Ministry of Foreign Affairs – Department for Green Diplomacy and Climate, KLIMA

Meeting in the Council for Development Policy on 31 October 2024
Agenda Item No 2.

1. Overall purpose:	*For discussion and recommendation to the Minister*
2. Title:	Danish Energy Partnership Programme 2025-2029 with Brazil, India and Kenya (DEPP 2025)
3. Presentation for Programme Committee:	11 June 2024
4. Previous Danish support presented to UPR:	Yes, other DEPP programmes: - 27 January 2022: The Danish Energy Partnership Programme III (DEPP 3) – Enhanced Engagements in South Africa and Vietnam - 10 September 2020: Danish Energy Partnership Programme - phase 3 (DEPP III)

Danish Energy Partnership Programme with Brazil, India and Kenya 2025-2029

Key results:

- Long-term energy modelling in Brazil, India and Kenya have informed least cost and low-carbon energy sector plans as a key building block for providing affordable and reliable energy for citizens in the three countries.
- Improved transparent regulatory energy frameworks have supported efficient integration of more variable renewable energy to meet increasing energy demand and aligning with the Paris Agreement in the three countries.
- Offshore wind development in Brazil and India has been further enabled through improved regulatory frameworks, transparent tender processes, and socio-economic and environmental safeguards and co-benefits.
- Energy efficiency improved through deployment of energy efficiency measures in Brazil and Kenya including for buildings, industries and grid infrastructure to ensure cost-efficient energy consumption by households and industries

Justification for support:

- Partner countries have demonstrated strong policy commitment to accelerate green energy transition and climate action.
- Energy is an enabler for sustainable socio-economic development, and a driver for achieving multiple SDGs. However, the Energy Progress Report (June 2024) finds that the world remains off track to achieve SDG 7 for energy by 2030.
- The programme will support a just and inclusive green energy transition (SDG7) which is aligned with Denmark's strategy "The World We Share" and related MFA How-to-Notes.

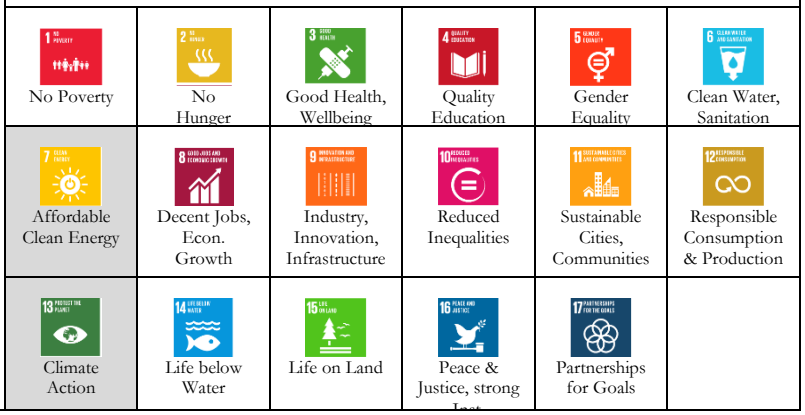
Major risks and challenges:

- Global geopolitical tensions impacting energy planning and green energy infrastructure investments is reduced by demonstrating least-cost energy modelling.is mitigated.
- Risk of resistance to energy transition due to different political-economy interests in the energy sector is mitigated by strong focus on transparency and stakeholder engagement.
- Risk of limited capacity constraints in national partner institutions is limited by tailor-make support to partner needs and priorities.

File No.	Public 360 No. 24/22853
Country	Brazil, India, Kenya
Responsible MFA Unit	Green Diplomacy and Climate (KLIMA)
Sector	Energy
Partner	Danish Energy Agency (DEA)

DKK million	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total**
Commitment	135.7	84.3					220.0
Projected disbursement		29.2	42.0	49.7	53.8	45.3	220.0

Duration	2025-2029
Previous grants	SSC energy Brazil DKK 11.5 million (2022-2026); DETI Brazil DKK 1.7 million (2021-2022); INDEP India DKK 69.0 million (2020-2024); SSC energy India DKK14.4 million (2017-2021); SSC energy Kenya DKK 10.0 million (2021-2025).
Finance Act code	06.34.01.70
Head of unit	Anne Hougaard Jensen
Desk officer	Morten Houmann Blomqvist
Reviewed by CFO	Rie Høygaard Jensen



Objective:

Contribute to a just and inclusive green energy transition in the three partnership countries through advancement of low carbon energy development and implementation of the countries' Nationally Determined Contributions under the Paris Agreement and long-term climate targets.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%	0%	100%	0%	0%
Total green budget (DKK)		**220.0**		

Justification for choice of partners:

The DEA will be the implementing partner, building on its extensive expertise, experience and knowledge from Danish integration variable renewable energy and its wider global cooperation portfolio comprising 24 bilateral government-to-government partnership programmes. National partners are selected based on their mandates, interest, and commitment to the partnerships.

Summary:

Affordable and green energy is a key enabler of socio-economic development and sustainable long-term growth. The Danish government-to-government energy partnership programme with Brazil, India, and Kenya will support a green and just energy transition aligned with goals of the Paris Agreement and SDG7. It will support transparent least cost long-term energy planning and integration of variable renewable energy, which will contribute to affordable and reliable access to renewable energy, thus supporting climate action targets and national energy demand.

Budget:

Brazil	DKK 42.2 million
India	DKK 84.0 million
Kenya	DKK 60.8 million
Unallocated funds 9.7%	DKK 21.4 million
Programme support (administration and communication)	DKK 10.6 million
Mandatory Mid-term Review (administered by MFA)	DKK 1.0 million
Total	**DKK 220.0 million**

Ministry of Foreign Affairs of Denmark (MFA)
Danish Energy Agency (DEA)

Danish Energy Partnership Programme 2025-2029
with
Brazil, India, and Kenya

(DEPP 2025)

Framework Programme Document

MFA file: Public 360 No. 24/22853

Contents

Definitions, abbreviations and acronyms

Note: Country-specific abbreviations and acronyms are given in the country programme documents

AMG	Danida Aid Management Guidelines
Ancillary services	A variety of operations beyond generation and transmission that are required to maintain grid stability and security. These services generally include active power control or frequency control and reactive power control or voltage control, on various timescales.
BOGA	Beyond Oil and Gas Alliance
BRADEP	Brazil-Denmark Energy Partnership
BRICS+	Brazil, Russia, India, China, South Africa - alliance of major developing countries, with Saudi Arabia, Egypt, Ethiopia, Iran, and the United Arab Emirates joining in early 2024
Consenting	The consenting process for the development of offshore wind projects is a critical element prepared by the involved regulatory authorities. This requires thorough planning and coordination amongst authorities in order to reduce risks to developers and investors.
COP	Conference of the Parties (to the UNFCCC)
CO_2	Carbon dioxide
DAC	OECD Development Assistance Committee
Danida	Brand name for Danish International Development Cooperation
DEA	Danish Energy Agency
DEPP 2025	Danish Energy Partnership Programme 2025 -2029 with Brazil, India and Kenya
DETI	The Danish Energy Transition Initiative
DKK	Danish kroner
DTU	Technical University of Denmark
EE	Energy efficiency
Energinet	Danish Transmission System Operator
ESMAP	World Bank Energy Sector Management Assistance Program
G20	Group of twenty largest economies
GC	Centre for Global Cooperation (of DEA)
GDP	Gross domestic product
GHG	Greenhouse Gas
GOWA	Global Offshore Wind Alliance
GtG	Government-to-Government
HRBA	Human Rights Based Approach
IEA	International Energy Agency
IFU	Investment Fund for Developing Countries (Denmark)
ILO	International Labour Organization
IMF	International Monetary Fund
INDEP	India-Denmark Energy Partnership
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
JWG	Joint Working Group (steering committee in INDEP)
KENDEP	Kenya-Denmark Energy Partnership
LNOB	Leaving no one behind
LT-LEDS	Long term low emissions development strategy
LTS	Long term strategy – submissions of LT-LEDS under the UNFCCC
LEARNING	MFA Department for Evaluation, Learning, and Quality
MCEU	Danish Ministry of Climate, Energy and Utilities
MFA	Ministry of Foreign Affairs of Denmark
MOEP	Ministry of Energy and Petroleum of Kenya
KLIMA	MFA Department for Green Diplomacy and Climate

MTR	Mid-term Review
MYNSEK	MFA secretariat of the strategic sector cooperation
NDC	Nationally Determined Contribution under the UNFCCC
NGO	Non-governmental organisations
OECD	Organisation for Economic Co-operation and Development
PAG	Programme Advisory Group (for DEPP – members MFA, MCEU with DEA as secretary)
PANT	Human rigths principles of participation, accountability, non-discrimination, and transparency
PC	Danida Programme Committee
PD	Programme document
RE	Renewable energy
SAG	Strategic Advisory Group (for DEPP, consisting of the MFA, MCEU, and DEA as the secretary)
SC	Steering committee
SDG7	Ensure access to affordable, reliable, sustainable and modern energy for all
SDG13	Take urgent action to combat climate change and its impacts
SSC	Strategic sector cooperation
SWOT	Strengths, weaknesses, opportunities, threats
TOC	Theory of change
TOR	Terms of reference
TWG	Technical working group
UNFCCC	United Nations Framework Convention on Climate Change
UPR	Danish acronym for the Council for Development Policy

1. Introduction, context, rationale and justification

1.1 Introduction

This Framework Programme Document (PD) outlines the background, justification, objectives, and management arrangements for Danish support under the proposed Danish Energy Partnership Programme with Brazil, India, and Kenya 2025-2029 (DEPP 2025 for its acronym - as 2025 is the year the Programme starts).

The Danish support for DEPP 2025 is a budget frame of DKK 220.0 million for the period between early 2025 to end 2029 as agreed between the Danish Energy Agency (DEA), the Danish Ministry of Climate, Energy and Utilities (MCEU), and the Ministry of Foreign Affairs of Denmark (MFA). The PD will be an Annex to the Agreement with the DEA as the implementing partner and constitutes an integral part hereof together with the documentation specified in the following.

Brazil, India and Kenya are strategically significant for achieving the goals of the Paris Agreement and Denmark's climate diplomacy, and continuation of the existing energy partnership with India and establishment of new energy partnerships with Brazil and Kenya are among the Danish Government's development policy priorities for 2025. The DEA peer-to-peer partnership approach has proven effective in fostering confidential, trust-based dialogue, which is an essential platform for climate diplomatic discussions. India is the former G20 chair and the third-largest consumer of energy in the world. Brazil, as the current chair of the G20 and the host of COP30, plays a pivotal role. Kenya is a leading country to promote renewable energy transition in Africa, as one of the founding fathers to the Accelerated Partnership for Renewables in Africa (APRA), and is a new member of the Beyond Oil and Gas Alliance (BOGA). Additionally, the Green Strategic Partnership with India is of high priority for Denmark. Furthermore, the DEPP 2025 partnership can demonstrate the co-benefits of a green energy transition if designed by engaging local populations and create synergies with Danish companies with interest in entering the markets in India, Brazil and Kenya.

In this context, the overall objective of the Danish support to DEA's government-to-government (GtG) collaboration under DEPP 2025 is to *Contribute to a just and inclusive green energy transition in the three partnership countries through advancement of low carbon energy development and implementation of the countries' Nationally Determined Contributions under the Paris Agreement and long-term climate targets".*

This Framework PD describes the proposed Danish Energy Partnership Programme 2025-2029 with Brazil, India, and Kenya (DEPP 2025). The PD "package" consists of the present Framework PD plus one Country PD each for Brazil, India, and Kenya, respectively – attached as Annex I, J, and K. The structures of the Framework and Country PDs are as far as relevant consistent with Danida guidelines and formats, but some adaptation has been made, also to avoid/minimise repetition. For the Brazil-Denmark Energy Partnership the acronym BRADEP has been chosen. For the Kenya-Denmark Energy Partnership the acronym KENDEP has been chosen. For the India-Denmark Energy Partnership, the acronym INDEP was well established in the ongoing phase of cooperation and to distinguish between the first and second phase, the cooperation during 2020-2024 is referred to as INDEP while the proposed second phase 2025-2029 under DEPP 2025 is referred to as INDEP II.

DEA undertook DEPP 2025 formulation missions to Kenya during 28 April-3 May, to India during 23-31 May, and to Brazil during 10-20 June 2024. Appraisal was undertaken during 19 August-23 September but with preparatory work from 24 June. More information on the formulation,

approval, and implementation process is found in the Process Action Plan in Annex F while the follow-up to the appraisal recommendations is found in Annex H.

1.2 Background and context

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise well below 2° Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C. However, global emissions continue to reach unprecedented levels, and national commitments are collectively far too unambitious to stay within the 1.5°C limit. Limiting global warming to 1.5 °C with limited or no overshoot requires reductions in global greenhouse gas (GHG) emissions of 43 % by 2030 and 60 % by 2035 relative to the 2019 level and reaching net-zero carbon dioxide emissions by 2050, the Intergovernmental Panel on Climate Change (IPCC) estimates[1]. This is critical to avoid the worst impacts of climate change, including more frequent and severe droughts, heatwaves, sea level rise, flooding and changes in rainfall patterns.

Climate change will disproportionately affect the poorest communities most despite the fact that they contributed least to the global warming. The World Bank estimates that climate change could push over 130 million people back into poverty between 2020 and 2030. Moreover, by 2050, an estimated 213 million people may be forced to migrate due to the adverse impacts of climate change[2]. Millions of people are living either without access to electricity or without access to reliable and affordable electricity. Energy is at the heart of achieving many of the Sustainable Development Goals (SDGs) but the recent stocktake of the SDG´s emphasised that only 17% of the SDG's are on track.

To achieve the long-term goals of the Paris Agreement, countries are required to develop Nationally Determined Contributions (NDCs) containing national emission reduction targets. Every five years, each country should submit a new and more ambitious NDC, informed by the Global Stocktake. The first round of NDCs for 2030 were submitted in 2020 and NDCs for 2035 should be submitted well in advance of COP30 in 2025. Countries should also strive to formulate Long Term Strategies/Long-Term Low Emission Development Strategies (LTS/LT-LEDS), with the aim to contribute to the long-term goals of the Paris Agreement. In contrast to NDCs, LTSs are not mandatory. However, many countries have formulated either an LTS or set a national long-term climate target. With the COP28 decision on the Global Stocktake, all countries are now encouraged to align their NDC with their LTS, and with limiting global warming to 1.5 °C.

Energy accounts for more than three-quarters of total GHG emissions globally, with fossil fuels accounting for 81% of the total energy supply. The three DEPP 2025 partner countries collectively stand for almost 10% of the global GHG-emissions with India and Brazil ranking as the third and fifth most emitting country. Thus, accelerating the energy transition away from fossil fuels is central to the achievement of existing NDCs as well as future NDCs and long-term climate targets.

With about 85% of additional global electricity demand towards 2026 set to come from outside economies in the global North, ensuring to meet the rising demand with renewable energy is

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1 https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

2 World Bank 2020. Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030. https://documents1.worldbank.org/curated/en/706751601388457990/pdf/Revised-Estimates-of-the-Impact-of-Climate-Change-on-Extreme-Poverty-by-2030.pdf

imperative for fighting climate change. While renewables are proven the cheapest form of power today, transitioning to a green energy system poses significant challenges, particularly for developing and emerging economies, including difficulties in attracting investments, high upfront costs, ensuring security of supply, and lack of access to technical expertise needed for implementing and managing renewable and integrated energy systems.

Lack of reliable and affordable energy can push millions of the most vulnerable people back into poverty, leaving them unable to afford energy services, as demonstrated by the recent global energy crisis. Renewable energy offers new possibilities for both economic development and energy security at times of geopolitical instability, particularly for fuel-importing countries such as Kenya and India. Furthermore, green transition opens opportunities for job creation, higher degree of gender balance in the energy-related work force and to phase-out subsidies for fossil fuels, which the International Monetary Fund (IMF) estimates exceeded USD 7 trillion in 2022 or 7.2 % of global GDP. Globally, the share of green jobs in renewable energy grew by 64%, reaching 12 million between 2012 and 2022. The International Renewable Energy Agency (IRENA) and the International Labour Organization (ILO) predict green energy transition to create more jobs than it will eliminate. Investing in renewable energy will not go at the expense of sustainable development and socio-economic development. Rather, investing in renewable energy and the SDGs will by far be mutually reinforcing, though mitigation of trade-offs is important.

Partnering with India, Brazil, and Kenya reflects a growing demand from the partners for Denmark's technical and regulatory lessons learned, in order to amplify the use of electricity from especially solar and wind. The ongoing engagements under the strategic sector cooperation (SSC) in Brazil and Kenya and the India-Denmark Energy Partnership are based on a trust-based dialogue that allows the partnership to identify the core challenges in transitioning to an energy system based on more variable renewable energy sources. The existing partnerships involve key sector institutions and will be expanded to include additional partners and areas of cooperation under DEPP 2025 both at national and subnational levels.

The partnership draws on Denmark's 40 years of experience and expertise in the green transition and more than 10 years of the Danish Energy Agency's experience of sharing best practice through GtG cooperation, currently with 25 partner countries. While emitting only 0.1 % of the world's CO_2 emissions, Denmark is considered a global frontrunner in the global effort on mitigating climate change and green solutions. Currently, Denmark has the highest share of variable renewable energy sources in the grid while having one of the most reliable energy systems at cost-competitive prices[3]. Therefore, both the Danish Climate Act and the Danish Strategy for Development Cooperation also point to the opportunities for Denmark to increase its international support to the largest GHG-emitters and developing countries to raise their climate ambitions.

Opportunities and challenges for a green energy transition

The proposed DEPP 2025 has identified Brazil, India and Kenya as three important countries in a global green energy transition. Brazil and India are large countries where the design of the future energy mix will influence global CO_2 emissions, while Kenya is among the strongest voices in Africa demonstrating the possibility of achieving universal access to electricity based on renewable energy. The three countries are in this sense quite different when it comes to size, current energy mix, and expectations for the cooperation with DEA. However, each country has been selected due its relevance for a Danish engagement to support global green energy transition. The three countries

[3] Denmark in Top Five among the World's Best Electricity Systems (stateofgreen.com)

are pooled together in the same programme document for simplifying administrations of formulating and managing larger programmer, achieving economy of scale, as well as providing opportunities for adaptive management and flexibility is the use of unallocated funds, etc.

That said, several similarities exist. All three countries have set out ambitious targets for renewables and already have considerable shares of green energy in their energy mix today. Yet, all of them are confronted with the challenges of diversifying their energy mix with variable renewable energy sources while meeting a growing energy demand and working to achieve international commitments and aspirations expressed in their NDCs and LTS and other long-term climate targets as well as achieving SDG targets. All three countries are in a critical stage of their energy transition where the technical capacity development in DEPP 2025 will support the planning and integration of additional energy capacity, improved and adequate grid systems, increased energy efficiency, and development of clear regulations - all while ensuring transparency for just green energy transition and access to reliable and affordable green energy.

To meet these challenges the cooperation is mainly centred on the following four expertise areas which will be tailored to the specific context and needs expressed by the Governments and partner institutions:

- Long-term energy modelling and planning
- Integration of variable renewable energy in the energy mix
- Development of offshore wind energy
- Energy efficiency

Achieving a *cost-efficient green transition* is challenging due to the need for complex information and projections, such as those related to energy source composition and grid infrastructure investments. Long-term planning is a critical instrument to ensure a holistic approach in developing the energy sector. Therefore, DEPP 2025 will assist the partner countries to develop long-term energy strategies allowing for country specific needs and based on cost-efficient models. Analysing least-cost scenarios — including forecast of demand for energy and infrastructure, deployment of new technologies, and assessment of policy impacts — helps the partners to be more informed in both the formulation of political plans and climate targets including how the energy sector transition can contribute to both NDCs and long-term climate targets and possibly accelerate the green transition. Thus, long-term energy planning is a precondition to secure a more science-based, transparent and efficient transition.

Balancing an energy system based on variable energy sources is a core challenge in enabling the green transition as it requires new competences, regulation and practices in operating the energy system to ensure the security of supply. Upholding a reliable energy supply is a prerequisite for realizing the green transition. Therefore, DEPP 2025 will share tools and experiences to enhance partners' capabilities in integrating variable energy sources into their energy mix, e.g. electricity market designs and operation of the power grid. This is essential for ensuring timely investments in renewable energy and grid expansion to meet future rapid increasing energy demand in the three countries. By this DEPP 2025 supports energy availability and affordability, crucial for enabling societal development. If long-term planning and investment are not made, it will affect local population through increased energy prices, more frequent power blackouts and barriers for economic growth and job creation.

Offshore wind has a significant potential in the DEPP 2025 countries for both energy supply and local job creation. However, its deployment can be challenging due to the need to balance various stakeholder interests. Unclear regulation and complex administrative procedure are often a barrier

for attracting investors. Therefore, DEPP 2025 will also share Danish methods for deploying renewable energy through transparent, competitive public tenders, aiming to attract more private capital through stakeholder dialogue and de-risking measures. DEPP 2025 will also offer insights on planning renewable energy projects with local community involvement, benefit sharing, environmental assessments, and cost-efficiency to enhance transparency, non-discrimination, and accountability.

Expansion of solar and wind energy opens many opportunities for sustainable growth and social development for the three countries, including providing energy poor communities and regions with affordable and reliable energy. However, as solar and wind investments reach scale, social resistance is increasing and threating to undermine an accelerated green transition if proper community consultation, benefit sharing initiatives and compensation scheme are not in place. Based on the mixed Danish experiences and international standards, DEPP 2025 will support and explore how local community engagement and consultation can be addressed and regulated to maximise community benefits such as creation of local jobs or improved access to affordable energy, and minimise adverse impacts from new infrastructure.

Energy efficiency is often called the "first fuel" in green energy transitions, as it provides some of the quickest and most cost-effective CO_2 mitigation options while lowering energy bills, providing socio-economic benefits and strengthening energy security. However, a lack of awareness, technical expertise, and institutional capacity to develop, implement and enforce energy efficiency standards are often barriers for reducing energy consumption and emissions. Therefore, DEPP 2025 will share Danish experience on regulatory schemes and measures to improve energy efficiency in industries and buildings by enhancing incentives, increasing transparency and raising ambitions.

DEA Global Cooperation

The core foundation of DEA's Global Cooperation (GC) approach to GtG is that it is based on partner demand and peer-to-peer knowledge exchanges. This approach has enabled DEA to build up mutual trust and partnerships that, based on experience, enables a deeper and longer-term engagement. The confidential and technical dialogue established has shown effective to pave the way to central decision-makers and key governmental institutions. This is demonstrated by agreements to place technical experts (long-term advisors) within the partner's energy authorities – an arrangement that Denmark is often exclusively permitted to apply compared to other donors and development partners.

The areas and measures of cooperation are based on comprehensive assessments of the partners' needs, priorities and capacity[4]. In addition, formulation of the partnerships also takes into account the already existing activities by a variety of different donors and multilateral agencies in each country allowing DEA to focus on its strongholds. To ensure a sustainable impact on regulatory frameworks and institutions through the technical advisory provided, it is essential to identify the key challenges and decision-makers in the green transition. A core element of delivering effective technical advice and achieving long-term impact is adapting Denmark's decades of experience and expertise in green energy transition to the specific context of the partner country. With technical cooperation and knowledge exchanges at the centre of the partnership, the GtG cooperation takes a holistic approach, recognizing energy as a crucial driver of sustainable development and strengthening/sustainment of capacities, at individual, institutional and enabling environment level, as instrumental for achievement of development results.

[4] Partner assessments/SWOT analyses have been conducted for each of the countries.

In providing technical expertise within the four expertise areas, cross-cutting issues including poverty orientation, gender equality, and a human rights-based approach are integrated in sharing Denmark's long-lasting experience and know-how in the green transition. The human rights principles of Participation, Accountability, Non-discrimination, and Transparency (PANT) underpin many activities, as further explained in DEA's "forståelsespapir" (se Annex B, in Danish), e.g. consultation of local communities, transparent access to information, etc. The combination of technical capabilities, good governance, and poverty orientation will be critical to deliver affordable and reliable electricity to more than 1.6 billion people, hereof 47 million people living below the poverty line[5], while transitioning towards a low-carbon economy.

1.3 Summary of national contexts

The national contexts for Brazil, Kenya, and India are described in each of the respective Country Programme Documents. The following table presents an overview of key demographic and socio-economic numbers in the three countries.

Table 1.1: Key demographic and socio-economic figures

	Brazil	**Kenya**	**India**
Population (million)	216	55	1.430
Surface area (km^2)	8.515.770	580.370	3.287.260
Population density (persons/km^2)	26	93	473
Life expectancy (years, total)	73	62	68
GDP (current USD/capita)	10.043	1.950	2.485
People living below the poverty line of USD2.15 a day (% of population)	4	36	13
Corruption perception index (rank out of 180)	104	126	93

Sources: Data based on most recent data from World Bank Database and Transparency International (Corruption Perception Index).

The national energy and climate related contexts vary across the three partner countries. The following table presents an overview of key emissions and energy related figures, including pledges and aspiration for GHG emissions in the NDC as well as long-term climate targets.

Table 1.2: Key emissions- and energy related figures

	Brazil	**Kenya**	**India**
NDC 2030 target	Unconditional NDC-target: Net GHG emissions cap of 1.20 $GtCO_2e$ in 2030 (~53% below emission levels in 2005). Ending illegal deforestation by 2030.	Conditional NDC-target: 32% reduction of GHG emissions in 2030 compared to BAU scenario of 143 $MtCO_2e$ (conditional on 87 % external finance).	Unconditional NDC target: Emissions intensity 45% below 2005 levels in 2030. Conditional NDC target: 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources.
Long-term climate target and Long-Term Strategies (LTS)	Climate Neutral by 2050 communicated through the NDC. No submission of separate LTS.	Submission of LTS, 2020-2050 with aspiration for carbon neutrality by 2050.	Net zero by 2070 LTS submitted to UNFCCC.

[5] Poverty line is defined as USD2.15 a day.

Total GHG-emissions (excl. land use, land-use change and forestry (LULUCF) (Mt CO_2e)	1136	82	3444
GHG-emissions per capita (excl. LULUCF) (tons CO2e)	7.15	1.41	2.43
Ranking of GHG emitters worldwide (excl. LULUCF)	#5	#88	#3
Total final energy consumption (TJ)	10,203,254	693,503	26,422,000
Total electricity consumption (TJ)	1,983,389	35,043	4,343,834
Fossil fuel share of total energy mix (% of total)	51	21	74
Share of wind- and solar energy in the total electricity generation mix (% of total)	21%	20%	6%
ESMAP RISE[6] Indicators – overall scores	82	73	78

Sources: GHG-emissions data are based on the most recent data from the World Resources Institute's CAIT Climate Data Explorer. All energy related figures are based on most recent data from the IEA.

1.4 Strategic global context for DEPP 2025

The primary focus in DEPP 2025 is to support the just and inclusive energy transition that is central to Sustainable Development Goal 7 (SDG7)[7], and which call for accelerated actions. The 2024 tracking SDG7 report[8] expressed a clear concern that the current pace of progress is not adequate to achieve any of the 2030 targets for SDG 7 and: *"To achieve universal access to clean energy by 2030, robust policies are needed to accelerate electrification, enhance energy efficiency and increase investments in renewable energy. These efforts, coupled with fostering innovative solutions and creating supportive regulatory frameworks, are pivotal to advance towards Goal 7 and meet climate objectives."*

The SDG Report[9] concluded with regard to SDG 13 that *"The global community faces a critical juncture. All countries must urgently speed up economy-wide, low-carbon transformations to avoid escalating economic and social costs. The upcoming 2025 cycle of nationally determined contributions (NDCs) presents a chance for ambitious climate action plans that drive economic and social progress. These must have increased ambition to close implementation gaps, cover entire economies and all greenhouse gases, and align with the target of limiting global temperature rise to no more than 1.5°C."*

Also, the UN General Assembly Call to Action included: *"Urgently prioritize and implement measures to achieve universal access to affordable, reliable, and modern energy services by 2030, through extending access to electricity for over 600 million people who are currently without electricity and providing clean cooking solutions. Rapidly accelerate global energy transitions and actions towards net zero emission energy systems, in a just, orderly, and equitable manner, including, inter alia, through tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030. Compellingly ensure that no one is left behind by enhancing public-private-partnerships, technology transfer, and capacity building for developing countries in creating an enabling environment for energy transitions, emphasizing the interlinkages with other SDGs*

DEPP 2025 is designed to respond to these concerns and priorities. Its implementation will support the temperature goals of the Paris Agreement and furthermore contribute to SDG 13[10] on climate action, particularly by supporting human and institutional capacity development on climate change mitigation measures and integration of measures into national policies, strategies and planning.

[6] Regulatory Indicators for Sustainable Energy (RISE) – see link giving scores overall, for energy access, renewable energy, energy efficiency, and clean cooking.

[7] The aim of SDG 7 (link) is to "ensure access to affordable, reliable, sustainable, and modern energy for all."

[8] Energy Progress Report 2024 by IRENA, IEA, UNSD, World Bank and WHO (https://trackingsdg7.esmap.org/)

[9] United Nations Sustainable Development Goals Report, 28 June 2024 (link) – see page 34 under SDG13.

[10] SDG 13 (link): "Take urgent action to combat climate change and its impacts"

1.5 Rationale and justification

Alignment with Denmark's development policy priorities

DEPP 2025 is fully aligned with Danish priorities, policies, and strategies as articulated in Denmark's Strategy for Development Cooperation "The World We Share", which among other things states that *"Danish authorities have decades of experience in creating the framework for successful green transition, and Danish companies, knowledge institutions and other stakeholders are at the very front in developing and implementing green solutions within renewable energy, district heating, energy efficiency…"*; "*Denmark will promote ambitious national climate action plans that enable developing countries and growth economies to transition from fossil fuels to clean energy sources…". "Denmark will strengthen the Danish SDG7 leadership and energy cooperation on green transition in developing countries, including promoting renewable energy and energy efficiency. This applies particularly to growth economies with high emission levels. The international cooperation on energy under the strategic sector cooperation will lie at the heart of the efforts to promote green transition and underpin Danish climate diplomacy*. The Danida How-to-Note on Energy Transition and Emission Reductions in Developing Countries, acknowledges that *"the Danish Energy Agency is deeply engaged in technical authority-to-authority cooperation at the country level in emerging economies"* and states that: *"Working with major emerging economies is critical, as 30% of the increase in energy demand will indeed come from these countries*" and *"The major emerging economies and targeted partnership countries are already among the global top emitters, and the energy sector is the main source. Accordingly, in these cases the focus is more directly on the energy sector and on long-term energy planning both nationally and sub-nationally,"* and *"Emerging economies still contain pockets of poverty, and the social and economic aspects of energy measures will be increasingly analysed"*. And *"concrete links must be forged between authority-to-authority cooperation, bilateral projects and multilateral organisations such as IRENA, IEA, UNEP-CCC, the NDC Partnership and ESMAP in order to enhance capacity and national frameworks, as well as to develop investable projects."*.

The Danish Government's Foreign and Security Policy Strategy (May 2023), states that the climate crisis constitutes the 21st century's greatest challenge, requiring global cooperation and action and emphasizing that Denmark must continue to be at the forefront of the global climate action through its climate diplomacy efforts, continuing to assume a leading role in pushing for increased ambitions with regard to emission reduction efforts and other climate action. The proposed KENDEP Programme is also aligned to priorities in the Danish Government's new Strategy for strengthened Danish engagement with African countries "Africa's Century".

Affordable and reliable access to electricity for both households, public institution and industries are key concerns driving the DEPP 2025 Programme's focus on least-cost long term planning, cost-efficient integration of variable renewable energy, and cost-effective implementation of energy efficiency. The programme has also increased emphasis on socio-economic aspects of the energy transition – in line with the partner countries' policies and principles for a just and inclusive energy transition.

SDG 7 is not a human right in itself but a key enabler to achieve several human rights (access to water, housing, heath, etc.) and most of the SDGs. Based on the recent MFA Mid-Term Reviews of DEPP III and INDEP and interest from partner countries, DEPP 2025 will strengthen a poverty orientation and human rights-based approach to support a green energy transition based on the Danish experiences and knowledge of Danish partner organisation such as the Danish Institute for Human Rights. DEA will focus on the human rights principles of participation, accountability, non-discrimination, and transparency (PANT) and the MFA's multidimensional definition of poverty. A starting point will be DEA's "forståelsespapir"/concept note on human rights and poverty which will elaborated further in the Document (see Annex B to the present framework PD). In Brazil, human rights and community consultation will particularly be integrated in the components working with offshore wind whereas in Kenya affordability is key to achieve universal access to electricity

and clean cooking. Renewable energy will be considered a major opportunity to achieve human rights and alleviate poverty while being mindful of risks of adverse impacts on affected communities and populations if they are now sufficiently engaged and consulted. The recent year in Denmark and globally demonstrates the importance of having a "social license" to operate (increasing community co-benefits and limiting adverse impacts) is precondition to accelerate a green energy transition and attract international investors to the sector.

Gender equality is considered as a cross-cutting issue in the programme across all three countries. Although gender equality can be difficult to reflect in energy modelling or in more technical discussion about integrating variable renewable energy, opportunities exist to reflect gender in many other areas. In fact, a green energy transition is an opportunity to achieve strong gender balance in employment in the sector and differentiated impacts between women and men when it comes to potential benefits and risks of adverse impacts. Training and capacity development activities should monitor and strive to strengthen the gender balance, and community consultations and co-benefits should consider the gender differences. Country specific information and gender equality and human rights and poverty can be found in in each Country PD.

Sustainable, reliable and affordable energy is an enabler and precondition to achieve growth, poverty eradication, job creation and ability to adapt to climate change and natural hazards. Least cost energy models also highlight that renewable energy is the cheapest energy available in the three countries. However, it is complex to adjust the current dependency on fossil fuels, geothermal or hydropower towards more variable renewable sources such as solar and wind. It will require new institutional capabilities, long-term planning for investment and grid expansion, and approaches to engage and consult communities when renewable energy investments are planned, constructed and operated. The DEA has more than 30 years of experience know-how on how to plan, model and design policies, regulation and community consultation process.

Just and Inclusive Energy Transition (JIET)

There is no global definition of just and inclusive energy transition. DEPP 2025 respects the different interpretations of the three partner countries and see the mutual partnership as a learning process. The below bullets are considered by DEA as some of the relevant points and have been inspired by discussion under the Brazilian chairmanship of G20:

1. End energy poverty by ensuring access to affordable, reliable, sustainable and modern electricity and clean cooking for all.
2. Social dialogue and stakeholder participation to encourage meaningful and effective stakeholder participation, including from labour unions, workers and civil society.
3. Social protection of particular with particular consideration of the vulnerable and marginalised segments of the population affected by the energy transition.
4. Policy inclusiveness by incorporate perspectives on gender, age, racial, ethnic and vulnerable and marginalised groups into energy planning
5. Respect, protect and fulfil human rights, in particular the rights of indigenous peoples, labour rights and the rights of persons with disabilities, and consider the interests of local communities
6. Invest in affordable and reliable solutions for just and inclusive energy transitions, and widely share the benefits renewable energy access and mitigate the burden of energy transitions.
7. Maximise co-benefits and local value creation while mitigating adverse socio-economic and environmental impacts of energy
8. Quality jobs and workforce transformation through reskilling and up-skilling to create avenues of employment, while creating greater opportunities for all, noting the ILO guidelines on a Just Transition for all in this regard.

Justification against OECD DAC criteria

A short summary is provided below, while a longer version is found in Annex C:

Relevance: DEPP 2025 responds to global concerns and priorities for energy transition and climate action, as well as national partner needs and priorities.

External and internal coherence: Aligned with wider policy priorities of national partner government institutions and emphasis is placed on synergy with initiatives of other development partners. Internal coherence is overseen by the Strategic Advisory Group (SAG) and the Programme Advisory Group (PAG).

Effectiveness: The Steering Committees (SCs) in each country will serve as accountability mechanism toward Programme objectives and intended results.

Efficiency: Specific TOR for each major intervention, will ensure a demand-driven approach and efficient resource utilisation.

Impact: Impact drivers underpin the programme, and a focus on socio economic aspects of inclusive just energy transition will further contribute to impact.

Sustainability: Cooperation integrated into overall partner development and sector policies and plans and involves other relevant stakeholders.

1.6 Lessons learned

DEPP 2025 and the implementation of country partnerships will build on DEA-GC's extensive experience with GtG technical cooperation, spanning over 10 years, and lessons learned. DEA will build on its tailor-made approach to peer-to-peer government approach, based on partners' needs and priorities combined with DEA's key competencies. A key element is also a highly adaptive approach to be able to adjust and respond to new country needs to ensure programme relevance throughout the five-year period. It also involves a stronger focus on turning knowledge into operation and investment but also more focus on the socio-economic dimension of a green energy transition (further details also outlined in section 1.2).

The MFA Mid-term Reviews (MTRs) of DEPP III and INDEP, reported in March 2024 and July 2023 noted that DEA GC is an appreciated partner across countries enjoying wide recognition of the GtG approach establishing trust and great flexibility in implementation. The advisors embedded with partner institutions are well received and trusted among partners acting as strong bridge builders between partners and DEA GC. The MTR also found well-functioning peer-to-peer relations with Energinet, enjoying appreciation from their peers in the partner countries. These elements recognised by the MTRs will be continued and strengthened in programme structures and implementation of DEPP 2025.

The MTRs also emphasised several areas for further improvement and development. The programme should reflect political economy of the energy sector in each country and adapt to the national context as well as move closer to operationalization and implementation as a green energy transition matures. It could also be to widen the potential DEPP support areas and support non-governmental organisations such as think tanks and universities. Furthermore, it was recommended to ensure joint planning and reporting structures, which would allow more adaptive approaches and to expand into topics beyond traditional areas of DEA. Finally, the importance of strengthening DEA's capacity development approach and improved political-economy assessment was highlighted.

DEA has taken steps to implement these recommendations, and the work is still ongoing. Additional resources have been allocated to develop a stronger capacity building approach and political economy lighthouse appointed. Furthermore, the programmes are strengthening its socio-economic focus on enabling affordable and reliable energy but also to support community consultation, good governance and co-benefit sharing such as job creation and reskilling. National Steering Committees have been established in all countries to adjust work programmes and planned results. DEA is increasingly also working with national think-tank's or NGO's such as the Danish Institute for Human Rights. The learnings and recommendations from the MTRs are -reflected in the present framework PD and the three country PDs.

DEA has already responded to the MTR-recommended strengthening of internal capabilities of DEA GC on development issues, capacity development and political economy approaches across programmes, countries, and in dialogue with partners. DEA is developing an *"Integrated Approach to Capacity Development in Global Cooperation",* which will apply across DEA's global cooperation programmes. The box below briefly summarises key aspects of this approach.

Approach to Capacity Development

Capacity is understood[11] *as the ability of people, organizations and society as a whole to manage their affairs successfully, and capacity development as the process whereby people, organizations and society unleash, strengthen, create, adapt and maintain capacity over time in order to achieve development results.*

Capacity development should ideally be approached at three levels: individual, institutional, and enabling environment. It is widely recognized that individual level capacity development focuses on improving skills, knowledge, and performance, and that organizational capacity development aims to enhance institutional performance through strategies, plans, rules, partnerships, and structures. At the enabling environment level, the goal is to improve policy frameworks that address economic, political, energy, climate, and social factors.

The efforts by DEA to reinforce, facilitate, or catalyse capacity development through its technical cooperation embraces all levels. DEA conducts an assessment of the needs, priorities, resources and ability to influence policies of all partners in order to tailor-make the support.

Attaining institutionalization of results can, however, be a challenging task, and the technical cooperation by DEA is no exception. Spurred by recent MFA reviews of DEA's partnership programmes, DEA intends to reinforce its efforts to support partner institutions in achieving institutionalization of results and has recently initiated work to put in place a more structured approach embracing the practical, experience-based approach and the already well-established toolbox, and supporting that each step of any capacity development process is more systematically addressed. This is intended to facilitate that technical cooperation interventions effectively target the goals established jointly with the partner institutions for their capacity strengthening through the partnership with DEA, as well as to facilitate joint monitoring and verification of results and learning.

DEA has initiated its strengthened approach to capacity development in the formulation of DEPP 2025 country PDs. While DEA has a wide range of tools, it is important to measure wider outcomes of the collaboration and knowledge sharing with the partner institutions. The indicators of the results frameworks reflect, as relevant, targets and indicators for improved capabilities developed during the partnership. This includes measures such as partner institutions applying knowledge and new capabilities developed. It comes into expression through content in new policies, regulations or standards. Or it can be application of new modelling capacities informing long term energy planning/NDCs or converting international standards for community consultations related to new renewable energy projects into practice.

[11] UNDG-UNDAF Companion Guidance (link)

Annex G summarises how the DEPP 2025 formulation has addressed the particular MTR recommendation for future energy partnership programmes including the recommendation to advance on partner assessments. Each Country Programme Document summarises key results achieved, and lessons learned from ongoing collaboration in the country, which will not be repeated here.

2. Presentation of DEPP 2025

2.1 Objective, theory of change, results framework and key assumptions

2.1.1 Framework Programme Objective

The objective of the DEPP 2025 framework Programme is to:
Contribute to a just and inclusive green energy transition in the three partnership countries through advancement of low carbon energy development and implementation of the countries' Nationally Determined Contributions under the Paris Agreement and long-term climate targets.

2.1.2 Theory of Change

The narrative Theory of Change (ToC) can be summarised as:

If Denmark contributes grant funds to DEPP 2025 for Brazil, India, and Kenya.
And if DEPP 2025 engages into partnerships within strategically chosen areas with national partners in Brazil, India and Kenya who have the relevant mandates and a strong continued commitment to the partnership.
And if DEA serves as an effective and efficient implementing partner for this cooperation drawing on extensive experience from numerous Strategic Sector Cooperation and Danish Energy Partnership Programmes (in currently 24+countries).
And if DEA collaborates closely with key national partners leveraging its core competences, best practice knowledge and experience, and applies a structured and effective approach to knowledge exchange and capacity development approaches including peer-to-peer exchanges, embedded long-term advisors, delegation visits including in Denmark, workshops, seminars, learning events and training courses, triangular/South-South exchanges.
And if these activities are strategically designed to address the specific needs of partners, focusing on planning, strategies, regulatory, institutional, and technical measures aligned to partner institutions' own strategies and plan.
And if this is done through sharing experience on medium and long-term just, inclusive, and green transition in the energy sector and climate action.
And if a multi-dimensional poverty approach and human rights principles underpins the cooperation as a whole.
And if the national partners sustain their commitment to effective uptake, application and use of knowledge and experience in these areas.
And if the national partners strive for synergy between DEPP 2025 and other initiatives in their country in support of its just and inclusive energy transition and climate action.
And if Denmark strives for synergy between DEPP 2025 and Denmark's multilateral energy and climate cooperation such as with the IEA, the IRENA, the World Bank, the NDC Partnership, and others.
Then, scenario-based energy plans that demonstrate the cost-effectiveness of a just inclusive and green energy transition can be used for building consensus and driving forward the transition to

meet affordable future power demands for households and enterprises to sustain growth opportunities aligned with the Paris Agreement.
And then, countries' robust regulatory and legal framework for renewable energy and energy efficiency, and power system optimisation facilitate and secure investments into renewable energy and energy efficiency based on transparent tenders and stakeholder consultations.
And then, favourable conditions are set for an increased and sustained renewable energy share in the countries' energy mix and a reduced energy intensity which demonstrate that future energy demand can met by renewables as the most cost-efficient pathway.
And then a long-term contribution has been made towards a resource-efficient electricity system, providing more affordable, secure, and reliable power supply in partner countries benefitting more than 1.6 billion people.
And then a long-term and sustainable contribution will have been made to a just and inclusive green energy transition in the three partnership countries through advancement of low carbon energy development and implementation of the countries' NDCs under the Paris Agreement and long-term climate targets (the DEPP 2025 objective).

Brief consultation documents have been used during the formulation process in the interaction with national partners in the three countries to identify the priority areas for cooperation under DEPP 2025, and the annual workplans will be the main vehicle for translating DEPP 2025 theory of change and results frameworks into concrete partnership action.

2.1.3 Key assumptions and drivers

It is important to note that as implementing partner DEA will be accountable for results at output level while outcomes and impact are within DEA influence and interest, respectively, but depend on partner action – however, DEA is required to monitor results at outcome and impact levels. Assumptions relate to factors that are not (fully) within the control of DEA in implementing DEPP 2025, but which underpin the theory of change and include:

- Partner country government's sustained political support for NDC targets and related policy initiatives related to transparent governance of the renewable energy.
- Climate-diplomacy relations that support partner countries in addressing both climate action and a just energy transition, including community consultations and last-mile distribution.
- Partner countries continue to share the necessary data for providing technical assistance in energy modelling and planning despite higher geo-political sensitivity.
- Additionality and synergy ensured in a dynamic field with many stakeholders with different interest, competencies and skills.
- The partnership strategically supports transformational change aligned to partner countries' NDC and SDG targets and related policies and strategies, and manages oppositional interest.
- Relevant data and knowledge shared as needed also on broader topics such socio-economic and environmental impacts of renewable energy and open tender processes.
- Country partners engage effectively throughout the programme and value peer-to-peer exchanges of good practice.
- Country level programme governance and management mechanisms (Steering Committees/Joint Working Groups) meet regularly as foreseen and are effective in monitoring progress and results and in providing strategic guidance to implementation including ensure continued alignment to country priority needs and with emphasis on assumptions and risk factors as well as capacity development results for sustainable outcomes.
- Renewable energy is an enabler to meet future energy demand in the countries, including the electrification and digitalisation of society, while providing access to affordable and reliable energy to populations including low-income groups.

- The cooperation contributes effectively to enabling investment to be mobilised, where required, to complement institutional strengthening.
- Countries' continued interest in engaging and consulting communities.

Key drivers of sustainable impact

- Continued partner high-level political commitment and strategic engagement with Denmark to meeting energy transition and climate targets.
- A structured approach to knowledge sharing, including delegation visits "seeing is believing".
- Continued attention to the socio-economic aspects of the energy transition in the partnership.
- Effective communication of results and lessons targeted at decision makers.
- Triangular cooperation and sustained peer-to-peer exchanges also with other countries.

2.2 Summary of country programmes

A summary description of each country programme is given below. Please refer to the Country Programme Documents for further description including of national partners.

2.2.1 Summary description of the Brazil-Denmark Energy Partnership Programme

BRADEP builds on the already well-established cooperation under the SSC on energy, which is planned to continue in parallel with BRADEP until December 2025. By entering into a energy partnership programme, Denmark will widen and deepen the existing partnership with Brazil. Due to a particular demand in offshore wind and the expansion with new partners including at state level, BRADEP comprises a separate offshore wind component. It will also include a new energy efficiency component. The totally four outcomes set forth are intended to attribute to the overall programme objective, which is defined as: *"A just and inclusive energy transition and climate action supported through a strengthened partnership between Brazil and Denmark for an enabling framework for renewable energy, the effective integration of variable renewable energy, the development of the offshore wind sector, and development of new energy efficiency measures".*

Outcome 1: Offshore wind energy development further enabled through improved regulatory framework conditions considering socio-economic and environmental co-benefits.

To achieve this targeted outcome, peer-to-peer knowledge exchanges will be facilitated on regulatory framework addressing pertinent technical and socio-economic aspects, such as public consultations with affected communities and job creation. The cooperation will in particular address: i) Offshore wind process/cycle and integrated planning approaches for new infrastructure development and sustainability; ii) Consenting process and social aspects with a focus on JIET; iii) Offshore wind legal structures that are sound, commercially effective, and in line with best public policy practices.

This component is primarily anchored with the Ministry of Mines and Energy, but several more partner institutions will be engaged as offshore wind development involves multiple resort areas including Marine Spatial Planning, environmental permitting and consultation with affected fishery communities and port infrastructure development. Cooperation with State governments where the first projects are most likely to take place is also expected.

Outcome 2: Long-term planning processes and methodologies effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in support of a just and inclusive energy transition.

To achieve this outcome, knowledge exchanges will be conducted on governance, institutional frameworks and scenario development approaches for long-term energy planning. Planning with a

long-term perspective provides important support for the definition, evaluation, and updating of strategies and policies on energy sector decarbonisation and integration of large shares of variable renewable energy. As such, it provides important insights for the design of renewable energy support schemes, grid infrastructure planning, and security of supply. This will be key to build adequate grid infrastructure and prepare adequate social consultation and engagement processes.

Lead partner is the Ministry of Mines and Energy and the Energy Research Office of Brazil is also key. This component will contribute to the energy sections of Brazil's Climate Plan and facilitate triangular cooperation and support joint work in multilateral settings, such as the G20 and the NDC Partnership, where Brazil will become co-chair together with Denmark in 2025.

Outcome 3: Flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, through optimised flexibility measures and renewables forecasting, which contributes to more stable and affordable electricity supply for all consumers.

Brazil's goal of reducing its dependency on hydropower may involve a substantial expansion of electricity generation from solar and wind. Such expansion comes with a variety of engineering and economic challenges. If addressed poorly, it could result in more expensive and less reliable electricity supply, which affects all consumers, and especially low-income households already paying a large share of their income on electricity.

Denmark has accumulated a wealth of experience with grid integration of variable energy sources, and to achieve the targeted outcome, this component will facilitate peer-to-peer exchanges of knowledge and experiences in integration of variable renewable energy with reduced curtailment, improved forecasting and dispatching tools and procedures. The Ministry of Mines and Energy, the national transmission system operator, and the electricity regulatory agency, will be the key partners.

Outcome 4: A transparent and ambitious regulatory and institutional framework leads to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry, which will also benefit lower-income households and Brazil's sustainable re-industrialization policy.

This outcome will be targeted through Brazilian partners exchanging experiences with DEA on regulatory and institutional frameworks conducive for cost-effective implementation of energy efficiency strategies, policies, and plans with focus on low-carbon development in the industrial sector and on emissions reduction in buildings from an energy efficiency and Life Cycle Analysis perspective. Energy efficient measures will be key for the competitiveness of Brazil's industries – and the indirect job creation – and reduce household energy consumption. This outcome is anchored with Ministry of Mines and Energy given its role as the line ministry responsible for energy efficiency policy and will also involve the electricity regulatory agency who is leading work on energy efficiency regulation.

2.2.2 Summary description of the India-Denmark Energy Partnership Programme

The India-Denmark energy partnership, phase II (INDEP II) develops, strengthens and expands the engagements under the first phase of INDEP by moving closer to the implementation level in partner institutions. INDEP II will work within the three core areas already established in the first phase of the partnership, namely offshore wind; long-term energy planning and modelling; and integration of variable renewable energy, all of which are of high political importance and in demand from partners. Further, a new component initiates a state level partnership on wind energy development. Hence, the INDEP II programme is designed with four targeted outcomes, intended to attribute to the overall objective of the programme, which is: *"The implementation of targets and measures for a sustainable and low-carbon energy mix supported by the India-*

Denmark Energy Partnership, in line with the Paris Agreement paving the way for a just and inclusive transition to renewable energy".

Outcome 1: A timely and efficient implementation of India's offshore wind strategy.

This component deepens the previous engagement by now focusing on policy design and project implementation, supporting partners in implementing the offshore wind strategy, which aims for tendering of 37 GW by 2030. The component has particular emphasis on developing an enabling framework and an offshore wind industry that is both socially and environmentally sustainable and economically viable. In order to achieve the targeted outcome, the programme will : i) help establishing an attractive and transparent policy framework with efficient processing of tenders; ii) help optimizing the use of India's offshore wind potential through joint marine spatial planning analysis, and sharing best practices from Denmark on environmental and social impact assessments; and iii) help facilitating grid infrastructure development by analysing technical and economic barriers for enhanced integration of offshore wind, creating policy recommendations, and leveraging Danish experiences in grid development. Lead partner is the Ministry of New and Renewable Energy, which will host an embedded long-term advisor.

Outcome 2: Scenario-based modelling and long-term energy planning informs decision-making on energy policies in India.

Providing best practice modelling tools and the data for policy planning and thereby enhancing the visibility for planned policies is crucial for policymakers when designing policy interventions with the aim of creating a low-risk framework for investments. In order to achieve this outcome, the cooperation will: i) update the Indian Power Outlook, assessing how to achieve the net-zero ambition in 2070 as well as ways to refine the model, e.g. by inclusion of socioeconomic considerations; ii) develop and update technology catalogues, forming the basis for future updates of the Indian Power Outlook and other modelling tools; and iii) support partners in facilitating dialogue with stakeholders on how to use power sector modelling scenarios to guide policy decisions. An embedded long-term advisor is planned to support this outcome, which is anchored with the Ministry of Power and the Central Electricity Authority of India.

Outcome 3: Measures for integration of variable renewable energy leading to a more affordable and reliable supply of electricity.

Grid integration of higher shares of variable renewable while ensuring affordability and reliability of electricity is crucial for India's economic development and critical for millions of poor households. Leveraging Denmark's proven experience, the targeted outcome will be achieved through: i) Establishment of a partnership between Grid-India and Energinet[12] supporting Grid India to enhance operational flexibility and system readiness for high penetration of variable renewable energy: ii) Collaboration on system flexibility and the design and development of the power market. This with emphasis on how good governance and markets play an important role in ensuring cost-efficiency, affordability, non-discrimination and transparency; iii) Collaboration on resource adequacy monitoring, transmission planning, forecasting, and technical/regulatory frameworks for renewables. This will strengthen Indian partners with the necessary tools and processes to ensure a reliable power supply even with a fluctuating renewable energy mix; and iv) Joint studies and workshops to explore the opportunities and challenges associated with increased decentralised variable renewable energy sources, recognizing how distributed generation can provide opportunities for smaller actors to benefit from the energy sector. This outcome is planned to be

[12] Further elaborated in Annex 10

supported by an embedded long-term advisor and is anchored with the national system operator Grid-India.

Outcome 4: Partnership with Tamil Nadu on wind energy contributing to sustainable and just energy transition.

Recognizing the importance of the state level in the energy transition, a new collaboration with Tamil Nadu State Government will be initiated to support a just and inclusive development of the wind energy sector focusing on local communities and the possible socioeconomic impact they may experience from renewable energy deployment, including offshore wind, will be a key area. The cooperation will support the State Government of Tamil Nadu in: i) Preparing for the emergence of offshore wind energy development in the State as well as support repowering of existing onshore wind turbines and; ii) Engaging with communities: Maximising benefit-sharing and mitigating potential adverse impacts for local communities, through stakeholder engagement, strategies for stakeholder co-existence, and understanding of local socioeconomic opportunities around the wind energy sector, including upskilling and creation of jobs in the renewable energy sector.

2.2.3 Summary description of the Kenya-Denmark Energy Partnership Programme

Building upon the partnership developed through the SSC on energy, the Ministry of Energy and Petroleum (MOEP) of Kenya, has requested expanded support, and the KENDEP programme is designed in response to this. It is deepening and widening the existing engagement level (of the SSC), and in a manner that is complementary to support from Kenya's many development partners in adjacent fields of inter alia renewable energy and access to energy. The overall objective is:
"Kenya's just and inclusive green energy transition supported through strengthened partnership between Kenya and Denmark for an enabling framework for a cost-efficient electricity system with increased affordability, reliability and security of supply and reduced energy intensity to support achieving universal access to energy".

Kenya is challenged by uneven energy access between urban and rural areas, power blackouts, aging infrastructure leading to inefficiencies, regulatory overlaps hindering governance effectiveness, financing constraints for large-scale projects, and the imperative of balancing energy development with environmental sustainability amidst climate vulnerabilities. A reliable electricity grid supplied with affordable renewable energy sources is foundational for fulfilling Kenya's development agenda, including universal and affordable access to electricity, clean cooking, sustainable economic growth, job creation, poverty alleviation, and improved education and health services. Electricity consumers, including households and enterprises stand to gain, including disadvantaged population groups who will benefit from increased access to and reliability of electricity supply at least-cost electricity prices.

The targeted outcomes of KENDEP are all linked to the challenges of affordability and reliability, and outcome 1 and 2 builds on the already established cooperation in energy planning and market reforms respectively, whereas outcome 3 related to energy efficiency is a new cooperation area of the partnership.

Outcome 1: MOEP has robust systems and procedures for planning least-cost low-carbon energy pathways and effective regulations leading to increased share of renewable energy in the energy mix and universal access to reliable and affordable energy.

To achieve this, the programme will help strengthening capabilities in power sector planning in MOEP through: i) introduction of – and training in new modelling tools; ii) data collection and analysis of how to consider for future higher electricity demands from electrification of other sectors in the energy planning; iii) mapping of resources and grid coverage to identify cost-effective

solutions for communities access to electricity and clean cooking. The key planning instrument targeted with this, is Kenya's Integrated National Energy Plan. De-risking approaches for tendering and auctioning to allow transparency in governance, facilitate inter-ministerial consultations and improve community engagement is also part of this component. It is planned to have a long-term advisor posted with MOEP to assist the institutionalisation of capacity building in energy modelling, and a second long-term advisor focusing on de-risking, tendering procedures and policy development and working with the Economic Council of Advisors Climate Team under the State House. to help facilitate inter-ministerial consultations.

Outcome 2: Transparent regulatory framework, in line with international governance standards, for efficient, reliable, and market-based integration of variable renewable energy generation adopted.

Market-based integration of variable renewable energy with competitive tendering will be critical to enhance reliability and to enable least-cost power prices for consumers (affordability). Both parameters are also crucial for households to rely more on eCooking rather than charcoal and other non-sustainable cooking fuels. To achieve the targeted outcome, the programme seeks to enhance capabilities and knowledge for developing and implementing a robust regulatory framework for the electricity market that fuels the efficient, secure, and market-based integration of renewable energy generation, and facilitate investments and innovation, while simultaneously improving power system operations through market-based mechanisms. This by working with MOEP and the national companies engaged in the market reform, notably the national electricity generation company and the national transmission company, and by drawing on best practices from Denmark through inter alia peer-to-peer cooperation with Energinet and the posting of a long-term advisor with MOEP coordinating with national electricity generation company and the national transmission company. Key areas of collaboration in fields of system operations are capacity strengthening for optimizing power system operations and grid management, and for strengthening the planning and utilization of interconnectors and transmission lines to ensure reliable electricity access for all and enhance climate adaptation by facilitating the transfer of electricity across regions and borders.

Outcome 3: Data-driven energy efficiency and demand-side management strategies approved, paving the way for stronger policies and regulations, reducing grid loss, and impactful energy-saving measures across Kenya benefitting end-consumers.

In response to interest from MOEP, a new component is herewith introduced into the partnership. It is centred on promoting energy efficiency and is anchored with the MOEP unit responsible for implementation of the national Energy Efficiency and Conservation Plan, but expected to widely engage relevant stakeholders. To achieve the targeted outcome, it is intended to provide for a better understanding among stakeholders on the potential of electrification industrial processes as basis for prioritizing measures to support green industrialisation that generate economic value and enhance livelihoods. The second focus area will be co-development with Kenyan partners in electricity transmission and distribution of a strengthened system for analysis and prioritisation of electricity grid loss reduction measures.

3. Institutional arrangement and management set-up

DEPP 2025 will form part of DEA's overall governance structure with MCEU and MFA (KLIMA and MYNSEK). Furthermore, each country will have established its own governance structure where annual work plans, budgets and annual progress are discussed. The overall approach and committees and groups are presented below and described in more details in each Country Programme Document.

Steering Committees (SCs)

As further described in the Country PDs, the in-country SCs[13], which are co-led by the Danish Ambassador and high-level partner institution representatives, consist of representatives from each partner institution, other relevant authorities, and DEA. The SC is the forum for overall strategic dialogue between Denmark and the partner country on the energy partnership, discussing and deciding on the overall priorities of the cooperation in accordance with the Memorandum(s) of Understanding between the Denmark and the partner country. The SC is a forum for policy dialogue and agreement on the direction of the cooperation. The SC will meet annually in-person, and a written procedure can be used to agree on updates/changes in between meetings. The SC will approve annual work plans and progress reports and monitor results, assumptions, and risk factors, and provide guidance on issues related to progress and results of the cooperation and make recommendations on reallocation of resources for decision by DEA and the MFA. This will include attention to results and institutional uptake of knowledge sharing and capacity strengthening. By doing so the SC will ensure that evolving programme priorities are addressed based on an adaptive management approach and with engagement of relevant stakeholders. DEA-GC will share information related to expert resources available for the year to engage in technical exchanges and activities with partners. This will ensure transparency and allow for an open discussion with the partners on how to design, prioritise and allocate annual resources aligned to programme objectives.

Technical Working Groups (TWGs)

TWGs will be established under each DEPP 2025 Outcome with relevant institutions to ensure effective commitment and engagement of the relevant partners in regular coordination and management of the implementation of the agreed annual workplans. Each partner institution will appoint members to the TWG where the DEA (and where relevant long-term advisors) also participate. This will involve the Embassy Energy Sector Counsellor. The TWGs will meet at least twice per year and have the responsibility to: i) develop, consolidate and check annual workplans and resource allocations against workplans; ii) monitor programme progress and results at output level, using "traffic light" markers for assessment of progress of activities against agreed workplans, and; iii) ensure cross fertilisation within and between Programme components and activity areas; iv) identify strategic interventions that could be supported by unallocated funds and; v) report on institutional uptake and application of knowledge sharing activities and outputs. The TWGs will report to the SC. Sub-groups may be formed on ad-hoc basis to support the TWGs when relevant for specific topics/activity clusters.

Country team in DEA GC

DEA GC has appointed a Country Team Leader for each country who will be responsible for overseeing the DEPP 2025 programme implementation in the country and who will serve as the DEA contact person for all matters related to DEPP 2025. The DEA GC country team has also appointed project leads for each of the outcomes.

Strategic Advisory Group (SAG)

The SAG, based in Denmark, acts as the highest decision-making authority on the DEPP 2025 programme. MCEU and MFA have already established a well-functioning SAG, which for several years has been strategically guiding the full portfolio of energy GtG programmes implemented by DEA. SAG consists of high-level representation from MFA, MCEU and DEA. DEA acts as secretary to the SAG, which meets every six months to discuss overall programme progress, approve cross-programme budget changes, including approval of the use of unallocated funds and ensures

[13] Called Joint Working Groups (JWGs in INDEP II India)

cross-exchanges of experience and good practice. This includes coherence and synergy where relevant to Denmark's multilateral energy and climate cooperation.

Programme Advisory Group (PAG)
The PAG is part of the already established governance structure, and consists of representatives from MFA, MCEU and DEA and meet every six months prior to the SAG meetings. DEA will prepare the annual progress report including a narrative report on progress in capacity development and the annual budget for presentation to and endorsement of the PAG. The PAG will also monitor risks and assumptions. The PAG reports to the SAG.

Set-up at Ministry of Foreign Affairs of Denmark (MFA) including the Embassy level
In Copenhagen, MFA(KLIMA) is the responsible unit participating in SAG and PAG, receiving and commenting DEA progress reporting, responding to DEA queries, etc. The Embassy of Denmark in each country (which is part of the MFA) has appointed an Energy Sector Counsellor, who oversees the ongoing implementation of DEPP 2025 and has contacts with national partner institutions. The counsellor may be assisted by national programme officers or advisors. The Danish Ambassador co-chairs the Steering Committee(s).

Set-up at the Danish Ministry of Climate, Energy, and Utilities (MCEU)
MCEU is DEA's parent ministry, which is a member of PAG and SAG. MCEU has country desks for Brazil, India and Kenya, as well as a coordinator of the overall DEPP 2025.

4. DEPP 2025 budget allocation, financial management and reporting

Budget
The proposed total budget for the 5-year DEPP 2025 is DKK 220 million of ODA-eligible grant funds sourced from the Danish Finance Act (FL-konto 06.34.01.70). MCEU has approved a total budget of DKK 220.0 million, which is pending final approval of the Ministry of Finance. The budget allocations by country, unallocated funds, DEA programme support, and MTR are reflected in Table 4.1 below.

Table 4.1: Budget allocation

DEPP 2025 budget allocation	
Brazil	DKK 42.2 million
India	DKK 84.0 million
Kenya	DKK 60.8 million
Unallocated funds 9.7%	DKK 21.4 million
Programme support (administration and communication) 5,0863%	DKK 10.6 million
Mandatory Mid-term Review (administered by MFA)	DKK 1.0 million
Total	DKK 220.0 million

Summary budget allocations at outcome level have been included in Table 5.1 of each Country Programme Document (PD), and budget allocations at outputs level have been included in Annex 5 of each Country PD. Budget allocations at output level will accommodate services from DEA GC Consortium partners including services contracted from national institutions and knowledge partners in Kenya, Brazil, and India, such as universities, think tanks, etc. Such inputs can be supported both trough DEA's current framework contracts with consortium partners and through the use of unallocated funds. Likewise, output level budgets will accommodate triangular cooperation/exchanges contributing to the particular output and related outcome. Moreover,

triangular exchanges will be eligible for allocations from the unallocated funds reserve. Types of expenses eligible for support with unallocated funds are the same as expenses programmed with allocated funds.

Financial management and reporting
As no cash funds will be transferred or disbursed though national partners directly, there will be no requirements for accounting of funds and financial reporting by national partners. To monitor the delivery by DEA of technical cooperation in-country consistent with work plans agreed between DEA and the national partners, DEA time spent with partners is reported in the annual progress reporting to the MFA (KLIMA). Budgets and actual expenditures at outcome and output level broken-down on the cost-categories: DEA staff; Consultants; Other Costs will be presented in the annual financial reporting to the MFA (KLIMA). The progress- and the financial reports will help PAG to assess value for money at its annual meeting. The final approved progress and audited financial reports should be submitted to the MFA by 31. March the following financial year (and no later than 30. June the following year).

GC uses the DEAs annual salary cost rate for the implementation of DEPP 2025. The DEA follows the guidelines from the Agency for Public Finance and Management (APFM) under the Ministry of Finance for calculating annual salary costs. Direct salary costs for a full-time equivalent (FTE) are calculated by dividing DEAs expected salary costs for professional FTEs by the estimated number of professional FTEs in the given year. In addition to the direct salary costs, there are indirect costs in the form of overhead which also follows APFM guidelines. Based on the budget for the given year, DEAs average overhead costs per FTE are calculated. This is divided into overhead salary (support functions, senior management, etc.) and overhead for other costs (building maintenance, office equipment, etc.). This approach is followed for all GC programmes including SSC projects, as per the 2020-SSC Guidelines, section 6.5.1 Salary Budget for Personnel from the Danish Authority. A comprehensive review of DEPP III on inter alia DEA hour registration and expenditure spending was recently undertaken by the MFA MTR-team. The MTR team did not offer any recommendations in this regard.

5. Work planning, adaptive management, monitoring and communication of results

Work planning
Work planning is an ongoing process where annual work plans will be developed to align to partners' priorities and requests, and availability of DEA specialists and consultants, balanced with available resources. The start-up phase in each country (the first 6 months of implementation) will partly continue ongoing and agreed work whereas other new areas of work will require further assessment and programming of the new additions to the cooperation. Work planning will be prepared with partners at TWG level, for endorsement at Steering Committee level. The annual work plans will define annual activities, annual output targets and link these directly to the Results Framework in each Country Programme. In collaboration with partners, terms of reference (TOR) will be formulated for each activity cluster/major event and the TOR will specify tasks and targets for the activity as well as required specialist inputs from national partners, DEA, Embassy Energy Sector Counsellor (and sector experts/long-term advisors where relevant), Energinet, DEA consortium partners and consultants. A particular concern will be to ensure a systematic approach to knowledge sharing and the uptake and application of knowledge and experience. The DEA revised DEPP operational manual will include a guide for a structured approach to capacity needs assessment, capacity development planning, and monitoring capacity development. From the start of

implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy.

Adaptive management

In line with the MFA's "Doing Development Differently" initiative, relevance and effectiveness will be strengthened through increased emphasis on coherence and by an adaptive management approach with an increased emphasis on results, learning and national ownership. Adaptive management provides for flexibility and adjustments reacting to opportunities for positive change but also to enable rapid action to identify alternatives, in case conditions and partnership relations might change unfavourably. More specifically:

- Changes in outcomes and outputs can be approved by the Head of the responsible MFA unit (MFA(KLIMA)). For outputs, the changes must align with the related outcome.
- Reallocation between budget lines. The implementing partner (DEA) can reallocate up to 10% of a budget line to other budget lines, whereas changes exceeding 10% must be presented to and approved by SAG and finally approved by the Head of responsible MFA unit (MFA(KLIMA))
- Unallocated funds provide a resource for support to interventions beyond the approved results framework, when an unforeseeable and strategic opportunity arises with existing or new national partners that will contribute to the objectives of DEPP 2025 (such as expanding on subnational level interventions as the partnerships mature and opportunities arise, or follow-up on triangular cooperation opportunities engaging DEPP 2025 partner institutions with DEAs partners from across its portfolio of international cooperation). Unallocated funds could additionally be eligible for responding on partner priorities beyond the present four outcome tracks (Offshore Wind Development; Long-Term Energy Planning; Integration of Renewable Energy; and Energy Efficiency). As recommended by the appraisal team, DEA will during implementation explore how pilot interventions at the sub-national level can be prioritised. Proposals for use of unallocated funds must be endorsed by the Country Programme Steering Committee and recommended though DEA to the SAG, which will decide - and through this process be approved by the relevant MFA director level. Criteria for prioritisation are i) evidence of clear national partner interest and demand as well as a plan for how it will lead to sustainable development results; ii) strategic or innovative aspects; iii) increased partner demand to enhance/broaden expected targets and results within a given area, (iv) must support the objectives of DEPP 2025. As unallocated funds are limited (DKK 21.4 million), SAG will ensure that all three countries have the opportunity to benefit. Unallocated funds can be mobilised until one year before completion of the Programme, to ensure completion of activities. Normal Danida quality assurance procedures apply[14] to MFA approvals of the use of unallocated funds.

Progress and results monitoring

Monitoring towards targets will be reported through the progress reporting to the SC using a "traffic-light" system, where:

- "green" is on-track – implementation progresses as scheduled.
- "yellow" is partly on-track, which requires SC attention and potentially remedial action to get back on-track.

[14] As stated on page 54 in the Danida Guidelines (link) *"The quality assurance/appraisal and approval process for allocation of unallocated funds follow normal guidelines for new appropriations"*. The normal procedures are further described in these Guidelines (see for example in Section 4.3 Quality Assurance).

- "red" is off-track, which requires urgent attention by the SC and recommendations on changes to get back on-track and/or recommend reallocation of resources. If "red" in two consecutive reporting periods, the SC could consider extraordinary remedial measures such as setting-up a task force.

Results reporting
Following Danida Guidelines, monitoring and reporting will be based on the results framework at output and outcome level and each national partner institution will, jointly with DEA monitor progress towards achieving these outputs and outcomes via annual progress reporting to the SC. An Annual Progress Report for each country will be prepared for approval by the SC. The SAG in Copenhagen will consider the results reporting across all three DEPP 2025 country programmes. Monitoring of actual expenditure by DEA including international and national consultancy will be reported to SAG in the consolidated DEA annual progress reports across all three DEPP 2025 countries. Final narrative and financial reports should be submitted to the MFA by 31 March the following financial year.

Communication of results
DEA will actively engage in targeted communication of progress and results informing stakeholders both in Denmark and the three countries. DEA will for each outcome, as relevant, publish "result stories" to communicate the positive value added and effects of the DEPP 2025 Programme to decision makers, the substantive professional community in Denmark and the partner countries and internationally, and the general public, through a variety of means, including social media, new items and reports published on the DEA, Embassy of Denmark in each country, MFA and partner websites. A draft communication strategy is found in Annex E.

6. Risk management

Full risk management matrices consistent with Danida guidelines are found in Annex 4 of each Country PD. At the overall, strategic level the following risk factors and mitigating measures are highlighted:

Contextual risks
Global geopolitical tensions impacting energy planning and green energy infrastructure investments. Resistance to energy transition due to different political-economy interests in the energy sector, e.g. powerful economic fossil fuel interest, industries in risk of being affected, social stakeholder groups with potential adverse impacts or opinion makers not believing in a green energy transition. Challenges of implementing costly and complex grid developments. Political change of government that can lead to disrupting ongoing planning processes.
Mitigating measures: Provide targeted support for the enabling environment for a cost-competitive green energy transition and climate action that is based on inclusivity, affordability, security of supply and facilitation of investments in renewable energy and energy efficiency.
Residual risk: Minor to DEPP 2025 as such.

Programmatic risks
Limited resources and managerial capacity in national partner institutions due to shortage of staff and risk of not applying enhanced capabilities to improve policies, regulations and planning.
Mitigating measures: Systematic approach to assessment of partner needs, resources and priorities for knowledge exchange, technical assistance and capability strengthening which is close ongoing policy priorities and implementation Robust peer-to-peer partnerships at middle level management

and technical levels. Adherence to agreed frequency of Steering Committee (SC) meetings ensuring that the SC serves as effective accountability mechanism.
Residual risk: Minor to DEPP 2025 as such.

Institutional risks
Risk of insufficient coordination and synergies with other initiatives in complex and dynamic contexts.
Mitigating measures: Actively pursue coherence with Denmark's multilateral cooperation with the World Bank, IEA, IRENA, NDC Partnership, etc. as well as other initiatives and coordinate these efforts with the Danish Embassies in the DEPP 2025 countries who are actively engaged in relevant coordination mechanisms underscoring the comparative advantages of the GtG, peer-to-peer approach that most other development partners do not offer.
Residual risk: Minor to DEPP 2025 as such.

7. Closure and exit

Closure of DEPP 2025
Implementation by DEA of DEPP 2025 is scheduled to end by the end of 2029. DEA final progress and results reporting, and financial reporting to MFA will be undertaken in the first quarter of 2030. MFA (KLIMA) Final Results Report and MFA closure of accounts, and administrative closure will be completed by mid-early-2030.

Exit strategy
DEPP 2025 is planned to be completed by end of calendar year 2029 and implementation progress and expenditure will be monitored closely through the management set-up described in the foregoing. The adaptive management approach will also contribute to adherence to the agreed implementation schedule.

The eventual exit of DEA support is an ongoing consideration throughout the Programme. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy. This approach is supported by embedded long-term advisors in relevant partner institutions.

The use of the previously mentioned DEA knowledge sharing/capacity development approach and toolkit under development will be an important element in contributing to sustainable development outcomes and impact and thus part of the strategy toward eventual DEA exit from DEPP 2025 substantive workstreams.

The potential needs and possibilities for continuation of energy partnership programmes in Brazil, India, and Kenya through a new phase beyond 2029 will depend on partner needs and priorities and resources that Denmark through MFA/DEA can allocate to continued partnership as well as assessment of results achieved, and value for money. Some areas of collaboration might also be matured and national capabilities achieve a level where the cooperation is phased out.

As mentioned in connection with the Programme Committee meeting on DEPP 2025, MFA(LEARNING) is planning an evaluation of Danish Energy Partnership Programmes in 2025. While the detailed scope and of this Evaluation is not yet known, its recommendations and agreed

follow-up will undoubtedly be important for how DEA contributes to sustainable development outcomes and impact and therefore also for exit strategies in DEPP programmes.

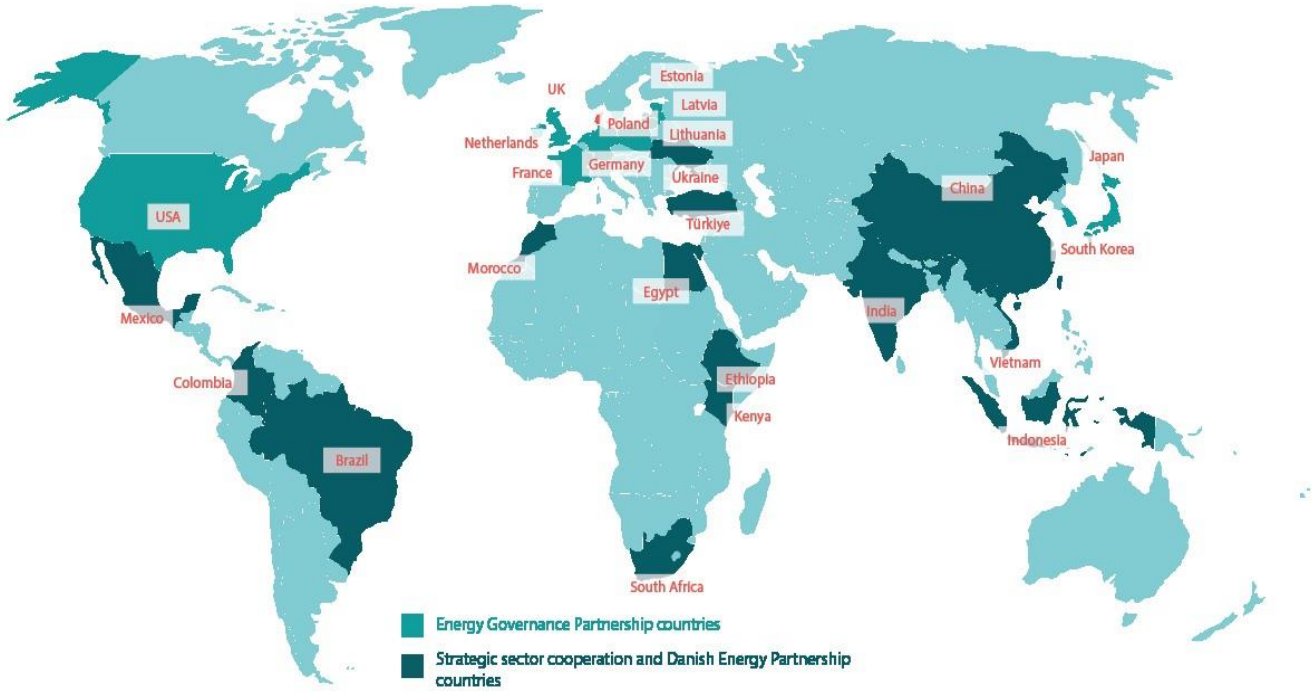
Prior to the planned MFA mandatory Midterm Review (MTR) of DEPP 2025 (tentatively planned for mid-late 2027) DEA will prepare a consolidated draft exit strategy for consideration by the MTR. This exit strategy will be informed by follow-up to the 2025 DEPP Evaluation.

Annex A: Partner assessment

Brief presentation of the DEA as implementing partner and summary of capacity assessment

DEA was established in 1976, and is an agency under the MCEU. The DEA shares best practices from decades of green transition in Denmark through GtG cooperation with 25 partner countries

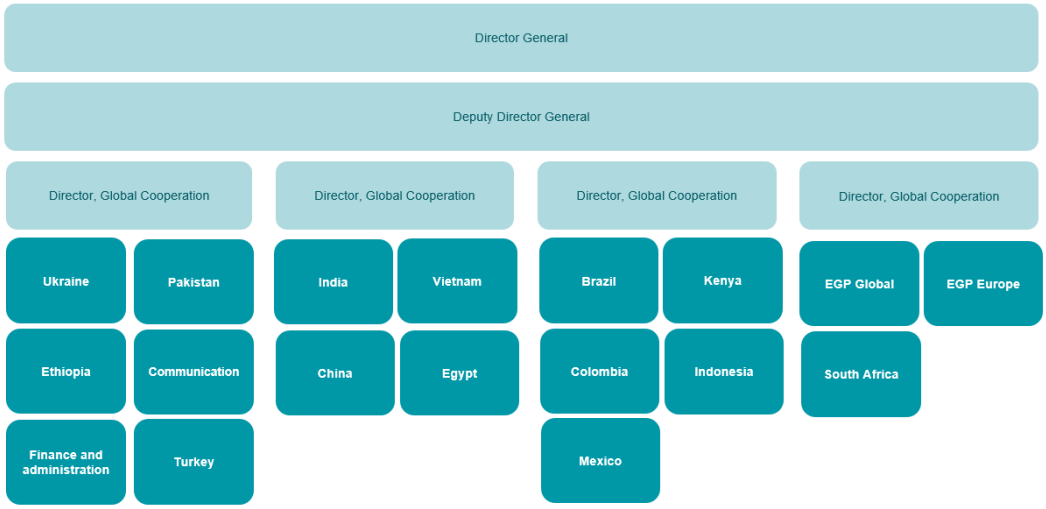
Figure A.1: DEA Global Cooperation on the World Map



DEA's international development cooperation is anchored in the Centre for Global Cooperation (GC) where around 100 people are working with one or several of the 24 partner countries. The DEA GC is organised within a matrix structure. In terms of the vertical structure, the management level consists of four Directors with the responsibility of country programmes as illustrated below. Every country programme comprises a team leader, specialists and in some cases a generalist. The energy partnerships with India, China, and Vietnam are the programmes with the most full-time employees (FTEs). 11 FTEs are assigned to the INDEP programme, while 3 FTEs are currently assigned to the SSC projects in Kenya and Brazil. In the country programmes, each outcome has a Project Lead with the role of ensuring progress, providing regular updates and identifying resource needs. In terms of the horizontal structure, all personnel are assigned to one of the six specialist teams known as 'faggrupper'. The specialist teams are aligned with the five work streams within the country programmes, namely energy modelling, offshore wind, integration, energy efficiency, and district heating. Additionally, there is one specialist team designated for generalists. Generalists are

tasked with supporting the team leader in programme management and solving crosscutting tasks beyond the country programmes. For every specialist team, a coordinator is appointed to support competency development and to ensure coordination and synergies across the country programs. The coordinators ensure that the necessary competences are present in the specialist-team. Thus, the coordinator's main responsibility is to foster a platform for knowledge sharing, sustaining a high level of expertise, and facilitate exchange across programmes, ongoing tasks and the national centres. To reinforce specialized competencies and expertise in DEA GC, individuals known as "Technical Lighthouses" are appointed. A Technical Lighthouse is an experienced specialist who has in-depth knowledge of a particular area. They have a special responsibility to engage and follow the latest developments within a specialised field in order to have the necessary knowledge about the latest developments, trends and relevant news, which they then share with their colleagues. In addition to DEA staff exclusively employed in the Centre for Global Cooperation, a "satellite program" is established, incorporating DEA staff from other national centres. The objective is to ensure knowledge about the latest Danish regulatory framework within the country programs. It is anticipated to have 10 satellites assigned to DEA GCs country programs in 2024.

Figure A.2: Organigram – DEA Centre of Global Cooperation



Implementation modalities

DEA is chosen as the Implementing Partner for DEPP 2025 based on its extensive expertise and experience in implementing DEPP and SSC programmes. Following is a list of the implementation modalities applied in the partnerships:

- GtG, peer-to-peer engagement between DEA staff and staff of national partner institutions.
- Technical expert inputs by the Danish Transmission System Operator, Energinet.
- Technical expert inputs by international and national consultants under framework contract with DEA.
- Inputs by knowledge partners, think tanks, academia in partner countries on both technical and socio-economic topics.
- Funding of knowledge exchange processes and events including delegation visits.
- Funding of seminars, learning events, training courses at the Danida Fellowship Centre.
- Long-term advisors form an important part the DEPP 2025 delivery model where technical experts are placed within the partner's energy authorities – an arrangement that Denmark is almost exclusively permitted among other donors.

Knowledge exchange
Various meeting formats are implemented to promote knowledge exchange within DEA GC. Weekly centre meetings with presentations from specialist teams, insights and key findings from missions, and discussions on overarching topics like KODEKS VII. Additionally, weekly team leader meetings aim to facilitate experience sharing among country programs, enhance management skills, and address crosscutting issues.

Country programme meetings typically occur biweekly. Coordination meetings within development engagements are also held weekly, although typically organised in larger country programmes. Moreover, meetings within specialist teams are typically arranged on an ad hoc basis. Likewise, knowledge sharing between long-term advisors, the Embassy of Denmark in each country and DEA GC is taking place.

Brief identification of Energinet and consortium partners
DEA GC has entered Framework Contracts with a series of Consortiums on six positions. The contract period of the current Framework Contract is from 3 July 2024 with termination 3 July 2027 with the possibility to extend the duration once by 12 months.

The Framework Contract Consortiums are:
Position 1 – Energy Planning and Modelling:

- **Supplier 1:** Ea Energianalyse A/S, COWI A/S & Viegand Maagøe A/S Consortium

Position 2 – Renewable Energy Integration:

- **Supplier 1:** COWI A/S, Ea Energianalyse, Viegand Maagøe A/S and DTU Consortium
- **Supplier 2:** Sweco Denmark A/S & Nordic Green Solutions A/S Consortium

Position 3 – Onshore- and Offshore Wind Development:

- **Supplier 1:** DTU, Viegand Maagøe A/S, COWI A/S and Ea Energianalyse A/S Consortium
- **Supplier 2:** Sweco Denmark A/S and Nordic Green Solutions Consortium with support from EMD International

Position 4 – Energy Efficiency:

- **Supplier 1:** Viegand Maagøe A/S , Ea Energianalyse A/S and COWI A/S Consortium
- **Supplier 2:** Sweco Denmark A/S and Nordic Green Solutions A/S Consortium

Position 5 – Heating and Cooling supply legislation, planning and modelling:

- **Supplier 1:** COWI A/S, EA Energianalyse A/S and Viegand Maagøe A/S Consortium
- **Supplier 2:** Sweco Denmark A/S and Nordic Green Solutions A/S Consortium

Position 6 – Climate change mitigation planning and modelling:

- **Supplier 1:** Ea Energianalyse A/S, COWI A/S and Viegand Maagøe A/S Consortium

The Framework Contract has a new structure where each position is assigned two consultants, with the exception of position 1 & 6. Supplier #1 is used, however, if supplier #1 under-delivers, rejects assignments, or fails to meet agreed timelines three times, they can be swapped with supplier #2 for a period of three months.

Additionally, DEA GC and Energinet have recently entered a new framework contract with effect from 1 May 2024 and termination 1 May 2027 with the opportunity of one year extension. As the Danish Transmission System Operator, Energinet has a unique position in providing consultative

assistance to the partner countries within the areas of system operation, forecasting of variable renewable energy, electricity market, balancing and ancillary services, system flexibility, network codes, transmission and coherent energy planning, grid-connection of on- and offshore wind power, and High-Voltage Direct Current (HVDC) technology.

If the consortium partners do not have the required competences to solve the tasks requested in the Terms of Reference, the leading consultants of the consortium can subcontract a national/local consultant accepted by the Danish Energy Agency. This modality is often used when local and contextual knowledge is needed for solving the tasks.

Table A.1: Summary of key DEA features as DEPP 2025 Implementing Partner

Name of Partner	**Core business**	**Importance**	**Influence**	**Contribution**	**Capacity**	**Exit strategy**
	What is the main business, interest and goal of the partner?	*How important is the programme for the partner's activity-level (Low, medium high)?*	*How much influence does the partner have over the programme (low, medium, high)?*	*What will be the partner's main contribution?*	*What are the main issues emerging from the assessment of the partner's capacity?*	*What is the strategy for exiting the partnership?*
DEA	DEA's goal is a well-planned green transition with Denmark leading the way, sharing Danish experiences and solutions globally.	Low	High	DEA cooperates with governments in order to contribute to their just and inclusive green energy transition. The approach is adapted to local circumstances in close dialogue with the partners with the focus to reach a long term and viable green transition.	Limited in-house capacity on cross-cutting issues. To reinforce specialized and general competencies and expertise in DEA GC known as "Technical Lighthouses" are appointed, including on cross-cutting issues. DEA's new "Integrated Approach to Capacity Development in Global Cooperation" is also important.	Chapter 8 briefly identifies an exit strategy concerning DEPP 2025. The wider role of DEA in Danish Energy Partnership Programmes is expected to evolve over time, with the portfolio of SSC and DEPP programmes. The planned Evaluation of DEPP in 2025 is expected to make recommendations in this regard.

Annex B: Forståelsespapir om det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder

Forståelsespapir om det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder

1. Formål

Office/department
Global Rådgivning

Date
10-11-2022

J no.
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Dette papir skal tilvejebringe et fælles forståelsespapir mellem UM, KEFM og ENS, der operationaliserer ENS' inddragelse af det flerdimensionelle fattigdomsbegreb og en menneskeretlig tilgang (HRBA) i Energistyrelsens myndighedssamarbejder. Det gælder både de eksisterende programmer med henblik på mere fyldestgørende midtvejsevalueringer (Mid-term review) og det fremadrettede arbejde med programudvikling – herunder en ny rammesætning for det strategiske sektorprogram (SSC). Papiret udarbejdes efter anmodning fra Udviklingspolitisk Råd (UPR) samt for at implementere Udenrigsministeriets udviklingspolitiske strategi og relaterede "how-to notes".

2. Baggrund

Med afsæt i den danske lov om internationalt udviklingssamarbejde er målet for Danmarks udviklingssamarbejde at bekæmpe fattigdom og fremme menneskerettigheder, demokrati, bæredygtig udvikling, fred og stabilitet i overensstemmelse med FN-pagten, Verdenserklæringen om Menneskerettighederne og FN's konventioner om menneskerettigheder. Et centralt omdrejningspunkt er FN's 2030-dagsorden for bæredygtig udvikling samt verdensmål.

Loven om internationalt udviklingssamarbejde såvel som den udviklingspolitiske strategi beskriver altså FN's verdensmål og Parisaftalen som afgørende indsatsområder og pejlemærker for at bekæmpe fattigdom. Loven og strategien anerkender på overordnet plan, at klimaindsatsen er et selvstændigt indsatsområde til at opnå fattigdomsbekæmpelse.

2.1 Rammesætning for myndighedssamarbejderne for energi

Det er essentielt at påpege, at myndighedssamarbejderne som udgangspunkt er organiseret mellem to nationale myndigheder (hhv. KEFM og et partnerministerie i et partnerland) og med Energistyrelsen som udførende dansk part. Derfor er udgangspunktet for arbejdet et nationalt perspektiv for det pågældende land og sekundært - hvor relevant - fokus på regionale og lokale forhold. Det er vigtigt at fremhæve, at Energistyrelsen indgår i et *kapacitetsopbyggende* samarbejde med partnerne for at fremme og accelerere grøn omstilling, men at det er de nationale myndighedspartnere, som i praksis beslutter, om en implementering inden for udvalgte områder skal ske. Det er derfor altid partnerne, der implementerer lovgivning og regulering, offentliggør udbud eller øger ambitioner og mål i praksis, hvorfor den danske indsats kan siges at have bidraget til, men ikke tilskrives effekten for omstillingen.

Som udgangspunkt tager myndighedssamarbejdet afsæt i de specifikke partnerlandes efterspørgsel, som matcher de danske erfaringer med grøn omstilling i energisektoren. Det primære fokus for projekterne er derfor en energi- og klimamæssig vinkel, som direkte henfører til verdensmål 7 – *at sikre adgang til pålidelig, bæredygtig og moderne energi til en overkommelig pris*. Men som FN selv påpeger har arbejdet med dette verdensmål en central rolle ift. en lang række andre globale udfordringer – herunder fattigdom og menneskerettigheder (se tekstboks 1[15]).

> "*Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential. Transitioning the global economy towards clean and sustainable sources of energy is*

[15] https://sdg-tracker.org/energy / https://www.unccd.int/resources/publications/fuel-life-securing-land-energy-nexus

	Delmål under verdensmål 7	Myndighedssamarbejdets tiltænkte effekt
7.1	Inden 2030 skal der sikres universel adgang til pålidelig og moderne energiforsyning til en overkommelig pris.	*7.1.1. Andel af befolkning med adgang til elektricitet.* Myndighedssamarbejdet sætter ind ved at sikre adgang til strøm med høj forsyningssikkerhed. Programmerne arbejder for at sikre overkommelige priser på elektricitet gennem teknologineutrale energiscenarier - som på et faktabaseret grundlag viser hvordan et forventet energiforbrug billigst leveres ud fra tilgængelige energikilder. Myndighedssamarbejdet fokuserer ikke direkte på etablering af den fysiske adgang via opsætning af kabler mv., men indirekte gennem estimering af fremtidigt energiforbrug og rådgivning omkring nødvendige investeringer i infrastruktur. Det er en grundlæggende forudsætning, at der findes elektricitet fra moderne kilder [16]til at starte med. Ydermere er det en forudsætning, at el-prisen er tilstrækkelig lav, så forbrugerne i udsatte grupper har råd til at betale for dem. Dette opnås via et konkurrenceudsat og teknologineutralt elmarked.
		7.2.2 Andel af befolkning, som primært anvender vedvarende energi / grøn strøm Ved at øge adgangen til elektricitet i områder, hvor det giver samfundsøkonomisk mening, vil andelen af mennesker som kan bruge ren energi til fx madlavning, belysning og varme/køling på mellemlang sigt vokse.
7.2	Inden 2030 skal andelen af vedvarende energi i det globale energimix øges væsentligt.	*7.2.2. Andel af vedvarende energi i det samlede, endelige energiforbrug.* Alle aktiviteter i programmerne søger direkte at øge andelen af vedvarende energi i partnerlandenes energiforbrug.
7.3	Inden 2030 skal den globale hastighed for forbedring af energieffektiviteten fordobles.	*7.3.1. Energiintensitet målt i forhold til primær energi og BNP.* Gennem den danske styrkeposition inden for energieffektivitet rådgives partnerministerier om afkobling af økonomisk vækst og energiforbrug.

