

Indonesia-Denmark Energy Partnership Project (INDODEPP)

<div>Key results:</div> <ul style="list-style-type: none">- Contribute to achieving low carbon development, implementation of the Paris Agreement on Climate Change, including continued upscaling NDC goals in Indonesia. The change process is achieved through technical assistance and coordinated climate diplomacy actions with the Danish Ministry of Foreign Affairs / the Royal Danish embassy (Green Frontline Mission).- Across partner institutions, modelling capacity is improved, and partners are capable of running state-of-the-art energy models stimulating choice-awareness about climate- and energy costs.- Indonesia's energy policy and planning is strengthened and better aligned among stakeholders, and monitoring systems for implementing renewable energy plans are integrated in national law (e.g. decree).- The governmental system, regulation and incentives for managing renewable energy integration in Indonesia is modernized. Among other contributing to more attractive opportunities for renewable energy investments.- A pilot tender project on wind power is facilitated providing a basis for commercial and/or concessional financing and ready for wider replication in Indonesia.- Least-cost grid integration strategies and planning for enhanced integration of variable renewable energy enabling the partner PLN (Indonesian State-Owned Electricity Utility) to be confident in forecasting and systems operation for the national target of 23 % renewable energy by 2025.- Capacities developed and system ready for energy efficiency measures in buildings.- Increased energy efficiency in industry and power plants. <div>Justification for support:</div> <ul style="list-style-type: none">- Indonesia being the fourth most populated country in the world and the sixth largest global emitter of greenhouse gases is an essential partner in the dialogue and action on the green transition.- This project focuses on institutional capacity development where transformational change for low carbon development can be achieved.- Partners in the project have Government mandate (and authority) in the chosen areas of collaboration. They are already trusted partners in Strategic Sector Projects (DK/ID), and the applied government-to-government modality has been verified as being fit-for-purpose.- The formulation process for INDODEPP has included series of close consultations with national partners. In the end of the formulation process partner commitment was confirmed by the joint (DK/ID) signing of a <i>Consultation Document</i> summarizing the main targets of INDODEPP.- The project is in line with the Danish Government's Climate Act and targets climate change mitigation and SDGs prioritised in Denmark's strategy "The World 2030" for development cooperation.- The Embassy of Denmark in Jakarta is one of Denmark's "Green Front Line Missions" enhancing high-level climate diplomacy. <div>Major risks and challenges:</div> <ul style="list-style-type: none">- Vested interests in traditional energy solutions including coal and palm oil and decreasing prices on both oil and coal might affect the political economy and push for increased use of coal.- Limited institutional capacity in partner institutions and risks of discontinuity in key partners staffing.- Political and social tension may arise from elections in 2020 and 2024.	<div>File No.</div> F2 2020-34198																							
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	<div>Responsible Unit</div> GDI with Ministry of Climate, Energy and Utilities and the Danish Energy Agency																							
	<div>Sector</div> Climate and Energy																							
	<div>Partner</div> Ministry of Energy and Mineral Resources																							
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Major risks and challenges:

- Vested interests in traditional energy solutions including coal and palm oil and decreasing prices on both oil and coal might affect the political economy and push for