I udmøntningen af myndighedssamarbejdet udgør følgende styrkepositioner de overordnede kategorier for ENS' tekniske bistand; Langsigtet energiplanlægning, rammevilkår for vedvarende energi, integration af vedvarende energi, energieffektivitet og fjernvarme.
Nedenfor gennemgås kort baggrund og UM's anvendte definitioner på fattigdom og menneskeretlig tilgang med udgangspunkt i Global Rådgivnings (GR) virke. Derefter følger et udkast til operationalisering under GR's myndighedssamarbejder. Da forhold omkring fattigdomsbekæmpelse og menneskeretlig tilgang er kontekstspecifikke, er der i Annex 1 til SSC-rammeaftalen udarbejdet eksempler for hvert land. I tillæg hertil samarbejder Global Rådgivning også med multilaterale aktører som IRENA, der er tilstede i partnerlandene. Som eksempel arbejder IRENA mere for den udviklingspolitisk dagsorden, hvilket Global Rådgivning drager nytte af i sine programmer, ligesom IRENA udnytter, at Global Rådgivning oftere har en tættere adgang til myndighederne i de pågældende partnerlande.

3. Fattigdomsbekæmpelse

Verdensbanken estimerer, at globale klimaforandringer vil skubbe op til 132 millioner mennesker ud i fattigdom i perioden 2020 til 2030[17]. Frem mod 2050 konkluderes også, at 213 millioner mennesker vil migrere frem mod 2050 som følge af klimaforandringer. Det sætter fattigdomsbekæmpelsen under pres.
Denne udvikling er blevet accelereret af pandemien og den nuværende energikrise, hvor 75 mio. mennesker har mistet evnen til at betale for elektricitet, og 100 mio. mennesker har mistet muligheden for madlavning baseret på bæredygtige energiløsninger. I udviklingslande, hvor energi og fødevarer udgør en stor andel af husholdningsbudgetterne, har stigende energipriser en betydelig påvirkning på inflation og stigende energipriser har været et tilbageslag i forhold til at øge andelen af befolkning, som har adgang til energi. De stigende energipriser har også bidraget til at antallet af mennesker, der lever i ekstrem fattigdom i de mest udsatte lande og regioner af verden er steget. [18]
Der er dog samtidig evidens for, at grøn energitransition har positive effekter. Andelen af grønne jobs inden for vedvarende energi er på globalt niveau vokset i perioden 2012 til 2022 til 12 millioner (64%). En rapport fra IRENA og ILO konkluderer ligeledes, at der vil blive skabt flere jobs gennem en grøn

[16] Elektricitet som produceres fra en central enhed til et antal forbrugere.
17 Verdensbanken. 2020. Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030. https://documents1.worldbank.org/curated/en/706751601388457990/pdf/Revised-Estimates-of-the-Impact-of-Climate-Change-on-Extreme-Poverty-by-2030.pdf
[18] IEA Energy Outlook 2022. https://iea.blob.core.windows.net/assets/47be1252-05d6-4dda-bd64-4926806dd7f3/WorldEnergyOutlook2022.pdf

energiomstilling, end der vil blive tabt.[19] Dette kræver dog, at der i den holistiske planlægning tages højde for de socioøkonomiske bidrag, som kommer med den grønne omstilling. Det samme gælder i udrulningen af vedvarende energi og energieffektivitet, hvor man bør inkludere relevante forhold omkring jobskabelse og lokalsamfund (fx modvirkning af negative effekter for lokalsamfund afhængige af fossile energikilder).[20]

Tre socioøkonomiske effekter af grøn energitransition[21]

1. Domestic participation in the RE value chain.
The goal here is to enhance the involvement of domestic firms and labor in a competitive manner to maximize job creation, skills development, and knowledge transfer all along the value chain.

2. Local development.
The objective is to design and implement initiatives to strengthen the resilience and livelihoods of communities living near RE project sites. These could include programs to hone skills (general or specific to RE), improve or augment services and infrastructure, increase revenue and initiate ownership-sharing agreements.

3. Gender equality and social inclusion.
The aim here is to ensure that all individuals and groups - including women and those disadvantaged on the basis of their identity—have equal opportunity to benefit from RE deployment, including job opportunities, education and training, business opportunities, and local development initiatives.

I dialogen med ENS' partnermyndigheder er der meget fokus på *holistisk* planlægning, som skal sikre evidensbaseret viden om jobskabelse, gensidig afhængighed til andre sektorer (fx minedrift og fossile energisektorer), nationale værdikæder, styrkelse af lokalsamfund og uddannelse. Som eksempel har ENS' partnerlande typisk store udfordringer med forsyningssikkerhed i deres el-systemer.

Det er vigtigt at understrege, at en øget andel af fluktuerende vedvarende energi kan udfordre forsyningssikkerheden, såfremt landets operatører og markedsvilkår ikke sikrer en effektiv integration. **En effektiv integration er en forudsætning for, at grøn energi og forsyningssikkerhed kan gå hånd-i-hånd**. Sker dette, vil det understøtte verdensmål 7.1.

3.1 Det flerdimensionelle fattigdomsbegreb

Det flerdimensionelle fattigdomsbegreb ser bredt på fattigdom og omhandler adgang til ressourcer såsom uddannelse, sundhed, naturressourcer, vand, energi og rettigheder – og er altså ikke kun fokuseret på indkomst. Begrebet opdeles i fire områder: ressourcer, muligheder og valg, stemme og indflydelse, samt personlig sikkerhed.

Et forsimplet, men konkret eksempel, der illustrerer at tilgangen anvendes på ENS' arbejdsområder findes i den danske tilgang til energiplanlægning.

1. *Ressourcer:* fx bedømmes alle ressourceformer til at producere elektricitet på lige fod og på basis af livstidsomkostninger samt inddrager eksternalitetsomkostninger for samfundet.
2. *Muligheder og valg:* fx har alle samfundsgrupper adgang til energi på lige fod og leveringssikkerheden ensartet.
3. *Stemme og indflydelse:* fx gennemføres politiske beslutninger på energiområdet med en transparent adgang til information og med mulighed for at blive hørt i processen.
4. *Personlig sikkerhed:* fx grøn omstilling reducerer forurening (eksempelvis luftforurening og dermed forbedrer sundhedstilstanden for udsatte samfundsgrupper).

3.2 Human Rights Based Approach (HRBA)

[19] IRENA, ILO (2021)
[20] A Sure Path to Sustainable Renewable Energy – Maximizing Socioeconomic Benefits Triggered by Renewables (ESMAP, SMRI, Oct 2022). https://esmap.org/sites/default/files/esmap-files/81331_SRMI%20Socioeconomic%20Guidelines_Spreads.pdf
[21] (ESMAP, SMRI, Oct 2022).

Den menneskeretlige tilgang er baseret på fire principper – *ikke-diskrimination, deltagelse og inklusion, gennemsigtighed, og ansvarlighed*. I dansk forvaltningspraksis indgår principperne som en integreret værdi, hvilket også kommer til udtryk i Energistyrelsens globale partnerskaber. Et forsimplet, men konkret eksempel, der illustrerer tilgangen anvendt på ENS' arbejdsområder i partnerlande findes i etableringen af en ny landvindmøllepark.

1. *Ikke-diskrimination:* energien fra møllerne kommer alle til gode, bl.a. ved integration i elmarked, og forbeholdes ikke specifikke grupper af samfundet
2. *Deltagelse og inklusion:* fx åbne høringer for samfundet (erhvervsliv, ngo'er, uddannelsesinstitutioner) og inddragelse af lokalsamfund i processen med at definere projektet
3. *Gennemsigtighed:* fx åbne udbud med transparent og lige adgang til information (one-stop shop)
4. *Ansvarlighed:* fx udbud og kontrakter har information om og mulighed for at klage til en instans.

3.3 Operationalisering af dimensioner og principper

Energistyrelsens myndighedssamarbejder understøtter primært SDG 7, 8, 9, 13 og 17 ved bl.a. at bidrage til en styrkelse af partnerlandenes klimamål, sikre adgang til ren og bæredygtig energi samt understøtte kapacitetsopbygning inden for energiområdet.

Alle myndighedssamarbejder er udarbejdet og programmeret med fokus på den energifaglige efterspørgsel fra partnerlandene. Men det kan indirekte belyses, hvordan aktiviteterne i myndighedssamarbejdet understøtter det flerdimensionelle fattigdomsbegreb og principperne for HRBA.

1. **Langsigtet energiplanlægning**

Eksempler på GR indsatser:

- Udvikling af energisektormodeller, der tager udgangspunkt i en faktabaseret tilgang og som har til formål at levere billig strøm med høj leveringssikkerhed.
- Udvikling af teknologikataloger, der inddrager relevante interessenter (erhverv, universiteter, andre myndigheder) i udarbejdelsen af datagrundlaget. Teknologikataloget anvendes til at informere den politiske beslutningsproces, som skal understøtte nationale mål omkring adgang til energi (herunder specifikt elektricitet).
- Analyser og data offentliggøres så vidt muligt med henblik på at informere interessenter eller det bredere samfund.
- Energimodeller og specifikke analyser på nationalt og subnationalt niveau og understøtter SDG 7 omkring bl.a. adgang til energi for alle.

Fattigdomsbegreber	HRBA-principper
Så vidt muligt skal GRs aktiviteter søge at sikre: - At energimodeller og scenarier inkluderer reelle livstids- og eksternalitets- omkostninger fx luftforurening - At energimodeller og specifikke analyser ikke udelukker dele af samfundet e.g. udsatte grupper - At der undersøges job effekt af forskellige scenarier af grøn energiomstilling - At øget adgang til energi styrker borgernes muligheder for at gennemføre uddannelse, opstart af virksomhed o. lign.? Fx i yderområder. - At de sundhedsmæssige effekter fra elektricitetsproduktion estimeres	Så vidt muligt skal GRs aktiviteter søge at sikre: - At partnermyndigheden gør brug af åbne konsultationer, hvor relevante interessenter herunder privatsektor har kunnet byde ind med data og viden - At analyser og data offentliggøres med henblik på at informere interessenter eller det bredere samfund. - At der i dialogen omkring ny regulering og politik tages højde for udsatte grupper. - At det foreslås eller rådgives om nye antagelser og kriterier i modeludviklingen der gør, at flere dele af landet eller befolkningsgrupper inkluderes (såfremt det modsatte var tilfældet før)

GR kerneområde: **Rammevilkår for vedvarende energi**

Eksempler på GR indsatser:

- Objektiv planlægning af placering, miljøvurdering, lovgivning mv. som skal levere omkostningseffektiv vedvarende energi til alle borgere.
- Ved VE udbud: Introducere interessentdialog før udarbejdelse og annoncering af udbud. Inddragelse af lokalsamfund i høringer som en del af processen (kan også reducere investor-risiko).

- One-stop shop: én indgang for alle interessenter sikrer transparent og lige adgang til information.
- Udbudsdesign: sikres anføring af klagevejledning i udbudsmateriale.

Fattigdomsbegreber	HRBA-principper
Så vidt muligt skal GRs aktiviteter søge at sikre: - At nationale planer om VE udbygning understøtter, at elektriciteten kommer alle til gode - At der udarbejdes analyser for jobskabelsespotentiale for øget andel af VE i elproduktionen - At øget leveringssikkerhed af elektricitet giver fattige og/eller udsatte grupper mulighed for at tænke mere langsigtet (fx ved øget livskvalitet eller forbedret drift af små virksomheder. - At der udarbejdes analyse af uddannelses- og træningsbehov for at gennemføre VE udbygning - At lokalbefolkninger involveres tidligt i planlægningsprocesser gennem høringer fx ved identificering af nye områder til VE udbygning	Så vidt muligt skal GRs aktiviteter søge at sikre: - At partneren er blevet introduceret for one-stop-shop tilgangen, og at hele eller delelementer er blevet brugt. - At alle befolkningsgrupper har lige adgang til fordele fra VE udbygning fx jobs? Og tages der i den forbindelse højde for at lokalsamfund, kvinder, udsatte grupper har adgang til uddannelse, forretningsmuligheder og offentlige tilbud (fx incitamentsordninger) - At der er udført åbne konsultationer for at få input fra relevante interessenter herunder privatsektor, NGOer og samfundsinstitutioner. - At der i offentliggjort udbudsmateriale er indført klagemulighed - At rammerne for privatsektor bidrager med at opnå mål omkring jobskabelse og uddannelse
Personlig sikkerhed	Ansvarlighed
Mulige monitoreringsspørgsmål: -	Mulige monitoreringsspørgsmål: - er der indført klagemulighed i offentliggjort udbudsmateriale?

GR kerneområde: **Integration af vedvarende energi**

Eksempler på GR indsatser:
- Objektiv planlægning af placering, miljøvurdering, lovgivning mv. af elnets-infrastruktur
- Grid codes
- Liberalisering af elsektoren
- Elmarked

Fattigdomsbegreber	HRBA-principper
Så vidt muligt skal GRs aktiviteter søge at sikre: - At øget leveringssikkerhed af elektricitet giver fattige og/eller udsatte grupper mulighed for at tænke mere langsigtet (fx ved øget livskvalitet eller forbedret drift af små virksomheder. - At der udarbejdes analyse af uddannelses- og træningsbehov for at gennemføre VE udbygning - At lokalbefolkninger involveres tidligt i planlægningsprocesser gennem høringer fx ved identificering af nye områder til VE udbygning.	Så vidt muligt skal GRs aktiviteter søge at sikre: - At alle befolkningsgrupper har lige adgang til fordele fra VE udbygning fx jobs? Og tages der i den forbindelse højde for at lokalsamfund, kvinder, udsatte grupper har adgang til uddannelse, forretningsmuligheder og offentlige tilbud (fx incitamentsordninger) - At der er udført åbne konsultationer for at få input fra relevante interessenter herunder privatsektor, NGOer og samfundsinstitutioner. - At rammerne for privatsektor bidrager med at opnå mål omkring jobskabelse og uddannelse

GR kerneområde: **Energieffektivitet og fjernvarme**

Eksempler på GR indsatser:
- Vidensdeling omkring danske erfaringer med brug af redskaber på myndighedsniveau herunder incitamenter og ny regulering, som sænker energiforbrug eller øger energiintensiteten.
- Vidensdeling omkring udvikling af bygningsreglement for nye og eksisterende bygninger.
- Udvikling af aftaleordninger for energieffektivitet i industrisektorer tilordnet nationale forhold med inspiration fra danske ordninger.
- Vidensdeling om lovgivning for etablering og udbygning af fjernvarme herunder tekniske implementeringsformer

Fattigdomsbegreber	HRBA-principper
Så vidt muligt skal GRs aktiviteter søge at sikre: - At der udarbejdes analyse af uddannelses- og træningsbehov for at implementere EE løsninger i bygninger og industri - At de sundhedsmæssige effekter fra ee indsats estimeres	Så vidt muligt skal GRs aktiviteter søge at sikre: - At rammerne for privatsektor bidrager med at opnå mål omkring jobskabelse og uddannelse - At partnermyndigheden gør brug af åbne konsultationer, hvor relevante interessenter herunder privatsektor har kunnet byde ind med data og viden - At analyser og data offentliggøres med henblik på at informere interessenter eller det bredere samfund. - At der i dialogen omkring ny regulering og politik tages højde for udsatte grupper.

Annex C: Justification against OECD DAC criteria

The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) has defined six quality criteria[22], and the justification for DEPP 2025 against these criteria is briefly summarised below:

Relevance: The Programme responds to global concerns and priorities for energy transition and climate action. As further described in Country PDs it responds directly to national partner needs and priorities. It is also fully aligned with Danish partnership priorities for emerging economies as expressed in "The World We Share".

External and internal coherence: The Programme is aligned with wider policy priorities of national partner government institutions and emphasis is placed on synergy with initiatives of other development partners. The Danish Embassies will contribute to this in relevant coordination efforts. Internal coherence and cross-fertilisation between and among several other DEPP and SSC programmes will be ensured through internal coordination within DEA through its internal organisational structure, substantive exchanges and staff meetings, and overseen by the Strategic Advisory Group (SAG) and the Programme Advisory Group (PAG). The MFA and MCEU will ensure synergies with Denmark's multilateral energy/climate cooperation through coherence with Denmark's multilateral cooperation with the World Bank, IEA, IRENA, the NDC Partnership, IISD and others.

Effectiveness: The GtG, peer-to-peer partnership has the potential to effectively contribute to outcomes in a manner that no other development partners offer. This includes the proposed engagement of long-term advisors, which has proven highly successful e.g. in India. The Steering Committees (SCs) in each country will serve as accountability mechanism toward Programme objective and intended results, and technical working groups (TWGs) will prepare and monitor workplans consistent with DEPP 2025 objectives and results framework.

Efficiency: The Programme is demand-driven, with targeted interventions responding to partner priorities. It also benefits from economies of scale in DEA and expertise and experience gained through many other SSC and DEPP programmes since 2012. The peer-to-peer cooperation that is at the heart of DEPP, is based on specific TOR for each major intervention, intended to further ensure a demand-driven approach and efficient resource utilisation.

Impact: The Programme is based on results-oriented engagement with national partners selected based on relevant mandates and high-level commitment, coupled with demand-driven knowledge exchange and capability strengthening and the use of "impact drivers" underpinning the programme theory of change. A focus on socio economic aspects of inclusive just energy transition will further contribute to impact.

Sustainability: It is central to integrate the cooperation into overall partner development and sector policies and plans, and involve other stakeholders, including think tanks, academia and the private sector, in strengthening the enabling framework for green energy transition and climate action. Drivers of sustainable impact include an effective SC as accountability mechanism based on ownership and commitment at high levels, effective communication of results and lessons targeted at decision makers, striving for value added and synergy with support from other development partners, and support for triangular cooperation.

[22] See link.

Annex D: List of supplementary material

#	Document/information	Internet link if available
1.	United Nations Sustainable Development Goals Report, 28 June 2024	(link)
2.	The Energy Progress Report, 12 June 2024 (by World Bank ESMAP; IEA; IRENA, WHO and United Nations Statistics Division)	(link)
3.	IEA Press Release on the Energy Progress Report, 12 June 2024	(link)
4.	Review Report, MFA MTR of DEPP III, March 2024	
5.	Danish Energy Agency: Det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder (Danish only).	
6.	Danida Approach Note on Fighting Poverty and Inequality	(link)
7.	Danida How to Note on Energy Transition and Emission Reductions in Developing Countries	(link)
8.	Minutes of the Council for Development Policy endorsing DEPP III for approval, 10 September 2020	(link)
9.	Danida Open Aid, DEPP II (DEPP III not found)	(link)
10.	Danida Open Aid, Brazil	(link)
11.	Danida Open Aid, India	(link)
12.	Danida Open Aid, Kenya	(link)
13.	Job creation in a new industry – learnings from Denmark's offshore wind journey (DEA; 2023)	(link)
14.	The Danish Energy Agency as a one-stop-shop (2020)	(link)

Annex E: Plan for communication of results

This is for DEPP 2025 as a framework programme – plans for communication of results included in each Country Programme Document.

What? (the message)	**When?** (the timing)	**How?** (the mechanism)	**Audience(s)**	**Responsible**
DEPP 2025 key summary programme information. Results against targets for one selected Outcome per Country Programme (Outcome 2, long-term energy planning for Brazil; Outcome 1, offshore wind for India; Outcome 2, variable renewable energy integration for Kenya) tentatively selected for this purpose.	When the DEPP 2025 programme approved and updated regularly/ annually	Danida Open Aid.	The Danish resource base and taxpayers.	MFA (KLIMA)
Fact sheets/small brochures ("Kernefortælling") on DEPP 2025 and – separately - each of its country programmes in Brazil, India, and Kenya. Key messages from DEPP 2025, results and achievements, including "impact stories".	Fact sheets when DEPP 2025 is approved and updates as relevant. Other key messages as relevant during implementation.	Danish Energy Agency website. MCEU website. State of Green. Social media. Folkemødet 2025, etc.	Danish resource base and Danish taxpayers. International development partners.	DEA communication team. MCEU
Key messages on DEPP 2025 results and achievements, including "impact stories".	During implementation.	MFA/Danida website and newsletters. Links to relevant websites of the Danish Embassies in Brazil, India and Kenya. World's Best News campaign. State of Green. Social media.	The Danish resource base, international partners.	MFA(KLIMA)

Annex F: Process Action Plan

Action/deliverable	Target date	Responsible
Presentation of early draft DEPP 2025 (then called DEPP IV) programme document ("concept note") to the Danida Programme Committee.	11 June	MFA(KLIMA)
Submission of DEPP 2025 PDs to appraisal.	19 August	DEA with MFA(KLIMA)
Appraisal.	19 August-236 September	Appraisal consultants engaged by MFA(KLIMA)
Appraisal report (draft/final)	23/27 September	Appraisal consultants
Revised draft DEPP 2025 PDs based on appraisal recommendations to DEA for corrections.	30 September	Formulation process consultant
Corrections to draft final DEPP 2025 PD.	7 October	DEA, MFA(KLIMA)
DEA and MFA (KLIMA) to complete final check and forward final DEPP 2025 PD with appropriation cover note to the UPR Secretariat.	14 October (firm deadline to UPR)	DEA, MFA(KLIMA)
Council for Development Policy (UPR) meeting	31 October	UPR secretariat/UPR
Approval of DEPP 2025 by the Danish Minister for Development Cooperation.	Mid-November	Danish Minister for Development Cooperation.
Signing of Agreement between MFA and DEA for DEPP 2025 implementation.	Early December	DEA/MFA
DEPP 2025 implementation.	Early 2025-end 2029	DEA with national partners in Brazil, India, and Kenya
DEPP 2025 start-up phase, including further assessments of partner needs and priorities, updating/ further constitution of technical working groups, preparation of structured plan for knowledge sharing, development of work plans and draft progress and results reporting, etc. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy to be considered by the MTR.	January-June 2025	DEA with national partners.
Team meetings within DEA GC country teams that also include long-term advisors and Sector Counsellors (online), to discuss country specific matters.	Weekly	DEA GC country team leaders
Meetings of DEA GC country team leaders to discuss common and cross cutting issues, ensure cross-programme coordination and exchange of knowledge, experience, and lessons.	Weekly	DEA GC country team leaders
Country Programme technical working group meetings in-country for each Outcome – to prepare draft work plans and progress/results reports for Steering Committee approval and to identify key messages for communication as per the communication strategy.	Every six months	DEA with national partner institutions in each country.

Country Programme Steering Committee meetings to approve work plans and resource allocations, approve annual progress and results reports, monitor risks and assumptions.	Annually, plus through communication between annual meetings if required to address urgent issues.	Embassies with key national partners in each country.
Prepare consolidated progress and results reporting against DEPP 2025 results framework at output and outcome levels for presentation to and endorsement of the PAG. The progress reporting will include expenditure and budget updates at output level. Reporting will also include updates on risks and assumptions. Reporting will include results and experience gained in the use of DEA CG tools for knowledge exchange and capacity development and suggestions for further development of the DEA GC toolbox.	Annually	DEA
Meetings of the Programme Advisory Group (PAG) to discuss programme progress and issues and prepare the meetings of the SAG.	Every six months prior to the SAG meetings	MFA, MCEU and DEA
Meetings of the Strategic Advisory Group (SAG) to discuss overall programme progress, approve cross-programme budget changes, including approval of the use of unallocated funds, and ensure cross-exchanges of experience and good practice between/among DEPP programmes and multilateral energy and climate cooperation.	Every six months	MFA, MCEU and DEA.
Results reporting/financial reporting to MFA – this will include breakdown of expenditure into categories to be agreed with MFA.	Annually	DEA
Targeted communication of results as per communication strategy and plan.	Ongoing throughout implementation period	DEA, Embassies, MFA, national partners.
Planned MFA evaluation of Danish Energy Partnership Programmes implemented by DEA	2025 (tbc)	MFA (LEARNING)
Prepare consolidated draft exit strategy for consideration by MFA Mid-term Review – to be informed by the DEPP Evaluation.	Prior to MTR	DEA
Mandatory MFA Mid-term Review with visits to Brazil, India, Kenya.	Mid-late 2027 (timing tbd)	MFA(LEARNING)
Final progress and results reporting and financial reporting to MFA.	First quarter 2030	DEA
Final Results Report on DEPP 2025	Mid-2030	MFA(KLIMA)
Closure of accounts on DEPP 2025	Mid-2030	MFA

Annex G: Responses to MTR recommendation regarding formulation of new DEPPs

#	DEPP III MTR recommendation (No. 9) for formulation of future DEPPs	MFA(KLIMA) response	How addressed in DEPP IV formulation
1.	Diversify the programs. The political economy of the energy sector in each of the countries is complex, differ and is dynamic. This could call for adapting the priorities and budget for each of the new country Project Documents to the national context.	Political economy will form part of the formulation process, incl. in assessment of partners. Budgets can also differ across countries.	The context analysis and main text country context summarises key aspects of the political economy, and this will be an important part of the ongoing strategi dialogue including the country programme steering committees to monitor as part of programme implementation.
2.	Individual country Projects could be focused on fewer core areas and shift towards implementation e.g. of Energy Efficiency and NDC's.	As RE matures, it appears relevant that future programmes will focus more on implementation of regulations and support progress of outlined targets, e.g. applying new capabilities or publish final wind tender.	The country programmes are considered to be focused on priority partner needs and where DEPP 2025 can add best value considering Danish strongholds and the presence of other development partners in the highly dynamic country contexts.
3.	Widen the potential DEPP support areas from the current four thematic areas to meet the challenge of the transition process and partner country demands. This could be support to civil society organization, knowledge centers, curriculum development at universities for modelling etc.	Thematic areas will be adjusted to the national context and four thematic areas broadened to relevant areas.	DEPP 2025 has increased focus on socio-economic aspects of the partner countries' just and inclusive energy transition. This is planned to involve national think tanks, academic institutions and other parts of civil society, as further described in each Country PD.
4.	Due to the highly political context of the transition processes an adaptive approach to programming should be taken. This require that clear strategic goals are defined, and that accountable and joint management structures, work planning and reporting structures are established.	All DEPP partner countries will have national management structures for planning and reporting. It is considered that all DEPP countries already have "clear strategic goals".	There is strong emphasis on the role of steering committees in each country serving as accountability mechanisms, for monitoring of strategic goals and targets set in the results framework for each country programme, and an adaptive management approach will underpin the programme (see Chapter 6 of the present document).
5.	Capacity development should be defined, and capacity assessment and capacity development plans should be made with core partner	Capacity development, assessment and plans will be strengthened and defined.	DEA GC is developing an "Integrated Approach to Capacity Development in Global Cooperation". This will be reflected in the DEPP operational manual.

	institutions. Support should be based on documented absorption capacity. Further strengthening of South-South cooperation should be included.	However, this not only a scope during the formulation phase.	
6.	The use of national institutions and other national capacities should be increased as initiated in Vietnam and Mexico		See #3 above.
7.	Exit strategies should be included considering impact and sustainability.	A chapter of "exit strategy" will be included to consider the sustainability of the DEA GR technical assistance and set a time horizon for the collaboration.	A chapter on exit strategies has been included in each Country PD and exit strategies will be a focus for the mandatory MFA MTR of DEPP 2025.

Annex I: BRADEP Programme Document (separate file)

See separate file.

Annex J: INDEP II Programme Document (separate file)

See separate file.

Annex K: KENDEP Programme Document (separate file)

See separate file.

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Annex I:

Brazil-Denmark Energy Partnership (BRADEP) 2025-2029

Key results:

- Emerging offshore wind strategies, policies, and regulations of the Brazilian government have been informed and developed and will effectively account for environmental and socio-economic aspects incl. public and community consultations.
- Long-term energy planning has informed decision-makers and the broader public about opportunities for least-cost, low-carbon development of the energy sector, including socio-economic dimension and enhanced climate change mitigation from a just and inclusive energy transition perspective in Brazil.
- Accurate forecasting of variable renewable energy and optimised flexibility measures have contributed to the integration of an increased share of variable renewable energy from wind and solar energy into the power system and have led to stable and affordable supply of electricity.
- Energy efficiency policies, strategies, and plans for buildings and industry have been strengthened by supporting a transparent and ambitious regulatory and institutional framework and will lead to a cost-effective implementation of energy efficiency measures that also benefit lower-income households.

Justification for support:

- Brazil's policy priorities and principles for a just and inclusive energy transition, with the social dimension high on the political agenda aligns with the Danish policy priorities.
- Strong interest from Brazilian partners to expand cooperation with Denmark to spearhead a global green transition and global action such as COP30 in 2025 and co-chairmanship with Denmark in the NDC Partnership in 2025.
- Brazil's strong interest in maintaining high levels of renewable in the grid while ensuring affordable electricity to the 33 million people living below the poverty line in Brazil (SDG7).

Major risks and challenges:

- Potential delays in key legislation in the Brazilian Congress, but regulatory work and forecasting are still needed to inform the decision making process.
- Brazilian government's high priority of continued development of oil and gas risk leading to more fossil fuel electricity solutions.
- Capacity constraints in Brazilian national partner institutions. addressed by identifying partner priorities.

File No.	Public 360 No. 24/22853						
Country	Brazil						
Responsible MFA Unit	Green Diplomacy and Climate (KLIMA)						
Sector	Energy						
Partner	Danish Energy Agency (DEA)						
DKK million	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total**
Commitment	N/A	N/A					
Projected disbursement		1.8	8.7	10.8	11.7	9.2	42.2
Duration	2025-2029						
Previous	SSC 2023-26 DKK 11.5 million; DETI 2021-22 DKK 1.7 million						

Objective:

A just and inclusive energy transition and climate action supported through a strengthened partnership between Brazil and Denmark for an enabling framework for renewable energy, the effective integration of increased levels variable renewable energy, the development of the offshore wind sector considering socio-economic and environmental aspects, and development of new energy efficiency measures.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%	0%	100%	0%	0%
Total green budget (DKK)		**42.2 million**		

Justification for choice of partners:

The key national partners are the ones with the relevant mandates and who are committed to the partnership in the chosen areas of engagement.

Summary:

Government-to-government cooperation for exchange of knowledge and experience to accelerate a green energy transition with attention to strengthen socio-economic perspectives related to renewable energy expansion. Focus on offshore wind development, long-term energy planning, integration of variable renewable energy, and energy efficiency. This will contribute to a just and inclusive green energy transition, Sustainable Development Goal 7 on affordable clean energy, and the goals of the Paris Agreement on climate change.

Budget:

Outcome 1: Offshore wind energy development	DKK 17.2 million
Outcome 2: Long-term energy planning	DKK 7.5 million
Outcome 3: Flexibility and integration of variable renewable energy	DKK 5.9 million
Outcome 4: Energy efficiency	DKK 11.6 million
Total	**DKK 42.2 million**

Ministry of Foreign Affairs of Denmark (MFA)
Danish Energy Agency (DEA)

Brazil-Denmark Energy Partnership (BRADEP) 2025-2029 Country Programme Document

MFA file: Public 360 No. 24/22853

Contents

Definitions, abbreviations and acronyms

ABEEólica	Brazilian Wind Energy Association
AMG	Danida Aid Management Guidelines
Ancillary services	A variety of operations beyond generation and transmission that are required to maintain grid stability and security. These services generally include active power control or frequency control and reactive power control or voltage control, on various timescales.
ANEEL	Brazil's National Electricity Agency (regulator)
BOGA	Beyond Oil and Gas Alliance
BRADEP	Brazil-Denmark Energy Partnership
BRICS+	Brazil, Russia, India, China, South Africa - alliance of major developing countries, with Saudi Arabia, Egypt, Ethiopia, Iran, and the United Arab Emirates joining in early 2024
CBAM	The EU's Carbon Border Adjustment Mechanism (for which DEA is the mandated authority in Denmark)
CEBRI	The Brazilian Center for International Relations (independent think tank)
CERNE	Centro de Estratégias em Recursos Naturais e Energia, Natal, a developer end think tank
CIF	Climate Investment Funds
Consenting	The consenting process for the development of offshore wind projects is a critical element prepared by the involved regulatory authorities. This requires thorough planning and coordination amongst authorities in order to reduce risks to developers and investors.
COP	Conference of the Parties (to the UNFCCC)
CO_2	Carbon dioxide
DAC	OECD Development Assistance Committee
Curtailment	Reduction of infeed to the grid from renewable energy sources.
Danida	Brand name for Danish International Development Cooperation
DEA	Danish Energy Agency
Demand response	The mechanism through which free consumer agents or previously enabled aggregators may submit offers to reduce (or shift) their loads to meet peak demand of the National Interconnected System to contribute for system reliability and low tariffs.
DEPP 2025	Danish Energy Partnership Programme (Brazil, India, Kenya) 2025-2029
DETI	The Danish Energy Transition Initiative
DKK	Danish kroner
DTU	Danish Technical University
EE	Energy efficiency
Energinet	Danish Transmission System Operator
EPE	Energy Research Office of Brazil
ESMAP	World Bank Energy Sector Management Assistance Program
EU	European Union
G20	Group of twenty largest economies
GCEE	Centro de Gestão e Estudos Estratégicos, Centre for Management and Strategic Studies, a Brazilian think tank
GDP	Gross domestic product
GHG	Greenhouse Gas
GGGI	Global Green Growth Institute
GOWA	Global Offshore Wind Alliance
GtG	Government-to-Government
GW	Gigawatt
GWEC	Global Wind Energy Council
HRBA	Human Rights Based Approach
IBAMA	The Environment Agency, Brazil (under MMA)
IEA	International Energy Agency
IFU	Danish Investment Fund for Developing Countries
ILO	International Labour Organization
IRENA	International Renewable Energy Agency
JETPs	Just Energy Transition Partnerships

LCA	Life Cycle Analysis
LNOB	Leaving no one behind
LTEP	long-term energy planning
LTA	Long-term advisor
Levelized cost/ LCoE	DEA has developed a Levelized Cost of Energy Calculator - LCoE Calculator - to assess the average lifetime costs of providing one kWh for a range of power production and energy efficiency technologies. It is a tool to estimate and compare the socio-economic electricity production costs in a simplified manner using localized data and estimates
LEARNING	MFA Departmenr for Evaluation, Learning, and Quality
MCEU	Danish Ministry of Climate, Energy and Utilities
MEPS	Minimum Energy Performance Standards
MFA	Ministry of Foreign Affairs of Denmark
KLIMA	MFA Department for Green Diplomacy and Climate
MMA	Ministry of Environment and Climate of Brazil
MME	Ministry of Mines and Energy of Brazil
MPOR	Ministry of Ports and Airports of Brazil
MSP	Marine Spatial Planning
MTR	Mid-term Review
NDC	Nationally Determined Contribution under the UNFCCC
NGO	Non-governmental organisations
OECD	Organisation for Economic Co-operation and Development
OdC	Observatorio do Clima, an important Brazilian NGO
OLADE	The Permanent Secretariat of the Latin American Energy Organization
ONS	The Brazilian Transmission System Operator
OSW	Offshore wind
PAG	Programme Advisory Group ((for DEPP – members MFA, MCEU with DEA GC as secretary)
PANT	Human rigths principles of participation, accountability, non-discrimination, and transparency
PD	Programme document
PDE 2031	Ten-Year Energy Expansion Plan 2031
PNDP	National Policy for People Development
PNE 2050	2050 National Energy Plan
PV	Photovoltaic
RBL	Brazilian Real, the Brazilian currency - also referred to as R$
RE	Renewable energy
SAG	Strategic Advisory Group (for DEPP, consisting of the MFA, MCEU, and DEA CG (secretary)
SC	Steering committee
SDG7	Ensure access to affordable, reliable, sustainable and modern energy for all
SDG13	Take urgent action to combat climate change and its impacts
SSC	Strategic sector cooperation
TA	Technical assistance
TC	Trade Council
TOC	Theory of change
TOR	Terms of reference
TSO	Transmission system operator
TWG	Technical Working Group
UFRN	Federal University of Rio Grande do Norte
UNFCCC	United Nations Framework Convention on Climate Change
UPR	Danish acronym for the Council for Development Policy
VRE	Variable renewable energy
WB	World Bank

1. Introduction, context, strategic considerations, rationale, and justification

1.1 Introduction and background

This Programme Document (PD) describes the proposed 'Brazil-Denmark Energy Partnership Programme 2025-2029' (BRADEP) which include a primary budget proposal of DKK 42.2 million[1]. The programme is part of a proposed Danish Energy Partnership Framework Programme (DEPP 2025[2]) that also comprises country programmes in India and Kenya. The PD is based upon several recent interactions with current and potential partners in Brazil, including a formulation mission to Brazil during 10-20 June 2024 undertaken by the Danish Energy Agency (DEA). Please refer to the Process Action Plan in Annex 8 for further information on the formulation, approval, and implementation process.

BRADEP builds upon an energy partnership between Brazil and Denmark that was initiated in 2021 with the Brazilian Ministry of Mines and Energy (MME) and the DEA as key partners, which started as a Danish Energy Transition Initiative (DETI[3]) and was followed by a Strategic Sector Cooperation (SSC[4]) that was launched in August 2023. The SSC has achieved important results, and Brazilian partners have expressed strong interest in an expansion of the programme, including more partners and new topics in the exchange of knowledge and experience in a government-to-government cooperation with DEA.

Brazil places a high priority on achieving a just and inclusive energy transition. Brazil is furthermore poised for a significant growth in its renewable energy sector due to a growing electricity demand and challenges posed by recurrent droughts and limited expansion capacity for hydropower. Adding large amounts of solar- and wind energy to the power system is very challenging when having to maintain the security of supply on days with limited sun and wind. Furthermore, expanding renewable energy infrastructure also impose new opportunities and risk for local communities. In this context, Denmark can provide technical and regulatory experience that is relevant and requested by Brazilian partners in order to ensure stability, affordability, and accessibility.

The DEA offers invaluable insights, particularly in regulatory frameworks and the structural changes essential for this transition. Denmark's regulatory experience is not only well-established but also enriched by lessons learned from cooperation with 24 different countries.

The programme and its activities must emphasize a just transition, tailored to Brazil's specific needs, priorities, and capacities. To address this aspect, the BRADEP is aligned with the DEA note[5] on the poverty and human rights-based approaches, and includes important components such as:

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[1] This budget does not include long-term advisors that will be financed from another account (FL 06.38.02.13) in the case of Brazil.

[2] So called because it starts in 2025. It was previously referred to as DEPP IV, including in the concept note to the Danida Programme Committee.

[3] Grant of DKK 1.67 million.

[4] Grant of DKK 1.497 million for inception, and grant of DKK 9.999 million for SSC phase 1.

[5] Forståelsespapir om det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder (only available in Danish and not online) – the concept note is included in the DEPP 2025 Framework Programme Document as Annex B.

- Justice and Distribution Concerns: Ensuring benefit-sharing of energy infrastructure development such as local content and job creation, with careful consideration of current and emerging trends in human rights disciplines.
- ESG: Integrating environmental, social, and governance (ESG) elements into energy infrastructure development and planning. This includes a comprehensive life cycle assessment—*from cradle to grave*—when relevant and emphasizes public participation and the enforcement of regulations and policies. These elements support that Brazil's energy transition needs to be not only efficient and sustainable but also just and inclusive, addressing the needs and rights of all stakeholders involved.

Having vast potential for developing offshore wind, the Brazilian authorities are particularly interested in Denmark's more than 40 years of experience in the offshore wind sector, including environmental concerns and socio-economic aspects such as job creation. Also, the Brazilian partners have demonstrated an interest in Danish knowhow on the integration of large shares of variable renewable energy into the electricity system with a stable security of supply. Furthermore, Brazil and Denmark both have a long tradition in energy planning, and a mutual interest in exchanging methodologies and experiences to further advance and secure investment for the green transition. Both countries promote the importance of long-term climate and energy planning internationally, including in the G20 energy transition working group under Brazilian chairmanship, and the NDC Partnership, co-chaired by Brazil and Denmark in 2025. Brazil is increasing its focus on energy efficiency, acknowledging that it is the important "first fuel" in order to reduce the expansion of the energy system and thereby reducing future CO_2 emissions. The Ministry of Mines and Energy and other partners have requested Danish experiences and knowhow on energy efficiency regulation in industry and buildings, an area where Denmark has particular expertise.

On the basis of analysis during the programme formulation process, and in dialogue with partners on their priorities and demands compared to Danish competencies, it is proposed that BRADEP will focus on four outcome tracks:

- Offshore Wind Development
- Long Term Energy Planning
- Integration of Renewable Energy, and;
- Energy Efficiency

1.2 Country context

With an area of about 8.5 million km^2 Brazil is by far the largest country in South America, covering about half of the continent's land area. Globally, Brazil is the World's fifth largest country by land area. Brazil has a population of about 218 million. Brazil is the only country in the Americas where Portuguese is the official language. OECD classifies Brazil as an upper middle-income country.[6]

Key challenges

Brazil has one of the greenest energy matrices in the world.[7] In 2023, 49% of the energy came from renewable sources, and when only considering the electricity system, almost 90% came from renewables. The share of hydropower in the Brazilian electricity matrix reached 59% in 2023 and is therefore the most important source of energy for the country. However, in recent years, Brazil has experienced recurrent years of drought – the latest and most severe in 2021 with water levels at the lowest level in 91 years – and where the share of hydropower dropped despite the introduction of

[6] Brazil is eligible for ODA flows, see OECD DAC (link)

[7] The International Energy Agency in July 2024 concluded that *"Brazil has the cleanest energy mix in the G20"* and that *"Brazil is a frontrunner in clean energy transitions"* see (link)

several new run-of-river plants. Brazil had to import electricity from neighbouring countries and increased power generation at plants burning fossil fuels – raising energy prices for consumers. Different measures to reduce energy usage in order to alleviate the crisis were directed. The crisis and the increased energy prices were particularly hard on the poorest segments of society, which includes more than 33 million Brazilians living below the poverty line. Poverty and relatively high energy prices result in widespread energy poverty.

Other key challenges in the energy sector include i) integrating a higher share of variable renewable energy (VRE); ii) a future increase in demand and associated bottlenecks in power transmission systems; iii) fossil fuels used in isolated power systems; and iv) the continued exploration of fossil fuels. A central part of Brazil's ongoing energy transition is the advancement of the different sources of renewable energy, including the untapped potential for offshore wind. Brazil's renewable energy potential is vast and diverse, and the country has implemented various policies and incentives to promote renewable energy development, including support schemes, auctions for renewable energy projects, tax incentives, and renewable energy targets. Brazil has also launched an ambitious policy for a "sustainable re-industrialization" programme. With many jobs coming from oil & gas and other fossil industries, the focus on green jobs is a particular challenge and opportunity.

A key goal of Brazil's energy policy is the achievement of a just and inclusive energy transition, which the country has recently reiterated during its role as chair of the G20. However, realizing this goal requires continued investment, policy support, advanced regulation, and technological developments to harness the available resources effectively and to address the country's growing energy demands while mitigating climate change. The expansion of renewable energy is also competing with Brazil's continued priority to the oil and gas sector with the partly state-owned company Petrobras being very influential.

According to the National Ten-year Plan (PDE, 2031), the national electricity demand is expected to increase by 2.5% annually until 2031. The transmission system has doubled in size in the past 20 years and is expected to increase even further in order to accommodate the increasing demand for electricity. The challenging aspects of having a high production of VRE in the North and demand concentrated in the South creates bottlenecks in the transmission system, increasing the risk unreliable power supply and the curtailment of wind power in the North.

The development of offshore wind

The conditions for offshore wind (OSW) in Brazil are considered to be among the best in the world with high stable wind resources and low seabeds. As the OSW sector is starting up in Brazil, there is great interest in a partnership with Denmark to learn from the vast Danish experience and knowledge in this area. At COP28 in 2023, Brazil announced its decision to join the Global Offshore Wind Alliance (GOWA) initiated by Denmark, which is seen as a sign of the importance of OSW for the energy transition and the economic development of Brazil.[8] This is also evident from the large interest from private developers who have already filed preliminary applications for more than 80 projects, totalling more than 200 GW – even before the regulatory framework is in place. A bill on offshore wind is currently being discussed in Congress, where the inclusion of other suggested laws concerning thermal power plants, hinders the approval process.

[8] This vast potential is further described in the World Bank Group study on "Scenarios for Offshore Wind Development in Brazil", conducted by DNV and released in July 2024. This study reflects Brazil's offshore wind energy potential as exceeding 1,200 GW, with 480 GW from fixed foundations and 748 GW from floating foundations. This abundant resource, strategically located near demand centres, positions offshore wind as a pivotal player in Brazil's future energy landscape. This study and related information can be found here (link) (link) (link) and (link)

The development of onshore wind energy projects has been growing significantly[9] in the last couple of years but have also resulted in growing opposition from affected communities in Brazil. With limited regulations or rules that decide the compensations schemes or considerations for the affected population, the projects often come with at a high negative price for the communities. The fear is therefore that the offshore wind projects, which will be larger in scale, could have a similar negative impact on e.g. fishing communities and the tourism industry. BRADEP will therefore focus on regulation related to consenting processes, community involvement, public consultations, and compensation mechanisms.

Energy Efficiency

Energy efficiency (EE), which is often referred to as "the first fuel" in the energy transition, is increasingly becoming a political priority as an important tool in the Brazilian energy transition. In general, installing energy efficiency measures are cheaper than installing new power generation capacity. Even though wind power and utility scale solar are getting close, energy efficiency are still most often the cheapest. In light of the future electricity generation expansion plans in Brazil, which is expected to require large investments and land for energy production plants in most cases socioeconomic benefits could be gained by focus on EE and reducing or/and delaying the built out of generation capacity. Energy efficiency investments improve countries' energy productivity, resulting in multiple additional benefits, enabling them to reduce greenhouse gas (GHG) emissions, grow their economies, improve public health and ensure energy security.

However, there are both challenges and opportunities for a greater reliance on EE, including in buildings and industry. The DEA formulation mission to Brazil identified that there is a lack of awareness of the benefits of EE particularly in enterprises and industry, with payback time for some EE improvements as low as a few months. The Atlas of Energy Efficiency from the Energy Research Office (EPE) in 2022 included a special chapter on the Brazilian iron and steel sector. The EPE Atlas 2023[10] edition features a chapter dedicated to the residential sector, offering an in-depth analysis of the national and international aspects of energy use in this sector, breaking down consumption by end-use and income class. It also provides a series of key policy recommendations to improve energy efficiency in the building sector, including adopting a holistic approach to building energy codes, greater efforts to expand and strengthen Minimum Energy Performance Standards (MEPS), and promoting innovative business models and demand response incentives to encourage the use of digital technologies. The Atlas also contains technical data on EE in industry although it does not provide specific policy recommendations. Among its extensive technical data and information, the Atlas notes a downward trend in recent years in the evolution of RD&D investments in EE. The IEA CETP Annual Report 2023 provides information on EE in Brazil and IEA's increasing engagement in this area. The IEA particularly notes two Brazilian initiatives, the Esplanada Eficiente [11](Programme for Energy Efficiency, or PEE) and PotencializEE[12] (Promoting Investments Energy Efficiency in Industry Programme). The World Bank ESMAP RISE[13] Indicators for Brazil reflect a low score on building energy codes and financing for EE.

[9] According to EMBER, Brazil is a leader in renewable electricity within the G20. 89% of Brazil's electricity came from renewables in 2023, by far the highest among G20 economies, and added a very impressive figure of 5 GW of wind production into the system (see link). In this regard, see: (link).

[10] This Atlas was developed in collaboration with the International Energy Agency (IEA), to which Denmark contributes through the Energy Efficiency in Emerging Economies Programme (E4)/Clean Energy Transitions Programme (CETP). The Atlas 2023 can be found here (link) and the 2022 version here (link). The CETP Annual Report 2023 can be found here (link).

[11] More information here (link).

[12] More information here (link).

[13] The Regulatory Indicators for Sustainable Energy (RISE) for Brazil can be found here (link).

Fossil fuel production

While Brazil has high ambitions for a continued development of renewable energy, the government has not set targets for the phase-out of fossil fuel production. A new plan has recently been presented by the MME that aims to make Brazil the fourth largest oil producer in the world (now the eighth largest) by 2029, nearly doubling current levels of production The oil and gas industry makes up for 13% of the Brazilian GDP and is thus an important economic factor in the country. If renewable energy cannot present an affordable and reliable source of energy in the short to medium term, there is a risk of Brazil opting for alternative sources to power their energy grid. This is particular a risk as Brazil has large domestic natural gas resources.

Decarbonisation efforts

After a number of revisions of Brazil's Nationally Determined Contribution (NDC)[14] under the previous administration, the new government updated the NDC in September 2023, so it again aligns with the original NDC from 2016:

- 48% GHG emissions in 2025 (compared to 2005 level)
- 53% GHG emissions reduction in 2030 (unconditional)
- Climate neutral in 2050
- Ending illegal deforestation by 2030.

The Ministry of Environment and Climate of Brazil (MMA) is currently working on a Climate Plan that aims to define how to achieve the presented ambitions and how to divide the decarbonisation requirements among the relevant sectors. As part of the Climate Plan, the MME will develop a decarbonisation strategy for the energy sector in line with the above-stated targets. The difficult political climate in Congress and the strong influence from the agricultural, oil/gas, and mining sectors are expected to present challenges to the implementation of needed policy changes.

1.3 Results and lessons learned from DETI and SSC on Energy in Brazil

The SSC programme officially started in September 2023 and was preceded by an engagement under the DETI during mid-2021 to end of 2022 and an SSC inception period during late 2022 to August 2023. During this time, the cooperation between Brazil and Denmark has achieved important results and has demonstrated strong interest from Brazilian partners and stakeholders in a deepened and widened exchange of knowledge and experience with Denmark.

Building a strong partnership

A first and important achievement of the DETI, SSC inception, and SSC programmes has been the development of strong partnerships between, on the one hand, the Danish Embassy in Brasilia and the Danish Energy Agency and, on the other, key Brazilian governmental institutions that are responsible for planning and implementing the country's goals for a just and inclusive energy transition. This includes strong institutional partnerships with MME, EPE, Brazil's National Electricity Agency (ANEEL), the Brazilian Transmission System Operator (ONS), and the Environment Agency (IBAMA), as well as strong inter-personal relationships with institutional leaders, mid-level management, and technical experts at these institutions. More recently, new relationships have been developed with partners who will play important roles in a more extensive cooperation under BRADEP, including MMA, the Ministry of Ports and Airports (MPOR), certain state-level governments, and universities and think tanks.

[14] Under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement on Climate Change. The latest NDC can be seen here (link).

Activities and engagements
The strong partnership was formed through the continuous efforts of the Danish Embassy in Brasilia, regular DEA missions to Brazil, technical delegation visits from Brazil to Denmark, Danish and Brazilian parliamentary delegation visits, and a wide variety of online meetings and workshops.

During the DETI, SSC inception, and the SSC programme, the DEA has arranged a variety of seminars to exchange technical knowledge in the key areas of cooperation, including in offshore wind, long-term planning, and the integration of variable renewable energy. On the Danish side, these workshops involved technical specialists from the Danish Energy Agency and relevant international consultants, Energinet, and Ea Energy Analysis. In the offshore wind track, this has included technical workshops on the levelized cost of wind power, the Danish "one-stop shop" approach for offshore wind licencing, offshore environmental assessments, offshore wind tenders, and the design of power purchase agreements. In the long-term energy planning track, workshops have focused on exchanging experiences on power system modelling methodologies, the development of technology catalogues, and assumptions for modelling the emerging hydrogen sector. Whereas, Brazilian partners have expressed that for now, they are not interested in actual energy modelling work. Under the integration track, Energinet has presented how they handle the integration of variable renewable energy in Denmark, with more focused presentations on the roles of demand-side flexibility, forecasting of wind and solar photovoltaic (PV), and the role of ancillary services.

All of these engagements were important to initiate the technical peer-to-peer exchanges and to identify the detailed interests and requirements from the Brazilian partners for more in-depth technical cooperation. In addition, the formulation mission to Brazil in June 2024 heard numerous examples of positive impressions from delegation visits, underscoring the achievements and the reinforced interest in this partnership modality. Brazil has expressed particular interest in the offshore wind and exploring how a just and just energy transition can be integrated in long-term energy planning leading to least-cost energy scenarios, consideration of local communities' co-benefits and mobilising private investors.

Green diplomacy
The engagements initiated under DETI and the SSC programme have illustrated how the energy cooperation holds significant potential to contribute to Denmark's green diplomacy in Brazil - a country with significant strategic and geopolitical importance as one of the strong voices in the global South. The partnership formation process benefited from the bilateral meeting between President Lula of Brazil and Danish Prime Minister Mette Frederiksen in July 2023 and the visit to Brazil by the then Danish Minister for Development Cooperation and Global Climate, Dan Jørgensen, in August 2023. Aside from an active participation by the Brazilian partners in the SSC cooperation, the strong partnership is also reflected by the invitation to Denmark for an active participation in the G20 Energy Transition Working Group and the Climate Financing Task force under Brazilian chairmanship. Furthermore, the strong energy dialogue will contribute to the Danish cooperation with Brazil during COP30 in Belém, and in the NDC Partnership which will be co-chaired by Brazil and Denmark in 2025. Finally, the energy cooperation is foreseen to be a cornerstone in the Strategic Partnership between Denmark and Brazil that is planned to be endorsed in 2025 at the highest political level.

1.4 Alignment with Denmark's development policy priorities
As outlined in the DEPP 2025 framework Programme Document, the support to Brazil's just and s inclusive energy transition is well aligned with Denmark's Strategy for Development Cooperation

"The World We Share" and in the Danida How-to-Note on Energy Transition and Emission Reductions.

BRADEP's contribution to Brazil's just and inclusive energy transition and climate goals are fully in line with these Danish priorities and further reinforced by Denmark's active climate diplomacy with Brazil, including in the process leading up to Brazil hosting COP 30 in 2025. Denmark is represented in three working groups under Brazil's G20 secretariat, and Brazil's and Denmark's co-chairmanship of the NDC Partnership is another example of a strategic priority.

Contributions to SDGs

- SDG 1: No poverty – SDG 1: No poverty. Supporting reliable, affordable supply of clean energy contributes to poverty alleviation including alleviation of energy poverty, which is widespread among disadvantaged communities in Brazil (although access to electricity is nearly 100% except for mainly isolated communities in remote regions. Affordability and reliability are key concerns driving the programme's focus on least-cost long term planning, cost-efficient integration of VRE, and cost-effective implementation of energy efficiency, and the increased emphasis on socio-economic aspects of the energy transition – in line with Brazil's policies and principles for a just and inclusive energy transition.
- SDG 7[15]: Affordable and Clean Energy – BRADEP will support MME and its agencies in long-term planning, integration and regulation of renewable energy including OSW with the aim to supply affordable, reliable and sustainable energy for all based on least cost development.
- SDG 13: Climate Action – BRADEP will support Brazil's low-carbon targets for the power sector and further support the Government's actions to mitigate climate change and its impacts, including through integrating climate change perspectives into long-term planning.
- SDG 17: Partnerships for the goals – BRADEP will be a bilateral partnership, which will also contribute to coordination with other bilateral and multilateral development partners.

More indirectly, BRADEP will also contribute to:

- SDG 8: Decent work and economic growth – through supporting the green energy transition and least-cost energy planning, the programme indirectly contributes to job creation in the energy sector including development of the offshore wind sector. Affordable and reliable energy access is key to Brazil's green industrialization and driving wider social and economic development in all sectors of society.

Private sector stakeholders

Brazil was Denmark's 18th largest export market in 2022 with total exports (goods and services) of DKK 28.4 billion (an increase of 28.6% from 2021) corresponding to 1.4% of Denmark's total export income. There are particularly good opportunities for Danish companies within energy, agriculture and food as well as health. Vestas has signed an agreement with Casa dos Ventos for two projects in Brazil: Serra do Tigre wind park in the state of Rio Grande do Norte, and Babilônia Centro in the state of Bahia.[16] The projects have a total capacity of 1.3 GW once fully installed, making it the largest onshore order to date for Vestas in Latin America and globally.

Other Danish energy, infrastructure and transportation companies, such as Copenhagen Infrastructure Partners, European Energy, and Maersk are already active in Brazil. The industry eagerly awaits the offshore wind bill currently pending in the Brazilian Congress. Once passed, this legislation is expected to significantly boost interest in offshore wind solutions from Danish

[15] The SDG 7 Energy Progress Report 2024 (by World Bank ESMAP; IEA; IRENA, WHO and United Nations Statistics Division) (link). The SDG7 data for Brazil can be seen here (link)

[16] See link

companies, given the substantial potential in Brazil's coastal states, where BRADEP is also poised to engage.

The strong interest was evident at the Brazil Wind Power Expo 2023, where the Trade Council (TC) showcased a Danish pavilion for the first time, featuring seven Danish companies. During the DEA formulation mission, the Head of Energy and Sustainability Advisory for Latin America at the Danish Consulate General in São Paulo further confirmed Denmark's commitment to this sector. Additionally, the Danish Investment Fund for Developing Countries (IFU) is investing in both solar and wind projects in Brazil.

Justification based on OECD DAC criteria
The DEPP 2025 Framework Programme Document contains a justification based on the OECD DAC criteria of relevance, coherence, effectiveness, efficiency, impact, and sustainability. This is for the DEPP 2025 programme as a whole, also including BRADEP.

1.5 Target groups and cross-cutting concerns

There are considerable inequalities in Brazil, and poor communities exist both in urban areas (favelas) and in remote communities, e.g. in the Amazon region and among indigenous peoples, as well as in coastal fishing communities. The social dimension is high on Brazil's political agenda for the energy transition – both in internal and external policies. At the launch of Brazil's chairmanship of G20 at the UN General Assembly, Brazil stated that "it was spearheading the Global Alliance against Hunger and Poverty[17], as well the Joint Taskforce for the Global Mobilization against Climate Change". Brazil is formulating key principles for a just and inclusive energy transition as part of the key deliverables in the Energy Transition Working Group under the G20. These principles have inspired the DEA approach to a Just and Inclusive Energy Transition (see framework document) also reflected in the BRADEP Programme Document. While there is a high level (over 99%) of electricity access in Brazil, energy poverty is widespread among disadvantaged communities. MME has underscored the critical role of energy access in improving living standards, creating economic opportunities, and promoting social well-being.[18] MME has observed that "The escalating energy expenses can disproportionately burden low-income households, worsening prevailing inequalities and contributing to energy poverty. It is incumbent upon us to enact public policies and strategies that safeguard against these detrimental impacts, guaranteeing equitable distribution of the benefits stemming from the energy transition."

While access to affordable, reliable, sustainable, and modern energy for all is a Sustainable Development Goal (SDG7), access to renewable energy is not a human right in itself. But given the role of green and sustainable energy as a broader enabler of human and economic development, it is strongly interconnected with basic rights such as the right to life, food, health, shelter, education, etc. In BRADEP, affordability and reliability are key concerns driving the programme's focus on least-cost long term planning, cost-efficient integration of VRE, and cost-effective implementation of energy efficiency, and the increased emphasis on socio-economic aspects of the energy transition – in line with Brazil's policies and principles for a just and inclusive energy transition. This is also in response to the nation wide power cut experienced in Brazil in 2023. Also, and in line with the earlier mentioned DEA "forståelsespapir"/concept note on poverty orientation and a human rights-based approach to development (HRBA), DEA will focus on the human rights principles of

[17] See link
[18] See link

participation, accountability, non-discrimination, and transparency) and the MFA's multidimensional definition[19] of poverty.

During the past years increased local opposition has developed against development of solar PV and onshore wind projects. This will be important to take into account and address in the development of the development of the offshore sector. It is envisioned that the Danish Institute of Human Rights (DIHR, or a similar organisation) will be involved in the development and/or implementation of a model to identify, evaluate and measure the just energy transition advancements, focusing on the intersection of business and human rights and multi-stakeholder dialogue processes which are key elements of the development of energy infrastructure. Similarly, the BRADEP formulation delegation met with non-governmental organisations and think tanks that may be engaged in addressing cross-cutting concerns related to inclusion, consultation, compensation, job creation/re-skilling under the energy transition.

Gender equality aspects will be mainstreamed across activities, for example the representation of women in stakeholder consultations, attracting both women and men in job creation and re-skilling activities, and a dialogue between Danish and Brazilian partner institutions on the representation of women in key positions in the energy sector – an area where MME has a particular focus.

For energy efficiency the work on households has a strong focus on regulation that can help bring down energy poverty, as a high share (36%) of Brazilian families spend more than half of their monthly income on energy consumption[20].

1.6 Choice of partner institutions

The DEA will be the implementing partner for Denmark's support through BRADEP and the DEPP 2025 Framework Programme as a whole. DEA's experience and capacity in implementing government-to-government energy partnership programmes is presented in the DEPP 2025 Framework Programme Document and its Annex A.

Through the DEA's prior cooperation and as part of the programming formulation, the following partners have been chosen as particularly relevant to advance the energy partnership between Denmark and Brazil. (A more detailed stakeholder analysis can be found in Annex A1.2 and the partner assessment in Annex 2):

The Ministry of Mines and Energy (MME) is the lead authority in the energy sector and therefore the main partner in the ongoing SSC and the proposed BRADEP, including as co-chair of the Steering Committee.

The National Electric Energy Agency (ANEEL) is an independent authority linked to MME, responsible for regulating the Brazilian electricity sector.

The Energy Research Office (EPE) supports MME energy policies with studies and research on energy planning covering electricity, renewable energy, biofuels, oil, and natural gas.

The National Electric System Operator (ONS) is responsible for coordinating and controlling the operation of electricity generation and transmission facilities in the Brazilian National

[19] The multidimensional poverty concept does not reduce poverty to a question of income but about access to resources in a wider sense, including opportunities and choices, voice and influence, personal safety, etc.
[20] Source: justica-energetica.pdf (polis.org.br)

Interconnected System (SIN) and for planning the operation of the country's isolated systems, under the supervision and regulation of ANEEL.

The Ministry of Environment and Climate Change (MMA) is responsible for formulating and implementing environmental and climate policies, promoting sustainable development, and conserving natural resources. This includes coordination of the National Climate Plan and responsibility for the NDC.

The Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) is the government agency under MMA responsible for environmental protection and conservation including environmental licensing of renewable energy projects.

The State Governments of Rio Grande do Norte, Rio Grande do Sul, Ceará, and Rio de Janeiro are expected to be BRADEP partners as MME and other partners have identified themto be the first States taking steps to develop offshore wind (OSW) projects in Brazil.

The Ministry of Ports and Airports of Brazil (MPOR) is expected to be a partner in BRADEP, as it has responsibilities within regulation of maritime space for OSW, and industry development regarding OSW ports and vessels, and sustainable fuels in shipping.

The formulation mission also met with other stakeholders in Brazil including academic institutions, think tanks, and professional associations (see further information in Annex 2).

2. The BRADEP Programme

2.1 Programme Objective

Objective: *A just and inclusive energy transition and climate action supported through a strengthened partnership between Brazil and Denmark for an enabling framework for renewable energy, the effective integration of variable renewable energy, the development of the offshore wind sector, and development of new energy efficiency measures.*

2.2 Summary description of the BRADEP Programme

The Brazil country programme of DEPP 2025 builds on the strong relationship and results that have been established during the DETI and SSC programmes between Denmark and Brazil. The BRADEP will further deepen and widen the engagement by continuing the existing outcomes on long-term planning and integration of renewable energy. For the first year of the BRADEP, the SSC programme will continue in parallel until December 2025. Due to a strong demand for offshore wind activities and the expansion of the engagement with new partners, it has been decided to create a separate outcome on this topic. In addition, the programme will include a new outcome on energy efficiency, which has been identified as a promising area of engagement with strong interest from partners and which can start in early 2025. As such, the programme will work on topics jointly decided by Brazilian and Danish partners based on priorities, demand and competencies, aiming to address issues identified as most relevant to advance Brazil's just and inclusive energy transition.

The programme will build on the strong partnership that have been developed over the past years with the Ministry of Mines and Energy (MME) as key partner, and other important partner institutions – EPE, ONS, ANEEL, and IBAMA. Furthermore, BRADEP will include new partners that are relevant to achieving the programme's objectives – such as the MMA, state governments, universities, and think tanks. Due to the government-to-government nature of BRADEP, the partnership will be centred on bilateral engagements between Denmark and Brazil, facilitating in-depth knowledge exchanges among experts in the four areas outlined in this section. Additionally,

the programme also proposes triangular cooperation approaches, where relevant lessons will be shared with third countries, for example, by engaging in multilateral forums or by drawing on some of the DEA's 24 government-to-government partnership from around the world.

Outcome 1: Offshore wind energy development

"Offshore wind energy development further enabled through improved regulatory framework conditions considering socio-economic and environmental aspects".

Brazil has tremendous potential for offshore wind energy production, and the Brazilian Congress is currently reviewing a bill to boost the sector's development. Brazilian partners are strongly interested in exchanging knowledge with Danish experts on the development of a regulatory framework for the entire cycle of offshore wind. This includes addressing various technical and socio-economic aspects, such as public consultations with affected communities and job creation. Key areas of cooperation will include:

- Process/cycle of offshore wind. A systematic and planned approach to the development of offshore wind projects that accounts for social/environmental sustainability and that reduces risk.
- Consenting process and social aspects for offshore wind with a focus on Just and Inclusive Energy Transition.
- Legal characterisation of offshore wind. This output will focus on the specific regulatory and contractual aspects that are used in the area of offshore wind, highlighting best practices and instruments to develop this industry. Some examples of this are the concession agreements, decommissioning regime, guarantees, etc.

These areas will assure that there is an exchange between the two countries, referring to a structured and well-organized method for developing offshore wind projects that balances infrastructure growth with sustainability and minimizes risks. In the same line, in relation to the consenting process, this involves exchanging views and discussing the procedures and social considerations that are necessary for obtaining permissions for offshore wind projects, emphasizing a just and inclusive energy transition, including legal structures that are sound, commercially effective, and in line with best public policy practices.

The cooperation on offshore wind will include stakeholders at federal and state levels, and involve both partner institutions and relevant universities, think tanks, trade organisations, and members of civil society. Key partner institutions at the federal level include MME, with focus on regulatory frameworks and tendering procedures; MMA, and IBAMA, for the advancement of Marine Spatial Planning and environmental permitting and other aspects of offshore wind, including consultation with affected fishery communities. A cooperation with MPOR related to the development of port infrastructure development for offshore wind is currently under development. Furthermore, the outcome will include a cooperation with state governments in key regions that are preparing to start where the first offshore wind development projects in Brazil is most likely to take place, including Rio Grande do Norte, Ceará, Rio de Janeiro, and Rio Grande do Sul. The outcome will also include engagement with ANEEL, which is the regulatory agency that that is expected to have a predominant role as a "one-stop-shop" with regard to OSW permitting process.

Outcome 2: Long-term energy planning

"Long-term planning processes and methodologies effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in support of a just and inclusive energy transition".

The programme will also include an outcome on long-term energy planning. Planning is critical to ensure that long-term strategies are designed to minimise the cost of energy systems – including the cost of operation, of new investments, and of environmental and social externalities – while maintaining a high-level of security of supply. A key element here concerns the analysis of uncertainties regarding how technologies, markets, and policies develop in the future, which is explored by constructing scenarios of possible pathways that the energy system can follow. In this way, long-term planning is a useful tool to support the design of systems that provide affordable and secure energy, which is important for all consumers, including for those from low-income households who spend a disproportional share of their income on energy. In BRADEP, the cooperation on long-term planning will focus on how best to integrate large shares of VRE in the national grid and how to decarbonise the energy system to achieve net-zero emission targets.

While Brazil already has strong capabilities in the field of long-term planning, the partners have expressed interest in exchanging insights and experiences with different methodologies and processes. These include knowledge exchanges on governance and institutional frameworks and scenario development approaches for long-term energy planning to ensure these are designed to effectively support the definition, evaluation, and updating of strategies to decarbonise the energy sector and to integrate a large share of VRE.

Key partners for long-term term planning in the energy sector are MME, as the line ministry responsible for energy policy, and EPE, which is responsible for energy modelling and development of the plans and strategies, such as national energy plans for the next ten and thirty years. The outcome will also contribute to the energy sections of Brazil's Climate Plan that is coordinated by MMA. As the governmental partner institutions work closely with local universities and think tanks on energy sector scenarios, these will also be included in the engagement.

The partnership on long term energy planning will also include triangular cooperation and support joint work in multilateral settings, such as the G20 Global Coalition for Energy Planning, and the NDC Partnership, where Brazil will be co-chair together with Denmark in 2025.

Outcome 3: Flexibility and integration of variable renewable energy

"Flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, through optimised flexibility measures and renewables forecasting, which contributes to more stable and affordable electricity supply for all consumers".

Brazil's efforts to achieve a just and inclusive energy transition, and its goal to reduce its dependency on hydropower to ensure security of supply while meeting rising demand, will likely involve a substantial expansion of electricity generation from solar PV and wind, both onshore and offshore. The expansion of such variable sources of renewable energy comes with a variety of engineering and economic challenges. If addressed poorly, these can lead to more expensive and less secure supply of power, which affects all consumers, and especially those from low-income households, which already pay a large share of their income on energy. Denmark has accumulated a wealth of experience with the integration of variable energy sources over the past decades, and the Brazilian partners have on this basis expressed interest in exchanging knowledge on the following topics:

- Knowledge exchanges on regulation of frequency response and power system flexibility so as to promote effective integration of variable renewable energy with reduced curtailment.
- Improved forecasting and dispatching tools and procedures for variable renewable energy generation.

Key partners under this engagement include ONS, the national transmission system operator, which is responsible for electricity dispatch, renewables forecasting, the introduction of new measures for power system flexibility, among other things. The engagement will also involve ANNEL, the country's electricity regulatory agency, which oversees the development of regulation regarding measures that increase the flexibility of the country's power system. Finally, the engagement will also involve EPE, which regularly produces studies and policy evaluations relevant for the topic of this engagement.

Outcome 4: Energy efficiency

"A transparent and ambitious regulatory and institutional framework leads to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry, which will also benefit lower-income households[21] and Brazil's sustainable re-industrialization policy".

Finally, the programme will include a component on energy efficiency (EE). Brazil has strengthened the focus on EE, and in the Ten-Year Energy Expansion Plan 2031 (PDE 2031) the topic has been given special attention. In the PDE 2031 studies, it is estimated that in 2031, energy efficiency gains can contribute to about 7% projected on the basis of the Brazilian energy consumption observed in the year 2020 in the Brazilian Energy Balance (BEN 2021). It is estimated that efficiency gains in electricity consumption would reach around 4% of the estimated total electricity consumption, corresponding to the electricity generated by a hydroelectric plant with an installed capacity of around 7 GW, almost equivalent to the power of the Itaipu Power Plant (Brazilian part).

When considering buildings and utilities, it is pointed out that they represent 62% of electrical efficiency gains, showing their importance in terms of public energy efficiency policies. The industrial sector contributes 31% to electrical efficiency gains. The contribution of energy efficiency in the industrial sector will include a combination of policy mechanisms applicable to Brazilian industry, as well as autonomous actions by industries, linked to aspects such as retrofit of facilities, new industrial units, more modern and energy efficient (greenfield), and actions of energy use management, among others.

The Brazilian partners have expressed strong interest in exchanging experiences on the regulatory and institutional frameworks required to ensure the cost-effective implementation of energy efficiency strategies, policies, and plans. During the first year of the cooperation, the DEA, together with partners, will further analyse existing knowledge, identify needs, and select specific areas to be addressed. The programme will focus on two key sectors:

- Low-carbon development in the industrial sector, and;
- Emission reduction in buildings from an energy efficiency and Life Cycle Analysis (LCA) perspective.

MME will be the key partner for energy efficiency given its role as the line ministry responsible for energy efficiency policy in Brazil. ANEEL, the electricity regulatory agency, will also be a partner in this engagement, due to its role in facilitating the implementation of energy efficiency strategies and targets. EPE will be involved as a key partner that conducts assessments of the state of energy efficiency in Brazil, the effectiveness of specific policy measures, etc. The proposed programme

[21] Some of the most (yet largest) vulnerable groups, are the low-income families that live in favelas in the urban areas. The importance of energy efficiency for the poorest communities are therefore acute as they lack information about rights and support programmes. The BRADEP will address topics relevant for energy efficiency in poor communities at regional and municipal level under the output dealing with emission reduction in buildings from an energy efficiency and Life Cycle Analysis (LCA) perspective.

structure and lead partners involved is visualised in Figure 2.1 below (with shortened titles of outcomes and outputs for overview – please refer to Chapter 4 and Annex 3 for full titles and further details).

Figure 2.1: BRADEP Programme structure

Lead partners	Outcomes	Outputs	Other partners
MME	1. Offshore Wind Energy Development	1.1 Process/cycle of offshore wind (OSW). 1.2 Consenting process and social aspects for OSW 1.3 Legal characterization of OSW.	MMA IBAMA ANEEL State Governments
MME EPE	2. Long-term energy planning	2.1 Institutional frameworks and scenarios for long-term energy planning.	MMA
MME ONS	3. Flexibility and integration of variable renewable energy	3.1 Regulation of frequency response and power system flexibility. 3.2 Improved forecasting and dispatching for RE.	ANEEL EPE
MME ANEEL	4 Energy efficiency	4.1 Low-carbon development in the industrial sector. 4.2 EE in buildings.	EPE

It is expected that the partners participate actively in the development of work plans under each outcome to ensure that activities are aligned with priorities and available resources in the respective institutions. Concrete contributions from the partners to the programme include involvement from the relevant departments, outreach to other stakeholders, support in both the planning and execution of activities/workshops etc., providing access to data, contributions to joint publications and active participation in knowledge sharing.

The SSC programme is currently scheduled to be completed by end July 2026, while BRADEP is scheduled to start by 1 January 2025. DEA plans to accelerate the implementation of the SSC and complete the programme by the end of 2025. This means that the SSC and BRADEP will run in parallel during 2025. It is important to ensure coherence between the different SSC and DEPP cooperation funding and modalities[22], so that the Brazil-Denmark partnership in energy is an ongoing engagement where BRADEP adds resources that deepen and widen the cooperation. To avoid duplication, overlap and double accounting, separate accounting of activities and results under

[22] The SSC was preceded by cooperation with Brazil during 2021-2022 under the Danish Energy Transition Initiative (DETI).

SSC and BRADEP will be management where after BRADEP will be overtake SSC activities from 2026. Annex 9 illustrates the alignment framework between the energy SSC and BRADEP.

3. Theory of change and key assumptions

The Theory of Change (ToC) below is based on a thorough analysis of the key challenges that Brazil is facing in order to secure an affordable and available future electricity system, based on renewable energy. During the programming missions the main decision makers and key partners have been identified, and dialogue held with partners on priorities and demands that match Danish competencies in order to accelerate a green, just and inclusive energy transition in Brazil.

3.1 Theory of Change

The theory of change underpinning the BRADEP partnership is that:

If Brazil and Denmark agree to strengthen, deepen, and widen partnership and cooperation in support of developing pathways to accelerate a just and inclusive energy transition and climate action building upon government-to-government, peer-to-per cooperation developed, and experience gained, in the ongoing Strategic Sector Cooperation (SSC).
And if Brazilian energy authorities and stakeholders are committed to mutual partnership, knowledge exchange, and strengthening capabilities within offshore wind development, long-term energy planning, integration of renewable energy, and energy efficiency.
And if Denmark provides grant funding for cooperation under the Brazil-Denmark Energy Partnership (BRADEP) with the Danish Energy Agency (DEA) as implementing partner, building on expertise and experience gained by DEA through a national energy transition the past 45 years, the ongoing SSC in Brazil within energy, as well as bilateral energy partnership programmes in 24 other countries.
And if Brazilian partners strive for synergy between BRADEP and other initiatives in Brazil in support of its just and inclusive energy transition and climate action.
And if Denmark strives for synergy between BRADEP and Denmark's multilateral energy and climate cooperation with the NDC Partnership, the International Energy Agency, the International Renewable Energy Agency, the World Bank, and others.
Then, DEA and its associated Danish technical partners, including the Danish Transmission System Operator *Energinet*, the Danish Institute of Human Rights[23], consultants and other specialists, will collaborate with its Brazilian partners in a demand-driven and flexible manner supporting a range of joint activities, including peer-to-peer expert exchanges, technical and political delegation visits to exchange experience, expert workshops and seminars, substantive learning events, joint studies, formulation of technical guidelines, and triangular cooperation with third countries to share international best practice, etc. as further defined in annual work plans approved by the Steering Committee.
And then, in partnership DEA and its Brazilian partners will produce outputs in the following areas:

- A systematic and planned approach to offshore wind for a harmonious coexistence of infrastructure development and sustainability, while reducing risk, including Marine Spatial Planning.
- Consenting process and social aspects for offshore wind with a focus on Just and Inclusive Energy Transition.

[23] DEA is currently discussing the framework to collaborate with the Danish Institute of Human Rights for this programme. In fact, there has been preliminary conversations on the support to the programme even during the SSC phase.

- Legal characterization of offshore wind concerning, for example, the concession agreements, decommissioning regime, guarantees and relevant contractual matters.
- Knowledge exchanges on governance and institutional frameworks and scenario development approaches for long-term energy planning to ensure these are designed to effectively support the definition, evaluation, and updating of decarbonisation strategies and policies.
- Regulation of frequency response and power system flexibility, which can promote effective integration of variable renewable energy with reduced curtailment.
- Improved forecasting and dispatching tools and procedures for variable renewable energy generation.
- Low-carbon development in the industrial sector.
- Emission reduction in buildings from an energy efficiency and Life Cycle Analysis perspective.

And if the Brazilian partners sustain their commitment to effective application and use of knowledge and experience in these areas.

Then:

- ✓ Offshore wind energy development will be further enabled through improved regulatory framework conditions considering regulatory and socio-economic aspects.
- ✓ Long term planning processes and methodologies will effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in direct support of Brazil's just and inclusive energy transition.
- ✓ Improved flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, will be achieved through optimised flexibility measures and renewables forecasting, which will contribute to more stable and affordable electricity also for disadvantaged communities in line with Brazil's policy of just and inclusive energy transition.
- ✓ A more transparent and ambitious regulatory and institutional framework will lead to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry, which will also benefit lower-income households and Brazil's sustainable re-industrialization policy.

And then,

A just and inclusive energy transition and climate action will have been supported through a strengthened partnership between Brazil and Denmark for an enabling framework for renewable energy, the effective integration of increased levels variable renewable energy, the development of the offshore wind sector considering socio-economic and environmental aspects, and development of new energy efficiency measures. (i.e. the objective of the partnership).

And then,

A contribution will have been made to sustainable impact in the form of emission reductions and the expansion of variable renewable energy with a high level of security of supply at affordable prices and socio-economic co-benefits.

3.2 Key assumptions and drivers of sustainable impact

Key assumptions

The major assumption is that Brazilian cooperation partners are committed to sustained engagement and willing to allocate staff time, decision-making powers at management levels, knowledge and information and other required inputs in-kind to engage effectively with DEA staff and other

experts. It is also crucial that Brazilian partners find value in the strategic cooperation with Denmark for informed decision making to achieve Brazilian energy transition and climate action goals. As a result of recognising this value, all partners are expected to engage effectively throughout the programme and benefit from peer-to-peer exchanges of good practice as well as paths to avoid. Judging from the strength of the partnership developed in the ongoing SSC, this is a realistic assumption, and the formulation mission found strong evidence to support it – of course with the caveat that some areas of the proposed partnership such as cooperation at the state level and within energy efficiency are new. It is also a key assumption that the Steering Committee will serve as an effective and efficient mechanism for strategic guidance and accountability for progress and results and that therefore the SC meeting frequency should be kept. Another critical assumption is that there is progress in political decisions on Brazilian key enabling legislation for advance the energy transition and climate action.

Key drivers of sustainable impact

Drivers include:

- Continued high-level political commitment and support to meeting energy and climate targets, as currently evidenced in Brazil's ambitious policies on a just and inclusive energy transition and climate action, its role in G20, COP 30, etc.
- A sustained high-level strategic partnership between Brazil and Denmark.
- A structured approach to knowledge sharing, including delegation visits – the formulation mission heard numerous examples of the value of such visits from a "seeing is believing" perspective, including to industrial ports and wind testing facilities.
- Continued attention to the socio-economic aspects of the energy transition in the partnership.
- Effective communication of BRADEP results and lessons targeted at decision makers.
- Triangular cooperation and sustained peer-to-peer exchanges with other countries. The formulation mission found that this is a high priority for Brazil and examples were given of such cooperation, both in South America with countries such as Colombia, but also with countries in other regions such as African countries. In this regard, there may be potential for knowledge exchange between BRADEP and the Kenya-Denmark Energy Partnership (KENDEP) as well as the India-Denmark Energy Partnership (INDEP) that are both part of DEPP 2025.

4. Results framework

The results framework at outcome level is summarised in Table 4.1 below, where the key partners are also indicated under each outcome. The more detailed results framework at output level is found in Annex 3. In Annex 3, typical types of activities and topic area clusters are also indicated under each output.

Table 4.1 BRADEP results framework at outcome level

Programme	**Brazil -Denmark Energy Partnership (BRADEP) Programme**
Programme Objective	A just and inclusive energy transition and climate action supported through a strengthened partnership between Brazil and Denmark for an enabling framework for renewable energy, the effective integration of increased levels variable renewable energy, the development of the offshore wind sector considering socio-economic and environmental aspects, and development of new energy efficiency measures.
Impact Indicator	-Contribution to decarbonisation of the energy sector with an increased share of variable renewable energy with a high level of security of supply and socio-economic co-benefits. -Planned Offshore Wind

Outcome 1		**Offshore wind energy development further enabled through improved regulatory framework conditions considering socio-economic and environmental aspects.** Key partners and other important partners BR: MME, MMA, IBAMA, ANEEL, State Governments of Rio Grande do Norte, Ceará, Rio Grande do Sul, Rio de Janeiro, Universities, think tanks, trade organizations, civil society organizations. DK: Danish Energy Agency, Energinet, Danish Institute of Human Rights, Kammeradvokaten (Legal Advisor to the Danish State), Technical University of Denmark, University of Copenhagen, Danish Maritime Authority and others.	
Outcome indicator		Institutional capabilities enhanced through planning, stakeholder consultations and relevant regulations considering sustainability, human rights and just energy transition.	
Baseline	Year	2025	-No offshore wind projects. -The country's capacity to plan and regulate offshore wind and related activities in initial stages of being developed.
Target	Year	2029	-The country's capacity to plan, regulate and develop offshore wind and related activities with a focus on sustainability, human rights and just energy transition is improved and documented through planning, implementation, publication of new regulations and/or soft law instruments[24] -Offshore wind capabilities and first tenders advanced
Outcome 2		**Long-term planning processes and methodologies effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in support of a just and inclusive energy transition.** Key partners and other important partners BR: MME, EPE, (MMA, universities, think tanks) DK: DEA	
Outcome indicator		Evidence that updated long-term energy planning processes inform governance/institutional processes and the design of key long-term planning products, accounting for all relevant techno-economic and socio-economic developments.	
Baseline	Year	2025	Long-term energy planning is based on strong capabilities, especially with regard to the available input data and the use of advanced energy and power system modelling tools. There are opportunities to strengthen the link between scenario studies and policymaking processes.
Target	Year	2029	Long-term energy planning products and processes are designed to effectively inform policymaking. Offshore wind included in national energy plans
Outcome 3		**Flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, through optimised flexibility measures and renewables forecasting, which contributes to more stable and affordable electricity supply for all consumers.** Key partners and other important partners BR: MME, ONS, ANEEL, EPE DK: DEA, Energinet, (Universities)	

[24] This terminology refers to guides or non-binding but legally relevant instruments.

Outcome indicators		Stable operation of power systems with an increasing share of variable renewable energy, as a result of cost-efficient power system flexibility measures and accurate forecasts of generation from variable renewables, leading to reduced curtailment and need for re-dispatch.	
Baseline	Year	2025	Considerable amounts of variable renewable energy in the national inter-connected grid are being curtailed and limited use of market-based approaches for flexibility measures.
Target	Year	2029	An increased level of variable renewable energy in the national inter-connected grid is effectively integrated, opportunities for market-based approaches are considered and forecasting of variable renewable energy in the grid is informing decision makers in making electricity supply more stable and affordable for all consumers.
Outcome 4		**A transparent and ambitious regulatory and institutional framework leads to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry, which will also benefit lower-income households[25] and Brazil's sustainable re-industrialization policy.** Key partners and other important partners BR: MME, ANEEL, EPE DK: DEA	
Outcome indicator		Key energy efficiency measures in the buildings and industrial sectors are identified and implemented reducing the overall energy intensity.	
Baseline	Year	2024	Energy efficiency regulatory and institutional framework for industrial and building sector could be more transparent and ambitious, as for example reflected in EPE's Energy Efficiency Atlas
Target	Year	2029	Energy efficiency regulatory and institutional framework for industrial and building sectors more transparent and ambitious, as for example reflected in EPE's Energy Efficiency Atlas and other relevant indicators.

5. Inputs, budget, financial management

5.1 Inputs and budget

Inputs

DEA as the Implementing Partner will be responsible for the organization and timely delivery of technical cooperation inputs by DEA staff and external consultants to activities guided by demands and priorities as defined in the annual work plans. Inputs will be delivered based on TOR that ensure the accountability for delivery in alignment with agreed work plans and partner availability and capacity to engage.

Inputs will be staff time inputs from DEA-Global Cooperation (GC) and other DEA units, as well as the Danish transmission system operator Energinet and consultant inputs from DEA Consortium partners under framework contract. Where specific inputs by knowledge partners or

[25] Some of the most (yet largest) vulnerable groups, are the low-income families that live in favelas in the urban areas. The importance of energy efficiency for the poorest communities are therefore acute as they lack information about rights and support programmes. The BRADEP will address topics relevant for energy efficiency in poor communities at regional and municipal level under the output dealing with emission reduction in buildings from an energy efficiency and Life Cycle Analysis (LCA) perspective.

other external national consultants or institutions in Brazil are required, such inputs will be procured through DEA under existing and/or new framework contracts.

Brazilian national partner inputs will be delivered in-kind, aligned to the same annual work plans, which are approved by the Steering Committee. Participation of senior/decision making level staffing at the steering committee level, and middle level management/technical experts at TWG level.

Building on the successful experience from energy partnership programmes in other countries, it is proposed to engage two Sector Experts[26] (long-term advisors, LTAs, tentatively with IBAMA and ANEEL, still to be confirmed. Draft job profiles with qualification requirements are included in the BRADEP Programme Document annex 10). Representatives from the Brazilian hosting partner institutions for the LTAs will participate in the recruitment panel together with representatives from DEA and the Embassy of Denmark.

Budget

The proposed total budget for the 5-year DEPP 2025 programme in Brazil (BRADEP) is DKK 42.2 million of ODA-eligible grant funds sourced from the Danish Finance Act (FL-konto 06.34.01.70).

Up to three Long Term Advisors will be financed outside of the budget, under the Finance Act allocation to Myndighedssekretariatet/SSC. The budget for this input is reflected in Annex 5, and is expected to approximately DKK 12 million.

Table 5.1 below reflects the tentative budget allocation by outcome. This is an allocation budget not an activity-based budget. The budget will be allocated at output and activity levels in work plans to be agreed by the national Steering Committee. However, in Annex 5, a tentative allocation by output is provided to be further detailed during the start-up phase of BRADEP and updated in annual workplans.

As reflected in the planning and in detailed budget plan (annex 5), the first year of implementation will be partly a continuation of the SSC programme and funded from that programme.

5.2 Financial management and reporting

Grant funds will be transferred from the MFA to the DEA upon written request, and DEA will be responsible for all financial management and reporting on BRADEP funding. The financial management and reporting procedures are further defined in the DEPP 2025 Framework Programme Document. Audited financial report and progress report should be submitted no later than 31. March the following financial year.

[26] Funded outside the BRADEP budget from a separate MFA pool for sector experts. This means that the experts will require security clearance and have a close connection to the Embassy of Denmark in Brasilia – perhaps also working at the Embassy on a limited part time basis – also considering office space constraints at the Embassy. The Danida advisor modality for LTAs is not presently possible in Brazil as requisite agreement between the two countries for such modality is not in place.

Table 5.1: Summary budget allocations by outcome

Outcomes	Budget allocations [27]
Outcome 1: Offshore wind energy development further enabled through improved regulatory framework conditions considering socio-economic and environmental aspects.	**17.2**
Outcome 2: Long-term planning processes and methodologies effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in direct support of Brazil's just and inclusive energy transition.	**7.5**
Outcome 3: Flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, through optimised flexibility measures and renewables forecasting, which contributes to more stable and affordable electricity also for disadvantaged communities in line with Brazil's policy of just and inclusive energy transition.	**5.9**
Outcome 4: A transparent and ambitious regulatory and institutional framework leads to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry, which will also benefit lower-income households and Brazil's sustainable re-industrialization policy.	**11.6**
Total, DKK million	**42.2**

As no cash funds will be transferred or disbursed though national partners directly, there will be no requirements for accounting of funds and financial reporting by national partners. To monitor the delivery by DEA of technical cooperation in-country consistent with work plans agreed between DEA and the national partners, DEA time spent with partners is reported in the annual progress reporting to the MFA (KLIMA). Budgets and actual expenditures at outcome and output level broken-down on the cost-categories: DEA staff; Consultants; Other Costs will be presented in the annual financial reporting to the MFA (KLIMA). The progress- and the financial reports will help PAG to assess value for money at its annual meeting.

6. Institutional and management arrangement

The BRADEP Programme's institutional and management set-up will build on the governance and management structure of the ongoing Strategic Sector Cooperation (SSC). The SSC Steering Committee (SC) is the formal mechanism for strategic dialogue and joint decision-making concerning the Energy Partnership between the Danish Energy Agency, the Danish Ambassador and the Ministry of Mines and Energy of the Federative Republic of Brazil. A representative of the Brazilian Embassy in Denmark has also been invited to join SC meetings. Lead institutions for each Outcome may also participate in the SC as decided by the key partners. The SC will have a mandate for the comprehensive Brazilian-Danish Energy Partnership, including both the SSC (until it is completed) and BRADEP.

The SC is the forum for overall strategic dialogue between Denmark and Brazil in relation to the energy sector in Brazil. The SC discusses and decides on the overall priorities of the cooperation in accordance with the Memorandum of Understanding between the Ministry of Climate, Energy and Utilities of the Kingdom of Denmark and the Ministry of Mines and Energy of the Federative Republic of Brazil on renewable energies and energy transition.

The SC will meet annually in-person (or on a virtual platform). A written procedure can be used to agree on updates/changes in between meetings. The SC will approve annual work plans and

[27] 2025-2029 (DKK million, rounded).

progress reports. It will also monitor results, assumptions, and risk factors, and provide guidance on issues related to progress and results of the cooperation and make recommendations on reallocation of resources for decision by DEA and the MFA[28]. By doing so the SC will ensure that evolving programme priorities are addressed based on an adaptive management approach and with engagement of relevant stakeholders enabling purposeful adaptation of the programme as needed. Prior to the SC meetings DEA-GC will share information related to expert resources available for the year to engage in technical exchanges and activities with partners This will ensure transparency and allow for an open discussion with the partners on how to design, prioritise and allocate annual resources aligned to programme objectives.

At the operational level, Technical Working Groups (TWGs) under each BRADEP Outcome will be established with relevant institutions to ensure effective commitment and engagement of the relevant partners in regular coordination and management of the implementation of the agreed annual workplans. Each partner institution will appoint members to the TWG where DEA (and where relevant Long-Term Advisors) also participate. This will involve the Embassy Energy Sector Counsellor. The TWGs will meet at least twice per year and have the responsibility to: i) develop, consolidate and check annual workplans and resource allocations against workplans; ii) monitor programme progress and results at output level, using "traffic light" markers for assessment of progress of activities against agreed workplans, and; iii) ensure cross fertilisation within and between BRADEP components and activity areas; iv) identify strategic interventions that could be supported by unallocated funds and; v) report on institutional uptake and application of knowledge sharing activities and outputs. The TWGs will report to the Steering Committee. Sub-groups may be formed on ad hoc basis to support the TWGs when relevant for specific topics/activity clusters.

Participation from both Brazil and Denmark in Steering Committee Meetings will be at senior/decision making level, and participation in Technical Working Groups will be at middle level management/technical experts level.

DEA's Global Cooperation has appointed a Country Team Leader for Brazil who will be responsible for overseeing the BRADEP programme implementation. Likewise, the MME has appointed project leads for each of the outcomes.

Work planning

BRADEP work planning is an ongoing process where annual workplans will be developed to align to partners' priorities and requests, and availability of DEA specialists and consultants, balanced with available resources. The BRADEP start-up phase (first 6-12 months) of implementation will undertake further assessment of partner needs and priorities, particularly for partner institutions that will be new to the cooperation. After finalisation of the SSC programme by end 2025 new baselines will be developed for outcome 1-3 and indicators revisited. Work planning will be prepared with partners at TWG level, for endorsement at Steering Committee level. The annual work plans will define annual activities, annual output targets and link these directly to the BRADEP Results Framework (see Annex 3). In collaboration with partners, terms of reference (TOR) will be formulated for each activity cluster/major event (of a certain minimum size) and the TOR will specify tasks and targets for the activity as well as required specialist inputs from Brazilian partners, DEA, Energy Sector Counsellor (sector experts/LTAs where relevant), Energinet, DEA consortium partners and consultants.

[28] The DEPP 2025 Framework Programme Document defines criteria for allocation of unallocated funds briefly summarises key features of the adaptive management approach.

Approach to knowledge sharing and capacity strengthening

A particular concern will be to ensure a systematic approach to knowledge sharing and the uptake and application of knowledge and experience. DEA GC is developing an "Integrated Approach to Capacity Development in Global Cooperation", which will apply across DEA's global cooperation programmes. The DEPP 2025 Framework Programme Document contains a brief summary description of this new approach. As agreed with DEA and MFA(KLIMA) – and in line with Danida guidelines – it will be important during the start-up phase (first 6 months of implementation) to validate and expand the assessments of partner needs and priorities and reflect a structured approach to knowledge exchange and capacity development and monitoring as an integral part of work plans, applying the DEA tools as relevant. The DEA GC revised operational manual will include a guide for a structured approach to capacity needs assessment, capacity development planning and monitoring capacity development. In Brazil, capacity development will be rooted in a strong partnership approach. DEA's technical assistance and tools will be tailored to the Brazilian context and capacity development will be decided jointly with partners based on assessment of needs, priorities and resources. The approach will entail exchange of experiences among peers and focus on mutual learning on policies and strategies, as well as knowledge transfer and focus on technical skills. Attention will be given to the gender balance in knowledge sharing activities. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy.

Progress and results monitoring

Monitoring towards targets will be reported through the annual progress reporting to the SC using a "traffic-light" system, where:

- "green" is on-track – implementation progresses as scheduled.
- "yellow" is partly on-track, which requires SC attention and potentially remedial action to get back on-track.
- "red" is off-track, which requires urgent attention by the SC and recommendations on changes to get back on-track and/or recommend reallocation of resources. If "red" in two consecutive reporting periods, the SC could consider extraordinary remedial measures such as setting-up a task force.

Results reporting

Following Danida Guidelines monitoring and reporting will be based on the results framework at output and outcome level and each Brazilian partner institution will, jointly with DEA monitor progress towards achieving these outputs and outcomes via annual progress reporting to the SC. An Annual Progress Report will be prepared for approval by the SC. The Strategic Advisory Group (SAG) in Copenhagen[29] will consider the results reporting across all three DEPP 2025 country programmes. Progress report should be submitted not later than 31. March the following financial year. Monitoring of actual expenditure by DEA including international and national consultancy will be reported to SAG in the consolidated DEA annual progress reports across all three DEPP 2025 countries.

[29] The Strategic Advisory Group (SAG), based in Denmark, acts as the highest decision-making authority on the DEPP 2025 Framework Programme. SAG consists of high-level representation from MFA, MCEU and DEA. DEA acts as secretary to the SAG, which meets every six months to discuss overall programme progress, approve cross-programme budget changes, including approval of the use of unallocated funds and ensures cross-exchanges of experience and good practice.

Communication of results:
DEA will actively engage in targeted communication of progress and results informing stakeholders both in Denmark and in Brazil. DEA will publish "result stories" to communicate the positive value added and effects of the BRADEP Programme to decision makers, the substantive professional community in the two countries and internationally, and the general public, through a variety of means, including social media, new items and reports published on the DEA, Embassy, MFA and partner websites. A draft communication strategy is found in Annex 7.

7. Risk Management

A brief summary of key risk factors and mitigating measures is provided below. A detailed risk management matrix consistent with Danida guidelines is found in Annex 4. The risk analysis also responds to risk factors emerging from the context analysis in Annex 1.

Contextual risks:
Brazil has been through major political changes from the previous government to the current. The weakening of the Brazil's NDCs from the Paris Agreement and down-prioritisation of climate policies during the Bolsonaro-government show how a new change in government can affect the green agenda in Brazil. President Lula has placed a just and inclusive energy transition as one of his main priorities under his presidency and announced that Brazil is back on the international climate stage, stating that Brazil wants to be global frontrunner on the climate agenda. However, at the same time the government puts high priority to Brazil's oil and gas sector. Furthermore, the difficult political climate in Congress and the strong influence from the agricultural, oil/gas, and mining sectors are expected to present challenges to the implementation of needed policy changes for renewable energy and instead risk increasing fossil fuel electricity solutions.
Mitigating measures: The BRADEP Programme supports Brazil's vision for international cooperation and partnerships for the green agenda. The equal partnership approach facilitates knowledge sharing and builds on existing platforms and international initiatives, such as the NDC Partnership, G20, the Global Coalition for Energy Planning, and the hosting of COP30 in Belem. Denmark is furthermore building a Strategic Partnership at the highest level, where the focus on a just and inclusive energy transition and climate action is on the agenda. The Danish energy engagement includes a broad set of stakeholders, including members of Parliament. Peer-to-peer engagements at technical levels can furthermore be robust even in the face of political discourse.

Programmatic risks:
Limited staffing and managerial capacity in national partner institutions.
Mitigating measures: Systematic approach to assessment of partner needs and priorities for knowledge exchange and capability strengthening. Robust peer-to-peer partnerships. Steering Committee meeting at regular intervals serving as effective accountability mechanism.

Institutional risks:
The programme could risk duplicating existing activities and/or fail to build synergies with other initiatives in the highly dynamic Brazilian context.
Mitigating measures: The Embassy is actively engaged in relevant coordination fora, including with bilateral donors active in the energy sector such as Germany, the United Kingdom, Netherlands and the USA. Coherence with Denmark's multilateral cooperation with the EU, World Bank, IEA, IRENA, NDC Partnership, and others also contributes to coordination and synergy. Furthermore, the Brazilian partners are also very aware of the need for coordination between the different cooperations in order to avoid duplication of activities, and the Danish-Brazilian cooperation will revised on a regular basis considering the idea of adaptative management.

8. Exit Strategy

From the start of implementation, DEA's general approach will be ongoing attention to sustainable knowledge transfer as an integral part of all activities. Institutionalising capacity development through enhancing the partner institutions' existing tools and frameworks will be key to a successful exit strategy. The approach will be supported by embedded LTAs in relevant partner institutions.

Criteria for successful exit from specific areas of cooperation include evidence of uptake and use of knowledge and experience that has been exchanged through the partnership. Exit from cooperation or specific component could also be triggered by shift in policy priorities or limited progress against joint targets.

Exit or potential continuation with each partner institution will also depend upon the completion of outputs in agreed work plans and any further needs in these workstreams and/or the emergence of potential new priority workstreams and availability of resources.

Prior to the MFA Mid-term Review, DEA will – in liaison with national partners and the Embassy - prepare a consolidated exit strategy, which will be assessed by the MTR[30].

Overall, the cooperation is seen in a longer-term perspective, based on the overarching strategic partnership between Brazil and Denmark, partner demand within energy transition and climate action, and availability/prioritisation of funding.

[30] A Midterm Review is mandatory and budgeted at Framework Programme level.

Annex 1: Context analysis

A1.1: Poverty and inequality analysis

- The Brazilian government gives high priority to a just and inclusive energy transition which has also been promoted under the G20 chairmanship.
- The national programme to improve power generation to rural areas has resulted in almost universal access to electricity. However, inequality is high in Brazil and energy poverty is widespread amongst low income families. Therefore, while working on expansion of renewable energy (RE), BRADEP will focus on affordability.
- New energy infrastructure projects risk violating the rights of local populations, including indigenous people, such as new hydropower plants in the Amazon. This calls for greater diversification of the electricity matrix and emphasises the need for inclusive consultation processes with affected communities, a topic that will be addressed in BRADEP.

DEA's concept note (Forståelsespapir) on multi-dimensional poverty and Human Rights Based Approach (HRBA) provides examples of how DEA addresses poverty and human rights (See further in **Annex B** of the DEPP 2025 Framework Programme Document).
Poverty in Brazil is a serious concern, and the government has extensive cash transfer programmes. In 2020, 18.7 % of the Brazilian population lived below the international poverty line of RBL 6.85 a day according to the World Bank. Between 2016-2021 there were about 2.75 million more individuals in extreme poverty, and Brazil is one of the most unequal countries in the region with a Gini index of 0.529 (2021) (link).
The electrification programme *Luz para Todos* was launched in 2003 to improve rural electrification through network expansion and distributed generation systems with isolated networks, especially in the Amazon region. After 20 years, the programme has succeeded in delivering electricity for 17 million Brazilians, who previously did not have access. The government continues to invest in the programme to secure all Brazilians equal access to electricity and increase affordability (also priority of Brazil in relation to G20, see the most recent statement here (link)). Today, Brazil has almost universal electricity access (except in particular for isolated communities in the Amazon region) and the focus is to a larger extent on the affordability issue. The most recent SDG 7 progress tracking report data for Brazil published in June 2024 can be found here (link)
In the residential sector, 26% of the energy used comes from coal and firewood and the government has increased the focus on clean cooking policies.
The social dimension is high on the political agenda – both in internal and external policies, and MME has emphasized the importance of affordable, reliable, and sustainable energy access. MME has underscored the critical role of energy access in improving living standards, creating economic opportunities, and promoting social well-being (see more information here (link)). Brazil is in the process of formulating key principles for a just and inclusive energy transition as part of the key deliverables in the Energy Transition Working Group hosting the G20 (when available, further information on this will be included here in the next versions of this Programme Document).
The Brazilian G20 Presidency "issues Note (link) states that "Inequalities can persist in low-carbon energy systems, which may not be any more inclusive than conventional systems. When it comes to planning energy transitions, policy makers have to consider not only aspects related to lowering emissions from the energy sector, but also the economic and social opportunities that this process might create, such as quality of life improvements, job creation, education, and training. A people-centric vision is urgent to matters regarding energy transition, as technical-focused debates in large-scale processes, such as the G20 working groups, have considerable social impacts. As business-as-usual approaches are proven not to be enough, the Brazilian G20 presidency aims to promote broad-based discussions that cover the social dimension of energy transition related to supply, demand, policies and financing. The Brazilian presidency seeks to advance discussions and cooperation on the social dimension of energy transition even further, recalling that Sustainable Development Goal (SDG) 7 aims to "ensure access to affordable, reliable, sustainable, and modern energy for all by 2030". It will also emphasize that a social dimension approach to energy transition has the potential to promote solutions and maximize the results of other SDGs" (including SDG 1 no poverty and a listing of other key SDGs).
The EPE Atlas of Energy Efficiency in Brazil includes electricity and modern energy "gini indices" that measure inequality in access to energy services provided respectively by electricity and modern energy sources. The Atlas also includes information and policy recommendations on clean cooking in Brazil, noting as key policy initiatives i) the Gas Aid as a Federal Government programme whose goal is to reduce the burden on the budget of low-income

households; ii) Bolsa Família Programme, which is an income transfer programme guaranteeing basic income for families in vulnerability.
The International Energy Agency (IEA) in its Latin America Energy Outlook (2023) highlighted the following just transition policies of Brazil: • Amazon Decarbonisation Programme: Reduce diesel power plant generation in the Amazon region by 40% by 2026, USD 1 billion • the above-cited *Luz para todos* programme; • *Novo PAC*: USD 105 billion for the energy transition and energy security.

Vulnerable groups and how they are targeted (Leaving No One Behind):
Some of the most (yet largest) vulnerable groups, are the low-income families that live in favelas in the urban areas. In a study conducted in 15 favelas in the Greater Rio metropolitan area (representing 500,000 people where more than half live below the poverty line), more than 30% live in energy poverty and spend a disproportionate amount of their income on electricity bills. On average, low-income families pay twice as much for electricity than they can afford. In the study, 69% of the households stated that if their electricity bill was cut in half, they would spend the savings on food. The importance of energy efficiency for the poorest communities are therefore acute as they lack information about rights and support programmes such as the Social Electricity Tariff.[31]
The development of the offshore wind sector in Brazil provides new opportunities but it also raises questions on how offshore wind farms can impact the livelihoods of local communities e.g. fishing communities. The construction and operation of wind turbines can disrupt fishing activities, restrict access to traditional fishing areas, and potentially affect fish populations and marine ecosystems. However, several studies from Denmark have shown that the potential impact on fish and ecosystems is only during or right after installation, not during operation. The development of offshore wind projects can create new job opportunities in construction, maintenance, and operation for local communities as well as contributing to energy security. The jobs may require different skills and training programs are needed. However, re-skilling will not be a viable solution for all and compensation mechanisms and the continuation of livelihood practices should be ensured. In order to develop the sector in Brazil, the authorities must develop regulation and policies to manage the social, environmental and economic impacts of offshore wind projects.
Another aspect is the rights of indigenous peoples, who represent 0.8% (in total 1.7 million people) of the population when it comes to demarcation, defence, exclusive use and management of indigenous lands and territories, where some have been targeted by illegal mining and construction of large infrastructure projects, e.g. hydropower plants especially in the Amazon. New development of hydropower is limited due to a greater emphasis on indigenous peoples' territory and rights, why diversifying the electricity matrix becomes even more important.

Any risks that the programme may cause harm to poor and vulnerable groups:
Risk remains in terms of the development of energy projects in Brazil, for both offshore wind, onshore wind, solar and hydropower projects. A holistic and inclusive approach with a high degree of community involvement is necessary. However, renewable energy development is also intended to have a positive effect on vulnerable groups in terms of lower electricity bills and better access.

Key documentation and sources used for the analysis:
- Danida Approach Note on Fighting Poverty and Inequality (link)
- Danida How to Note on Energy Transition and Emission Reductions in Developing Countries (link)
- Brazilian National Energy Balance (BEN) 2024 (link)
- Energy Efficiency in the Favelas 2022 (link)
- SDG 7 progress tracking report data for Brazil (link)
- Brazil G20 Energy Transition Working Group (link)
- World Bank Poverty and Equity Brief for Brazil 2023 (link)
- IEA Latin America Energy Outlook 2023 (link)

Any additional studies/analytic work needed? How and when will it be done?
No additional studies or analytical work required during BRADEP formulation.

[31] The Social Electricity Tariff (TSEE) is a Brazilian government program that provides discounts on electricity bills for low-income families. These discounts and the exemption are possible because the federal government subsidizes the TSEE through the Energy Development Account (CDE), which receives resources from various sources, including charges paid by electricity companies and end consumers. To qualify for the TSEE, families must meet certain criteria: Be registered in the Single Registry for Social Programs of the Federal Government (CadÚnico); Have a monthly per capita family income of up to half the minimum wage; Have a monthly electricity consumption of up to 220 kWh; Indigenous and "quilombolas" families registered in CadÚnico may also be eligible for the TSEE, with differentiated discount rules. The amount of the discount on the electricity bill varies according to the monthly energy consumption: Up to 30 kWh: 65% discount; 31 kWh to 100 kWh: 40% discount; 101 kWh to 220 kWh: 10% discount.

A1.2: Political economy and stakeholder analysis

Political Economy Analysis:

- President Lula has given high priority to getting Brazil back on the international stage. Hosting COP30 in 2025 will further underline Brazil's role as a global climate lead. The Energy Partnership will further strengthen the bilateral relations between Denmark and Brazil and their mutual focus on energy transition and climate.
- Brazil has a very green electricity mix, however in order to meet rising demands and due to limitations in hydropower, further diversification and expansion of renewable energy sources is needed, including untapped potential for offshore wind.
- Even though Brazil has high ambitions for a continued development of renewable energy, the government has not set any targets for the phase-out of oil and gas production.
- BRADEP programme activities will support Brazil's ambitions for a just and inclusive energy transition.

Brazil is a federal presidential constitutional republic. The country consists of 26 States and one Federal District (Brasilia, Distrito Federal). Brazil has over 5,500 municipalities. States and municipalities have autonomous administrations which collect their own taxes and receive a share of the taxes collected by the Federal government. States are headed by a governor and municipalities by a mayor. Both entities have elected legislative bodies.

Socio-economic, political, and institutional factors affecting the dynamics of the green just and inclusive energy transition and climate action:

President Lula was reinstated as President of Brazil in January 2023 and a main priority has been to get Brazil back on the international stage. Expectations to a radical change in the country's climate policy course have therefore been high. All deforestation in the Amazon must end by 2030, and variable renewable energy such as wind and solar must be expanded as part of the energy transition to avoid too high dependency on hydropower. Brazil's potential as a supplier of e.g. green hydrogen must be redeemed as part of a larger re-industrialisation, and a national market for CO_2 credits will be created.

Hosting COP30 in Belém in the Amazon state of Pará in 2025, in parallel with the Danish EU presidency, is a major climate political flagship for the government and is key to Lula's narrative about Brazil as a leading country in climate policy. Prevention of illegal deforestation is one of the main focus areas for Brazil, creating fair development that takes into account both the climate and biodiversity and the people who live in the areas and are financially dependent on an income. Climate justice is another priority and for Brazil is a matter of the developed countries owning up to their historical responsibility for climate change and fulfilling their promises to deliver climate finance to the developing countries. Brazil sees itself as a spearhead for other developing countries and insists that international climate and environmental requirements must be historically fair. Brazil and other developing countries do not see the lack of ambition as the main challenge, but the lack of climate finance from developed countries, especially the target of annual funding of USD 100 billion. In that context, they first and foremost see themselves as recipients – not contributors.

Brazil took over the G20 presidency from India on 1 December 2023. G20 is a major foreign policy priority where the motto for the presidency is "building a just world and a sustainable planet". The priorities are divided into 3 axes: 1) social inclusion and the fight against hunger and poverty, 2) energy transition and sustainable development and 3) global governance reform.

Brazil has one of the greenest energy mixes in the world. In 2023, 49% of the energy came from renewables and when only considering the electricity system, almost 90% came from renewable sources in 2023. The share of hydropower in the Brazilian electricity matrix reached 59% in 2023 and is therefore the most important source of energy for the country. However, in recent years, Brazil has experienced recurrent years of drought – the latest and most severe in 2021 with water levels at the lowest level in 91 years – and where the share of hydropower dropped despite the introduction of several new run-of-river plants. As a result of the drought, Brazil lost hydropower equivalent to the energy consumed by Rio de Janeiro (the second largest city in Brazil with a population of over 6 million in 2020) in five months. Brazil had to import electricity from neighbouring countries and increase power generation at plants burning fossil fuels – raising the energy prices for consumers. Different measures to reduce energy usage in order to alleviate the crisis were directed. The crisis and the increased energy prices were particularly hard on the poorest segments of society where more than 33 million Brazilians live below the poverty line, and some are facing hunger.

There has been significant expansion of variable renewable energy sources, such as solar and wind in the last decade in Brazil. Installed wind power capacity has increased from 1.9 GW in 2012 to 23.8 GW in 2022, and solar has expanded to 24.4 GW in just five years. Politically, the government wants to continue this development to maintain a high level of green electricity production and at the same time decrease the dependency on hydropower. The

development of green hydrogen is also a high Brazilian priority, where state-owned Petrobras is engaging in international partnerships.

Offshore wind energy is one of the ways the country can diversify the electricity mix. With high stable wind resources and shallow seabed, the potential for offshore wind is high. This is also evident from the large interest from private developers who has already filed preliminary applications for more than 80 projects, totalling more than 200 GW – even before the regulatory framework is in place. The offshore wind Bill is currently being discussed in Congress, where the inclusion of other suggested laws concerning thermal power plants delays/hinders the approval process.

Brazil has strengthened the focus on EE, and in the Ten Year Energy Expansion Plan 2031 (PDE 2301) the topic has been given special attention. In the PDE 2031 studies, it is estimated that in 2031, energy efficiency gains can contribute to about 7% projected on the basis of the Brazilian energy consumption observed in the year 2020 in the Brazilian Energy Balance (BEN 2021). It is estimated that efficiency gains in electricity consumption would reach around 4% of the estimated total electricity consumption, corresponding to the electricity generated by a hydroelectric plant with an installed capacity of around 7 GW, equivalent to almost the power of the Itaipu Power Plant (Brazilian part). When considering buildings and utilities, it is pointed out that they represent 62% of electrical efficiency gains, showing their importance in terms of public energy efficiency policies. The industrial sector contributes 31% to electrical efficiency gains. The contribution of energy efficiency in the industrial sector will include a combination of policy mechanisms applicable to Brazilian industry, as well as autonomous actions by industries, linked to aspects such as retrofit of facilities, new industrial units, more modern and energy efficient (greenfield), and actions of energy use management, among others. Even though Brazil has high ambitions for a continued development of renewable energy, the government has not set any targets for the phase-out of fossil fuel production. On the contrary, a new plan that aims to make Brazil the fourth largest oil producer in the world (now the eighth largest) by 2029 and nearly doubling the production of oil has been presented by the Ministry of Mines and Energy (MME). The oil and gas industry contributes with 13% of the Brazilian GDP and is thus an important economic factor for the development of the society. When the largest oil fields were discovered in 2006 in Brazil, Lula spoke about "Brazil's second independence" and saw the revenue as a solution to the socioeconomic development of the country, supporting the social programs for the large population living in poverty.

The continued exploration of oil is also a factor for internal conflict in the government. The MME supports Petrobras' interest in oil exploration in the Amazon, whereas the Ministry of Environment and Climate Change (MMA) provides full support to the environmental agency IBAMA, that has rejected the application from Petrobras for environmental reasons.

In January 2022, the Brazilian government published a decree regarded as the first piece of legislation aimed at regulating offshore wind farms. Since then, the Brazilian Congress is discussing further proposals to regulate offshore wind power generation activities. Even though this regulatory framework is still under discussion, the most important provisions are:

- The developers can secure rights to operate in a "prism" through the format of planned offer for assignment of use. In this case, government offers pre-selected seabed areas, which are granted in the concession regime through a bidding procedure. The auction winner is based on the highest economic return for the exploration of the seabed right, and bidders have to prove they have sufficient technical, operational, economic-financial, and legal capacity to guarantee the implementation, operation and decommissioning of the offshore wind farm project.
- Also, developers have the alternative of the permanent offer for assignment of use. In this case, the granting authority will delimit prisms for exploitation based on selection and requests from interested developers, which will be granted in the form of authorization. The developers have to fulfil the studies and other requirements, including the availability of a point of interconnection point to the National Integrated Power System in Brazil (SIN). Once a developer expresses its interest, the granting authority will initiate a public call for other interested developers, lasting a minimum of 120 days, to eventually submit the requests to the planned offer if there are multiple expressions of interest in a prism or partial overlap of areas.

Throughout its discussion in Congress, the regulatory framework included provisions for measures unrelated to the central theme of the law. Among these measures, highlight goes to the obligation to contract new natural gas thermal power plants, the extension of the obligation to contract coal-fired thermal power plants, and the extension of the deadline for renewable energy generators to start operating with subsidies. The impact to be paid by consumers, estimated at up to BRL 25 billion a year by 2050 according to a study presented to the MME, represents a political obstacle to finalising regulations for the sector. Sources: Offshore wind development and regulation in Brazil | DLA Piper and "Jabutis" contaminam marco das eólicas e geram impacto de R$ 25 bilhões, diz especialista | CNN Brasil

A crucial factor in the expansion of renewable sources in the Brazilian energy matrix has been the use of the Energy Development Account (*Conta de Desenvolvimento Energética* - CDE). The CDE is a sector fund administered by the National Electric Energy Agency (ANEEL) and financed through a charge levied on consumers' electricity bills - in July 2024, charges plus taxes accounted for 44.1 % of the electricity bill, based on ANEEL data. The fund supports public policies in the Brazilian electricity sector, including subsidies for incentivised energy sources, coal and distributed generation.

The structural debate on the Brazilian electricity sector centres on the CDE mechanism, with different stakeholders defending different solutions to a model that is showing signs of collapse. Although the federal government has signalled that it is a priority to reduce subsidies and increase transparency in the management of CDE funds, there are mismatched measures authored by the government itself and Congress to extend subsidies. In this sense, there is a clash with the social agenda in general and sector planning in particular, with a direct impact on the discussion of new alternatives such as offshore wind power.

Source: **A conta chega: quase metade da fatura de luz é composta por impostos e encargos - Agência de Notícias da Indústria (portaldaindustria.com.br)**

The Ministry of Environment and Climate of Brazil (MMA) is currently working on a Climate Plan that aims to define how to achieve the presented ambitions and the sectorial division of contributions. However, the difficult political climate in Congress strong influence from agricultural, oil/gas and mining sector, is expected to challenge the implementation of needed policy changes.

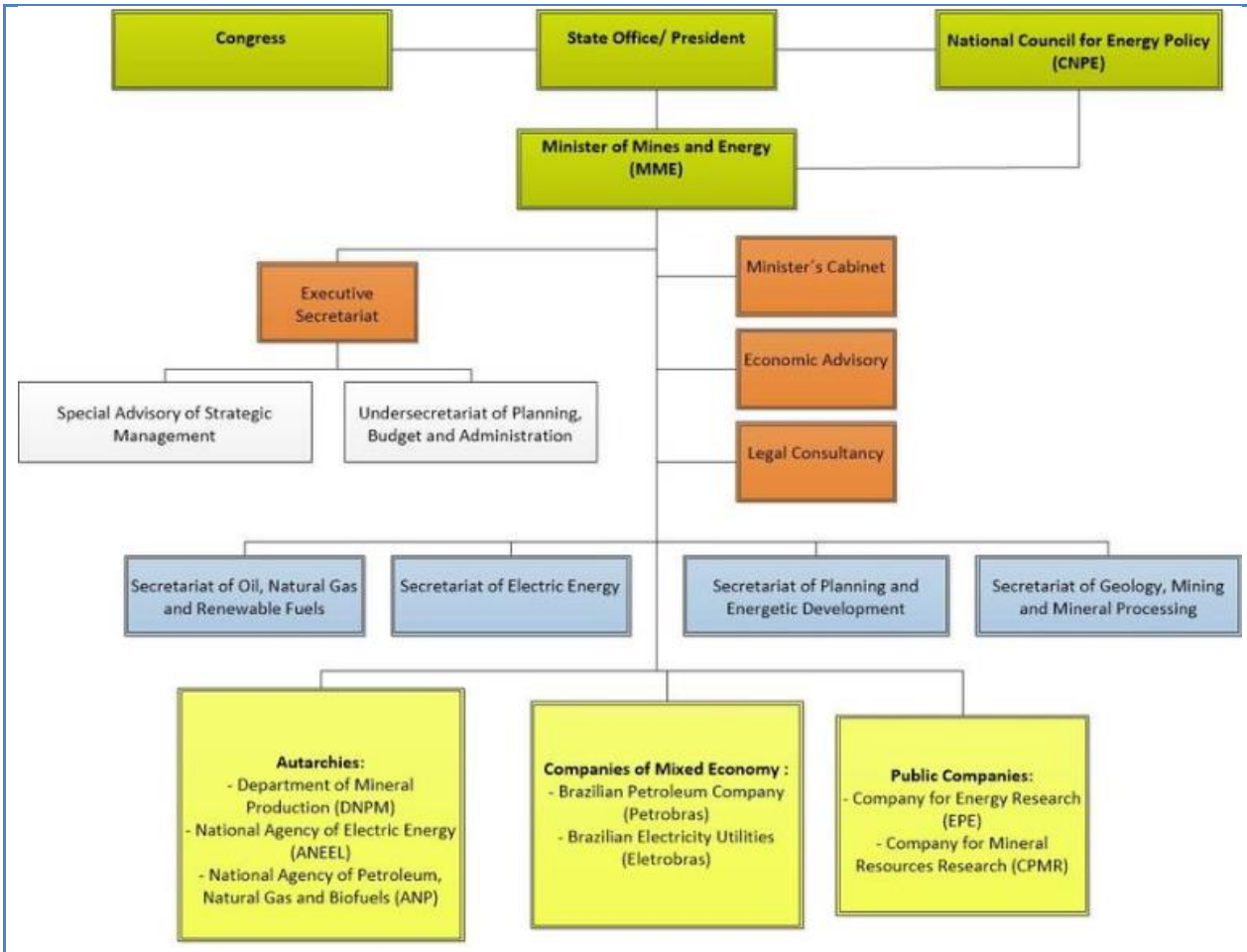
Finally, it can be noted that Brazil is a member of BRICS+ (Brazil, Russia, India, China, South Africa - alliance of major developing countries, with Saudi Arabia, Egypt, Ethiopia, Iran, and the United Arab Emirates joining in early 2024).

Stakeholder Analysis:

Key energy sector stakeholders most relevant to BRADEP:

- MME is responsible for energy policies and therefore natural key partner in BRADEP (as in SSC)
- The institutions responsible for energy research and planning, regulation, tenders, transmission operation, environmental permits as well as state governments engaged in offshore wind projects are EPE, ANEEL, ONS, MMA, IBAMA, governments of Ceará, Rio Grande do Norte, Rio Grande do Sul and Rio de Janeiro are also important partners to the programme.
- Partnerships with think tanks, universities will also contribute to the cooperation.

Organigram of the MME:



The Ministry of Mines and Energy (MME) is the line ministry responsible for energy policies and is therefore a natural key partner in BRADEP (like in the SSC), and the affiliated institutions, EPE, ANEEL and ONS will be important technical partners.

MME: Responsible for formulating and implementing policies related to the country's mineral resources and the energy sector, with a focus on energy security, sustainable development, energy transition, infrastructure development, regulatory framework and international cooperation.

EPE: The energy research office is responsible for conducting research, studies and analysis to support the formulation of energy policies. The primary focus is on energy planning and is developing both the ten-year and thirty-year development plan, the PDE and PNE.

ANEEL: The regulatory agency for the electricity sector. Functions include licensing and authorisation, regulation and tariff setting, market oversight and consumer protection.

ONS: As the transmission system operator, it operates as a non-profit association under the supervision of ANEEL.

MMA: The Ministry of Environment and Climate Change is responsible for formulating and implementing environmental policies, promoting sustainable development, and conserving natural resources. Responsible for the Climate Plan, NDC and development of Marine Spatial Planning (MSP). MMA will be included in the relevant BRADEP engagements when activities are within its area of responsibility.

IBAMA: (Brazilian Institute of the Environment and Renewable Natural Resources) is the government agency responsible for environmental protection and conservation including environmental licensing and monitoring of projects.

State Governments: Consultations have been held with the State Governments of Rio Grande do Norte, Ceará, Rio Grande do Sul, Rio de Janeiro on collaboration concerning offshore wind (OSW) development. The BRADEP formulation mission met with the State Government of Rio Grande do Norte in Natal and confirmed the State's interest in partnership on OSW.

Strategies, approaches for engaging stakeholders and ensuring coordination:

MME is the main partner of both the SSC and BRADEP and has expressed willingness to closely follow all activities, however it lacks the resources and time to coordinate with all stakeholders. The Danish Energy Agency will therefore ensure the coordination and synergies between the different tracks and where relevant include civil

society and private sector entities. An overall Steering Committee has been established and technical working groups for each track will ensure day-to-day implementation and progress.
A transparent approach where all stakeholders are informed has been agreed with the Brazilian partners.

Who stand to gain/to lose from the programme:
Federal and state agencies will be better positioned to fulfil their mandates and drive a just and inclusive green energy transition. Electricity consumers, including households and enterprises, stand to gain, including vulnerable population groups who will benefit from increased access to more reliable electricity supply. Local communities affected by new energy installations, will gain from the mitigation of negative effects as part of improved regulation, such as strengthened stakeholder consultations.
Developers and companies engaged in green energy solutions in Brazil stand to gain from improved regulatory framework conditions.

Key documentation and sources used for the analysis:

- Brazilian National Energy Balance (BEN) 2024 (link)
- PDE 2031 - 10 year energy development plan (link)
- PNE 2050- 30 year energy development plan (link)
- www.G20.org
- Official government websites
- Offshore Wind Energy Roadmap, 2022, EPE (link)

Any additional studies/analytic work needed? How and when will it be done?
No further studies are required as part of programme formulation, but during the BRADEP start-up phase further assessments will be required - particularly for new partners to the collaboration – to target knowledge exchange activities to partner needs and priorities.

A1.3: Fragility, conflict, resilience, migration

Issues and concerns of relevance to Danish interest concerning fragility, conflict, humanitarian situations, security, and migration:
Brazil is not classified as a fragile or conflict state, however the high inequality affects the general safety and security in the country. In 2022, the degree of wealth inequality based on the Gini coefficient reached 52.9% in Brazil that was deemed the most unequal country in Latin America. A just and inclusive energy transition supporting the economic development, is therefore a key priority for also securing a stable safety and security situation in the country.

Key documentation and sources used for the analysis:
World Bank Gini Index (link)

Are additional studies/analytic work needed? How and when will it be done?
No additional studies is required during Programme formulation.

A1.4: Human Rights, Gender, Youth and applying a Human Rights Based Approach

Human Rights Based Approach (HRBA)/Human Rights Principles of participation, accountability, non-discrimination, and transparency (PANT):

- The Lula government emphasises protection of human rights and has created Ministry for Indigenous Peoples, Ministry for Women, Ministry for Racial Equality
- Despite a strong Brazilian tradition for stakeholder consultation, marginalised groups lack access to information on their rights and how to get involved in decisions regarding energy infrastructure projects.
- BRADEP will include HRBA and PANT in the cross-cutting engagements for a just and inclusive energy transition including activities related to securing stakeholder participation in energy and climate planning, and consultation with affected communities in relation to offshore wind development.
- In BRADEP promotion of gender equality and youth will be part of socio-economic aspects, including in relation to job creation.

The new Brazilian government has represented a positive development for the protection and promotion of human rights, re-introducing a number of social and human rights programmes and re-established the council for social participation.

The government has for the first time in Brazilian history created a Ministry for Indigenous Peoples, to advance and protect the rights of the indigenous peoples of Brazil. However, despite the good signal, the ministry has been limited in power as responsibilities of agencies have been divided to other ministries. A Ministry for Women and a Ministry for Racial Equality were also created. These ministries are still in an initial stage, with limited competences and lacking sufficient financial and human resources.
Brazil holds a strong tradition for a high degree of stakeholder consultation and involvement of public opinions in development of strategies and legal frameworks.
Despite the great intentions for stakeholder involvement, marginalised groups lack access to information on how to get involved and acquire the necessary support. As an example, in an energy efficiency study conducted in 15 favelas in Rio de Janeiro, almost 70% responded that they were unaware of the Social Electricity Tariff - a public policy aimed at favouring the low-income population and providing better access for this segment to the benefits of electricity.
In BRADEP, DEA will place emphasis on the PANT principles in line with the DA concept note "Forståelsespapir" on HRBA and the multidimensional poverty focus.

Gender equality:
Gender inequality persists, compounded by cases of violence, also political, against women. A new law on 'equal pay for equal work' was passed in 2023 and steps are being taken to enforce this legislation, even if women represent only 18% of members of the Chamber of Deputies and 16% in the Senate.
In the MME, women have a strong representation in high-responsibility positions, thus representing 40% at director level.
Ensuring a gender lens on BRADEP activities will be important, including striving for gender equality in programme knowledge exchange activities, etc.

Youth and jobs:
Public policies aimed at young people are scarce and often end up being limited to components of the government's broader social agenda. The "pé-de-meia" programme is an example of a youth policy which is in its initial phase in the second quarter of 2024 and has the "neither in employment nor in education or training (NEET)" generation as its scope, providing a financial-educational incentive aimed at promoting the permanence and school completion of students enrolled in public secondary education. Currently, around 22% of the population aged between 15 and 29 neither study nor work, a situation that affects both genders, but is worse for women and, from a social point of view, for the poorest contingent of the population.
The social welfare programme Bolsa Família, recognized as one of the most effective in the world, is a conditional cash transfer programme in Brazil that aims to alleviate poverty and improve the well-being of low-income families, with a particular focus on children. The programme provides monthly payments directly to mothers or guardians, and the amount received varies depending on the family composition and age of the children. Some key conditions for receiving Bolsa Familia are: children aged 6 to 17 attending school regularly and having have regular health check-ups with complete their vaccination schedule.

Key documentation and sources used for the analysis:

- World Bank Poverty & Equity Brief, Brazil, April 2023 (link)
- Agência IBGE: Um em cada cinco brasileiros com 15 a 29 anos não estudava e nem estava ocupado em 2022 (link)
- Center for public impact: Bolsa Família in Brazil (link)

Are additional studies/analytic work needed? How and when will it be done?
It is envisioned that the Danish Institute of Human Rights (or similar association/expertise) will be involved in the development of a report focusing on the rights of communities in the development of energy projects in Brazil. This study can address the above-cited cross-cutting concerns serving as a basis for further engagements.

A1.5: Inclusive sustainable growth, climate change and environment

- Brazil has in recent years been hit by a number of natural disasters such as flooding, drought and wildfires affecting the most vulnerable people the most.
- The widespread flooding in Rio Grande do Sul earlier this year is the worst in Brazil's history and has displaced more than 500,000 people. The flooding has put climate change and adaptation on the political agenda.
- In BRADEP adaptation measures will be discussed in relation to regulation for offshore infrastructure projects.

In April 2024, heavy rain caused widespread flooding in the southern state Rio Grande do Sul. 176 lives were lost and more than 500,000 people were displaced from their homes. A total of 2.3 million people have been affected by the devastating floods. Clean water, sanitation and energy are now key challenges and many people have lost their home and income. The flooding is the worst in Brazilian history and has put climate change and adaptation high on the political agenda.
The area of Pantanal (the largest swamp area in Brazil) is currently experiencing a serious drought causing large bushfires to occur. Meanwhile, the Amazon forests have 47% more fires in the first half of 2024 compared to the same period last year. This tendency is said to be both due to the El Niña (warm aftermath of the El Niño) but also as an effect from climate change.
The two latest incidences show the vulnerability of the country for climate change and have brought greater attention to impact it will have, if no action is taken.

The country's NDC targets and how the proposed support aligns:
After a number of revisions of the NDC under the previous administration, the new government updated the NDC in September 2023, so it again aligns with the original NDC from 2016:

- 48% GHG emissions in 2025 (compared to 2005 level)
- 53% GHG emissions reduction in 2030
- Climate neutral in 2050
- Ending illegal deforestation by 2030.

Brazil has not yet developed specific plans on how to achieve the presented ambitions and how to define the sectorial division of contributions to the NDC. The MMA is developing a Climate Plan that aims to include this, however the political struggle to agree in Congress is expected to be challenging with a strong agricultural and mining sector.
In the energy sector, the MME presented in 2023 the first report with three Net Zero Scenarios by 2050 – all with a continued use of fossil fuels. The next PNE (National 30-year plan) will be published in 2025 and is expected to consider the ambitions in the NDC for the first time.
BRADEP will contribute to transformational change aligned with the Brazilian NDC and related policies and strategies.

Policies and strategies at national/regional/local level to ensure that development is inclusive and sustainable, avoids harmful environmental and social impacts and responds to climate change:
At COP28, the government presented the Ecological Transformation Plan (as a response to the American IRA and the European Green Deal) and is expected to be the signature policy for the Lula administration for inclusive and sustainable development to tackle climate change. The plan has three main goals:
1) Higher productivity and green jobs: incorporate technological innovations in industrial processes and in natural resources management, to generate well paid jobs; 2) New relationship with the environment: reduce the environmental footprint of economic development, notably greenhouse gas emissions; 3) Shared and fair earnings: promote equitable development with better income distribution and widespread benefits. Included in the plan are policies such as the development of a carbon credit market, the offshore wind bill and green hydrogen.
President Lula also adopted an ambitious programme to re-industrialise the country, the Novo Programa de Aceleração do Crescimento (PAC). It aims at significant improvements in infrastructure, including transport, energy transmission and sanitation. Government's main challenge is to attract and guarantee necessary financing.
As a contribution to the ecological plan, the Brazilian government launched in January 2024, the new industrial plan "Nova Indústria Brasil". The plan defines strategic areas for investment according to potential impacts to the country's social and economic development, mobilizing BRL 60 million from private and public funds. One of the six objectives for the industrial ten-year plan is "Bioeconomy, decarbonisation and energy transitions and security", aiming for the industrial sector to cut carbon emissions by 30%, increase the share of biofuels by 50% and increase the focus on biodiversity. The plan sets ambitious objectives, but its concrete implementation still needs to be defined.

Political will and institutional and human capacity to implement these policies and strategies:
There is a high degree of political will to implement the above-mentioned strategies with a broad ministerial consensus and involvement. See section A1.6 for an assessment of the human capacity in the public sector.

Support to inclusive green growth and transformation to low-carbon and climate resilient economies:
With the presentation of the Ecological Transformation Plan it is evident that Brazilian government wishes to establish Brazil as one of the most ambitious developing countries with a plan to decarbonise the economy. Also, the plan is not only seen as a tool for Brazil but aims to be a proposal from the whole global South for a new globalisation that is "environmentally sustainable and socially inclusive, with an overhaul of global financial flows and the affirmation of the South as the centre of green economy".

Positive impacts and potential risks or negative impacts related to natural and human environments and climate change from the proposed programme and how these may be mitigated:
A key issue in the development of onshore wind energy projects in Brazil, is the impact on local communities. There are no regulations or rules that decide the compensations schemes or considerations for the affected population, thus the projects often come with at a high negative price for the communities. The fear is therefore that the offshore wind projects, which will be larger in scale, could have a similar negative impact on e.g. the fishing and tourism industry. BRADEP will therefore focus on consenting processes, community involvement and compensation mechanisms to increase policy considerations in the new regulations.

Environmental and social impact assessment requirements and issues:
Since the programme will not include any physical infrastructure investments, no concrete environmental impact assessments are required. However, engagements will include considerations of the general environmental and socio-economic impact of energy projects, in particular offshore wind energy. It will further facilitate knowledge sharing around possible mechanisms, planning strategies and processes which de-risk energy projects, allow for minimizing any impact on ecosystems and that outline any opportunities for nature restoration as part of an energy project.

Key documentation and sources used for the analysis:

- Ecological Transformation Plan (link)
- Nova Indústria Brasil (2024) (link)
- Climate Action Tracker (link)
- Guardian: Brazil Floods (May 2024) (link)

Are additional studies/analytic work needed? How and when will it be done?
No other studies will be required as part of Programme formulation.

A1.6: Capacity of public sector, corruption

Capacity of the public sector[32] for policy making, implementation of policies, enforcement of regulations and effective service delivery (general assessment):

- Brazil has a highly developed professional public sector with strong institutions, but insufficient staff resources.
- Lack of effective coordination between different government institutions and levels, including central, state and local levels.
- Public opinions lack trust in government institutions and suspect corruption.

Brazil has a highly developed professional public sector with strong institutions and well-established mechanisms and processes for policy implementation across various levels of government, although many institutions have insufficient staff resources. Sometimes lack of effective coordination among central, state, and local governments can hinder policy implementation. Brazil is a country with a presidential tradition, with short political cycles and frequent changes in power creating a challenging environment for the continuity of public policies. This institutional fragility generates a widespread perception of waste of resources, inefficiency, and disbelief in institutions – boosted by a perception of corruption.
The Brazilian State is responsible for providing a wide range of services to the population, a role made possible by the application of one of the highest tax burdens in the world. According to data released by the Brazilian Institute of Planning and Taxation in June 2024, the average tax burden is 40.71% of workers' income, who needs to work 149 days a year to pay their taxes. This creates a scenario of dissatisfaction among the population, who express the perception that the taxes paid do not translate into quality public services.
See also Annex 2 for an assessment of the partners' capacities.

Anti-corruption measures:
BRADEP does not engage in transfer of funds to the Brazilian partners and thus there is no risk of corruption utilising the programme funds.
Brazil lost 2 points on the Corruption Perception Index (CPI) for 2023 and fell 10 positions in the global ranking released in January 2024, ranking 104th out of the 180 listed. The country reached the second-worst position in history, in a process that registers a loss of seven points in the evaluation of the fight against corruption since 2012.

Key documentation and sources used for the analysis:

[32] Since BRADEP will not channel ODA grant funds through national partner institutions, public financial management issues and financial management capacity assessment are not relevant here.

- The 2023 Corruption Perceptions Index (CPI) (link)
- Poder360: Brasileiro trabalha em média 150 dias para pagar impostos (link)

Are additional studies/analytic work needed? How and when will it be done?
No additional studies are required as part of Programme formulation.

A1.7: Matching with Danish strengths and interests, engaging Danish actors and seeking synergies

Areas where we have the most at stake – interests and values:
Danish priorities, policies, and strategies are articulated in Denmark's Strategy for Development Cooperation "The World We Share", which among other things states that *"Danish authorities have decades of experience in creating the framework for successful green transition, and Danish companies, knowledge institutions and other stakeholders are at the very front in developing and implementing green solutions within renewable energy, district heating, energy efficiency…" "Denmark should be the little green cogwheel that sets the larger ones in motion. This happens when we inspire major CO2 emitters to take ambitious climate action, through international cooperation on renewable energy and energy efficiency, or through government-to-government strategic sector cooperation with other countries"; "Denmark must assume international leadership within reductions, green transition, and access to clean energy"; "Denmark will promote ambitious national climate action plans that enable developing countries and growth economies to transition from fossil fuels to clean energy sources…". "Denmark will strengthen the Danish SDG7 leadership and energy cooperation on green transition in developing countries, including promoting renewable energy and energy efficiency. This applies particularly to growth economies with high emission levels. The international cooperation on energy under the strategic sector cooperation will lie at the heart of the efforts to promote green transition and underpin Danish climate diplomacy. T*hese priorities are further elaborated e.g. in the Danida How-to-Note on Energy Transition and Emission Reductions in Developing Countries. As can be seen in the foregoing sections of this context analysis, BRADEP is clearly in line with these priorities.

The Danish Government's Foreign and Security Policy Strategy (May 2023), states that the climate crisis constitutes the 21st century's greatest challenge, requiring global cooperation and action and emphasizing that Denmark must continue to be at the forefront of the global climate action through its climate diplomacy efforts, continuing to assume a leading role in pushing for increased ambitions with regard to emission reduction efforts and other climate action. BRADEP's contribution to Brazil's climate goals in therefore in line with this Danish priority, and further reinforced by Denmark's active climate diplomacy with Brazil, including in the process leading up to Brazil hosting COP 30 in 2025.

Where we can have influence through strategic use of positions of strengths, expertise and experience:
Brazil is a key player in the global fight against climate change the coming years. Not only having the presidency of the G20 in 2023, where Denmark has shown as a trusted partner and has been invited to three working groups and one task force. But also, hosting the COP30 in 2025 – at the same time as Denmark will have the EU presidency – the partnership with Brazil will be of strategic importance. The Danish long-term experience with the energy transition gives Denmark a unique position as a global frontrunner within renewable energy, that can strengthen the relations with Brazil. This includes long-term energy planning, where Denmark has a long tradition. Furthermore, Denmark approved a Climate Act in 2020 with ambitious emission reduction targets, reporting and accountability mechanisms. Also, the Danish initiation and support to the LTES-initiative at the Clean Energy Ministerial (CEM) is well-known and recognized in Brazil. Brazil and Denmark's co-chairmanship of the NDC Partnership in 2025 is also important to mention, as is the joint interest in a Global Coalition for Energy Planning (in G20).
Offshore wind energy, where Denmark that was the first country to construct an OSW farm in 1991, is seen as a strength in the development of the OSW sector in Brazil. Denmark is a reference case in many examples, both when discussing the regulatory framework, technical requirements and environmental considerations, but also looking at the whole lifecycle and including decommissioning. The Brazilian membership of GOWA which has been spearheaded by Denmark, shows the ambitions to develop the sector.
The high levels of variable renewable energy in the Danish electricity matrix while maintaining security of supply is of great interest for the Brazilian partners. How to integrate these large shares of renewables is a key competence and experiences on forecasting and the use of ancillary services is requested by Brazilian partners.
Energy efficiency is a vital element often referred to as "the first fuel" in the green transition of the energy sector and is a key element in the Danish energy model. Energy efficiency performances in households, manufacturing and energy production has supported the transition and improved the cost competitiveness in the manufacturing industry. In Denmark which is of great interest to Brazil.

Danish comparative strengths:

The State of Green showcases expertise and experience in the Danish resource base, connecting to more than 500 solution providers in the green transition, including private companies, utilities, research institutions, financial institutions, and public sector stakeholders.
The Danish Energy Agency's Global Cooperation highlights Denmark's expertise and experience in the green energy transition and how this is reflected in the current 25 bilateral country partnerships.

Concrete opportunities for synergies through Danish foreign policy engagement, commercial engagement, trade relations and investment, Danish local and central authorities, civil society organizations, IFU and academia:

In 2021 Denmark and Brazil signed an MoU on Energy, focusing on energy transition and offshore wind, which created the basis for the current Energy Cooperation (SSC) between the two countries.

Denmark and Brazil are working on a Strategic Partnership with an aim to have it signed by the Heads of State in 2025 inter alia to enhance collaboration in areas of strategic bilateral importance. The BRADEP will be an integrated part of this framework, building on common values and the commitment of both countries to a just and inclusive energy transition.
BRADEP will also create synergies to the activities in a new city SSC between City of Copenhagen and City of São Paulo, where energy efficiency in public buildings will be one of the main tracks – well in line with the Energy Efficiency outcome of BRADEP. Coordination from policies at a federal level to municipal level is important for a successful implementation.
The Danish Investment Fund for Development Countries (IFU) has invested in several projects in Brazil. IFU manages Denmark's Green Investment Fund which has provided a USD 21 million loan to the developer European Energy for the construction of three new wind farms in the Northern part of Brazil – totalling 94 MW.
Denmark has supported the Amazon Fund with DKK 150 million, where the main effort of the fund is to prevent, monitor and combat deforestation and promote the preservation and sustainable use of Amazon. The Brazilian partners have earlier requested support for how to transition the isolated systems in the Amazon in an environmentally and protective way for the forest.

Assessment of the development partner landscape and coordination, including opportunities for synergy with Denmark's multilateral energy/climate cooperation:

There are many bilateral and multilateral development partners supporting the green energy transition in Brazil. While there is a general lack of coordination, efforts have been made under the SSC and will continue under BRADEP to . maximise coordination and synergy with other initiatives/minimise any risk of duplication or insufficient synergies with other initiatives – not least with the multilateral agencies that are also supported by Denmark through multilateral cooperation. It is very important to underline that Brazil does not consider itself as donor-recipient country, including when it comes to capacity development. The narrative is a two-way partnership for knowledge sharing and mutual knowledge development and application of expertise and experience. The following list summarises partnerships in areas relevant to BRADEP:

Partner	**Areas of cooperation**
GIZ / Germany	• Energy Systems of the Future: promoting the insertion of renewable energies and energy efficiency: - Planning (EPE) - Regulation (ANEEL) - Distribution (MME) - Pilot projects (MME) • Sector coupling (EE in food and beverage sector) • Energy transition • Political high-level partnership • E2Brasil Project • H2Brasil Project • Investment programme: Transforming EE in industries (PotecializEE)
EU / EIB	In 2007 the EU-Brazil strategic partnership was established, and 33 bilateral sectoral dialogues was initiated. However, the interest for more political and economic partnership, the bilateral relation entered a phase of suspension, and the cooperation stalled until 2023, where the 8th Brazil-EU Summit took place and both parties reaffirmed their commitments. Brazil-EU economic and commercial relations are of great relevance for both sides. In 2023, the EU is Brazil's second largest trading partner and Brazil is the single most important exporter of agriculture and food products to the EU. The EU is the leading foreign investor in Brazil with about 50% of total stock of FDIs. Global Gateway energy projects in Brazil: • Green low carbon technologies for SMEs and companies • Team Europe Initiative financing projects on renewable energy and energy efficiency and the promotion of green hydrogen. • Construction and operation of port infrastructure • EIB and BNEDS (Brazilian development bank) are building on the existing loan agreement to step up support for projects in the renewable energy sector and climate change mitigation.
Netherlands	• Green Ports Partnership: public and private parties to promote collaboration, development and energy projects. • Offshore wind • Green hydrogen • Biofuels and Biogas • Circular economy
UK	• Brazil UK hydrogen hub • SIESUR: System integration • Energy in the Amazon • Commercial cooperation on offshore wind
USA	• US-Brazil Energy Forum (USBEF) with the Department of Energy: - Hydrogen - Offshore Wind - Decarbonising the Amazon

	• Technical assistance for diversifying the supply chain for solar energy • Organising the Clean Energy Industry hub with a focus on hydrogen
Japan	• Support regulation on AC • LED lighting for commercial and residential use
WEF	Development of actions for the Energy Transition Programme (link)
IEA	Brazil has been an associate member since 2017. The IEA and Brazil have expanded their collaboration on energy and climate issues since IEA Director Fatih Birol paid a visit to Brazil in 2023 and deepened bilateral cooperation in particular on fair energy transition, financing, and bioenergy. Brazil is a partner country in the IEA Clean Energy Transitions Programme (CETP) that is supported by Denmark. IEA experts worked with the Ministry of Mines and Energy to revise its National Energy Efficiency Plan, with an emphasis on strengthening governance. In 2023, Brazil engaged in preparing the IEA Latin America Energy Outlook (link).
IRENA	Brazil has submitted an application for membership in IRENA in 2018 but is still marked as "State in Accession". The IRENA energy profile for Brazil can be found here (link)
WB	Development of activities for ToR with ESMAP on offshore wind potential (link)
Green Climate Fund (GCF)	Since 2019, the Green Climate Fund (GCF) has supported Brazil with USD 412 million. divided into 10 projects (2 focused on Brazil and 8 regional, where Brazil is included as one of several partner countries). Several of the projects focus on deforestation in the Amazon. Denmark has supported the GCF with DKK 1.2 billion DKK since the fund's operationalization in 2014-15. GCF in Brazil (link)

Other multilateral engagements:

GOWA	Brazil joined GOWA during COP28 in 2023 (link).
G20	Brazil holds the presidency for the G20 in 2024 and has invited Denmark to participate in three working groups (Energy Transition, Digitalisation, Environment and Climate) and the task force for Global Mobilisation against Climate Change. It is explored how Denmark can support the suggested Global Coalition for Energy Planning under the ETWG.
COP30	Brazil will host the COP30 at the same time Denmark will have the EU presidency which provides the basis for a strong cooperation for a successful COP (link).
NDC Partnership	Brazil has accepted to co-chair the NDC Partnership from 2025, together with Denmark. The partnership will play an important role towards COP30 and the countries' obligations to update NDCs in 2025 (link)
CEM and MI	Brazil will host the next Clean Energy Ministerial (CEM 15) and Mission Innovation (MI) summit in October 2024 (together with the G20 Energy Transition Ministerial). Brazil sees a great strength in CEM and is in particular interested in the LTEPS-track which Denmark initiated and is co-funding with Germany. (link)

Key documentation and sources used for the analysis:

- Danida How to Note on Energy Transition and Emission Reductions in Developing Countries (link)
- The Global Gate Way Initiative within the context of Brazil-EU relations (2024)

Are additional studies/analytic work needed? How and when will it be done?

Continuous coordination and analysis of the development partner landscape (both bilateral and multilateral) will be done as part of BRADEP in order to find synergies and avoid duplication with other activities and initiatives.

Annex 2: Partner assessment

A2.1: Summary of key partner features

Name of key Partner	**Core business**	**Importance**	**Influence**	**Contribution**	**Capacity**	**Exit strategy**
	What is the main business, interest and goal of the partner?	*How important is the programme for the partner's activity-level (Low, medium high)?*	*How much influence does the partner have over the programme (low, medium, high)?*	*What will be the partner's main contribution?*	*What are the main issues emerging from the assessment of the partner's capacity?*	*What is the strategy for exiting the partnership?*
Ministry of Mines and Energy (MME)	Responsible for formulating and implementing policies related to the country's mineral resources and energy sectors. Overseeing ANEEL, EPE, ONS.	High	High	MME will be the main partner in BRADEP (as it is under SSC) with the primary institutional anchoring. MME as co-chair of the Steering Committee sets the direction for the partnership with decision making power and prioritisation. Facilitates the involvement of affiliated government entities.	Strong ministry with professional personnel. Lack staff resources and capacities compared with the large areas of responsibilities – also considering the many international activities and engagements. The ministry takes up new tasks, as it steps up effort on energy efficiency and initiates the development of the offshore wind sector.	From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy to be assessed by the MTR. Criteria for successful exit from specific areas of cooperation include evidence of uptake and use of knowledge and experience that has been exchanged through the partnership. Exit or potential continuation with each partner institution will also depend upon the completion of outputs in agreed work plans and any further needs in these workstreams and/or the emergence of potential new priority workstreams and availability of resources.
National Electric Energy	ANEEL is responsible for regulating and overseeing the country's	High	Medium	ANEEL will be engaged in especially the offshore wind and energy efficiency	Generally strong competences and sufficient resources. Lack capabilities	As above

Agency (ANEEL)	electric power sector. Licensing and authorisation, regulation and tariff setting, market oversight and consumer protection, energy efficiency programmes and measure.			activities and provide staff time (in-kind), data, background information reports.	on regulation of offshore wind and for coordinating a one-stop-shop. Also, regulatory capacity on Energy Efficiency could be strengthened.	
Energy Research Office (EPE)	EPE is responsible for conducting research, studies and analysis to support the formulation of energy policies. The primary focus is on energy planning and is developing both the ten-year and thirty-year development plan, the PDE and PNE.	Medium	High	EPE will engage in especially the offshore wind and energy planning engagements and provide staff time (in-kind), data, background information reports.	Very strong competences but lack human resources. Has in 2024 been allocated 90 new positions which is starting to get hired. Strong link to the MME.	As above
National Electricity System Operator (ONS)	ONS is the transmission system operator, responsible for the operation and coordination of Brazil's electric power system.	Low	Medium	ONS will engage in particular the integration engagement and provide staff time (in-kind) data, background information reports.	Strong competences and have in recent years increased the level of competences. However, have been working to develop capabilities to integrate increasing levels of variable renewable energy.	As above
Ministry of Environment and Climate Change (MMA)	MMA is responsible for formulating and implementing environmental policies, promoting sustainable development, and conserving natural resources in the country.	High	Medium	MMA will engage in especially the environmental issues and marine special planning concerning offshore wind Provide staff time (in-kind), data, background information reports.	Strong ministry with professional personnel. Lack resources and capacities in staff compared with the large areas of responsibilities – also considering the many international activities and engagements.	As above
Brazilian Institute of Environment and Renewable Natural	IBAMA is the government agency responsible for environmental protection and conservation under the MMA.	Medium	Medium	IBAMA will engage in especially the environmental issues concerning offshore wind. Provide staff time (in-kind), data, background	Generally strong competences but lack both financial and human resources. Also, lack capabilities related to	As above

Resources (IBAMA)				information reports. IBAMA is an important licensing agency for offshore wind projects	offshore wind as it is a new sector.	

A2.2: General information on Brazilian civil service

Note: this information has been included as part of the general assessment of government partners and may be relevant in the further assessments of partner staffing and engagement in knowledge sharing activities.

In Brazil, government employees are under the Civil Service Statute (*Estatuto do Servidor Público*), primarily having two main contract possibilities: statutory positions (*cargo efetivo*) or commissioned positions (*cargo em comissão*). This is critical for the assessment on management practices and tools and knowledge management processes and practices. There are a few exceptions, like Special Duty Positions (*funções gratificadas*), which are temporary positions with additional remuneration added to the base salary of an employee holding a statutory position.

- Statutory Positions are the most common and coveted type of public service contract in Brazil. It offers job security with dismissal only under very specific circumstances. Employees obtain these positions through public exams with rigorous competition, with salaries and benefits are pre-defined by law and vary based on experience and position. Once hired, employees follow a career progression system with opportunities for promotion.
- Commissioned Positions are temporary or non-permanent positions with shorter contracts, typically lasting 2-4 years (political cycles). The appointments are made by the Executive Board of the public entity, often based on political affiliation or specific expertise. Salaries are generally higher than statutory positions for similar roles, and these positions offer less job security compared to statutory positions.

For all government employees, the National Policy for People Development (PNDP), stablished in 2019, applies and promotes the development of competencies of people working in federal government agencies and entities, both direct, autarkic, and foundational. The PNDP is currently being implemented in the federal public administration and the National School of Public Administration (ENAP) is responsible for guiding and supporting agencies and entities in the Policy's implementation.

Principles of the PNDP:

- **Alignment with the institution's strategic planning:** People development actions should be aligned with the institution's goals and objectives.
- **Focus on competency development:** Actions should focus on developing the competencies necessary for civil servants to perform their duties with excellence.
- **Valuing diversity:** Actions should consider the diversity of civil servants and their individual needs.
- **Participation of civil servants:** Civil servants should be involved in the development and implementation of people development actions.
- **Transparency and accountability:** People development actions should be transparent, and their results should be monitored and evaluated.

PNDP Instruments:

- **People Development Plan (PDP):** An annual planning tool that defines the people development actions to be carried out within the agency or entity.
- **Annual PDP Implementation Report:** A document that presents the results of the people development actions carried out during the year.
- **Consolidated Development Action Plan:** A tool that brings together the PDPs of all federal government agencies and entities, both direct, autarkic, and foundational.
- **Consolidated PDP Implementation Report:** A document that presents the results of people development actions carried out throughout the entire federal government administration, both direct, autarkic, and foundational.
- **Models, methodologies, computerized tools, and development paths:** Resources to assist in the development and implementation of people development actions.

A2.2: Brief presentation of key partners one by one

Note: Yellow frames indicate organisational units most directly relevant for BRADEP.

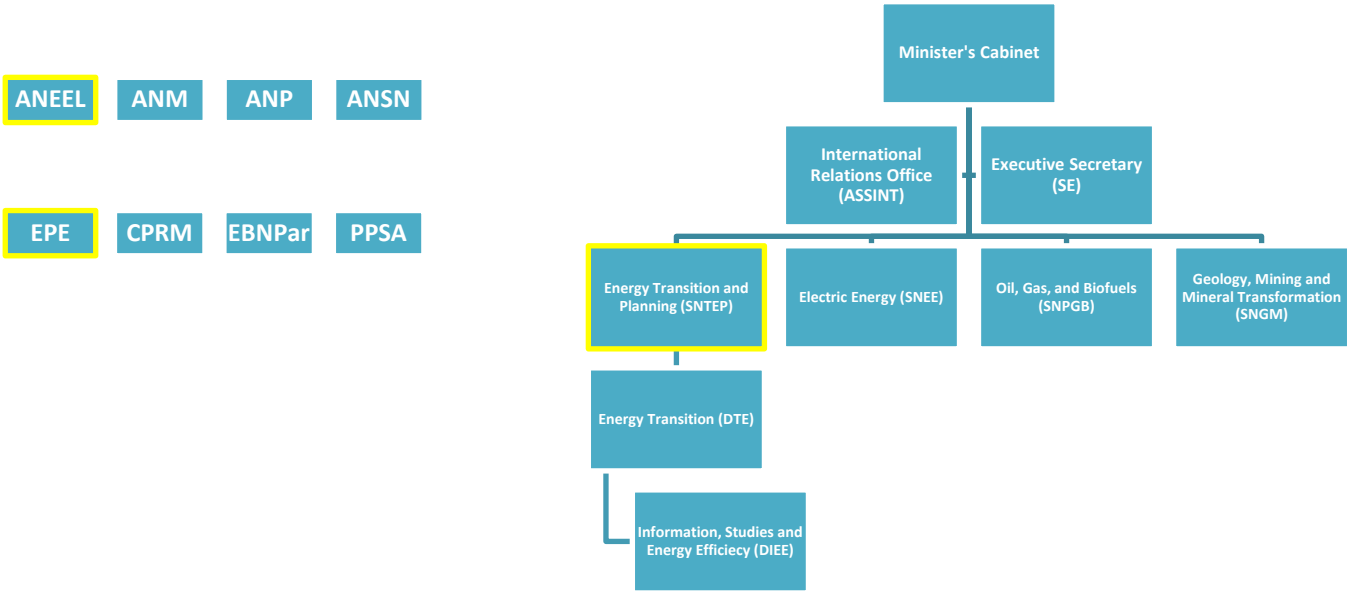
Ministry of Mines and Energy (MME):

Justification for selecting MME:

MME is responsible for formulating and implementing policies related to Brazil's energy sectors. Therefore, it is the key partner on regulatory frameworks for the continuing integration of renewable energy, offshore wind energy, long term energy planning, and energy efficiency.

MME are taking up new tasks, as they are stepping up efforts on energy efficiency and initiating the development of the offshore wind sector.

Key information on MME:



Source: Estrutura Organizacional — Ministério de Minas e Energia (www.gov.br)

- MME is a superior body, with a structure containing different organisational units, including EPE –and ANEEL. According to "Portal da Transparência", there are 807 active employees directly linked to the MME as their own organisational unit within this structure. The gender-balance analysis depends on information from secondary sources, such as the MME's own publication of January 2024 which reported that women account for almost 40 per cent of leadership positions in the agency. The budget for units directly linked to the MME is RBL1.07 billion (DKK 1,348 billion) in 2024.
- MME staff in statutory positions do not have specific career strictly focused on the energy sector. Most of them are following the career of Infrastructure Analysts (AIE), Senior Infrastructure Specialists (EIS) and Public Policy and Government Management Specialists (EPPGG). Employees in the Specialist careers usually have master's degrees or doctorates, which indicates a more experienced and academic profile.
- There is no knowledge of staff training programmes within the ministry. Nonetheless, employees in statutory positions have the possibility of asking for training leaves and leave for postgraduate programme, which may pave the way for functional progression and promotion since the specialists must comply with experience prerequisites and are encouraged to take part in specialisation, master's and doctoral courses offered by national and foreign institutions.
- MME plays an important role in the Brazilian government's political coalition. The current Minister Alexandre Silveira was appointed in December 2022 with the aim of accommodating an important centre-right wing political group – PSD party – present in the National Congress and in different Brazilian states. Below the Minister, Executive Secretary Arthur Valério, who took up the post in January 2024, has a consistent career as a State Attorney, but has not worked in the energy sector until this point. The predominantly political profile of the MME's high command is complemented by the technical profiles of the secretaries.

- MME's main mandate and goal is strictly linked to social and development policies as government priorities, which anchors the agendas of universal and affordable access to electricity and fuels and the "just and inclusive energy transition" as a driving force for sustainable development and Brazil's global strategic positioning.
- The Brazilian bureaucracy is characterized by a hierarchical structure, with the MME holding significant influence over the development of the energy sector. The MME coordinates the National Energy Policy Council (CNPE), an interministerial body that advises the Presidency on formulating guidelines for energy sector policies. The CNPE often serves as an arena for power struggles, where the MME seeks to support its policies, sometimes in an unpredictable and non-transparent manner, excluding non-governmental actors. The MME is in charge of developing the National Energy Transition Policy (PNTE), which is expected to be launched in the second half of 2024. The PNTE aims to establish the National Energy Transition Plan (PLANTE) and the National Energy Transition Forum (FONTE), enabling broader social participation in discussions on the topic. The overall goal is to promote greater articulation and coordination of the energy transition in Brazil, aligning it with other government policies, such as the National Climate Change Policy and the Ecological Transformation Plan, which are being developed by the Ministry of Environment and Climate Change (MMA) and the Ministry of Finance, respectively.

Summary of MME capacity assessment:

MME's staff have comprehensive experience within the electricity sector and can therefore both advise on technical, policy and management agendas. MME staff will mainly be engaged in guiding the deliverables from the BRADEP programme while the technical agencies (ANEEL, EPE, and ONS) will be in charge of conducting the activities with MME staff approval. The main issues are related to two aspects:

- Having secretaries and directors available at a time of work overload – limited resources to cooperate in the energy planning track.
- Hierarchical structures: Getting the approval and engaging the Ministry's high command
- Bureaucratic challenges can create a slow response rate and processing time on documents.

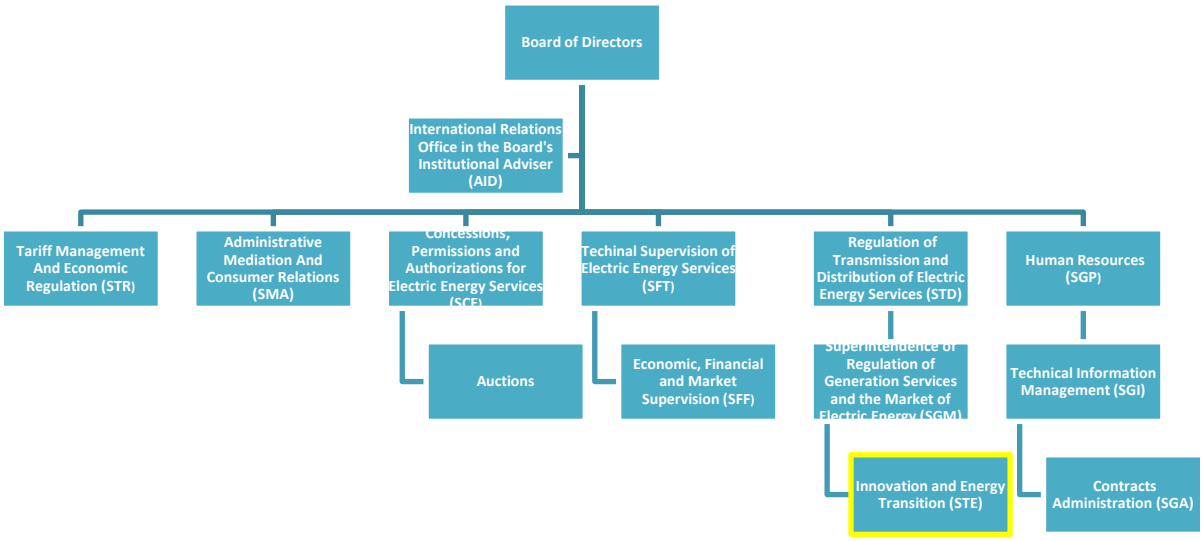
The National Electric Energy Agency (ANEEL):

Justification for selecting ANEEL as partner:

ANEEL is an independent authority of the Brazilian government linked to the Ministry of Mines and Energy. It is responsible for regulating the Brazilian electricity sector, with the goal of ensuring a reliable, efficient, and competitive market that benefits consumers.

Key information on ANEEL:

- According to "Portal da Transparência", ANEEL currently has a staff of 672 active employees. The gender-balance analysis depends on information from secondary sources, such as a OECD's report sharing that around 37% of ANEEL's employees are women. The agency's budget for 2024 was initially set at RBL 187.4 million (around DKK 238 million), but this was reduced by RBL 31.7 million (around DKK 39,9 million) in June due to a 20% budget contingency measure imposed by the government on all regulatory agencies. Amidst this context of resource constraints, ANEEL employees are mobilizing to demand salary increases and the organization of public competitive examinations to fill the agency's open positions – currently 206, according to movement representatives.
- ANEEL's board of directors operates under a collegiate system, composed of five directors – including one Director-General – and three substitutes. These directors are not subject to hierarchical subordination, representing the final administrative authority. They enjoy administrative, financial, and patrimonial autonomy. ANEEL directors serve five-year terms with the possibility of re-election for one additional term. Upon the completion of their terms, the ANEEL Directorate proposes a shortlist of three candidates, each with relevant experience and qualifications, for each open position. This list is sent to the Senate for analysis and voting on the nominees. Once approved, the nominees are officially appointed by the Brazilian President.



Source: Estrutura Organizacional — Agência Nacional de Energia Elétrica (www.gov.br)

- Currently, Sandoval Feitosa serves as the Director-General, centralizing the responsibilities of presiding over the board meetings, supervising the agency's operations, issuing administrative acts, entering into contracts, agreements, and other legal instruments in accordance with the Directorate's decisions, and managing budgetary and financial resources. The Director-General and the Directors are not affiliated with any organizational units, which are headed by superintendents or secretaries.
- ANEEL's organizational units are categorized as either superintendencies or secretariats based on the scope of activities and the size of the unit. The superintendencies generally have larger teams and are responsible for managing a higher volume of projects and activities, while secretariats have smaller teams and work closely with the board of directors and other ANEEL units. The Secretariat of Energy Efficiency (STE) plays a key role as the main partner due to its responsibilities, particularly those of the Energy Efficiency Coordination (CEFEN), which is responsible for monitoring the implementation and effectiveness of Energy Efficiency programme regulations, and the Energy Transition Coordination (CTREN), which coordinates agency actions aimed at improving or establishing regulatory frameworks that promote the development of sectoral initiatives focused on the energy transition, such as offshore wind power.

Summary of partner capacity assessment:

ANEEL's staff have comprehensive experience within the electric sector and can therefore advice on technical agendas. The main issues are related to:

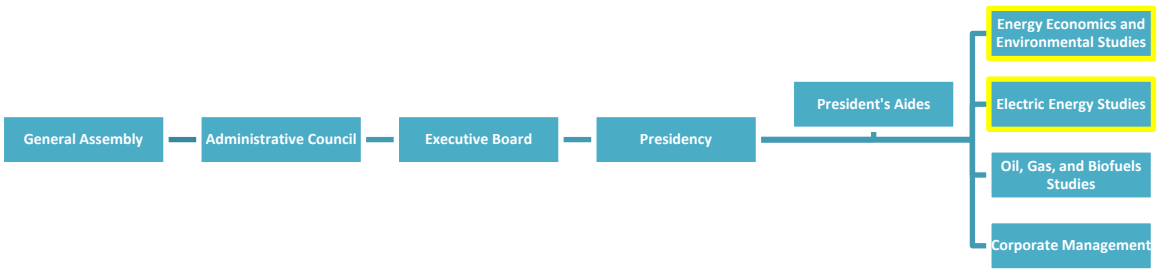
- Fostering engagement among the Agency's technical staff during a critical time of resource scarcity.
- Political influence movements in the appointment of positions and the structuring of the Agency.

The Energy Research Office (EPE):

Justification for selecting EPE as partner:

EPE works in support of MME energy policies with studies and research on energy planning covering electricity, oil, natural gas and its derivatives and biofuels. Covering the areas of engineering, economics, modelling, policy and environment and where they overlap, EPE's role requires broad articulation with a multiple range of institutions, including ANEEL and ONS. With access to key data and sophisticated analysis tools, EPE applies a strong technical expertise in high-quality deliverables considered in the formulation of public policies in the power sector.

Key information on EPE:



Source: Slide 1 (epe.gov.br)

- According to "Portal da Transparência", EPE currently has a staff of 330 active employees. EPE has published in March 2024 that 64 of them are women. EPE's budget for 2024 was initially set around RBL 40 million (around DKK 50,8 million), but it was reduced to RBL 26 million (around DKK 33 million), a budget cut equivalent to 65%. Half of the current budget is committed to mandatory expenses, which prompted the EPE's president to publicly express efforts to restore the budget in March 2024. Nevertheless, EPE is expected to have more 90 employees available – Lawyers, Corporate Management Analysts and Energy Research Analysts – to join the staff within 2 years after being approved in a public examination to happen in September 2024.
- The General Assembly is the highest decision-making body of EPE, empowered to deliberate on all matters related to its purpose, including its competence to amend the company's capital stock and bylaws. The Administrative Council is composed of six members: its President, appointed by the Minister of Mines and Energy; the CEO (who cannot be the same person in the role of Executive Board's President); and other directors appointed by the Minister of Finance, the Minister of State for Management and Public Service Innovation, and the employees. Members must be elected by the General Assembly for a unified term of two years, with a maximum of three consecutive re-elections allowed.
- EPE's Executive Board is composed of a President and four Directors, appointed by the Minister of Mines and Energy and elected by the Board of Directors. The Executive Board has a unified management term of two years, with a maximum of three consecutive re-elections allowed. The current President, Thiago Prado, who was elected in August 2023, is aligned with his predecessor Thiago Barral, current Secretary of SNTEP at MME, has a discreet and technical profile, giving space for advisors and other members of the high command to take leadership stances, and has experience with other key partners: he was a director at MME, a Specialist in Public Service Energy Regulation at ANEEL, and an Environmental Analyst at IBAMA.
- Currently, around 60% of EPE's staff hold postgraduate degrees, indicating a focus on expertise. The demand for technical expertise among EPE employees continues to grow, reflected in the requirement for a higher education certificate in relevant fields for the 2024's public exam candidates. With the exception of staff positions taken through public exams, EPE currently has a total of 20 positions for temporary government employees and 42 positions for the exercise of special duties that receive fixed-value remunerations added to the employee's salary, all appointed by the company's Executive Board.

Summary of EPE capacity assessment:

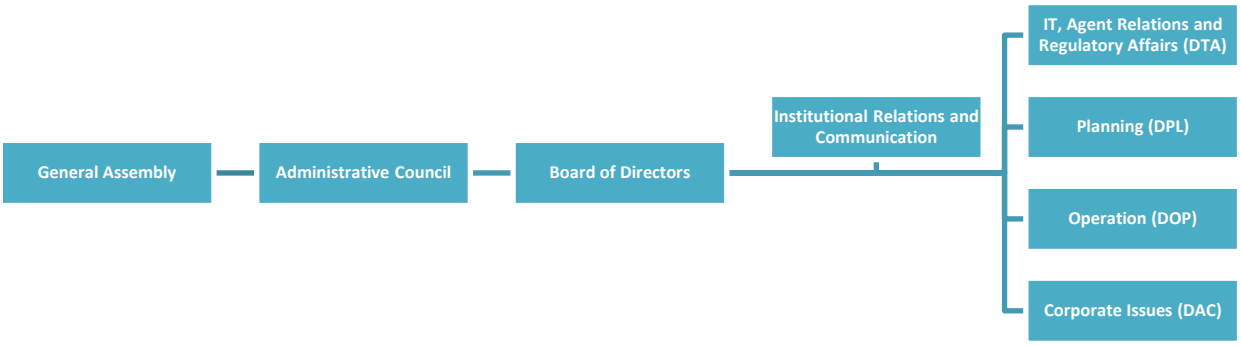
EPE's staff have comprehensive experience within the power sector and can therefore advice on technical agendas. The main issue is related to:

- Obtaining the consent of the high command to develop activities on LTEP's track and other topics considered sensitive, even if other key partners are interested.

The National Electric System Operator (ONS):

ONS is the institution responsible for coordinating and controlling the operation of electrical energy generation and transmission facilities in the Brazilian National Interconnected System (SIN) and for planning the operation of the country's isolated systems, under the supervision and regulation of ANEEL. ONS is a big organisation with strong existing capabilities and has shown an interest in learning about the operation of the electricity system with increasing volumes of renewable energy, demands that DEA can meet with a focus on wind/solar forecasting, frequency control, flexibility measures, etc.

Key information on ONS:



- According to the latest annual activity report released by ONS for 2023, the agency has 967 employees, of which 363 are women. In December 2021, ANEEL approved a budget of RBL 2.4 billion (around DKK 3,04 billion) for ONS for the 2022/2024 cycle. The amount represents an 11.4% increase compared to the previous cycle, with payroll expenses initially projected to account for half of the total budget. ONS's expenses are mainly (95.4% of the total) funded by transmission service charges.
- The General Assembly is the highest decision-making body, responsible for approving changes to the company's capital stock and bylaws. The Administrative Council oversees the overall governance and sets strategic direction. Comprised of six members, including a president appointed by the Ministry of Mines and Energy, and representatives from the Ministry of Finance, Ministry of Public Service Innovation, and employee groups.
- The Executive Board manages the day-to-day operations of ONS. It is composed of a President and four Directors, all appointed by the Minister of Mines and Energy and elected by the Administrative Council. The current President Marcio Rea was elected in May 2024.

Summary of ONS capacity assessment:

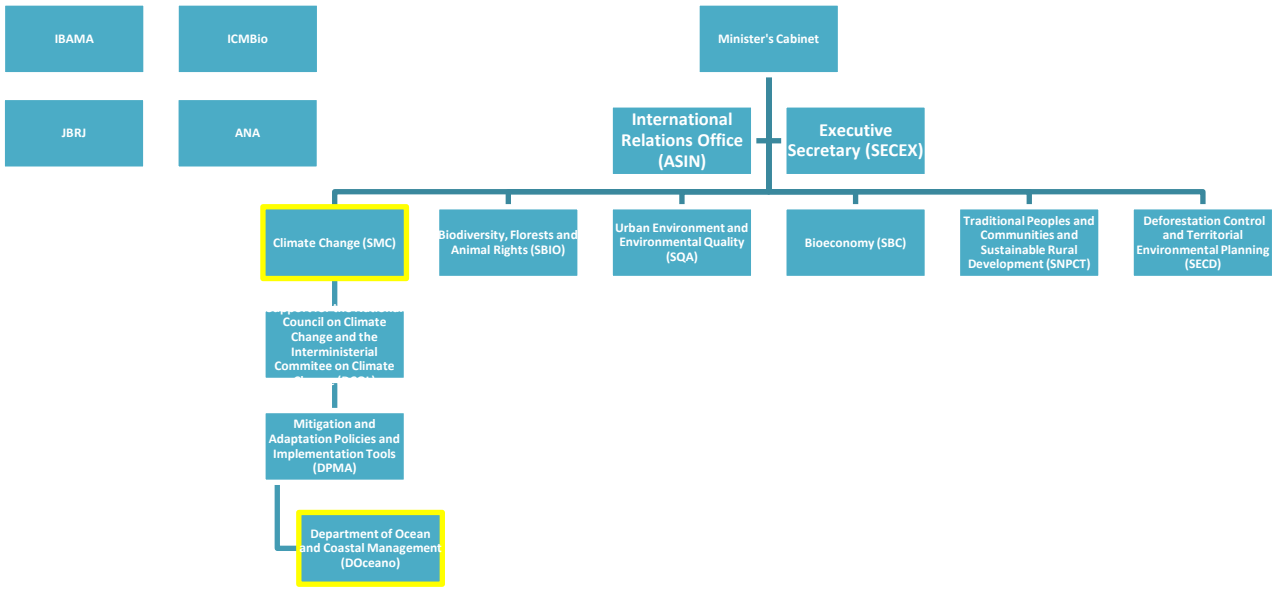
ONS have strong technical competencies and have in recent years increased their workforce with a greater level of engineers. The main issues are related to:

- Strong competences and have in recent years increased the level of competences.
- Focus on developing capabilities to integrate increasing levels of variable renewable energy and about power system operation with large share of variable renewable energy (wind/solar forecasting, frequency control, flexibility measures).

The Ministry of Environment and Climate Change (MMA):

MMA is responsible for formulating and implementing environmental policies, promoting sustainable development, and conserving natural resources in the country. Part of its mission is to coordinate and implement national climate change policies and plans, of national adaptation plans, on the Action Plan on Sustainable Production and Consumption. They have a strong impact on other ministries defining decarbonization targets and participating in Marine Special Planning, with the possibility of being in a position of conflict with the MME.

Key information on MMA:



Source: 1.1 Estrutura Organizacional (organograma) — Ministério do Meio Ambiente e Mudança do Clima (www.gov.br)

- MMA is a superior body, with a structure containing different organisational units, including autarchies – IBAMA – and regulatory agencies. According to "Portal da Transparência", there are 685 active employees directly linked to the MMA as their own organisational unit within this structure. Also, according to available on "Painel Estatístico de Pessoal", women account for 53% of the employees in leadership positions.
- MMA's budget for 2024 is RBL 3.6 billion. There was a reduction of 16.06% compared to 2023. The budget for 2024 is 72% lower than what was observed a decade earlier, in 2014, when RBL 13.1 billion were allocated to the MMA and its autarchies.
- MMA staff in statutory positions have the specific career of Specialist on Environment (Especialista em Meio Ambiente). This Specialist Career consists of the positions of environmental manager, administrative manager, environmental analyst, administrative analyst, environmental technician, administrative technician, and administrative assistant. A widespread movement demanding career restructuring is gaining momentum in July 2024, and while the impact on the Ministry itself is relatively limited in comparison to subsidiary agencies such as IBAMA, the potential for disruptions to public services and policy implementation in the short term is a cause for concern.
- There is no knowledge of training programmes within the ministry. Nonetheless, employees in statutory positions have the possibility of having assistance with language courses, asking for training leaves and leave for postgraduate programme, which may pave the way for functional progression and promotion since the specialists must comply with experience prerequisites and are encouraged to take part in specialisation, master's and doctoral courses offered by national and foreign institutions.
- The MMA plays a significant role in the Brazilian government's international agenda and is expected to play a lead role in COP30, yet its domestic power is limited due to political constraints. This dynamic is personified by Minister Marina Silva, an internationally recognized leader with limited domestic political engagement. Similarly, both the Executive Secretary, João Paulo Capobianco, and other secretaries under the Minister have technical expertise and significant prior experience in environmental NGOs and connections to the private sector.
- The MMA presides over collegial bodies, notably the National Environment Council (CONAMA) and the National Climate Change Council (CNMC). These bodies serve as government advisors on environmental and natural resource exploitation and preservation policies, as well as climate-related actions, respectively. CONAMA holds the authority to establish norms and procedures for environmental licensing of wind energy generation projects.

- MMA is facing a challenging yet crucial year amidst budget cuts, the legacy of the previous administration, and a lack of personnel. Despite these obstacles, the ministry has identified several key areas of focus to address the pressing environmental issues facing the nation:
    - **Curbing Amazonian Deforestation:** Reversing the alarming surge in Amazon deforestation is paramount. The MMA aims to implement stricter enforcement measures, enhance monitoring capabilities, and promote sustainable land-use practices to curb illegal deforestation.
    - **Fostering Sustainable Development:** Embracing a bioeconomy model that harmonizes environmental protection with economic growth is a strategic priority. The MMA seeks to promote innovation, investment, and job creation in sustainable sectors like biofuels, biomaterials, and ecosystem services.
    - **Raising Climate Ambition**: Updating NDCs and implementing ambitious climate policies is essential. The MMA is committed to leading this effort, ensuring the country meets its international climate commitments.
    - **Reinforcing Multi-Level Governance:** Strengthening environmental governance across all levels, from federal to municipal, is crucial. The MMA aims to establish multi-stakeholder councils, promote public participation, and enhance transparency and accountability.

Summary of MMA capacity assessment:

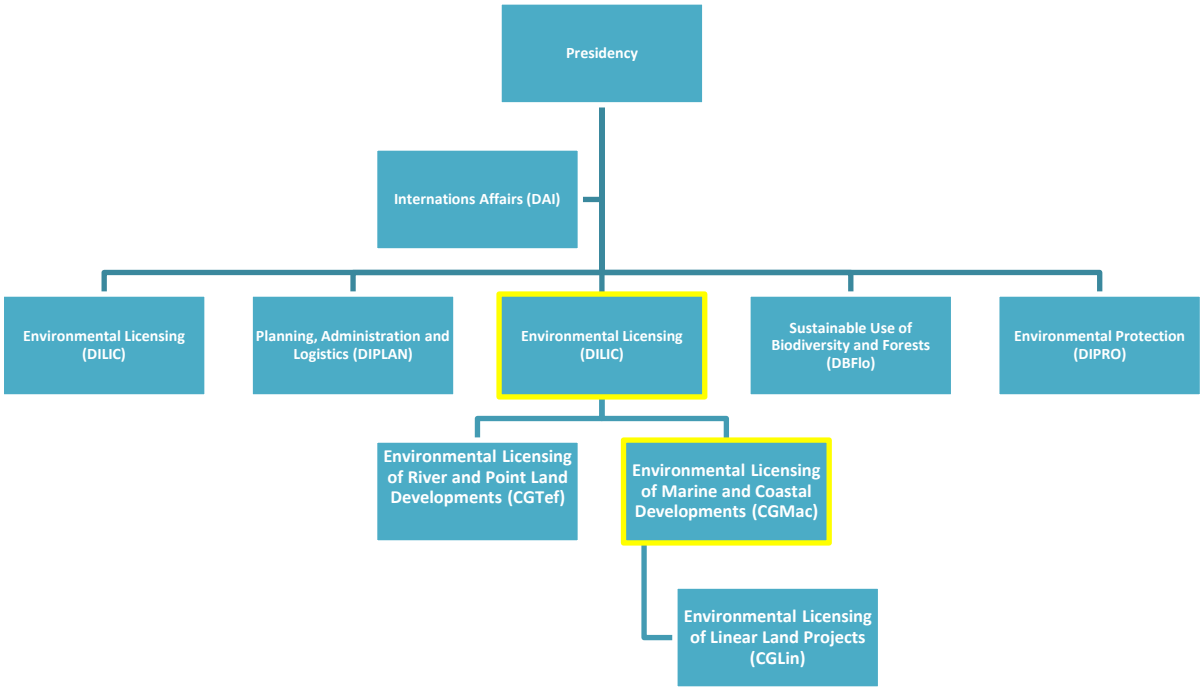
MMA's staff has comprehensive technical capacity and is involved in key issues, even for other partners in Brazil. Main issues are related to:

- Having secretaries and directors available at a time of work overload
- Possibility of low-impact activities due to political dynamics and conflicts with the MME

The Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA):

IBAMA serves as a critical authority for environmental governance in Brazil. Functioning under the supervision of the Ministry of Environment and Climate Change, IBAMA fulfils a multifaceted role, enforcing environmental legislation and regulating resource utilization by issuing permits for businesses engaged in activities that impact the environment.

- According to "Portal da Transparência", IBAMA currently has a staff of 2.860 employees working in the federal, state e local levels. It faces a chronic shortage of employees, which has halved in the last 25 years. According to the presidency, currently one out of every six candidates who took up their posts at IBAMA in the last selection process in 2022 have already left their posts.
- Despite the lack of precise information regarding IBAMA's 2024 budget, it is known that the agency is facing budget cuts in areas such as firefighting. For instance, only RBL 50 million is available for this purpose in a critical moment (July 2024) out of the RBL 120 million that IBAMA had requested from the government in 2023. The budget is composed of two main sources: annual transfers from the federal government and environmental fines and service fees paid by project developers.
- Among the key positions within IBAMA, there are: Environmental Analysts, responsible for the technical analysis of environmental licensing processes, environmental monitoring, and environmental inspection; Environmental Technicians, responsible for carrying out technical fieldwork, including data collection, environmental monitoring, and environmental inspection; Environmental Enforcement Officers, responsible for enforcing environmental laws, issuing infraction notices, and seizing illegal products; and Administrators, responsible for the administrative activities of IBAMA units, such as personnel management, procurement, bidding, and budgeting.



Source: Estrutura — Ibama (www.gov.br)

- Operating at the federal, state, and local levels, IBAMA's multi-tiered structure aims to ensure a comprehensive coverage and responsiveness to environmental issues across the vast territory of Brazil. IBAMA's headquarters in Brasilia serves as the central command, providing overall leadership, strategic direction, and coordination for the entire organization. Current president Rodrigo Agostinho has a balanced profile between the technical and political aspects, since he has a background as an environmentalist, but also a political past, including as a federal deputy, when the environment was his main topic.
- Within the scope of CONAMA, IBAMA is seeking to review or establish new regulations in 3 areas:
  - Revision of procedures for environmental licensing of onshore wind energy generation undertakings.
  - Revision of the regulations that establish maximum pollutant emission limits for stationary sources.
  - New procedures for environmental licensing of offshore wind energy generation undertakings.

In this work, IBAMA seeks to effectively internalize the precepts of ILO Convention No. 169 concerning Indigenous and Tribal Peoples. Additionally, in the case of wind energy licensing, there is a focus on adapting the regulations to mitigate social and environmental impacts currently registered in onshore projects.

Summary of IBAMA capacity assessment:

IBAMA's staff have comprehensive experience within the environmental area and can therefore advise on technical agendas. Main issues are related to:

- Having focal points available at a time of resource scarcity
- Possibility of low-impact activities due to conflicts with the MME

Key partners at State level are proposed to include departments in the **State Governments of Rio Grande do Norte, Rio Grande do Sul, Ceará, and Rio de Janeiro.** Further assessment of these institutions will need to be undertaken during the start-up phase of BRADEP in early 2025 once the partnerships have been formalised.

The Ministry of Ports and Airports of Brazil (MPOR) is also planned to be a partner in BRADEP. MPOR has responsibilities within regulation of maritime space for OSW, and industry development regarding OSW ports and vessels, and sustainable fuels in shipping.

Other stakeholders that were met by the formulation mission in Brazil include academic institutions, think tanks, and professional associations such as:

- **The Center for Management and Strategic Studies (CGEE), Brasilia**
- **The Brazilian Center for International Relations (CEBRI) (think tank), Rio de Janeiro**
- **The Federal University of Rio Grande do Norte (UFRN), Natal**
- **CERNE – Centro de Estratégias em Recursos Naturais e Energia, Natal**
- **The NGO Observatorio do Clima (OdC), Brasilia**
- **The NGO RevoluSolar, Rio de Janeiro**
- **The Brazilian Wind Energy Association ABEEólica, Sao Paulo**

Annex 3: Results framework

Notes:

- While not required by the standard Danida template for results frameworks, indicative activity types/topic area clusters are listed under each output as this facilitates understanding of what is expected to lead to the outputs.
- Activities will be defined in annual work plans to be approved by the Steering Committee.
- End year (2029) targets are indicated. Mid-programme (2027) targets for outputs have also been reflected.
- DEA will be accountable for the achievement of the outputs, which are within their control and to monitor and report on the achievement of outcomes, which are within DEA's influence but not within DEA control.
- The assumptions (summarised in Section 3.2) underpinning the theory of change are important for achieving the stated outcomes and impact and must be closely monitored.
- Annex 9 illustrates the phasing-in of BRADEP activities while the SSC is still ongoing until end 2025.
- BRADEP baselines in 2025 for Outcomes 1, 2 and 3 will take into consideration SSC results by end 2025 where relevant, but this is not noted for all 2025 baselines below to avoid repetition.
- The work plans for Outcomes 1, 2, and 3 will be developed based upon the results achieved under the SSC by 2025 and the results matrix will be revisited then.

Also, Outcome 4 on energy efficiency, will be further concretized in the start-up phase and after the first year of implementation.

Programme	**Brazil-Denmark Energy Partnership (BRADEP)**		
Programme Objective	A just and inclusive energy transition and climate action supported through a strengthened partnership between Brazil and Denmark for an enabling framework for renewable energy, the effective integration of increased levels variable renewable energy, the development of the offshore wind sector considering socio-economic and environmental aspects, and development of new energy efficiency measures.		
Impact Indicator	- Contribution to decarbonisation of the energy sector with an increased share of variable renewable energy with a high level of security of supply and socio-economic co-benefits. - Planned offshore wind		
Outcome 1	**Offshore wind energy development further enabled through improved regulatory framework conditions considering socio-economic and environmental aspects.** Key partners and other important partners: BR: Ministry of Mines and Energy, Ministry of Environment, IBAMA, Ministry of Ports and Airports, State Governments of Rio Grande do Norte, Ceará, Rio Grande do Sul, Rio de Janeiro, Universities, think tanks, trade organizations, civil society organizations. DK: DEA, Energinet, Danish Institute of Human Rights, Kammeradvokaten (Legal Advisor to the Danish State), Technical University of Denmark, University of Copenhagen, Danish Maritime Authority and others.		
Outcome indicator	Capacity to plan and regulate offshore wind and related activities considering sustainability, human rights and just energy transition		
Baseline	Year	2025	-No offshore wind projects or tenders. -The country's capacity to plan and regulate offshore wind and related activities are in initial stage of of being developed.
Target	Year 5	2029	The country's capacity to plan and regulate offshore wind and related activities with a focus on sustainability, human rights and just energy transition is improved and documented through planning,

			implementation and new regulations, as evidenced in at least 3 concrete examples. Offshore wind capabilities and first tenders advanced
Output 1.1		**Process/cycle of offshore wind. A systematic and planned approach to offshore wind for a harmonious coexistence of infrastructure development and sustainability, while reducing risk.**	
Indicative activity / topic areas		I. Wind resources and measurements. Technique, data handling, regulation and contractual aspects of the information gathering. II. Regulatory schemes for localization of offshore wind. III. Environmental aspects of offshore wind. ➢ Detailed considerations of Strategic Environmental Assessment. ➢ Details of Environmental Impact Assessment. ➢ Novelties in environmental requirements. Evolution and tendencies including requirements of birds/bats/mammals studies, decommissioning standards for restoration of the seabed, recyclable blades, etc. ➢ Biodiversity enhancement mechanisms. IV. Port infrastructure development for offshore wind to support the energy transition. ➢ Detailed characterization of port activities related to offshore wind deployment. ➢ Technical requirements for port infrastructure to service offshore wind projects. ➢ Regulatory framework and investment incentives for port development in offshore wind. ➢ Case studies. ➢ Specific ports infrastructure assessment. V. Territorial/urban planning in light of the infrastructure needed for offshore wind. ➢ Industrial and social transformation in the states. ➢ Job creation and human capital in the local regions. ➢ Fisheries and coexistence with artisanal and small industrial sectors. ➢ Case studies of best practices/challenges in compensation/mitigation. schemes. VI. Support of the intergovernmental working group concerning offshore wind on: o Planning of reinforcements in the energy transmission system; o Development and/or adaptation of port infrastructure; o Assessment and analysis of the socio-environmental impacts of projects; o Development of production and industrial chains in the country; o Planning of auctions for access to offshore areas for the development of projects; o Technological development and promotion of innovation; o Sources of resources and financing models; and ➢ o Business models and support schemes for projects in the Brazilian context.	
Output indicator		Capacity to plan and regulate offshore wind and related activities with a focus on sustainability, human rights and just energy transition is improved and following best practice	
Baseline	Year	2025	A systematic and planned approach to offshore wind for a harmonious coexistence of infrastructure development and sustainability can be improved, although some regulatory efforts are identified.
Target	Year 3	2027	Enhanced formal capacity of public officials to approach the planning and regulation of offshore wind with strategic tools and abilities to initiate triangular cooperation on offshore wind, as evidenced in at least 2 concrete

			examples of regulatory improvements which also provide evidence that general stakeholder engagement capabilities are further developed.
Target	Year 5	2029	The country's capacity to plan and regulate offshore wind and related activities with a focus on sustainability, human rights and just energy transition is improved and enhanced following best practices and with the capacity, including the ability to share experiences gained in the process with other countries as documented in at least 3 concrete examples. Relevant stakeholder engagement capabilities are improved at a very high level, as evidenced by at least 2 concrete examples in each partner State.
Output 1.2		**Consenting process and social aspects further defined for offshore wind with a focus on Just and Inclusive Energy Transition.**	
Indicative activity /topic areas		• Single/multiple window institutional arrangements for consenting process in offshore wind. Coordination of permits. • Advanced approach to Marine Spatial Planning (MSP). Work coordinated with the Danish Maritime Authority. ➢ MSP 101. What is the process that Denmark has conducted to structure the planning. ➢ Aspects of coordination of the MSP exercises. ➢ Resources: Public participation portal, digitalization, communication strategy. • Human rights and consenting process for offshore wind. Focus on public participation and Just Energy Transition. Possible engagement with the Danish Institute of Human Rights or similar/equivalent institution. Human Rights Impact Assessment and consequences at a local level. • Licensing and authorization for decommissioning. • Public participation and digitalization/transparency regulation.	
Output indicator		Capacity to conduct/drive an offshore wind consenting process with a focus on sustainability, human rights and just energy transition is improved and enhanced following best practices and with the capacity to share experiences gained in the process with third countries. Relevant stakeholders have the ability to utilize the consenting process with increased capabilities.	
Baseline	Year	2025	The awareness and abilities of the country to develop an effective and systematic consenting process for offshore wind with a focus on just energy transition can be improved.
Target	Year 3	2027	Enhanced formal capacity of the public officials to approach specifically the consenting process of offshore wind level with strategic tools and with abilities to initiate triangular cooperation on offshore wind. This is documented by selected examples of tools and cooperation.
Target	Year 5	2029	The country's capacity to conduct/drive an offshore wind consenting process with a focus on sustainability, human rights and just energy transition is improved and enhanced following best practices and with the capacity to share experiences gained in the process with third countries. Relevant stakeholders have the ability to utilize the consenting process with increased capabilities. This is evidenced in concrete documentation on consenting processes and plans for their further utilization.
Output 1.3		**Legal characterization of offshore wind identified.**	
Indicative activity /topic areas		• Public law regulatory arrangement for offshore wind. Focus on concession and public procurement rules. Market dialogue and responsive regulation. • Contractual aspects for offshore wind. • Special considerations on public procurement and administration of tender processes. • WTO rules and competition regulation for offshore wind.	

		• Dispute resolution in renewable energy with a focus on offshore wind • Investment screening regulation for critical infrastructure. Coordination with Danish Business Activity. • New trends in environmental, social, and governance (ESG) performance assessments.	
Output indicator		Capacity to execute and utilize legal tools/products/services related to offshore wind is improved following best practices	
Baseline	Year	2025	The capacity and awareness of public officials and relevant stakeholders concerning legal aspects for offshore can be improved.
Target	Year 3	2027	Enhanced formal capacity of the public officials and relevant stakeholders concerning legal aspects of offshore wind, including documentation on regulatory innovations and with abilities to initiate triangular cooperation. This includes binding legal instruments as well as soft law and specialized guidelines
Target	Year 5	2029	The country's capacity to execute and utilize legal tools/products/services is improved and enhanced following best practices and with the capacity to share experiences gained in the process with third countries. Relevant stakeholders have the ability to utilize sophisticated tools with increased capabilities. This is documented in at least 3 concrete examples.
Outcome 2		**Long-term planning processes and methodologies effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in support of a just and inclusive energy transition** Key partners and other important partners: BR: MME, EPE, (MMA, universities, think tanks). DK: DEA	
Outcome indicator		Evidence that updated long-term energy planning processes inform governance/institutional processes and the design of key long-term planning products, accounting for all relevant techno-economic and socio-economic developments	
Baseline	Year	2025	Long-term energy planning is based on strong capabilities, especially with regards to the available input data and the use of advanced energy and power system modelling tools. There are opportunities to strengthen the link between scenario studies and policy-making processes.
Target	Year 5	2029	Long-term energy planning products and processes are designed to effectively inform policymaking Offshore wind included in national energy plans
Output 2.1		**Knowledge exchanges on governance and institutional frameworks and scenario development approaches for long-term energy planning to ensure these are designed to effectively support the definition, evaluation, and updating of strategies and policies to decarbonise the energy sector and to integrate a large share of VRE.**	
Indicative activity /topic areas		• Expert workshops on governance and institutional frameworks and scenario development methods for long-term planning • Expert workshops on planning related to offshore wind • Technical and political delegation visits to exchange experiences with long-term planning approaches • Formulation of technical guidelines on how to model selected topics in the context of sectoral decarbonisation strategies with a focus on energy • Triangular and multilateral cooperation with third parties to share international best practice in long-term planning, for example, under Global Coalition for Energy Planning under G20 and the OLADE.	

Output indicator		Knowledge exchange with partner institutions results in updated long-term energy planning processes with respect to governance/ institutional processes and the design of key long-term planning products, including 10 and 30-year energy sector plans and input on energy sector for national climate plans.	
Baseline	Year	2025	Brazil is developing its first energy transition plan, which aims for the decarbonisation of the energy sector, and which should be consistent with the country's cross-sectoral climate strategy.
Target	Year 5	2029	Recommendations delivered and applied to guide decision-making on the formulation of decarbonisation strategies and specific decarbonisation policies in the energy sector.
Outcome 3		**Flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, through optimised flexibility measures and renewables forecasting, which contributes to more stable and affordable supply for all consumers.** Key partners and other important partners: BR: MME, ONS, ANEEL, EPE. DK: DEA, Energinet (Universities).	
Outcome indicator		Stable operation of power systems with an increasing share of variable renewable energy, as a result of cost-efficient power system flexibility measures and accurate forecasts of generation from variable renewables, leading to reduced curtailment and need for re-dispatch	
Baseline	Year	2025	Considerable amount of variable renewable energy in the national inter-connected grid are being curtailed and limited use of market-based approaches for flexibility measures.
Target	Year 5	2029	Aincreased level of variable renewable energy in the national inter-connected grid is effectively integrated, opportunities for market-based approaches are considered, and forecasting of variable renewable energy in the grid is informing decision makers in making electricity supply more stable and affordable for all consumers.
Output 3.1		**Knowledge exchanged on regulation of frequency response and power system flexibility.**	
Indicative activity /topic areas		• Peer-to-peer dialogue among TSOs on operation of transmission system with large share of variable renewable energy, for example, concerning grid codes, frequency regulation, and sources of power system flexibility (demand-side response, batteries, flexible operation of power plants) • Recommendations and guidelines on methodological approaches and support for their practical implementation.	
Output indicator		Findings and recommendations from workshops and collaborative studies on frequency response and power system flexibility inform partners' design and implementation of new flexibility measures	
Baseline	Year	2025	Ancillary services based on regulated mandatory availability. Initial experiences with demand-side response in the context of regulatory sandboxes.
Target	Year 3	2027	Implementation of action plan for selected measures for enhancing cost-effective integration of variable renewable energy, including development of guidelines and recommendations.
Target	Year 5	2029	Action plan completed and variety of initiatives implemented, with measurable contribution to reduced curtailment.
Output 3.2		**Improved forecasting and procedures for variable renewable energy generation are identified.**	
Indicative activity /topic areas		• Peer-to-peer exchange on methodologies to forecast wind and solar photovoltaic generation.	

		• Recommendations and guidelines on methodological approaches and support for their practical implementation.	
Output indicator		Knowledge shared during workshops, training programmes, and development of joint studies increases partners' capacity to develop forecasting tools, contributing to measurable improvement of forecasting accuracy.	
Baseline	Year	2025	Brazil uses forecasting methods that result in comparatively high prediction errors, resulting in the need for redispatch by the transmission system operator and potential curtailment.
Target	Year 5	2029	Forecast accuracy and dispatching procedures improved year on year and contributing to reduced need for re-dispatch and curtailment.
Outcome 4		**A transparent and ambitious regulatory and institutional framework leads to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry, which will also benefit lower-income households and Brazil's sustainable re-industrialization policy.** Key partners and other important partners: BR: MME, ANEEL, EPE. DK: DEA	
Outcome indicator		Key energy efficiency measures in the buildings and industrial sectors are identified and implemented reducing the overall energy intensity.	
Baseline	Year	2024	Energy efficiency regulatory and institutional framework for industrial and building sector could be more transparent and ambitious, as for example reflected in EPE's Energy Efficiency Atlas.
Target	Year 5	2029	Energy efficiency regulatory and institutional framework for industrial and building sectors more transparent and ambitious as for example reflected in EPE's Energy Efficiency Atlas and other relevant indicators.
Output 4.1		**Low-carbon development in the industrial sector.**	
Indicative activity /topic areas		• Cooperation and knowledge exchange on incentive schemes for energy efficiency in the industrial sector based on regulatory impact assessment studies and tested through pilot projects. • Cooperation on development and dissemination of EE technology catalogues and technical guidelines for selected industrial sectors. • Cooperation and knowledge exchange on existing and innovative co-generation measures and technologies incl. testing facilities and pilot projects in the industrial sector, where it contributes to GHG-emissions reductions.	
Output indicator		• Incentive schemes for energy efficiency in the industrial sector established. • EE technology catalogues and technical guidelines for industry developed. • Targeted initiatives in innovative co-generation measures and technologies incl. testing facilities and pilot projects in the industrial sector.	
Baseline	Year	2024	- EE incentive schemes for the industrial sector limited. - Energy efficiency technology catalogue and technical guidelines for industrial sector limited. - Implementation of innovative co-generation measures and technologies incl. testing facilities and pilot projects limited.
Target	Year 3	2027	- EE incentive scheme for an additional industry sector tested in a pilot project in 2 specific enterprises by relevant authority. - EE technology catalogue and technical guidelines for one additional selected industrial sector developed and disseminated. - 2 innovative co-generation measures and technologies in selected industry carried out and demonstrated.
Target	Year 5	2029	- Roadmap and action plan for nation-wide roll-out of incentive scheme ready for approval by competent authorities.

			- Comprehensive compendium of EE technology catalogues and technical guidelines for the industrial sector developed and disseminated at federal and state level. - Roadmap for initiatives in implementing innovative co-generation measures and technologies incl. testing facilities for the industrial sector considering important market drives (e.g. CBAM), developed and disseminated.
Output 4.2		**Emission reduction in buildings from an energy efficiency and Life Cycle Analysis (LCA) perspective.**	
Indicative activity /topic areas		• Cooperation on targeted initiatives to promote energy efficiency in public buildings at federal and state level. • Develop recommendations of energy efficiency and LCA requirements to be included in building codes as part of new regulation. • Cooperation on development and dissemination of EE technology catalogues for buildings and technical guidelines for selected technologies and systems.	
Output indicator		• Initiatives to promote energy efficiency in public buildings at federal and state/regional level undertaken. • Recommendations of energy efficiency and LCA requirements established to be included in building codes. • EE technology catalogues developed for buildings and technical guidelines for selected technologies and systems.	
Baseline	Year	2024	- Initiatives to promote energy efficiency in public buildings at federal and state level are limited. - Energy efficiency and LCA requirements in building codes not sufficiently reflected. - EE technology catalogues for buildings and technical guidelines for selected technologies and systems are limited.
Target	Year 3	2027	- Initiatives identified through energy audits and pre-feasibility studies to promote energy efficiency in public buildings at federal and state level in an additional climate zone carried out. - Energy efficiency and LCA requirements in building codes drafted and presented to relevant stakeholders through a consultation process in an additional pilot state. - EE technology catalogue for buildings and technical guideline for selected technologies presented and discussed with stakeholders through a consultation process in an additional pilot state.
Target	Year 5	2029	- Comprehensive compendium of energy audits and pre-feasibility studies compiled and disseminated at federal and state level across different climate zones. - Finalized recommendations of energy efficiency and LCA requirements in the building codes ready to be incorporated by the relevant authority as input for future net zero buildings from and energy efficiency and LCA perspective. - Comprehensive compendium of EE technology catalogues and technical guidelines for buildings developed and disseminated at federal and state level as input for future net zero buildings from and energy efficiency and LCA perspective

Annex 4: Risk management

Contextual risks[33]:					
Risk Factor	**Likelihood**[34]	**Impact**[35]	**Risk response**	**Residual risk**	**Background to assessment**
Any risk of political instability and lack of consensus on the green energy transition could affect the Programme. The climate agenda is facing some opposition in the Parliament (called the National Congress), where concerns about potential negative consequences for the agricultural sector are widespread.	Likely	Significant	BRADEP is based on strategic partnership at the highest levels of a Brazilian government politically committed – and internationally highly profiled - on an inclusive green transition and climate action, as also reflected in the hosting of G20, COP 30, etc. But BRADEP is also based on peer-to-peer engagements at technical levels that can be robust even in the face of political discourse.	Minor	Brazil has been through major political change from the previous government to the present. The weakening of the Brazil's NDCs from the Paris Agreement and down-prioritisation of climate policies during the Bolsonaro-government show how a new change in government can affect the green agenda in Brazil. President Lula has placed a just and inclusive energy transition as one of his main priorities under his presidency and announced that Brazil is back on the international climate stage, stating that Brazil wants to be global frontrunner on the climate agenda. However, there are still different perspectives on a green transition and vested interests. A related concern are potential delays in key legislation in the Brazilian Congress, as seen for example in the OSW Bill processing by Congress.

[33] This category covers the range of potential adverse outcomes that may arise in a particular context, including the risk of harm beyond the immediate context or the country's borders and may include governance failure (e.g. the failure of effective public financial management or law enforcement); competition for resources; natural hazards; and pre-existing socio-political tensions. (Danida Guideline to Risk Matrix 2018).

[34] Danida classification categories are: very unlikely, unlikely, likely, almost certain (see link)

[35] Danida classification categories are: insignificant, minor, major, significant (see link)

Unclear division of responsibilities in regulation of OSW development and unclear regulation of consultation processes. Social resistance to RE deployment if consultation processes are inadequate.	Likely	Significant	BRADEP will address these issues in Outputs under Outcome 1 focusing on enabling offshore wind energy development through improved regulatory framework conditions considering regulatory and socio-economic aspects.	Minor for BRADEP as such	In some cases, including in offshore wind (OSW), there is social resistance e.g. from fishing communities who fear for their livelihoods. Onshore wind farms and solar parks demand large land areas and there are thus potential conflicts with other land use and there is room for improvement in consultation processes with local communities in these areas. While BRADEP does not support physical facilities on the ground, social resistance is a key concern in sector development. BRADEP as a multi-faceted programme is engaged with a range of national partners now also proposed to include direct partnership with the State level on OSW. Federal-State level division of roles and responsibilities are important, and the formulation mission noted a number of issues in this regard, including unclear regulation on consultation processes.
Programmatic Risks[36]:					

[36] This category covers include two kinds of risk: (1) the potential for a programme to fail to achieve its objectives; and (2) the potential for the programme to cause harm in the external environment. With regard to (1), the risk factors for programme failure include many of the contextual risks outlined above, as well as institutional and political factors. But there are many other reasons for potential programme failure, including inadequate understanding of the context or flawed assessment of what needs to be done; management and operational failures; and failures of planning and co-ordination. Risk is also associated with new or innovative programme approaches (although there may also be risk in failing to innovate). (Danida Guideline to Risk Matrix 2018). The categorisation of likelihood, impacts, and residual risk is also consistent with Danida guidelines.

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
Limited resources and managerial capacity in national partner institutions due to shortage of staff.	Likely	Major	Systematic approach to assessment of partner needs and priorities for knowledge exchange and capability strengthening. Robust peer-to-peer partnerships at middle level management and technical levels. Adherence to agreed frequency of Steering Committee (SC) meetings ensuring that the SC serves as effective accountability mechanism. Denmark's active climate diplomacy and high-level state visits also reinforce Brazilian partner commitment even despite many pressures on key partner management and staff.	Minor	The Brazilian national partner institutions are generally staffed with highly skilled managerial and technical staff but there are capacity constraints due to limited staffing resources. Brazil's many commitments to upcoming international events compound this issue.
Institutional risks[37]:					
Risk Factor	**Likelihood**	**Impact**	**Risk response**	**Residual risk**	**Background to assessment**
The programme could risk duplicating existing activities and/or fail to build synergies with other initiatives The programme could risk duplicating existing activities and/or fail to build synergies with other initiatives in the highly dynamic Brazilian context.	Likely	Significant	Formal coordination mechanisms among development partners are very limited but the Embassy is actively engaged in relevant coordination fora. Coherence with Denmark's multilateral cooperation with the World Bank, IEA, IRENA, NDC Partnership and others also contributes to coordination and synergy and will	Minor	The energy transition and climate action are increasingly crowded fields in Brazil, particularly since the change of government in 2023 and considering the high-profiled international events such as G20 and COP 30. Denmark is a small development partner, but the unique value added of government-to-government peer-to-peer cooperation is a key feature of the

[37] This category includes "internal" risk from the perspective of the donor or its implementing partners. It includes the range of ways in which an organisation and its staff or stakeholders may be adversely affected by interventions, e.g. damage to a donor's reputation if it fails to achieve its objectives, or from financial/fiduciary failure (Danida Guideline to Risk Matrix, 2018).

			be pursued by the MFA and MCEU in relevant fora		programme, which no other development partners provide.
Any unintended use of resources or misconduct could reflect negatively on the partnership.	Very unlikely	Significant	There will be no direct fund transfers to partner institutions. The Programme will follow DEA financial and contracting procedures, and the risk of direct corruption is considered unlikely.	Insignificant	Any fraud or misconduct would have devastating consequences for the partner institutions.

Annex 5: Budget details and budget notes

Table A5.1: Summary budget allocations at output level
All numbers in DKK.

Outcomes	Outputs		2025	2026	2027	2028	2029	Sub-total
1: Offshore Wind Energy Development	**1.1:** Process/cycle of offshore wind (OSW).	DEA staff	-	957.000	957.000	957.000	957.000	3.828.000
		Consultants	-	350.274	490.383	560.438	350.274	1.751.368
		Other Costs	-	230.742	323.039	369.187	230.742	1.153.710
		Subtotal	-	1.538.016	1.770.422	1.886.625	1.538.016	**6.733.078**
	1.2: Consenting process and social aspects for OSW	DEA staff	-	717.750	717.750	717.750	717.750	2.871.000
		Consultants	-	350.274	490.383	560.438	350.274	1.751.368
		Other Costs	-	202.575	283.605	324.120	202.575	1.012.875
		Subtotal	-	1.270.599	1.491.738	1.602.308	1.270.599	**5.635.243**
	1.3: Legal characterization of OSW.	DEA staff	-	717.750	717.750	717.750	717.750	2.871.000
		Consultants	-	233.516	326.922	373.625	233.516	1.167.579
		Other Costs	-	163.217	228.504	261.147	163.217	816.085
		Subtotal	-	1.114.483	1.273.176	1.352.522	1.114.483	**4.854.664**
							Outcome 1 Subtotal:	**17.222.984**
2: Long-term energy planning	**2.1:** Institutional frameworks and scenarios for long-term energy planning.	DEA staff	-	957.000	957.000	957.000	957.000	3.828.000
		Consultants	-	465.107	651.150	744.171	465.107	2.325.536
		Other Costs	-	274.092	383.729	438.548	274.092	1.370.461
		Subtotal	-	1.696.199	1.991.879	2.139.719	1.696.199	**7.523.997**
							Outcome 2 Subtotal:	**7.523.997**
3: Flexibility and integration of variable renewable energy	**3.1:** Regulation of frequency response and power system flexibility.	DEA staff	-	239.250	239.250	239.250	239.250	957.000
		Consultants	-	253.034	354.247	404.854	253.034	1.265.168
		Other Costs	-	146.222	204.710	233.955	146.222	731.108
		Subtotal	-	638.505	798.207	878.058	638.505	**2.953.276**
	3.2: Improved forecasting and dispatching for RE.	DEA staff	-	239.250	239.250	239.250	239.250	957.000
		Consultants	-	253.034	354.247	404.854	253.034	1.265.168
		Other Costs	-	146.222	204.710	233.955	146.222	731.108
		Subtotal	-	638.505	798.207	878.058	638.505	**2.953.276**
							Outcome 3 Subtotal:	**5.906.552**
4: Energy efficiency (EE)		DEA staff	574.200	574.200	574.200	574.200	574.200	2.871.000
		Consultants	176.000	264.000	572.000	704.000	484.000	2.200.000

	4.1: Low-carbon development in the industrial sector.	Other Costs	176.363	105.818	211.636	246.908	141.091	881.816
		Subtotal	926.563	944.018	1.357.836	1.525.108	1.199.291	5.952.816
	4.2: EE in buildings.	DEA staff	574.200	574.200	574.200	574.200	574.200	2.871.000
		Consultants	136.000	204.000	442.000	544.000	374.000	1.700.000
		Other Costs	204.530	122.718	245.436	286.342	163.624	1.022.651
		Subtotal	914.730	900.918	1.261.636	1.404.542	1.111.824	5.593.651
							Outcome 4 Subtotal:	**11.546.467**

Sub-totals per year:	1.841.293	8.741.243	10.743.101	11.666.941	9.207.421	
						42.200.000

Tentative budget for LTAs (Sector Counsellors), DKK million. Funding is from Finance Act allocation to Myndighedssekretariatet/SSC (finanslovskonto: FL 06.38.02.13) and separate from the above budget.

Table A5.2: Summary budget for LTAs (Sector Counsellors), DKK million

	2025	2026	2027	2028	2029	Subtotal
Outcome 1: Offshore Wind Development	0.6	1.2	1.2	1.2	0.6	4.8
Outcome 2: Long-term energy planning			1.2	1.2	1.2	3.6
Outcome 4: Energy efficiency (EE)	0.6	1.2	1.2	0.6		3.6
Yearly subtotal	1.2	2.4	3.6	3	1.8	
Grand total						12.0

Annex 6: List of supplementary materials

#	Document/information	Internet link if available
1.	Danish Energy Agency: Det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder (Danish only).	
2.	DEA Global Cooperation on Brazil - website	(link)
3.	Issue Note, Brazil G20 Energy Transitions Working Group	(link)
4.	Brazil's Ten-Year Energy Expansion Plan (PDE) 2031 - English version	(link)
5.	Brazil's 2050 National Energy Plan (PNE 2050) – in Portuguese	(link)
6.	Brazil NDC update 2023	(link)
7.	The Energy Progress Report 2024 – Brazil	(link)
8.	The Energy Progress Report 2024 (by World Bank ESMAP; IEA; IRENA, WHO and United Nations Statistics Division)	(link)
9.	World Bank ESMAP Scenarios for Offshore Wind Development in Brazil	(link)
10.	World Bank ESMAP RISE indicators Brazil	(link)
11.	Brazil energy data, International Energy Agency (IEA) (2021-2022, current)	(link)
12.	Brazil Energy Profile, IEA, November 2023	(link)
13.	IEA Clean Energy Transitions Programme (CETP) Annual Report 2023 (March 2024) – see sections on Brazil	(link)
14.	International Renewable Energy Agency (IRENA) Brazil profile, August 2023	(link)
15.	World Economic Forum (WEF) White Paper on Brazil's energy transition (2023)	(link)
16.	WEF Fostering Effective Energy Transition 2024 (see section on Brazil)	(link)
17.	Summary of the Steering Committee Meeting on 24 October 2023 on Energy Cooperation between Denmark and Brazil	
18.	SSC Brazil energy - Progress Report 2023 (March 2024)	
19.	Danida Approach Note on Fighting Poverty and Inequality	(link)
20.	Danida How to Note on Energy Transition and Emission Reductions in Developing Countries	(link)
21.	SSC - Updated work programme for Outcome A on long-term energy planning, April 2024 – March 2025	
22.	SSC- Proposed updated work programme for Outcome B on Integration of Renewable Energy, April 2024 – March 2025	
23.	SSC – ppt presentation at DEPP 2025 kick-off seminar (7 March 2024)	
24.	SSC - Results-Framework-and-Work-Plan-yearly report 2023 (1 March 2024)	
25.	SSC Brazil-Narrative-Annual-Report for 2023 final (28 February 2024)	
26.	SSC - Work programme for November 2023 – April 2024	
27.	Full project document for Strategic Sector Cooperation (SSC) on least-cost long-term energy planning and improved integration of renewable energy (Approved by MFA). Hereinafter referred to as SSC.	
28.	SSC - Energy Background document (16 August 2023)	
29.	Danida Open Aid, SSC energy, Brazil	
30.	Job creation in a new industry – learnings from Denmark's offshore wind journey (DEA; 2023)	(link)
31.	The Danish Energy Agency as a one-stop-shop (2020)	(link)
32.	Consultant's end-of-mission report on formulation mission to Brazil (3 July 2024)	
33.	Review Report, MFA MTR of DEPP III, March 2024	
34.	Green Climate Fund – Projects in Brazil	(link)

Annex 7: Plan for communication of results

Communicating key events, results and / or positive effects of the programme will happen on an ongoing basis and in close coordination between DEA, MCEU and MFA

What? (the message)	**When?** (the timing)	**How?** (the mechanism)	**Audience(s)**	**Responsible**
BRADEP programme information, selected results targets (as mentioned in the DEPP 2025 Concept Note[38] to the Danida Programme Committee, the outcome indicator for Outcome 1 (offshore wind) was tentatively selected for this); and results updates against targets.	When the Programme DEPP 2025 programme including BRADEP approved and updated regularly/ annually	Danida Open Aid.	The Danish resource base and taxpayers.	MFA/KLIMA
Fact sheet/small brochure ("Kernefortælling") on BRADEP. Key messages from BRADEP results, achievements and effects communicated through relevant channels and / or communication products	Fact sheet when BRADEP is approved and updates as relevant. Other key messages as relevant during implementation.	Danish Energy Agency website. MCEU website. Social media.	Danish resource base and Danish taxpayers. International development partners.	DEA MCEU
Fact sheet/small brochure on BRADEP in Portuguese. Key messages from BRADEP and information on BRADEP-related key events.	Fact sheet immediately when BRADEP approved and updates as relevant.	Fact sheet/small brochure on BRADEP in Portuguese and English on Embassy website.	Brazilian partners.	Embassy of Denmark in Brazil
Key messages on BRADEP results and achievements, including "impact stories".	During BRADEP implementation.	MFA/Danida website and newsletters. World's Best News campaign. State of Green. Social media.	The Danish resource base, international partners.	MFA/KLIMA
Key messages on BRADEP results and achievements.	As relevant during implementation.	Websites, social media etc. of national partners.	National partners and stakeholders.	National partners

[38] At that time, DEPP 2025 was referred to as DEPP IV.

Annex 8: Process action plan

Action/deliverable	Target date	Responsible
Presentation of early draft DEPP IV (now DEPP 2025) programme document ("concept note") to the Danida Programme Committee.	11 June	MFA(KLIMA)
DEA formulation mission to Brazil	10-20 June 2024	DEA/Embassy
Consultant's End-of-Mission Report which includes names and titles of persons met and key takeaways from each meeting.	3 July	Formulation process consultants
Short note to key national partner institutions summarising the key topic areas proposed for cooperation during 2025-2029.	5 July	DEA/Embassy
Finalise draft BRADEP PD and submit to DEA together with the rest of the full DEPP programme documentation package consisting of the country PDs for Brazil, India, and Kenya and the framework programme PD.	31 July	Formulation process consultant
DEA/Embassy online consultation with MME	12 August	DEA/Embassy with MME
Submit full draft programme documentation package including BRADEP PD for appraisal	19 August	DEA
Appraisal	19 August-23 September	Appraisal consultants engaged by MFA(KLIMA)
Appraisal report (draft/final)	23/27 September	Appraisal consultants engaged by MFA(KLIMA)
Adjust draft DEPP 2025 PD package including BRADEP PD based on appraisal recommendations and submit to DEA for comments.	30 September	Formulation process consultant
DEA and MFA to submit corrections to draft final DEPP 2025 PD package including BRADEP PD	7 October	DEA, MFA(KLIMA) - including comments from Embassy, MCEU
Consultant to make any final minor adjustments/edits in DEPP 2025 PD package including BRADEP PD based on corrections received and then submit to DEA for final check.	8 October	Formulation consultant
DEA/MFA to complete final check and forward final DEPP 2025 PD package including BRADEP PD with appropriation cover note to the UPR Secretariat.	14 October (firm deadline to UPR)	DEA, MFA(KLIMA)
Presentation of BRADEP PD (together with DEPP 2025 Framework PD and Country PDs for Indiaand Kenya) to the Council for Development Policy (UPR).	31 October	MFA(KLIMA) with DEA
Approval of DEPP 2025 by the Danish Minister for Development Cooperation.	Mid-November	Danish Minister for Development Cooperation.
Document for Finance Committee (Aktstykke) and presentation to the Parliamentary Finance Committee.	November	MFA(KLIMA)
Signing of Agreement between MFA and DEA for DEPP 2025 implementation.	Early December	DEA/MFA

BRADEP Implementation in Brazil.	Early 2025-end 2029	DEA with Brazilian national partners
BRADEP start-up phase, including further assessments of partner needs and priorities, updating/ further constitution of technical working groups, preparation of structured plan for knowledge sharing, development of work plans and draft progress and results reporting, etc. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy to be considered by the MTR.	January-June 2025	DEA with national partners
BRADEP Steering Committee meetings	Annually	Embassy of Denmark/MME/other relevant partners, DEA, Brazilian Embassy in Denmark
Technical working groups for each Outcome – preparing work plans and progress reports for Steering Committee approval.	Meeting every six months	DEA with national partner institutions
Targeted communication of results as per communication strategy and plan.	Ongoing throughout implementation period	DEA, Embassy, MFA, national partners
Prepare consolidated draft exit strategy for consideration by MTR.	Prior to MTR	DEA
Mandatory MFA Mid-term Review (MTR).	Mid-2027 (timing tbd)	MFA(LEARNING)
Final progress and results reporting.	Early 2030	DEA

Annex 9: BRADEP alignment framework vs. SSC

The SSC and BRADEP involve partly overlapping topics, so there is a need to align the two programmes, both for funding and reporting purposes. The work under the SSC will be intensified and planned to be completed by the end of 2025, not by August 2026 as originally indicated in the SSC project document. The work under the SSC will be completed as stated in the SSC results framework – see the illustrations below in Tables A9.13 for an overview.

BRADEP outcomes 1, 2 and 3 will build on the SSC results and will start when the SSC work has been completed – anticipated start early 2026. The present section provides an outcome-by-outcome overview of how the different topics are aligned at output level between the programmes. BRADEP Outcome 4 on energy efficiency will begin in early 2025 and since energy efficiency is not a topic in SSC there will be no overlap.

BRADEP Outcome 1: Offshore wind energy development:

Table A9.1: Division of offshore wind development outputs between the SSC and BRADEP

	2023	2024	2025	2026	2027	2028	2029	
SSC **Outcome 1.B:** Improved integration of renewable energy in the Brazilian power system to support a cost-effective security of supply (with a focus on offshore wind)								
Output 1.B.2: Improved regulatory frameworks for offshore wind								
Activity 1.B.2.1: *Brazilian delegation visit to Denmark with a focus on Offshore Wind*								
Activity 1.B.2.2: *Workshops around MSP and environmental impacts of offshore wind*								
Activity B.2.3: *Evolution of offshore wind tenders in Denmark*								
BRADEP **Outcome 1:** Offshore wind energy development further enabled through improved regulatory framework conditions considering socio-economic and environmental aspects.								
Output 1.1: Process/cycle of offshore wind. A systematic and planned approach to offshore wind for a harmonious coexistence of infrastructure development and sustainability, while reducing risk.								
Output 1.2: Consenting process and social aspects further defined for offshore wind with a focus on Just and Inclusive Energy Transition.								
Output 1.3: Legal characterization of offshore wind.								

The BRADEP outputs will build on the experience exchange and learning developed during the SSC phase, output 1.B.2 on improved regulatory frameworks for offshore wind. In BRADEP the focus will be to address the main elements of the cycle of offshore wind, the consenting process and the legal aspects that need to be considered when developing a new offshore wind sector.

BRADEP Outcome 2 on Long-Term Energy Planning:

Table A9.2: Division of long-term energy planning outputs between the SSC and BRADEP

	2023	2024	2025	2026	2027	2028	2029	
SSC **Outcome 1.A:** Support long-term energy planning to achieve least-cost low-carbon development of the Brazilian energy sector								
Output 1.A.1: Supporting studies on key technologies for the Brazilian energy transition								
Output 1.A.2: Advance impact of long-term planning studies on political decision-making								
Output 1.A.3: Improve methodological approaches to model low-carbon energy technologies								
BRADEP Outcome 2: Long-term planning processes and methodologies effectively inform least-cost, low-carbon development of the energy sector and enhanced climate change mitigation in support of Brazil's just and inclusive energy transition								
Output 2.1: Governance and institutional frameworks and scenario development approaches for long-term energy planning are designed to effectively support the definition, evaluation, and updating of decarbonisation strategies and policies.								

BRADEP Output 2.1 on Governance and institutional frameworks and scenario development approaches for long-term energy planning are designed to effectively support the definition, evaluation, and updating of decarbonisation strategies and policies will be a continuation of SSC Output 1.A.2, entitled "Advance impact of long-term planning studies on political decision-making". As explained in the SSC results framework, Outputs 1.A.2. will facilitate knowledge sharing on long-term energy planning processes and methodologies that are used in Denmark and Brazil by means of bilateral expert workshops and triangular cooperation events involving third countries. Additionally, Output 1.A.2 will identify areas for a deeper, longer-term cooperation on the topics of governance/institutional frameworks and scenario methods. This will then form the basis for Output 2.1 of the BRADEP programme, which aims to produce a joint study that will inform the development of the Brazilian energy transition plan.

BRADEP Outcome 3 on the Integration of Variable Renewable Energy:

Table A9.3: Division of integration of VRE outputs between the SSC and BRADEP

	2023	2024	2025	2026	2027	2028	2029	
SSC **Outcome 1.B:** Improved integration of renewable energy in the Brazilian power system to support a cost-effective security of supply								
Output 1.B.1: Enhanced capability in integration of variable renewable energy								
Activity 1.B.1.1: *Support for development of improved forecast methodology for the power system*								
Activity 1.B.1.2: *Enhanced operational procedures and dispatch management*								
Activity 1.B.1.3: *Identification of flexibility products, e.g. capacity reserves, ancillary services and demand-side management*								
Activity1. B.1.4: *Support regulatory models and planning processes for grid connections and interconnections*								
BRADEP **Outcome 3:** Flexibility and integration of an increasing share of variable renewable energy from wind and solar energy, through optimised flexibility measures and renewables forecasting, which contributes to more stable and affordable electricity also for disadvantaged communities in line with Brazil's policy of just and inclusive energy transition.								

Output 3.1: Frequency response and power system flexibility products are regulated.								
Output 3.2: Improved forecasting and dispatching tools and procedures for variable renewable energy generation are implemented								

DEPP Output 3.1 on frequency response and power system flexibility will be a continuation of SSC Output 1.B.1, Activity 1.B.1.3, entitled "Identification of flexibility products, e.g. capacity reserves, ancillary services and demand-side management". As explained in the SSC results framework, Activity 1.B.1.3 will include workshops to facilitate knowledge exchange on frequency response measures and power system flexibility products. The BRADEP programme will build on this by aiming to facilitate the implementation of selected measures, which have been identified as most relevant during the SSC phase of the cooperation. This will also include knowledge sharing and capacity-development activities, such as tailored training courses and technical delegation visits to Denmark.

Annex 10: Long Term Advisor job profiles

The BRADEP programme provides the possibility of having up to three long term advisors (LTAs) working in partner institutions as in-house experts and advisors. Currently, two positions are proposed: Note: The draft LTA job provides are currently being discussed with partners.

Long term senior energy advisor in consenting process and marine spatial planning for offshore wind to be based in IBAMA/MMA *(DRAFT):*

Area of responsibility/tasks:

The main responsibility of the advisor will be to serve as an in-house expert and advisor to both IBAMA and MMA in the different tasks associated with the internal capacity development on on best practices concerning consenting processes, licensing and marine spatial planning for offshore wind. Furthermore, the Danish Energy Agency´s internal staff will support the senior expert advisor in this task, when appropriate.

Responsibilities include:

- Develop an internal strategy with IBAMA and MMA to create capacity concerning offshore wind in both institutions and ensure that there is a plan to multiply the effects of that knowledge in a federal and state level.
- Support IBAMA and MMA in setting up an environmental technical working group that works with offshore wind to promote scientific research concerning offshore wind in Brazil.
- Participate in the working groups under the BRADEP and follow up on progress in project activities under outcome 1 on offshore wind.
- Advise on the implementation of the BRADEP in a cohesive and coordinated manner that aligns with Brazilian plans and priorities.
- Facilitate delegation visits related to outcome 1 with MMA and IBAMA.
- Help ensure a smooth dialogue and communication between IBAMA, MMA and the Danish Energy Agency under Outcome 1 by acting as a binding link between the institutions.

Long term senior energy advisor in energy efficiency to be placed with ANEEL (*DRAFT*)

Area of responsibility/tasks:

The main responsibility of the adviser will be to serve as an in-house expert and adviser to both ANEEL and MME in the different tasks associated with the internal capacity building concerning the best practices in developing a transparent and ambitious regulatory and institutional framework leading to a cost-effective implementation of energy efficient policies, strategies and plans for buildings and industry in Brazil at national and provincial level.

Furthermore, the Danish Energy Agency´s internal staff will support the senior expert advisor in its task, when appropriate.

Responsibilities include:

- Developing incentive schemes for energy efficiency in the industrial sector based on environmental impact assessment studies and tested through pilot projects.
- Developing and disseminating EE technology catalogues and technical guidelines for selected industrial sectors.
- Implementing targeted initiatives to promote deployment of co-generation, electrification, alternative fuels (e.g. hydrogen) in the industrial sector, where it contributes to GHG-emissions reductions carried out
- Developing and implementing targeted initiatives to promote energy efficiency in public buildings at federal and state level.
- Developing recommendations of energy efficiency and LCA requirements to be included in building codes as part of new regulation.
- Developing and disseminating EE technology catalogues for buildings and technical guidelines for selected technologies and systems.

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Annex J:

India-Denmark Energy Partnership (INDEP II) 2025-2029

Key results:

- DEA technical cooperation has contributed to advancing a resource-efficient, reliable, and affordable electricity system, through improved integration of renewable energy, while also promoting a socially just and inclusive green transition through improved governance and data for sustainable development.
- DEA technical cooperation has contributed to inform and prepare a timely and efficient implementation of India's offshore wind strategy through an attractive enabling framework emphasizing environmental and social impact assessments.
- Long-term energy planning and modelling has informed decision-making on energy policies including through the inclusion of socioeconomic considerations in updates of the Indian Power Outlook for contribution to a low-carbon energy trajectory that is just and inclusive.
- Partnership with the Tamil Nadu on wind energy has contributed to fostering a sustainable and just energy transition with emphasis on developing partner capacity and policy frameworks on wind energy, including with a focus on issues related to job creation and co-existence with local communities.

Justification for support:

- Climate and energy targets calls for immediate policy action for accelerating renewable energy deployment in India.
- Sharing of best practices and know-how allows India to leapfrog the transition towards clean and affordable energy.
- The India-Denmark Green Strategic Partnership enables high-level political dialogue strengthening impact of the programme.
- Continuation of significant progress and results achieved during the INDEP I program with enhanced socio-economic focus.

Major risks and challenges:

- Continued reliance on fossil fuels a risk, but least-cost modelling provides a strong argument for renewable energy sources.
- Staffing constraints in Indian partner institutions poses limitations, but this will be mitigated through a strengthened focus on institutionalization of capacity development results.
- Risk of insufficient coordination and lack of synergies with other initiatives in the highly dynamic Indian context, but DEA and EDK actively engaged in strengthening donor coordination.

File No.	Public 360 No. 24/22853						
Country	India						
Responsible MFA Unit	Green Diplomacy and Climate (KLIMA)						
Sector	Energy						
Partner	Danish Energy Agency (DEA)						
DKK million	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total**
Commitment	N/A	N/A					
Projected disbursement		13.0	15.4	19.3	20.9	15.4	84.0
Duration	2025-2029						
Previous	INDEP 2020-24 DKK 69.0 million; SSC 2017-21 14.4 million						

Objective:

The implementation of targets and measures for a sustainable and low-carbon energy mix supported by the India-Denmark Energy Partnership, in line with the Paris Agreement paving the way for a just and inclusive transition to renewable energy.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%	0%	100%	0%	0%
Total green budget (DKK)		**84.0 million**		

Justification for choice of partners:

The key national partners are the ones with the relevant political mandates and those who are highly committed to the bilateral energy partnership in the described areas of engagement.

Summary:

Government-to-government cooperation for exchange of knowledge and experience to accelerate a green energy transition with attention to environmental and socio-economic aspects. Focus on offshore wind, long-term scenario-based modelling and energy planning, integration of variable renewable energy, and wind energy in the State of Tamil Nadu. This will contribute to the acceleration of India's energy system transformation by advancing a just and inclusive transition to renewable energy. The energy partnership between India and Denmark will support Sustainable Development Goal 7 on affordable clean energy, and the goals of the Paris Agreement on climate change.

Budget:

Outcome 1: Offshore wind	DKK 15.2 million
Outcome 2: Scenario-based modelling and long-term energy planning	DKK 23.5 million
Outcome 3: Integration of variable renewable energy	DKK 20.7 million
Outcome 4: Wind energy in Tamil Nadu	DKK 7.8 million
Long-term Advisors	DKK 16.8 million
Total	**DKK 84.0 million**

Ministry of Foreign Affairs of Denmark (MFA)
Danish Energy Agency (DEA)

India-Denmark Energy Partnership
Phase II (INDEP II) 2025-2029
Country Programme Document

MFA file: Public 360 No. 24/22853

Contents

Abbreviations and acronyms

Note: Not all technical terms are included in this list but are explained where they are used – this is particularly the case in Annex 10 on TSO-ISO collaboration.

AMG	Danida Aid Management Guidelines
Ancillary services	A variety of operations beyond generation and transmission that are required to maintain grid stability and security. These services generally include active power control or frequency control and reactive power control or voltage control, on various timescales.
BRICS+	Brazil, Russia, India, China, South Africa - alliance of major developing countries, with Saudi Arabia, Egypt, Ethiopia, Iran, and the United Arab Emirates joining in early 2024
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CIF	Climate Investment Funds
CoE	Centre of Excellence for Offshore Wind and Renewable Energy
COP	Conference of the Parties (to the UNFCCC)
CO_2	Carbon dioxide
CTU	Central Transmission Utility of India Limited
CPI	Corruption perception index
DAC	OECD Development Assistance Committee
Danida	Brand name for Danish International Development Cooperation
DEA	Danish Energy Agency
DEPP	Danish energy partnership programmes
DISCOM	Distribution company
DKK	Danish kroner
DSO	Distribution system operator
Energinet	Danish Transmission System Operator
ESIA	Environmental and social impact assessment
ESMAP	World Bank Energy Sector Management Assistance Program
EU	European Union
G20	Group of twenty largest economies
GDP	Gross domestic product
GHG	Greenhouse Gas
GoI	Government of India
GtG	Government to Government
GW	Gigawatt
GWEC	Global Wind Energy Council
HRBA	Human Rights Based Approach
HVDC	High Voltage Direct Current
IEA	International Energy Agency
IFU	Investment Fund for Developing Countries (Denmark)
INR	Indian Rupees
IPO	Indian Power Outlook
ISO	Independent System Operator
IRENA	International Renewable Energy Agency
JETPs	Just Energy Transition Partnerships
JWG	Joint working group
LNOB	Leaving no one behind
LTA	Long-term advisor

MFA (LEARNING)	MFA Department for Evaluation, Learning, and Quality
MCEU	Danish Ministry of Climate, Energy and Utilities
MFA	Ministry of Foreign Affairs of Denmark
MFA(KLIMA)	MFA Department for Green Diplomacy and Climate
MNRE	Ministry of New and Renewable Energy
MOP	Ministry of Power
MTR	MFA Mid-term Review
NDC	Nationally Determined Contribution under the UNFCCC
NGO	Non-governmental organisations
NIWE	National Institute of Wind Energy
OECD	Organisation for Economic Co-operation and Development
OSW	Offshore wind
PAG	Programme Advisory Group (for DEPP, consisting of the MFA, MCEU, and DEA GC as the secretary)
PANT	Human rights principles of participation, accountability, non-discrimination, and transparency
PD	Programme document
PPA	Power Purchase Agreement
PV	Photovoltaic
RE	Renewable energy
SAG	Strategic Advisory Group (for DEPP, consisting of the MFA, MCEU, and DEA GC as the secretary)
SC	Steering committee
SDGs	Sustainable Development Goals
SECI	Solar Energy Corporation of India Limited
SSC	Strategic sector cooperation
SWOT	Strengths, weaknesses, opportunities, threats
TA	Technical assistance
TWG	Technical Working Group
TOC	Theory of change
TOR	Terms of reference
TSO	Transmission system operator
UNEP CCC	United Nations Environment Programme – Copenhagen Climate Centre
UNFCCC	United Nations Framework Convention on Climate Change
UPR	Danish acronym for the Council for Development Policy
VRE	Variable renewable energy
WB	World Bank

1. Introduction, context, strategic considerations, rationale, and justification

1.1 Introduction and background

This Programme Document (PD) describes the proposed India-Denmark Energy Partnership Programme, Phase II (INDEP II). INDEP II is part of a proposed Danish Energy Partnership Framework Programme (DEPP 2025[1], 2025-2029) that also comprises country programmes in Brazil and Kenya. The PD is based upon the lessons learned and key results of ongoing successful cooperation under the first phase of INDEP (INDEP I, 2020-2024). Consultations with present and potential future partners took place during a formulation mission undertaken by the Danish Energy Agency (DEA) to India during 23-30 May 2024. From the mission it is clear that the support from DEA is highly appreciated by partners. For further information on the formulation, approval, and implementation process, please refer to the Process Action Plan in Annex 8.

Denmark has supported the green transition in India since the first Strategic Sector Cooperation (SSC) programme on offshore wind that started in 2018[2] followed by the commencement of the current energy partnership (INDEP I) in 2020. INDEP I has delivered key results on both a technical and strategic level, which has led to key results such as support for development of the first offshore wind strategy and first public tender as well as the preparation of the Indian Power Outlook that demonstrates the most cost-efficient pathways to net-zero in 2050 for the power sector. Through the partnership, Denmark has managed to establish a very strong position as a nodal partner to the Government of India (GoI) in the area of the green transition and Indian partners have declared a strong interest in continuing the collaboration in a new programme phase. Based on the results of INDEP I, the aim of INDEP II is to strengthen and expand the energy partnership in the areas and within the particular topics, where Danish experiences and strongholds can contribute most effectively to accelerate India's green energy transition.

India is the third largest consumer of energy in the world and coal accounts for more than 75 % of total electricity production with high health and climate impact for the population. Therefore, India's energy transition is not only important domestically but also critical for delivering on the global targets set out in the Paris Agreement. India has demonstrated high ambitions to reduce greenhouse gas emissions (GHG) and advance renewables in its energy mix, but providing green, affordable and reliable electricity to its 1.4 billion people as well as matching the growing energy demand of its industrial sector, constitutes an immense challenge for the country. India's ability to succeed in its green endeavours as well as deliver on the Government of India's promise of continued economic growth and sustained poverty reduction fundamentally depends on its ability to accelerate the transformation of its energy sector. Given the urgency of mitigating climate change, the transition of the Indian economy has to take place at unprecedented scale.

India is particularly interested in learning from Denmark's demonstrated ability in deploying renewable energy, maintain energy reliability and decouple economic growth from GHG emissions. India has expressed specific interest in learning from Denmark's long experience in the deployment of offshore wind as well as the Danish experiences of integrating very high shares of variable renewable energy into the grid, providing cheap electricity without compromising the level of

[1] So called because it starts in 2025. It was previously referred to as DEPP IV, including in the concept note to the Danida Programme Committee.

[2] The SSC was funded with totally DKK 14.35 million, hereof a grant of DKK 999,270 for an inception phase (2017-2018), a grant of DKK 8.5 million for SSC phase 1 (2018-2021) and a grant of DKK 4.86 million (2022) for extension of phase 1.

security of supply. Furthermore, India is also interested in using evidence-based modelling based on the Danish approach to long-term energy planning and modelling, which is key to ensure cost-efficient long-term planning and assess the socio-economic effects of the energy transition.

INDEP is founded on two Memorandums of Understanding (MOU) with the Ministry of New and Renewable Energy (MNRE), (signed in 2008) and the Ministry of Power (MOP), (signed in 2020 – efforts are underway to extend its duration). In addition, a joint Centre of Excellence on Offshore Wind and Renewable Energy (CoE) was initiated in 2019 with a Letter of Intent with MNRE.

Country context - India's green energy challenges and opportunities

With a population of 1.4 billion people, India is the world's most populous country and currently ranked as the third largest CO_2 emitter. In 2023, India had the fastest growing economy in the world – a trend that is projected to continue in the years to come. Since the turn of the century, India has experienced a remarkable socioeconomic development. Between 2004 and 2022, extreme poverty in India decreased by 40 %, driven not at least by a rapid expansion of basic services, including access to electricity. In 2000, approximately 60 % of the population had access to electricity – today India has achieved near-universal access to electricity following a strong political focus on improving electricity access in rural and remote areas[3] [4]. The development in India hence illustrates how access to affordable and reliable electricity is an important measure for alleviation of poverty and increasing livings standards for especially the poor and vulnerable parts of the population.

Even though access to electricity has increased significantly, many villages are still without a reliable supply. Power cuts affect 85 % of Indian households on a daily basis, not only hampering economic growth, but also posing a challenge to socioeconomic development. Furthermore, it is important to note that the increase in demand up till now has been covered almost exclusively by fossil energy sources. In recent years, India has managed to rapidly scale up its renewable energy capacity and now ranks 4th largest in wind power capacity and 5th largest in solar power capacity, reaching a total capacity of 197 GW (including hydropower) in July 2024[5]. Notably, India has experienced some of the lowest costs for large scale Solar PV plants globally. However, the production of electricity in India continues to be heavily dominated by coal, with coal posing a share of more than 75 % of total electricity production. Renewables such as hydro, wind, solar and biofuels only make up a share of 20 %, followed by natural gas (3 %) and nuclear (2%) (2023). Looking at energy as a whole, over 80% of India's energy needs are currently covered by coal, oil and solid biomass. Coal is set to remain the largest source of energy for the years to come.

India's high level of economic growth has been accompanied by a spark in energy demand. Energy consumption in India has more than doubled since 2000 and for 2024-2026, India's energy demand is expected to grow by at least 6% per annum, in total an increase roughly equal to the current energy consumption of the United Kingdom[6]. Globally, India is likely to account for 25% of global energy demand growth over the next two decades[7]. Looking only at electricity demand, electricity consumption in India is expected to increase fivefold in the coming 25 years, driven by megatrends such as a growing middle class and an increase in urbanization. Thus, covering both current, but in particular also expected future demand for energy constitutes a paramount challenge for the Government of India (GoI). At the same time, a key political objective for the GoI is to ensure

[3] https://ourworldindata.org/energy/country/india

[4] In international statistics having access to electricity is defined as having an electricity source that can provide very basic lighting, and charge a phone or power a radio for 4 hours per day"

[5] https://cea.nic.in/wp-content/uploads/installed/2024/07/IC_July_2024.pdf

[6] https://www.business-standard.com/industry/news/powering-up-india-to-equal-uk-s-current-electricity-demand-in-3-years-124021100645_1.html

[7] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1966227

continued economic growth and increasing living standards. The BJP[8]-government led by Prime Minister Modi has put forward the ambition for India to achieve high-income status and become a developed nation by 2047, making it crucial for the government that the green transition does not happen at the expense of continued economic development.

The Indian society and especially the electricity sector now stands at a crossroad in terms of how to meet its future massive power demand. Currently, the rapid increase in demand is expected to be met primarily by adding more fossil fuels to the system. This will not only hold severe consequences for both the fight against climate change, but also pose a serious threat to sustained socioeconomic development in India. India is among the countries most vulnerable to climate change and India is already feeling the effects from climate hazards due to global emissions, which are hitting the country increasingly hard. Extreme weather events, like intense rainfall and heat waves have become more frequent and extreme by nature across India. Without sufficient mitigation measures put in place, the impact of climate change risks to severely undermine the development gains made by India in recent decades, pushing millions of people back into poverty and hold potentially disastrous implications for public health. Today, India is among the countries with the worst air quality globally – in 2019, it was estimated more than 1.5 million deaths in India could be attributed to air pollution[9]. Furthermore, it is also important to note that India is currently the world's second largest coal importer. Hence lowering dependency on imported fuels would be beneficial for the Indian economy, though strong vested interests in coal production also exist.

However, India has a significant potential to increase and accelerate its deployment of renewable energy – both on land, but also at sea, where particularly the coast of Tamil Nadu in the south provides opportunities for India to expand into the offshore wind sector. Gujarat is another state with significant offshore wind potential. In 2023, India released its first strategy for offshore wind development, followed by the announcement of the country's first offshore wind tender in 2024 and the announcement of funding for two additional offshore wind projects later the same year. India is currently working actively on integrating higher shares of variable renewable energy into the energy mix with a focus on providing secure, affordable, and sustainable access to energy, but are challenged by the magnitude and complexity of identifying the ways of operating the world's largest grid based on fluctuating renewable energy. Meeting India's energy demand with renewable energy sources will require large investments in renewable energy and here wind and solar power are cost-effective options in comparison with new fossil fuel installations. Furthermore, it will require implementation of effective polices and regulation that can attract investments and steer the electricity sector and the economy towards a sustainable path in line with climate and energy targets put forward by the GoI.

India has demonstrated high ambitions to reduce its current high carbon intensity in its electricity mix, as reflected in its Nationally Determined Contribution (NDC) pledge under the Paris Agreement on Climate Change/UN Framework Convention on Climate Change (UNFCCC). At the operational level, this is reflected in its efforts to increase the share of renewable energy (RE) in power generation. The long-term goal of India is to reach net-zero emissions by 2070. India's NDC includes an emissions-intensity target of 45% below 2005 levels by 2030 and a target of achieving 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. In addition, at COP26 India made the ambitious target of 500 gigawatts (GW) of non-fossil capacity by 2030, including approximately 100 GW from wind, out of which 37 GW is expected to

[8] The Prime Minister's political party Bharatiya Janata Party

[9] https://www.bc.edu/bc-web/bcnews/nation-world-society/international/air-pollution-in-inda.html

come from offshore wind. MNRE's goal is already in 2024 and 2025 to award 7.2 GW of offshore wind capacity.

While these targets will be challenging to achieve, it demonstrates strong commitment to rapidly expand renewable energy production which will require e.g. high quality data and scenario modelling to support the long-term energy and investment planning. Furthermore, new social and environmental opportunities and challenges needs to be addressed in the early stage of the planning in order to ensure a just and inclusive transition to green energy.

Political, economic and regulatory challenges

While India has made significant progress to accelerate the build-out of renewable energy, implement energy market reforms, and integrate renewable energy sources in the grid, the country still faces severe challenges to achieve a just and inclusive energy transition, providing affordable and reliable green energy to its population:

- Legacy of coal: The country's reliance on coal power remains substantial (reaching almost USD 6.2 billion in the financial year of 2023), and significant subsidies in the coal and petroleum sectors may restrict the financial resources available for investments in renewable energy. While there is a political focus on renewable energy in India, the coal sector's lobbying power remains a significant factor in shaping India's energy landscape and strong vested interests in the coal industry remains, with the state-owned company Coal India Limited (CIL) being the largest coal miner in the world. The sector is a significant source of employment and revenue and has substantial political backing due to its economic importance, including due to strong investments in overseas coal mines such as in Mozambique and Indonesia.
- Grid development: The new geographies of energy generation with high shares of renewable energy will require new grid development, and long-term planning will be critical to ensure a cost-efficient build-out. Moreover, integrating a higher share of renewables comes with intermittency issues. Upgrading the national grid and operational procedures in order to ensure flexibility is crucial to manage this variability, enhance efficiency, and ensure a reliable energy supply.
- Regulatory barriers: India's federal structure presents regulatory challenges, with inconsistent implementation of regulations across different states, creating an environment that is not conducive to investors. Streamlining regulatory processes to facilitate the faster deployment of renewable energy projects will be essential. Furthermore, addressing the need for providing a stable policy environment is crucial, ensuring that policies are transparent, sustainable, and formulated with consensus among the states.
- Socially inclusive and just green transition: Investments in renewable energy in India has the potential to leverage economic opportunities, but will also require comprehensive and forward-looking skilling, re-skilling and development programmes to build sufficient competences, local content and decent jobs. Furthermore, potential adverse community impacts, such as land displacement, loss of livelihoods, and environmental degradation, must be proactively mitigated in order to minimize resistance from local communities and maximize benefit sharing. Community engagement and consent are critical elements in this process, ensuring that affected communities are not only protected but also benefit from the transition.

INDEP II will help address these issues by sharing experiences and best practices from Denmark's advanced experience in long-term energy planning, and the development, planning, and support for effective integration of renewable energy, including offshore wind.

Institutional framework

The institutional framework of India's power sector is characterized by a complex structure involving multiple ministries, regulatory bodies, and state entities.

The responsibilities among the actors in the Indian energy sector are divided in the following way:

- The Central Government sets national policies through the Ministry of New and Renewable Energy (MNRE) and Ministry of Power (MOP), and their agencies (CEA, NIWE and others).
- State Governments implement central policies and have some autonomy in areas such as power distribution.
- Regulatory bodies such as CERC, which oversees the functioning of inter-state electricity markets, regulate tariffs and oversee operation of the power system.
- State-Owned Enterprises exist for the generation of power, as well as for the distribution of power (DISCOMs)
- Public sector enterprises, operating under the administrative control of the Ministry of Power, are responsible for the transmission of electricity across India, like PowerGrid.
- Private sector enterprises are engaged in generation, distribution, and renewable energy projects.

The institutional structures are further described in Section 1.8 and Annex 1 and 2.

1.2 Key results from INDEP Phase I

Implementation of INDEP I has progressed according to plan and the partnership is expected to reach the majority of programme targets before the end of 2024. In general, the activities under INDEP I have aimed at delivering technical capacity development and inputs with a strong focus on enhancing transparency and good governance in the energy sector. Three of the key results and achievements of INDEP I include:

Support to the first offshore wind tender: Activities under INDEP I have played a key role in supporting the Ministry of New and Renewable Energy (MNRE) and the National Institute of Wind Energy (NIWE) in developing the country's first *Strategy for Establishment of Offshore Wind Energy Projects* (published in 2023)[10] and preparing the first offshore wind tender of a total of 4 GW outside the coast of the state of Tamil Nadu (announced in February 2024). Through the joint *Centre of Excellence on Offshore Wind and Renewable Energy* (CoE), Danish experts have supported partners in developing a conducive and transparent regulatory framework for offshore wind, preparing the tender documents and assisted in designating the areas for offshore wind build-out with due consideration of possible environmental and social impacts of the projects (*maritime spatial planning*). Lastly, Denmark has assisted in de-risking future offshore wind projects by assessing the port readiness of relevant ports in Tamil Nadu and Gujarat, [11]aiming to ensure that relevant port infrastructure will be in place in time to handle a rapid build-out of offshore wind and generate positive spill-over effects for local communities, including jobs in the renewable energy sector and sub-industries. The assessment of ports has later been used by the Ministry of Ports, Shipping and Waterways (MPSW) to designate the ports for operation and maintenance (O&M) of future offshore wind projects.

"The joint projects on maritime spatial planning and port infrastructure have provided significant inputs for the draft tender document that is currently under stakeholder consultation as well as the upcoming tenders for offshore wind in India. The Danish approach and experience has been very helpful to advance this and has brought great value to take

[10] Strategy for Establishment of Offshore Wind Energy Projects (link)
[11] Tamil Nadu and Gujarat are the two states where the OSW development is currently planned to take place.

us forward and reach 30[12] GW by 2030,", Mr Dinesh Jagdale, Joint Secretary, Ministry of New and Renewable Energy (2022)[13]

Relatedly, an important result under the offshore wind outcome also includes the successful consolidation of the CoE. Established in 2019, the CoE is currently a joint initiative between Denmark and India. During the formulation mission MNRE informed, that they would like to keep CoE within the MNRE structure. Furthermore, MNRE are planning to dedicate additional resources from the Indian side and would like to develop a roadmap for how the Indian side can eventually take full ownership of the CoE, constituting an important means of enhancing the sustainability of the offshore wind collaboration.

Development of the first Indian Power Outlook: Another key deliverable under INDEP I has been DEA's support to the development of India's first Power Outlook (IPO) together with the Central Electricity Authority (CEA). The IPO is the first long-term electricity plan developed in India and is expected to be published in fall of 2024. The report builds upon India's *National Electricity Plan* but extends the scope to 2050 with additional focus on what it will require for India's power sector to become net-zero by 2050, well ahead of the official economy-wide net zero emission target of 2070. Through examining least-cost pathways for India's power sector to achieve carbon neutrality while meeting the growing energy demand, the aim of the report is to increase choice awareness among Indian decision-makers, supporting India in identifying policy actions necessary for the achievement of the country's NDC and long-term climate targets. Furthermore, the IPO might also play a role in illustrating ways to accelerate India's green transition. During the formulation mission, partners in CEA informed that the data from the IPO was already used in dialogue with the Ministry of Environment, Forest and Climate Change about possible updates to India's NDC.

Green diplomacy: The engagements initiated under INDEP I have illustrated how the energy cooperation holds significant potential to contribute to Denmark's green diplomacy, strategic influence for Denmark at the highest level and a strengthening of the bilateral relationship with a strategically important global partner. The energy cooperation constitutes a key component of the Green Strategic Partnership between Denmark and India and during INDEP I, Denmark has managed to position itself as a nodal partner for India on the green transition. This has been illustrated by numerous ministerial visits to India providing high-level recognition of the partnership with Denmark. Similarly, the invitation for Denmark to join the Indian led G20 working groups on Climate and Energy in 2023, provided a strong testimony to strength and potentials of the energy partnership.

1.3 Lessons learned and follow-up on the MTR of INDEP Phase 1

Through INDEP I, DEA has managed to deliver high impact technical cooperation and establish a close and trusted relationships with key Indian ministries and institutions responsible for India's energy transition. The partnership has been characterized by great commitment and buy-in from partners, who have continuously been expressing high demand for Danish competencies and know-how, emphasizing the high technical quality of Danish technical cooperation, drawing upon lessons learned from both Denmark and the European context. In this regard, INDEP I has illustrated that Denmark's comparative advantage in India collaborating on energy is intrinsically related to Denmark's credibility as a knowledgeable frontrunner, able to deliver high technical quality inputs,

[12] The GoI has later raised the ambition to 37 GW in 2030

[13] https://ens.dk/en/press/indian-danish-collaboration-launches-conceptual-plan-15-indian-offshore-wind-parks

drawing upon not only resources internally in GC, but also from the national centres in DEA working with the Danish energy transition as well as from consortium partners.

Another important lesson learned from the implementation of INDEP I is that embedded long-term advisors (LTAs) is working very well in India and has been a key component in the success of the programme. The LTAs are seen as an integrated part of the partner institution, and they have an important role for DEA in ensuring that activities are targeting the demand and needs from partners. The peer-to-peer approach with regular knowledge sharing and high-quality technical assistance is in high demand and the LTAs have delivered effectively on this demand. The formulation mission found very strong evidence of the value of having technical experts in partner institutions hosting the LTAs**.** The posting of a third LTA in Grid India in 2023 is one clear example, since it has strengthened the activities related to integration of renewable energy, which was highly appreciated by partners. It is important to note that other institutions in India have stated their interest in having an LTA posted with them in order to build capacity and ensure a closer link to INDEP II activities.

MFA's mid-term review (MTR) in May 2023 of INDEP acknowledged the achievements of INDEP I and strong partnerships established under the collaboration, including the ways in which the partnership has been able to the link the technical work to institutional capacity development by working closely with partners to support the development of new strategies and policies on the energy transition.

The MTR pointed to specific areas that could be improved further going forward, including a more systematic approach to long-term planning of technical cooperation, enhanced focus on capacity development, and increased in-country coordination. In terms of the latter, the MTR also pointed to the fact that it would be beneficial to introduce cluster meetings between Trade Council (TC), investment advisors, LTAs and the Energy Counsellor to ensure mutual information sharing and inspiration, acknowledging that investments in the energy sector in India are highly needed. Furthermore, MTR also pointed to the need to move the program closer to implementation, looking into also engaging with partners on state level with the purpose of addressing cross-cutting concerns arising from the energy transition.

For INDEP II, DEA has decided to enter into a new partnership with the State Government of Tamil Nadu in line with the recommendation put forward by MTR. The collaboration will have a particular focus on supporting the state government in addressing the opportunities and challenges arising from the green transition. To enhance knowledge sharing and in-country coordination, the Energy Counsellor has set up a series of regular meetings at the Embassy, strengthening coordination among INDEP personnel based in India. Furthermore, DEA has made an overview of all planned projects, which is updated after every bi-weekly team meeting in order to track progress and timeline and hence enhance internal coordination and planning. INDEP II will continue paying particular emphasis to strengthening coordination and knowledge sharing among all relevant actors.

In order to ensure a systematic approach to capacity development, DEA's Centre for Global Cooperation is developing an "Integrated Approach to Capacity Development in Global Cooperation", which will apply across DEA's global cooperation programmes. The DEPP 2025 Framework Programme Document contains a brief summary description of this new approach. The synergies with other activities under the Green Strategic Partnership have also been enhanced under INDEP I and will continue to evolve further as part of INDEP II. Due to the adaptive management approach and as the programmes mature, the synergies will be more evident. Already today, close

coordination with the TC and Innovation Centre Denmark activities is taking place, with DEA taking an active part in the advisory board for two strategic alliances on wind and green fuels, although keeping a clear arm's length to commercial interests. The cooperation with the Maritime SCC programme on green shipping is another example of a strengthened synergy among the Danish sector programmes. INDEP II will also look into strengthening synergies to SSC programmes on skill development (education), health and environment, acknowledging their clear overlaps to the green agenda.

In addressing other MTR recommendations, several steps have been taken by GC in order to ensure improved long-term planning of the technical cooperation, both as part of the Joint Working Group (JWG) meetings with partners and also by having dialogue on planned activities with involvement of the consortium partners (group of consultants).

1.4 Alignment with Danish priorities and strategic considerations

Alignment with Denmark's development policy priorities

As outlined in the DEPP 2025 Framework Programme Document, the support to India's green and social inclusive energy transition is well aligned with Denmark's Strategy for Development Cooperation and in the Danida How-to-Note on Energy Transition and Emission Reductions.

The Danish Government's Foreign and Security Policy Strategy (May 2023), states that the climate crisis constitutes the 21st century's greatest challenge, requiring global cooperation and action and emphasizing that Denmark must continue to be at the forefront of the global climate action through its climate diplomacy efforts, continuing to assume a leading role in pushing for increased ambitions with regard to emission reduction efforts and other climate action. Given the size of the Indian economy and the country's share of global CO_2 emissions, partnering with India provides a unique opportunity for Denmark to contribute to the achievement of the goals set out in the Paris Agreement and the SDG7 and contribute to creating a sustainable and prosperous future for the 1.4 billion people living across India.

Contributions to SDGs

- SDG 7: Affordable and Clean Energy – INDEP II supports the deployment of renewable energy and promotes the use of least-cost development strategies to ensure affordable, reliable, and sustainable energy for all. By supporting the development of the offshore wind sector, effective long-term energy and grid planning, and effective integration of variable RE in the grid, the programme will contribute to fostering an enabling environment for investments in RE and support the shift towards a cleaner energy mix.
- SDG 13: Climate Action – INDEP II contributes to both avoided and decreased GHG emissions through integrating climate change perspectives into energy planning and modelling and working to address challenges around and barriers to accelerating renewable energy development. Already now, partners have informed that Indian authorities are using the data from the India Power Outlook (not yet published) in their efforts toward updating India's NDC.
- SDG 1: No poverty – Access to affordable (and modern) sources of energy is a fundamental necessity to meet basic human needs, and a key factor in alleviating poverty. Thus, supporting a reliable, affordable supply of clean energy for all contributes to poverty alleviation. Providing affordable, green energy is a key objective driving the INDEP II focus on least-cost long term planning and modelling and cost-efficient and market-based integration of VRE and a strengthened emphasis on the socio-economic aspects of the energy transition, including environmental and social impacts of renewable energy deployment.

- SDG 17: Partnerships for the goals – INDEP II is a bilateral partnership between India and Denmark, fostering collaboration and ensuring coordination with other bilateral and multilateral development partners. Furthermore, the programme will reinforce South-South and triangular cooperation (through INDEP I, South-South cooperation between India and respectively Vietnam and South Africa has already taken place).

More indirectly, INDEP II will also contribute to:

- SDG 8: Decent work and economic growth – The partnership with Tamil Nadu State places a particular emphasis on ensuring that local communities' benefits from the green transition, including through prioritizing job creation and an inclusive stakeholder dialogue. More indirectly, INDEP II will generally, through supporting the development and strengthening of the green energy sector, contribute to job creation through generating new economic opportunities for local communities[14][15]. Affordable and reliable access to green energy is a driver of development in all sectors of society contributing to economic growth.
- SDG 5: Gender Equality – INDEP II will, as further elaborated in Section 1.6, mainstream gender perspectives its areas of intervention and thus aim to contribute to increased gender equality in the energy sector more widely.

Danish know-how and green solutions

To drive the energy transition, including the realization of goals set out in India's offshore wind strategy, strong engagement and investments by the private sector is necessary. DEA is supporting India in designing market-based mechanisms to accelerate deployment of renewable energy and establish a transparent and reliable enabling framework. Given Danish strongholds in offshore wind, the INDEP II focus on creating an investor-friendly framework in the power sector, including with a particular emphasis on promoting sustainability, may create opportunities for international companies, incl. Danish companies. However, it is important to note that DEA's programme is guided by an "arms-length" principle, making sure that DEA's integrity towards partner institutions is not compromised. During INDEP I implementation, DEA has established a clear and beneficial working relationship with the Trade Council (TC) in India, where TC is handling all export-related activities if they may arise as spin-offs from activities carried out under the energy partnership. Furthermore, DEA is continuously working closely with TC, in order to be up-to-date about industry perspectives on India's green transition. As part of the programming of INDEP II, DEA and TC conducted a series of roundtable sessions with Danish companies, showing in which way DEA and TC may work together to mutual benefit – also with the aim of supporting the Indian partners in attracting much-needed investments from abroad.

Justification against OECD DAC criteria

The justification for the proposed Programme based on the OECD DAC criteria of relevance, coherence, effectiveness, efficiency, impact, and sustainability is elaborated in the DEPP 2025 Framework Programme Document.

1.5 Target groups and cross-cutting concerns

The relation between energy and human rights

[14] GOI's estimates that India can potentially create about 3.4 million jobs (short and long term) by installing 238 GW solar and 101 GW new wind capacity to achieve the 500 GW non-fossil electricity generation capacity according to the 2030 goal.

[15] There is a great potential for renewable energy in coal mining states which can be leveraged to create job opportunities for coal sector workers after re-skilling, but INDEP II does not work in coal mine states.

Greening India's energy system and ensuring a safe, clean, affordable and reliable electricity supply has the potential to benefit all segments of society, including disadvantaged groups and small enterprises, which is a particular priority concern. Conversely, inaction and the consequent continued use of coal for power generation and household use of traditional biomass fuel, would lead to worsening of the harmful impacts on health, environment, and climate change. However, new green energy infrastructure will also pose new risks as additional areas will need to be dedicated for e.g. the build-out of the electricity grid or the establishment of offshore wind farms. These developments will require an explicit focus on transparency and public consultations in order to maximize co-benefits and minimize adverse impacts for local communities.

Human Rights Based Approach to Development

A key aspect of INDEP II will be to support increased transparency and good governance in the power sector and make information available where possible. Where relevant, the INDEP II collaboration will emphasize the importance of stakeholder engagement focusing on inclusion and enhancing public consultations. It will involve diverse stakeholders, including local communities, civil society organizations, and representatives of industrial associations to ensure all concerns and needs are considered and ensuring that no rights holders will be excluded from involvement.

Stakeholder engagement

With the emergence of offshore wind, interactions will emerge with new stakeholders and around new potential conflicts of interest. As an example, in terms of offshore wind development early and constructive stakeholder engagement with e.g. fishing communities in Tamil Nadu will be critical to ensure socially and environmentally sustainable development. Perceived concerns around offshore wind may include interference with fishing activities, due to construction and operation of wind turbines, affected access to traditional fishing areas, and potential impacts on fish populations and marine ecosystems.

Diversity and Inclusion

In recent years the empowerment of women and girls has been a political priority in India. However, much remains to be done. Despite initiatives such as the Renew Power: Women for Climate and Women in Sustainability (WiS)[16] aiming to enhance women's participation in the renewable energy sector, women only represent 11% of the workforce in India's renewable energy sector.[17] Further, caste and class-based inequities in India are complex and multifaceted, deeply affecting the social and economic development of the country. INDEP II will strive for a gender balance in capacity development activities and monitor and report on the gender balance in capacity development activities.

Skills and jobs

INDEP II, through strengthening an enabling environment for the deployment and integration of renewable energy, is expected to contribute significantly to job creation, which may directly and indirectly benefit youth. The new engagement with Tamil Nadu State Government will include support on measures and activities to develop the wind energy sector and foster a sustainable

[16] https://mnre.gov.in/empowering-women-in-renewable-energy/#1686130235609-56ed5be9-1158 The MNRE Minister emphasized the significance of developing women-centric policies and implementation frameworks in the renewable energy sector. He recognized how women are more effective in bringing about change at the grassroots level through community engagement and household-level action. He noted that women, especially in rural areas, can benefit from Decentralised Renewable Energy (DRE) and gain reliable livelihood opportunities. He also highlighted, that women can play a big role in switching to green cooking which can be another big step in achieving Net Zero

[17] https://energyalliance.org/gender-empowerment-in-the-renewable-energy-sector/

development with a focus on skill development, job creation and co-existence between offshore wind and other interests at sea (e.g. fisheries).

1.6 Choice of partner institutions

DEA will be the implementing partner for Denmark's support through INDEP II. DEA's experience and capacity in implementing government-to-government energy partnership programmes is presented in the DEPP 2025 Framework Programme Document and its Annex A which also identifies DEA's external service providers (i.e. Energinet and consortium partners and consultants). INDEP II will also involve the Embassy of Denmark in New Delhi and its Energy Sector Counsellor and other staff.

The choice of national partners in India lies in the institutions' mandates and roles in the energy transition and is based on well-established partnerships through DEA's prior cooperation and further assessments as part of the programme formulation process. Furthermore, in order to account for the complexity of the Indian power sector and address the prevalence of silo-thinking among key stakeholders in the sector, INDEP II has been formulated with the particular aim of including a broad range of actors on both centre and state level. The main partners are listed below. A more detailed stakeholder analysis can be found in Annex A1.2 and more detailed information on the key partners is found in Annex 2:

- Ministry of New and Renewable Energy (MNRE) is the nodal ministry responsible for all new and renewable energy matters. The partnership will focus on policy development and regulatory frameworks crucial for offshore wind development.
- National Institute of Wind Energy (NIWE) serves as the technical focal point for wind energy in India. Their expertise in wind resource assessment, project planning, and certification is essential for developing and implementing offshore wind projects.
- Ministry of Power (MOP) governs the power sector, including grid infrastructure and market development. MOP is the focal point for activities carried out on long-term energy planning and modelling and integration of variable renewable energy, but actual implementation will be carried out together with agencies and institutions under MOP.
- Central Electricity Authority (CEA) holds the mandate for national power planning. Partnering with CEA will promote high quality long-term planning in the power sector and ensure transparent system planning and standards for integration of variable renewable energy.
- Grid-India oversees the operation of the national grid. Grid-India hence constitutes a key actors in facilitating renewable energy integration into the grid and ensuring reliability of the electricity supply.
- Central Electricity Regulatory Commission (CERC) regulates power markets. Collaboration will facilitate the development of regulations that incentivize and optimize VRE integration.
- Central Transmission Utility of India Limited (CTU) is responsible for developing the national transmission system.
- State Government of Tamil Nadu: An MoU with the State Government of Tamil Nadu is under signature, aiming to include the state government as new partner under INDEP II. State Governments have a number of different responsibilities in relation to the green transition and are crucial to secure adequate and sustainable local implementation of federal policies. The INDEP II engagement with Tamil Nadu, will have a particular focus on addressing the build-out of wind energy, maximizing benefit-sharing for local communities.

2. The DEPP 2025 India Country Programme - INDEP II

2.1 Programme Objective

The overall objective of the programme is: *"The implementation of targets and measures for a sustainable and low-carbon energy mix supported by the India-Denmark Energy Partnership, in line with the Paris Agreement paving the way for a just and inclusive transition to renewable energy".*

2.2 Short summary description of the Programme

The India country programme of DEPP 2025 builds upon the strong relationships established and results achieved with partners under INDEP I. INDEP II will continue to work within the core focus areas of INDEP I, namely offshore wind, long-term energy planning and modelling and integration of variable renewable energy. This is based on the assessment that these areas continue to constitute the work streams where Danish support can have the most significant impact for accelerating India's green transition. However, based on partner institutions' targets and assessments of the main barriers to India's green transition, INDEP II seeks to develop, strengthen and further expand the previous engagements under INDEP I. This includes moving technical cooperation closer to implementation on both federal and state level with a particular emphasis on supporting stakeholder participation, good governance and transparency in the development of the green energy sector. Similarly, INDEP II places a renewed emphasis on strengthening the analysis of India's political economy and its implications for the energy sector and using this as a guiding principle in the design and implementation of activities. Furthermore, INDEP II notably seeks to establish a direct partnership between the Danish and Indian transmission system operators as well as include new particular outputs related to policy dialogue on energy modelling and the development of a regulatory framework for distributed generation.

Outcome 1: Offshore wind

"A timely and efficient implementation of India's offshore wind strategy"

In 2024, India announced the country's first offshore wind tender and following the *Indian Strategy for Establishment of Offshore Wind Energy Projects*[18] it is the aim of the Government of India (GoI) to have tendered out a total of 37 GW offshore wind before the end of 2030. India holds a vast potential for developing offshore wind and through INDEP I, Denmark has played a key role in supporting the development of the offshore wind strategy and laying the foundations for the first tender. As offshore wind in India is now moving towards implementation, INDEP II seeks to deepen the engagement on offshore wind through moving technical cooperation closer to policy and project implementation, supporting partners in implementing the offshore wind strategy with a particular emphasis on developing a framework and an industry that is both socially and environmentally sustainable and economically viable. Working with MNRE and NIWE, key areas of cooperation will include:

- Enabling framework for offshore wind: Establishing an attractive and transparent policy framework for offshore wind with a particular focus on supporting the efficient processing of offshore wind tenders.
- Sustainable use of India's offshore wind resources: Optimizing the use of India's offshore wind potential through joint analyses on topics such as marine spatial planning and by sharing best practices from Denmark on environmental and social impact assessments (ESIA).

18 https://cdnbbsr.s3waas.gov.in/s3716e1b8c6cd17b771da77391355749f3/uploads/2023/09/20230927103095853 2.pdf

- Power evacuation infrastructure for offshore wind: Analysing technical and economic barriers to the integration of offshore wind, creating policy recommendations, and leveraging Danish experiences in grid development.

Outcome 2: Scenario-based modelling and long-term energy planning

"Scenario-based modelling and long-term energy planning informs decision-making on energy policies in India".

Long-term energy planning and modelling is an important part of assessing the impacts of climate and energy targets as well as providing transparent and evidence-based inputs to future policy decisions. Providing best practice modelling tools and the data for policy planning and thereby enhancing the visibility for planned policies is crucial for policymakers when designing policy interventions with the aim of creating a low-risk framework for investments. Under INDEP I, the first Indian Power Outlook (IPO) has been developed, analysing various future energy scenarios extending to 2050. By informing decision-makers, new policies and targets, the aim is to accelerate the transformation of the energy system and guide India towards a low-carbon, cost-efficient energy future. Under INDEP II, efforts to enhance long-term energy planning and modelling will be continued and further strengthened, strengthening partner capacity on energy planning and modelling with the aim of partners taking over by the end of the program period. Partnering with the Ministry of Power (MOP) and the Central Electricity Authority (CEA), the outcome will involve several key activities:

- Power system modelling and long-term planning: Updating the IPO, assessing how to achieve the net-zero ambition in 2070 as well as ways to refine the model, e.g. by the inclusion of socioeconomic considerations.
- Technology catalogues: Development and updates of technology catalogues, forming the basis for future updates of the IPO.
- Policy dialogue: Development of shorter analyses and policy briefs based on request from CEA and MOP and strengthening of the dialogue with other energy modelling experts in India, such as CEEW and NITI Aayog. Through this, the aim is to support strengthened assessments for a low-carbon energy trajectory, based on an inclusive approach taking socio-economic aspects taken into consideration.

Outcome 3: Integration of variable renewable energy

"Measures for integration of variable renewable energy leading to a more affordable and reliable supply of electricity".

India has one of the world's largest electricity grids. Development and operation of the grid will play a critical role in enabling integration of high shares of variable renewable energy in system and thereby ensure the success of India's energy transition. Cost-effective integration of very high shares of variable renewable energy into the power grid is critical for India's transition and for maintaining access to an affordable and reliable electricity supply for all consumers, including poor and vulnerable households across India, for whom the access to affordable and reliable electricity continues to constitute a challenge. Acknowledging that the integration of renewable energy into the grid is a critical barrier to India's green transition, INDEP II seeks to expand the previous cooperation through a new direct partnership between the Danish Transmission System Operator Energinet and the Indian Independent System Operator Grid India, aiming to foster strategic collaboration around best practice for system operation high-lighting specific challenges and solutions. The group of partners for INDEP II activities will include Ministry of Power (MOP), Grid-India, Central Electricity Authority (CEA), Central Electricity Regulatory Commission (CERC) and Central Transmission Utility of India Limited (CTU).

Leveraging Denmark's proven experience in integrating high shares of variable renewable energy through development of enabling regulatory frameworks, enhanced system flexibility and market design for efficient integration, key focus areas include:

- Power system operation: A strategic partnership will be established between the Indian Independent System Operator (ISO) Grid Controller of India Ltd. (Grid-India), and the Danish Transmission System Operator (TSO) Energinet[19]. Through peer-to-peer knowledge sharing and capacity building, this partnership will support Grid India to enhance operational flexibility and system readiness for high penetration of variable renewable energy.
- System flexibility and market development: In order to support increased integration of variable renewable energy and flexibility of the power system, this collaboration will particularly focus on market design and development, regulatory frameworks, and other solutions for power system flexibility. From a societal perspective, markets along with good governance and transparency play an important role in ensuring cost-efficiency/affordability and non-discrimination.
- Security of supply: A high share of variable renewable energy creates new challenges for security of supply. INDEP II will facilitate collaboration on resource adequacy monitoring, transmission planning, forecasting, and technical/regulatory frameworks for renewables. This will provide Indian partners with the necessary tools and processes to ensure a reliable power supply even with a fluctuating renewable energy mix.
- Distributed generation: Recognizing the growth of distributed generation and the challenges and opportunities this brings a new cooperation area will focus on this aspect. Joint studies and workshops will explore the opportunities and challenges associated with increased distributed VRE sources, including, where relevant, considerations around the potential of distributed generation to 'democratise' energy generation and benefit smaller actors.

Outcome 4: Wind Energy in Tamil Nadu

"Partnership with Tamil Nadu on wind energy contributing to sustainable and just energy transition".

Under INDEP II, a new collaboration with the State Government of Tamil Nadu will be initiated with a particular emphasis on ensuring that local communities experience socioeconomic benefits and gains from renewable energy deployment, including offshore wind. This follows initial engagements during INDEP I in light of the recently published tender for offshore wind, off the coast of Tamil Nadu. This outcome moves INDEP to the state level, and hence a step closer to the challenges and opportunities pertaining to implementation of renewable energy projects, addressing two key areas:

- Policy framework for wind energy at state level: Preparing for the emergence of offshore wind energy development in the State as well as support repowering of existing onshore wind turbines.
- Stakeholder and community engagement: Maximising benefit-sharing and mitigating potential adverse impacts for local communities, through a focus on stakeholder engagement, strategies for stakeholder co-existence, and understanding/fostering of local economic opportunities around the wind energy sector, including the creation of new jobs in the renewable energy sector. Other stakeholders, including civil society, will be included in the activities carried out on a case-by-case basis.

[19] Further elaborated in Annex 10

The proposed programme structure and lead partners involved is visualised in Figure 2.1. below (with shortened titles of outcomes and outputs for overview – please refer to Annex 3 for full titles and further details). Furthermore, based on requests from lead partners, other partners on either centre or state level might be included as associated partners throughout programme implementation if deemed necessary.

Knowledge partner modality

By developing a knowledge partner modality, INDEP II will aim to work closer with key Indian institutions, universities and think-thanks such as the Indian Institute of Technology Madras (IIT Madras) and Council of Energy, Environment and Water (CEEW) as well as the nodal government think tank NITI Aayog placed directly under the PM's office. The aim of the knowledge partner model is to significantly strengthen the assessment of how activities under INDEP II will play into the wider political/economic context and contribute to enhancing the socioeconomic co-benefits arising from a just and inclusive energy transition. The knowledge partner model is a new initiative under INDEP II and it is described in detail in Annex 11.

Figure 2.1: INDEP II structure and national partners

Lead partners	Outcomes	Outputs	Other Partners
Ministry of New and Renewable Energy (MNRE)	1. Offshore Wind	1.1 Enabling framework for OSW 1.2 Sustainable use of wind resources 1.3 Grid infrastructure for OSW	National Institute of Wind Energy (NIWE)
Ministry of Power (MOP)	2. Scenario-based modelling and planning	2.1 Power system modelling and long-term planning 2.2 Technology catalogues 2.3 Policy dialogue	Central Electricity Authority of India (CEA)
Ministry of Power (MOP)	3 Integration of variable renewable energy	3.1 Power system operation 3.2 System flexibility and market development 3.3 Security of supply 3.4 Distributed generation	• Central Electricity Authority of India (CEA) • Grid Controller of India Limited (Grid India) • Central Electricity Regulatory Commission (CERC) • Central Transmission Utility of India (CTU)
State Government of Tamil Nadu (Energy Department).	4. Wind energy in Tamil Nadu	4.1 Scoping and planning 4.2 Policy framework for wind energy at state level 4.3 Stakeholder and community engagement	

3. Theory of change and key assumptions

3.1 Theory of Change

The narrative Theory of Change (ToC) can be summarised as:

If India and Denmark agree to strengthen, deepen, and widen their partnership and cooperation in support of a just and inclusive energy transition and climate action building upon government-to-government, peer-to-per cooperation developed, and experience gained, in the India-Denmark Energy Partnership Programme (INDEP I).

And if Indian authorities and stakeholders are committed to mutual partnership, knowledge exchange, and strengthening capabilities within offshore wind strategy development, long-term energy planning and modelling, integration of renewable energy, and wind energy development at state level.

And if INDEP II engages into partnerships within strategically chosen areas with the key national partners in India who have the relevant mandates and a strong continued commitment to the partnership and many of whom are well known to Denmark from strong partnerships under INDEP I.

And if Denmark provides grant funding for cooperation under INDEP II with the Danish Energy Agency (DEA) as implementing partner, building on expertise and experience gained by DEA through the ongoing INDEP I and through bilateral energy partnership programmes in 24 other countries.

And if Indian partners strive for synergy between INDEP II and other initiatives in India in support of its just and inclusive energy transition and climate action.

And if Denmark strives for synergy between INDEP II and Denmark's multilateral energy and climate cooperation such as with the International Renewable Energy Agency, the World Bank, and others.

And if a multi-dimensional poverty approach and human rights principles as well as cross-cutting concerns such as gender equality underpin the cooperation.

Then, DEA and its associated Danish technical partners, including the Danish Transmission System Operator *Energinet*, consultants and other specialists, together with embedded long-term advisors and the Embassy of Denmark in India, will collaborate with its Indian partners in a demand-driven and flexible manner supporting a range of joint activities, including peer-to-peer expert exchanges, technical and political delegation visits to exchange experiences, expert workshops and seminars, substantive learning events, joint studies, formulation of technical guidelines, and triangular cooperation with third countries to share international best practice, etc. as further defined in annual workplans approved by the Joint Working Groups (Steering Committees).

And then, in partnership DEA and its Indian partners will produce outputs in the following areas:

- Attractive enabling framework for offshore wind.
- Strengthened capacity for more efficient and sustainable utilization of India's wind resources.
- Strengthened enabling framework for grid infrastructure for offshore wind.
- Improved power system modelling and long-term planning.
- Update of technology catalogues.
- Strengthened assessments for a low-carbon energy trajectory.
- Improved system readiness for integration of high shares of variable renewable electricity through ISO-TSO partnership.
- Strengthened measures to enhance system flexibility and market development.
- Procedures to ensure security of supply.

- Energy system development with increased distributed generation for an affordable and sustainable electricity supply.
- Scoping and planning of a partnership with Tamil Nadu State.
- Contributions to a conducive policy framework for wind energy in Tamil Nadu.
- Contributions to partner capacity and policy frameworks for wind energy development in co-existence with local communities and other interests.

And if the Indian partners sustain their commitment to effective application and use of knowledge and experience in these areas.

Then, INDEP II will have contributed the following outcomes.

- Timely and efficient implementation of India's offshore wind strategy through a more attractive enabling framework that also emphasises environmental and social impact assessments, enabling co-benefit opportunities.
- Scenario-based modelling and long-term energy planning that informs decision-making on energy policies, including e.g. through the inclusion of socioeconomic considerations in updates of the India Power Outlook, illustrating the way to a low-carbon energy trajectory to ensure long-term affordability and reliability of a greener energy mix that meet the fast-growing energy demand of India.
- Measures for integration of variable renewable energy, including through enhanced system operation and market development, leading to a cleaner, more affordable and reliable supply of electricity.
- Partnership with Tamil Nadu on wind energy that contributes to a sustainable and just energy transition with emphasis on developing partner capacity and policy frameworks for wind energy development in co-existence and benefit-sharing with local communities and other interests.

And then, the implementation of targets and measures for a sustainable and low-carbon energy mix is supported by the India-Denmark Energy Partnership in line with the Paris Agreement, paving the way for a just and inclusive transition to renewable energy (the Programme's objective)

Impact level:

And then a long-term contribution has been made towards a resource-efficient electricity system, ensuring affordability, security, reliability, and quality of power supply in partner countries benefitting more than 1.4 billion people in India alone.

And then a long-term contribution has been made towards a socially just, inclusive, and green transition and to sustainable growth and resilient development for people and enterprises in India by supporting a transparent governance system for renewable energy and more solid data for long-term energy planning.

3.2 Key assumptions and drivers

Key assumptions

The major assumption is that cooperation partners are committed to sustained engagement and willing to allocate staff time and inputs in-kind to engage effectively with DEA staff and other experts. It is also crucial that Indian partners find value in the strategic cooperation with Denmark for informed decision making to achieve Indian goals. As a result of recognising this value, all partners are expected to engage effectively throughout the programme and benefit from peer-to-peer exchanges of good practices and paths to avoid. Based on the record of INDEP I, including the strong relationship established with key partner institutions, this is deemed a realistic assumption. The formulation mission also found strong evidence to support the expectation of sustained partner commitment, however of course with the caveat that the Tamil Nadu State Government is a new partner to the energy partnership. The assumptions underpinning the theory of change also note the importance of the political economy. India is a vast and institutionally

complex country, and the Danish cooperation is only a very small part of the overall picture, but the assumption is that Denmark as under INDEP I can continue to play a key role in supporting and accelerating the Indian energy transition

Key drivers of sustainable impact
Drivers include:

1. Continued high-level political commitment and support to meeting energy and climate targets.
2. A sustained high-level strategic partnership between India and Denmark.
3. A structured approach to knowledge sharing.
4. Continued attention to the socio-economic aspects of the energy transition.
5. Effective communication of INDEP II results and lessons targeted at decision makers.
6. Triangular cooperation and sustained peer-to-peer exchanges with other countries – this is already taking place and there may be potential for knowledge sharing with the Brazil-Denmark Energy Partnership (BRADEP) and the Kenya-Denmark Energy Partnership (KENDEP) that are both part of DEPP 2025.

4. Results framework

The overall objective of the programme is: "*The implementation of targets and measures for a sustainable and low-carbon energy mix supported by the India-Denmark Energy Partnership, in line with the Paris Agreement paving the way for a just and inclusive transition to renewable energy.*

The programme is expected to have four outcomes in the areas of offshore wind, long-term energy planning and modelling, renewable energy integration and wind energy in Tamil Nadu, as presented in the results framework below (see Annex 3 for output level results framework). It is important to note that DEA will be accountable for the achievement of the outputs, which are within their control and to monitor and report on the achievement of outcomes, which are within DEA's influence but not within DEA control. The above-cited assumptions are important for achieving the stated outcomes and impact and must be closely monitored.

As DEA expands into a new partnership with the State Government of Tamil Nadu, the proposed outputs, indicators, and targets for Outcome 4 may be adjusted in the initial implementation phase (see further in Chapter 5). These elements will be discussed and finalised with the partners in the JWG (Steering Committee).

Table 4.1: Results Framework at Outcome level

Programme		**India-Denmark Energy Partnership 2025-2029 (INDEP II)**	
Programme Objective		The implementation of targets and measures for a sustainable and low-carbon energy mix supported by the India-Denmark Energy Partnership in line with the Paris Agreement, paving the way for a just and inclusive transition to renewable energy.	
Impact Indicators		• Installed renewable energy capacity • Share of variable renewable energy sources in the electricity mix • Documented examples of enhanced awareness of socio-economic co-benefits (qualitative assessment)	
Baseline	Year	2024	Total installed capacity of 200 GW and a target of 500 GW by 2030.
Target	Year	2029	India is on track and has accelerated renewable energy build-out to meet the national targets for renewable energy in 2030 and beyond following a just and inclusive energy transition process with attention to socio-economic aspects of the green transition.

Outcome 1:		**A timely and efficient implementation of India's offshore wind strategy.** Partners: • Ministry of New and Renewable Energy (MNRE) • National Institute of Wind Energy (NIWE)	
Outcome indicator		• GW offshore wind being tendered based on updated and new legislation and guidance documents (quantitative assessment). • Evidence of how activities have supported an economically, socially and environmentally sustainable implementation of the offshore wind strategy (qualitative assessment).	
Baseline	Year	2024	Government strategy published with 4 GW tendered out.
Target	Year	2029	The implementation of India's offshore wind strategy is on track and with due consideration of environmental and social impacts.

Outcome 2		**Scenario-based modelling and long-term energy planning informs decision-making on energy policies in India.** Partners: • Ministry of Power (MOP) • Central Electricity Authority of India (CEA)	
Outcome indicator		• Updates of the Indian Power Outlook and technology catalogues (quantitative assessment). • Government announcement and/or policies informed by the Indian Power Outlook and background data, reflecting a just and inclusive approach to the green transition (qualitative assessment).	
Baseline	Year	2024	First Indian Power Outlook published with two least-cost scenarios.
Target	Year	2029	• The Indian Power Outlook is updated and widely used. • Indian Power Outlook and background data has informed at least three government announcements, plans and/or policies, reflecting a just and inclusive approach to the green transition.

Outcome 3		**Measures for integration of variable renewable energy leading to a more affordable and reliable supply of electricity.** Partners: • Ministry of Power (MOP) • Central Electricity Authority of India (CEA) • Grid Controller of India Limited (Grid India) • Central Electricity Regulatory Commission (CERC) • Central Transmission Utility of India (CTU)	
Outcome indicators		Share of VRE in the final electricity generation [20] Security of supply (known and established metrics for assessing security of supply[21]).	
Baseline	Year	2024	Current institutional capacity and policy framework is primarily tailored to a power system dominated by conventional resources. VRE share of total installed capacity (2023): 26% Annual proportion of VRE in electricity generation (2022-23): 11%

[20] Mean of verification: depending on availability of data.

[21] Mean of verification: depending on availability of data.

			Security of supply: the target as per 2024 set out by CEA[22].
Target	Year	2029	• Improved regulatory framework and institutional capacities support the planning and operation of a power system dominated by variable renewable electricity in the most secure and cost-efficient manner. • Integration of VRE is continued and accelerated, as a minimum without reducing security of supply.

Outcome 4		**Partnership with Tamil Nadu on wind energy contributing to sustainable and just energy transition.** Partner: State Government of Tamil Nadu (Energy Department).
Outcome indicator		• Policies and initiatives aiming to support effective implementation of Tamil Nadu's plans on wind energy with a particular focus on efficient policies and measure to ensure just, inclusive and sustainable development (qualitative assessment). • Procedures/strategies for stakeholder and community engagement to enhance co-benefits and mitigate potential adverse impacts (qualitative assessment).
Baseline	Year 2024	• Untapped potential for onshore wind repowering and limited awareness around offshore wind. • Limited consultation with civil society and local fishing communities
Target	Year 2029	• An enabling framework in place to ensure opportunities related to onshore repowering and offshore wind development including a focus on skill development and local engagement. • Process for stakeholder consultation and socio-environmental assessment in place for the offshore wind in Tamil Nadu.

5. Inputs, budget, financial management

5.1 Inputs and budget

Inputs

DEA as the Implementing Partner will be responsible for the organization and timely delivery of technical cooperation inputs by DEA staff and external consultants to activities guided by demands and priorities as defined in the annual work plans. Inputs will be delivered based on TOR that ensure the accountability for delivery in alignment with agreed work plans and partner availability and capacity to engage.

Inputs will be staff time inputs from DEA-Global Cooperation (GC) and other DEA units, as well as the Danish Transmission System Operator Energinet and consultant inputs from DEA Consortium partners under the framework contract. Where specific inputs by *knowledge partners* (see Annex 11) or other external national consultants or institutions in India are required, such inputs will be procured through DEA under existing and/or new framework contracts.

Indian national partner inputs will be delivered in-kind, aligned to the same annual work plans, which are approved by the Joint Working Groups (the national Steering Committees for INDEP II).

22 CEA 2022. Draft Guidelines for Resource Adequacy Planning Framework for India. Available at: www.cea.nic.in/wp-content/uploads/irp/2022/09/Draft_RA_Guidelines___23_09_2022_final.pdf (Accessed October 2024)

Building on the success under INDEP I of having 3 embedded long-term advisors (LTAs) in partner institutions, the budget provides for a continuation of this important modality with 3 Danida LTAs in India under INDEP II. One LTA will be posted with MNRE to support the workstream under Outcome 1 and two LTAs will be posted with CEA and Grid-India, respectively, to support the workstreams under Outcome 2 and Outcome 3. Summary job profiles are found in Annex 9. The LTA position for MNRE is currently under recruitment as the former incumbent is returning to DEA - there is still a need to update and detail the job profiles for the other two LTA positions, which is also reflected in the Process Action Plan in Annex 8.

Recruitment of the LTAs as Danida advisors follows procedures of the Danish Ministry of Foreign Affairs and is supported by DEA. Representatives from the partner institution where the LTA will be placed, will participate in the recruitment panel together with representatives from DEA and the Embassy of Denmark in India.

Budget

The proposed total budget for the 5-year DEPP IV programme in India (INDEP II) is DKK 84.0 million of ODA-eligible grant funds sourced from the Danish Finance Act (FL-konto 06.34.01.70).

Table 5.1 below reflects the tentative budget allocation by outcome. This is an allocation budget not an activity-based budget. The budget will be allocated at output and activity levels in work plans to be agreed by the national Joint Working Groups. However, in Annex 5 a tentative allocation by output has been provided to be further detailed during the start-up phase of INDEP II and updated in annual work plans.

Table 5.1: Summary budget allocations at outcome level

Outcomes	**DKK million, rounded**
Outcome 1: A timely and efficient implementation of India's offshore wind strategy	**15.2**
Outcome 2: Scenario-based modelling and long-term energy planning informs decision-making on energy policies in India	**23.5**
Outcome 3: Measures for integration of variable renewable energy leading to a more affordable and reliable supply of electricity	**20.7**
Outcome 4: Partnership with Tamil Nadu on wind energy contributing to sustainable and just energy transition	**7.8**
Long-term advisors	**16.8**
Total:	**84.0**

5.1 Financial management and reporting

DEPP IV grant funds including for INDEP II will be transferred from the MFA to the DEA upon written request, and DEA will be responsible for all financial management and reporting on DEPP 2025 and INDEP II funds. The financial management and reporting procedures are further defined in the DEPP 2025 Framework Programme Document, but audited financial report should be submitted by 31. March the following financial year.

As no cash funds will be transferred or disbursed though national partners directly, there will be no requirements for accounting of funds and financial reporting by national partners. To monitor the delivery by DEA of technical cooperation in-country consistent with work plans agreed between DEA and the national partners, DEA time spent with partners is reported in the annual progress reporting to the MFA (KLIMA). Budgets and actual expenditures at outcome and output level broken-down on the cost-categories: DEA staff; Consultants; Other Costs will be presented in the

annual financial reporting to the MFA (KLIMA). The progress- and the financial reports will help SAG to assess value for money at its annual meeting.

6. Institutional and management arrangement

6.1 Institutional set-up, governance, and management

The INDEP II Programme will build on the governance structure of INDEP I, consisting of a strategic level and an operational level.

At the strategical level, there are currently two Joint Working Groups (JWGs), one for the Ministry of Power (MOP) and its agencies, and one JWG for the Ministry of New and Renewable Energy (MNRE) and its agency the National Institute of Wind Energy (NIWE). The two JWGs act as steering committees for INDEP as per agreement with MOP and MNRE, respectively and this set-up was agreed[23] during INDEP I implementation and has worked well. During the formulation mission, Indian partners confirmed that they would like to continue with the same institutional setup for the next program phase. Under INDEP II a third JWG/Steering Committee is envisaged for the partnership with Tamil Nadu, subject to confirmation. The JWGs will meet as a minimum once per year to approve the INDEP II annual workplans and progress reports. JWGs will also monitor results, assumptions, and risk factors, and discuss and resolve issues related to programme progress and if required make recommendations on reallocation of resources for decision by DEA and the MFA[24]. By doing so the JWGs will ensure that evolving programme priorities are addressed based on an adaptive management approach and with engagement of relevant stakeholders enabling purposeful adaptation of the programme as needed. Finally, the JWG also acts as a forum for policy dialogue. Prior to the JWG meetings DEA-GC will share information related to resources available for the year to deliver technical cooperation with partners (not necessarily as a monetary budget). This will help ensure transparency and allow for an open discussion with the partners on how to design, prioritise and allocate annual resources aligned to programme objectives. The DEPP 2025 Framework Programme Document briefly summarises the adaptive management approach consistent with Danida guidelines.

At the operational level, one Technical Working Group[25] (TWG) for each outcome are to be consolidated, to ensure effective commitment and engagement of the relevant partners in day-to-day coordination and management of the implementation of the agreed annual work programmes. Each partner institution will appoint members to the TWGs where the DEA and LTA also participate and with involvement of the Embassy Energy Sector Counsellor. The TWGs will meet at least twice per year and have the responsibility to: i) develop, consolidate and check annual work-plans and budgets against development engagement partners work-plans; ii) monitor programme progress at output level, using "traffic light" markers for assessment of progress of activities against agreed work plans, and; iii) ensure cross fertilisation within and between engagements; iv) identify strategic interventions that may be supported by unallocated funds and; v) report on institutional

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[23] This governance structure was different from what was proposed in the INDEP I Programme Document. However, in a DEA separate note on follow-up to this MTR conclusion, it was noted that *"As the governance structure of the INDEP is based on agreement with partners and is furthermore deemed to have worked out very well for the first four years of the programme, it is suggested not to make any changes to the governance of the program for the remaining year. As part of the programming of the next phase of the India-Denmark Energy Partnership, DEA will enter into dialogue with partners about which governance structure they envision for the new program phase, including reporting requirements, frequency of meetings, responsibilities of the Joint Working Group etc. "*

[24] The DEPP 2025 Framework Programme Document defines the criteria for allocation of unallocated funds and the limits of authority and procedures within the DEPP 2025 management set-up in the adaptive management approach.

[25]

uptake and application of capacity development activities and outputs. The TWGs will report to the JWGs (Steering Committees).

There will be a need for the national partners to provide senior/decision making level staffing at the steering committee level, and middle level management/technical experts at TWG level.

DEA's GC has appointed a Country Team Leader/Coordinator as focal point for India who will be responsible for overseeing the INDEP II implementation.

6.2 Work planning, results monitoring, and reporting

Work planning:

INDEP II work planning is an ongoing process with each partner, where the annual work plans will be developed to align to partners' annual work programmes and needs, and availability of DEA specialists and consultants, balanced with available resources. Work planning will be prepared with partners at TWG level, for endorsement at the Joint Working Group (Steering Committee) level. The INDEP II annual work plans will define annual activities, annual output targets and link these directly to the Results Framework in this Programme Document. Work plans should have indicators that reflect the intended outputs and increased institutional capabilities to produce them. In collaboration with partners and LTAs, TOR will be formulated for each activity (of a certain minimum size) and the TOR will specify tasks and targets for the activity as well as required specialist inputs from partners, DEA, LTAs, Energy Sector Counsellor, Energinet, consortium partners and consultants.

Approach to capacity development:

A particular concern will be to ensure a systematic approach to knowledge sharing and the uptake and application of knowledge and experience. DEA GC is developing an "Integrated Approach to Capacity Development in Global Cooperation", which will apply across DEA's global cooperation programmes. The DEPP 2025 Framework Programme Document contains a brief summary description of this new approach. As discussed and agreed with DEA and MFA (KLIMA) – and in line with Danida guidelines – it will be important during the start-up phase (first 6 months of implementation) to validate and expand the assessments of partner needs and priorities and reflect a structured approach to knowledge exchange and capacity development and monitoring as an integral part of workplans, applying the DEA tools as relevant. The DEA revised DEPP 2025 implementation manual will include a guide for a structured approach to capacity needs assessment, capacity development planning, and monitoring capacity development. Attention will be given to the gender balance in capacity development activities. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy.

Results monitoring:

Monitoring towards targets will be reported through the progress reporting from the TWGs once a year to the JWG and DEA using a "traffic-light" system, where:

- "green" is on-track – implementation progresses as scheduled.
- "yellow" is partly on-track, which requires JWG attention and potentially remedial action to get back on-track.
- "red" is off-track, which requires urgent attention by the JWG and JWG recommendations on changes to get back on-track and/or recommend reallocation of funding. If "red" in two

consecutive reporting periods, the JWG could consider extraordinary remedial measures such as setting-up a task force.

Results reporting:
Following Danida Aid Management Guidelines (AMG), monitoring and reporting will be based on the results framework at output and outcome level and each INDEP II key partner institution will, jointly with DEA monitor progress towards achieving these outputs and outcomes via annual progress reporting to the JWGs. An Annual Progress Report will be prepared by DEA for approval by the JWGs and submitted to the Strategic Advisory Group (SAG) [26] in Copenhagen, which will consider the results reporting across all three DEPP 2025 country programmes. Final report should be submitted no later than 31. March the following financial year. Monitoring of actual expenditure by DEA including international and national consultancy will be reported to SAG in the consolidated DEA annual progress reports across all three DEPP 2025 countries.

Communication of results:
DEA together with the Embassy of Denmark (EDK) in India and the Indian partners will actively engage in targeted communication of progress and results informing stakeholders both in Denmark and in India. The focus will be on raising awareness on the opportunities and choices in the clean energy transition and how the INDEP II programme contributes to this, including concrete examples of strategic decisions to which INDEP II activities and outputs have contributed. DEA will publish "result stories" to communicate the positive value and effects of INDEP II to decision makers, opinion leaders, and the general public, through a variety of means, including websites, social media, press releases and reports published on the DEA website. A draft communication strategy is found in Annex 7.

7. Risk Management

A brief summary of key risk factors and mitigating measures is provided below. A detailed risk management matrix consistent with Danida guidelines is found in Annex 4. The risk analysis also responds to risk factors emerging from the context analysis in Annex 1.

Contextual risks:
Continued reliance on fossil fuels: India remains heavily dependent on coal as baseload in the energy system and there are strong vested interests in the coal sector, coal perceived as a stable energy source, contributing to job creation and economic growth. There are currently no political plans of facing out coal in the country, however it is the ambition to increase the flexibility of coal fired power plants. The significance of coal constitutes a main reason that India will not pursue the Just Energy Transition (JET) Partnership.
Mitigation measures: INDEP II will continue to document and pursue, by various tools, that renewable energy in India is more cost-efficient and as stable an electricity source as fossil fuels, emphasising how the Danish experience shows that the green transition can contribute to socioeconomic development and growth. Major residual risk.
Social resistance to RE deployment: the scale and magnitude of measures necessary to transform the India energy sector comes with the risk of social resistance due to conflicts over land and natural resources and possible negative implications for livelihoods and jobs

[26] The Strategic Advisory Group (SAG), based in Denmark, acts as the highest decision-making authority on the DEPP 2025V Framework Programme. SAG consists of high-level representation from MFA, MCEU and DEA. DEA acts as secretary to the SAG, which meets every six months to discuss overall programme progress, approve cross-programme budget changes, including approval of the use of unallocated funds and ensures cross-exchanges of experience and good practice.

Mitigation measures: INDEP II will place increasing emphasis on the socio-economic aspects of the energy transition, including through supporting transparent and inclusive dialogue with civil society and affected stakeholders on both state and federal level. Minor residual risk to INDEP II as such.

Programmatic risks:

Limited staffing capacity and turnover of staff in key positions in key national partner institutions: Partner institutions are generally staffed with highly skilled technical staff but there are capacity constraints and continuous staff turnover.

Mitigation measures: INDEP II will place renewed emphasis on a structured approach to further needs assessment and a systematic approach to capacity strengthening employing a range of tools and modalities for maximum effectiveness. Minor residual risk.

Institutional risks:

The programme could risk duplicating existing activities and/or fail to build synergies with other initiatives. The energy transition and climate action, particularly in terms of offshore wind, are crowded fields in India with many bilateral and multilateral donors engaged.

Mitigation measures: While coordination among development partners could be strengthened, including with other EU countries, EDK and DEA project leads are very actively engaged in coordination with other development partners and the LTAs also have good insights into engagement by other bilateral and multilateral development partners. Minor residual risk.

8. Exit strategy

From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy. This approach is supported by embedded LTAs in relevant partner institutions.

Criteria for successful exit include evidence of uptake and use of know-how that has been transferred. As an example of this, throughout INDEP II it will be a key purpose of working closely with MNRE to ensure that the Centre of Excellence of Offshore Wind and Renewable Energy is incorporated into the Ministry of New and Renewable Energy and thus taken over by the Indian side by the end of the programme phase. It will also be closely monitored if specific sectors matures and institutional capacity reach a sustainable level in order to phase-out or re-focus the Danish technical support.

Criteria for a potential continuation of collaboration would be based on the emergence of new or expanded areas of cooperation building on the success of INDEP II and offering cost effective use of resources – and availability of funding. In Annex 2 Partner Assessment some reflections are also made for each partner institution concerning exit strategy.

Prior to the MFA Mid-term Review, DEA will - in liaison with national partners and the Embassy - prepare a consolidated exit strategy, which will be assessed by the MTR.[27]

Annex 1: Context analysis

A1.1: Poverty and inequality analysis
Drivers of poverty and inequality, status regarding multi-dimensional poverty in relation to just inclusive green energy transition and climate action: **Key points:**

[27] A Midterm Review is mandatory and budgeted at Framework Programme level.

- India has progressed remarkably in fighting poverty in the last 20 years, but inequality remains high which is disproportionality affecting women and other disadvantaged groups.
- Increased access to electricity, especially through government schemes like Saubhagya, has been a key driver of poverty reduction in India, but millions of households still lack electricity, and energy demand is rapidly increasing.
- Offshore wind development poses both challenges and opportunities for affected local communities, which is why a transparent and inclusive process is essential to ensure a just and inclusive transition.

Danida's approach to fighting poverty and inequality takes its starting point from SDG1 on *eliminating poverty* and SDG 10 on *reducing inequality* and applies the principles of the multi-dimensional poverty concept and the principles of *leaving no-one behind* and *do no harm*. DEA's concept note (Forståelsespapir) on multi-dimensional poverty and HRBA provides examples of how DEA addresses poverty and human rights and is found in Annex B of the DEPP IV Framework Programme Document.

The status of multidimensional poverty in India:
In recent decades, India's development path has been characterized by remarkable progress. Between 2004 and 2022, extreme poverty decreased by 40%, driven by a deeper integration into the global economy, improved business environment and expansion of basic services[28]. Likewise, the share of the population facing multi-dimensional poverty[29] (measured by access to *resources*, *opportunities and choices* and *personal security*) fell from 25% to 15 % between 2015-16 and 2019-21. Despite sustained progress in tackling multidimensional poverty, levels of inequality remain high – the sustained growth of the Indian economy has disproportionately benefitted the richer parts of the population. Since the early 1990s, the share of national income going to the top 10% of the population increased from ca. 30% to 60%. The bottom 50% accounted for just 15% of national income in 2022-23, and the top 1% earned on average 23 times the average income in India (INR 0.23 million), while the bottom 50% earned 0.3 times the national average income. Rising economic inequality disproportionately affects women, children and other disadvantaged groups (such as people of lower caste) and is compounded by other inequalities in e.g. health and education. Significant disparities continue to exist between urban and rural populations, with 5.3% of urban people compared to 19.3% of rural people facing multi-dimensional poverty. Differences exist between states as well, with higher levels of multi-dimensional poverty in the Eastern Region, particularly the states of Bihar and Jharkhand (30%), where mineral resources and mining (including coal) are concentrated.
Increased access to electricity has been among the key drivers of poverty reduction in India; electricity constituting a basic and essential service with a 'multiplier effect' on household standard of living, e.g. in terms of health and education. Between 1993 and 2021, access to electricity increased from 50% to 97% (96.7% via grid connection and 0.33 through off-grid electricity sources), a key instrument being the introduction of the *Saubhagya scheme* in October 2017. The aim of the Saubhagya scheme is to ensure last mile connectivity through the provision of free electrical connections to all households in India, illustrating how the Government perceives electricity access as a key means to foster socioeconomic development.
Despite these positive developments, it is estimated that 5.8 million households in India remain without electricity access and in line with the expected growth trajectory, energy demand is expected to increase **dramatically** in the coming decades. Currently, more than 75% of electricity consumption remains covered by coal and hence providing green, cheap and reliable energy to cover both current and future demand for electricity is central to sustained poverty reduction and increasing living standards among Indians. As India is among the countries most vulnerable to climate change, without sufficient mitigation measures put in place, climate change furthermore risks to push millions of people back into poverty, undermining the poverty reduction achieved by India in recent decades (see A1.5).

Vulnerable groups and how they are targeted (Leaving No One Behind, LNOB):
According to the Indian Exclusivity Report, a number of groups are recognised as disadvantaged in India, including women, Dalits, tribals, Muslims, workers in the informal sector, the poor, the elderly, and the disabled. The majority of India's disadvantaged groups continue to be denied access to the four essential public goods: pensions, digital access, land, labour & resources, and legal justice.
Climate change contributes to increasing vulnerabilities across the population, with a disproportionate negative impact of the life of already vulnerable groups. Already today, extreme weather events like droughts and flooding are becoming more frequent and more severe across India, disproportionately affecting the poor and other

[28] World Bank 2024. India Macro Poverty Outlook. Accessed at: https://thedocs.worldbank.org/en/doc/5d1783db09a0e09d15bbcea8ef0cec0b-0500052021/related/mpo-ind.pdf
[29] NITI Aayog, OPHI, UNDP 2023. India National Multidimensional Poverty Index – A Progress Review 2023. Accessed at https://www.undp.org/india/publications/national-multidimensional-poverty-index-progress-review-2023

vulnerable groups. Furthermore, the green transition in itself, including technological developments can give rise to new forms or causes of vulnerabilities and inequalities, if not carefully managed. As an example, offshore wind energy development in India may result in potential impact on local communities and conflicting interests, which must be addressed as part of ensuring a just and sustainable transition. This means that potential impacts on e.g. fishing communities and marine ecosystems must be understood, with key stakeholders involved, making sure that their rights upheld. Furthermore, processes for expedited approvals, circumventing stakeholder engagement requirements, are causes for concern, as this reduces the possibility for local communities and civil society organisations to have a say. Offshore wind being a new area of development in India, successful and socially sustainable implementation of the GoI strategy for offshore wind development, will require the development of transparent regulatory frameworks, certification processes (see further section on ESIA), and engagement mechanisms, to ensure constructive and inclusive dialogue with affected stakeholders. These concerns are both addressed as part of the federal engagement on OSW (outcome 1), with a particular emphasis on sharing Danish experiences with Environmental and Social Impact Assessments and stakeholder dialogue, but also on an implementation level in Tamil Nadu (outcome 4) with a particular focus on strengthening dialogue with local, vulnerable communities and fostering positive spill-over effects from establishing offshore wind farms.

Any risks that the project may cause harm to poor and vulnerable groups:
Key risks in relation to ways in which a green transition of the Indian energy sector may cause harm to poor and vulnerable groups include the following:
Lack of access to rights – right to participate/be heard and/or conflict over land rights when building out renewable energy infrastructure. India has previously experienced cases of land rights issues related to RE development (e.g. Pavagada photovoltaic park in Karnataka).
Negative impact on livelihoods for groups such as coal workers, fishermen and farmers arising from negative environmental impacts, restrictions related to the build-out of renewable energy or closing down workplaces.
Increasing electricity prices – if energy development and system integration is not managed in the most cost-efficient manner and/or inequitably distributed.
These are no risks of doing harm emanating from the INDEP II programme and associated activities. Rather, through awareness of and knowledge sharing around these overarching transition-related risks, INDEP II will seek to support the development of policy frameworks that address and minimise such risks (e.g. through fair and inclusive consultation processes, stakeholder engagement, environmental and social impacts assessment processes in line with international best practice, compensation mechanisms, incentive structures, cost-efficient energy development).

Key documentation and sources used for the analysis:
Danida Approach Note on Fighting Poverty and Inequality (link)
CIF: Just transition in India (link)
Kiesecker et. al (2020): Renewable Energy and Land Use in India: A Vision to Facilitate Sustainable Development (link)
India Exclusion Report: India-Exclusion-Report-2019-20-e-copy.pdf (centreforequitystudies.org)

Any additional studies/analytic work needed? How and when will it be done?
No additional studies or analytical work required in the formulation, but continued attention to socio-economic aspects of energy transition and OSW development will be required in INDEP II implementation.

A1.2: Political economy and stakeholder analysis

Political Economy Analysis:

Socio-economic, political, and institutional factors affecting the dynamics of the green, just and inclusive energy transition and climate action:

Key points:

- India has expanded its renewable energy capacity significantly, but coal is still a cornerstone of the Indian energy mix.
- BJP returned to power in 2024, ensuring policy continuity, which boost investor confidence. However, the federal structure creates regulatory challenges, especially for land acquisition and energy investments.
- Despite a reduction in fossil fuel subsidies, recent energy crises and rising demand have led to policies that may hinder the green transition, highlighting the tension between economic growth and environmental sustainability

India, the world's largest country with a population of 1.4 billion, is among the fastest growing economies in the world (7.2% in 2022-23). The sustained economic growth has been accompanied by a rapidly growing energy demand and although India has taken impressive steps to build out its renewable energy capacity (India has the 4th

largest RE capacity globally), India remains the world's third largest CO_2-emitter, with fossil fuels covering over 70% of energy demand. Coal accounts for about 56.9% of India's total installed capacity, leading to significant greenhouse gas emissions, and India's continued reliance on coal for electricity generation for years to come poses environmental challenges. Balancing economic growth with environmental sustainability is a critical issue.

India's energy sector has evolved significantly since independence. Initially, the sector was characterized by state dominance, with public sector enterprises like Coal India Limited (CIL) and the Oil and Natural Gas Corporation (ONGC) playing pivotal roles. The focus was on achieving energy security through domestic production and state-controlled pricing mechanisms. Today, the political focus is on achieving energy security and affordable access to energy in order to support sustained economic growth and socioeconomic development. India's electricity demand is projected by the International Energy Agency to grow at an annual rate of 6% through 2026. The country's infrastructure requires significant investment to meet this growing demand, including addressing high levels of transmission and distribution (T&D) losses (India has T&D losses of around 20% as of 2022, among the highest in the world, due to outdated infrastructure and theft, which impacts the financial viability of distribution companies (DISCOMs)). Thus, the sector needs substantial capital, with an estimated USD500 billion required by 2030, especially in renewable energy and grid modernization.

In the last 20 years the share of the population with basic access to electricity has increased significantly from approximately 50 % to almost 100 %. This remarkable achievement was reached through active involvement by the government through programmes such as Saubhagya. Despite improvements, energy access remains uneven, with rural areas in particular facing shortages and inconsistent supply. Additionally, there are disparities in energy prices across states due to varied subsidy regimes.

Energy subsidies, particularly for electricity and fuel, play a crucial role in India's political economy. In 2021, energy subsidies amounted to approximately USD15 billion. Subsidies are politically sensitive, impacting voter behaviour and often leading to populist measures that strain public finances. Energy policy in India is influenced by its federal structure, where both the central and state governments have jurisdiction. This can lead to policy inconsistencies and challenges in implementation.

With an increasing level of income, the demand of electricity is likely to rise dramatically in the future. Current projections point to a fivefold increase in electricity consumption in the next 25 years. Meeting the increased demand with sustainable sources is a major challenge and a great opportunity. With this fast increase in electricity consumption, India will need to accelerate the build out of renewables and make the necessary regulatory framework in order to efficiently integrate and manage larger amounts of variable renewable energy sources into the power system. Electricity infrastructure will need to be built-out and strengthened to accommodate for intermittent and decentralised generation. Further measures to ensure cost efficient ways to ensure reliability and flexibility as well as optimal use of energy resources will be important for the transition of the power system and social acceptance of the transition.

India's energy sector is thus at a pivotal juncture, with significant opportunities and challenges ahead. The interplay of political decisions, economic imperatives, and environmental considerations will shape the country's energy future. Some of the specific issues facing India's energy sector are:

1. Energy security
    - Import dependency: High reliance on imported oil and gas exposes India to global market volatility and geopolitical risks.
    - Strategic reserves: Developing petroleum reserves to mitigate potential supply disruptions.
2. Economic growth and energy demand
    - Rapid industrialization and urbanization drive increasing energy demand.
    - Balancing energy supply with sustainable development is crucial for long-term stability.
3. Renewable energy expansion
    - Policy support: Incentives and regulatory frameworks to boost renewable energy adoption.
    - Integration challenges: Grid integration, managing intermittency, and securing investment.
4. Coal dependency
    - Despite environmental concerns, coal remains vital due to its abundance and existing infrastructure.
    - Transitioning to cleaner energy while maintaining economic stability is a significant challenge.
5. Environmental and social impacts
    - Pollution: Coal-based power contributes to severe air pollution and health issues.
    - Climate change: Reducing greenhouse gas emissions is essential to meet international commitments.
6. Energy access and equity
    - Ensuring reliable and affordable energy access, particularly in rural areas.
    - Programmes like Saubhagya aim for universal electricity access.

India has set ambitious targets, but there is also need for a clear plan for cost-optimal build-out of the electricity system. Making sure that least cost technologies and solutions are used is key to ensure affordability for consumers

and growth of the economy and job creation. More market-based policy measures would ensure that the competitiveness between renewables and fossil fuels would be fair, and in many cases, it will favour the cheapest solutions which are wind and solar. Having an electricity system with high shares of variable renewable sources will also require new measures to balance demand and supply and/or store electricity seasonally and on a daily basis in order to ensure reliability and robustness in the system.
India is reliant on imports of oil and gas from other countries, exposing the country to volatility in market prices and to geopolitical constraints and supply chain disruptions. To match these challenges, Government of India has announced the following ambitions:

- To reduce emissions intensity of its GDP by 45% by 2030 from 2005 level
- To achieve about 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030
- To reach net-zero by 2070
- 500 GW of renewable energy capacity by 2030

The political scene:
The ruling coalition led by the Bharatiya Janata Party (BJP) returned to power for a third five-year term after the general election in April-May 2024, ensuring policy continuity; this will boost investor confidence. Risks to political stability are relatively small owing to a weak opposition and the high domestic approval rating of the prime minister, Narendra Modi, who will remain India's dominant political figure. In the new coalition government, the energy area is still divided between the Ministry of New and Renewable Energy (MNRE) and Ministry of Power (MOP). But, unlike the previous government where the same minister headed both the ministries, in the new Modi 3.0 Government, MNRE and MOP are now headed by two different ministers. As BJP no longer has the full majority in the Indian Parliament, the role of coalition partners from coal dependent states could potentially in the short run have a challenging impact on India's path to carbon neutrality.

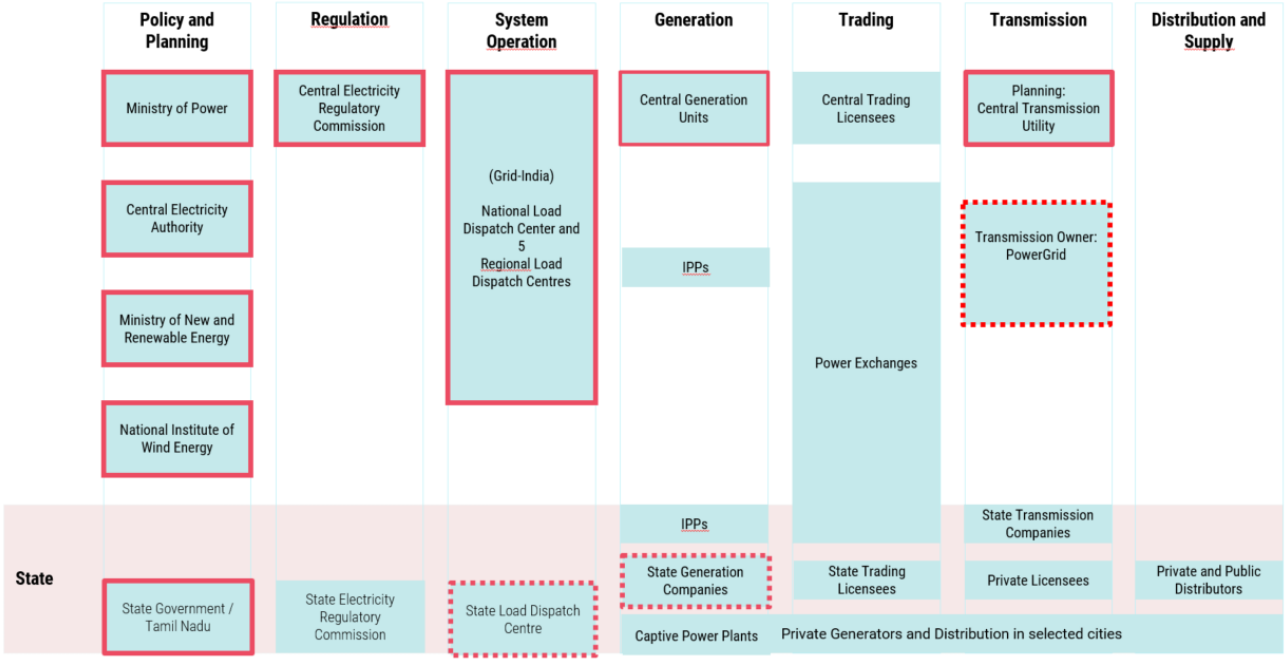
Internationally, India is a member of BRICS+(Brazil, Russia, India, China, South Africa - alliance of major developing countries, with Saudi Arabia, Egypt, Ethiopia, Iran, and the United Arab Emirates joining in early 2024). **"**The Economist" on 12 April 2024 (link) observed that India will strive to balance its strategic ties with Russia while seeking closer co-operation over time with fellow members of the Quad (an informal diplomatic grouping that also includes the US, Japan and Australia). India will try gradually to influence global policy by positioning itself as a leader of emerging economies, using its strong bilateral relations and growing market size.
India's GDP growth will remain one of the strongest in Asia; "The Economist" expects it to reach 6.5% in fiscal year 2024/25 (April-March). Elevated public spending, robust urban demand, significant foreign investment inflows and easing inflation will support growth. Tensions with China will persist, but a large-scale military conflict is unlikely. _____
Socio-economic and institutional factors in the political economy:
Key factors influencing the dynamics of India's energy transition and climate action include:

- India's green transition can create millions of jobs, enhance energy security, and reduce India's dependence on fossil fuels. The government has an ambition to become energy independent by 2047, which is one driver of renewable energy development in the country. However, this also includes continuing the use of coal. *"Energy security of the country cannot be achieved by renewable sources of energy alone; dependence on coal-based generation is likely to continue till cost-effective energy storage solutions are available"* (MOP, 2023). Therefore, and despite efforts to diversify energy sources and increase the share of renewable energy, coal remains a reliable and cost-effective option for meeting the country's growing energy demands. The Indian government continues to support the coal sector through subsidies, policies and initiatives aimed at increasing production. The coal sector is a major contributor to India's economy, providing employment to millions and contributing significantly to government revenues through taxes and royalties.
- A lack of reliable electricity supply and continued reliance on traditional fuels for cooking remain pressing issues (IEA).
- Despite India having significantly reduced fossil fuel subsidies (by 59% since 2014), the energy crisis of 2022 and increasing energy demands have led to measures that may reverse this progress. In response to high fossil fuel prices in 2022–23, India aimed to protect low-income households by limiting retail prices of petrol, and diesel, reducing taxes, providing direct transfers to businesses and consumers, and supporting existing energy supplies. Yet, these untargeted subsidies are found to be inefficient for supporting low-income households and they limit the funds available for clean energy technologies, hindering the energy transition, according to IISD's report on India's energy policy (2023).

- India is considered the World's largest democracy and the country's democratic framework supports a participatory approach to policymaking, crucial for inclusive energy transition and socially acceptable climate action.
- India's federal structure means state-level initiatives are critical in addition to national policies in driving the green transition. Energy is on the "concurrent list" meaning it is governed by both states and the central government, which can create friction. India faces regulatory challenges, with numerous regulations inconsistently implemented across different states, creating an environment that is not conducive to investors. Additionally, issues related to land acquisition further complicate the investment landscape for solar and wind deployment. To foster sustainable development, it is imperative that policies are well-funded, sustainable, and formulated with a consensus among the states (Industry Input for INDEP II on Wind Energy, MFA)
- Socio-economic factors including a growing middle class and rapid urbanization are accelerating energy consumption.
- Investment in India's energy sector is hampered by current coordination practices between states and the central government, slow decision-making, and insufficient industry involvement, excessive bureaucracy, delay and increased costs for developers, complex approval process etc. (Industry Input for INDEP II on Wind Energy, MFA)
- India's informal sector faces the risk of disruption but also opportunities from the green transition (UNDP).
- Political parties and civil society organizations are increasingly focusing on environmental issues, influencing policy directions. The transition is expected to create jobs, enhance energy security, and contribute to global efforts against climate change.
- The country's youth, forming a significant part of the population, is a vital demographic in driving climate action. Skill development and green job creation are essential in building a consensus for the green transition.

Stakeholder Analysis:

Key public stakeholders most relevant to INDEP II are reflected in the brief overview of Indian power sector institutions below. Annex 2 provides a detailed description and assessment of the most important key partners and stakeholders.



Among key public sector stakeholders not specifically part of the energy sector is Niti Aayog, the apex public policy think tank of the Government of India. Besides partners and stakeholders in the government structure, there are important stakeholders in civil society, non-governmental organisations, universities and other academic institutions including major think tanks. The latter are also briefly listed in Annex 2 and some of these were met by the May 2024 DEA formulation mission.

Strategies, approaches for engaging stakeholders and ensuring coordination:

- The programme is demand driven based on partner requests, which will ensure commitment and interest from the government officers.

- High-level interest and coordination will be ensured via JWG meetings that align expectations and interests between the parties.
- The programming activities are aligned with partner priorities, which means that they will also contribute to the daily work activities of the partners.
- Coordination will be undertaken via frequent coordination meetings among DEA, Energy Counsellor and other Embassy staff, LTAs, Trade Council and other relevant stakeholders.
- Coordination with other development partners is organized via coordination meetings**,** when required.

Who stand to gain/to lose from the programme:

The Indian government is building on an existing momentum for energy transition, which will be supported and validated via international collaboration and knowledge sharing on least-cost approaches to energy planning and modelling and development and grid integration of further renewable resources that have been shown to reduce or at least maintain power prices despite growing demands. This will ultimately benefit the power consumers through increased security of supply and lower costs, including for households and enterprises in more disadvantaged segments of society. Indian state and central government officials will benefit from exchange of experience and knowledge as well as training courses and other learning opportunities. The programme will support a transparent and comprehensive development of the regulatory framework within the green energy sector, which will benefit investors by streamlining the processes and allowing for enhanced and transparent competition.

The programme aims to support a transition in the energy sector, which will not be advantageous to the market players relying of fossil fuels.

Key documentation and sources used for the analysis:

- (IEA) India Energy Outlook 2021 – Analysis - IEA. (link)
- (Cambridge) - Climate Governance and Federalism in India. (link)
- (The Economist) India Economy, Politics and GDP Growth Summary - The Economist, (link)
- (WEF) India is making strides on climate policy that others could follow. (link)
- (UNDP) What are the socio-economic impacts of an energy transition?. (link)
- (IISD): Mapping India's Energy Policy 2023 (link)
- Publications on the political economy of India's power sector include "Mapping Power, The Political Economy of Electricity in India's States) (link for sale only, 2018) which concludes that contrary to conventional wisdom, attempts to depoliticize the sector are misplaced and could worsen outcomes.
- A more recent (2023) academic article on the subject is "India's just energy transition: Political economy challenges across states and regions" (link) which concludes that to comply with international climate targets, India will eventually need to phase out coal-fired power plants and substantially increase the use of solar-PV and wind power. Winners and losers of this transformation will not be distributed equally across the country, which potentially holds severe implications for the feasibility of the transformation and that complementary policies, will be necessary to avoid deepening regional disparities and increase acceptance from adversely impacted region, particularly in Eastern, less wealthy, coal-mining states.

Any additional studies/analytic work needed? How and when will it be done?

No additional studies or analytical work required during Programme formulation.

A1.3: Fragility, conflict, resilience, migration

Key drivers of conflict, fragility, resilience in relation to energy transition climate change mitigation:

India is not considered as a fragile country or conflict state and the country is generally characterized by peace and stability. Yet, terror incidents, armed clashes and violent public unrest does occur in certain parts of India, particularly in the Central territory of Jammu and Kashmir, the borderlands to Pakistan and the state of Manipur. However, no conflicts exist or are expected to arise in the regions or sectors where INDEP II is planning to engage.

Issues and concerns of relevance to Danish interest concerning fragility, conflict, humanitarian situations, security, and migration:

More than 80% of the Indian population lives in areas that are a risk of climate-induced disasters and it is estimated that by 2050, India alone will see a total number of 45 million people being forced to migrate from their homes in search for safety and sustainable livelihoods amidst a changing climate (inter-state migration). In addition to this, it is also expected that India will experience an increasing inflow of migrants from neighbouring countries like Bangladesh which are equally vulnerable to the impacts of climate change. This may not only threaten sustainable growth and development in India but also hold security implications for affected states.

Key documentation and sources used for the analysis:
(The Fund for Peace) - Fragile State Index. (link)
(Ministry of Foreign Affairs of Denmark) – Rejsevejledning for Indien (link)

Are additional studies/analytic work needed? How and when will it be done?
No additional studies or analytical work required during formulation.

A1.4: Human Rights, Gender, Youth and applying a Human Rights Based Approach

Human Rights Based Approach (HRBA)/ Opportunities and barriers for participation, inclusion, and empowerment of rights holders:

Key points:

- Ensuring the active involvement of marginalized communities in renewable energy projects is crucial, but caste, class, and gender barriers can hinder their participation and benefit-sharing.
- India has laws place to protect right-holders, such as the Right to Information Act and the LARR Act, however inconsistent implementation can lead to socio-economic inequities in renewable energy development.
- Skills development and local engagement is essential to ensure a just and inclusive transition.

India's Right to Information Act 2005 mandates timely response to citizen requests for government information. It provides for right to information for citizens to secure access to information under the control of public authorities. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 ('LARR Act') includes stringent requirements for consent from private land owners whose land is being acquired and Social Impact Assessments (SIAs) to be conducted, however, due to challenges with adhering to the LARR Act (leading to delays) the Central Government, with encouragement from NITI Aayog, has allowed states to establish alternative mechanisms for acquiring private land for RE developments. The effect is that RE developers can side-pass some requirements of the LARR-Act. WRI-India (link) found in one of their case studies that, in the absence of adequate public consultation and engagement with vulnerable communities regarding compensation, livelihoods, rehabilitation and resettlement, there is a risk of further deepening inequitable distribution of benefits and burdens, thus exacerbating socio-economic inequity (including case related inequity). Whilst there is no evidence that this is true across all projects, it is important for consideration. Caste and class-based inequities in India are complex and multifaceted, deeply affecting the social and economic development of the country. Addressing these inequities requires sustained efforts in policy implementation, social change, and economic reforms, alongside a commitment to upholding justice and equality for all citizens. Article 16 of the Constitution of India clearly mentions that the State shall treat everyone equally in the matters of employment. No citizen shall be discriminated on the basis of race, caste, religion, creed, descent or place of birth in respect of any employment or office under the State. However, despite legal protections and affirmative action policies, caste-based discrimination remains prevalent in many areas.

The Human Rights Based Approach (HRBA) is based on four principles i.e. Participation, Accountability, Non-discrimination, and Transparency (PANT) These are integral parts of how DEA implements its international partnerships[30]. A key aspect of INDEP II will be to support increased transparency in the power sector and make information available where possible. Where relevant, the INDEP II collaboration will focus on attention to the value of stakeholder engagement processes and considerations around inclusion and give sparring to the efforts to enhancing public consultations and involving diverse stakeholders, including local communities and civil society organizations, representatives of industrial associations, etc. in the energy planning and policy-making process to ensure that the concerns and needs of all affected groups are considered. This will be done with a particular focus on emphasizing the importance of attention to ensuring that no rights holders will be excluded from involvement.

Gender equality:
In recent years the empowerment of women and girls have been a political priority in India. However, much remains to be done. According to statistics, the female labour force participation has improved slightly over the last decade from 29% in 2014 to 36% in 2024. Politics in India is reflect increasing awareness of the topics of gender equality and the skilling of women and especially girls. Notably, there are also caste, class and other intersectionalities to be considered. The skilling of women has by many Indian economists been identified as necessary in order to reach the ambitious Indian economic growth targets, where female labour participation is a key element to reaching the

[30] As further explained in the "Forståelsespapir om det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder".

target under the Viksit Bharat (Developed India) vision. There are strong indications, that the rate of women employment in the energy sector is below the national average across sectors, with 20% to 25% of women representation in management positions in the power sector. Despite initiatives such as the Renew power: women for climate and Women in Sustainability (WiS)[31] aiming to enhance women participation in the renewable energy sector, women only represent 11% of the workforce in India's renewable energy sector.[32] Gender equality measures must also consider the complex intersections with caste and class-based inequities. For instance, the Gujarat Solar Park, a mega-scale RE project, was officially committed to achieving 'gender positive' outcomes and claimed to empower women. However, it did not fully consider the complex intersectionality of gender, caste, and class.
As a result, the project tended to reproduce caste and class-based inequities, by providing opportunities primarily to women from middle to high income households and dominant caste[33]. A Gender Perspective published by the International Renewable Energy Agency (IRENA) examines the question of gender equity throughout the renewable energy sector. Building on a ground-breaking survey of employees, companies and institutions, it finds that much remains to be done to boost women's participation and allow their talents to be fully utilised. The report also points to issues such as insufficient access to training of women, need for mainstreaming of gender in energy policies, and needs for enhancing access for women to finance.
INDEP II will strive for a gender balance in capacity development activities and monitor and report on the gender balance in capacity development activities.

Youth and jobs:
Employment generation coupled with improving employability is the priority of the Indian Government. Estimates suggest that installing 238 GW solar and 101 GW new wind capacity, to meet the 2030 goal of 500 GW non-fossil electricity generation capacity, could generate about 3.4 million jobs (short and long term). This represents jobs created in the wind and on-grid solar energy sectors.
India's engineering sector is highly skilled, but often lacks a focus on sustainability and socio-economic aspects. Incorporating sustainability into education and training programmes is essential.
According to WRI, NIWE and the newly formed COEFOWRE are agencies best placed to develop the skilled workforce necessary for the OSW sector by providing relevant training courses. Therefore, INDEP's engagement with NIWE is essential and the proposed new partnership with the State of Tamil Nadu will contribute to developing an enabling framework for opportunities related to onshore repowering and offshore wind development with a focus on skill development and local engagement.

Key documentation and sources used for the analysis:

- Gender equality, UNICEF India (**link**)
- WRI-India (2021): Renewable Energy to Responsible Energy: A Call to Action (link)
- WRI India (2022): Winds of Change: Learnings for the Indian Offshore Wind Energy Sector – working paper (link) WRI-India highlights some risks to be taken into account; marine ecosystems and fishing livelihoods. The due diligence conducted with respect to offshore wind tends to focus purely on technical aspects, rather than social impacts such as livelihood creation and disruption. This report also sets out a number of recommendations
- Ryan Stock (2021): Bright as night: Illuminating the antinomies of 'gender positive' solar development (link). Academic article published in World Development.

Are additional studies/analytic work needed? How and when will it be done?
No additional studies required as part of formulation.

A1.5: Inclusive sustainable growth, climate change and environment

Risks and challenges to inclusive sustainable growth and development from the impact of climate change, as relevant to INDEP II:
Key points:

[31] https://mnre.gov.in/empowering-women-in-renewable-energy/#1686130235609-56ed5be9-1158 The MNRE Minister emphasized the significance of developing women-centric policies and implementation frameworks in the renewable energy sector. He recognized how women are more effective in bringing about change at the grassroots level through community engagement and household-level action. He noted that women, especially in rural areas, can benefit from Decentralised Renewable Energy (DRE) and gain reliable livelihood opportunities. He also highlighted, that women can play a big role in switching to green cooking which can be another big step in achieving Net Zero
[32] https://energyalliance.org/gender-empowerment-in-the-renewable-energy-sector/
[33] https://www.sciencedirect.com/science/article/abs/pii/S0305750X20303235

- India is among the countries most vulnerable to climate change and the impact of climate change risks to severely undermine the development gains made by India in recent decades, pushing millions of people back into poverty.
- Climate change threatens food security and water availability, impacting especially rural livelihoods and exacerbates inequalities, especially for marginalized communities.
- Rising temperatures are expected to increase energy demand for cooling, while water stress could impact hydropower and thermal power generation. This may affect the reliability and affordability of energy, especially in poor and rural areas.

Home to 1/6 of the world's population, India holds the key to achieving the 2030 agenda and since the beginning of the century, India has made remarkable progress in the eradication of poverty[34] with a total of 415 million people escaping poverty between 2005 and 2021. However, India is among the countries most vulnerable to climate change and already today, India is experiencing the effects of a changing climate with heath waves, droughts, floodings and other weather-related events becoming not only more frequent, but also longer lasting and more extreme. Climate change and development are deeply intertwined in India and if sufficient mitigation measures are not applied in due time, this means that the impact of climate change risks to severely undermine the development gains made in recent decades.

Rising temperatures and changes in precipitation pose a serious threat to the Indian agricultural sector with the potential to significantly worsen food security and threaten livelihoods in rural areas, where a large proportion of smallholder farmers still depends on agriculture for their subsistence. Similarly, water stress and declining ground water reserves poses a risk to both urban and rural water security. A warmer climate will also threaten advancements in health with rising heat-mortality as well as changing disease patterns putting strains on an already challenged public health system. Rising sea-levels will disrupt lives in coastal areas, including major cities like Chennai, Mumbai and Kolkata, just as floodings from intense monsoon rains holds the potential to cause extensive damage to both livelihoods, infrastructure and the economy across the country. Altogether, a likely side-effect of these developments is a surge in both inter-state and intra-state migration, as large numbers of people will be fleeing their homes due to a loss of liveability in the most exposed communities (particularly rural areas), potentially leading to uncontrolled urbanization with severe implications for health and social development.

Climate change will also pose a challenge to energy security. In the coming decades, the demand for electricity for cooling alone is expected to increase drastically and furthermore water stress may undermine both hydropower and thermal power generation (together responsible for X % of power generation in India today), posing a threat to the ability of the state to deliver affordable and reliable energy, particular in poor and rural areas. Lastly, as the impacts of climate change have been shown to disproportionately affect the marginalized and vulnerable, the above-mentioned developments may all together lead to a widening of economic disparities as well as gender inequalities across India, as women, often responsible for water and fuel collection, will face increased burdens.

While difficult to measure the exact cost of climate change, the Indian think-thank *Council of Energy, Environment and Energy* (CEEW) estimates what without sufficient mitigation measures put in place, climate change will result in significant economic losses for India across sectors, amounting to 258-522 billion USD in 2100 (2010 numbers). Such a scenario would not only prove detrimental to the Indian economy, but also significantly affect the ability of the government to invest in development and implement pro-poor policies, further enhancing the vicious cycle between climate change and poverty.

<u>The country's NDC targets and how the proposed support aligns:</u>

NDC targets are shown in section A1.2 above. DEPP IV India/INDEP II can play a positive and facilitating role:

- Supporting India with strengthening an enabling environment for investment in renewable energy infrastructure.
- Provide data and analysis for informed decision making in NDC updating – data and analyses underpinning the Indian Power Outlook (IPO) are already being used by different authorities (even though the IPO is not yet published).
- Generate collaborative research through studies of the role of storage, which is vital for managing intermittent renewable sources.
- Help in capacity building, training personnel to manage and operate new green technologies.
- Develop framework conditions and regulation to integrate the growing share of renewables in India.
- Conduct studies to establish a feasible development path for the Indian power sector to reduce emissions and obtain its long-term emissions targets.

[34] Poverty measured by the multidimensional poverty index developed by the WB.

- Develop various power sector tools and platforms (e.g. power market trading, forecasting of renewables) that are crucial for higher renewables penetration.
- Support tendering procedures for creating a transparent bidding process for offshore wind power.

Policies and strategies at national/regional/local level to ensure that development is inclusive and sustainable, avoids harmful environmental and social impacts and responds to climate change:

At the National Level, NITI Aayog oversees the Sustainable Development Goals, ensuring that policies align with inclusive growth and environmental sustainability. Relevant policies and strategies at central level most notably include:

- The National Action Plan on Climate Change outlines eight missions with the purpose of mitigating climate change impacts in line with the Paris Agreement. These include the National Solar Mission, the National Mission for Enhanced Energy Efficiency and the National Mission on Strategic Knowledge for Climate Change.
- The National Skill Development Mission aims to enhance employability, supporting economic growth without exacerbating social disparities.
- Mahatma Gandhi National Rural Employment Guarantee Act aims to provide employment, fostering inclusive development in rural areas.
- Smart Cities Mission and Gati Shakti Mission focus on sustainable infrastructure, improving quality of life and reducing environmental impact of cities.
- Building Resilience: Programs like Pradhan Mantri Fasal Bima Yojana protect farmers against climate risks, promoting sustainable agriculture.

Furthermore, states like Tamil Nadu, Gujarat and Kerala are implementing their own climate action plans, addressing local challenges related to climate, energy and environmental sustainability.

Political will and institutional and human capacity to implement these policies and strategies:

Political will:

- India has demonstrated strong political will to counter climate change by setting ambitious climate and energy targets, including a pledge to reach net-zero emissions by 2070.
- The country's leadership is actively engaging in international climate dialogues and has updated its Nationally Determined Contributions (NDCs) to reflect its commitment to climate action.
- The Indian G20 presidency had high ambitions on energy and climate change mitigation. The Indian Government managed to reach agreement among G20 countries about the pledge to triple renewable energy capacity by 2030, an aim that was later adopted by world leaders in the COP28 declaration.

Institutional capacity:

- India is recalibrating state institutions to strengthen their capacity for climate action, particularly in sectors like agriculture, water, and disaster management.
- The country is focusing on enhancing the efficiency of institutional frameworks for climate change adaptation, which is essential for sustainable development.
- Institutional innovations, such as the establishment of the International Solar Alliance (ISA) reflect India's proactive approach to building institutional capacity for climate diplomacy and strengthen institutional resilience towards climate change in the Global South.

Human capacity:

- Human capacity development is a key focus, with initiatives like the *Climate Change Adaptation in Rural Areas of India* (CCA RAI) project, which aims to mainstream climate change adaptation in development thinking and action.
- Training programs for government officials and local multipliers are enhancing the capacity to integrate climate change adaptation into planning processes.
- Support for community-level adaptation efforts is helping individuals and communities in finding ways to cope with climate shocks and building long-term resilience.

Support to inclusive green growth and transformation to low-carbon and climate resilient economies:

Achieving green growth and transforming India towards a low-carbon and climate resilient economy remains a huge challenge for the Indian Government. However, India has also – particularly in recent years – taken a number of important steps nationally and internationally towards a green transformation:

- **National policies:** India's national policies, like the National Action Plan on Climate Change, prioritize sustainable development and green growth.
- **International commitments:** India's commitments under the Paris Agreement and its updated NDCs reflect its dedication to a low-carbon future.

- **Economic strategies:** The Central Budget 2023-24 emphasizes green growth, with initiatives across sectors to promote a green economy.
- **Renewable energy:** India is rapidly expanding its renewable energy capacity, aiming to achieve 50% of its power capacity from non-fossil sources by 2030.
- **Green financing:** The country is exploring green bonds and other financial instruments to fund its transition to a green economy. Initial carbon market discussions are also ongoing.
- **Technology Transfer:** Collaborations with global partners (DK, UK, US, Germany and others) facilitate access to advanced know-how and technologies for green growth.
- **Capacity building:** Programmes are in place to enhance skills and knowledge in green technologies and sustainable practices.
- **Infrastructure development:** Investments in climate-resilient infrastructure are being made to withstand climate impacts.
- **Green jobs:** The shift to a green economy is expected to create millions of new jobs in the renewable energy sector and associated sectors.
- **Public engagement:** Awareness campaigns and education programmes are raising public consciousness about green growth.
- **Corporate responsibility:** Businesses are encouraged to adopt sustainable practices and contribute to green growth.
- **Urban planning:** Smart city initiatives incorporate sustainability into urban development plans.
- **Climate adaptation:** Strategies are being implemented to make agriculture, water resources, and urban areas more climate resilient.

Positive impacts and potential risks or negative impacts related to natural and human environments and climate change from the proposed programme and how these may be mitigated:

The proposed programme will support India's energy transition within three thematic areas (offshore wind, long-term energy planning and integration of variable renewable energy) that have proven crucial to foster a green transition of the energy sector. India, being the world's most populous country and third largest CO_2-emitter is a nodal country for the global fight against climate change. INDEP II can thus contribute not only to the achievement of India's NDCs, but also to the achievement of the Paris Agreement as a whole.

Environmental and social impact assessment (ESIA) requirements and issues:

In India, environmental and social impact assessments (ESIAs) are a critical part of the regulatory framework for sustainable development and are required for specific projects:

- ESIAs are mandatory for a wide range of projects, including thermal power plants, hydropower projects exceeding 15 MW, transmission lines over 220 kV, and mining projects over 50 hectares.
- The process involves predicting and assessing potential adverse impacts and developing mitigation measures documented in an *Environmental and Social Management Plan* (ESMP).
- Projects categorized as 'A' require approval from the Ministry of Environment, Forests and Climate Change (MoEFCC), while 'B' category projects need state-level approval.

Smaller RE projects e.g. PV plants and onshore wind are not required to conduct an ESIA (when outside zones deemed eco-sensitive), but various stakeholders and experts have suggested that it should be changed (ref. WRI).

Key documentation and sources used for the analysis:

- Cabinet approves India's Updated Nationally Determined Contribution (link)
- Sustainable Development Goals, NITI Aayog (link)
- National Action Plan on Climate Change (NAPCC) (link)
- India: Helping People Build Resilience to Climate Change - World Bank Group. (link)
- How can India Re-calibrate its Climate Change Action Policy? CEEW. (link)
- WRI India (2022): Winds of Change: Learnings for the Indian Offshore Wind Energy Sector – working paper (link)

Are additional studies/analytic work needed? How and when will it be done?

No additional studies required as part of programme formulation.

A1.6: Capacity of public sector, corruption

Capacity of the public sector[35] for policy making, implementation of policies, enforcement of regulations and effective service delivery (general assessment):

India has a highly developed professional public sector with relatively strong institutions and well-established mechanisms and processes for policy implementation across various levels of government. Compared to similar countries, the Indian public sector is however relatively small – the public share of total employment in India is estimated at 5.77% (2023), which is half the corresponding number for China and Indonesia. At the same time, the Indian public sector is characterized by a heavy bureaucracy and a lack of effective coordination across centre, state and local governments, posing a challenge to policy implementation. Overall, the ability of the state to effectively design and implement public policies (state capacity), varies across India. In 2015, the Government of India initiated its flagship programme *Digital India*, aiming to transform India into a digitally empowered society and knowledge economy. Digital India and similar initiatives have played an important role in enhancing the accessibility and efficiency of public services and strengthened mechanisms for citizen feedback and grievance redressal (e.g., through a Public Grievance Portal). Yet, effective service delivery continues to be challenged by inefficiencies in the Indian bureaucracy and inconsistencies between public sector entities in service delivery. Finally, urban and rural areas and different socioeconomic groups also experience a disparity in terms of the quality and efficiency of service delivery. The assessments of the key INDEP II partner institutions in Annex 2 provide further details.

Anti-corruption measures:

INDEP II does not engage in transfer of funds through the Indian partner institutions and thus there is no risk of corruption utilising the programme funds. When conducting activities together with partners, the DEA's main principle will be to make work, reports, findings and recommendations publicly available unless the partners deem there are confidential elements that need protection. Similarly, it is an integrated part of the dialogue with partners to advocate for, and illustrate the benefits of, transparency in terms of processes and for the inclusion of all relevant stakeholders e.g. through public hearings. This will altogether reduce any risk of corruption. In Transparency International's report for 2023, India achieves a score of 39 out of 100 on the Corruption Perceptions Index, indicating persistent corruption challenges. India ranks 93rd out of 180 countries, showing a slight decline with a change of -1 since the previous year. The Government of India emphasizes that the country has a strict policy of zero tolerance against corruption and has implemented a comprehensive framework to combat corruption, focusing on systemic improvements and reforms.

Key documentation and sources used for the analysis:

- The 2023 Corruption Perceptions Index (CPI) (link)
- Measures to combat corruption - Press Information Bureau (link)

Are additional studies/analytic work needed? How and when will it be done?

No additional studies are required as part of programme formulation.

A1.7: Matching with Danish strengths and interests, engaging Danish actors and seeking synergies

Areas where we have the most at stake – interests and values:

Danish priorities, policies, and strategies are articulated in Denmark's Strategy for Development Cooperation "The World We Share", which among other things states that *"Danish authorities have decades of experience in creating the framework for successful green transition, and Danish companies, knowledge institutions and other stakeholders are at the very front in developing and implementing green solutions within renewable energy, district heating, energy efficiency…" "Denmark should be the little green cogwheel that sets the larger ones in motion. This happens when we inspire major CO2 emitters to take ambitious climate action, through international cooperation on renewable energy and energy efficiency, or through government-to-government strategic sector cooperation with other countries"; "Denmark must assume international leadership within reductions, green transition, and access to clean energy"; "Denmark will strengthen the Danish SDG7 leadership and energy cooperation on green transition in developing countries, including promoting renewable energy and energy efficiency. This applies particularly to growth economies with high emission levels. The international cooperation on energy under the strategic sector cooperation will lie at the heart of the efforts to promote green transition and underpin Danish climate diplomacy.*

[35] Since DEPP 2025 does not channel ODA grant funds through national partner institutions, public financial management issues and financial management capacity assessment are not relevant here. Reference can be made to Annex 2, Partner assessment for capacity of the proposed key national partner institutions.

The Danida How-to-Note on Energy Transition and Emission Reductions in Developing Countries, acknowledges that *"the Danish Energy Agency is deeply engaged in technical authority-to-authority cooperation at the country level in emerging economies"* and states that: *"Working with major emerging economies is critical, as 30% of the increase in energy demand will indeed come from these countries." "The major emerging economies and targeted partnership countries are already among the global top emitters, and the energy sector is the main source. Accordingly, in these cases the focus is more directly on the energy sector and on long-term energy planning both nationally and sub-nationally," "Emerging economies still contain pockets of poverty, and the social and economic aspects of energy measures will be increasingly analysed. Civil society can help in this, including at the country level. The goal is a socially inclusive green transition, including job creation," "Danish development aid should continue to serve as a catalyst and mobilise finance for renewable energy, decarbonisation, phase-out of fossil fuels" "Authority-to-authority cooperation may also help promote export of Danish solutions in renewable energy, energy efficiency etc., and be followed up by Danish finance through, for instance, the IFU and EKF. At the same time, technical authority-to-authority cooperation feeds into the policy dialogue on climate ambitions, thus contributing to Danish SDG 7 and climate leadership." "Concrete links must be forged between authority-to-authority cooperation, bilateral projects and multilateral organisations such as IRENA, IEA, UNEP-CCC, the NDC Partnership and ESMAP in order to enhance capacity and national frameworks, as well as to develop investable projects.".*

INDEP II is clearly in line with these priorities, and Denmark considers itself to be a global leader in a range of aspects of the green transition such as renewable energy policy and long-term planning etc. The experience from the Danish energy transition has great relevance to India's Energy Transition. DEA (and other Danish energy institutions such Energinet) have strong competences within offshore wind development, energy modelling and long-term energy and grid integration of high shares of variable renewable energy. The lessons learned from Denmark is that there are significant benefits by having incentives and regulations in place for a flexible and market-based power system. Denmark has demonstrated that it is possible decouple economic growth, and GHG emissions, providing important learnings for India, for whom achieving green growth is essential for making sure that the green transition of the Indian economy does not happen at the expense of sustained poverty reduction and socioeconomic development.

<u>Where we can have influence through strategic use of positions of strengths, expertise and experience:</u>

Through the India-Denmark Energy Partnership, Denmark has managed to establish a prominent position as one of the preferred partners for India in the area of offshore wind and renewable energy modelling and integration. A primary reason for the strong position is the approach of basing long-term advisors within partner institutions. Denmark is the only country with embedded advisors in Government of India – ministries and agencies. Overall, Denmark's unique insights from more than 50 years of energy transition are in high demand from Government of India. During a bilateral meeting in 2023 between Mr. Dan Jørgensen and former Minister of Power and New and Renewable Energy, R.K. Singh, the Indian side clearly expressed that India wants Denmark to play an even stronger role supporting India's energy transition.

Moreover, the first phase of INDEP has illustrated how the energy partnership can create influence and spill-over effects towards Danish climate diplomacy efforts in India. The strength of the energy cooperation has paved the way for Danish participation with the G20. In 2023, the Indian G20 presidency in 2023 invited Denmark to participate in the G20 Energy Ministerial and the supporting working groups. This is being repeated under the Brazilian G20 presidency in 2024 and could be continued under the South African presidency in 2025.

In INDEP II, it will be a continuous focus to explore ways in which DEA and the Danish Embassy in New Delhi can further consolidate the Danish position in India, making sure that the Danish strongholds are used to deliver results. There is significant opportunity to coordinate further with the Government of India think-thank NITI Aayog, a strategically important actor in the Indian political space. NITI Aayog is placed directly under the Prime Minister's Office and is expected to take on a prominent role following the recent election, supporting efficient and cross-cutting implementation of the Government of India's energy policies. NITI Aayog has shown interest in collaborating with Denmark on energy transition topics and has invited Denmark to participate in the India Government's working group on energy planning. Collaborating with NITI Aayog provides exposure for INDEP II towards the Prime Minister's Office and the Ministry of Finance, which could be important to gain political momentum for the agendas and technical work taking place under the energy cooperation.

<u>Where Denmark can play a role through active partnerships and support in pushing the agenda forward. Concrete opportunities for synergies through Danish foreign policy engagement, commercial engagement, trade relations and investment, Danish local and central authorities, civil society organizations, IFU and academia:</u>

The energy partnership between India and Denmark is an integrated part of the Green Strategic Partnership (GSP) between India and Denmark, encompassing several sector collaborations in addition to that on energy. There is strong potential for leveraging synergies between different sector collaborations, particularly between Energy and Maritime/green shipping, where green hydrogen (and associated impacts on the energy system and infrastructure) is a key topic, and between Energy and Education, with potential for interaction around skilling for the green

economy. Under the GSP, there is also significant opportunity for coordination/collaboration between INDEP II and the Trade Council (TC), which has initiated two energy related commercially oriented fora:
the Wind Alliance India and Green Fuels Alliance. Close coordination is facilitated by DEA participation on the advisory boards of both alliances. Furthermore, as part of the preparation of INDEP II, TC and DEA hosted three industry roundtable sessions with Danish companies present in India in order to obtain industry inputs for suggested focus areas and activities for INDEP II. There is big potential to further enhance and strengthen such collaborative efforts as part of INDEP II.
It was mentioned to the mission by the Trade Council that there seems to be scope of a larger role for IFU in India.

Assessment of the development partner landscape and coordination, including opportunities for synergy with Denmark's multilateral energy/climate cooperation:

The energy transition and climate action, particularly in terms of offshore wind, are crowded fields in India with many bilateral and multilateral donors engaged. There is therefore a risk that the programme could duplicate existing activities and/or fail to build synergies with other initiatives. During the first phase of INDEP it has been a continuous focus to explore synergies and enhance coordination with other development partners engaged in India. The number of initiatives supported by development partners, is large and coordination remains relatively weak due to e.g. a competitive donor environment. However, Denmark has established a strong position in India with close ties to other development institutions including EU, the ADB and the WB. Furthermore, in general Denmark works through several multilateral channels (WB ESMAP, IEA, IISD, CEM, the Clean Energy Investment Coalition, CIF, etc.) in areas that can supplement INDEP.
A recent Indo-German initiative provides new opportunities for multi-lateral coordination and could be an important platform for Danish engagement under INDEP II. During the Indian RAISINA dialogue 2024, MNRE announced that the former Indian conference on renewable energy RE-invest will be revitalized in a new format, as part of an Indo-German initiative to establish a collaboration forum/platform to further investments in renewable energy, with Germany (GIZ) being the main implementing partner. MNRE explicitly recommended Danish engagement based on the strong Indo-Danish energy collaboration. From the Government of India, this initiative is considered an alternative to the Just Energy Transition Partnership (JETP), which the Indian Government has decided not to adopt. So far, nine priority workstreams on renewable energy investment, development and deployment have been identified, including on wind energy and on enabling environment and infrastructure, with clear synergies to the INDEP programme. Denmark (along with all other major international actors active in the energy transition space India) has been invited as a partner country for RE-invest and ongoing involvement with relevant workstreams, and this initiative can provide an important arena for supporting policy action on areas of interest to INDEP II, including through strengthened multi-lateral coordination and dialogue with investment stakeholders.

Agency	Areas of support
ADB	In 2023 the Asian Development Bank (ADB) committed one $250 million policy-based loan to promote power sector reforms (co-financed by KfW) and to facilitate the shift to renewable energy. Two $200-million loans to expand the transmission and distribution network and urban services in Uttarakhand were also sequenced (co-financed by Asia Infrastructure Investment Bank (AIIB)).
AFD	Energy efficiency, renewable energy, urban infrastructure (public transport, water).
CIF	CIF's investments in India are through its Clean Technology Fund. Denmark supports the Accelerated Coal Transition (ACT) which is implemented by ADB and the WB.
EU/ EIB	In 2020 the EU-India strategic partnership was agreed, including a roadmap to 2025. It was agreed that the 2016 EU-India Clean Energy and Climate Partnership should be strengthened with a focus on energy efficiency and renewable energy including integration in the energy system (e.g smart grids). Energy security, integrating of EV charging infrastructure, energy R&D, support to a just energy transition and mobilising finance is also highlighted. EIB provide long-term financing, advisory support and blend EU grants to support global climate action, climate resilience, and energy efficiency (among others). 1/3 of EIB's activities in India are energy sector related promoting a diverse range of renewable energy technologies, including conventional technologies such as onshore wind farms, hydropower, and solid biomass, as well as emerging technologies like offshore wind, photovoltaic, concentrated solar power and second-generation biofuels.
GIZ/ KfW	In 2022, India and Germany signed the Green and Sustainable Development Partnership and made a commitment to achieving the goals of the 2030 Agenda and the Paris Agreement. GIZ supports restructuring India's energy sector and reduce emissions. It promotes the expansion of renewable

	energy and is committed to increasing energy efficiency. GIZ has a significant presence in India within the energy sector and has an established platform in the Indo-German energy forum.
IEA	The IEA and India have expanded their collaboration on energy and climate issues in recent years. India sent a formal request for full membership to IEA ministers in October 2023. India becoming an IEA member would mark a huge, consequential change in international energy governance. Clean Energy Transitions Programme (CETP); Energy efficiency, green hydrogen, bioenergy and biofuels, climate and energy policies
IISD	Denmark supports the International Institute for Sustainable Development (IISD) Global Subsidy Initiative (GSI), which is very active in India.
IRENA	Strategic Partnership Agreement with India signed in 2022. IRENA will facilitate knowledge sharing from India on scaling-up renewable energy and clean energy technologies as well as support India's efforts to advance cost-effective decarbonisation through the development of domestic green hydrogen. IRENA will also facilitate long-term national energy planned towards the achievement of ambitious long-term developmental targets in the sectors of housing, rural electrification, renewable energy, assured electricity supply and reduction in oil import dependence, among others. Denmark supports IRENA through multilateral cooperation, including within long-term energy planning.
JICA	Power transmission and distribution projects
OECD	Denmark supports the OECD Clean Energy Finance and Investment Mobilisation (CEFIM) programme, which is active in India and recently (April 2024) held a seminar on energy efficiency launching the Energy Savings Insurance (ESI) concept with the Bureau of Energy Efficiency and other stakeholders.
UK	UK supports sustainable and inclusive growth and helps India make a transition to clean energy and tackle climate change. The main instrument is investment in the private sector and deploying expertise to help India to improve development outcomes and mobilise high quality finance. UK supports the Ministry of New and Renewable Energy with energy transition, including the deployment of new renewables such as India's first offshore wind initiative. The Accelerating Smart Power and Renewable Energy Programme (ASPIRE) contributes towards India's low carbon energy transition through supporting MNRE to standardise policy and regulatory frameworks; to develop new, sustainable business models to encourage more investment; to introduce new and innovative technologies, and to build the capability of key stakeholders in the energy sector. This includes activities engaged by the UK in Tamil Nadu and the DEA formulation mission in May 2024 met the British Deputy High Commissioner in Chennai who found it to be a good decision for Denmark to engage in Tamil Nadu on OSW. The State Government also approached the UK on OSW which is a priority. UK is still scoping new support and there is full agreement on coordination and synergy.
USA	USAID is working with India to implement ambitious emissions reduction measures, transition to renewable energy, and promote the flow of capital toward climate-positive investments. India is a priority country for the U.S. climate diplomacy and a longstanding strategic partner on clean energy research, development and deployment. The US-India partnership is organized via task forces focusing on topics such as energy storage, grid planning and biofuels, etc.
WB	The first Low-Carbon Energy Programmatic Development Policy Operation will support India in developing green hydrogen. In general, Denmark's long-standing support to the WB Energy Sector Management Assistance Program (ESMAP) contributes to developing high-quality knowledge products (link) that can be a vary contribution to knowledge and capability development. ESMAP has also provided inputs to wind energy development including in Tamil Nadu (link). The Energy Progress Report tracking SDG 7 is an inter-agency flagship report (link). Similarly, the ESMAP Regulatory Indicators for Sustainable Energy (RISE) provide key data for green energy transition in many countries including India (link).

Key documentation and sources used for the analysis:

- Danida How to Note on Energy Transition and Emission Reductions in Developing Countries (link)
- TC India Strategic Green Transition Alliance in India, approved and signed project description

Are additional studies/analytic work needed? How and when will it be done?

No additional studies or analytical work required during formulation.

Annex 2: Partner assessment

A2.1 Summary of key partner features

Name of Partner	**Core business** *What is the main business, interest and goal of the partner?*	**Importance** *How important is the programme for the partner's activity-level (Low, medium high)?*	**Influence** *How much influence does the partner have over the programme (low, medium, high)?*	**Contribution** *What will be the partner's main contribution?*	**Capacity** *What are the main issues emerging from the assessment of the partner's capacity?*	**Exit strategy**[36] *What is the strategy for exiting the partnership?*
The Ministry of New and Renewable Energy (MNRE)	MNRE is the nodal Ministry of the Government of India for all matters relating to new and renewable energy. The broad aim of the Ministry is to develop and deploy new and renewable energy to supplement the energy requirements of the country.	High	High	Partner will be assessing, facilitating, directing, approving and owning the work that will be agreed for the whole programme. Partner is also very crucial in facilitating contact with other central and state government bodies and agencies.	Partner is lacking resources and know-how to steer the whole program. The partner is lacking number of people that can work for offshore wind policy development and support. The available employees are occupied with ongoing onshore wind and solar developments. The partner is also lacking knowledge on offshore wind on the available personnel.	Handing over the Centre of Excellence (CoE) secretariat by facilitating the gradual development of the CoE capacity so it can eventually function without Denmark's support. INDEP II will enhance coordination and dialogue with other ministries and agencies about the necessity of dedicating resources to offshore wind development, based on the Danish experiences and institutional setup. Other agencies can be included in the OSW policy and tender development to

[36] Also, in general, and from the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy to be assessed by the MTR.

						ensure institutional anchoring INDEP II can also support MNRE in dialogue with other donors in order to secure additional funding for the CoE going forward.
The National Institute of Wind Energy (NIWE)	NIWE is an autonomous R&D institution established by MNRE in 1999 to serve as a technical focal point of excellence to foster the development of wind energy in the country.	High	Medium	Partner will be assessing the technical part of the work carried out during the program. Partner is also crucial in facilitating contact with stakeholders in Tamil Nadu.	Partner is lacking resources and know-how to steer the whole program.	Creating in house know-how and expertise about offshore wind.
Central Electricity Authority (CEA)	CEA is responsible for the technical coordination and supervision of programmes and is entrusted with a number of statutory functions. The CEA advises the central and state governments on policy matters within the power sector.	Medium. CEA is a large agency with many tasks of which the programme is only engaging with some of these.	High. CEA acts as the coordinator of INDEP II activities under the MOP track. Various divisions in CEA are the direct partner for activities (IRP division for all O2 activities, PSPA-II division for transmission planning, Grid management division for grid codes and standards and TPRM	Regulatory powers within its mandate, staff time expertise and experience (in-kind), data, information, reports, communication channels for information and results.	CEA is a large organization undertaking key tasks for the government with comprehensive capacity for activities under INDEP II but prioritizes national tasks higher when relevant. Certain key staff within CEA are imperative for ensuring progress.	CEA is already undertaking tasks within the suggested areas and have advanced skills that can be utilized given an exit. Continuous capacity development will enhance the longevity of the programme.

			division for thermal flexibility).			
Ministry of Power (MOP)	MOP is primarily responsible for evolving general policy in the field of energy, including perspective planning, policy formulation, processing of projects for investment decision, monitoring of the implementation of power projects, training and manpower development and the administration and enactment of legislation in regard to thermal and large hydro power generation, transmission and distribution. MOP is responsible for the Administration of the Electricity Act, 2003, the Energy Conservation Act, 2001 and to undertake amendments to these Acts.	Medium. This is a very large ministry and Denmark is a small albeit strategically important partner.	High. MOP is guiding the strategic direction and decisions of the programme.	Institutional anchoring of programme activities. Decision making and regulatory powers within its mandate, staff time expertise and experience (in-kind).	MOP is the nodal ministry for the power sector and therefore has to manage national agendas primarily. International collaboration should be anchored at sufficient high level to validate the work on all levels of the government agencies.	Support for capacity development of staff of MOP and its nodal agencies of CEA, CERC, Grid-India, NTPC.
Grid Controller of India Limited (Grid-India)	Grid-India (National Load Dispatch Center and 5 Regional Load	Medium	High Grid-India is a nodal agency for TSO-ISO	Institutional anchoring of programme activities	Grid-India employs top-of-the-class engineering graduates	Grid-India has been an active and skilled partner; they have

	Dispatch Centers) is an independent system operator of the Indian National Grid. Grid-India has a mandate to achieve maximum economic efficiency of the National grid, providing operational feedback for grid planning, market development and policy initiatives.		collaboration and for Outcome 3 activities more broadly. It has also contributed immensely to expanding Outcome 3 activities to state levels.	on integration of RE and TSO-ISO collaboration. Staff expertise and experience (in-kind), data, information, reports, communication channels for information and results.	from the Indian MIT (IITs). Staff are generally busy and work long hours. The best staff are appointed to work with international partners, and they are already quite busy, so getting enough partner time can be a challenge.	already been executing various Danish ideas (for example, workshops for RE developers) on their own and it can be used given an exit. Continuous engagement, study tours, and exchange visits with the Danish TSO will enhance capacity development, Danish influence, and the programme's longevity.
CERC	CERC is a national regulator that is mandated to promote competition, efficiency, and economy in bulk power markets while enhancing supply quality and consumer interests. CERC has quasi-judicial status and plays a very important role in tariff determination, inter-state energy trading and energy market development at the National level.	Medium All big donors, including the WB, USAID, European Commission, etc, work extensively with CERC and provide financial support to procure knowledge and expertise from all around the world. Given its size and budget, Denmark should aim to be a small but important partner in terms of expertise in integrating RE into the grid.	High Most policy initiatives related to the Indian National Grid Code, including but not limited to electricity tariffs and the electricity market, have to be finally adopted and approved by CERC before they can be implemented.	Staff expertise and experience, information, data reports, communication channels for information and results.	CERC is a quasi-judicial bench consisting of a chairman and 4-5 members. Other permanent CERC staff, about (30) help members. CERC hires temporary staff and consultants from time to time, with whom we will be working most of the time. These staff are however often very overworked.	

A2.2 Presentation of key partners

Ministry of new and Renewable Energy (MNRE)

Justification for selecting partner:

MNRE is the nodal Ministry of the Government of India for all matters relating to new and renewable energy. Therefore, it is a natural partner for the implementation of regulatory frameworks for the development of offshore wind in the country.

Key information on the partner:

MNRE consists of a number of secretaries and divisions[37]. The main contact for INDEP II is the Director for the Wind Division (Scientist-E).

The role of new and renewable energy has been assuming increasing significance in recent times in India with the growing concern for the country's energy security. Energy self-sufficiency was identified as the major driver for new and renewable energy in the country in the wake of the two oil shocks of the 1970s. The sudden increase in the price of oil, uncertainties associated with its supply and the adverse impact on the balance of payments position led to the establishment of the Commission for Additional Sources of Energy in the Department of Science & Technology in March 1981. The Commission was charged with the responsibility of formulating policies and their implementation, programmes for development of new and renewable energy apart from coordinating and intensifying R&D in the sector. In September 1982, a new department, i.e., Department of Non-conventional Energy Sources (DNES), that incorporated CASE, was created in the then Ministry of Energy. In 1992, DNES became the Ministry of Non-conventional Energy Sources. In October 2006, the Ministry was renamed as the Ministry of New and Renewable Energy

Vision: To develop new and renewable energy technologies, processes, materials, components, sub-systems, products & services at par with international specifications, standards, and performance parameters to make the country a net foreign exchange earner in the sector and deploy such indigenously developed and/or manufactured products and services in furtherance of the national goal of energy security.

Mission:

- Energy Security: Development and deployment of alternate fuels like hydrogen, biofuels and synthetic fuels and their applications to contribute towards bridging the gap between domestic oil supply and demand; lesser dependency on oil imports.
- Increase in the share of clean power: Renewables like wind, hydro, solar, geothermal, bio & tidal power to supplement fossil fuel-based electricity generation.
- Energy Availability and Access: Supplement energy needs of cooking, heating, motive power, and captive generation in rural, urban, industrial, and commercial sectors.
- Energy Affordability: Cost-competitive, convenient, safe, affordable, and reliable energy supply options.
- Energy Equity: Per-capita energy consumption at par with the global average level by 2050, through a sustainable and diverse fuel- mix.

Allocation of Business:

- Research and development of Biogas and programmes relating to Biogas units.
- Commission for Additional Sources of Energy (CASE)
- Solar Energy including Solar Photovoltaic devices and their development, production, and applications.
- All matters relating to small/mini/micro hydel projects of and below 25 MW capacity.
- Programme relating to improved chulhas and research and development thereof.
- Indian Renewable Energy Development Agency (IREDA).
- Research and development of other non-conventional/renewable sources of energy and programmes relating thereto.
- Tidal energy.

[37] https://mnre.gov.in/whos-who/

- Integrated Rural Energy Programme (IREP).
- Geothermal Energy.

Functions:

- Facilitate research, design, development, manufacture, and deployment of new and renewable energy systems/devices for transportation, portable and stationary applications in rural, urban, industrial, and commercial sectors through:
- Technology Mapping and Benchmarking.
- Identify Research, Design, Development and Manufacture thrust areas and facilitate the same.
- Lay down standards, specifications, and performance parameters at par with international levels and facilitate industry in attaining the same.
- Align costs of new and renewable energy products and services with international levels and facilitate industry in attaining the same.
- Appropriate international level quality assurance accreditation and facilitate industry in obtaining the same.
- Provide sustained feedback to manufacturers on performance parameters of new and renewable energy products and services with the aim of effecting continuous upgrade so as to attain international levels in the shortest possible time span.
- Facilitate industry in becoming internationally competitive and a net foreign exchange earner Resource Survey, Assessment, Mapping and Dissemination.
- Identify areas in which new and renewable energy products and services need to be deployed in keeping with the goal of national energy security and energy independence.
- Resource Survey, Assessment, Mapping and Dissemination.
- Deployment strategy for various indigenously developed and manufactured new and renewable energy products and services.
- Provision of cost-competitive new and renewable energy supply options.

Summary of partner capacity assessment:

- The partner has limited resources and knowledge to create efficient policies and has been depending on external donors. Main limitations include: insufficient number of people; limited knowledge of/about: environmental impact assessment; technical project assessment; risk assessment of offshore wind tenders / projects; effects on society and other businesses using the same ecosystem; the perspective of the developer that are non-Indian; offshore project financing.
- The partner will contribute with policy development and decision making.
- The programme includes the partner's capacity development by informing them, making joint work, arranging workshops and dissemination of studies.
- Local think tanks and universities are more integrated into the programme to be able to act as additional capacity development stakeholders. INDEP II consider working with Council for Energy, Environment & Water (CEEW) as well as the Indian Institute of Technology Madras (IIT Madras). They can support in various ways for example by conducting environmental impact assessments on local marine life and coast in general and social impact assessments on the local fishing communities, businesses and other stakeholders using the resources in the same area.
- The effect of the cost of offshore wind on the local population and opportunities for job creation.
- A SWOT analysis has been completed for MNRE.

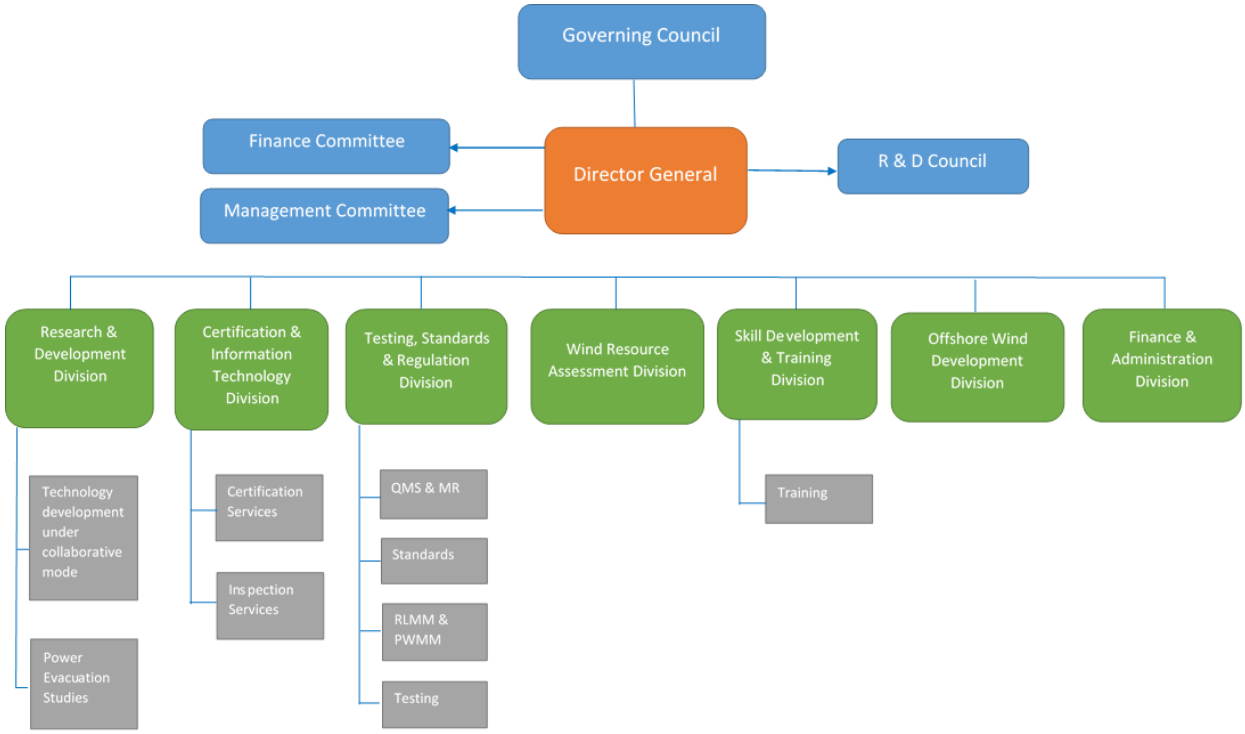
NIWE

Justification for selecting partner:

National Institute of Wind Energy is an autonomous R&D institution established by the Ministry of New and Renewable Energy (MNRE), Government of India in 1999 to serve as a technical focal point of excellence to foster the development of wind energy in the country.

Key information on the partner:

Organisation's profile:



The National Institute of Wind Energy is a technical focal point for wind energy technologies established by the Ministry of New and Renewable Energy in Chennai in 1998. A Wind Turbine Test Station has also been established at Kayathar, Tamil Nadu, with technical and financial support from Danida.

Mission: NIWE, a knowledge-based institution of high quality and dedication, offers services and seeks to find total solutions for the major stakeholders across the entire spectrum of the wind energy sector. It will support the wind turbine industry in achieving and sustaining quality such that products of the highest quality and reliability are installed, harnessing all energy available in the wind. NIWE will strongly support the wind turbine industry in developing the know-how and know-why and promoting export of products and services.

Objectives:

- To serve as the technical focal point for wind power development in India, for promoting and accelerating the pace of utilization of wind energy and support the growing wind power sector in the country.
- To develop and strengthen the facilities and capabilities, evolve strategies, promote, conduct, co-ordinate and support research and development programmes to achieve and maintain reliable and cost-effective technology in wind power systems.
- To analyse and assess wind resources based on the data available from various sources and prepare wind energy density maps / wind atlas / reference wind data.
- To prepare and establish standards including guidelines, procedures, protocols for design, testing and certification of wind power systems, sub-systems, and components, taking into consideration the Indian conditions and in line with internationally recommended practices and standards and update the same based on the feedback.
- To establish world class facilities, conduct and coordinate testing of complete wind power systems, sub-systems, and components according to internationally accepted test procedures and criteria, whereby the total performance that includes power performance, power quality, noise level, dynamics, operation, and safety systems is tested according to agreed protocols.

- To accord type approval / type certification which verifies conformity with safety related requirements as per standards, guidelines and other rules for design, operation, and maintenance, as well as adequate documentation of quality issues such as power performance, noise, life expectancy and reliability.
- To monitor the field performance of wind power systems, sub-systems, and components, effectively utilize this feedback for fulfilment of the above objective and issue of certification, establish and update the data bank on a continuous basis and serve as information Centre for selective dissemination.
- To undertake human resource development programme for the personnel working in the wind energy sector.
- To promote commercial exploitation of know-how, know-why results and offer various consultancy services to the customers.
- To promote the development and commercialization of any other wind energy systems including stand-alone systems.

Summary of partner capacity assessment:

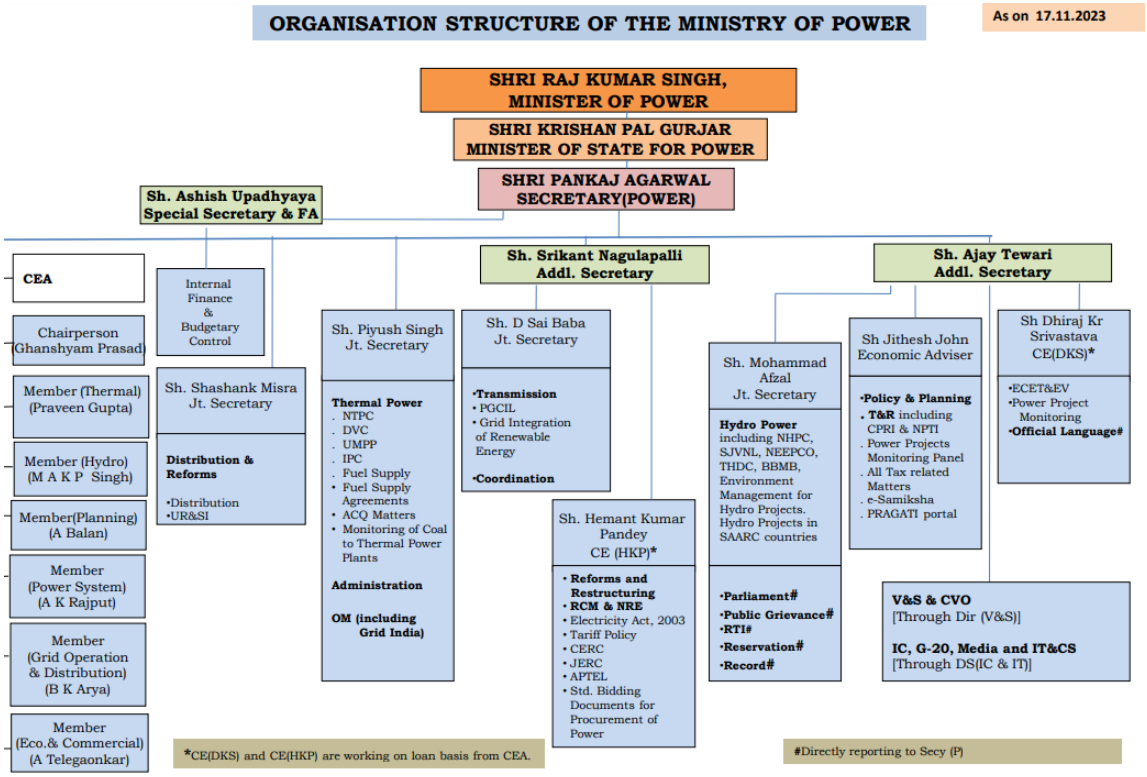
- There is not enough number of personnel and necessary skills for executing offshore wind tenders. There is also a high level of hierarchy making it difficult to communicate the knowledge directly with the personnel.
- The partner will be responsible for providing necessary data and information as well as enabling contacts to data sources. The partner is also expected to act as the one-stop-shop for offshore wind tenders and there is uncertainty around the capability of the partner related to the risk of the development of offshore wind such as: external wake and blockage effects of offshore wind sites on each other; the offtake and payment risks; the electrical infrastructure design and cost; and database for offshore wind project progress.
- There is actual work planned to be executed with personnel from NIWE such as marine spatial planning. It is expected that the share of responsibility will enable capacity building. Workshops are also planned to transfer methodology to execute marine spatial planning in India.
- Local think tanks and universities are more integrated into the programme to be able act as additional capacity development stakeholders. They can support on various topics including on socio-economic aspects and engagement of local fishing communities.
- A SWOT study has been completed for NIWE.

Ministry of Power (MOP)

Justification for selecting MOP as partner:
MOP is the nodal ministry for power sector policy formulation and decision-making and has the mandate to revise or develop legislation for the sector. MOP has signed an MOU with MCEU and is committed at high level to renew this MOU for a second phase of the collaboration. MOP has previously been engaged in organizing and evaluating the INDEP activities and seeks international experience on various topics within the power sector.

Key information on MOP:

- Organisation's profile



MOP employs a total of 277 staff of which 43 are women (15%).

Leadership

MOP is governed by Minister R.K. Singh who is also serving as minister of MNRE. He has been in office since 2017. Apart from the minister, Mr. Gurjar is Minister of State and Mr. Agarwal is Secretary. Under the secretary are two additional secretaries (AS) of which AS Tewari is the lead from MOP in the India-Denmark JWG.

Mandate

MOP is primarily responsible for evolving general policy in the field of energy, including perspective planning, policy formulation, processing of projects for investment decision, monitoring of the implementation of power projects, training and manpower development and the administration and enactment of legislation in regard to thermal and large hydro power generation, transmission and distribution. MOP is responsible for the Administration of the Electricity Act, 2003, the Energy Conservation Act, 2001 and to undertake amendments to these Acts.

Management practices and tools

MOP is together with its agencies responsible for the implementation of the Electricity act, which is the key guideline for these organizations by outlining their roles and tasks.

The Indian bureaucracy is rather hierarchic, and MOP therefore has a large voice in determining the development of the sector. For example, MOP has mandate to regulate plants to increase/decrease import of coal for periods of high demand. Moreover, NTPC, the largest power plant operator in India, is a public sector undertaking under MOP's mandate and the ministry therefore has great influence on its development. MOP is involved in climate talks, e.g. formulation of NDC's, regarding aspects related to the power sector, but the climate portfolio belongs under a different ministry (MOEFCC).

Knowledge management processes and practices

A national training policy for the power sector has been formulated specifying that every organization shall ensure training for at least one week every year for all personnel equal to 1.5-5% of the salary budget depending on the level of the staff. Money spent on training is viewed as an investment as an integrated human resource development activity and not as an expenditure.

A nodal organization within power sector training is the National power training institute consisting of eleven institutes throughout India. Training might be within post graduate diploma courses, three weeks common training for all new recruits, cyber security and many other topics.

MOP engages with numerous international development partners in knowledge development activities as they are the nodal ministry for a sector that gains a lot of attention. MOP high-level officials often engage in seminars and workshops organized by other development partners. There are no LTA's from any country deputed to MOP as far as is known. MOP's interests in specific topics and areas are discussed annually at the JWG where these are implemented in the action plan for the coming years. The direct engagement with MOP officers for knowledge development has been limited under INDEP I and has rather focused on administrative and strategic discussions of INDEP. Under INDEP II, MOP will continue act as the official focal point for outcome 2 and outcome 3, however the actual activities under the outcomes are expected to be conducted with agencies and institutions under MOP.

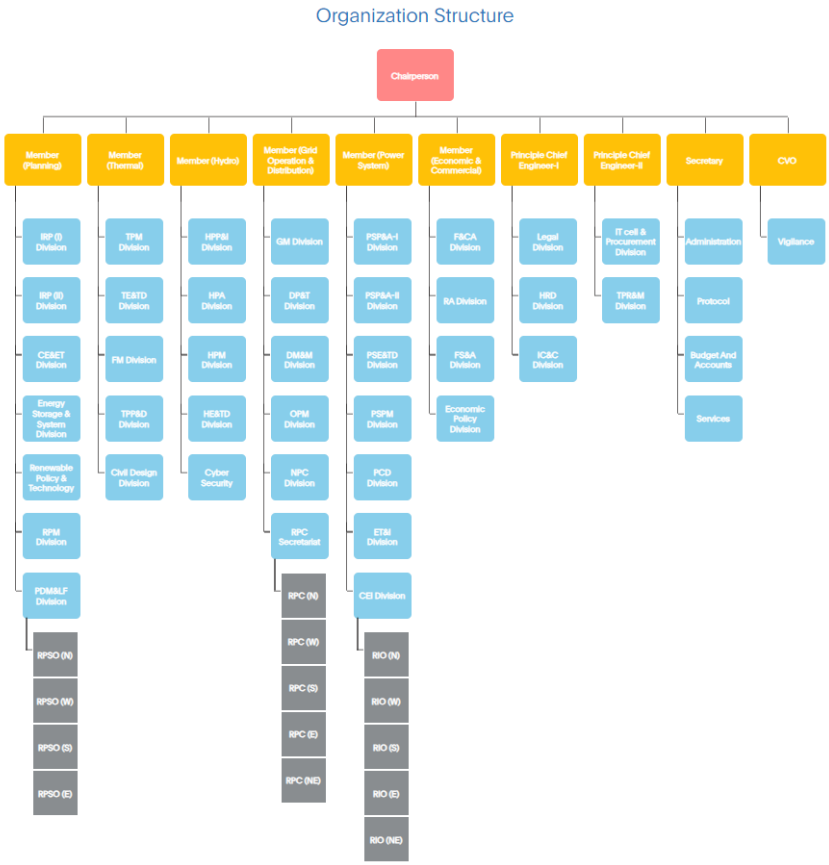
Summary of partner capacity assessment:
MOP is the ministry governing the power sector in India. The staff in the ministry typically have comprehensive experience within the power sector and can therefore both advice on technical, policy and management agendas. Their staff is mainly engaged in guiding, dissemination and implementing the deliverables from the programme while the technical agencies are in charge of conducting the activities.
The main issues are related to two aspects; 1) assigning priority to international collaboration versus the national agenda 2) obtain sufficiently high-level commitment to the programme to ensure that staff at all levels will support the programme.

Central Electricity Agency (CEA)

Justification for selecting CEA as partner:
CEA has the mandate to develop and implement national power planning for central and state level across the majority of the power sector. CEA is a key partner for INDEP I and has facilitated collaboration across agencies. CEA is committed to a continued collaboration with Denmark and has suggested topics of relevance. CEA can be the nodal agency for various activities under INDEP II and has capable staff for absorbing capacity development activities.

Key information on CEA:

Organisation's profile:



The total staff in CEA, including all categories, was 716 in the financial year 2022-23. Out of these 137 were women, corresponding to a share of 19%. The total budget of CEA in the same period was 125 crores INR.

Leadership:
CEA management consists of a Chairperson, and six Members with various responsibility areas. The Chairperson, Mr. Ghanshyam Prasad, is formerly a Joint Secretary in MOP and took office in CEA in July 2022.

Mandate:
CEA is responsible for the technical coordination and supervision of programmes and is entrusted with a number of statutory functions. The CEA advises the central and state governments on policy matters within generation, transmission, trading, distribution and utilisation of electricity. CEA moreover is the statutory body for formulating plans for the development of electricity systems and to collect and record data concerning the same areas.

CEA prescribes the standards on matters such as construction of electrical plants, electric lines and connectivity to the grid, installation and operation of meters and safety and grid standards. It is also responsible for concurrence of hydropower development. CEA is tasked with preparing a National Electricity Plan (Vol I & II) in accordance with the National Electricity Policy and notify such plan once every five years. The latest National Electricity Plan was published in 2023 for generation and for transmission later in 2024.

Management practices and tools:
CEA is mandated to plan and monitor certain sectors of the power sector (e.g. hydropower, thermal plants and transmission) and therefore has strong decision-making authority within these areas. Some data from CEA is published online and on certain online platforms and otherwise it might be difficult for external parties to access additional data. Public data is typically rather generic and focus on overall power sector parameters. CEA and DEA have signed an NDA to aid in the exchange of data and to ensure confidentiality.

This NDA has been used several times when data not available to the public has been shared throughout INDEP I. Moreover, other stakeholders involved with INDEP use this NDA as an intermediary to exchange data with DEA.

Knowledge management processes and practices:
CEA under the electricity act is responsible for training and research functions as the Central government prescribes it. CEA has created a chair at IIT Delhi to which the officers of MOP and CEA are nominated for upgradation of their knowledge and skills. Promising officers in CEA can be nominated for enrolling in a 3-year MBA programme at IIT Delhi taking place via evening classes. CEA staff is supposed to move between divisions on a regular basis to get exposed to different parts of the organization. Typically, officers are shifted after 5-7 years in one division, which affects the opportunity for capacity building. New officers joining the divisions might have no prior knowledge about the specific topic of the power sector and will therefore learn the topic from scratch. Exceptions do occur for key officers that manage very important areas of the power sector who are allowed to remain for longer within one division. CEA is engaged with multiple development partners on many topics. They are typically consolidated via high-level commitment and operated at chief engineer level. Long-term advisors in CEA only exist from Denmark and one officer from Japan working on clean coal projects. The Danish approach with engaging in deep direct technical cooperation is rare among development partners that typically engage via different modalities. CEA frequently shares requests on topics and demands that will aid the officers in their daily tasks. This typically happens in day-to-day interactions when other discussions are already taking place with colleagues from Denmark. It is therefore often not a structured approach to demand requirements as these changes according to the tasks at hand. Demands and requests from higher level is managed via JWG discussions where the priority areas for the coming years are clarified.

Summary of partner capacity assessment:
CEA is a large institution with many staff working on topics closely related to the programme. The staff are highly qualified and experienced and able to absorb capacity development activities. The main contributions from CEA are in the form of in-kind staff resources, data, dissemination of results and implementation of learnings. In addition, CEA is hosting an LTA by providing office space in their building. The main issues are related to priority given to international collaboration tasks versus domestic tasks based on requests from their own ministries and parliament. Certain key staff at mid-management level are crucial for driving progress and prioritizing the programme activities.

Grid-India

Justification for selecting Grid-India as partner:
Grid-India (National Load Dispatch Center and 5 Regional Load Dispatch Centers) is an independent system operator of the Indian National Grid. Grid-India (formerly known as Power System Operation Corporation Limited (POSOCO)), has a mandate to achieve maximum economic efficiency of the National grid, providing operational feedback for grid planning, market development and policy initiatives. Grid-India has been a nodal partner in implementing various tracks under INDEP I and also in coordinating activities with various other organisations (e.g. under INDEP I, a forecasting project with the state load dispatch centre in Karnataka has been conducted). Under INDEP II Grid-India and the Danish TSO Energinet will enter into a technical peer-to-peer cooperation that is further described in Annex 10.

Key information on Grid-India:

Organisation's profile:
Grid-India comprises 5 Regional load dispatch centres, the national load dispatch centre and the Board that oversees all 6 organisations. A total of 643 staff are employed within the organization. More than 90% of Grid-India employees are electrical engineers, and the gender representation there is dominated by males. However, institutional policies are in place to encourage more female hires and participation in the organisation to increase from the current level of 12%.

Leadership:
The board is led by the chairman and managing director (CMD) and has 6-7 members with various responsibilities. 2 board members are appointed by the government of India. Each regional load dispatch centre and National load dispatch centre is headed by an Executive Director (ED). During INDEP I, LTA reported directly to the Director of Market Operation (DMO) and also worked closely with the ED National load dispatched centre and staff under him. Director System Operations (DSO) and CMD were also involved in the programme at various key decision-making processes.

Mandate:
Grid-India is an independent system operator that ensures the safety, security, and system stability of the Indian Grid. Its main responsibility is operating and dispatching the National grid. It also coordinates various aspects, including the exchange of power and the power market between regions and rates. Grid-India also plays an important role in providing inputs to CEA, CERC, CTU, and other relevant agencies for the design and operation of future grids. As an agency with a key to system security and stability, Grid-India's role and technical expertise are highly respected. Despite not having direct power to formulate key legislation and regulations, Grid-India's experience and feedback are the basis for many such regulations and legislations. Experiences and lessons learned from Danish collaboration at this level can provide a solid basis for future steps to integrate more RE into the national grid.

Management practices and tools:
Grid-India director and CMD are appointed by the public enterprise selection board, generally appointed til retirement, which normally is less than 5 years. Directors have a minimum tenure of 2 years. All directors are almost near retirement age, and they tend to streamline the organisation so that they can leave a legacy. Some unpopular decisions can be reversed after their retirement. INDEP II should therefore try to make decisions in consultation with mid-senior level managers. All international collaborations go through a department of international collaboration. Public data sharing is normally good, but important high-resolution data is kept within. Special NDA (with board approval) or instruction from the ministry is required for the sharing of such data.

Knowledge management processes and practices:
All new staff are employed as Trainees who shift from one department to another before being employed permanently after 2 years. Even mid-management level staff are expected to transfer between departments and learn all trades frequently. Very few specialist staff work in only one area. The speculation in all areas comes with experience. Mid-level and senior managers often have 25+ years of experience in the same organisation. Thus, managers are also specialists and the ones who often know the most. Most priority projects are executed just in time, and resources are pooled into a group headed by the project responsible, often the senior managers. After the project, the resources return to their daily work (which was divided among colleagues in their absence). This creates overwork in some periods in the organisation.

Summary of partner capacity assessment:
Grid-India employs top-of-the-class engineering graduates from the Indian MIT (IITs). The staff is technically adept; however, their level of independence and critical thinking is far below that of an average Danish office worker. Many have also developed a superiority bias, so it is quite hard to influence them positively without their trust. Getting their trust is quite challenging, but it is possible, as many DEA colleagues had this established during INDEP I. Staff are generally busy and work long hours. The best staff are appointed to work with international partners, and they are already quite busy, so getting enough partner time can be a challenge. The ministerial orders and orders from the regulator (CERC) always get higher priority to internal projects and agendas. Ensuring continued commitment from Grid-India Staff for International Collaboration is challenging, given other priorities.

Central Electricity Regulatory Commission CERC

Justification for selecting CERC as partner:

CERC is an independent energy regulator that intends to promote competition, efficiency and economy in bulk power markets, improve the quality of supply, promote investments and advise the government on the removal of institutional barriers to bridge the demand-supply gap and thus foster the interests of consumers. Among others CERC's aims to:

- Issue Indian Electricity Grid Code (IEGC)
- Set tariff mechanism and ensure least cost investments
- Facilitate open access in inter-state transmission
- Promote the development of the power market
- Facilitate technological and institutional changes required for the development of competitive markets in bulk power and transmission services.

CERC is instrumental in formulating regulations and policies for all areas of work under the Integration of RE.

Key information on CERC:

Organisation's profile:

CERC consists of a chairperson and 3 to 4 members, each overseeing functional areas (Law, Financial, Engineering, Regulatory Affairs, etc.). CERC staff, headed by the chief of each division, help the commission. CERC had a total workforce of approximately 75-80 staff during the 2023-2024 financial year. CERC hires external consultants from time to time, and they sometimes engage in international collaboration.

Mandate:

CERC is mandated to promote competition, efficiency, and economy in bulk power markets while enhancing supply quality and consumer interests. It has jurisdiction over all interstate matters. CERC has quasi-judicial status and plays a very important role in tariff determination, inter-state energy trading and energy market development. CERC holds public hearings to invite comments from members of the public prior to the approval of important regulations, which have improved the interface between policymakers and citizens. CERC, in its defined role, essentially separates the electricity sector from the political establishment.

Management practices and tools:

CERC does analyse data and trends in the sector to propose and discuss new regulations, but these analyses often lack the required rigour. CERC is understaffed and relies more on expert opinion than data-based decision-making. Sometimes, agencies like CTU and grid-India are tasked with conducting detailed studies based on CERC experts' opinions. INDEP II can possibly contribute to a data-based decision-making process. Many innovative regulation changes are discussed and consulted with the public before implementation. However, the stakeholder consultation process is normally much shorter than in Europe.

Summary of partner capacity assessment:

CERC does not have a large staff count. 30% of positions are still unfilled. Most international collaborations happen with a small team and involve temporarily hiring senior consultants. All big donors, including the WB, USAID, European Commission, etc, work extensively with CERC and provide financial support to procure knowledge and expertise from all around the world. Lower-level CERC staff and hired consultants are highly qualified, but they do not have decision-making power, which is exclusively vested in the commission.

Other centre and state level partners:

CTU:

Central Transmission Utility (CTU) is a 100% subsidiary of PowerGrid, responsible for operating the central transmission grid. Its functions include planning new grid infrastructure in collaboration with the Central

Electricity Authority (CEA), granting entities access to the grid, and managing the billing of transmission charges. The CTU's revenue is derived from fees, and charges that are solely paid by players in the power sector.

State Government of Tamil Nadu:
State Governments are responsible for the transmission and distribution infrastructure, which is vital for the integration of RE into the grid. State Governments also have their own policy frameworks and incentives that can facilitates growth of RE within their territories. Each state will develop a Climate Action Plan or a Green Energy Transition Roadmap. Tamil Nadu is considered a RE front runner state and was the first state to have wind energy as part of their energy system (1985)

Examples of other partners that is expected to be included in specific activities:
PowerGrid:
PowerGrid is a majority state-owned company that owns the transmission assets and was historically the sole owner of the national transmission system. Today, new transmission systems are awarded through a competitive bidding process, requiring PowerGrid to compete with private players on equal terms to gain the rights to own and operate these systems. Despite this competition, PowerGrid still dominates the transmission infrastructure at the central level. The company's revenue is primarily derived from tariffs charged for grid usage.

NTPC:
NTPC is the largest generation company in India, dominating the generation sector at the central level. Its portfolio includes both conventional and non-conventional generation sources. As a majority government-owned company, NTPC operates commercially, similar to PowerGrid, balancing its public ownership with a competitive, profit-making approach to energy production and distribution.

NITI Aayog:
NITI Aayog, The National Institution for Transforming India, is a pivotal institution in India's policy landscape. Established to replace the Planning Commission, it serves as the premier policy 'Think Tank' of the Government of India. The institution of NITI is closely aligned with the highest executive office, Prime Minister Office (PMO). This facilitates the direct incorporation of strategic initiatives and policy development into national policy.

Annex 3: Results framework

Notes:

1. While not required by the standard Danida template for results frameworks, indicative activity types/topic area clusters are listed under each output as this facilitates understanding of what is expected to lead to the outputs.
2. Activities will be defined in annual workplans to be approved by the Joint Working Groups (Steering Committees).
3. End year (2029) targets are indicated. Mid-programme (2027) targets for outputs have also been reflected.
4. DEA will be accountable for the achievement of the outputs, which are within their control and to monitor and report on the achievement of outcomes, which are within DEA's influence but not within DEA control.
5. The assumptions (summarised in Section 3.2) underpinning the theory of change are important for achieving the stated outcomes and impact and must be closely monitored.
6. Lastly, it should be noted that the baselines listed for 2024 should also be informed by the results and achievements of INDEP I by end 2024, which need to be considered in the development of work plans for INDEP II during the start-up phase in early 2025.

Programme		**India-Denmark Energy Partnership Programme, 2025-2029 (INDEP II)**	
Programme Objective		The implementation of targets and measures for a sustainable and low-carbon energy mix supported by the India-Denmark Energy Partnership in line with the Paris Agreement, paving the way for a just and inclusive transition to renewable energy.	
Impact Indicators		• Installed renewable energy capacity • Share of variable renewable energy sources in the electricity mix • Documented examples of enhanced awareness of socio-economic co-benefits (qualitative assessment)	
Baseline	Year	2024	Total installed capacity of 200 GW and a target of 500 GW by 2030.
Target	Year	2029	India is on track and has accelerated renewable energy build-out to meet the national targets for renewable energy in 2030, and beyond, following a just and inclusive energy transition process with attention to socio-economic aspects of the green transition.

Outcome 1:		**A timely and efficient implementation of India's offshore wind strategy.** Partners: • Ministry of New and Renewable Energy (MNRE) • National Institute of Wind Energy (NIWE)	
Outcome indicator		• GW offshore wind being tendered based on updated and new legislation and guidance documents (quantitative assessment) • Evidence of how activities have supported an economically, socially and environmentally sustainable implementation of the offshore wind strategy (qualitative assessment).	
Baseline	Year	2024	Government strategy published with 4 GW tendered out.
Target	Year	2029	The implementation of India's offshore wind strategy is on track with due consideration of environmental and social impacts of the projects.

Output 1.1	**Attractive enabling framework for offshore wind in place.**
Indicative activities	• Support on design and processes for handling offshore wind tenders with a particular focus on de-risking measures and a transparent market dialogue with relevant stakeholders.

		• Workshops and study tours on lessons learned from offshore wind tenders in Denmark.	
Output indicators		• MNRE has taken ownership of Centre of Excellence on Offshore Wind and Renewable Energy. • Evidence of how joint studies have been used to guide decisions on the future policy framework for offshore wind, establishing a policy framework that is attractive for investors, and which duly considers environmental and social impact legislation.	
Baseline	Year	2024	CoE is a joint Centre between India and Denmark hosted in MNRE Offshore wind strategy published, but policy framework needs to be developed further in order to accommodate an ambitious tender pipeline.
Target	Year	2027	Roadmap developed for the future of the Centre of Excellence.
Target	Year	2029	The Centre of Excellence is an integrated part of MNRE. Three documented examples of how the Centre of Excellence has supported the establishment of an attractive, sustainable and transparent policy framework for offshore wind.

Output 1.2:		**Strengthened capacity for efficient and sustainable utilization of India's wind resources.**	
Indicative activities		• Workshops and training modules[38] aiming to build institutional capacity through joint studies and technical analyses (marine spatial planning, wake study assessments etc.) relevant to offshore wind development. • Sharing of Danish experiences on wind turbine test facilities, port development and supply chain and offshore wind market development. • Sharing of best practices on environmental and social impact assessments, including permitting procedures.	
Output indicators		• Number of applied high-quality joint analyses on best practice approaches regarding offshore wind planning and the efficient use of India's offshore wind resources. • Evidence of how training sessions and joint studies have supported partners to enhance institutional capacity (qualitative assessment).	
Baseline	Year	2024	NIWE has limited experience on commercial offshore wind development.
Target	Year	2027	At least two common studies and joint activities conducted through joint capacity development sessions.
Target	Year	2029	Five documented examples of how training sessions and resulting joint studies and analyses with NIWE have led to increased institutional capacity on the technical aspects of offshore wind development as well as environmental and social impact assessments.

Output 1.3:	**Strengthened enabling framework for power evacuation infrastructure for offshore wind.**
Indicative activities	• Workshops and joint studies on the technical barriers and economic risks related to power evacuation infrastructure of offshore wind in India, including capacity building sessions with participation from a range of relevant government institutions.

[38] As a general point for all training activities (particularly where directly related to outputs on strengthened institutional capacity), it is suggested information is recorded about the number of people who have completed the training and their position, role, and gender. Moreover, participants should be required to provide information/evidence of how knowledge was shared with peers within her/his organisation, as well as concrete applications of the learning. This requirement should be reflected in the workplans and TOR for trainings. In annual reports, selected examples could be given summarising the contribution to increasing institutional capacities.

		• Development of policy recommendations on grid connection of offshore wind to central or state grid systems.	
Output indicators		• Evidence of key recommendations from workshops or technical studies used for designing the regulatory framework power evacuation infrastructure for offshore wind.	
Baseline	Year	2024	No regulatory framework for power evacuation infrastructure in place for offshore wind.
Target	Year	2027	At least one documented example of how a workshop or joint study has been used by partners to design an enabling framework for offshore wind infrastructure.
Target	Year	2029	Three documented examples of how partners have used joint studies to implement an enabling framework of power evacuation infrastructure of offshore wind.

Outcome 2		**Scenario-based modelling and long-term energy planning informs decision-making on energy policies in India.** Partners: • Ministry of Power (MOP) • Central Electricity Authority of India (CEA)	
Outcome indicator		• Updates of the Indian Power Outlook and technology catalogues (quantitative assessment). • Government announcement and/or policies informed by the Indian Power Outlook and background data, reflecting a just and inclusive approach to the green transition (qualitative assessment).	
Baseline	Year	2024	First long-term power outlook published under INDEP I with two least-cost scenarios.
Target	Year	2029	• The Indian Power Outlook is updated and widely used. • Indian Power Outlook and background data has informed at least three government announcements, plans and/or policies, reflecting a just and inclusive approach to the green transition

Output 2.1:		**Improved power system modelling and long-term planning.**	
Indicative activities		• Development of further editions of the Indian Power Outlook, looking into new updates of the model and areas included in the analysis, including with explicit attention to inclusivity. • Workshops and other means of capacity development in the Balmorel power sector model used for developing high-quality scenario-based outlooks.	
Output indicators		• Evidence of enhanced capacity in advanced modelling techniques being applied to develop low-carbon development scenarios for the Indian power sector. • Regular updates of the Indian Power Outlook, with attention to inclusion and stakeholder engagement.	
Baseline	Year	2024	The first Indian Power Outlook (IPO) published with substantial support from the Danish Energy Agency.
Target	Year	2027	The IPO has been updated by partners and is used to inform decisions on long term energy and climate targets.
Target	Year	2029	• The Indian Power Outlook is updated regularly. • Three documented examples of how partners are independently preparing scenario-based long-term modelling of the Indian power system, with attention to data transparency and inclusivity in the

			preparation process, illustrating their ability to develop future editions of the IPO without support from the DEA.
Output 2.2		**Updated technology catalogues.**	
Indicative activities		• Development and updates of technology catalogues. • Peer-to-peer knowledge sharing on processes for stakeholder engagement for the development of technology catalogues.	
Output indicator		Evidence of power sector technology catalogues updated, used and disseminated.	
Baseline	Year	2024	The first two technology catalogues have been published with support from the Danish Energy Agency.
Target	Year	2027	Technology catalogues have been updated and improved with partners taking charge of the process, and with active involvement of relevant stakeholders.
Target	Year	2029	Three documented examples of how updated TCs have been disseminated and used by partners and wider stakeholders.
Output 2.3		**Strengthened assessments for a low-carbon energy trajectory**	
Indicative activities		• Development of model-based case studies and policy briefs on power sector development based on request from MOP and CEA management • Peer-to-peer knowledge sharing about how to use energy modelling and scenarios to guide policy decisions and dialogue with external stakeholders, for example NITI Aayog. • Support dialogue internally in CEA and MOP about how to update and use the results from the IPO.	
Output indicators		• Evidence of how partners use power sector modelling scenarios in dialogue with relevant internal and external stakeholders to guide decisions for a just and inclusive low-carbon energy trajectory (qualitative assessment). • S	
Baseline	Year	2024	Limited use of long-term modelling scenarios in policy making.
Target	Year	2027	Examples of how results from the IPO have been used to strengthen the internal coordination and policy dialogue between ministries and agencies.
Target	Year	2029	Three documented examples of how partners use power sector modelling scenarios in dialogue with relevant external stakeholders to guide decisions for a just and inclusive low-carbon energy trajectory.
Outcome 3		**Measures for integration of variable renewable energy leading to a more affordable and reliable supply of electricity.** Partners: • Ministry of Power (MOP) • Central Electricity Authority of India (CEA) • Grid Controller of India Limited (Grid India) • Central Electricity Regulatory Commission (CERC) • Central Transmission Utility of India (CTU)	
Outcome indicators		• Share of VRE in the final electricity generation [39] • Security of supply (known and established metrics for assessing security of supply[40])	
Baseline	Year	2024	Current institutional capacity and policy framework is primarily tailored to a power system dominated by conventional resources.

[39] Mean of verification: depending on availability of data.

[40] Mean of verification: depending on availability of data.

			VRE as proportion of total installed capacity (2023) : 26% Annual proportion of VRE in electricity generation (2022-23): 11% Security of supply: the target as per 2024 set out by CEA[41].
Target	Year	2029	• Improved regulatory framework and institutional capacities support the planning and operation of a power system dominated by variable renewable electricity in the most secure and cost-efficient manner. • Integration of VRE is continued and accelerated, as a minimum without reducing security of supply.

Output 3.1		**Contributions to improved system readiness for integration of high shares of variable renewable electricity through ISO-TSO partnership.**	
Indicative activities		• Workshops, peer-to-peer knowledge exchange and study tours with focus across 6 collaboratively defined areas (see Annex 10). • Joint development of position papers/memos and/or collaboration on tools and procedures to improve system readiness for integration of high shares of variable renewable electricity.	
Output indicators		• Partnership established with work plans developed/updated annually for each of the 6 Areas of Collaboration (see Annex 10) • Evidence of the partnership having contributed to system readiness for integration of high shares of variable renewable electricity.	
Baseline	Year	2024	No formal partnership in place
Target	Year	2027	Partnership between Grid-India and Energinet is well-established with peer-to-peer knowledge sharing on a regular basis.
Target	Year	2029	Three documented examples of how the partnership has contributed to an enabling framework for enhanced system readiness for integration of high shares of variable renewable electricity.

Output 3.2		**Strengthened measures to enhance system flexibility and market development.**	
Indicative activities		• Peer-to-peer knowledge sharing, workshops and joint studies on market development and the design of regulatory frameworks to facilitate increased electricity market development and coupling across Indian states. • Peer-to-peer knowledge sharing, trainings and joint studies on the role and enhancement of flexibility in the electricity system. • Support on the establishment of frameworks for transparent data handling and market surveillance as well as studies and design of regulatory frameworks to facilitate cross-state trading. • Support for, and participation in, triangular and South-South engagements including with other DEA Global Cooperation partner countries.	
Output indicator		• Evidence of relevant interventions undertaken (qualitative assessment). • Evidence of how interventions have supported partners to enhance institutional capacity (qualitative assessment).	
Baseline	Year	2024	A need for enhancing power system flexibility has been identified, requiring multiple key actors to develop and implement new measures and solutions, including market-based solutions.
Target	Year	2027	At least two documented examples of joint activities with several key partners on system flexibility and market development, including

41 CEA 2022. Draft Guidelines for Resource Adequacy Planning Framework for India. Available at: www.cea.nic.in/wp-content/uploads/irp/2022/09/Draft_RA_Guidelines___23_09_2022_final.pdf (Accessed October 2024)

			considerations around affordability, reliability and non-discrimination, as relevant.
Target	Year	2029	Three documented examples of how activities have supported partners to strengthen their institutional capacity to design and implement measures to enhance power system flexibility and market design.

Output 3.3		**Procedures to ensure security of supply in place.**	
Indicative activities		• Peer-to-peer knowledge sharing on the development of tools for monitoring resource adequacy and response to fluctuations. • Support on forecasting, looking into replication and upscaling of the results, and/or leveraging of results from previous work to inform regulatory developments. • Support for strengthened practices and processes for transmission planning • Peer-to-peer knowledge sharing on the development of technical and regulatory frameworks for renewable energy. • Support for, and participation in, triangular and South-South engagements, including with other DEA partner countries.	
Output indicator		Evidence of relevant activities such as workshops or joint publications undertaken (qualitative assessment). Evidence of how specific activities have supported partners to enhance institutional capacity (qualitative assessment).	
Baseline	Year	2024	A need for strengthening security of supply and monitoring generation from VRE has been identified.
Target	Year	2027	At least one documented example of joint activities with several key partners on power system analysis, system operation and planning for security of supply
Target	Year	2029	At least three documented examples of how activities have supported partners to strengthen institutional capacity to analyse and ensure security of supply with high shares of variable renewable electricity.

Output 3.4		**Energy system development with increased distributed generation for affordable and sustainable electricity supply.**	
Indicative activities		• Establishment of a new cooperation area on distributed generation, including identification of partners and stakeholders and joint scoping. • Joint studies, workshops and publications that identify gaps, needs and challenges for a smooth transition to increased levels of distributed generation.	
Output indicators		• Collaboration established with relevant partners, with work plans developed/updated annually (yes/no) • Evidence of relevant activities undertaken (qualitative assessment) • Evidence of how activities have supported partners to enhance institutional capacity (qualitative assessment)	
Baseline	Year	2024	The Indian government has ambitious targets for growth of roof-top solar in particular. Meanwhile, opportunities and challenges around distributed generation are not yet comprehensively assessed.
Target	Year	2027	Increased collaboration related to distributed generation in order to reinforce the move towards efficient build-out and use of distributed variable renewable energy resources with a focus on affordability and reliability.

Target	Year	2029	Three documented examples of how partners have enhanced institutional capacity to analyse and address challenges and opportunities around distributed generation both in a system operation and societal perspective. Insights from Danish/European developments informing discussions around appropriate solutions for India, and vice versa.

Outcome 4		**Partnership with Tamil Nadu on wind energy contributing to sustainable and just energy transition.** Partner: State Government of Tamil Nadu (Energy Department).	
Outcome indicator		• Policies and initiatives aiming to support effective implementation of Tamil Nadu's plans on wind energy with a particular focus on efficient policies and measure to ensure just, inclusive and sustainable development. • Procedures/strategies for stakeholder and community engagement to enhance co-benefits and mitigate potential adverse impacts.	
Baseline	Year	2024	• Untapped potential for onshore wind repowering and development of offshore wind. • Limited consultation with civil society and local fishing communities.
Target	Year	2029	• An enabling framework in place to ensure opportunities related to onshore repowering and offshore wind development including around skill development and local engagement. • Processes for stakeholder consultation and socio-environmental assessment in place for offshore wind in Tamil Nadu.
Output 4.1		**Scoping and planning of the partnership with Tamil Nadu State.**	
Indicative activities		• The Danish Energy Agency and the State Government of Tamil Nadu to finalize agreement and develop the focus areas, key activities and modalities of the partnership, in accordance with a mutually adopted Memorandum of Understanding.	
Output indicator		• The governance setup for the partnership with focus areas, key activities and modalities for cooperation is well-established. • Adoption of the first two work plans, including engagement with other partners in Tamil Nadu.	
Baseline	Year	2024	Partnership not established.
Target	Year	2027	The Danish Energy Agency and Tamil Nadu Energy Department have signed a MoU as a basis for a well-established partnership with yearly work plans and joint working group meetings have formed the basis for cooperation on wind energy in support of sustainable and just transition.
Target	Year	2029	Not relevant – output will be completed in 2027
Output 4.2		**Policy framework for wind energy in Tamil Nadu.**	
Indicative activities		• Peer-to-peer knowledge sharing, joint studies and analyses aiming to support repowering of existing onshore wind turbines. • Peer-to-peer knowledge sharing, joint studies and workshops on offshore wind development, including how to support economic development around offshore wind farms.	
Output indicator		• Evidence of relevant activities undertaken (qualitative assessment) • Evidence of how activities have supported partners to enhance institutional capacity (qualitative assessment)	

Baseline	Year	2024	• Onshore wind repowering is a priority for the government, but initiative from private actors is limited. • Partners have limited knowledge about offshore wind and policies and regulation for offshore wind development are not in place.
Target	Year	2027	At least one documented example of how joint activities have provided input to development of frameworks/incentives for onshore wind repowering. At least one documented example of how joint activities have increased partner awareness of opportunities and risks related to offshore wind development.
Target	Year	2029	Three documented examples of how partners have enhanced institutional capacity for advancing wind energy development in Tamil Nadu.
Output 4.3		**Capacity and policy framework for local engagement around wind energy development and stakeholder co-existence.**	
Indicative activities		• Workshops and sparring on best practices of engaging with local communities, aiming to ensure local acceptance of wind energy, including offshore wind farms. • Support on measures and activities to foster sustainable development with a focus on skill development, job creation, co-existence between offshore wind and other interests at sea (e.g. fisheries).	
Output indicator		• Evidence of how partners have enhanced institutional capacity to develop and enforce a policy framework for local consultations in relation to wind energy development, and to identify and foster opportunities for co-existence between offshore wind and other interests at sea.	
Baseline	Year	2024	Limited engagement with communities, but strong interest to foster a just, inclusive and sustainable transition.
Target	Year	2027	At least one documented example of how joint activities have enhanced the engagement with civil society.
Target	Year	2029	Three documented examples that INDEP II has contributed to partners pursuing just and inclusive wind energy development with focus on stakeholder engagement and dialogue, stakeholder co-existence and inclusive wind industry development.

Annex 4: Risk management

Contextual risks[42]:					
Risk Factor	**Likelihood**[43]	**Impact**[44]	**Risk response**	**Residual risk**	**Background to assessment**
Risk of political instability	Unlikely	Significant	The Green Strategic Partnership between India and Denmark is considered robust, stable and well-anchored in key national ministries and the Embassy of Denmark keeps abreast of political developments at the highest levels.	Minor	India is the world's largest democracy. Parliamentary elections were held in Q2 2024, and Prime Minister Modi's Party BJP was re-elected for a third five-year term in a coalition government. India can have extensive political debates on political priorities.
Continued reliance on fossil fuels.	Likely	Significant	INDEP is well anchored in the key national authorities responsible for the clean energy transition and contributes in a significant way to the transition while also addressing flexibility in thermal generation, paving the way for integrating larger shares of variable renewable energy (VRE) in the energy mix. INDEP II will continue to document and pursue by various tools, that Renewable Energy (RE) in India is more cost-efficient than the use of fossil fuel energy sources, emphasising how the Danish experience shows that the green transition can contribute to	Major	India is heavily dependent on coal as the base load in the energy system and with a rapid increase in electricity demand it is unlikely that the deployment of renewables can keep up. Today, fossil fuels still dominate with the majority of the energy consumption remaining covered by coal (45%) and oil (24%) (2021), thus contributing to high levels of greenhouse gas emissions, with India being the third-largest emitter globally. Already today, India's energy demand is increasing significantly and providing cheap and affordable electricity to its population and industry constitutes a key political means for the GoI in order to ensure continued economic growth and socioeconomic

[42] This category covers the range of potential adverse outcomes that may arise in a particular context, including the risk of harm beyond the immediate context or the country's borders and may include governance failure (e.g. the failure of effective public financial management or law enforcement); competition for resources; natural hazards; and pre-existing socio-political tensions. (Danida Guideline to Risk Matrix 2018).

[43] Danida classification categories are: very unlikely, unlikely, likely, almost certain (see link)

[44] Danida classification categories are: insignificant, minor, major, significant (see link)

			socioeconomic development and growth.		development. The significance of coal constitutes a main reason that India will not pursue the Just Energy Transition (JET) Partnership.
Social resistance to RE deployment	Likely	Significant	INDEP II will place increasing emphasis on the socio-economic aspects of the energy transition, including through supporting transparent and inclusive dialogue with civil society and affected stakeholders on both state and federal level.	Minor	India has previously experienced cases of resistance from local communities when building out RE at land, and local (in particular fishing) communities in Tamil Nadu is also showing initial resistance to building OSW outside the coast of Tamil Nadu. In general, the scale and magnitude of measures necessary to transform the India energy sector comes with the risk of social resistance due to conflicts over land and natural resources and possible negative implications for livelihoods and jobs, including for those currently employed in the coal sector. India's carbon economy is deep-rooted and indirectly supporting the poorest part of the population. However, it should be noted, that the deployment of green energy in Indi is currently happening with the aim of increasing total generation capacity.
Programmatic Risks[45]:					
Risk Factor	**Likelihood**	**Impact**	**Risk response**	**Residual risk**	**Background to assessment**
Insufficient inter- and intra-institutional coordination	Likely	Major	INDEP II is a multifaceted programme engaging with a broad	Major	The Indian power sector is characterised by a high level of complexity with numerous

[45] This category covers include two kinds of risk: (1) the potential for a programme to fail to achieve its objectives; and (2) the potential for the programme to cause harm in the external environment. With regard to (1), the risk factors for programme failure include many of the contextual risks outlined above, as well as institutional and political factors. But there are many other reasons for potential programme failure, including inadequate understanding of the context or flawed assessment of what needs to be done; management and operational failures; and failures of planning and co-ordination. Risk is also associated with new or innovative programme approaches (although there may also be risk in failing to innovate). (Danida Guideline to Risk Matrix 2018). The categorisation of likelihood, impacts, and residual risk is also consistent with Danida guidelines.

including between centre and state levels.			range of stakeholders at the centre level. In addition, the programme will initiate a new direct partnership with the state government of Tamil Nadu. Throughout programme implementation it will be a particular focus area to initiate cross-agency seminars, studies, delegation visits and other learning events aiming to foster cooperation and break down silos among key stakeholders with overlapping mandates and tasks in the Indian power sector. Furthermore, the high level JWG set-up is also a mechanism to facilitate coordination between relevant ministries and institutions. Lastly as an external catalyst engaged in supporting an inclusive approach to the energy transition, DEA can facilitate knowledge and data sharing across institutions - the Indian Power Outlook is a case in point showing that even before it has been officially published, its data is being used by different agencies across the GoI.		ministries, agencies and institutions with overlapping mandates and responsibilities. Furthermore, divisions of responsibilities between centre and state level is far from always clear. The formulation mission noted a number of issues in this regard. After the Indian Election in spring 2024, INDEP II partner ministries MOP and MNRE are now headed by different ministers, which will likely challenge inter-ministerial coordination on power sector policy further. The formulation mission noted a number of issues in this regard.
Any risk of insufficient or un-sustained commitment and ownership by national partners to the partnership and to dedicating in-kind resources to the cooperation.	Unlikely	Major	INDEP II builds on a strong foundation of durable partnerships and mutual trust developed under INDEP I. Throughout INDEP I implementation, DEA has experienced a very high degree of buy-in from partners, who have continuously expressed high	Insignificant	Sustained partner commitment is key to delivering results and sustainable impact under INDEP II.

			satisfaction with the cooperation with Denmark. Hence, within the existing limitations to partner staffing the experience has been that partners dedicate resources and remains committed to the partnership. As an example of this, MNRE is has declared their commitment to integrate and sustain the CoE with their own dedicated resources. Furthermore, the very successful experience with posting three embedded LTAs with three key partners also reflects the mutual trust established, LTAs working with peers on often sensitive information in a way that no other development partners in India has been able to so far.		
Limited staffing capacity and turnover of staff in key positions in national partner institutions.	Likely	Major	Close working relations have already been established with key national partner institutions under INDEP I and their institutional strengths are known. In line with MTR recommendations, INDEP II will place renewed emphasis on a structured approach to further needs assessment and a systematic approach to capacity strengthening employing a range of tools and modalities for maximum effectiveness. Institutional capacity of the partner institutions will be assessed during the initial start-up phase of INDEP II implementation	Minor	Indian national partner institutions are generally staffed with highly skilled technical staff, but there are capacity constraints and continuous staff turnover. However, expect from the case of Tamil Nadu, partner challenges and constraints are largely already known from INDEP I- INDEP II is essentially an institutional capability strengthening programme where the DEA engagement model is based on peer-to-peer exchange of knowledge and therefore partner capacity is central.

			and will result in a capacity development plan agreed with the partners and with emphasis on uptake and application of learning rather than training of individuals.		
Institutional risks[46]:					
Risk Factor	**Likelihood**	**Impact**	**Risk response**	**Residual risk**	**Background to assessment**
The programme could risk duplicating existing activities and/or fail to build synergies with other initiatives due to the in-country presence of many other development partners.	Likely	Significant	While coordination among development partners could be strengthened, including with other EU countries, EDK and DEA project leads is very actively engaged in coordination, and the LTAs also have good insights into engagement by other bilateral and multilateral development partners. Coherence with Denmark's multilateral cooperation with the WB, IEA, IRENA, IISD and others also contributes to coordination and synergy and will be pursued by the MFA and MCEU in relevant fora.	Minor	The energy transition and climate action are crowded fields in India – however mostly within the field of OSW. Denmark is a small development partner, but the unique value added of government-to-government peer-to-peer cooperation is a key feature of the programme, which no other development partners provide.
The programme could fail to deliver its outcomes, which will reflect negatively on DEA, the MFA and the key national Indian partners.	Unlikely	Significant	The theory of change and results framework indicators are designed with realistic targets. The JWGs (Steering Committees) set-up is intended to ensure accountability and should also monitor assumptions and risk factors underpinning the cooperation and take remedial action if implementation is not on track.	Minor	This programme is strategic and high-profiled so any shortfall in delivering expected results would reflect negatively on the partners.

[46] This category includes "internal" risk from the perspective of the donor or its implementing partners. It includes the range of ways in which an organisation and its staff or stakeholders may be adversely affected by interventions, e.g. damage to a donor's reputation if it fails to achieve its objectives, or from financial/fiduciary failure (Danida Guideline to Risk Matrix, 2018).

Any unintended use of resources or misconduct could reflect negatively on the cooperation.	Very unlikely	Significant	There will be no direct fund transfers to partner institutions. The programme will follow DEA financial and contracting procedures, and the risk of direct corruption is considered unlikely.	Insignificant	The risk of fraud is limited to the use of funds in DEA, since no direct transfers to partner institutions will take place.

Annex 5: Budget details

Table A5.1: Summary budget allocations at output level
All numbers in DKK.

Outcomes	Outputs		2025	2026	2027	2028	2029	Sub-total
1: A timely and efficient implementation of India's offshore wind strategy.	**1.1:** Enabling framework for OSW	DEA staff	584.051	584.051	584.051	584.051	584.051	2.920.257
		Consultants	160.000	240.000	520.000	640.000	440.000	2.000.000
		Other Costs	28.000	42.000	91.000	112.000	77.000	350.000
		Subtotal	772.051	866.051	1.195.051	1.336.051	1.101.051	**5.270.257**
	1.2: Sustainable use of wind resources	DEA staff	584.051	584.051	584.051	584.051	584.051	2.920.257
		Consultants	160.000	240.000	520.000	640.000	440.000	2.000.000
		Other Costs	32.000	48.000	104.000	128.000	88.000	400.000
		Subtotal	776.051	872.051	1.208.051	1.352.051	1.112.051	**5.320.257**
	1.3: Grid infrastructure	DEA staff	467.241	467.241	467.241	467.241	467.241	2.336.206
		Consultants	149.680	224.520	486.460	598.720	411.620	1.871.000
		Other Costs	32.000	48.000	104.000	128.000	88.000	400.000
		Subtotal	648.921	739.761	1.057.701	1.193.961	966.861	**4.607.206**
							Outcome 1 Subtotal:	**15.197.721**
2: Scenario-based modelling and long-term energy planning informs decision-making on energy policies in India.	**2.1:** Long-term energy planning and modelling	DEA staff	1.635.344	1.635.344	1.635.344	1.635.344	1.635.344	8.176.721
		Consultants	237.680	356.520	772.460	950.720	653.620	2.971.000
		Other Costs	76.000	114.000	247.000	304.000	209.000	950.000
		Subtotal	1.949.024	2.105.864	2.654.804	2.890.064	2.497.964	**12.097.721**
	2.2: Technology catalogues	DEA staff	1.168.103	1.168.103	1.168.103	1.168.103	1.168.103	5.840.515
		Consultants	112.000	168.000	364.000	448.000	308.000	1.400.000
		Other Costs	48.000	72.000	156.000	192.000	132.000	600.000
		Subtotal	1.328.103	1.408.103	1.688.103	1.808.103	1.608.103	**7.840.515**
	2.3: Policy dialogue	DEA staff	467.241	467.241	467.241	467.241	467.241	2.336.206
		Consultants	72.000	108.000	234.000	288.000	198.000	900.000
		Other Costs	23.200	34.800	75.400	92.800	63.800	290.000
		Subtotal	562.441	610.041	776.641	848.041	729.041	3.526.206
							Outcome 2 Subtotal:	**23.464.441**
3: Measures for integration of variable renewable	**3.1:** Power system operation	DEA staff	584.051	584.051	584.051	584.051	584.051	2.920.257
		Consultants	163.080	244.620	530.010	652.320	448.470	2.038.500
		Other Costs	40.000	60.000	130.000	160.000	110.000	500.000
		Subtotal	787.131	888.671	1.244.061	1.396.371	1.142.521	**5.458.757**

energy leading to a more affordable and reliable supply of electricity.	**3.2:** System flexibility and market development	DEA staff	467.241	467.241	467.241	467.241	467.241	2.336.206
		Consultants	338.280	507.420	1.099.410	1.353.120	930.270	4.228.500
		Other Costs	48.000	72.000	156.000	192.000	132.000	600.000
		Subtotal	853.521	1.046.661	1.722.651	2.012.361	1.529.511	**7.164.706**
	3.3: Security of supply	DEA staff	467.241	467.241	467.241	467.241	467.241	2.336.206
		Consultants	86.280	129.420	280.410	345.120	237.270	1.078.500
		Other Costs	28.000	42.000	91.000	112.000	77.000	350.000
		Subtotal	581.521	638.661	838.651	924.361	781.511	**3.764.706**
	3.4: Distributed generation	DEA staff	350.431	350.431	350.431	350.431	350.431	1.752.154
		Consultants	176.560	264.840	573.820	706.240	485.540	2.207.000
		Other Costs	32.000	48.000	104.000	128.000	88.000	400.000
		Subtotal	558.991	663.271	1.028.251	1.184.671	923.971	4.359.154
							Outcome 3 Subtotal:	**20.747.324**
4: Partnership with Tamil Nadu on wind energy contributing to sustainable and just energy transition.	**4.1:** Scoping and planning	DEA staff	400.492	400.492	400.492	400.492	400.492	2.002.462
		Consultants	26.672	40.008	86.684	106.688	73.348	333.400
		Other Costs	26.936	40.404	87.542	107.744	74.074	336.700
		Subtotal	454.100	480.904	574.718	614.924	547.914	2.672.562
	4.2: Policy framework for wind energy at state level	DEA staff	383.805	383.805	383.805	383.805	383.805	1.919.026
		Consultants	26.672	40.008	86.684	106.688	73.348	333.400
		Other Costs	24.136	36.204	78.442	96.544	66.374	301.700
		Subtotal	434.613	460.017	548.931	587.037	523.527	2.554.126
	4.3: Engagement with local communities	DEA staff	383.805	383.805	383.805	383.805	383.805	1.919.026
		Consultants	26.656	39.984	86.632	106.624	73.304	333.200
		Other Costs	24.928	37.392	81.016	99.712	68.552	311.600
		Subtotal	435.389	461.181	551.453	590.141	525.661	2.563.826
							Outcome 4 Subtotal:	**7.790.515**
LTA: Outcome 1			1.400.000	1.400.000	1.400.000	1.400.000	-	5.600.000
LTA: Outcome 2			700.000	1.400.000	1.400.000	1.400.000	700.000	5.600.000
LTA: Outcome 3			700.000	1.400.000	1.400.000	1.400.000	700.000	5.600.000
							LTA Subtotal:	**16.800.000**

Sub-totals per year:	12.941.860	15.441.240	19.289.070	20.938.140	15.389.690	
					Grand total	**84.000.000**

Annex 6: List of supplementary materials

#	Document/information	Internet link if available
1.	Modi-Ki-Guarantee-Sankalp-Patra (2024, in English) - BJP Manifesto the first 100 days	
2.	DEA Global Cooperation website on INDEP	(link)
3.	Draft Memorandum of Understanding on Development of Offshore Wind and Renewable Energy, including a Just and Sustainable Energy Transition between the Tamil Nadu Energy Department and Danish Energy Agency.	
4.	INDEP I Progress Report 2023 (March 2024)	
5.	DEA ppt presentations on INDEP March-April 2024	
6.	Industry Input for INDEP II on Wind Energy - Round table with DEA - 16 May 2024 prepared by The Trade Council, Ministry of Foreign Affairs of Denmark.	
7.	Material for Joint Working Group (JWG) meetings on INDEP with MOP and MNRE on 8 and 9 November 2023, respectively-including concept note for the Indian Power Outlook (IPO) and Progress Report 2022 – 2023 for the Centre of Excellence (CoE) for Offshore Wind and Renewable Energy	
8.	INDEP MTR - follow up on recommendations, signed 17 November 2023	
9.	Review Report, MTR INDEP and INDODEPP, July 2023	
10.	Danida Approach Note on Fighting Poverty and Inequality	(link)
11.	Danida How to Note on Energy Transition and Emission Reductions in Developing Countries	(link)
12.	Danish Energy Agency (2023): Det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder	
13.	WRI India (2022): Winds of change: learning for the Indian offshore wind energy sector	
14.	Ministry of External affairs (2022): India-Denmark Joint statement during the visit of prime minister to Denmark	
15.	The Green skills alliance – skills development as a driver for employment, employment capacity and productivity in the green transition	
16.	WRI India et al. (2021): Renewable energy to responsible energy: a call to action	

Annex 7: Plan for communication of results

Communicating key events, results and / or positive effects of the programme will happen on an ongoing basis and in close coordination between DEA, MCEU and MFA.

What? (the message)	**When?** (the timing)	**How?** (the mechanism)	**Audience(s)**	**Responsible**
Key summary of INDEP programme information, selected results targets (as mentioned in the DEPP 2025 Concept Note to the Danida Programme Committee, the outcome indicator for Outcome 1 (offshore wind) was tentatively selected for this); and results updates against targets.	When the DEPP 2025 programme including the INDEP II programme is approved or updated	Danida Open Aid.	The Danish resource base and taxpayers.	MFA/KLIMA
Key messages emanating from INDEP II results and achievements, including "impact stories".	During INDEP II implementation.	MFA/Danida website and newsletters. World's Best News campaign. Website of the Danish Embassy in India. State of Green. Social media.	The Danish resource base, international partners, and national partners.	MFA/KLIMA and Embassy
Updated fact sheet ("kernefortælling") on INDEP II. Key messages emanating from INDEP II results and achievements, including "impact stories".	Fact sheet when INDEP II approved and updated as relevant. Other key messages as relevant during implementation.	Danish Energy Agency website. MCEU website. State of Green. Social media.	Danish resource base and Danish taxpayers. International development partners.	DEA MCEU
Key messages emanating from INDEP II results and achievements.	As relevant during implementation.	Websites social media etc. of national partners.	National partners and stakeholders.	National partners

Annex 8: Process action plan

Activity	Timing/deadline	Responsible
Formulation mission to India	23 - 31 May	DEA with formulation process consultants
Consultant's End-of-Mission Report which includes names and titles of persons met and key takeaways from each meeting.	7 June	Formulation process consultants
Presentation of early draft DEPP IV (now DEPP 2025) programme document ("concept note") to the Danida Programme Committee.	11 June	MFA(KLIMA)
Updated consultation documents to CEA, CERC, Grid-India, MNRE, NIWE, and Tamil Nadu State Government Energy Department.	End June	DEA with EDK
One-pager on knowledge partner concept to IIT Madras.	End June	DEA
Feedback from Energinet mission to India on TSO-ISO collaboration with Grid-India (see Annex 10)	3 July	Energinet via DEA
Submission to DEA of draft INDEP II Programme Document (PD) (together with DEPP 2025 Framework PD and Country PDs for Brazil and Kenya)	31 July	Formulation process consultants
Submission of revised draft INDEP II PD (together with DEPP 2025 Framework PD and Country PDs for Brazil and Kenya) for appraisal.	19 August	DEA
Appraisal of proposed DEPP 2025 including INDEP II.	19 August-23 September	MFA(KLIMA) with appraisal consultants
Appraisal report (draft/final)	23/27 September	Appraisal consultants
DEA participation in GoI Flagship Conference RE-INVEST in Gandhinagar, Gujarat and feedback to revision of INDEP II PD.	16 – 18 September	DEA
Adjust draft DEPP 2025 PD package including INDEP II PD based on appraisal recommendations and submit to DEA for comments.	30 September	Formulation process consultants
Signing of Memorandum of Understanding (MoU) with Tamil Nadu State Government	As soon as possible	EDK with Tamil Nadu State Government
Renewal of MoU with MOP	As soon as possible	EDK with MOP
Draft MoU to Niti Aayog	As soon as possible	DEA/EDK
DEA/MFA to complete final check and forward final DEPP 2025 PD package including INDEP II PD with appropriation cover note to the UPR Secretariat.	14 October (firm deadline to UPR)	DEA, MFA(KLIMA)
Presentation of INDEP II PD (together with DEPP 2025 Framework PD and Country PDs for Brazil and Kenya) to the Council for Development Policy (UPR).	31 October	MFA(KLIMA) with DEA
Approval of DEPP 2025 by the Danish Minister for Development Cooperation.	Early/mid-November	Minister

Document for Finance Committee (Aktstykke) and presentation to the Parliamentary Finance Committee.	November	MFA(KLIMA)
Signing of Agreement between MFA and DEA on DEPP 2025 Programme implementation.	Late November/ early December	DEA/ MFA(KLIMA)
INDEP II start-up phase, including further assessments of partner capacity development needs and priorities, updating/ further constitution of implementation working groups, preparation of structured plan for knowledge sharing/capacity development, development of work programmes and draft progress and results reporting, etc. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy to be considered by the MTR.	January-June 2025	DEA with national partners in India
INDEP II Full-fledged implementation.	June 2025-December 2029.	DEA
Meetings of Joint Working Groups (JWGs) at high level serving as "Steering Committees."	Annually	EDK/ MOP/ MNRE with other partner institutions including Tamil Nadu State Government for OSW.
Technical working groups (TWGs) for each Outcome – preparing work plans and drafts progress reports for JWG approval.	Meeting every six months	DEA with national partner institutions
Targeted communication of results as per communication strategy and plan.	Ongoing throughout implementation period	DEA, EDK, MFA, national partners
Prepare consolidated draft exit strategy for consideration by MTR.	Prior to MTR	DEA
Mandatory Mid-term Review (MTR).	Mid-late 2027 (timing tbd)	MFA(LEARNING)
Final progress and results reporting.	Early 2030	DEA

Annex 9: Job profiles for long-term advisors

Note: only the key roles, functions, and qualification requirements are listed here. The full job descriptions are developed at the time the positions are advertised.

Since the former incumbent in the LTA position in MNRE has a new job, the LTA position under Outcome 1 is currently under recruitment with a deadline for applications of 11 August 2024, see (link) - subject to confirmation of full funding of this position through INDEP II.

The roles, functions, and qualification requirements for the LTA positions in i) CEA and ii) Grid-India are based on job descriptions for the incumbents.

LTA in MNRE: Head of Secretariat (Long-term Advisor / Sector Expert), The Centre of Excellence (COE) for Offshore Wind and Renewable Energy (Senior Advisor N1)

Place of service: Ministry of New and Renewable Energy, New Delhi, India
Role and area of responsibilities/tasks: The Long-term Advisor/Sector Expert will be the anchor point for the COE and serve as the Head of Secretariat for the COE with key responsibility for coordination on projects and activities between the partner organizations. Simultaneously, the Sector Expert shall be the focal point for Danish knowledge on offshore wind on a day-to-day basis for the Indian partners. Other tasks are to lead the planning of various events, workshops and seminars hosted by the COE as well as maintain an updated and relevant website for the COE.
MNRE will allocate sufficient resources to host and collaborate with the Sector Expert as part of the COE, i.e. providing a workstation within the MNRE ecosystem, allowing access to relevant materials, information and data (as permissible under Indian Laws/Regulations) for supporting the technical assistance and allocation of hours to collaborate with the Sector Expert.
The two main responsibilities of the Sector Expert will be to:

1. Serve as an in-house day-to-day expert on Danish experiences with offshore wind energy to build capacity in MNRE, NIWE and SECI;
2. Serve as Head of Secretariat for the COE, including coordination of progress and contribute to the work through both expertise and organization of the four thematic working groups in close collaboration with DEA.

The Sector Expert will be the in-house entry point for Danish knowledge and stakeholders and provide the Indian partners quick and direct access to information on relevant Danish know-how on offshore wind. Regarding more comprehensive issues included in the work programme, the expert is expected to direct relevant queries to the DEA, who will find the relevant Danish expert or plan a capacity development technical exercise with relevant experts. The sector expert will be an important facilitator in the cooperation and dialogue between the DEA and MNRE. The presence of a Danish Sector Expert is expected to make the programme more efficient and effective.

The Sector Expert on offshore wind energy is expected to:

- Provide technical assistance and build capacity in the MNRE and related agencies (NIWE and SECI) on offshore wind energy in general, but in particular on government practices and regulation in close cooperation with the DEA experts as well as other international and local experts.
- Contribute to strengthening the capacity of MNRE and relevant agencies in setting up the regulatory structure that will govern the development of offshore wind energy in India in a cost-efficient and sustainable way.
- Co-chair and co-lead the organisation and work of the working groups under the COE and follow-up on progress in programme activities
- Coordinate the work under the COE and the four working groups, i.e. support drafting TORs for technical assistance, organise workshops, plan events, etc.
- Identify Indian needs and facilitate technical assistance from the DEA.

- Keep updated on Indian energy sector development and provide input to policy dialogues relevant for the partners under the INDEP. Inputs may include the preparation of short policy briefs or background notes as required and establishing a personal network with development partners, civil society organisations and private sector.

Success criteria:
- Successfully translate best practices within offshore wind energy into concrete policy and regulatory inputs for adaptation to an Indian context and assistance to MNRE, NIWE and SECI.
- Contribute to the vision of the COE to become a nationally and internationally recognized, respected and leading non-profit knowledge hub working for the robust and sustainable development of offshore wind energy in India, e.g. by sharing and disseminating Danish best practices and results of the COE activities to support adaptation to an Indian context.
- Expedient delivery of technical inputs required for the completion of programme activities related to offshore wind and renewable energy in cooperation with the DEA
- Successfully collaborate and liaise between Indian partners and the DEA
- Successfully validate and communicate results based on assessments of impact of programme activities with specific focus on maintaining an updated website for the COE
- Successfully ensure ownership, legitimacy and effectiveness of programme activities through proactive engagement with a wide range of actors across government, business and organizational sectors.

Demand Profile/Qualifications
- Solid knowledge of Global offshore wind energy polices and sector is a requirement
- A master level degree or corresponding qualifications in energy/environmental management, economics, political science, engineering and/or subjects relevant to renewable energy
- Extensive experience working with one or more fields related to offshore wind energy, i.e. regulation, tendering, financing, planning, procurement.
- Project management and coordination experience and preferably experience from delivery of technical assistance
- Proven experience in liaison and engaging with regulators, authorities and various stakeholders on all levels
- Experience from developing countries, preferably India, will be an advantage
- Fluency in English, written and spoken, is required. Fluency in Danish is an advantage.
- Strong written and verbal communication skills.
- Openness towards and understanding of different cultures and capacity to work in a different cultural setting
- Inter-personal skills with a high level of initiative and diplomacy
- Ability to work as part of an interdisciplinary team with relations to different ministries and stakeholders
- Proactive and flexible attitude, adaptability, self-driven, social sensitivity, with respect for other cultures
- Capacity to manage and facilitate working processes involving parties at different levels.
- Interviews: Month of August – week 34 and 35
- Case and test: Candidates must be prepared to complete a case and test.
- Expected commencement: October 2024 (or the earliest possible)

The DEA and the Danish Ministry of Foreign Affairs will select applicants for the position for interview. Applicants should expect to undergo personality- and case tests. The final interview panel consists of representatives from the DEA, MNRE and the Danish Ministry of Foreign Affairs.

Note: These are excerpts from the job profile in Danish for the current LTA position and will be updated by DEA for the final INDEP II Programme Document

Langtidsrådgiver inden for energimodellering, Central Electricity Authority (CEA):

Titel: Langtidsrådgiver / Senior Advisor N1 / Sector Expert
Tjenestested: CEA, New Delhi, Indien
Ansvarsområde/opgaver
Rådgiverens hovedansvar er at 1) agere som intern ekspert i CEA inden for energiplanlægning og langsigtet modellering for at opbygge kapacitet i institutioner som CEA og MOP; 2) koordinere fremskridt og bidrage til videndelingsarbejdet med hensyn til energiplanlægning. Rådgiveren vil bygge videre på de resultater, som er skabt over samarbejdets initiale periode fra 2020-2022.
Langtidsrådgiveren vil levere og facilitere dansk viden, samt give de indiske partnere hurtig og direkte adgang til information om relevant dansk energiekspertise. Hvis der fra indisk side ønskes viden om mere omfattende emner inden for arbejdsprogrammet, forventes rådgiveren at rette relevante forespørgsler til Energistyrelsen, som finder den relevante danske ekspert eller planlægger en kapacitetsopbygningsøvelse med relevante eksperter.
Rådgiveren vil være en vigtig facilitator i samarbejdet og dialogen mellem CEA og DEA. Tilstedeværelsen af en langtidsrådgiver har vist sige at gøre programmet langt mere effektivt og sikre kontinuerlig fremdrift.
Kandidaten forventes at have erfaring med energimodellering og kan udvikle potentielle fremtidige scenarier, som kan hjælpe Indien med at levere input til beslutningstagning om udvikling af el-systemet på lang sigt. Kandidaten skal have erfaring inden for modellering af el-systemer og omfattende viden om scenarieudvikling og –analyse, meget gerne fra den indiske kontekst. Desuden skal kandidaten have et godt overblik over og forståelse for de antagelser, der er ligger til grund for modelleringen og deres indbyrdes forhold, samt for de konklusioner, der kan drages ud fra resultaterne.
Som langtidsrådgiver forventes kandidaten også at:

- Tilvejebringe teknisk assistance og opbygge kapacitet i CEA og relaterede agenturer (CERC, POSOCO og POWERGRID) om energiplanlægning og modellering i tæt samarbejde med Energistyrelsens eksperter samt andre internationale og lokale eksperter
- Bidrage til at styrke kapaciteten hos CEA og MOP og relevante agenturer, der styrer energiplanlægningen i Indien
- Deltage i arbejdsgrupperne under programmet og følg op på fremskridt i programaktiviteter
- Rådgive om gennemførelsen af programmet på en sammenhængende og koordineret måde, der stemmer overens med indiske planer og prioriteter

Endvidere forventes langtidsrådgiveren at have en tæt sparring med sektorrådgiveren på energi på den danske ambassade i New Delhi, herunder at:

- Holde tæt kontakt til sektorrådgiveren, der i samspil med langtidsrådgiveren indgår i den faglige dialog med Energistyrelsen og lokale partnermyndigheder om fremdriften i INDEP, herunder planlægning af missioner.
- Med involvering af sektorrådgiveren at koordinere arbejdet med energiplanlægning i partnerskabet Indien-Danmark, dvs. støtte organisering af workshops, planlægge begivenheder osv.
- I koordination med sektorrådgiveren på energi, holde dig opdateret om den indiske energisektorudvikling og give input til politiske dialoger, der er relevante for partnerne og energipartnerskabsprogrammet.
- I samspil med sektorrådgiveren aktivt udforske synergier mellem det bilaterale partnerskabsprogram og de multilaterale fora og andet samarbejde, hvor både Danmark og Indien er aktive

Succeskriterier i jobbet

- Succesfuld implementering af best practice inden for energiplanlægning og modellering til konkrete politiske input og assistance til CEA og MOP.
- Betimelig levering af relevant input, der kræves til gennemførelse af programaktiviteter relateret til energiplanlægning og modellering i samarbejde med ENS, herunder at sikre fremdrift i udarbejdelsen af den anden version af India Power Outlook samt det andet teknologikatalog.
- Konstruktiv og værdsat kontakt mellem indiske partnere og ES
- Validering og kommunikation af gode resultater baseret på effektvurderinger af program-aktiviteter
- Sikring af ejerskab, legitimitet og effektivitet af programaktiviteter gennem proaktivt engagement med en bred vifte af aktører på tværs af regerings-, forretnings- og organisationssektorer

Profil / kvalifikationer

- Solid viden om dansk energipolitik og planlægning er et krav
- En kandidatgrad eller tilsvarende kvalifikationer inden for energi / miljøledelse, økonomi, statskundskab, teknik og / eller fag, der er relevante for modellering af energisystemer, kan være relevant
- Omfattende erfaring med at arbejde inden for områder relateret til energiplanlægning og modellering
- Projektledelse og koordineringserfaring og helst erfaring fra teknisk bistand
- Erfaringer fra Indien vil være en klar fordel
- Grundlæggende kendskab til den indiske elsektor. Erfaring med modellering af el-systemet og scenarieudvikling i den indiske kontekst vil være en klar fordel.
- Flydende engelsk, skriftlig og talt, er påkrævet. Flydende dansk er en fordel
- Gode skriftlige og mundtlige kommunikationsevner
- Åbenhed over for og forståelse af forskellige kulturer og evne til at arbejde i en anden kulturel ramme
- Interpersonelle færdigheder med et højt niveau af initiativ og diplomati.
- Evne til at arbejde som en del af et tværfagligt team med relationer til forskellige ministerier og interessenter
- Proaktiv og fleksibel holdning, tilpasningsevne, social følsomhed med respekt for andre kulturer
- Kapacitet til at styre og lette arbejdsprocesser, der involverer parter på forskellige niveauer
- Orientering i mod at forstå de indiske partnerorganisationers behov/krav og kunne matche dem med passende løsninger.

Long-term Advisor on integration of renewable energy (Sector Expert), Grid-India:

Note: this is based on the job description of the incumbent LTA/Sector Expert in Grid-India (formerly known as POSOCO) and will be updated by DEA.

Roles the Long-term Advisor

The main responsibility of the LTA is to be the nodal point and in-house expert on Danish knowledge and experience in the integration of variable renewable energy. However, the secondary role will be to coordinate knowledge-sharing activities under INDEP between POSOCO & CERC and the DEA & Energinet, which can cover subject area as listed below:

- Transmission planning
- Short-term forecasting and system operation
- Balancing and ancillary services
- Flexible operation of power plants
- Grid codes and grid standards
- Electricity market design

The expectation is that you will have significant expertise and experience in at least one of the above topics, and that you will be able to coordinate and facilitate knowledge-sharing activities in the others, together with the India team at the DEA. The Danish and European experience in integration of renewable energy is interesting in this context in India, and thus, the LTA will be the in-house entry point for Danish and European knowledge and stakeholders and provide the Indian partners quick and direct access to information on relevant Danish and European know-how in the area. For other energy related issues, the LTA is expected to direct relevant queries to the DEA, who will find the relevant Danish expert or plan a capacity development exercise with relevant experts. The LTA will be an important facilitator in the cooperation and dialogue between the DEA and MOP and relevant MOP institutions.

Title: Long-term Advisor / Sector Expert (Senior Advisor N1)
Place of service: Gri-India (formerly: Power System Operation Corporation Limited (POSOCO)), New Delhi, India

Role and area of responsibilities/tasks

The LTA is expected to have extensive knowledge on and experience with the Danish and/or European approach to the integration of RE and assist in enabling the cost-efficient integration of variable renewable energy generators.

The LTA is expected to fulfil the following responsibilities and tasks and share the best available knowledge on:

- Serve as an in-house expert on a daily basis and provide technical assistance, in collaboration with the DEA, to build capacity in POSOCO, CERC and other relevant organisations within integration of RE. It is expected that the LTA has experience, based on the Danish and/or European model, with at least one of the below listed topics:
  - Transmission planning
  - Short-term forecasting and system operation
  - Balancing and ancillary services
  - Flexible operation of power plants
  - Grid codes and grid standards
  - Electricity market design
- Assist in coordination within areas under INDEP for the possible benefit of POSOCO, CERC, and other relevant organizations.
- Work closely with the India team at the DEA in further strengthening the INDEP cooperation and achieving the objectives of the flexibility and integration of RE track.

Success criteria

- Successful implementation of best practices within integration of RE to make the basis of concrete political inputs and assistance to POSOCO, CERC and MOP in this regard.
- Create the availability of Danish and European experiences on integration of renewable energy to the Indian partners on a day-to-day and on-demand basis.
- To work closely with the Energy Counsellor at the Danish Embassy in Delhi as well as the existing LTA on long-term energy planning and the India team at DEA in Copenhagen, on a day-to-day basis to implement the INDEP activities on integration of RE with specific focus on power markets.
- Contribute to daily capacity development within the Indian partners in close dialogue with DEA based on the Danish energy transition and regulatory experiences.
- Establish and maintain close working relation with the Indian partners.

Requirements and expectations concerning the candidates' qualifications

- Proven experience and expertise on the Danish and European power sector is a must.
- Solid knowledge of the Danish energy policy and regulation practice on integration of RE and the Danish energy model in general.
- A master's degree level or corresponding qualification in power sector management, engineering, economics and/or another relevant fields of relevance to integration of RE and power markets.
- Project management and coordination and preferably experience with international development cooperation/regulatory assistance.
- Experience with working in India is considered an advantage, including knowledge of on the India power sector.
- Fluency in written and spoken English with good communication skills. Fluency in Danish will be an advantage but not a must.
- Openness and sensitivity towards understanding different cultures and ability to work in an interdisciplinary team and different cultural settings with multiple Indian stakeholders.
- Good inter-personal skills with a high level of initiative and diplomacy and openness towards and understanding of different cultures and capacity to work in different cultural settings.
- Capacity and flexibility to work with tight deadlines when needed.
- Capacity to manage and ease work processes involving parties at different levels and organisations.
- Willingness to recognize and apprehend the demand of Indian partner organisations and match this with adequate solutions.

Annex 10: Strategic partnership on power system operation (TSO-ISO collaboration)

Excerpts from a project description[47] for TSO-ISO collaboration between Energinet and Grid-India 2024 and onwards:

Introduction:

The Indian Independent System Operator (ISO), Grid Controller of India (henceforth Grid-India) is a key partner under the INDEP programme under Outcome 3 and operates as a division under the Indian Ministry of Power (MOP). With its responsibilities for round-the-clock monitoring and operation of the integrated operation of the Indian Power Grid, Grid-India has a central role in optimizing the integration and operation of renewable energy systems. Grid-India independently manages India's integrated electricity system and is responsible for balancing the interstate transmission system that interconnects the country's states. As such, Grid-India is a central actor with a critical role in averting curtailments and ensuring a dispatch plan that incorporates the highest proportion of renewables in the energy mix. Grid-India and the Danish Transmission System Operator (TSO) Energinet have cooperated in a number of areas during the first phase of the INDEP-programme, with a particular focus on power markets, including market design, development and monitoring. This existing engagement lays the foundation for the continued and strengthened TSO-ISO direct cooperation that will be structured around six mutually agreed core areas of collaboration, as further elaborated in the following. The main purpose of the partnership is to create an operationally founded collaboration around well-defined system operation-specific challenges to deliver impact closer to implementation, as well as strategically oriented input to support engagements and sector dialogues in emerging areas. The TSO-ISO collaboration will aim to support Grid-India to operate the system reliably and cost-effectively, to achieve significant cost savings for the Indian system by providing inspiration and choice awareness of tools, methodologies and processes, support for development of roadmaps and review of relevant documents, tools, processes, and regulation, as relevant under each collaboration area.

The collaboration will give Grid-India an in-depth understanding of European, Nordic and Danish developments to ensure balancing capabilities at affordable prices and quality. It will give opportunity to discuss uncertainties in implementation and how planning and deadlines are difficult to set, as there are uncertainties in the tools to be developed and high complexity in both the cooperation and IT-solutions.
The expectations are that Grid-India through the collaboration can achieve progress while avoiding mistakes through learnings from Energinet's experience, lessons and successes. This can on the longer run reduce the costs for balancing and accelerate the increase in variable renewable energy (VRE) while ensuring affordability and high security of supply for the benefit of all parts of society including disadvantaged communities and small enterprises.

Overall challenges for the Indian power system, to which the partnership aims to contribute include:

- increase from current 100 GW of large scale solar, small scale/roof top solar and onshore and offshore wind to 500 GW in 2030
- continuous increase in demand of xx% annually and new types of load from datacentres, electrolyzers and storage
- System changing fast on technology, volume, digitalization and participants and challenge to develop, approve and implement new regulation at same pace.

Overall purposes of cooperation:

- Upholding high security of supply and efficient system operation with increasing share of renewables

[47] Note: in drafting this excerpt, the original draft project description has been significantly shortened some editing done to avoid confusion in the use of some terms such as objectives and outcomes vs. the main INDEP II theory of change and results framework.

- Identify short term solutions and actions under current regulatory framework and structure
- Support to inform Grid India's strategic positioning and input to sector dialogue on long-term/strategic sector developments.

Areas of collaboration:
Six Areas for Cooperation were confirmed during working meetings in New Delhi in June 2024:
- Control room tools for closer to real-time operation
- Frequency control
- Grid connection and monitoring of requirements
- Improved stability of large pooling stations
- Security of supply/generation adequacy
- Market coupling

In addition, a high-level dialogue on management approach and strategies for a System Operator in a market with increased share of RE has been identified as a possible further area for cooperation.

The partnership will involve engagement between relevant departments and experts at Energinet, and Grid-India's System Operation (SO) and Market Operation (MO) teams. Some areas of cooperation will be specific to SO or MO, whereas many will be cross-cutting. Relevant focus and department/ team will be determined in close coordination with the key contacts for the SO and MO teams.

Each of the six areas is briefly summarised below, reflecting initial views on priority issues. The timeline and roadmap for each area is to be further agreed, but below are also indicated some immediate actions for some of the areas.

1) Control room tools:
Problem statement
With an increasing share of VRE and a more complex energy system there is a need for closer to real time operation. This demands new tools, it-system and control room procedures. This is particularly focussed on the System Operation perspective (with SO team).
Context
This is a highly timely topic, of mutual interest to Energinet and Grid India. Energinet is undergoing a large change with increased automatization and change in it-systems in the control centre for both grid and balancing operations on national, Nordic and European level. The tools cover both improved forecasting, monitoring of inertia and other indicators beside voltage and frequency and improved real time information of the electricity system, topics of great interest in an Indian context as well.
- **Overall purpose:** Ensure preparedness of control room for increased complexity and inverter-based system.
- **Short term activities/deliverables:** Presentation of Energinet's '*control room of the future'* programme, incl. Energy Management System (EMS)/ Electromagnetic Transient (EMT) development and forecasting close to real time (the last mile).
- **Short term modality:** Online workshop on Global Power System Transformation (GPST) control room of the future
- **Short-term deliverables:** Inspiration memo on long-term control room tool strategy and short-term EMS development for use in Grid-India tool development

2) Frequency control:
Problem statement
The fast changes of the Indian power system put pressure on the frequency control of the NLDC. Notably, it is only possible for Grid-India to control the approximately 700 GW inter-state power plants, and not intra-state generators, limiting the resources available for frequency control. Moreover, the power from these are often sold on long-term power purchase agreements (PPAs), leading to a lack of available balancing

resources for Grid-India, and increased need for self-balancing at regional and state level. The challenges of frequency control lead to a strong interest from Grid-India to understand platforms and setups for frequency control (including Picasso and Mari projects). This area is focussed on both the System Operation and Market Operation cooperation (SO and MO teams).

Context

As for India, the balancing needs in the Danish/European energy system are projected to become significantly larger in the future. Increasing the liquidity in the balancing markets will provide more robust price signals and maximize the social welfare and security of supply. This is the case for Europe as well as India. In light hereof, Energinet's methods and procedures, particularly on their integration in the common European balancing market platforms and the system operation implementation through the Nordic Balancing Model are of great interest to Grid-India and will be one of the focus areas for the collaboration. In Denmark the need for balancing is increasing as VRE in periods can cover up to 100% of demand. Energinet is working closely together with other Nordic TSO's in the Nordic Balancing Model (NBM) to establish a new operational balancing methodology and structure. NBM is part of the implementation of the European balancing platforms of Picasso and Mari. At a European level, energy balancing markets are being established according to the European network code for Electricity Balancing. The code is being implemented through the Picasso and Mari project. The development started in 2018, and markets are expected to be fully implemented in 2026 and with the first countries participating from 2024.
Energinet has also developed new products and market solutions for other ancillary services as primary reserves and new fast frequency reserves to deal with low levels of inertia. This is both developed nationally and cross border.

- **Overall purpose:** Improve frequency control in system with high shares of VRE.
- **Medium to Long term purposes:** Improved monitoring of Inertia through the use of PMUs[48]; and improved frequency control by experimental use of synchronous condensers
- **Short-term activities/deliverables:**
  - Present inertia monitoring methodology in Nordic and FRR (frequency restoration reserve) and FCR (frequency containment reserve) markets and arguments for last year's changes to support improvement of frequency in Nordic synchronous area.
  - Present Picasso algorithm, AOF (allocation optimization function) and organisation and TSO responsibilities
  - Presentation from Grid-India on current and future organisation of LFC/AGC responsibilities and systems
  - Identify the best fit methodology/tool for balancing and frequency control for Indian power system based on mutual discussions.
  - Prepare roadmap for implementation of inertia assessment tool/methodology
- **Modalities:**
  - Online workshops
    - Share of the current practice/methodology followed by Energinet and other European TSOs on Inertia assessment in real-time
    - Understand the existing practice in Indian power system
  - Potential visit by Energinet expert to Grid India and/or exchange programme
- **Results:**
  - Short-term: Inspiration memo on market-based procurement and stakeholder involvement process of frequency regulation to be used in dialogue with regional and national load centres and CERC (if need for change in grid codes) and suggestions for short optimization of frequency regulation procedures between LDC's, incl. potential current market barriers.

[48] Phasor Measurement Unit, also called a PMU or a synchrophasor, is a key tool used on electric systems to improve operators' visibility into what is happening throughout the vast grid network.

Long term: support change from FCR delivery obligation to market based procurement to include load and storage technologies to deliver. Today 60-70 GW of thermal out of 250 GW is obliged.**3) Grid connection and monitoring of requirements:**

Problem statement

Increased shares of renewable energy production facilities, introduction of large demand units, including electrolysers, datacentres and storage, change the power system and challenge its robustness. Development of robust connection requirements is part of the solution, already in place/underway by CEA. Meanwhile lack of compliance with standards/requirements, over time, is a challenge, and there is a need from Grid India to understand/investigate monitoring and enforcement mechanisms for continued adherence to standards/requirements This area is focussed on the System Operation cooperation (SO team), (while also highlighting the interrelations between system operator and regulator, for potential consideration under Output 3.2).

- **Long-term purposes**: Robust and reliable operation of the power system with increased share of VRE and large-scale connection of load (batteries, electrolyzes, EV, datacentres) and roof top solar.
- **Short-term activities/deliverables:** Sparring on process for approval and monitoring, incl. possibilities for sanctions if significant deviances. Facilitation of efficient dialogue between national and province system operators and national and local regulation.
- **Modality:**
  - Online workshops:
  - Share of the compliance verification and model validation process for RE plants in Denmark and other European TSOs. Including explanation of the current regulatory framework (in Denmark and other European TSOs) on technical requirements for connection of new renewable plants, battery energy storage systems, electric vehicle charging stations, electrolyser loads, datacentres etc.
  - Understand the current regulatory framework (connection code/connectivity standards) and associated roles and responsibilities in India.
  - Collaborate development of recommendations for improvements to regulatory framework and/or monitoring and enforcement practices.
  - Training sessions/ workshops on compliance verification.
- **Results:** inspiration memo on how to incentive regional and state level to fulfil responsibilities based on Danish/Nordic/European experience to be used in NLDC dialogue with regional and state level. Focus on both short actions in current situation and potential long-term actions.

4) Improved stability of large pooling stations:

Problem statement

In India, large pooling stations exist as a point of connection for individual wind and solar production units to the transmission system. However, the sub-stations are challenged by the fact that even minor changes in voltage frequency leads to decoupling of production facilities. It is of utmost urgency to address how to deal with this and what regulatory changes might be needed. This area is focussed on the System Operation cooperation (SO team).

- **Long-term purpose:** Secure the integration of increased production from wind and solar into the transmission system through continuous development of design, connection requirements and maintenance of large pooling station for VRE (+5 GW). And development of frameworks for "direct lines/captive customers"
- **Short-term purpose:** Exchange of state-of-the-art technology and design for large pooling stations
- **Modality:** Online workshop:
  - Energinet presentation on large station design onshore and offshore
  - Grid-India on large pooling stations and long distance HVDC connections.
- **Results**: Overview of state-of-the-art technology development and overlapping interests between Energinet and Grid-India to assess potential long-term issue for cooperation.

5) Security of supply/generation adequacy:

Problem statement

With the overall challenges of the Indian power system illustrated by increased shares of VRE and increased demand, the challenge of upholding high-level of SoS and an efficient system is imminent. In addition, the development of the power system also increases the challenge of generation adequacy i.e. the ability of the electricity system to cover the electricity consumers' total demand for electricity. As conventional power plants deliver a decreasing share of the electricity production and with the increasing shares of VRE in the system, the need – and opportunities – for involvement of new market participants in the balancing of the system is increasing. Moreover, with increasing electrification of demand as part of the green transition it is more important to couple cooling, transport and green gases in delivering flexibility to the electricity system. Participation is enabled both through updated connection requirements, agreements, and market participation. This area is focussed on both the system and market operation cooperation.

Context

In Denmark, Energinet has increased the focus on participation of demand flexibility, storage and solar and wind for energy balancing, capacity reserves and other non-frequency ancillary services. Such participants are new to delivering ancillary services, and require incentives as well as guidance, support and awareness of opportunities to encourage participation. To this end, new reports on outlook for ancillary services and price history and real time balancing information have been developed to make it more attractive and easier to participate.

- **Long-term purpose:** Use of capacity mechanism to ensure long term generation adequacy with increasing share of VRE. Focus on short term 3-day generation adequacy assessment by Grid-India and ensuring optimal data to form a basis for decision.
- **Short-term activities/deliverables:**
  - In depth presentation of EU methodology for security of supply assessment, incl. historic and future climate scenarios, and assumption data development
  - Presentation of Grid-India methodology for security of supply
  - Sparring on challenges/solutions:
  - In India, AGC at the central sector factors region as a balancing area, intra-state AGC would consider state as a balancing area.
  - Explore if any simplifications can be made similar to PICASSO in India (e.g. in the cases where a state has to reschedule a central sector generator in the real-time through AGC, and/or operating the regional and state control areas under AGC in a nested fashion).
  - Understand how Denmark has implemented PICASSO with end-to-end scheduling to settlement.
  - Infrastructure and software needed for PICASSO model
  - Presentation of FCR, aFFR capacity and FFR markets,
  - Presentation of Revenue calculator for market service.
  - Presentation of ancillary service from RE. (design, reliability, price/cost of delivering the service)
  - Capacity market design and resource assessments
    i. Presentation of cross-border generation adequacy calculations (SoS calculations)
    ii. Short term adequacy
    iii. Discussion of different capacity mechanism models
    iv. Role of TSO in auctioning processes
  - Market Monitoring and Surveillance
    i. Presentation of Cross-border transmission capacity calculation
    ii. Power exchange operation, and cross- echange settements NEMOS - Knowledge sharing session. (samples of mistakes from Power exchanges/market participants)
    iii. Distributed generation – baseline
    iv. Market coupling /clearing - ACER regulation - Knowledge sharing session.
    v. Session on India structure on market coupling.
    vi. Contract for difference (CfD) presentation. Part of DEA-engagement.
  - Forecasting?
  - Capacity mechanisms for security of supply:

i. Develop the future market design responding to the challenges for security of supply and increased need for flexibility and monitoring (incl. sector coupling and electrolysers) through facilitation of markets, Business case, strategies and Roadmaps.
ii. Secure technology neutral market service engagement in the market e.g. Electrolysers, datacentres, cooling/heating.

- **Modality: Online Workshops**
  - Potential for mission to India in autumn 2024
  - Potential topic for exchange programme
- **Results**: Provide input for Grid-India to inform strategic positioning on Operational vs. planning target for SoS, inclusion of balancing reserves, political vs. market expectation assumptions, and sector dialogue on the topic

6) Market Coupling:

Problem statement

The power system is developing rapidly with increased share of VRE and large load units entering the system. This increases the need to establish a coherent market that links the role of the different stakeholders. In addition, this increases the importance of the role and functioning of the power exchanges. This area is focussed on the market operation cooperation.

- **Long-term purpose:** Harmonized Indian electricity market for efficient economic dispatch and competition.
- **Short-term activities/deliverables:**
  - Presentation of current and historic role and cooperation between Energinet and power exchanges.
  - Presentation on use and availability of transmission capacity in day ahead markets in Europe today and historic development.
  - Facilitate discussion on Grid-India role as potential future Market operator.
- **Modality:**
  - Online workshop.
  - Potential mission to India together with Security of supply.
- **Results**: collaborate on potential roadmaps for market coupling of power exchanges and TSO role.

Organisation of the TSO-ISO Collaboration:

The collaboration will be overseen by a steering committee and working group to ensure efficient cooperation. The steering committee will consist of management level participants from Energinet, Grid-India and DEA, the working group will consist of main responsible employees for the collaboration from Energinet, Grid-India (main contact persons for SO and MO teams) and DEA, and coordination will be managed in the governance of the TSO-ISO collaboration. For coordination with the INDEP governance structures, it will be the responsibility of the Steering Committee to report to the Joint Working Group with MOP. The long-term advisor (LTA) will participate in both steering committee and working group activities as relevant. Energinet and Grid-India will appoint 1-2 responsible employees to be responsible for cooperation, incl. planning of meetings, workshops, visits and the reporting as part of the INDEP programme.

Relation to other INDEP II activities:

There are strong synergies across the TSO-ISO collaboration and other INDEP II outputs, particularly Output 3.2. Close coordination will be important to avoid duplication of efforts and leverage synergies/learnings across activities. Output 3.1 and Output 3.2 are differentiated particularly as per the involved actors, with Output 3.1 focusing on System Operation specific topics, with no broader actor involvement, whereas Output 3.2 will focus on broader system flexibility topics with other actors and frequently cutting across multiple actors/stakeholders (which may also include System Operator).

Annex 11: Knowledge partners for INDEP II

Introduction

Throughout the implementation of INDEP I, DEA GC has worked closely with both Indian consultancies and high rank universities in order to support the development of joint reports and studies together with the Indian partner authorities. This has been a key supplement to working with the Danish consortium partners under the GC Framework Contract and has also enhanced the capacity development in the wider Indian context. Working directly with Indian actors has proven very beneficial in terms of the particular insights into the technical aspects and challenges related to the Indian energy sector and the broader socioeconomic context that they bring to partnership.

Recognizing the fast-changing technical, political and economic landscape and complexities of the Indian context, INDEP II will seek to formalize and strengthen the cooperation with Indian knowledge institutions through the initiation of a new modality of partner collaboration - called the knowledge partner model.

Knowledge partner model

The aim of the knowledge partner model is to support the INDEP II activities in providing high quality technical cooperation with partners based on a profound understanding of the Indian energy sector and its complexities as well as the broader socioeconomic and political context that the programme is both part of, but also aims to influence. Further it is an opportunity to work closer with other stakeholders in India that has either influence or knowledge that is important for the energy transition in India.

The knowledge partner may be engaged in two different ways:

- Consultancy: The knowledge partner may act as a consultant on projects, including, but not limited to, joint studies, workshops and seminars. This could be particularly relevant for projects requiring deep insights into the Indian energy sector or a wider socioeconomic context – for instance when developing studies on the just energy implications of the deployment of green energy. When acting as consultants, knowledge partners will be subcontracted through the GC framework contract holders.
- Knowledge exchange: GC and the knowledge partner may engage in knowledge exchange on topics of common interest. This may involve sharing of data, information, participating in working groups on policy discussions, reviews and provisions of feedback on studies as well as any other form of exchange agreed upon by the parties. Both CEEW and NITI Aayog has shown particular interest in engaging in knowledge exchange on the topic of long-term planning and modelling, discussing assumptions and policy implications of the analyses conducted by both institutions. Knowledge exchange under the knowledge partner modality will not involve any form of financial reimbursement as it is assumed to be of mutually beneficial nature.

Knowledge partners in INDEP II

INDEP II aims to include the Indian Institute of Technology Madras (ITT Madras) and Council of Energy, Environment and Water (CEEW) as knowledge partners. Additional knowledge partners such as for instance The National Institute for Transforming India (NITI Aayog -government think tank)) may be included in the program at a later stage.

Examples of knowledge partner institutions:

Located in Tamil Nadu, **IIT Madras** is internationally renowned for its excellence in technical education, basic and applied research, innovation, entrepreneurship and industrial consultancy.

Ranked as the no. 1 engineering university in India, IIT Madras encompasses a total of sixteen academic departments as well as advanced research centres, working in various disciplines of engineering and pure sciences. Based on IIT Madras' large expertise within energy research, the university has recently launched the *IIT Madras Energy Consortium*, aiming to enable the energy transformation to a low-carbon future through collaborations between the industry, academia and government. The Energy Consortium has extensive insight into both technical and economic aspects of the energy transition as well as the socioeconomic opportunities and challenges, including issues related to fisheries and stakeholder co-existence. During INDEP I, IIT Madras has been contracted to support studies under the offshore wind outcome.

CEEW is among Asia's leading non-for-profit policy research institutions. CEEW aims to explain and change the use, reuse and misuse of resources through data, integrated analysis and strategic outreach to key stakeholders and the public. While CEEW has established strong collaborations with both governmental and private sector stakeholders, the institution is not affiliated to any government, organization or the like and remains completely independent. CEEW has strong expertise within all three focus areas of INDEP II (offshore wind, long-term planning and modelling and integration of variable renewable energy), as well as particular insights into the just transition field. Throughout INDEP I, there has been continuous dialogue with CEEW, but a formal relationship is yet to be established.

NITI Aayog is the premier think-thank of the Government of India chaired by Prime Minister Modi, providing both directional and policy inputs. NITI Aayog aims to bring the states and union territories to act together in the national interest of India with the goal of promoting cooperative federalism. In order to deliver on India's commitments to fighting climate, its development needs and the goal of becoming a developed nation by 2047, NITI Aayog has recently created 7 working groups tasked to identify issues, develop pathways and suggest policy action on various aspects of climate change. NITI Aayog has shown strong interest in establishing a collaboration with Denmark through INDEP II.

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Annex K:

Kenya-Denmark Energy Partnership (KENDEP) 2025-2029

Key results:

- Kenya-Denmark energy partnership has strengthened Kenya's long-term energy planning to support least cost energy transition contributing to achieving Kenya's target of 100% renewable energy and universal access to reliable and affordable energy by 2030.
- DEA has informed the development of a transparent regulatory framework enhancing efficient, reliable, and market-based integration of variable renewable energy contributing to lower energy prices
- Data-driven policies and regulations reduce has contributed to reduce grid loss and to advance demand-side energy-savings in sectors such a 'clean cooking' (eCooking) and 'productive use of energy' across Kenya.

Justification for support:

- Danish support aligned to and requested by the Kenyan government partners for deeper and broader government-to-government support from Denmark
- Consistent with the Strategic Denmark-Kenya Partnership 2021-2025, Denmark's Strategy "The World We Share" and related MFA How-to-Notes
- Contribute to support Kenya's efforts to achieve SDG7 and operationalisation of Kenya's National Determined Contribution (NDC) plan, which is key to achieve Kenya's socio-economic development.

Major risks and challenges:

- Socio-economic development can influence political stability and presidential elections in 2027 could disrupt current policy targets. Mitigation: Long-term energy planning and transparency will provide data to all stakeholders demonstrating least-cost energy pathways
- High staff turnover and limited absorption capacity could slow progress. Mitigation: Assessment of partner needs and current capabilities will allow to tailor-make capacity development efforts to increase institutional capabilities including next generations through universities. Risk of insufficient coordination and lack of synergies with other initiatives in the highly dynamic Kenyan context. Mitigation: The programme's embedded long-term advisors and the embassy will collaborate closely with other donors and multilateral

File No.	Public 360 No. 24/22853						
Country	Kenya						
Responsible MFA Unit	Green Diplomacy and Climate (KLIMA)						
Sector	Energy						
Partner	Danish Energy Agency (DEA)						
DKK million	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total**
Commitment	N/A						
Projected disbursem		8.0	11.5	12.2	14.8	14.3	60.8
Duration	2025-2029						
Previous	SSC 2021-2024 DKK 9.97 million.						

Objective:

Kenya's just and inclusive green energy transition supported through strengthened partnership between Kenya and Denmark for an enabling framework for a cost-efficient energy system with increased affordability, reliability and security of supply and reduced energy intensity to support achieving universal access to energy.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%	0%	100%	0%	0%
Total green budget (DKK)		**DKK 60.8**		

Justification for choice of partners:

The key national partners have the relevant mandates and competences and are committed to the partnership at the highest level in the chosen areas of engagement.

Summary:

The Danish Government-to-government cooperation will provide training, knowledge exchange and capacity development to support Kenya's just and inclusive green energy transition with attention to socio-economic aspects and access to energy. Focus will be on long-term energy planning and modelling, integration of variable renewable energy, and energy efficiency, which will be key to operationalise Kenya's ambitious energy and development targets. This will also contribute to Sustainable Development Goal 7 on affordable clean energy, and the goals of the Paris Agreement on climate change.

Budget:

Outcome 1: Energy planning and modelling	DKK 19.5 million
Outcome 2: Integration of variable renewable energy	DKK 15.8 million
Outcome 3: Energy efficiency	DKK 8.7 million
Long-term Advisors	DKK 16.8 million
Total	**DKK 60.8 million**

Ministry of Foreign Affairs of Denmark (MFA)
Danish Energy Agency (DEA)

Kenya-Denmark Energy Partnership (KENDEP) 2025-2029

Country Programme Document

MFA file: Public 360 No. No. 24/22853

Contents

Abbreviations and acronyms

AMG	Danida Aid Management Guidelines
APRA	Accelerated Partnership for Renewables in Africa
Balmorel	Web based power market simulator (see link)
BOGA	Beyond Oil and Gas Alliance
CIF	Climate Investment Funds
COP	Conference of the Parties (to the UNFCCC)
CO_2	Carbon dioxide
CPI	Corruption perception index
DAC	OECD Development Assistance Committee
Danida	Danish International Development Cooperation
DEA	Danish Energy Agency
DEPP	Danish energy partnership programmes
DKK	Danish kroner
DSO	Distribution system operator
EE	Energy efficiency
Energinet	Danish Transmission System Operator
EPRA	Energy and Petroleum Regulatory Authority, Kenya
ESCOs	Energy Service Companies
ESMAP	World Bank Energy Sector Management Assistance Program
EU	European Union
GDP	Gross domestic product
GHG	Greenhouse Gas
GIS	Geographic Information System
GoK	Government of Kenya
GtG	Government to Government
GW	Gigawatt
HRBA	Human Rights Based Approach
HVDC	High Voltage Direct Current
IEA	International Energy Agency
IFC	International Finance Corporation
IFU	Investment Fund for Developing Countries (Denmark)
INEP	Integrated National Energy Plans
IRENA	International Renewable Energy Agency
JWG	Joint working group
KenGen	Kenya Electricity Generating Company, PLC
KAM	Kenya Association of Manufacturers
KETRACO	Kenya Electricity Transmission Company
KENDEP	Kenya-Denmark Energy Partnership
KPI	Key performance indicator
KPLC	The Kenya Power and Lighting Company PLC (Kenya Power)
LCPDP	Least Cost Power Development Plan, Kenya
LTA	Long-term advisor
MFA(LEARNING)	MFA Department for Evaluation, Learning, and Quality
MCEU	Danish Ministry of Climate, Energy and Utilities
MFA	Ministry of Foreign Affairs of Denmark
MFA(KLIMA)	MFA Department for Green Diplomacy and Climate
MOEP	Ministry of Energy and Petroleum of Kenya
MTP	Medium term plan
MTR	Danida Mid-term Review
NDC	Nationally Determined Contribution under the UNFCCC
NDCP	NDC Partnership
NGO	Non-governmental organisations
OECD	Organisation for Economic Co-operation and Development

PAG	Programme Advisory Group (for DEPP, consisting of the MFA, MCEU, and DEA CG as the secretary)
PANT	Human rights principles of participation, accountability, non-discrimination, and transparency
PD	Programme document
PPA	Power Purchase Agreement
PV	Photovoltaic
RE	Renewable energy
SAG	Strategic Advisory Group (for DEPP, consisting of the MFA, MCEU, and DEA CG as the secretary)
SC	Steering committee
SCADA	Supervisory Control and Data Acquisition
SDGs	Sustainable Development Goals
SSC	Strategic sector cooperation
SWOT	Strengths, weaknesses, opportunities, threats
TOC	Theory of change
TOR	Terms of reference
TSO	Transmission system operator
UNEP CCC	United Nations Environment Programme – Copenhagen Climate Centre
UNFCCC	United Nations Framework Convention on Climate Change
UPR	Danish acronym for the Council for Development Policy
VRE	Variable renewable energy
WB	World Bank

1. Introduction, context, strategic considerations, rationale, and justification

1.1 Introduction and background

This Programme Document (PD) describes the proposed Kenya-Denmark Energy Partnership (KENDEP) that is part of the proposed Danish Energy Partnership Framework Programme 2025-2029 (DEPP 2025[1] for its acronym), which also comprises country programmes in Brazil and India. This PD is based upon the current cooperation with key Kenyan government partners under the Strategic Sector Cooperation (SSC) in energy and consultations with national partners during a formulation mission undertaken by the Danish Energy Agency (DEA) to Kenya during 28 April - 3 May 2024. For further information on the formulation, approval, and implementation process, please refer to the Process Action Plan in Annex 8.

Sub-Saharan Africa is not on track to meet the SDG7 targets and by 2030 about 85% of people without access to electricity will live in Sub-Saharan Africa and only 3% of total energy investment is targeted Africa. Kenya is a frontrunner and one of few countries on track to meet the SDG7 targets[2]. Kenya has shown a remarkable commitment to achieve universal access to energy by promoting a low carbon development path based on renewable energy sources and advance towards a green economy, as outlined in *Kenya's Vision 2030*, and the *Green Economy Strategy Implementation Plan*.[3] It has set ambitious goals for its transition and is supported by the mission statement of the Kenyan Ministry of Energy and Petroleum (MOEP), the lead Kenyan partner for KENDEP - *"To facilitate provision of clean, sustainable, affordable, reliable, and secure energy services for national development while protecting the environment"* – also reflected in Kenya's NDC. In short, Kenya has the potential – as one of the few countries in Sub-Saharan Africa - to demonstrate how renewable energy can power the energy sector, achieve universal access to energy, and act as a driver for national socio-economic development. As such, Kenya has the potential to set a benchmark for other nations to follow.

Denmark and Kenya maintain a strong bilateral relationship as outlined in the Strategic Denmark-Kenya Partnership 2021-2025. With Kenya being a leading political and economic force on the African continent, strong Danish-Kenyan relations remain important as emphasised in the Danish government's new Africa Strategy "Africa's Century[4]".

Kenya shares Denmark's commitment to reaching the SDGs and both countries are focused on fighting climate change, poverty and inequalities. Kenya's efforts to tackle climate change and expand energy access match perfectly with Denmark's development cooperation goals, set out in the 'The World We Share".

Building upon the strong partnership developed through the SSC since 2022[5], the Kenyan government partners have expressed demand for a deeper and broader engagement including three long-term advisors (LTAs) posted with the MOEP for more day-to-day support. KENDEP will further leverage Denmark's expertise and experience in transitioning to clean energy and enable least cost power development to drive a green socio-economic transition and growth. DEA has considerable experience in making bilateral partnerships work, offering advice, and sharing knowledge on policies, regulations and operations. The engagement is supported by high-level

[1] So called because it starts in 2025. It was previously referred to as DEPP IV, including in the concept note to the Danida Programme Committee.
[2] See Press Release (link) and download/browse the Report here (link).
[3] Links to these are found here and here
[4] Link found here
[5] The SSC is planned to be completed by the end of 2024 and DEPP IV will widen and deepen this well-established partnership.

commitment evidenced by the signing of a Memorandum of Understanding (MoU) in September 2023 and a joint statement at COP28 in December 2023.

KENDEP will be funded by the Global Green Transition Envelope[6], which is a dedicated climate financing mechanism to support international development cooperation within climate mitigation and adaptation activities. The Programme will be implemented between 2025 and 2029, with an allocated amount of DKK 60.8 million.

1.2 Country context

Kenya's energy sector is integral to the country's long-term development strategy. The Kenya Vision 2030 sets out a long-term ambition of transforming Kenya into "*a newly-industrialising, middle income country where access to sustainable energy infrastructure is a cornerstone to achieve this*". The energy sector is thus recognised as one of the key enablers of sustainable economic growth, both as an enabler of socio-economic development and as a green sector in itself. Whereas Kenya imports its fossil fuels resources for some sectors, Kenya's electricity sector is primarily powered by domestic resources and is a regional leader in utilising renewable energy resources, with renewables from geothermal and hydropower accounting for nearly 90% of the energy generated. However, only 9% of Kenya's overall energy consumption is so far covered by electricity highlighting the immense opportunity to utilise domestic electricity production from renewable energy sources to meet the future energy demand of the growing young population and act as a development driver across all sectors of the society.

Kenya's main objectives for the power sector

At COP26, Kenya announced its aim for 100% clean energy in power generation by 2030, aligning with its conditional NDC target of a 32% reduction in greenhouse gas (GHG) emissions relative to the Business-As-Usual (BAU) scenario. The government is committed to accelerating the transition to clean energy and promoting energy efficiency. Kenya has set an ambitious target of achieving universal access to electricity by 2028. Kenya has made substantial progress in this area, doubling electricity access from 32% in 2013 to 75% in 2022. The demand for electricity has increased markedly, with a 9% increase in electricity demand and a 3% increase in peak electricity demand in 2021, driven by an expansion in GDP of about 8%. At the same time, Kenya has one of the highest electricity prices in Africa and has set the objective of reducing household electricity bills by 50%. This is of particular importance for poor households and communities, including for promoting reliable and affordable electricity, but also to make Kenya's industries cost-competitive through access to reliable and affordable energy.

Kenya main sustainable energy and climate targets

- 100% access to electricity by 2028.
- 50% reduction in household electricity bill by 2040.
- 100% clean energy in its electricity mix by 2030.
- 32% GHG emission reduction by 2030.

Thus, the bilateral Kenya-Denmark government cooperation will focus on the power sector i.e. affordability and reliability as well as ensuring that the green electricity is utilised to a higher degree in other sectors e.g. households including access to e-cooking, industrial processes which can convert to and utilise electricity, transportation etc.

Challenges

Even though Kenya has set ambitious targets and made considerable progress in terms of generating electricity from renewable energy resources, the historical evolution and current structure of the

[6] Formerly known as the Danish Climate Envelope

sector has led to two main challenges which the Kenyan government has put as the highest priorities for the sector - *affordability* and *reliability*.

On the one hand, affordability is challenged due to i) expensive power purchase agreements (PPAs), ii) high perceived investment risks for Independent Power Producers (IPPs) and iii) insufficient modelling tools and experience limiting opportunities to optimise the use of energy resources available. On the other hand, relatively high grid losses (i.e. 24.5%) and insufficient long-term planning challenge reliability. Currently, Kenya is experiencing regular power blackouts. In the first 6 months of 2023, customers were exposed to around 50 unplanned blackouts in average and there have been several nationwide blackouts in the last couple of years. Considering the future growth in electricity demand, there is an urgent need for i) strengthening capacities in power sector planning to help make the power infrastructure future ready, and for ii) enhancing capacity and tools available to run the power system with higher reliability in a context of growing variable energy resources.

Presently, the Kenyan power sector is structured in a way that puts s barriers to the energy transition. Kenya used to experience power shortages and in order to attract the necessary investments, long-term PPAs with relatively high electricity prices were entered into. Government-owned companies and IPPs in Kenya are influential stakeholders in the energy sector and they have demonstrated significant lobbying power. Many of the PPAs are still active and dictate high electricity prices. They are not easy to renegotiate or cancel as evidenced by the unsuccessful Presidential Task Force Review undertaken in 2021 and 2022. This pose a key challenge for providing more affordable and reliable energy to particular poorer households connected to the grid. It also demonstrates the importance of designing public tenders in the most cost-competitive way to provide the most cost-competitive energy prices to both consumers and industries.

The Kenyan government debt has accrued to a staggering USD 80 Billion and accounts for nearly three quarters of GDP and interest payments is eating up one quarter of revenue collected. This has an impact on the financial viability of public companies in key sectors such as Kenya Power and Lighting Company (KPLC). KPLC's financial situation for good or worse is thus impacting risk for private investors and the implementation speed of projects and government plans. Furthermore, as KPLC is the only offtaker of electricity, the current structure limits the options for ensuring competitive market mechanisms and in turn can hinder efforts to lower electricity prices. Without transparent competitive forces pushing for lower tariffs, consumers may end up paying more for electricity than they would in a more liberalised market. High electricity prices can serve as a barrier to utilising access gained through large electrification programmes e.g. for the poorest households, especially in rural areas. Even when the electricity grid is extended to these areas, the upfront connection costs and the ongoing expense of electricity can be prohibitive, leaving many without access to reliable power. Further, for low-income with access to electricity households the high cost of electricity limits opportunities for economic empowerment and upward mobility.

Unbundling the generation, transmission and distribution of power is a necessary step for restructuring the energy sector and was included in the Energy Act2019. This process has not yet been completed due to a combination of political, economic, and institutional factors. Unbundling the energy sector threatens existing power dynamics within KPLC and other related institutions, and decisions about restructuring may be influenced by short-term business or political considerations rather than long-term strategic goals. Another challenge is KPLC's financial instability, which is seen as a major barrier to unbundling. However, KPLC needs to see the opportunities for its business model so that unbundling will happen without undue delay in order for Kenya to grasp all the opportunities for a vibrant, transparent and market-based power sector.

Even though Kenya has ample solar and wind resources, financing is an obstacle for the private sector due to several aspects as seen in many African countries. Despite a fairly stable political

environment and economy, the political and commercial risks are seen as high - leading to expensive financing alongside difficulties with attaining finance to low interest rates and associated risks of borrowing in hard currency. The cost of capital can be two to three times higher in countries like Kenya than in advanced economies. The previous government enforced a moratorium on new generation projects, which has now been lifted, but there has been a period of 2-3 years with modest investments. Hence, de-risking of private sector investments through more transparent frameworks and regulation for renewable energy projects is in great need.

Kenya is currently undergoing political turmoil with President Ruto changing almost his entire cabinet and ministers in July 2024 after weeks of protest against a tax reform, which turned into demonstrations for the lack of prospects for the country's large youth population. Hence, the political level is under pressure to reform while ensuring socio-economic balance, which is a challenge to Kenya's future. It is crucial that the power sector is able to drive a just and inclusive social and economic development through affordable and reliable power.

International collaboration, such as KENDEP supported by Denmark, aims to enhance the capacity of the MOEP to integrate high shares of variable renewable energy (VRE), optimize power market operations, lower tariffs in the long term, and improve supply security to overcome the current challenges. This support is crucial for Kenya to meet its ambitious climate and development targets. A reliable grid supplied with affordable renewable energy sources is foundational for fulfilling Kenya's development agenda, including universal and affordable access to electricity, sustainable economic growth, job creation, poverty alleviation, and improved education and health services.

Institutional framework

Since 2018, Kenya has introduced a series of energy and power sector-related legislations and strategies to support its overall development agenda. These initiatives include the National Energy Policy 2018, the Energy Act 2019, the Least Cost Power Development Plan (LCPDP), the Kenya National Electrification Strategy (2018), the Kenya National Energy Efficiency and Conservation Strategy (2020), the National Bio Energy Strategy (2020), the National Climate Change Action Plan II (2018-2022), the National Clean Cooking Transition Strategy (2024-2028), the National Electric Cooking Strategy (2024), the Draft Renewable Auctions Policy (2022), and the Ministry of Energy's Strategic Plan (2023-2027). The Energy Act 2019 represents a significant milestone, consolidating laws and regulations related to energy based on the national energy policy to create an enabling environment for Kenya's low-carbon development agenda.

The energy sector is under the direction of MOEP, the government body responsible for the formulation and implementation of policies related to energy- and petroleum sectors. The ministry is divided into two State Departments – one for energy and one for petroleum. Its mandate includes ensuring the provision of adequate, reliable, and cost-effective energy to support Kenya's socio-economic development. Overall, MOEP is tasked with promoting sustainable and environmentally friendly energy practices, as well as managing the country's petroleum resources to ensure energy security and economic growth. The State Department for Energy, which is the partner organisation for KENDEP, oversees the development and regulation of renewable energy sources, the enhancement of energy efficiency, and the expansion of electricity access to achieve universal connectivity.

The Energy and Petroleum Regulatory Authority (EPRA) oversees both the energy and petroleum sectors. EPRA's mandate includes licensing and regulating energy service providers, setting and reviewing tariffs and prices for energy services, and ensuring compliance with standards and regulations to protect consumer interests. The authority also promotes the development of renewable energy, energy efficiency, and conservation. EPRA aims to create a conducive

environment for investment in the energy sector, enhance service delivery, and support the government's goals of ensuring sustainable, reliable, and affordable energy for all Kenyans.

Under MOEP, several State companies manage i) the generation (Kenya Electricity Generating Company (KenGen), and the Geothermal Development Company (GDC)), ii) the transmission (Kenya Transmission Company (KETRACO), and iii) the procurement, transmission and distribution of electricity (Kenya Power and Lighting Company (KPLC), as illustrated in Figure 1.1 below.

Figure 1.1: Power sector institutional structure

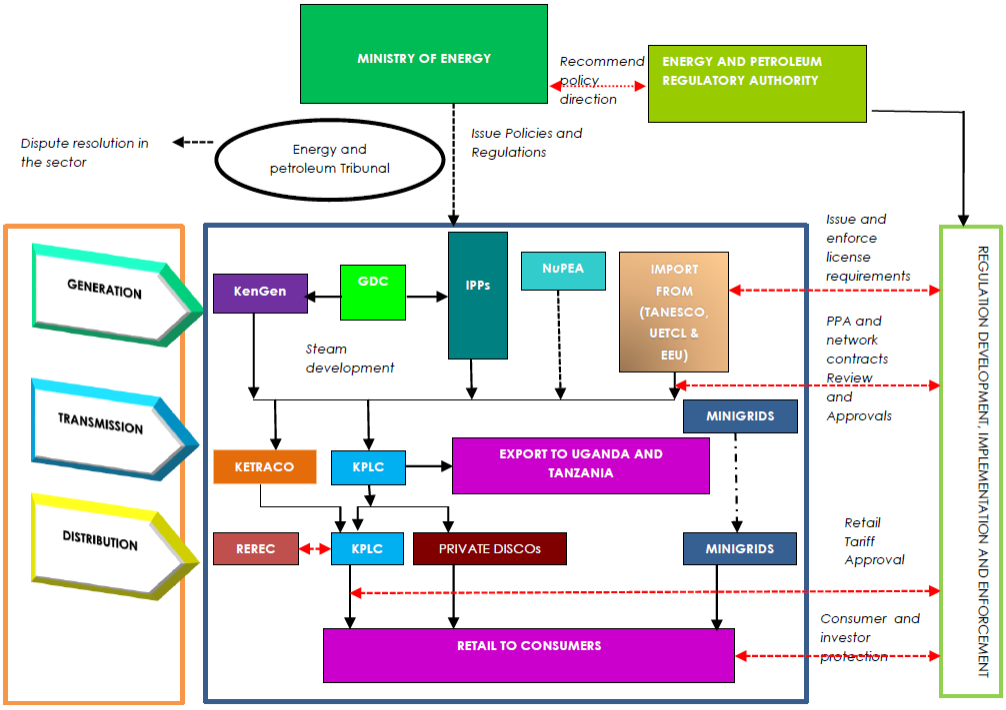

Figure 1 Power Sector Institutional Structure

1.3 Results and lessons learned from the SSC

The cooperation through the SSC project started recently in 2022 but has already delivered results on both technical and strategic levels, leading to a strong partnership based on trust with Kenya counterparts, which creates a strong foundation for further collaboration. The level of engagement and competences of the Kenyan partners, has allowed for a high degree of co-developed activities under the SSC. This suggests co-creation between experts as a key methodology going forward.

The SSC facilitated frequent meetings between ministers from both countries fostering strong diplomatic ties and high-level engagement, including clear demand for more in-depth support from the DEA. Further, through green diplomacy discussions the SSC also helped expanding partnerships with Kenya in two international other new alliances and partnerships, namely, the Africa-focused Accelerated Partnership for Renewables in Africa (APRA) with Kenya playing a leading role and the Beyond Oil and Gas Alliance (BOGA), showcasing Kenya's commitment to green development. The SSC also facilitated collaboration with other stakeholders like IEA, IRENA, EU and GIZ. This broader engagement creates a stronger support network for Kenya's energy transition.

In relation to **energy planning**, Denmark has developed close cooperation with Kenyan authorities under the SSC to improve their long-term energy planning. A core group of government staff has been established to strengthen the national power sector plan – the Least Cost Power Sector

Development Plan (LCPDP), and develop a Kenya specific power sector model. The SSC conducted capacity building efforts including dedicated trainings, demonstrated substantial interest from the Kenyan partners in applying some of the Danish energy planning approaches, which include supporting Kenya in building a new energy optimisation model (optimising supply and demand of electricity) by using Kenya's existing modelling data.

This sets the stage for a solid cooperation on energy planning and the large and engaged group of government staff ensures that the capacity building is sustainable and the LCPDP group has already started internal training for new members of the group.

In relation to **power system operations**, challenges with integrating a higher share of variable renewable energy and simultaneously reduce the number of electricity outages have been addressed through several expert twinning meetings between the Kenyan National Control Centre and the Danish Transmission System Operator (Energinet) as security of supply has worsened over the past few years and does not meet Kenya's own targets. Capacity development needs have been identified within areas such as Power Quality & System Stability, Voltage and Reactive Power control, HVDC Operations and ancillary services. Simulation of system performance under SCADA[7] real-time conditions and Restoration of the system following a blackout. These needs will be addressed in KENDEP and support relevant Kenyan authorities to enhance their institutional capacity within these areas.

In relation to **electricity markets**, the SSC project hosted four extensive workshops to help support the Energy and Petroleum Regulatory Authority (EPRA) in facilitating discussions across government stakeholder on the selected components of establishing national markets for electricity. With draft regulations from EPRA as point of departure a shared vision for the Kenya market was achieved and EPRA received expert feedback and recommendations on the regulations. Introducing electricity markets in Kenya will constitute a major reform of the electricity sector and establishing adequate regulation for market-based electricity procurement is key for attracting investment and ensure least-cost energy production based on cheapest resources i.e. variable renewable energy.

Lessons learnt

Despite relatively few years of operation, the SCC project offers valuable insights and lessons learnt to deepen the cooperation and guide KENDEP implementation. It has been evident that effective collaboration with Kenyan partners with varying perspectives requires significant investment in ensuring everyone is on the same page through a collaborative process. The success of DEA support to energy planning, where a complex group of government staff had to be formed and aligned exemplifies this. These efforts will be continued in KENDEP. In general, Kenyan partners have limited resources – financially and human - to fully implement their many ambitious goals and strategies. While the SSC project offered support, it was necessary to prioritise activities based on available human resources. With the larger KENDEP programme more day-to-day support can be offered by the LTAs, which will strengthen the cooperation and provide closer support to activities needed to operationalise Kenya's ambitious targets and policies.

The technical discussions and capacity development activities under the SSC have revealed a very high competency level among the Kenyan partners. Yet, knowledge and expertise regarding fluctuating renewable energy sources need to be enhanced. As part of the capacity development efforts, the Kenyan modelling data was compared to similar countries revealing that Kenya is using unrealistically low input price for gas and significantly higher prices of solar and wind energy. This discrepancy could lead to expensive solutions, harming both the climate and access to affordable electricity.

[7] Supervisory Control and Data Acquisition see link

Lessons from the SSC project also showed that it was beneficial when Kenyan partners led the strategic and operational discussions as it fostered strong ownership. KENDEP will adopt this approach, enhanced by LTAs to strengthen the institutionalization of deliverables, training, and co-implementation.

1.4 Alignment with Danish priorities and strategic considerations

KENDEP is guided by the Danish Government's ambitions to reduce global GHG emissions and promote a just and inclusive green transition. It directly responds to Denmark's Strategy for Development Cooperation 'The World We Share'[8] stating that Denmark must "*Assume international leadership within reductions, green transition, and access to clean energy*." Access to clean energy is a precondition for poverty reduction, economic growth and employment as well as education, gender equality and health (see further in Annex 1 Context Analysis). Further, the modality of government-to-government (GtG) cooperation on energy is at the heart of the efforts to promote green transition and underpin Danish climate diplomacy.

On 26 August 2024 the Danish government released its new Africa Strategy entitled "Africa's Century" outlining a new approach to the cooperation with African countries. Denmark's presence in Kenya will be enhanced by establishing the Embassy in Nairobi as a regional hub, with a regional innovation centre to facilitate collaborations in innovation and entrepreneurship in 2026, and expanding cooperation in key sectors, ultimately aiming to launch a Green Strategic Partnership with Kenya. KENDEP can play an important role in providing knowledge on how to support Kenya and other African countries in their electrification of societies. This is essential to most innovative sectors that requires high levels of digitalisation, which again demand high level of additional energy consumption and dependency on affordable and reliable energy supply.

Equal partnerships is a lead principle in the new Africa strategy and the strategic partnership is seen as a good example of this. The key for KENDEP to ensure an equal partnership on energy between Denmark and Kenya is to continue the approach of the SSC project where all activities are conducted on a peer-to-peer basis with Kenyan partners focusing on co-developing Kenyan solutions for Kenyan challenges in order to ensure engagement, ownership, and sustainability of the outcomes.

The Danish Embassy in Kenya will develop a new Strategic Framework for the Denmark-Kenya Partnership for 2026 to 2030, as the current framework is ending in 2025. The expectations are that the climate and energy agenda will be more pivotal, and KENDEP will be well aligned with the new programme and establish synergies to relevant government partners and development partners. Under the 2021-2025 framework, renewable energy and energy efficiency (EE) have been priorities for Denmark's engagement in "*promoting green, sustainable and inclusive economic growth and decent jobs with an emphasis on youth as well as market opportunities for Danish companies and investors with relevant solutions"*.[9]

For KENDEP the new Africa Strategy highlights the continued and improved coordination between Embassy programmes and projects as well as a need for more resources devoted to engaging with other development partners going forward.

Coordination with other Danish energy engagements in Kenya

The initial work on the programming of a new phase of the overall strategic framework for the Denmark-Kenya Partnership has just been initiated and energy is among the key sectors considered at this stage.

[8] And the related Danida how-to-notes (link) operationalising the Strategy.
[9] Strategic Framework Denmark -Kenya Partnership 2021-2025.

Denmark is supporting multiple multilateral initiatives in Kenya with synergies to the proposed KENDEP, including:

- IEA: Collaborating on data, policies, and implementation of energy efficiency (EE) and clean energy transitions.
- SEforALL**:** Supporting Kenya's EE strategy implementation and aligning with KENDEP for synergistic efforts.
- UNEP CCC**:** Active in off-grid energy and EE.
- IRENA: Complementing KENDEP with socio-economic studies on renewable energy. And also ensential in the Accelerated Partnership for Renewables in Africa (APRA) where KENDEP will ensure coherent coordination.
- Multi-country partnership: Supporting off-grid energy market development for bio-digesters.

These collaborations aim to improve EE, GHG emission reduction and socio-economic parameters across various sectors in Kenya through knowledge-sharing, policy development, and practical implementation.

Danish private sector engagement

The Kenyan Government is proactively seeking private investment for their energy sector to achieve its goal of 100% renewable energy and universal access to energy. This priority is also as Kenya will host a regional APRA Investment Forum co-led by IRENA in October 2024 on this topic. Sub-Saharan Africa only attract 3% of global energy investment despite it is the region lacking most behind to achieve SDG7 and with best potential for solar power.

Kenya is generally considered the economic, commercial, financial and logistics hub of East Africa and the environment for private sector engagement in the Kenyan energy sector is relatively good in a Sub-Saharan context. According to the Strategic Denmark-Kenya Partnership 2021-2025, Danish companies are investing in Kenya due to Kenya's strategic location, diversified economy, a relatively well-educated and entrepreneurial workforce, and status as a regional financial centre. Danish companies and institutions have know-how and solutions relevant for the transition towards a green economy. Both public and private investment partners are present in Kenya and engaged in concrete projects including with IFU who has significant investments in Kenya's energy sector. Already in the mid-1990s Kenya opened its market to IPPs and is considered to have one of the most developed power sectors in sub-Saharan Africa. Kenya benefits from favourable factors including: an active private sector; Kenya Power's long track record as a creditworthy off-taker; and abundant renewable energy resources, especially geothermal, wind and solar. Denmark has a good reputation with government agencies and Danish companies are known to be reputable partners delivering high quality goods and services. The Trade Council has always received support from government stakeholders when introducing Danish companies. The confederation of Danish Industries (DI) has one of their international offices in Nairobi, and IFU also has a representative based in Kenya. Though an arms-length distance to Danish commercial interest will be kept, it will be important to further private sector investment and application of relevant technologies in the Kenyan energy sector.

1.5 Rationale and justification

Kenya is a frontrunner country in Sub-Saharan Africa demonstrating how a green energy transition can be mutually reinforcing for achieving universal access to reliable and affordable electricity, including improving uptake of clean cooking solutions. The country is one of few countries in Sub-Saharan Africa demonstrating significant progress to achieve SDG7 by 2030 while maintaining its

ambition of maintaining renewable energy sources to power its grid as the least-cost option for the country. However, the country is already facing many challenges with its electricity grid and entering the next stage of adding more VRE will require new institutional capabilities, a new market-based approach and large investments in infrastructure. This will require new data and scenario modelling to make informed long-term planning and decisions to meet the increasing future energy demand in Kenya. The SCC project has demonstrated that it can provide some of the needed knowledge for Kenya to progress on the operationalisation and implementation of its ambitious NDC and energy targets.

By supporting Kenya's energy sector transformation, the programme contributes to achieving several SDGs.

Direct contribution

SDG 7: Affordable and Clean Energy – The programme will directly work with the MOEP to support long-term least-cost power sector planning. This collaboration promotes the use of least-cost development strategies, ensuring access to affordable, reliable, and sustainable energy for all Kenyans. By supporting effective VRE integration to the grid, through transparent auctions and power system stability, the programme will contribute to attract investors in RE and then enable an increased share of RE in the energy mix.

SDG 13: Climate Action – The programme is contributing to both avoided and decreased GHG emissions/climate change mitigation through integrating climate change perspectives into energy planning and modelling.

SDG 1: No poverty – through least-cost developments, increased integration of VRE, improved security of supply and development of electricity markets the programme will support access to affordable and reliable electricity and contribute to universal access to electricity.

SDG 17: Partnerships for the goals – The programme is a bilateral partnership between Denmark and Kenya, fostering collaboration and ensuring coordination with other bilateral donors and multilateral organizations. Furthermore, the programme will reinforce South-South cooperation, by engaging in triangular learning and exchanges of experience between countries engaged in DEPP 2025 framework programme (i.e. Brazil and India) and beyond (e.g. South Africa, Ethiopia and Indonesia on the Just Energy Transition Partnership). This directly promotes the global partnership for sustainable development envisioned by SDG 17.

SDG 5: Gender Equality – MOEP launched its Gender Policy on November 1st, 2019, as the first of its kind on the African continent. KENDEP aims to support the Kenyan efforts on mainstreaming gender perspectives in the energy sector, e.g. related to clean cooking.

Indirect contribution

SDG 8: Decent work and economic growth – through enhanced planning and improved framework conditions for VRE a well as EE measures, KENDEP indirectly contributes to job creation in the energy sector and industries. Ultimately, affordable and reliable access to modern energy can drive development in all sectors of society e.g. health, education, industries, retail and households and thus support job creation and socio-economic growth broadly in Kenya.

Justification against OECD DAC criteria

The justification for the proposed DEPP 2025 Programme based on the OECD DAC criteria of relevance, coherence, effectiveness, efficiency, impact, and sustainability is elaborated in the DEPP 2025 Framework Programme Document.

1.6 Target groups and cross-cutting concerns

Kenya is actively pursuing an electrification strategy aimed at powering all sectors, including lighting, cooling, cooking, and transportation, with green electricity. In this context, KENDEP support in areas such as least-cost planning and efficient power supply can greatly bolster the Government of Kenya's strategy implementation, ensuring both the affordability and accessibility of power, particularly for marginalized and vulnerable groups. Further, the decarbonising of the electricity sector has a huge potential for reduction of GHG emissions and associated air pollution and health costs. As the RE share is increasing, conventional energy technologies and their associated environmental impact and health risks from e.g. air pollution will be reduced. Reduced health risks will benefit most parts of the population that are not able to prevent themselves from exposure of pollutants, cannot afford health care and are without – or have poor social security.

While access to affordable, reliable, sustainable, and modern energy for all is a Sustainable Development Goal (SDG7), access to renewable energy is not a human right in itself. But given the role of clean and sustainable energy as a broader enabler of human and economic development, it is strongly interconnected with basic rights such as the right to life, food, health, shelter, education, etc. The Human Rights Based Approach (HRBA) is based on four principles i.e. Participation, Accountability, Non-discrimination, and Transparency (PANT). These are integral parts of good governance in Danish government and thus also part of how DEA implements its international partnerships[10].

KENDEP will specifically be supporting transparency and good governance in the power sector and make information available where possible. Competitive tendering and auction frameworks for renewable energy projects will lead to more transparent tendering processes where all bidders will have access to the same information and award criteria are clear including guidelines for complaints. Drawing on Denmark's experiences with public consultation, compensation schemes for affected communities can be part of auction criteria. Preparation of tendering utilizing relevant aspects of Danish experiences on how to de-risk projects incl. spatial planning, stakeholder dialogues (businesses, NGOs, educational institutions, local communities and interest groups) etc. are key to ensure that an HRBA approach is followed. DEA will in the partnership with national partners emphasise the importance of ensuring that all relevant and potentially affected rights holders will be included in consultation processes and potential adverse impacts addressed in the long-term energy planning and regulations.. KENDEP capacity development activities may also include modules on HRBA in its training activities and consider social and environmental impacts in the long-term energy planning.

Despite progress, gender disparities persist within MOEP. The number of women employed in the energy sector in Kenya is low and the green energy transition could open new possibilities of improving the gender balance. In KENDEP-partner institutions the shares of male employees outnumber females, especially at management level. One immediate approach for KENDEP is to target a gender balance in capacity development activities (including workshops and study trips). The programme will monitor the gender balance in capacity development activities and undertake a dialogue with partners and identify remedial factors as relevant if there is an imbalance. The reporting on capacity development activities will be gender disaggregated, and the Steering Committee may discuss potential strategies to address gender issues in the programme. Further, KENDEP will strengthen institutional capacities for gender mainstreaming in accordance with the MOEP's gender policy objectives ensuring that initiatives aimed at improving the energy framework thoroughly examine and address gender-related issues. Furthermore, gender equality will also be

[10] As further explained in the "Forståelsespapir om det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder.

considered related to affordability and reliability for poor households and female-led households where unreliable and expensive access to energy is a challenge and potential adverse gender impacts when new green energy investments is planned.

KENDEP support to Kenya's shift towards renewable energy could also lead to job creation. A study[11] (see box 1.1) estimates an average of 344,000 green jobs could be generated by 2040, if Kenya advances its objective of 100% clean energy. However, capitalising on this potential requires addressing two key areas: skills development to equip the workforce and streamlining policies to de-risk implementation of renewable energy projects. Scaling up the market for RE technologies provides significant opportunities for localising parts of the value chain, such as through local manufacture and/or assembly of renewable energy and energy efficiency technologies, with the associated technology transfer having the potential to come with additional positive effects to the economy. KENDEP, through strengthening and enabling environment for the deployment of RE, is therefore expected to contribute to job creation, which may directly and indirectly benefit youth. The engagement of universities in capacity development activities can also help place further emphasis on the job creation aspect, as will engagement with e.g. industry associations such as Kenya Association of Manufacturers (KAM).

1.7 Choice of partner institutions

DEA will be the implementing partner for Denmark's support through KENDEP. Its experience and capacity in implementing government-to-government energy programmes is presented in the DEPP 2025 Framework Programme Document and its Annex A.

KENDEP will continue working with the same partners as in the SSC project to benefit from previous knowledge of and working relationships and to consolidate the achievements. The MOEP will be the Kenyan lead partner for the programme and will with its associated state agencies and state-owned enterprises (EPRA, KETRACO, KPLC) lead the outcomes under their area of responsibility with the active involvement of other relevant stakeholders. The Energy Act 2019 firmly positions the MOEP as the government body that has the overarching responsibility for the energy sector in Kenya. Therefore, MOEP is considered the most relevant bilateral partner as it has the overall responsibility for policy, planning and decision-making as well as oversight of all the relevant government entities involved in development of the Kenyan power system. The roles of key institutions are outlined in Annex 2.

There is agreement with MOEP that all capacity development activities must be supported by capacity development plans including how it is institutionalised. MOEP has outlined key requirements for the institutional structure, roles and human resource areas such as competence development in its Strategic Plan 2023-2027. KENDEP is supporting MOEP in fulfilling this strategy.

KENDEP will also involve the Danish Embassy in Denmark through the Energy Sector Counsellor and the proposed LTAs, as well as DEA external service providers as presented in the DEPP 2025 Framework Programme Document (i.e. Energinet and consortium partners[12]).

2. The DEPP 2025 Kenya Country Programme - KENDEP

2.1 Programme Objective

The overall objective of the programme is: "*Kenya's just and inclusive green energy transition supported through strengthened partnership between Kenya and Denmark for an enabling framework for a cost-efficient electricity*

[11] RTI (2022): Measuring Green Jobs Creation in Kenya (link)
[12] See further in Annex A of the DEPP 2025 Framework Programme Document.

system with increased affordability, reliability and security of supply and reduced energy intensity to support achieving universal access to energy.".

Figure 2.1: KENDEP Programme structure

Lead partners	Outcomes	Outputs	Potential other stakeholders
MOEP	1. Energy planning and modelling	1.1 Modelling capacity 1.2 Integrated national energy planning framework 1.3 Regulatory framework	• Kenya State House • Strathmore university • Selected counties or council of governors[13] • WB – SEforAll
EPRA/ MOEP / KETRACO/KPLC	2. Integration of variable renewable energy	2.1 Electricity market regulation framework 2.2 System operation	WB – GIZ – EU – AFD
MOEP	3 Energy efficiency	3.1 Energy intensive industries/green industrialisation 3.2 Grid loss reduction	• EPRA, KETRACO, KPLC • Kenya Association of Manufacturers (KAM) • IEA – SEforAll - WRI

2.2 Summary description of the Programme

The structure of KENDEP is illustrated in Figure 2.1. Strategic engagement with policymakers and stakeholders remains a cornerstone of the programme. KENDEP will leverage existing partnerships and strategic engagement strategies to influence policy decisions and foster collaboration across the energy sector. The addition of LTAs has been specifically requested by MOEP in order to be able to provide more in-depth support on the ground in Kenya.

The outcomes and outputs of KENDEP are aligned with the MOEP Strategic Plan 2023-2027 and addresses some of the key "lessons learned" from the previous strategy 2018-2022 e.g. the following excerpts:

- There is a need for wider stakeholder consultations and analysis before adoption and implementation of new programmes/projects, policies and global commitments and obligations. (General approach in DEPP activities and thus relevant for all three outcomes)
- Systematic planning is necessary when setting targets for projects where timelines required for planning, designing, tendering, and construction must be taken into account. (Outcome 1)
- There is a need to introduce an ancillary services market to optimize integration of Variable Renewable Energy (VRE) in the power system. (Outcome 2)

[13] The Council of Governors is comprised of the Governors of the forty-seven Counties. The main functions are the promotion of visionary leadership; sharing of best practices and offer a collective voice on policy issues; promote inter – county consultations; encourage and initiate information sharing on the performance of County Governments with regard to the execution of their functions; collective consultation on matters of interest to County Governments.

- Collaboration between the Ministry of Energy and Petroleum and the relevant Ministries, Counties, Departments and Agencies (MCDAs) is key in enhancing efficiency of permits (an opportunity for the KENDEP team to also ensure compliance with environmental and social safeguards as per objectives of the Government of Kenya (GoK), approvals and licenses for timely investments in the sector (Outcomes 1, 2, and 3)

Outcome 1: Energy planning and modelling

"MOEP has robust systems and procedures for planning least-cost low-carbon energy pathways and effective regulations supporting increased share of renewable energy (RE) in the energy mix and universal access to reliable and affordable energy".

KENDEP will expand the energy planning and modelling cooperation. The focus will be on:

- Improving power sector modelling by introducing a least cost optimisation tool into the LCPDP process to reflect more accurately specific energy resources and optimise with demand in more detail (e.g. hourly basis)
- Enhancing energy demand data gathering and analysis to ensure that LCPDP can consider future higher energy demand (e.g. eCooking, electric mobility, hydrogen etc.) while ensuring least cost low carbon development and security of supply.
- Supporting strengthening of the planning framework for the integrated national energy plan (INEP).
- Mapping renewable energy resources, grid coverage and distance to communities to localize cost-effective solutions for access to electricity and clean cooking.
- De-risking approaches for tendering and auctioning to allow transparency, facilitate inter-ministerial consultations and improve community engagement.
- Assess need and time for social consultation and community engagement as grid expansion and renewable energy projects are planned, including co-benefit sharing schemes.

KENDEP strengthens Kenya's energy sector through a strategic capacity development approach. An embedded advisor within the MOEP will provide daily support, championing a dedicated planning unit within the renewable energy directorate. This initiative enhances internal expertise and streamlines the Least Cost Power Development Planning (LCPDP) / Integrated National Energy Plan (INEP) processes, leading to more informed and inclusive energy sector decisions and policies that better address the needs of marginalized groups. A strengthened power planning process also fosters a diverse power production mix, improving climate adaptation by providing flexibility against seasonal changes and droughts.

KENDEP will explore supporting energy devolution (county level) through dialogue with MOEP, prioritizing Danish assistance and coordinating with development partners active in county-level energy planning and the Governance team at the Embassy of Denmark, which co-chairs the Devolution Donor Working Group in Kenya.

Building on past modelling efforts, KENDEP will prioritise the development of customized technology catalogues, tailored specifically to Kenya. The technology catalogue can be widely utilized by ministries, universities, NGOs, and other stakeholders. It will facilitate informed and transparent decision-making based on the best available knowledge, thereby enhancing energy sector planning focused on affordability and reliability. Ultimately, this will benefit low-income households, by potentially reducing consumer costs and making e.g. reduced tariffs for e-Cooking attainable. A Geographic Information System (GIS) will be utilized to map renewable energy resources, grid access points, large consumption centres, and unserved rural areas. This visual tool will guide decision-makers in planning electricity access and serve as a valuable input for overall power planning.

To achieve Kenya's ambitious energy targets, KENDEP will enhance the overall policy framework and support improved coordination across government institutions. By working with both the MOEP and the Economic Council of Advisors Climate Team at the State House, KENDEP will bridge the gap between technical work and political action, ensuring high-level support for feasible and impactful initiatives. This includes de-risking approaches for tendering and auctioning to provide a stable and transparent framework for private investors, particularly benefiting local and vulnerable communities. Improved communication between MOEP and State House will further strengthen KENDEP's activities and highlight results to the highest political level. This collaboration will also provide a platform for the energy sector to contribute recommendations to the Kenyan NDC process and the African Group of Climate Negotiators. The LTA request from the State House has been discussed with the Principal Secretary of MOEP when he visited Denmark in March 2024 and agreed with MOEP Secretary for Renewable Energy during the wrapping-up of the formulation mission on 03 May 2024.

Outcome 2: Integration of variable renewable energy and power market

"Transparent regulatory framework, in line with international governance standards, for efficient, reliable, and market-based integration of variable RE generation adopted."

The programme will build upon previous efforts to define and develop a roadmap for market reforms in Kenya's power sector. Emphasizing transparency and alignment with international standards, KENDEP aims to improve national capabilities and knowledge for developing and implementing a robust regulatory framework that fuels the efficient, secure, and market-based integration of renewable energy generation. By drawing on best practices from Denmark and its partners, the programme seeks to:

- Facilitate investment and innovation, while simultaneously improving power system operations through market-based mechanisms.
- Continue its commitment to stakeholder engagement by focusing on capacity development for optimizing power system operations and grid management.
- Further strengthening of the Kenyan power market and developing a market-based integration of VRE to enable least-cost power prices for consumers (affordability)
- Strengthen the planning and utilization of interconnectors and transmission lines to ensure reliable electricity access for all and enhance climate adaptation by facilitating the transfer of electricity across regions and borders.

The market-based integration of VRE will be critical to enhance reliability of electricity but also challenge the current expensive power purchase agreement which will be key to lower the high electricity tariffs by 50% as is a stated objective by Kenya.

An LTA will be embedded within the MOEP in the State Department for Energy (but expected to be working significantly with Kenya Power and KETRACO). Besides day-to-day knowledge sharing, the LTA will also ensure demand driven use of Energinet and DEAs expertise.

Outcome 3: Energy efficiency

"Data-driven energy efficiency and demand-side management strategies approved, paving the way for stronger policies and regulations, reducing grid loss, and impactful energy-saving measures across Kenya benefitting end-consumers".

The programme will actively explore opportunities to expand into new areas, such as promoting energy efficiency through reducing system losses and supporting demand-side management strategies, which could contribute to lowering energy costs, which especially will benefit low-income households that are more sensitive to energy price fluctuations. The Kenyan government has expressed interest in cooperating with DEA in the following areas:

- Identification and reduction in barriers to specific electricity consumption e.g. e-cooking adoption in households and conversion to electricity in selected industries.
- Reduction of systems losses, which could contribute to lowering tariffs. Today expensive electricity is lost in the grid leading to higher system costs.

The Government of Kenya has great ambitions to progress on clean cooking though increased use of electricity – eCooking – which will have a direct positive impact on women, who are often primarily responsible for cooking and managing household energy use. Furthermore, the potential for identifying productive uses of electricity e.g. electric mobility, hard to abate industry sectors, green hydrogen etc. will be analysed to reduce imports of fossil energy sources and potentially establish exports of high value energy products. More productive use of electricity also has the potential to create new economic opportunities including for low-income households and be a driver of economic empowerment, contributing to poverty alleviation, job creation, and sustainable development.

This commitment to exploring innovative solutions across diverse sectors underscores KENDEP's mission to drive sustainable energy solutions for Kenya's future.

3. Theory of change and key assumptions

3.1 Theory of Change

The narrative Theory of Change (ToC) can be summarised as:

If Denmark contributes grant funds to KENDEP.

And if the Danish Energy Agency serves as an effective and efficient implementing partner for this cooperation.

And if KENDEP engages into partnerships in energy planning, VRE integration and energy efficiency with MOEP, EPRA, KETRACO, as well as KPLC, who have the relevant mandates and a strong continued commitment to the partnership.

Then partner institutions will be more effective in driving a just and inclusive green energy transition, strengthening framework conditions for achieving low carbon development, implementing the Paris Agreement on climate change and continuing upscaling and realising their NDC goals. [14]

Then, partner institutions will be able to deliver affordable and reliable energy access to energy consumers needed for achieving universal access to energy powered by renewable energy sources, where particularly poor households will rely on cheaper energy tariffs to transition away from current use of polluting fuels e.g. biomass.

Output level:

If DEA collaborates closely with MOEP, EPRA, KETRACO, as well as KPLC, leveraging its core competences, best practice knowledge, and learning-based institutional capacity development approaches.

And if these collaborations entail a series of targeted activities including workshops, peer-to-peer exchanges, embedded LTAs, triangular exchanges, and delegation visits including in Denmark.

[14] The cause effect chain is not linear.

And if these activities are strategically designed to address the specific needs of partners, focusing on planning, strategies, regulatory, gender balance, institutional, and technical measures.

And if this is done through sharing experience on medium and long-term just, inclusive, and green transition in the energy sector.

And if Kenyan partners strive for triangular synergy between INDEP and other initiatives in India in support of its just and inclusive energy transition and climate action.

And if Denmark strives for synergy between KENDEP and Denmark's multilateral energy and climate cooperation such as with the International Renewable Energy Agency, the World Bank, and others.

And if a multi-dimensional poverty approach and human rights principles underpin the cooperation as a whole.

Outcome level:

Then, scenario-based energy plans that demonstrate the most cost-effectiveness path towards a just, inclusive and green energy transition can be instrumental in building consensus for long-term energy planning. These plans drive the transition forward, ensuring that future power demand for households and industries sustain growth opportunities and improve poor households' well-being aligned with the Paris Agreement.

Then, Kenya's robust strategies, as well as regulatory and legal frameworks for RE and EE, and power system optimisation facilitate and secure investments into RE and EE based on competitive and transparent tenders and consultations of local communities to allow a green transition with universal access to energy in Kenya.

Then, favourable conditions are set for an increased and sustained RE share in Kenya's energy mix and a reduced energy intensity which demonstrate that future energy demand and 100% access to modern energy can be met by renewables as the most cost-efficient pathway and key to lower energy tariffs for poor households.

Impact level:

And then a long-term contribution has been made towards a resource-efficient electricity system, ensuring affordability, security, reliability, and quality of power supply in Kenya benefitting more than 56 million people.

And then a long-term contribution has been made towards a socially just, inclusive, and green transition and to sustainable growth leading to job creation and resilient development for people in Kenya in areas of energy transition.

3.2 Key assumptions and drivers

Several key assumptions are made regarding the political support from the Kenyan government, capacity development efforts by DEA, and the collaborative partnerships formed between DEA and Kenya partner institutions.

Political Support:

- Kenya government's sustained political support for NDC targets and related policy initiatives related to transparent governance of the renewable energy sector and universal access to energy.
- Maintained climate-diplomacy relations that support Kenya in addressing both climate action and a just energy transition.

- Denmark and Kenya continue to share the necessary data and methodological approaches.
- Kenya ability to manage economic stability (currency, debt, etc.) to attract international investments.

Capacity Development:

- KENDEP can provide additionality in a dynamic field with the many development partners present in the Kenya energy sector due to its G-t-G approach.
- KENDEP can strategically support transformational change aligned to Kenya's NDC and SDG targets and related national development policies and strategies.
- KENDEP can share technical data knowledge and address broader governance topics such as socio-environmental impacts of renewable energy, access to reliable and affordable energy to poorer householders and open/transparent tender processes to attract international investors.

Collaborative Partnership:

- Kenyan partners engage effectively throughout the programme and value peer-to-peer exchanges of good practice and paths to avoid.
- Kenyan partners invest their own resources in pursuing the ambitious targets of the cooperation within energy planning, integration of VRE, and energy efficiency.
- Effective governance and accountability mechanisms (including the Steering Committee), continued attention to assumptions and risks during implementation to ensure continued alignment to Kenya priority needs coupled with effective adaptive management.

4. Results framework

The overall objective of the programme is: "*Kenya's just and inclusive green energy transition supported through strengthened partnership between Kenya and Denmark for an enabling framework for a cost-efficient energy system with increased affordability, reliability and security of supply and reduced energy intensity to support achieving universal access to energy*".

The programme is expected to deliver three outcomes in the areas of energy planning, variable renewable energy integration and energy efficiency, as presented in the results framework in Table 4.1 below (see Annex 3 for the output level results framework).

Transitioning beyond SSC, DEA expands into new partnership areas related to renewable energy frameworks and energy efficiency. Baselines for capacity-development outputs will be established through capacity needs assessments conducted prior to capacity-development activities. The DEA GC operational manual will include a guide for a structured approach to capacity needs assessment, capacity development planning and monitoring capacity development.

Table 4.1: Results Framework at Outcome level for KENDEP

Programme		**Kenya-Denmark Energy Partnership 2025-2029**	
Programme Objective		Kenya's just and inclusive green energy transition supported through strengthened partnership between Kenya and Denmark for an enabling framework for a cost-efficient electricity system with increased affordability, reliability, security of supply and reduced energy intensity to support achieving universal access to energy.	
Impact Indicator		• Increased proportion of variable renewable in electricity generation mix (%) • Contribution to GoK objectives of universal access to affordable, reliable and modern energy services.	
Baseline	Year	2024	• 85-90% renewable energy in the electricity mix (data 2023) • Reliability according to official metrics not meeting the targets • Energy intensity as per IEA statistics (3 003.202MJ/thousand 2015 USD, value 2021)

			• 75% Electricity Access Rate (% households) (baseline 2023)
Target	Year	2029	• 98% renewable energy electricity mix by 2027 (GoK Plan 2023-2027) • Reliability according to official metrics meeting the targets • Reduction in renewable energy deployment costs leading to lower electricity prices • Energy intensity improved by 3% annually (GoK Plan 2023-2027) • 95% Electricity Access Rate (% households) – GoK target for 2027

Outcome 1:			**MOEP has robust systems and procedures for planning least-cost low-carbon energy pathways and effective regulations supporting increased share of renewable energy (RE) in the energy mix and universal access to reliable and affordable energy.** Partners: Ministry of Energy and Petroleum (MOEP)
Outcome indicators			• DEA advisory services towards power sector modelling lead to MOEP demonstrating roadmaps to meet higher energy demand while ensuring least cost low carbon development and security of supply. • DEA capacity cooperation has led to more solid integrated national energy sector planning is conducted using multiple advanced modelling tools. • Framework for renewable energy tendering has a positive impact on reducing prices for electricity procurement and has due considerations of environmental and social aspects.
Baseline	Year	2025	• National power sector planning is based on one tool. • Draft regulation for integrated national energy planning released. • Draft regulation for renewable energy auction framework released. • Cost data on power generation is not objectively represented.
Target	Year	2029	• National power sector planning is conducted using multiple advanced modelling tools improving the least cost pathways for the sector. • Integrated national energy sector planning is conducted using stakeholder engagement and public participation. • Framework for renewable energy auctions is the main platform for tendering procurement of electricity lowering national energy procurement prices.[15] • Objective data is represented in a technology catalogue which is regularly updated.

Outcome 2:	**Transparent regulatory framework, in line with international governance standards, for efficient, reliable, and market-based integration of variable RE generation adopted.** Partners: Ministry of Energy and Petroleum (MOEP) Energy and Petroleum Regulatory Authority (EPRA) Kenya Electricity Transmission Company Limited (KETRACO) Kenya Power and Lighting Company (KPLC)
Outcome indicator	• Regulation for capacity and ancillary services market adopted

[15] Id.

			• Share of 100% variable renewable energy sources electricity production (official EPRA biannual statistics[16]). • Reduced blackouts and improved security of supply as per official statistics. • Increased share of regional electricity trade.
Baseline	Year	2024	• Draft electricity market regulation released. • Variable renewable energy sources e.g. wind and solar generation accounts for 22% of the electricity generation capacity. • Indicator for Security of Supply: SAIDI: 8,836 hours per month. • Regional trade defined by bilateral PPA's with e.g. Ethiopia.
Target	Year	2029	• Market framework established to support increased reliability in power system operations. • Variable renewable energy sources e.g. wind and solar accounts for 30% of the electricity generation capacity. • Improved value for security of supply (SAIDI) in line with future MOEP indicator. • Regional trade functions increasingly on market terms with a growing volume of transactions, if possible.

Outcome 3:		**Data-driven energy efficiency and demand-side management strategies approved, paving the way for stronger policies and regulations, reducing grid loss, and impactful energy-saving measures across Kenya benefitting end-consumers.** Partners: Ministry of Energy and Petroleum (MOEP) Energy and Petroleum Regulatory Authority (EPRA) Kenya Electricity Transmission Company Limited (KETRACO) Kenya Power and Lighting Company (KPLC)	
Outcome indicator		• Sector coupling (electrification of other energy sectors) with a view to provide adequate, reliable and affordable electricity that can generate co-benefits in terms of economic growth (e.g. electrification of industries) and job creation. • Reduction in barriers to e-cooking adoption measured by increased user satisfaction and adoption rates.[17]	
Baseline	Year	2024	• Energy intensity as per IEA statistics (2021: 3003 MJ/USD 2015), value 2021. • Solid biomass used by an estimated 68% of households in Kenya. Approx. 30% of rural households and 54% of urban households currently use clean cooking technologies and fuels.
Target	Year	2029	• Energy Efficiency/intensity improved by 3% annually as per GoK Strategic Plan 2023-2027. • Progress on achieving Kenya's target of achieving universal access to clean cooking by 2028.

[16] Source: EPRA Biannual Statistics Report 2023/2024, available at: https://www.epra.go.ke/bi-annual-energy-petroleum-statistics-report-financial-year-2023-2024/

[17] This represents an opportunity for the DEPPIV team to consult with local communities.

5. Inputs, budget, financial management

5.1 Inputs and budget

Inputs:
DEA as the Implementing Partner will be responsible for the organization and timely delivery of technical cooperation inputs by DEA staff and external consultants to activities guided by demands and priorities as defined in the annual work plans. Inputs will be delivered based on TOR that ensure the accountability for delivery in alignment with agreed work plans and partner availability and capacity to engage.

National partner inputs will be delivered in-kind, aligned to the same annual workplans, which are approved by the national Steering Committee.

The budget provides for a total of 25 person-years of DEA resources and 12 person-years of LTA support in Kenya. Recruitment of the LTAs as Danida advisors follows procedures of the Danish Ministry of Foreign Affairs (MFA) and is supported by DEA. Representatives from the partner institution where the LTA will be placed participate in the recruitment panel together with representatives from DEA and the Embassy of Denmark in Kenya. Preliminary draft job profiles for the three LTA positions are included in Annex 9.

Other inputs will be staff time inputs from DEA and Energinet and consultant inputs from DEA Consortium partners under framework contract. (See Table 5.2 in Annex 5) Where specific inputs by external national consultants in Kenya are required, such inputs will be procured through DEA under existing and/or new framework contracts.

DEA has appointed a responsible country coordinator for Kenya based in Copenhagen, who will serve as the DEA contact person for all matters related to KENDEP.

Budget:
The proposed total budget for the 5-year KENDEP programme is DKK 60.825.000 million of ODA-eligible grant funds sourced from the Danish Finance Act (FL-konto 06.34.01.70).

Table 5.1 below reflects the tentative budget allocation by outcome. This is an allocation budget not an activity-based budget. In Annex 5 a tentative allocation by output will be provided to be further detailed during the start-up phase of KENDEP and updated in annual work plans.

Table 5.1: Summary budget allocations at outcome level

Outcomes:	**DKK million, rounded**
Outcome 1: MOEP has robust systems and procedures for planning least-cost low-carbon energy pathways and effective regulations supporting increased share of renewable energy (RE) in the energy mix and universal access to reliable and affordable energy.	19.508
Outcome 2: Transparent regulatory framework, in line with international governance standards, for efficient, reliable, and market-based integration of variable RE generation adopted	15.817
Outcome 3: Data-driven energy efficiency and demand-side management strategies approved, paving the way for stronger policies and regulations, reducing grid loss, and impactful energy-saving measures across Kenya benefitting end-consumers.	8.70
Long-Term Advisors	16.80
Total:	60.825

5.2 Financial management and reporting

DEPP 2025 grant funds will be transferred from the MFA to the DEA upon written request, and DEA will be responsible for all financial management and reporting on DEPP 2025 funds. The financial management and reporting procedures are further defined in the DEPP 2025 Framework Programme Document. Final audited financial report should be submitted by 31. March the following year.

As no cash funds will be transferred or disbursed though national partners directly, there will be no requirements for accounting of funds and financial reporting by national partners. To monitor the delivery by DEA of technical cooperation in-country consistent with work plans agreed between DEA and the national partners, DEA time spent with partners is reported in the annual progress reporting to the MFA (KLIMA). Budgets and actual expenditures at outcome and output level broken-down on the cost-categories: DEA staff; Consultants; Other Costs will be presented in the annual financial reporting to the MFA (KLIMA). The progress- and the financial reports will help PAG to assess value for money at its annual meeting.

6. Institutional and management arrangement

6.1 Institutional set-up, governance, and management

KENDEP will build on the governance structure of the SSC project consisting of a strategic level and an operational level. There is a need for senior management partner engagement at the steering committee level and for partner engagement at middle management/technical expert level for the technical working group level.

At the strategical level, a Steering Committee (SC) co-chaired by the MOEP Directorate for Renewable Energy, the DEA and the Danish Ambassador is already established. Under the KENDEP programme, the SC will meet as a minimum once per year to approve KENDEP country programme annual work plans and progress reports. It will also monitor results, assumptions, and risk factors, and discuss and resolve issues related to programme progress and make recommendations on allocation of resources for decision by DEA and the MFA[18]. By doing so the SC will ensure that evolving programme priorities are addressed based on an adaptive management approach and with engagement of relevant stakeholders enabling purposeful adaptation of the programme as needed. Finally, the SC also acts as a forum for policy dialogue. Prior to the SC meetings DEA will share information related to resources available for the year to deliver technical assistance with partners (not necessarily as a monetary budget). This will help ensure transparency and allow for an open discussion with the partners on how to design, prioritise and allocate annual resources aligned to programme objectives. The DEPP 2025 Framework Programme Document briefly summarises the adaptive management approach.

At the operational level, one or more Technical Working Groups (TWGs) are to be established for each outcome area, to ensure effective commitment and engagement of the relevant partners in day-to-day coordination and management of the implementation of the agreed annual work programmes. Each partner institution will appoint members to the TWG where the DEA and LTA also participate and with involvement of the Embassy Energy Sector Counsellor. The TWGs will meet at least twice per year and have the responsibility to: i) develop, consolidate and check annual work plans and resource allocations against development engagement partners work programmes; ii) monitor programme progress at output level, using "traffic light" markers for assessment of

[18] The DEPP 2025 Framework Programme Document has defined criteria for allocation of unallocated funds and the limits of authority and procedures within the DEPP 2025 management set-up in terms of reallocation between budget lines in the adaptive management approach.

progress of activities against agreed work plans, and; iii) ensure cross fertilisation within and between engagements; iv) identify strategic interventions that may be supported by unallocated funds and; v) report on institutional uptake and application of capacity development activities and outputs. The TWGs will report to the SC.

There will be a need for the national partners to provide senior/decision making level staffing at the steering committee level, and middle level management/technical experts at TWG level.

DEA's GC has appointed a Country Team Leader/Coordinator as focal point for Kenya who will be responsible for overseeing KENDEP implementation.

6.2 Work planning, results monitoring, and reporting

Work planning:

KENDEP work planning is an ongoing process with each partner, where the annual work plans will be developed to align to partners' annual work programmes and needs, and availability of DEA specialists and consultants, balanced with available resources. Work planning will be prepared with partners at TWG level, for endorsement at SC level. The annual work plans will define annual activities, annual output targets and link these directly to the Results Framework in the Programme Document. Work plans should have indicators that reflect the intended outputs and increased institutional capabilities to produce them. In collaboration with partners, TOR will be formulated for each activity (of a certain minimum size) and the TOR will specify tasks and targets for the activity as well as required specialist inputs from partners, DEA, LTAs, Energy Sector Counsellor, consortium partners/consultants and Energinet.

Approach to knowledge sharing and capacity strengthening

A particular concern will be to ensure a systematic approach to knowledge sharing and the uptake and application of knowledge and experience. DEA is developing an "Integrated Approach to Capacity Development in Global Cooperation", which will apply across DEA's programmes. The DEPP 2025 Framework Programme Document contains a brief summary description of this new approach. As agreed with DEA and MFA (KLIMA) – and in line with Danida guidelines – it will be important during the start-up phase (first 6 months of implementation) to validate and expand the assessments of partner needs and priorities and reflect a structured approach to knowledge exchange and capacity development and monitoring as an integral part of workplans, applying the DEA tools as relevant. The DEA GC revised operational manual will include a guide for a structured approach to capacity needs assessment, capacity development planning and monitoring capacity development. The DEA team and Kenyan partners will jointly be responsible to conduct capacity needs assessment and develop capacity development plans. Attention will be given to the gender balance in knowledge sharing activities. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy.

Results monitoring:

Monitoring towards targets will be reported through the progress reporting annually to the SC using a "traffic-light" system, where:

- "green" is on-track – implementation progresses as scheduled.
- "yellow" is partly on-track, which requires SC attention and potentially remedial action to get back on-track.
- "red" is off-track, which requires urgent attention by the SC and SC recommendations on changes to get back on-track and/or recommend reallocation of funding. If "red" in two

consecutive reporting periods, the SC could consider extraordinary remedial measures such as setting-up a task force.

Results reporting:
Following Danida Guidelines, monitoring and reporting will be based on the results framework at output and outcome level and each Kenyan partner institution will, jointly with DEA monitor progress towards achieving these outputs and outcomes via annual progress reporting to the SC. An Annual Progress Report will be prepared for approval by the SC. The Strategic Advisory Group (SAG) in Copenhagen[19] will consider the results reporting across all three DEPP 2025 country programmes. Final progress report should be submitted to the MFA by 31. March the following financial year. Monitoring of actual expenditure by DEA including international and national consultancy will be reported to SAG in the consolidated DEA annual progress reports across all three DEPP 2025 countries.

Communication of results:
DEA will actively engage in targeted communication of progress and results informing stakeholders both in Denmark and in Kenya. In Kenya the focus will be on raising awareness on the opportunities and choices going towards a greener energy system and how the programme contributes to this. DEA will publish "result stories" to communicate the positive value and effects of the Kenya Programme to decision makers, opinion leaders, and the general public, through a variety of means, including social media, press releases and reports published on the DEA website. A draft communication strategy is found in Annex 7.

7. Risk Management and Exit Strategy

A summary of key risk factors and mitigating measures is provided below. A detailed risk management matrix consistent with Danida guidelines is found in Annex 4. The risk analysis also responds to risk factors emerging from the context analysis in Annex 1.

7.1 Risk management

Contextual risks:
Political risk: While Kenya has made significant improvements in fostering political stability, challenges remain. Economic conditions, including poverty, unemployment, and inequality, can influence political stability negatively especially during and after elections as seen in 2007/2008 and recently protests against the tax bill in July 2024. Regional conflicts in the Horn of Africa and cross-border tensions can also have spill-over effects on Kenya's stability. Presidential elections are due to take place in 2027, at mid-term of the programme. Political will and priorities could change due to economic and political pressures. Political and economic stability is key to attract long-term private sector investments at scale which is needed to achieve Kenya's ambitious energy targets. Social resistance against planned energy infrastructure could delay progress. Mitigating measures: Monitor the situation. It is considered to post a policy-expert LTA in the State House to ensure high-level support and facilitate further strengthening of the diplomatic ties between Denmark and Kenya. Actively engage in communicating results and key strategic messages that promote a low carbon approach to energy production and conservation. Supporting development of transparent regulatory frameworks, open tender processes and stakeholder consultations for long-term planning

[19] The Strategic Advisory Group (SAG), based in Denmark, acts as the highest decision-making authority on the DEPP 2025 Framework Programme. SAG consists of high-level representation from MFA, MCEU, and DEA. DEA acts as secretary to the SAG, which meets every six months to discuss overall programme progress, approve cross-programme budget changes, including approval of the use of unallocated funds and ensures cross-exchanges of experience and good practice.

is providing sector specific stability for investors and mitigating social resistance for planned infrastructure. Major residual risk.

Programmatic risks:

Data and information unavailability: Efficient engagement requires detailed and accurate information about the Kenyan energy sector. Lack of access to and availability of data will affect the quality of the cooperation and knowledge exchanges negatively. Mitigating measures: Include sharing of relevant data in an implementation agreement with relevant partner institutions as well as engage with other development partners involved in the sector. Allocate resources to data collection and production. Major residual risk.

Limited absorption capacity and lack of staff retention in key positions across partners institutions: If the partner institutions do not ensure sufficient commitment to engage for effective uptake of knowledge sharing and other capacity development activities, there is a risk that the results will not be sustainable. Mitigation measures: Ensuring each partner institution designates officers to participate effectively in knowledge sharing. Maintain strong commitment from partner institutions: Strengthen alumni-network across institutions and design Danish support to a realistic absorption capacity of Kenyan institutions. Institutional capacity of the implementing agencies will be assessed during the initial start-up phase and will result in a capacity development plan agreed with MOEP and other partners. Minor residual risk.

Institutional risks:

The programme could duplicate existing activities and/or fails to recognise interfaces and synergies with other initiatives due to the in-country presence of many other development partners: Strong coordination is needed in the Kenya energy sector and DEA is already well connected to the multiple donors and multilateral agencies in operating in the sector. Careful identification done of other relevant bilateral and multilateral development partners' programmes has been conducted during the formulation. Denmark actively participates in EU's donor-coordination. Mitigation measures: It is considered to post a policy-expert LTA in the State House to actively engage in mapping other development partners programmes, and in sector coordination working groups. Also, MOEP is keeping track across development partner/donor activities and is mitigating duplication. Significant residual risk.

Any risk that the programme could fail to deliver its outcomes, would reflect negatively on DEA, MOEP, and the MFA: If the knowledge exchanged is not included in new regulations, strategies, and guidelines by partners. Mitigating measures: DEA and the Embassy also engage in dialogue with top management, the political level and other donors in order to facilitate consensus solutions based on the technical cooperation contributions. The theory of change and results framework indicators designed with realistic and measurable targets. Minor residual risk.

Any unintended use of resources or misconduct could reflect negatively on the cooperation: Corruption remains a significant challenge in Kenya and can undermine government effectiveness. Mitigation measures: There will be no direct fund transfers to partner institutions. Anti-corruption measures should therefore focus on the processes of tendering, awarding, and executing contracts with consultants. The programme will follow DEA financial and contracting procedures, and the risk of direct corruption is considered unlikely. Insignificant residual risk.

7.2 Exit Strategy

From the start of implementation, DEA's general approach will be ongoing attention to sustainable knowledge transfer as an integral part of all activities. Institutionalising capacity development through enhancing the partner institutions' existing tools and frameworks will be key to a successful exit strategy. The approach will be supported by embedded LTAs in relevant partner institutions.

Criteria for successful exit is evidence of uptake and use of know-how and tools that has been exchanged. It is foreseen that Kenya can benefit for Danish energy cooperation many years ahead as current needs for strengthening institutional capabilities to manage rapid growing energy demand based on a higher degree of variable renewable energy. However, shift in political priorities and continued commitment to the partnership will closely monitored to ensure that Danish support is leading to the expected results. and if the Kenyan government continues to demonstrate continued commitment to the partnership.

Criteria for a potential continuation of collaboration would be based on the emergence of new or expanded areas of cooperation building on the success of KENDEP and offering cost effective use of resources – and availability of funding. Furthermore, as DEA will deliver its services, it will be assessed how other donors and multilateral agencies can support the up-take and implementation of the enhanced institutional capabilities to ensure a high degree of sustainability of the knowledge work and new institutional capacity.

Some notes on exit have been made in Table A2.2 in Annex 2 for major partner institutions.

Prior to the MFA Mid-term Review, DEA will prepare a consolidated exit strategy, which will be assessed by the MTR.[20]

[20] A Midterm Review is mandatory and budgeted at Framework Programme level.

Annex 1: Context analysis

A1.1: Poverty and inequality analysis

Drivers of poverty and inequality, status regarding multi-dimensional poverty in relation to just inclusive green energy transition and climate action:

Key points:

- Despite high electricity access, issues like pricing and reliability hinder the adoption of clean cooking solutions. Efforts like reduced tariffs have had limited impact.
- KENDEP focuses on protecting vulnerable groups in Kenya's energy transition, aiming to minimize negative labour market impacts

The Danida Approach Note on Fighting Poverty and Inequality emphasizes the multidimensional poverty concept, which does not reduce poverty to a question of income but defines poverty as lack of access to resources in a wider sense, such as energy, jobs, education, health, natural resources, rights (including influence on decision-making processes), as well as personal security. The Note stresses that many groups are trapped in several dimensions of poverty, e.g. indigenous peoples, vulnerable women and children. The climate and energy crises influence several of these poverty dimensions. In energy/climate change mitigation projects, the Note emphasises the need to pay special attention to the political economy of the energy sector and socioeconomic effects of the transition, including the effect on vulnerable and poor groups, and the do-no-harm/safeguards as a minimum approach (e.g. investment, IFC safeguards).

As an example, access to clean cooking is a major issue on the African continent including Kenya. According to the National Electrical Cooking Strategy (2024) 61 percent of the population rely on polluting fuels such as firewood and charcoal. The effects are poor indoor health attributed to 21,500 premature deaths annually and contributes to deforestation, desertification, land degradation and famine. Moreover, according to recent studies the advantages of improved cookstoves are not as significant as once believed. Thus the government of Kenya wants to utilise the high access to electricity rate in Kenya putting more and more emphasis on eCooking as green electricity is an available domestic resource. The issue is speed of the transition as around 76 percent of households have access to electricity, but only 3.8 % use eCooking appliances as their primary solution for cooking, reheating and boiling water. Thus the potential of eCooking is huge but high prices and poor reliability are key concerns for people switching to eCooking. Reliability is a must if people are to rely on eCooking (Outcome 2) and prices need to become cost-reflective through a market framework and competitive tendering (Outcome 2). In an effort to promote eCooking EPRA have introduced a reduced tariff for eCooking but without metering and time-of-use studies it has not been utilised as of yet (Outcome 3).

DEA's concept note (Forståelsespapir) on multi-dimensional poverty and HRBA provides examples of how DEA addresses poverty and human rights (See further in Annex B of The DEPP 2025 Framework Programme Document).

Vulnerable groups and how they are targeted (Leaving No One Behind):

A scoping paper done by the Danish Institute for Human rights (2022) found the following group of people to be most vulnerable to human rights impacts in renewable energy projects in Kenya: women, children, pastoralists and smallholder farmers. The paper also found a gap between actions made in Nairobi and impacts in rural areas. KENDEP will work towards strengthening right-holders participation in planning and development of energy transition initiatives as well as enhancing transparency and accountability in line with DEA's concept note on multi-dimensional poverty and HRBA.

People working in extractive and carbon-intensive industries, and whose livelihoods are most at risk from the green transition, need support to ensure they are not impoverished but rather empowered. In Kenya, the energy transition is expected to affect the labour market at short and long-term. It would be important that decision-makers can minimize potential negative impacts as well as maximize the co-benefits of the green transitions such as green jobs. KENDEP will work on this in various ways e.g by seeking to evaluate job effects in the modelling of different scenarios; by enhancing framework conditions for the private sector that contributes to achieving goals around job creation and training; by discussing equal rights and opportunities.

Any risks that the programme may cause harm to poor and vulnerable groups:

No direct risks identified, however, previous examples of land right issues related to new energy infrastructure exist (e.g. lake Turkana). The Constitution of Kenya from 2010 created two levels of government, namely the National Government and 47 County Governments with defined mandates and functions. The Integrated National Energy

Plan under development will be based on the energy plans devised in the 47 counties ensuring local support. KENDEP will seek to propose the Kenyan government to enhance stakeholder and community dialogue for all matters regarding e.g. generation and infrastructure projects. This will in turn reduce the risks of any new development of energy future projects and ensure that KENDEP focuses on the rights of poor and vulnerable groups.

Key documentation and sources used for the analysis:

- Danida Approach Note on Fighting Poverty and Inequality (link)
- Danida How to Note on Energy Transition and Emission Reductions in Developing Countries (link)
- Danish Energy Agency (2023): Det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder.
- World Bank Group (2023): Kenya poverty and equity assessment
- Mulwa, R., Museumbi, E., and Maina, M. (2022). Incorporating Just Transitions in Kenya's Low-Carbon Development Path. Climate Strategies.
- The Danish Institute for human rights (2022): Scoping paper: human rights and the energy transition in Kenya (link)

Any additional studies/analytic work needed? How and when will it be done?

It will be crucial to continuously learn from both government and non-government stakeholders with regard to the energy sector's impact on both poverty and inequality and apply this learning. Thus, it is expected that the sector counsellor, LTAs and DEA together with the partners address any learnings, initiate relevant analysis and incorporate input for new policies, regulations and incentives.

A1.2: Political economy and stakeholder analysis

Political Economy Analysis:

Socio-economic, political, and institutional factors affecting the dynamics of the green just and inclusive energy transition and climate action:

Key points:

- The energy sector in Kenya plays a pivotal role in driving the country's socio-economic growth. With increased demand for energy substantial investments and robust policy frameworks are needed.
- Independent Power Producers (IPPs) and government owned companies in Kenya are influential stakeholders in the energy sector and have demonstrated significant lobbying power with their long-term Power Purchase Agreements (PPAs) leading to high electricity prices in Kenya.
- KPLC is the only off-taker of electricity, which limits the options for ensuring competitive market mechanisms and in turn can hinder efforts to lower electricity prices

Kenya is the fourth-largest economy in Sub-Saharan Africa and aspires to be an upper-middle-income country (UMIC) by 2030. It recently achieved lower-middle-income country (LMIC) status and although poverty was trending downward pre-COVID, 36.1 % of its population still lived under the international poverty line in 2021. Kenya's real gross domestic product (GDP) grew at an average annual rate of 4.8 % from 2015–19, due to robust growth of private consumption at an annual average rate of 5 % complemented by ambitious public investment focused on closing the large infrastructure gap and implementing the devolution mandate under the 2010 constitution. The agriculture, industry, and services sectors contributed 21.2 %, 25.4 %, and 45.4 %, respectively, in 2022 (Kenya National Bureau of Statistics 2022). In terms of regional contribution to national GDP, as of 2020, major urban agglomerations—including Nairobi, Kisumu, Mombasa, Kiambu, Machakos, and Nakuru—accounted for nearly 48 % of Kenya's GDP (Kenya National Bureau of Statistics 2021). But only 28.5 % of the population lived in urban centres in 2021.

Kenya is highly exposed to climate change, ranking 41st in the world's most vulnerable countries, according to the Notre Dame Global Adaptation Initiative (ND-GAIN) (2021). With its primarily rainfed agriculture sector, high levels of informality in the economy, and slowdown in the structural transformation of the economy, Kenya is exposed to exogenous climate risks. To achieve and sustain UMIC status, it will need to accelerate the use of public policies, public investments, and private sector financing to increase productivity, reduce regional inequities, and align efforts to boost growth with its commitments to climate action, as reflected in its Climate Change Act (CCA), Nationally Determined Contribution (NDC)—which commits the country to reduce emissions by 32 % of the expected 143 million metric tons of carbon dioxide equivalent (MtCO2e) by 2030, and establishing a climate-resilient society—and National Climate Change Action Plans (NCCAPs).

Kenya's overall Development Agenda is anchored in the Kenya Vision 2030 which aims at creating "a globally competitive and prosperous country with a high quality of life by the year 2030". Vision 2030 is being implemented through 5-year medium term plans (MTP). The latest MTP IV (2023-2027) is aligned to the Kenya Vision 2030 and the Kenya Kwanza Bottom-Up Economic Transformation Agenda (BETA) planning approach and is rooted in the Kenya 2010 Constitution. BETA has targeted sectors with the highest impact to drive economic recovery and growth. This will be achieved through bringing down the cost of living; eradicating hunger; creating jobs; expanding the tax base; improving foreign exchange balances; and inclusive growth. Energy is one of the key enablers for Government of Kenya's (GOKs) envisioned development in order to achieve sustainable economic growth.

Historically, Kenya's power sector has transitioned from heavy reliance on hydropower and biomass to a more diversified mix including geothermal, wind, solar, and thermal power. However, several severe droughts led to power generation shortages necessitating investments in alternative energy sources e.g. geothermal, Heavy Fuel Oil thermal plants (HFO) as well as wind power. These new generation plants were based on long-term Power Purchase Agreements (PPAs) in order to secure speed of implementation and reduce risk for investors but also led to high electricity prices which are still prevalent today. The Independent Power Producers (IPPs) in Kenya are influential stakeholders in the energy sectorand in 2021 a Presidential task force was set up to review the PPAs entered into by KPLC. A number of recommendations were provided, but ultimately the task force did not succeed to renegotiate PPAs and did not influence electricity prices.

Kenya has significant oil and coal reserves which are yet to be exploited. There have been two project proposals to build two coal power plants in Kenya but until now the environmental and social impacts have been evaluated as too negative. Additionally, the discovery of oil in Turkana in 2012 further added new dimensions for potential exploration. Thus, the government is continuously faced with a strategic choice of exploiting the domestic fossil fuels resources as imports are posing an increasing economic risk or foregoing the exploitation due to environmental costs. As stated in the update NDC: "To forego all the benefits of exploiting the fossil fuel resources, Kenya will need significant international support". Thus, the government of Kenya is committed to long-term sustainable development of the energy sector which is also evidenced by Kenya joining Friends of BOGA at COP28.

Stakeholder dynamics in the sector encompass a diverse range: the government, pivotal in policy and infrastructure; the private sector, increasingly involved in renewable energy generation; international donors supporting renewable energy and rural electrification; civil society advocating for equitable access and transparency; and consumers influencing market dynamics and policy priorities. Despite progress, significant challenges persist. These include uneven energy access between urban and rural areas (93.7 % and 66,3 %, respectively), aging infrastructure leading to inefficiencies, regulatory overlaps hindering governance effectiveness, financing constraints for large-scale projects, and the imperative of balancing energy development with environmental sustainability amidst climate vulnerabilities.

Institutionally, the sector is governed by key bodies such as the Ministry of Energy and Petroleum (MOEP), responsible for policy formulation and implementation, and the Energy and Petroleum Regulatory Authority (EPRA), which oversees electricity generation, transmission, distribution, and petroleum exploration. Other significant entities include Kenya Electricity Generating Company (KenGen), Kenya Power and Lighting Company (KPLC), Rural Electrification and Renewable Energy Corporation (REREC), and Geothermal Development Company (GDC). Policy frameworks guiding Kenya's energy strategy include the National Energy Policy 2018 focuses on security, affordability, and sustainability, supported by the Energy Act 2019 and Climate Change Act 2016, emphasizing climate-resilient infrastructure. The public sector dominates the players in the energy sector as KPLC is the only off-taker of electricity and generators such as KenGen, GDC etc. are majority owned by the Kenyan government. One of the main elements of the National Energy Policy and the Energy Act is unbundling and liberalisation of the sector i.e. separation of responsibilities i.e. KPLC cannot continue being the system operator, single off-taker and transmission company in a market-based electricity system. The Energy Act is a great foundation, but the unbundling has yet to be completed which causes overlap of responsibilities between e.g. KPLC and KETRACO as they both have parts of the transmission system and system operation should have been transferred to KETRACO. It is however, a complicated process and takes time to ensure that legal and financial transfer of ownership is completed in a transparent manner. The Kenyan government aims to pursue least cost power development and here the challenge is not transitioning away from fossil resources, but rather ensuring that new resources are objectively included in the long-term energy planning and procured in a competitive and transparent manner. Furthermore, support will be directed towards the completion of the unbundling as determined by the Energy Act 2019 as well as increased transparency in the planning, procurement and implementation processes. This will lower risks for the sector as a whole and enable the development of electricity markets. Ultimately this will support the strategic goal of having an affordable and reliable power sector.

Opportunities for renewable energy to drive Kenya's socio-economic development are plenty, notably in Kenya's rich resources for geothermal, wind and solar, technological advancements enhancing efficiency, regional integration through initiatives like the East African Power Pool (EAPP), ongoing policy reforms attracting private investments, and alignment with Sustainable Development Goals (SDGs) ensuring inclusive and sustainable growth. Kenya is in a strong position for continuing its low carbon energy transition. In terms of generation capacity, the power system comprises 26.82 % geothermal, 25.84 % hydro power, 19.85 % thermal, 13.57% wind, 6.70 % solar and 7.22 % other sources (biomass, import, off-grid) in 2023 (MOEP Strategic plan 2023-2027). On this basis Kenya's energy transition for the power sector is not moving from a fossil fuels dominated energy mix but one of increasing the use of variable resources and following a least cost pathway. Kenya is projecting a two-fold increase in electricity demand by 2030, which will require between 2-3 GW of new capacity in the coming decade. History has shown that even though Kenya has a lot of arid land with few inhabitants with great resources (e.g. geothermal, wind, solar etc.) there are issues with displacement and disputes over land rights, the rights of indigenous people, and the loss of livelihood which have to be accounted for from initial planning to ultimate implementation.

Kenya has been a fairly stable political country in recent years and the first two years with President Ruto in office were similar. However, in mid-June severe unrest and demonstrations started in Kenya amidst a proposed tax reform to curb the country's increasing debt burden. Especially young people experiencing anger over unemployment and discontent with corruption have taken to the street to show their dissatisfaction with the current state of affairs. On July 11, President Ruto in response to the unrest sacked all but two Cabinet Secretaries incl. the CS for Energy and Petroleum. This has however not yet appeased the protesters.

As per July 24 President Ruto finalised the nomination of his new Cabinet. The previous Cabinet Secretary (CS) for Energy Mr. Davis Chirchir will be the new CS for Roads and Transport and the new CS for Energy and Petroleum will be Mr. Opiyo Wandayi. He is one of four newly appointed CS from the political opposition. The impact of this political re-shuffle on the energy sector is not yet known but the expectation is that it will only create more focus on affordability, reliability and transparency which are at the core of the proposed KENDEP programme.

In a recent meeting[21] between the new Cabinet Secretary and the group of Development Partners, the CS concluded by listing the governments priority areas for the sector:

1. Improved connectivity: access to electricity and access to clean cooking
2. Reliable and stable grid
3. Competitive electricity prices
4. Accelerate development of geothermal and other resources
5. Finalise interconnectors and East African Power Pool (EAPP)
6. Improve efficiencies across the value chain
7. Finalise Review of Energy Policy
8. Enhancement of human capital in government institutions

Sources:

- Energy Sector Transformation in Kenya: Kenya Vision 2030.
- Kenya Updated NDC
- Kenya National Electric Cooking Strategy (2024)
- The Development of Oil and Gas in Turkana: Ministry of Petroleum and Mining.
- Kenya Electricity Generating Company (KenGen): Annual Report.
- Energy and Petroleum Regulatory Authority (EPRA): Strategic Plan.
- Stakeholder Analysis in Kenya's Energy Sector: World Bank.
- Infrastructure Challenges in Kenya's Energy Sector: African Development Bank.
- Policy and Regulatory Frameworks in Kenya: International Energy Agency.
- Renewable Energy Potential in Kenya: International Renewable Energy Agency.
- Technological Advancements in the Energy Sector: MIT Technology Review.
- East African Power Pool (EAPP): Regional Integration Reports.

[21] Courtesy meeting on 16 September 2024 between the Cabinet Secretary and the Development Partners group for the energy sector.

Stakeholder Analysis:

Key stakeholders most relevant to KENDEP:

Kenya has a regulated electricity sector with a significant and growing presence of independent power producers (IPPs) following the unbundling and partial privatization of the Kenyan energy sector formalized in Energy Act 2006 and Energy Act 2019. The electricity sector is overseen by:

- Ministry of Energy and Petroleum (MOEP), the lead government ministry in charge of energy-related matters.
- Energy and Petroleum Regulatory Authority (EPRA) - the sector regulator.

The Energy Act 2019 has opened up the market by authorizing EPRA to license other distributors, generators, transmitters and retailers of electricity:

- Kenya Power and Lighting Company (KPLC) is responsible for the distribution and supply of electricity,
- KETRACO is responsible for the transmission of electricity,
- KenGen and IPPs are responsible for generation.

The role of the private sector is expected to grow over time in power generation, distribution and supply.

Main government stakeholders include:

The Ministry of Energy and Petroleum (MOEP) has the mandate for policy formulation and monitoring of policy implementation to enable an environment conducive for efficient operation and growth of the sector. It sets the strategic direction for the growth of the sector and provides a long-term vision for all sector players. The Ministry is divided into the State Department for Energy and the State Department for Petroleum. KENDEP only works with the State Department for Energy.

The Energy and Petroleum Regulatory Authority (EPRA) is responsible for economic and technical regulation of the energy sector. Functions include Licensing of power sector facilities and technicians, Energy audit, tariff setting and sector oversight, regulations development and implementation including compliance and enforcement among others.

Rural Electrification and Renewable Energy Corporation (REREC) is mandated by Energy Act 2019 to be the lead agency for development of renewable energy resources other than geothermal and large hydropower, in addition to its previous mandate of rural electrification.

The Kenya Electricity Generating Company (KenGen) is the main power generation entity in the country. It is also the main driver for developments in geothermal energy. Limited liability company, listed on the Nairobi Securities Exchange, 70% state-owned.

Kenya Electricity Transmission Company (KETRACO) is a state company and has the mandate to plan, design, construct, own, operate and maintain high voltage (132kV and above) electricity transmission lines making up the National Transmission Grid and regional interconnections.

Kenya Power and Lighting Company (KPLC) – 51% government-owned – is the system operator and the main off-taker in the power market buying bulk power from all power generators on the basis of negotiated Power Purchase Agreements (PPAs). It also owns and operates part of the existing low voltage transmission infrastructure and the entire interconnected distribution network.

Strategies, approaches for engaging stakeholders and ensuring coordination:

The main partner – MOEP – has been good at facilitating engagement from other public sector institutions and public companies under the SSC. Thus, it is the main strategy to continue this work and ensure that all relevant entities and staff are included in KENDEP activities incl. capacity development. Ultimately, in Kenya it is crucial to ensure that the different public sector stakeholders are involved in the development of new policies and regulations, and where relevant and possible include civil society and private sector entities.

Under KENDEP MOEP will also formally be part of leading the technical working groups as well as coordinating the steering committee level interaction. For each outcome a core group of partner staff will be responsible for coordinating and tracking activities.

Who stand to gain/to lose from the programme:

MOEP and state agencies will through KENDEP be better positioned to fulfil their mandate and drive a just and inclusive green energy transition. The focus is on improving the enabling environment for generators and consumers of electricity. Households and industry are some of the major groups intended to gain. This includes e.g. disadvantaged population groups who will benefit from increased access to reliable and affordable electricity.

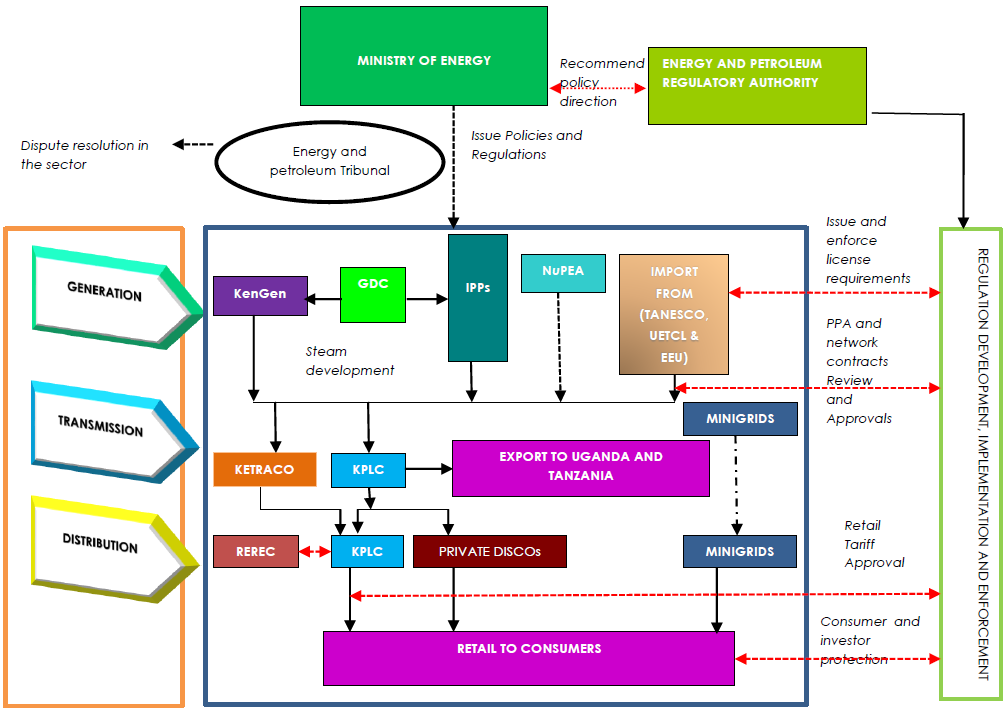

Figure 1 Power Sector Institutional Structure

Key documentation and sources used for the analysis:

- National Energy Policy 2018
- Energy Act 2019
- Least Cost Power Development Plan 2021 – 2030
- Kenya Energy Efficiency and Conservation Strategy
- National Electric Cooking Strategy (2024)
- MOEP Strategic plan 2023-2027

Any additional studies/analytic work needed? How and when will it be done?

Kenya is part of the initiative Accelerated Partnership for Renewables in Africa (APRA) and Denmark is one of the main partners/supporters. IRENA is the main facilitator of APRA, and it is envisioned that IRENA could complement the KENDEP activities with socio-economic studies on e.g. job creation, impact on health, economic development etc. This dialogue will be initiated after the start of KENDEP.

A1.3: Fragility, conflict, resilience, migration

Key drivers of conflict, fragility, resilience in relation to energy transition climate change mitigation:

Kenya is not classified as a fragile or conflict state but continues to be affected by fragility with conflicts over resources, displacement and radicalization impacts from the Horn of Africa. "Climate vulnerability is a serious challenge in Kenya with an economy that is highly dependent on natural resources and already suffering significant losses from recurring droughts and floods. Vulnerability to climate extremes is driven by changing land management and poor agricultural practices exacerbated by population growth. Droughts in the country are a key driver of poverty and humanitarian crises, causing spikes in food insecurity, undermining livelihoods and household resilience. Based on conventional standards, Kenya is considered a stable country. Yet Kenya has dimensions and pockets of fragility in terms of a legacy of poor governance, repeated election violence, tribalism and ethnic tensions, significant human rights violations, as well as pervasive corruption. Insecurity in the border lands, organised crime, and recent home-grown extremism constitute additional dimensions of fragility. Marginalisation fuels instability, and violent extremism can no longer be explained exclusively by instability in Somalia." (Strategic framework Kenya 2021-2025, MFA)

Issues and concerns of relevance to Danish interest concerning fragility, conflict, humanitarian situations, security, and migration:

"Long term instability in the Horn of Africa has challenged Kenya with instability along the borders, frequent terror attacks and refugee flows as a result of man-made humanitarian disasters. Due to the protracted instability as well as cyclical droughts, Kenya has for decades been host to hundreds of thousands of refugees from Somalia, South Sudan, the Democratic Republic of Congo and Ethiopia. As such, Kenya is a regional key actor as a host and transit nation for refugees and irregular migrants, even if Kenyans themselves are not a major source of migration to Europe." (Strategic framework Kenya 2021-2025, MFA)

Key documentation and sources used for the analysis:

- World Bank Groundswell Report (link)
- Fragility Risk and Resilience Analysis Tool (FRRAT) (2020) (link)
- Strategic framework Kenya 2021-2025, MFA (link)
- World Bank (2022): Country Partnership Framework for the Republic of Kenya for the period FY23-FY28 (link)

Are additional studies/analytic work needed? How and when will it be done?

No additional studies or analytical work required, but the security situation will be closely monitored during the implementation of the programme with regard to programme activities conducted outside Nairobi.

A1.4: Human Rights, Gender, Youth and applying a Human Rights Based Approach

Human Rights Based Approach (HRBA)/Human Rights Principles of participation, accountability, non-discrimination, and transparency (PANT):

Key points:

- Kenya's legal framework supports rights-holder participation in renewable energy projects, but improvements are needed in protecting land rights and indigenous peoples
- KENDEP integrates HRBA principles, focusing on enhancing transparency and accountability in energy governance.
- Kenya's Ministry of Energy developed a gender policy in 2019. KENDEP will support MOEP in their efforts and align with their targets

Opportunities and barriers for participation, inclusion, and empowerment of rights holders:

Kenya has through the Bill of Rights (2010) the legal basis in place for protecting human rights including in renewable energy projects with legislation elaborating on institutional and administrative frameworks. However, the extent to which the different institutions engage with human rights varies. In 2021, the Kenyan Cabinet adopted the Kenya National Plan on Business and Human Rights (NAP). The NAP provides a comprehensive framework for developing regulations to safeguard human rights abuses in among others renewable energy projects including protecting human rights in relation to land and natural resources, labour rights and access to remedies. However, some areas could be further strengthened e.g. (better) registration of community land; developing a standard national resettlement framework; better protection of indigenous people's rights; and stronger focus on the social aspect of ESIAs in energy projects. Kenya's juridical system is well-developed and includes both juridical and non-judicial remedy frameworks. However, challenges remain for right-holders accessing effective remedies especially for vulnerable right-holders.

Accountability mechanisms, non-discrimination and transparency / access to information, including for marginalised groups:

KENDEP will integrate non-discrimination, participation and inclusion, transparency and accountability in their work in accordance with the concept note on multi-dimensional poverty and HRBA. The Danish institute for Human rights highlights some areas for the Kenyan government to improve to ensure that the energy transition accounts for Human Rights:

- In line with the existing Constitutional provisions, international standards and good practices, the NAP on Business and Human Rights recommends that Kenya could enact and implement legislation that provides a strong regulatory and institutional framework for protecting and promoting human rights in the management of natural resources. Such provisions could address core substantive protections relating to business and human rights, such as labour rights, land rights, equality and non-discrimination, protection of the environment and access to information.
- Kenya can enhance transparency and accountability in energy governance, including through: proactively addressing corruption risks associated with the energy transition in accordance with the law; enhancing rights-holder participation and voice in the different stages of planning and development of energy transition

initiatives; and facilitating a strong role for state institutions and state-based remedy frameworks in monitoring and addressing corruption risks. The Kenya NAP on Business and Human Rights further urges that the government develop regulations on the Access to Information Act to facilitate disclosure of contracts, including those in renewable energy.

- Kenya can introduce obligatory reporting and due diligence requirements for companies on human rights
- Through legislation and regulation, the government can ensure that the mandated ESIA process effectively addresses human rights issues associated with the approval and development processes of renewable energy projects.
- As recommended under the Kenya NAP on Business and Human Rights, the government can enforce existing labour laws to ensure that they are effectively implemented to protect workers and their rights.
- The government can develop a concrete framework for resettlement relating to communities impacted by renewable energy projects and enact a public participation framework that accords with human rights standards and principles.
- Kenya could formally acknowledge the rights of Indigenous Peoples to customary land and corroborate ILO Convention 169 on Indigenous Peoples and secure respect for FPIC for impacted Indigenous Peoples, including in the context of renewable energy development.
- The government could improve access to the Human Rights Division of the High Court, Employment and Labour Relations Court and the Environment and Land Court, to ensure that they are accessible avenues for remedying business-related human rights abuses related to renewable energy. In addition, as recommended in the Kenya NAP on Business and Human Rights, Kenya can consider putting in place legislation and regulations which mandate companies to develop operational-level grievance mechanisms to address their human rights impacts on their workers and on affected communities.

Gender equality:

Opportunities and challenges generally:

Women – especially in rural areas – lack access to land and credit. They are often marginalised throughout planning and implementation stages of renewable energy projects including engagement, sensitisation, and land-related decision-making.

"Employment of women and men is skewed in favour of men. At the Ministry of Energy headquarters, the ratio of men to women as of December 2018 stood at 65% to 35%, respectively, thereby complying with the Constitutional requirement on gender. However, women account for only 15% of personnel in leadership positions. 30.8% of the personnel are in middle level management positions. Majority of female employees, 41.7% are in lower cadres (HR report, 2018). Currently, there exist gender units in the Ministry and its Semi-Autonomous Government Agencies (SAGAs). However, awareness on gender mainstreaming is relatively low among the technical staff yet they are critical in program and me implementation." (MOEP, gender policy).

Ensuring a gender balance in KENDEP specifically (gender equality in programme results framework indicators and targets, female participation in capacity development activities, etc.)

As the first African country Kenya's Ministry of Energy developed a gender policy in 2019. The policy outlines how the ministry work towards "*institutionalizing the principles of gender mainstreaming to ensure that opportunities and benefits are equally accessible and shared by both women, men, PWDs, and youth in all its operations*". The policy outlines how MOEP addresses gender equality and how they will mainstream gender in energy policy, planning, budgeting and l management. KENDEP will support MOEP in their efforts and align with their targets e.g. 2/3 gender rule.

Youth and jobs:

According to the 2019 census, more than half of the population is below 35 years, whereas 29% is between 18- 35 years. The rate for unemployment and underemployment is high in Kenya (69%) especially among youths. Kenya has developed a youth climate action strategy 2021-2030 aiming at among others to build transformative capacity of the youth to take climate action. The energy transition provides opportunities for youth, but it requires reskilling, developing new skills, capacity development and generally strengthen the youth to participate also in decision-making.

A 2022 study[22] by RTI researchers estimated that an average of 344,000 direct and indirect jobs will be created through 2040 as Kenya Power increases its new renewable energy capacity. Operating Kenya's power grid alone will support 110,000 direct and indirect green jobs annually by the late 2030s. However, the skills gap should be addressed to fully utilise the huge potential. Stakeholders described unpredictable and frequently changing policies in the energy sector that can shake investors and create confusion regarding Kenya's renewable energy needs.

Current licensing and registration procedures for energy projects are seen as long, cumbersome, and costly for private businesses. It is also noted that academia and the energy industry could benefit of working closer together to ensure Kenyans have the skills and experience needed to fill the green jobs over the next 20 years In general, the workforce lack adequate skills in wind power including modelling of wind plant projects. Further, the enabling environment for green jobs should be supported. This includes a need for increased cooperation and coordination among government agencies and authorities for a better understanding of the green economy and its economic benefits as well as the importance of creating an enabling environment that allows the RE projects to succeed, which KENDEP will support.

Key documentation and sources used for the analysis:

- The Danish Institute for human Rights (2022): Scoping Paper: Human Rights and the Energy Transition in Kenya.
- MOEP (2019): Gender Policy.
- UN Women (2023): Gender Equality in the Sustainable Energy Transition
- Mulwa, R., Museumbi, E., and Maina, M. (2022). Incorporating Just Transitions in Kenya's Low-Carbon Development Path. Climate Strategies.
- Youth Climate Action Strategy 2021-2030
- RTI (2022): Measuring Green Jobs Creation in Kenya (link)
- RTI (2023): Quantifying the local economic supply chain impacts of renewable energy investment in Kenya (link)

Are additional studies/analytic work needed? How and when will it be done?
No additional studies or analytical work required as part of Programme formulation..

A1.5: Inclusive sustainable growth, climate change and environment

Risks and challenges to inclusive sustainable growth and development from the impact of climate change, as relevant to KENDEP:
As previously mentioned, Kenya is highly vulnerable to the impacts of climate change, and Kenya is continuously affected by severe extreme weather events such as floods and droughts leading to famine, loss of livelihoods and displacement.

The country's NDC targets and how the proposed support aligns:
Kenya's unconditional NDC target (economy-wide) is 32% GHG emissions reduction by 2030 relative to the business as usual (BAU) scenario of 143 $MtCO_2e$ and in line with its sustainable development agenda. Kenya intends to bear 21% of the mitigation costs from domestic resources, and hence reaching the target is conditional upon international support for 79% of mitigation cost in the form of "finance, technology development and transfer, and capacity building". In September 2023 Kenya submitted its Long-Term Low-Emission Development Strategy (LT-LEDS) to UNFCCC in accordance with the Paris Agreement,. KENDEP strategically support transformational change aligned to Kenya's NDC and related policies and strategies.

Policies and strategies at national/regional/local level to ensure that development is inclusive and sustainable, avoids harmful environmental and social impacts and responds to climate change:
Kenya has developed a national Climate Change Response Strategy (NCCRS) in 2010, a National Climate Change Action plan (NCCAP) in 2013 (renewed in 2023), a National Adaptation Plan (NAP) in 2015, a Climate Change Act in 2016. These policies provide a vision for a low-carbon and climate-resilient development trajectory in Kenya. The energy sector has experienced electricity shortage during droughts, and increased share of clean energy is therefore considered key for Kenya's sustainable development as outlined in the newest NCCAP. Kenya's vision 2030 aims at creating a just and cohesive society that enjoys equitable social development in a clean and secure environment.

Political will and institutional and human capacity to implement these policies and strategies:
High degree of political will, but as mentioned in A6, the government agencies lack people to drive policies and ensure implementation, which is a real challenge for a continued expansion of green energy in Kenya.

Support to inclusive green growth and transformation to low-carbon and climate resilient economies:
This main purpose of KENDEP is to support Kenya's transformation to a low-carbon and climate resilient economy. The development engagements focus on supporting Kenya's low carbon development to meet is NDC's and other climate goals.

Positive impacts and potential risks or negative impacts related to natural and human environments and climate change from the proposed programme and how these may be mitigated:
There is no potential risks and negative impacts related to environment and climate change from the proposed interventions as they include no physical projects in climate change mitigation, merely technical assistance. Some climate change mitigation technologies have adverse environmental risks and negative impacts e.g. nuclear power, non-sustainable use of biomass and biofuels, and where relevant their risks and negative impact will be covered by any analysis of these technologies included in the programme.

Environmental and social impact assessment requirements and issues:
Since the programme will not include any physical infrastructure investments, no environmental impact assessments are required. All activities are conducted together with the partners and the DEA will include these aspects in the dialogue with the government institutions and stakeholders where relevant.

Key documentation and sources used for the analysis:

- Kenya - Vision 2030 (link)
- CIF (2024): Kenya REI investment plan (link)

Are additional studies/analytic work needed? How and when will it be done?
No additional studies or analytical work required

A1.6: Capacity of public sector, public financial management and corruption

Capacity of the public sector for policy making, implementation of policies, enforcement of regulations and effective service delivery:
Competences in Kenya's public sector are generally perceived as high in relative terms across the region. This is also the case for energy authorities where people are well-skilled and qualified. Nevertheless, the government agencies lack capacity i.e. people to drive policies and ensure implementation of policies and regulation, which is a real challenge for a continued expansion of green energy in Kenya. Moreover, graft and corruption is an integrated part of the Kenyan society, which is also expected to be adversely impacting the implementation of energy related policies and projects. Whereas the SSC project has not encountered examples of corruption it is the main principle that transparent planning, transparent decision-making processes, transparent and competitive procurement of power etc. reduces the opportunities for anyone to engage in corruption.

Anti-corruption measures:
KENDEP does not engage in transfer of funds to the Kenyan partners and thus there is no risk of corruption utilising the programme funds. In terms of activities the DEA's main principle will always be to make work, reports, findings, recommendations public unless the partners deem there are confidential elements. Transparency in terms of processes is also always a key recommendation and will reduce the opportunity for any person to engage in corruption.

Key documentation and sources used for the analysis:
The 2023 Corruption Perceptions Index (CPI) (link)

Are additional studies/analytic work needed? How and when will it be done?
No additional studies or analytical work required as part of formulation.

A1.7: Matching with Danish strengths and interests, engaging Danish actors and seeking synergies

Areas where we have the most at stake – interests and values:
Danish priorities, policies, and strategies are articulated in Denmark's Strategy for Development Cooperation "The World We Share", which states that Denmark will *"Promote ambitious national climate action plans that enable developing countries and growth economies to transition from fossil fuels to clean energy sources…".* In line with these priorities and as elaborated in the Danida How-to-Note on Energy Transition and Emission Reductions in Developing Countries, Denmark the clear objective of maintaining global SDG 7 leadership, promoting a fair and green energy transition, including access to clean energy, energy efficiency and cross-sectoral decarbonisation. The Danida How-to-Note on Energy Transition and Emission Reductions in Developing Countries, acknowledges that *"the Danish Energy Agency is deeply engaged in technical authority-to-authority cooperation at the country level in emerging economies"* and states that: *"Danish development aid should continue to serve as a catalyst and mobilise finance for renewable energy, decarbonisation, phase-out of fossil fuels" "Authority-to-authority cooperation may also help promote export of Danish solutions in renewable energy, energy efficiency*

etc., and be followed up by Danish finance through, for instance, the IFU and EKF. At the same time, technical authority-to-authority cooperation feeds into the policy dialogue on climate ambitions, thus contributing to Danish SDG 7 and climate leadership." "Concrete links must be forged between authority-to-authority cooperation, bilateral projects and multilateral organisations such as IRENA, IEA, UNEP-CCC, the NDC Partnership and ESMAP in order to enhance capacity and national frameworks, as well as to develop investable projects.". KENDEP is clearly in line with these priorities and attention will be given to coherence and synergy with other Danish support including multilateral cooperation. Further, the Danish Government's Foreign and Security Policy Strategy (May 2023), states that the climate crisis constitutes the 21st century's greatest challenge, requiring global cooperation and action and emphasizing that Denmark must continue to be at the forefront of the global climate action through its climate diplomacy efforts, continuing to assume a leading role in pushing for increased ambitions with regard to emission reduction efforts and other climate action.

Where we can have influence through strategic use of positions of strengths, expertise and experience:

DEA assists partners in deploying a framework for a cost-efficient or least cost energy transition. Denmark has world-leading experience in developing least-cost choice awareness for political level based on fact-based energy modelling as well world-leading experience integrating variable renewable energy sources for electricity production into the electricity grid. This experience both relates to the technical expertise and the regulation needed to support efficient use of electricity production. To maximise capacity development for grid operations there are two strategic focus areas. Firstly, with the transmission system operator to enhance capacity for efficient grid operations and secondly, with the ministry where there is a need to bring grid operations and expansion plans closer to the long-term planning activities. A long-term framework supporting the green transition creates a sound business environment, fosters innovation, makes economic sense, lowers consumer prices, reduces carbon emissions, and expands the global market for clean energy technology.

The placement of LTAs will increase Denmark's influence in the energy sector in Kenya. Not only will the LTAs be positioned to be able to give day-to-day advice and assistance to Kenyan peers in MOEP and its main institutions, but there is also an opportunity to position an LTA with the President's Climate Office in the State House. This can potentially act as a conduit for bringing key strategic energy issues to the highest political level and help align energy policies across the Kenyan government.

Denmark's overall current Strategic Framework agreement with Kenya – the Denmark-Kenya Partnership 2021-2025 is ending next year and so a new five-year Strategic Framework support programme for the years 2026 – 2030 will soon start programming and KENDEP will seek to ensure alignment to by seeking synergies with the overall country engagement.

Where Denmark can play a role through active partnerships and where is there a need for Denmark to take lead in pushing the agenda forward:

Denmark is already playing an active role in Kenya regarding climate diplomacy i.e. though engaging Kenya in the Beyond Oil and Gas Alliance (BOGA) and by supporting Kenya as an associated member of IEA.

Denmark can play a role in promoting that the unbundling of the energy sector in Kenya is completed i.e. by highlighting the benefits across all three outcomes. Furthermore, Denmark can support increased stakeholder consultations in the development of policies and regulations especially across ministerial siloes in cooperation with the State House.

Danish comparative strengths:

The State of Green showcases expertise and experience in the Danish resource base, connecting to more than 500 solution providers in the green transition, including private companies, utilities, research institutions, financial institutions, and public sector stakeholders.

The DEAs Global Cooperation highlights Denmark's expertise and experience in the green energy transition and how this is reflected in the currently 24 bilateral country partnerships.

Concrete opportunities for synergies through Danish foreign policy engagement, commercial engagement, trade relations and investment, Danish local and central authorities, civil society organizations, IFU and academia:

In general DEA does not engage directly in commercial activities but close coordination will be made with the MFA Trade Council. IFU made its first investments in Kenya in 1970. Since then, IFU has invested in a range of sectors including infrastructure (see IFU Africa portfolio here (link)). IFU's Nairobi office provides on-location advice to companies wishing to invest with IFU.

Assessment of the donor landscape and coordination, including opportunities for synergy with Denmark's multilateral energy/climate cooperation

Many bilateral and multilateral Development Partners (DPs) are engaged in Kenya, with a risk of a crowded arena in a country with limited coordination and absorption capacities. The African Development Bank (AfDB) is currently co-chairing overall energy sector donor coordination with the MOEP. However, until 16 September 2024 there had not been a meeting for 6 months. The newly appointed Cabinet Secretary for MOEP has wowed to change this. The Embassy and DEA have held bilateral meetings during the programming with the key

development partners. On a European level, , the European Member states (e.g. EU, Germany, France, Netherlands etc.) regularly meet to discuss their own programmes as "Team Europe". Denmark hosted the meeting in the spring of 2024 and the Netherlands hosted the last meeting on 26 August. Only looking at Team Europe the support for the energy sector amounts to EUR 1.3 billion across 53 projects or programmes (approximately DKK 10 billion). Most of these funds are loans and grants for larger infrastructure projects. Denmark may seem small in this, but the work being done on capacity development and addressing challenges is already providing input, which supports implementation of some of the large investments e.g. new national control centre funded by AFD France. There is an opportunity for Denmark to contribute to deepened donor coordination through the sector counsellor and embedded LTAs. The LTA posted in the State House could support with mapping stakeholders engaged in the sector and their programmes, as well as engage with them to facilitate identification of areas of collaboration and synergies between donors. Denmark is seen as objective and neutral, based on a good governance approach to sector development. The table below provides a summary overview of relevant parts of the DP landscape.

Development Partner	**Areas of support relevant for KENDEP**
Denmark	Overall Strategic Framework for Denmark-Kenya Partnership 2021-2025. Soon the programming of a new phase of the strategic framework will be initiated and the embassy will seek to include key sectors such as energy in the development. Four Strategic Sector Cooperation projects within food safety, environment, water, and maritime. Apart from maritime the SSC, projects are placed in the same embassy team. The embassy also handles large health, good governance, gender, and refugee programmes. It is expected that there will be coordination and potential synergies on both strategic and activity level.
African Development Bank (AfDB)	Support renewable energy projects to increase the capacity of renewable energy in the national grid. Support the establishment of a KPLC-run Energy Efficiency Unit. Denmark is a major supporter of the AfDB Sustainable Energy Fund for Africa (SEFA). Facility for Energy Inclusion OGEF (funding from AfDB, EU; KfW Germany, Nordic Development Fund): FEI OGEF is an innovative finance strategy aiming to increase the amount of debt financing available for qualified off-grid energy enterprises in both local and hard currencies. The Fund is designed to provide financing, mostly secured by receivables and inventory, to suppliers of off-grid energy solutions. Last mile connectivity project 2 (USD 109 mill.).: all counties. Menengai 35 MW geothermal IPP: (USD 65 mill.). Kopere 40 MW Solar PV IPP: (USD 63 mill.). Suppot to TVET and training for relevant skills development project - PHASE II (USD 48 mill.).
World Bank (WB)	Kenya Green and Resilient Expansion of Energy (GREEN) Program Phase 2 Project (2024-2029): The objective of the Second Phase of Green and Resilient Expansion of Energy Program Project for Kenya is to increase the capacity of Kenya Power System for energy trade and renewable energy integration. USD 202 mill.). Kenya Green and Resilient Expansion of Energy Program: To improve financial viability of KPLC and increase access to electricity (USD 400 mill.). KTDA Small Hydro Programme of Activities: Monetize and transact GHG reductions from renewable energy produced by small hydropower benefiting smallholder tea farmers in rural Kenya (USD 5.15 mill.). Kenya: Off-grid Solar Access Project for Underserved Counties (2018-2025): The objective of the Off-grid Solar Access Project for Underserved Counties is to increase access to modern energy services in underserved counties of Kenya (USD 150 mill.). Kenya Infrastructure Finance/PPP project (2013-2024): The overall objective of Adaptable Program Lending for Infrastructure Finance and Public-Private Partnership Project for Kenya is to increase private investment in the Kenya

	infrastructure market across sectors and to sustain this participation over an extended period of time. (USD 90 mill) East Africa Skills for Transformation and Regional Integration Project (EASTRIP): Upgrading of KenGen Geothermal Training Centre to a Regional Centre of Excellence, which would serve the full range of Energy Technology training and would act as the Regional Flagship Technical and Vocational Education and Training Institute for the Energy sector. Energy Sector Management Assistance Program (ESMAP) – supported by Denmark: Regulatory Indicators for Sustainable Energy (RISE) see (link). ESMAP also supports mini grids (link).
European Investment Bank (EIB)	EIB: Olkaria Geothermal Extension: Extension of the existing Olkaria I geothermal power plant with an additional 70 MWe turbine (Unit 6), the necessary wells, steam gathering system and interconnection facilities. (Cost EUR 298.30m, EIB EUR 72m + EUR 41m balance of previous loan, cofinancing with JICA).
German Embassy, KfW and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	DE: Steamfield Development Baringo-Silali - implemented by KfW (2014-2025): Creation of the prerequisites for the complete geothermal field development as well as for the generation and marketing of electricity generated from geothermal energy in the geothermal field Bogoria-Silali by private and / or public operators. Expected output around 200 MW. DE-KfW: KETRACO REEF1 grid strengthening program: The programme further aims to strengthen the transmission system by increasing grid availability and reliability. DE-KfW: Gogo HPP Rehabilitation: Rehabilitation of end of term HPP and increasing output by investing in new equipment and power house. DE: Olkaria Units I and IV Upgrade - implemented by KfW (2021 – 2025: Upgrade of the geo-thermal power plant Olkaria I & IV. The purpose is to increase of generation capacity and improvement of the stability of electricity supply. DE-KfW: Steamfield Development Baringo-Silali / Debt Swap proceeds (2024-2027): Creation of the prerequisites for the complete geothermal field development as well as for the generation and marketing of electricity generated from geothermal energy in the geothermal field Bogoria-Silali by private and / or public operators. Expected output around 200 MW. DE / GCF-EnDev project "Promotion of climate-friendly cooking" - implemented by GIZ (2020-2025): Promotion of improved household cooking solutions through: Strengthening the improved cook stove (ICS) Supply and Delivery Chain and Enhancing consumer demand and ICS market environment. DE: Energy Solutions for Displacement Settings - implemented by GIZ (2019-2024): (ESDS) project is part of the German Federal Ministry for Economic Cooperation and Development (BMZ) globally commissioned programme, 'Support to UNHCR in the Implementation of the Global Compact on Refugees in the Humanitarian- Development-Peace Nexus' (SUN). EU/DE-GIZ/ES: GET.Pro (GET.Invest, GET.Transform, AEEP, Convenant of Mayors Sub-Saharan Africa - CoM SSA), (2018-2026): Mobilising private investments into decentralised renewable energy EU: Estimated 10 mE for Kenya (get.invest). DE/ GIZ: (Upcoming)Development of Foundations for a Green Hydrogen Economy in Kenya (2024-2027): Develop the institutional and legal prerequisites as well as the technical competencies for sustainable economic development with green hydrogen and its derivatives (PtX). DE/GIZ Global Decarbonisation Diplomacy Programme (2024-2027): Expand climate and energy policies in partner countries to use green hyrogen for decarbonisation and diversifaction of their economies. DE-KfW: Green Hydrogen: Support commercial scale green Hydrogen / fertilizer project/ investment.

	DE/GIZ Project Development Programme: Supports private sector develop solutions in captive solar for Commercial and Industrial sector, Energy Efficiency and Green Hydrogen through private sector DE/ GIZ: (Upcoming) Promoting the framework conditions for 100% renewable energies by 2030 in Kenya (2024-2027): The administrative, regulatory and technical conditions for the supply of electricity generated exclusively from renewable energies have improved. DE/GIZ: Electric Mobility in Kenya: Supporting the electrification of Nairobi's Bus Rapid Transit (BRT) (2023-2027). DE: Green Cooling Initiative - implemented by GIZ (2018-2024). EU - KfW: "Green Resilient Electricity System" Project.: New Kamburu Floating solar PV plant, upgrading Gogo Hydropower plant, Baringo Silali Geothermal Prospect and Development, Transmission grid strengthening.
European Union (EU)	EU, EDFI's: ElectriFi Country window for Kenya (2021-2035): Targeting off-grid solutions together with private sector (solar home systems, mini-grids), clean cooking, captive power, small Independent Power Producers, energy efficiency and productive use of energy. EU, FR (AFD): Green Mini-Grid Facility (2016-2024): Facility to help the development of private mini-grids, through TA and connection/capex subsidies. EU, FR (AFD)+EIB: Last Mile Connectivity (2017-2025): Program to enhance the number of rural connections to the electricity grid (EIB 60 m€; AFD 90m€; EU-AITG grant: 30m€). EU, DE-KfW: Geothermal risk mitigation facility East Africa (2014-2026): Support public and private developers for the construction of geothermal power plants (EU-AITF 30 m€; KfW 20 m€, UK 47 mGBP). EU/Horizon Europe: Integrated Urban Electric Mobility Solutions in the Context of the Paris Agreement, the Sustainable Development Goals and the New Urban Agenda (2020-2024): The EU-funded SOLUTIONSplus project proposes the development of an innovative and highly effective approach to urban e-mobility. EU/Horizon Europe: Smart Energy Solutions for Africa (2021-2025): The project will explore innovative technologies and services in urban and rural contexts and support their uptake, deepening technical, financial and policy aspects. EU/Horizon Europe: Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy (2020-2025): The EU-funded LEAP-RE project will create a long-term partnership of African and European stakeholders in government, research and academia, the private sector and civil society. In its mission to develop renewable energy as a sustainable source of energy for all in Africa, the project will work to reduce fragmentation by aligning existing bilateral and multilateral frameworks. EU/Horizon Europe: ENERGy access and green transition collaboratively demonstrated in urban and rural areas in AfrICA, KPLC+ROAM, (2021-2025): solar-powered e-mobility solutions in urban Kenya. EU: Institutional capacity building to the sustainable energy sector in Kenya (SETA): Support public stakeholders at national level (Ministry of Energy and energy agencies) and county level (County Governments) to implement policies and regulations in the energy sector and to develop and implement energy plans and projects in priority areas.
Embassy of France and AFD	EU, FR (AFD): Reinforcement of electricity transmission network (2019-2025): Increase the stability and efficient operation of Kenya's electricity grid. (AFD loan: EUR 107.5m; EU 11th EDF grant: EUR 7m, French Treasury (34 M euros) FR: Seven Forks Solar Project: Project to develop 42.5MW Solar project next to Kamburu Dam with KenGen. Project includes a small battery energy storage system. FR (Proparco): Eldosol Energy Ltd (Cedate): Construction of the Cedate Eldoret 40MW solar-PV power plant.

	FR (Proparco): Eldosol Energy Ltd (Selenkei): Construction of the Selenkei Eldoret 40MW solar-PV power plant. TA on hydro optimization with EDF: The main objective of this TA grant will be to support KenGen in a better management of its hydropower plant along the Tana River.
Embassy of Italy	IT: Transformation of Climate action through utilization of a hybridized Clean and Sustainable Energy as a driver to climate-smart agriculture and agribusiness value chain Implementing Partner: UNEP (2021-2025) IT: Private Sector and Innovative Energy Technologies Development in Kenya - AICS financial support to the private sector, AVSI, Res4Africa Foundation, with a financial contribution from Eni (150K Eur) (2021-2024)
Japan International Cooperation Agency (JICA)	Project for Capacity Development of Power Transmission Systems. Project for Capacity Strengthening of O&M in Olkaria Geothermal Power Station. Olkaria I Unit 4 and 5 Geothermal Power Project. Olkaria V Geothermal Power Development Project. Olkaria I Units 1, 2 and 3 Geothermal Power Plant Rehabilitation Project. Project for comprehensive solutions for optimum development of geothermal systems in East African Rift Valley. Project for Capacity Strengthening for Geothermal Steam Supply and Management. (Nairobi, Menengai, Baringo-Silali, Suswa, Menengai) Project for the Improvement of Power Distribution System in and around Nakuru City and around Mombasa City.
Embassy of Netherlands	NL/DE (GIZ)/NOR/US/SWI: EnDev Programme (2009-2024): Promotion of improved cooking solutions and solar for productive use (NL 16.5 mE). NL: SDG7 Results Facility (2020-2023) and (2022-2025): The SDG 7 Results facility aims to give 2 million people in developing countries access to renewable energy through access to electricity and access to clean cooking solutions in homes. NL, DK, DE: EnDev African Biogas Component (2022-2025): Market development biogas. Program is implemented by SNV and GIZ (NL 1mE, DE 6.3 mE). NL (FMO): Hydrobox Infrastructures Sez Limited: Hydrobox Infrastructures SEZ Ltd ("Hydrobox") is a hydropower plant and mini-grid developer focused on developing small run-of river hydro mini-grids in Kenya under the Anchor, Business & Household Customer ("ABC") model. NL (FMO): M-KOPA Kenya (signed 2017): The company provides solar home systems and appliances, cookstoves, smartphones and digital financial services on a 'pay-as-you-go' basis, enabling customers to access products that they would otherwise not be able to afford on a cash basis. NL (FMO): Envirofit: Envirofit is a social enterprise that uses a market-based approach to create access to affordable, efficient, clean cooking technologies for household and commercial uses. NL (FMO): Greenlight Planet: The objective of the investment is to allow the company to continue its expansion of its Pay-As-You-Go Business in Sub-Saharan Africa. NL (FMO): Starsight Premier Energy Finance Limited: Starsight Premier Energy Finance is the financing arm of Starsight Premier Energy Group (SPEG). SPEG offers sustainable solar power and storage solutions to C&I clients in Kenya. NL (FMO): d.light: The objective of the investment is to allow the company to continue its expansion of its global Pay-As-You-Go. NL (FMO): E3 Low Carbon Economy Fund I: E3 Low Carbon Economy Fund I is an investment fund that aims to invest in low carbon decentralized and smart services in Africa.

	NL (FMO): Sun King Financing Limited: Sun King Financing Limited is a securitization vehicle acquiring pay-as-you-go receivables from Greenlight Planet Kenya Limited.
Embassy of Slovakia	SK: AgeVolt e-mobility solution in Kenya: Aim of the project is to prepare the ground conditions for implementation of charging solution and contribute to Kenya's developing electric vehicle ecosystem. Project is implemented by AgeVolt Slovakia.
Embassy of Sweden	SE: African Enterprise Challenge Fund, REACT (2017-2024): Providing top-up for PAYGO companies to reach the poorest of the poor with RE services. Reversed auctioning approach. SE: Modern Cooking Facility for Africa (2021-2026): MCFA's goal is to accelerate and rapidly speed up the delivery of clean, high quality, renewable energy cooking solutions to 1.8-3 million underserved energy poor people in DRC, Kenya, Mozambique, Tanzania and Zambia.
USAID	Through the continent-wide Power Africa programme. Focus areas highlighted below: Clean hydrogen: Power Africa is assisting the Government of Kenya with its goal to unlock investment in green hydrogen to drive economic growth, agricultural development, and industrial progress. Solar powered irrigation: Support to private sector (SunCulture) helps small-scale farmers to switch from manual irrigation to solar-powered pumps. With this innovation, they spend less time hauling water and more time expanding crop production. Electricity system: In Kenya, Power Africa works to optimize power supply, increase grid-based power connections, and strengthen utilities and other energy sector entities. USAID: financial support for renewable energy projects e.g. Kibeto Wind Farm, and Lake Turkana.
UK	UK Aid / Climate Compatible Growth: Support on modelling (OseMOSYS) to MOEP through Strathmore University. Focus on county energy planning.
IEA	Kenya became an association country in 2023. Proposed engagements: Training on data gathering for planning at national (MOEP and EPRA) and regional levels. Support SACREE on EE appliances prices and standards. Energy Efficiency training weeks. Global EE Conference 2024 (link).
IRENA	Accelerated Partnership for Renewables in Africa (APRA). Supported by Denmark and Germany. DEA with a separate grant for technical assistance in APRA countries.
SEforALL	Support leadership in international forums, Energy compact review, Energy policy review, include specific targets on EE in NDC, TA and policy support on renewables and EE, support GoF in the development of a Super ESCO. Sustainable cooling Capacity development on SEforAll Energy Systems Model and demand forecasting, including setting of an open portal.
WRI	Training MOEP and counties in the use of the Energy Access Explorer for energy planning.
CIF	The Climate Investment Funds (CIF) endorsed a $70 million plan in 2023 to advance the integration and utilisation of renewable energy in the Kenyan grid, enabling the country's transition to 100 % clean energy by 2030. It is part of CIF's Renewable Energy Integration (REI) investment program, which will support Kenya's ambition to reduce GHG emissions by 32 % by 2030 and achieve Net Zero by 2050.

Key documentation and sources used for the analysis:
Danida How to Note on Energy Transition and Emission Reductions in Developing Countries (link)

Are additional studies/analytic work needed? How and when will it be done?
There will be a need for continued development partner/donor coordination and mapping in Kenya throughout the programme. The intention is to update the mapping every 6 months.

Annex 2: Partner assessment

A2.1 Brief presentation of partners

The main Kenyan partner is the Ministry of Energy and Petroleum (MOEP). The Ministry has the mandate for policy formulation and monitoring of policy implementation to enable an environment conducive for efficient operation and growth of the sector. It sets the strategic direction for the growth of the sector and provides a long-term vision for all sector players. The Ministry is divided into the State Department for Energy and the State Department for Petroleum. The State Department for Energy is the overarching contact for all activities in the programme including engaging institutions under its responsibility which cover regulation, generation, transmission, and distribution.

Outcome 1 - **Energy Planning**: National energy planning is anchored in the Energy Act No 1 of 2019 with the mandate given to the Cabinet Secretary in charge of Energy. For the power sector the outlook is published in the Least Cost Power Development Plan (LCPDP).

The primary objective of the LCPDP is to develop a capacity expansion plan that meets projected demand at lowest possible cost. In Kenya, the LCPDP is developed by a group of over 40 staff from various government entities under MOEP. This group encompasses representatives from generation, transmission, distribution, and regulation.

Capacity development in energy planning is done with this group on two levels: as a whole and through a core group of 21 selected staff. This ensures that the relevant energy planning staff in Kenya enhance their capabilities.

Beyond MOEP, the staff in the LCPDP group includes staff from EPRA, Kenya Power, KETRACO, KenGen, GDC, NuPEA. This broad and well-coordinated group ensures that the plan is grounded across institutions, thereby increasing its commitment and probability of implementation.

Outcome 2 – Integration of variable renewable energy: The outcome is twofold focusing on power system operation and on electricity markets. The primary partners of MOEP, KETRACO, KPLC and EPRA, possess generally high levels of capacity and capability. However, their experience with both variable renewable energy operation and electricity markets is limited due to the recent implementation of these initiatives in Kenya.

Power System Operation: The responsibility for operating the Kenyan electricity grid, housed in the national control centre, currently lies with KPLC. Although KPLC still owns portions of the transmission network, it is also the sole off-taker and distribution company. As outlined in the Energy Act 2019, power system operations are intended to transition to KETRACO, which will become the sole transmission operator. This unbundling is ongoing.

The national control centre, the key unit responsible for operating the electricity grid, involves both KPLC and KETRACO in activities related to power system operations and integration of variable renewable energy sources. This collaborative approach is essential for ensuring the longevity/sustainability of the capacity development.

E**lectricity Markets:** the primary partner in developing electricity market regulation is EPRA. Stakeholder consultations are crucial in this process, as introducing new methods of purchasing, trading, and consuming electricity requires careful consideration. Therefore, MOEP, KPLC, KETRACO, KenGen, GDC, and other relevant entities are actively engaged in these activities.

Outcome 3 – Energy efficiency: The main partner is the Directorate for Renewable Energy under the State Department for Energy, which is also responsible for energy efficiency and conservation There is dedicated staff who are responsible for the implementation of the Kenya Energy Efficiency and Conservation Strategy. The initiation of this new outcome will be done together with this group of dedicated staff and include all the relevant stakeholders including industry associations and development partners.

A2.3 Summary of key partner features

Table A2.2: Summary of key partner features

Name of Partner	Core business	Importance	Influence	Contribution	Capacity	Exit strategy[23]
	What is the main business, interest and goal of the partner?	*How important is the programme for the partner's activity-level (Low, medium high)?*	*How much influence does the partner have over the programme (low, medium, high)?*	*What will be the partner's main contribution?*	*What are the main issues emerging from the assessment of the partner's capacity?*	*What is the strategy for exiting the partnership?*
Ministry of Energy and Petroleum - State Department for Energy, Directorate for Renewable Energy	Development and review of policies, strategies and guidelines for renewable energy, as well as energy efficiency and conservation. Provision of an enabling framework for the efficient and sustainable production, distribution of alternative energy and bioenergy technologies. Promote off-grid and decentralized electrical systems and hybrids for electricity access. Feed-in-tariff policy development, promotion and review.	High	High	Overall institutional anchoring of the partnership and facilitation of engagement with other public sector entities. Inviting for stakeholder consultations. Provide decision-making powers and prioritisation including adequate staff time (in-kind), data, background information, reports and communication channels for information and results.	Good overall structure of the ministry with assigned responsibilities. Some units lack capacity in the form of adequate number of staff and in some cases high turnover of staff.	Focus all capacity development efforts on the unit responsible for a given area to ensure that tools and learnings are integrated in the right institutional setup. I.e. a given MOEP unit will be able to implement the new capacity and tools in the future ministry processes.
Energy and Petroleum Regulatory	Responsible for economic and technical regulation of the energy sector. Functions include licensing of power	Medium	High	Provide decision-making powers and prioritisation including adequate staff time (in-	Competences are high and EPRA seems to have adequate number of staff available. Main issue	The work related to regulations (Outcome 2) is focused directly on providing input and guidance to specific

[23] Also, in general, and from the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured approach for eventual exit and will feed into the development of a consolidated exit strategy to be assessed by the MTR.

Authority (EPRA)	sector facilities and technicians, energy audit, tariff setting and sector oversight, regulations development and implementation including compliance and enforcement among others.			kind), data, background information, reports and communication channels for information and results	seems to be internal coordination between departments.	Kenyan regulations. Thus, the regulations will persist, and the enhanced capacity will endure within EPRA staff.
Kenya Electricity Transmission Company (KETRACO)	KETRACO's mandate is to plan, design, construct, own, operate and maintain the high voltage electricity transmission grid and regional power interconnectors that form the backbone of the National Transmission Grid.	Medium	High	Provide decision-making powers and prioritisation including adequate staff time (in-kind), data, background information, reports and communication channels for information and results	Competences are high and KETRACO seems to have adequate number of staff available. Main issue seems to be incomplete unbundling as per the Energy Act 2019 i.e. transfer of grid operations from KPLC to KETRACO.	Facilitating a closer connection between energy planning and grid expansion will improve the overall efficiency and investments in the grid (Outcome 1 + Outcome 2). Upgrading skills related to power system operations (Outcome 2) is focused on the staff in the national control centre. This is the key unit handling the operations of the power system and thus the right place for institutionalising new capacity and tools. Note: The national control (centre NCC) is right now with KPLC but as per the Energy Act 2019, the NCC will be transferred to KETRACO (ongoing).
Kenya Power and Lighting Company (KPLC)	KPLC owns and operates most of the electricity transmission and distribution system. It is the only off-taker of electricity and distribution company.	Medium	Medium	Provide decision-making powers and prioritisation including adequate staff time (in-kind), data, background information, reports and	Competences are high and KPLC seems to have adequate number of staff available. Main issue seems to be incomplete unbundling as per the	Upgrading skills related to power system operations (Outcome 2) is focused on the staff in the national control centre which right now rests with KPLC. This is the key

				communication channels for information and results. Provide access to staff in the national control centre.	Energy Act 2019 i.e. transfer of grid operations from KPLC to KETRACO.	unit handling the operations of the power system and thus the right place for institutionalising new capacity and tools.

Annex 3: Results framework

Notes:

- While not required by the standard Danida template for results frameworks, indicative activity types/topic area clusters are listed under each output as this facilitates understanding of what is expected to lead to the outputs.
- Activities will be defined in annual workplans to be approved by the Steering Committee.
- End year (2029) targets are indicated. Mid-programme (2027) targets for outputs have also been reflected.
- DEA will be accountable for the achievement of the outputs, which are within their control and to monitor and report on the achievement of outcomes, which are within DEA's influence but not within DEA control.
- The assumptions (summarised in Section 3.2) underpinning the theory of change are important for achieving the stated outcomes and impact and must be closely monitored.
- Lastly, it should be noted that the baselines listed for 2024 should also be informed by the results and achievements of the SSC, which need to be considered in the development of work plans for KENDEP during the start-up phase in early 2025. All activities are conducted in partnership with the Kenyan partners on a peer-to-peer basis in order to ensure an equal partnership and ownership of the outputs and outcomes.

Programme		**Kenya-Denmark Energy Partnership 2025-2029**	
Programme Objective		Kenya's just and inclusive green energy transition supported through strengthened partnership between Kenya and Denmark for an enabling framework for a cost-efficient electricity system with increased affordability, reliability and security of supply and reduced energy intensity to support achieving universal access to energy.	
Impact Indicator		• Increased proportion of variable renewable energy in electricity generation mix (%) • Contribution to Government of Kenya (GoK) objectives of universal access to affordable, reliable and modern energy services.	
Baseline	Year	2024	• 85-90% renewable energy in the electricity mix (data 2023) • Reliability according to official metrics not meeting the targets • Energy intensity as per IEA statistics (3 003.202MJ/thousand 2015 USD, value 2021) • 75% Electricity Access Rate (% households) (baseline 2023)
Target	Year	2029	• 98% renewable energy electricity mix by 2027 (GoK Plan 2023-2027) • Reduction in renewable energy deployment costs leading to lower electricity prices • Energy intensity improved by 3% annually (GoK Plan 2023-2027) • 95% Electricity Access Rate (% households) – GoK target for 2027

Outcome 1:	**MOEP has robust systems and procedures for planning least-cost low-carbon energy pathways and effective regulations leading to increased share of renewable energy (RE) in the energy mix and universal access to reliable and affordable energy.** Partners: Ministry of Energy and Petroleum (MOEP)
Outcome indicator	• Advisory services towards power sector modelling lead to MOEP demonstrating pathways meeting higher energy demand while ensuring least

			cost low carbon development and security of supply reflecting a just and inclusive approach to green transition. • Integrated national energy sector planning is conducted using multiple advanced modelling tools. • Framework for renewable energy tendering has a positive impact on reducing prices for electricity procurement and has due considerations of environmental and social impacts.
Baseline	Year	2024	• National power sector planning is based on one tool. • Draft regulation for integrated national energy planning released. • Draft regulation for renewable energy auction framework released. • Cost data on power generation is not objectively represented.
Target	Year	2029	• National power sector planning is conducted using multiple advanced modelling tools improving the least cost pathways for the sector • Integrated national energy sector planning is conducted using stakeholder engagement and public participation. • Framework for renewable energy auctions is the main platform for tendering procurement of electricity[24]. • Objective data is represented in a technology catalogue which is regularly updated.

Output 1.1		**Strengthened modelling capacities of the MOEP-led power sector planning groups leading to enhanced choice for least-cost low-carbon power sector development.**	
Indicative activities		- Capacity development in selected power sector models supporting least cost national power sector planning. - Development and publication of a Kenyan technology catalogue. - Triangular knowledge-sharing activities on power sector modelling conducted.	
Output indicators		• Ability of MOEP-led power sector planning group staff to use optimisation power sector modelling techniques and toolboxes.[25] • Power sector technology catalogue developed together with Kenyan partners and non-government stakeholders and published.	
Baseline	Year	2024	• Staff have been exposed to least cost power sector model training under the SSC but are not yet in sufficient number able to use advanced power sector models for national planning. • No systematic, stakeholder-driven and shared framework for technology projections exists (incorporating energy and technical; environment and cost aspects).
Mid-term target	Year	2027	• MOEP-led power sector planning groups use optimization models as part of the toolbox for national least cost power sector plans. • Development and publication of energy sector technology catalogue for Kenya through stakeholder consultations.
Target	Year	2029	• Publication of least cost power sector plan using Kenya customized optimization model incl. least cost low-carbon development scenarios for the Kenyan power sector. • Expanded and updated technology catalogue completed and used.

[24] Id.

[25] The number of people who have been exposed to the modelling techniques will be recorded. Gender of participants will be recorded. Reporting on MOEP staff engagement will be included in annual reports, which will include the position and role of the participants, participants satisfaction and application of techniques and use of toolboxes. Annual reports will summarise/analyse the LTA, and other Danish-supported inputs contribution to increasing capacities for least cost low-carbon scenarios development by the planning group and engaging in stakeholder consultations.

Output 1.2		**Strengthened integrated national energy planning framework**	
Indicative activities		• Strategic input to MOEP on modelling toolbox for integrated energy planning. • Mapping of renewable energy sources, grid access for rural communities and populations, including poor and vulnerable population groups (using GIS). • Share Danish experiences on whole energy sector planning approaches, emphasizing environmental and social aspects, as input to the implementation of the Integrated National Energy Plan (INEP). • Engaging sub-national energy planning (i.e county level) in the national planning framework	
Output indicators		• Number of knowledge-sharing workshops on overall modelling toolbox providing input to the composition of INEP modelling toolbox. [26] • Development stage of INEP and integration of KENDEP modelling results.	
Baseline	Year	2024	• No knowledge-sharing on overall toolbox for whole energy sector planning. • Draft regulations for INEP released.
Mid-term target	Year	2027	• Three knowledge-sharing workshops on whole energy sector planning tools providing input for the INEP toolbox. • INEP toolbox of models in place and includes power sector model results.
Target	Year	2029	• Five knowledge-sharing workshops on whole energy sector planning tools and providing input for the INEP toolbox • INEP developed and demonstrably integrate insights from KENDEP-supported data-driven modelling results.
Output 1.3		**Conducive regulatory framework and auction processes for accelerated renewable energy deployment in place**	
Indicative activities		• Knowledge sharing of best practices from Danish tendering models and processes, including community consultation and local benefit sharing together with institutional set-up • Policy recommendations for de-risking sector development and private sector investments. • Peer-to-peer engagement in revising/further developing regulation and processes for tendering framework. • Triangular cooperation on competitive tendering and good governance processes.	
Output indicator		• Implementation of RE projects follows well informed developed regulatory framework, and successful design of RE tendering framework, through exchange of the Danish experience including social and environmental aspects.	
Baseline	Year	2024	Draft regulation for renewable energy tendering framework released.
Mid-term target	Year	2027	Regulation for renewable energy tendering framework adopted with KENDEP support.
Target	Year	2029	Operational procedures for first competitive renewable energy tender in place leading to first tenders and selection of Independent Power Producers (IPPs).

[26] The number of people who engaged in the workshops will be recorded. Knowledge-sharing workshops reporting will be included in annual reports, which will include the gender of participants, their position and role of the participants, participants satisfaction and application of learning. Annual reports will summarise/analyse the contribution to INEP, including engagement of sub-national level.

Outcome 2:		**Transparent regulatory framework, in line with international governance standards, for efficient, reliable, and market-based integration of variable RE generation adopted.** Partners: Ministry of Energy and Petroleum (MOEP) Energy and Petroleum Regulatory Authority (EPRA) Kenya Electricity Transmission Company Limited (KETRACO) Kenya Power and Lighting Company (KPLC)	
Outcome indicator		• Regulation for capacity and ancillary services market adopted • Share of 100% variable renewable energy sources electricity production (official EPRA biannual statistics[27]). • Reduced blackouts and improved security of supply as per official statistics • Increased share of regional electricity trade	
Baseline	Year	2024	• Draft electricity market regulation released. • Variable renewable energy sources e.g. wind and solar generation accounts for 22% of the electricity generation capacity • Indicator for Security of Supply: SAIDI: 8,836 hours per month • Regional trade defined by bilateral PPA's with e.g. Ethiopia
Target	Year	2029	• Market framework established to support increased reliability in power system operations • Variable renewable energy sources e.g. wind and solar accounts for 30% of the electricity generation capacity • Improved value for security of supply (SAIDI) in line with future MOEP indicator • Regional trade functions increasingly on market terms with a growing volume of transactions, if possible.
Output 2.1		**Electricity market regulation framework for a competitive market adopted.**	
Indicative activities		• Workshops with partners to define a specific market design for Kenya • Recommendations/review of draft regulation • Stakeholder engagement in the development of regulations and market design • Site visits and customized study tours focused on Nordic electricity markets • Support in analysis of data and definition of merit order for dispatch purposes	
Output indicator		• New or updated electricity market regulations demonstrably promoting competition in the Kenyan power sector, developed through exchange of experience with Danish experts. [28] • Knowledge exchanges on Danish experience leading to increasing regional electricity trade through electricity markets[29]	
Baseline	Year	2024	• Kenya is in the process of aligning its regulatory framework to the Energy Act 2019. • Limited regional electricity trade through bilateral PPAs.
Mid-term target	Year	2027	• An action plan is developed to advance Kenyan partners' capacity to align their regulations for operations of a competitive electricity market,

[27] Source: EPRA Biannual Statistics Report 2023/2024, available at: https://www.epra.go.ke/bi-annual-energy-petroleum-statistics-report-financial-year-2023-2024/

[28] Reporting on the exchange of experience with Danish experts will be included in annual reports, which will include the gender of participants, their position and role of the participants, participants satisfaction and application of learning. Annual reports will summarise/analyse the contribution to the updated electricity market regulations, including engagement of all Kenyan institutions.

29 Id.

			including grid codes for connection, system operations and market, and alignment with East African Power Pool. • Stakeholders' consultation to advance the regulatory frameworks.
Target	Year	2029	• Regulations for operations of a competitive electricity market developed and reviewed including grid codes for connection, system operations and markets. • Kenyan regulations aligned with East African Power Pool.
Output 2.2		**Strengthened operational procedures for management of power system support cost-effective security of supply.**	
Indicative activities		• Training on technical areas e.g. Forecasting of VRE, Power Quality, System Stability Training, Voltage and Reactive power control. • Operation and control practices including security analysis, stability studies, optimal power flow and system management using industry standard simulation tools like Power Factory, PSS/E, etc. • Review of grid codes for transmission connection and distribution.	
Output indicators		• New/updated system procedures demonstrably informed by analysis and prioritisation tools and methodologies supported by KENDEP. • Proficiency in selected tools for simulation, analysis and optimization of power systems operations. [30]	
Baseline	Year	2024	Forecasting, scheduling, and dispatching inadequate for large amounts of variable renewable energy.
Mid-term target	Year	2027	Staff from national control centre acquainted with Danish best practices on SCADA simulation, dispatching operations and forecasting of VRE, and have developed own guidelines.
Target	Year	2029	• Procedures updated for improving forecasting and dispatching contributing to reduced curtailment of VRE and improved security of supply. • Support given to System Operator and to MOEP to compile policy briefs for the consideration of PS and CS.

Outcome 3:	**Data-driven energy efficiency and demand-side management strategies approved, paving the way for stronger policies and regulations, reducing grid loss, and impactful energy-saving measures across Kenya benefitting end-consumers.** Partners: Ministry of Energy and Petroleum (MOEP) Energy and Petroleum Regulatory Authority (EPRA) Kenya Electricity Transmission Company Limited (KETRACO) Kenya Power and Lighting Company (KPLC)
Outcome indicator	• Sector coupling (electrification of other energy sectors) with a view to provide adequate, reliable and affordable electricity that can generate co-benefits in terms of economic growth (e.g. electrification of industries) and job creation.

[30] The number of people who successfully completed KENDEP learning courses on power system operations, will be recorded. Gender of participants will be recorded. Training course reporting will be included in annual reports, which will include the position and role of the participants, participants satisfaction and application of learning. Annual reports will summarise/analyse the contribution to strengthened power system operation management.

		• Reduction in barriers to e-cooking adoption, despite the implementation of time-of-use tariffs, as measured by increased user satisfaction and adoption rates.[31]	
Baseline	Year	2024	Energy intensity as per IEA statistics (2021: 3003 MJ/USD 2015), value 2021.
Target	Year	2029	Energy Efficiency/intensity improved by 3% annually as per GoK Strategic Plan 2023-2027.
Output 3.1		**Improved prioritisation of effective measures in energy intensive industries to support green industrialisation.**	
Indicative activities		• Analysis of electrification potential of industrial processes. • Mapping and benchmarking of energy consumption in selected energy intensive industries in collaboration with e.g. other Danish sector cooperation projects and other development partners e.g. IEA. • Support identification and formulation of favourable policies supporting uptake of high-efficiency equipment in energy intensive industries incl. impact studies on socio-economic effects / Danish EE incentive schemes.	
Output indicators		• Quantitative assessment of the potential use of electricity to support industrial processes. • New or updated regulation or schemes in place for selected industries.	
Baseline	Year	2024	• No clear assessment of the potential productive use of electricity in industrial sectors. • Systematic energy efficiency schemes for energy intensive industries are absent.
Mid-term target	Year	2027	• Methodology for quantitative assessment of electrification potential of industrial processes in selected sectors in place. • Recommendations developed for political level on potential EE policies and their effects.
Target	Year	2029	• New or updated EE in industries strategic orientations, demonstrably informed by analysis and prioritisation tools and methodologies. • Energy efficiency schemes proposed for political decision-making level for selected industries.
Output 3.2		**Strengthened system for analysis and prioritisation of grid loss reduction measures in place (transmission and distribution).**	
Indicative activities		- Knowledge exchanges on identifying and prioritising system loss hotspots - Impact study of increased digitalization of the grid infrastructure and incorporating smart data requirements into the grid code.	
Output indicator		- New or updated grid loss reduction strategies, demonstrably informed by analysis and prioritisation tools and methodologies.	
Baseline	Year	2024	Sub-optimal power system losses (Technical and commercial losses).
Mid-term target	Year	2027	Methodology proposed for monitoring and assessing grid losses.
Target	Year	2029	New approach to grid losses institutionalised.

[31] This represents an opportunity for the DEPPIV team to consult with local communities.

Annex 4: Risk management

Contextual risks[32]:					
Risk Factor	**Likelihood**[33]	**Impact**[34]	Risk response	**Residual risk**	**Background to assessment**
Political risk	Likely	Significant	Monitor the situation. It is considered to post a policy-expert LTA in the State House to ensure high-level support and facilitate further strengthening of the diplomatic ties between Denmark and Kenya. Actively engage in communicating results and key strategic messages that promote a low carbon approach to energy production and conservation. Supporting development of transparent regulatory frameworks, open tender processes and stakeholder consultations for long-term planning is providing sector specific stability for investors and mitigating social resistance for planned infrastructure.	Major	Presidential elections are due to take place in 2027, at mid-term of the programme. The political economy in the sector, as always, has its drivers and opponents of transformational change. Political will and priorities could change due to economic and political pressures.
Programmatic Risks[35]**:**					

[32] This category covers the range of potential adverse outcomes that may arise in a particular context, including the risk of harm beyond the immediate context or the country's borders and may include governance failure (e.g. the failure of effective public financial management or law enforcement); competition for resources; natural hazards; and pre-existing socio-political tensions. (Danida Guideline to Risk Matrix 2018).

[33] Danida classification categories are: very unlikely, unlikely, likely, almost certain (see link)

[34] Danida classification categories are: insignificant, minor, major, significant (see link)

[35] This category covers include two kinds of risk: (1) the potential for a programme to fail to achieve its objectives; and (2) the potential for the programme to cause harm in the external environment. With regard to (1), the risk factors for programme failure include many of the contextual risks outlined above, as well as institutional and political factors. But there are many other reasons for potential programme failure, including inadequate understanding of the context or flawed assessment of what needs to be done; management and operational failures; and failures of planning and co-ordination. Risk is also associated with new or innovative programme approaches (although there may also be risk in failing to innovate). (Danida Guideline to Risk Matrix 2018). The categorisation of likelihood, impacts, and residual risk is also consistent with Danida guidelines.

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
Data and information unavailability	Likely	Significant	Include sharing of relevant data in an implementation agreement with relevant partner institutions as well as engage with other development partners involved in the sector. Allocate resources to data collection and production.	Major	This is a main limitation and other development partners, including partners supported by Denmark are contributing to data production and collection.
Limited absorption capacity and lack of staff retention in key positions across partners institutions	Likely	Major	Ensuring each partner institution designates officers to participate in the TA. Maintain strong commitment from partner institutions: Strengthen alumni-network across institutions. Institutional capacity of the implementing agencies will be assessed during the initial implementation phase and will result in a capacity development plan agreed with MOEP and other partners.	Minor	The partnership is based on the assumption that it is a mutual cooperation where resources for learning and knowledge exchange is available. The issue of staff turnover is recognised by partners.
Institutional risks[36]:					
Risk Factor	**Likelihood**	**Impact**	**Risk response**	**Residual risk**	**Background to assessment**
The programme could duplicate existing activities and/or fails to build synergies with other initiatives due to the in-country presence of many other development partners.	Likely	Significant	It is considered to post a policy-expert LTA in the State House to actively engage in mapping other development partners programmes, and in sector coordination working groups. Coherence with Denmark's multilateral cooperation with the World Bank, IEA, IRENA, and others also contributes to coordination and synergy and will be pursued by the MFA and MCEU in relevant for a.	Major	Energy development is a crowded field in Kenya. Denmark is a small development partner, but the unique value added of government-to-government peer-to-peer cooperation is a key feature of the programme, which very few other development partners provide.

[36] This category includes "internal" risk from the perspective of the donor or its implementing partners. It includes the range of ways in which an organisation and its staff or stakeholders may be adversely affected by interventions, e.g. damage to a donor's reputation if it fails to achieve its objectives, or from financial/fiduciary failure (Danida Guideline to Risk Matrix, 2018).

Any unintended use of resources or misconduct could reflect negatively on the cooperation.	Unlikely	Significant	There will be no direct fund transfers to partner institutions. Anti-corruption measures should therefore focus on the processes of tendering, awarding, and executing contracts with consultants. The programme will follow DEA financial and contracting procedures, and the risk of direct corruption is considered unlikely.	Insignificant	Corruption remains a significant challenge in Kenya and can undermine government effectiveness.
Any risk that the programme could fail to deliver its outcomes would reflect negatively on DEA, MOEP, and the MFA.	Unlikely	Significant	DEA and the Embassy also engage in dialogue with top management, the political level and other development partners/donors in order to facilitate consensus solutions based on the technical assistance contributions. The theory of change and results framework indicators designed with realistic and measurable targets. The Steering Committee serves as accountability mechanism monitoring progress and results.	Minor	This programme is strategic and high-profiled.

Annex 5: Budget details

Table A5.1: Summary budget allocations at output level
All numbers are in DKK million and are preliminary.

Outcomes	Outputs		2025	2026	2027	2028	2029	Sub-total
1: Energy planning and modelling	**1.1** Modelling capacity	DEA staff	1.025.357	1.025.357	1.025.357	1.025.357	1.025.357	5.126.786
		Consultants	392.000	588.000	1.274.000	1.568.000	1.078.000	4.900.000
		Other Costs	104.000	156.000	338.000	416.000	286.000	1.300.000
		Subtotal	1.521.357	1.769.357	2.637.357	3.009.357	2.389.357	**11.326.786**
	1.2 Integrated national energy planning framework	DEA staff	598.125	598.125	598.125	598.125	598.125	2.990.625
		Consultants	28.800	152.400	330.200	406.400	282.200	1.200.000
		Other Costs	7.200	38.100	82.550	101.600	70.550	300.000
		Subtotal	634.125	788.625	1.010.875	1.106.125	950.875	**4.490.625**
	1.3 Regulatory framework	DEA staff	598.125	598.125	598.125	598.125	598.125	2.990.625
		Consultants	9.600	50.800	110.067	135.467	94.067	400.000
		Other Costs	7.200	38.100	82.550	101.600	70.550	300.000
		Subtotal	614.925	687.025	790.742	835.192	762.742	**3.690.625**
							Outcome 1 Subtotal:	**19.508.036**
2: Integration of variable RE	**2.1:** Electricity market regulation framework	DEA staff	1.025.357	1.025.357	1.025.357	1.025.357	1.025.357	5.126.786
		Consultants	92.800	365.400	791.700	974.400	675.700	2.900.000
		Other Costs	38.400	151.200	327.600	403.200	279.600	1.200.000
		Subtotal	1.156.557	1.541.957	2.144.657	2.402.957	1.980.657	**9.226.786**
	2.2: System operation	DEA staff	598.125	598.125	598.125	598.125	598.125	2.990.625
		Consultants	185.600	353.800	766.567	943.467	650.567	2.900.000
		Other Costs	44.800	85.400	185.033	227.733	157.033	700.000
		Subtotal	828.525	1.037.325	1.549.725	1.769.325	1.405.725	**6.590.625**
							Outcome 2 Subtotal:	**15.817.411**
3: Energy efficiency and demand-side management	**3.1:** Energy intensive industries/green industrialisation	DEA staff	598.125	598.125	598.125	598.125	598.125	2.990.625
		Consultants	76.000	239.400	518.700	638.400	427.500	1.900.000
		Other Costs	40.000	126.000	273.000	336.000	225.000	1.000.000
		Subtotal	714.125	963.525	1.389.825	1.572.525	1.250.625	**5.890.625**
		DEA staff	341.786	341.786	341.786	341.786	341.786	1.708.929

	3.2: Grid loss reduction	Consultants	36.000	112.320	243.360	299.520	208.800	900.000
		Other Costs	6.400	25.200	54.600	67.200	46.600	200.000
		Subtotal	384.186	479.306	639.746	708.506	597.186	**2.808.929**
							Outcome 3 Subtotal:	**8.699.554**
LTA: Outcome 1.1			700.000	1.400.000	1.400.000	1.400.000	700.000	5.600.000
LTA: Outcome 1.3			700.000	1.400.000	1.400.000	1.400.000	700.000	5.600.000
LTA: Outcome 2			700.000	1.400.000	1.400.000	1.400.000	700.000	5.600.000
							LTA Subtotal:	**16.800.000**

Sub-totals per year:	7.953.800	11.467.120	14.362.927	15.603.987	11.437.167	
						60.825.000

Annex 6: List of supplementary materials

#	Document/information	Internet link if available
1.	Africa's Century - Strategy for strengthened Danish engagement with African countries	(link)
2.	Danida Approach Note on Fighting Poverty and Inequality	(link)
3.	Danida How to Note on Energy Transition and Emission Reductions in Developing Countries	(link)
4.	MOEP (2019): Gender Policy.	
5.	MOEP Strategic plan 2023-2027	(link)
6.	MOEP Least Cost Power Development Plan 2021 – 2030	
7.	Kenya Energy Act 2019	
8.	MOEP Kenya Energy Transition and Investment Plan 2023-2050	
9.	Danish Energy Agency (2023): Det flerdimensionelle fattigdomsbegreb og den menneskeretlige tilgang i Energistyrelsens myndighedssamarbejder	
10.	Fragility Risk and Resilience Analysis Tool (FRRAT) (2020)	
11.	UNEP CCC (2020): Kenya Energy Efficiency and Conservation Strategy	(link)
12.	Strategic framework Kenya 2021-2025, MFA	(link)
13.	World Bank (2022): Country Partnership Framework for the Republic of Kenya for the period FY23-FY28	(link)
14.	World Bank Groundswell Report	(link)
15.	World Bank Group (2023): Kenya poverty and equity assessment	
16.	Mulwa, R., Museumbi, E., and Maina, M. (2022). Incorporating Just Transitions in Kenya's Low-Carbon Development Path. Climate Strategies.	
17.	UN Women (2023): Gender Equality in the Sustainable Energy Transition	
18.	Youth Climate Action Strategy 2021-2030	
19.	RTI (2022): Measuring Green Jobs Creation in Kenya	(link)
20.	RTI (2023): Quantifying the local economic supply chain impacts of renewable energy investment in Kenya	(link)
21.	CIF (2024): Kenya REI investment plan	(link)
22.	Kenya - Vision 2030	(link)
23.	The Danish Institute for human Rights (2022): Scoping Paper: Human Rights and the Energy Transition in Kenya.	
24.	University of Sussex: The political economy of low carbon energy in Kenya	
25.	DIIS (2021): The political economy of energy transitions in Sub-Saharan Africa: contributions to an analytical framework. Working Paper	
26.	Elsie Onsongo, Elusiyan Olufemi Eludoyin, Meron Tesfamichael and Julia Tomei: The political economy of power planning in Kenya. COP27 Policy brief series	

Annex 7: Plan for communication of results

For other DEPPs, DEA has developed a communication strategy that involves a set of success stories and fact sheets to ensure the possibility of making swift news- and social media stories (SoMe). This is developed with inputs from the embassies to ensure consistency with the diplomatic agenda. The communications strategy is a living document that will be developed continually and thus the plan below is to be seen as a dynamic tool for regular monitoring and updating during programme implementation. Communicating key events, results and / or positive effects of the programme will happen on an ongoing basis and in close coordination between DEA, MCEU and MFA.

What? (the message)	**When?** (the timing)	**How?** (the mechanism)	**Audience(s)**	**Responsible**
Release on the approval of KENDEP. Key summary of programme information. Results updates against targets. Impact stories including contribution to SDGs 7 and 13, replicable examples of good practice.	When KENDEP is approved and updated regularly/annually	MFA/Danida website and newsletters. News item on the MFA website Website of the Danish Embassy in Nairobi.	Political decision makers and practitioners. Danish private enterprises interested in Kenya. The general public. International partners.	MFA (KLIMA) and Embassy
Release on the approval of KENDEP. Key summary programme information. Results updates against targets. Impact stories including contribution to SDGs 7 and 13, replicable examples of good practice.	As above	MCEU website and State of Green.	Danish resource base and Danish taxpayers. International development partners	MCEU
Release on the approval of KENDEP.	As above	DEA website. DEA newsletter, seminars.	Danish professional community.	DEA

Key summary programme information (Kernefortælling). Results updates against targets. Impact stories including contribution to SDGs 7 and 13, replicable examples of good practice.		State of Green. Proactive sharing of KENDEP results and lessons in the DEPP Strategic Advisory Group. SoMe channels	Danish private enterprises interested in Kenya. Other DEA partner countries. International development partners.	
Key summary programme information. Results updates against targets. Impact stories including contribution to SDGs 7 and 13, replicable examples of good practice.	As above and when major events and other opportunities arise to showcase the results of KENDEP (i.e. COP, IEA conferences, etc.)	Websites of national partners SoMe channels Newsletter, seminars, conferences. Press release	Energy community in Kenya. International development partners. Kenya general public.	National partners
Development of key strategic messages to promote a low carbon approach to energy production and conservation.	When major events and other opportunities arise	DEA/MCEU communication department develops a series of short messages that anyone would be able to use in a given communication situation – in writing or oral. This would be a product constant development over the KENDEP implementation period.	Key messages will be addressing one specific target group – this could be: • Decision makers in Kenya and in other DEPP countries • Academia, Private sector enterprises • General public • International development partners.	DEA/MCEU communication department

Annex 8: Process action plan

Activity	Timing/deadline	Responsible
Formulation mission to Kenya.	28 April-3 May	DEA with formulation process consultant
Consultant's End-of-Mission Report which includes names and titles of persons met and key takeaways from each meeting.	15 may	Formulation process consultant
Consultation document with results framework reviewed by the key Kenyan national partners and agreed	07 June	DEA
Presentation of early draft DEPP 2025 (then called DEPP IV) programme document ("concept note") to the Danida Programme Committee.	11 June	MFA(KLIMA) with DEA
Submission to DEA of draft Kenya Country Programme Document (PD) (together with DEPP 2025 Framework PD and Country PDs for Brazil and India)	31 July	Formulation process consultants
Submission of revised draft KENDEP PD (together with DEPP 2025 Framework PD and Country PDs for Brazil and India) for appraisal.	19 August	DEA
Appraisal of proposed DEPP 2025	19 August-23September	MFA(KLIMA) with appraisal consultant
Appraisal report (draft/final)	23/27 September	Appraisal consultants
Adjust draft DEPP 2025 PD package including KENDEP PD based on appraisal recommendations and submit to DEA for comments.	30 September	Formulation process consultants
DEA/MFA to complete final check and forward final DEPP 2025 PD package including KENDEP PD with appropriation cover note to the UPR Secretariat.	14 October	MFA(KLIMA) with DEA
Present the DEPP 2025 Programme to the Council for Development Policy (UPR).	31 October	MFA(KLIMA) with DEA
Approval of DEPP 2025 by the Danish Minister.	Early/mid-November	Minister for Development Cooperation
Document for Finance Committee (Aktstykke) and presentation to the Parliamentary Finance Committee.	November	MFA(KLIMA)
Signing of Agreement between MFA and DEA on DEPP 2025 Programme implementation.	Late November/ early December	DEA/ MFA(KLIMA)
KENDEP start-up phase, including further assessments of partner capacity development needs and priorities, updating/ further constitution of implementation working groups, preparation of structured plan for knowledge sharing/capacity development, development of work programmes and draft progress and results reporting, etc. From the start of implementation, there will be focus on sustainable knowledge transfer and uptake as an integral part of all activities. This is also seen as part of a structured	January-June 2025	DEA with national partners in Kenya

approach for eventual exit and will feed into the development of a consolidated exit strategy to be considered by the MTR.		
KENDEP Full-fledged implementation.	June 2025-December 2029.	DEA
Meetings of the Steering Committee (SC)	Annually	SC members
Technical working groups (TWGs) preparing work plans and progress reports for SC approval.	Meeting every six months	DEA with national partner institutions
Targeted communication of results as per communication strategy and plan.	Ongoing throughout implementation period	DEA, EDK, MFA, national partners
Prepare consolidated draft exit strategy for consideration by MTR.	Prior to MTR	DEA
Mandatory Mid-term Review (MTR).	Mid-late 2027 (timing tbd)	MFA(LEARNING)
Final progress and results reporting.	Early 2030	DEA

Annex 9: Long-Term Advisor draft job profiles

A9.1 KENDEP – LTA description 1

Host and place of work:
Ministry of Energy and Petroleum (MOEP), Directorate for Renewable Energy

Key functions and responsibilities:

- Contribute to capacity development based on Danish experiences with regards to development of the Least Cost Power Development Plan (LCPDP) as well as the Integrated National Energy Plan (INEP) together with the LCPDP group and relevant stakeholders in the electricity sector.
- Contribute to capacity development based on Danish experiences in enhancing the partners' capacity to conduct power sector modelling and scenario development.
- Identify needs of the relevant Kenyan partners for Outcome 1 and facilitate technical assistance from the DEA team in Denmark
- Facilitate close coordination and communication between the partner organizations, including status meetings and reporting about short term progress and plans.
- Provide support on development of TOR for technical assistance and other input, working with MOEP to select consultants, follow-up on consultants work progress and comment on their deliverables and reports.
- Support planning and implementation of programme workshops and events and provide input to work programme development and progress reports.
- Keep updated on energy sector development and establish a personal network with development partners, civil society organisations and private sector.

Qualifications:

- Solid knowledge of power sector modelling with a main focus on optimization modelling tools i.e. Balmorel is a requirement.
- A master level degree or corresponding qualifications in energy/environmental management, economics, political science, engineering and/or subjects relevant to renewable energy could be relevant.
- Extensive experience working with one or more related fields such as: energy data collection and statistics, energy system modelling, renewable energy planning.
- Programme management and coordination experience and experience from delivery of technical assistance, exchange visits and technical secondments.
- Experience from developing countries, preferably Kenya will be an advantage.
- Fluency in English, written and spoken, is required. Fluency in Danish is an advantage.
- Experienced in giving presentations to workshop and other events.

A 9.2 KENDEP – LTA description 2

Host and place of work:

- Ministry of Energy and Petroleum (MOEP), Directorate for Renewable Energy
- Day-to-day work will involve out posting with KETRACO, KPLC, and EPRA

Key functions and responsibilities:

- Contribute to capacity development based on Danish experiences with regards to development and implementation of technical and market regulation of stakeholders (e.g. TSO, DSOs, system and market operators, retailers, generators and consumers) in the electricity sector.
- Contribute to capacity development based on Danish experiences in increasing the ability to integrate variable renewable energy including increased flexibility from generation and demand.
- Contribute to capacity development based on Danish experiences in power system operation and development of technical regulations with the overall purpose of increasing the ability of the system to integrate more variable renewable energy.
- Identify needs of the relevant Kenyan partners and facilitate technical assistance from the DEA team in Denmark.
- Facilitate close coordination and communication between the partner organizations, including status meetings and reporting about short term progress and plans.
- Provide support on development of TOR for technical assistance and other input, working with MOEP to select consultants, follow-up on consultants work progress and comment on their deliverables and reports.
- Support planning and implementation of programme workshops and events and provide input to work programme development and progress reports.
- Keep updated on energy sector development and establish a personal network with development partners, civil society organisations and private sector.

Qualifications:

- Solid knowledge of the Danish energy system and the Danish Energy policy incl. integration of renewable energy in the power system is a requirement.
- A master level degree or corresponding qualifications in energy/environmental management, economics, political science, engineering and/or subjects relevant to renewable energy could be relevant.
- Extensive experience working with one or more related fields such as: energy data collection and statistics, energy system modelling, measures for integration of renewable energy, power system operation, electricity market development, regulation of the energy sector incl. offshore wind energy, renewable energy planning.
- Programme management and coordination experience and experience from delivery of technical assistance, exchange visits and technical secondments.
- Experience from developing countries, preferably Kenya will be an advantage.
- Fluency in English, written and spoken, is required. Fluency in Danish is an advantage.
- Experienced in giving presentations to workshop and other events.

A 9.3 KENDEP – LTA description 3

Host and place of work:

- Ministry of Energy and Petroleum (MOEP), Directorate for Renewable Energy
- Economic Council of Advisors Climate Team under the President's State House

Key functions and responsibilities:

- Contribute to capacity development based on Danish experiences policy development, renewable energy regulations and competitive tendering methodologies e.g. auctions for the the energy sector.
- Contribute to capacity development based on Danish experiences in terms of preparing energy sector reforms and providing fact-based choice-awareness for political level.
- Assist partners and LTAs in identifying needs of the relevant Kenyan partners for all KENDEP outcomes and align with political priorities.
- Facilitate cross government coordination and communication to ensure alignment and synergies are accommodated in activities.
- Keep updated on energy sector development and establish a personal network with development partners, civil society organisations and private sector.

Qualifications:

- Solid knowledge and experience from working with policy development, renewable energy regulation and political processes in the energy sector.
- A master level degree or corresponding qualifications in energy/environmental management, economics, political science, engineering and/or subjects relevant to renewable energy could be relevant
- Extensive experience working with one or more related fields such as: energy policy development, renewable energy planning and tendering, economic impact studies, socio-economic analysis and political processes.
- Programme management and coordination experience and experience from delivery of technical assistance, exchange visits and technical secondments
- Experience from developing countries, preferably Kenya will be an advantage
- Fluency in English, written and spoken, is required. Fluency in Danish is an advantage.
- Experienced in giving presentations to workshops and other events

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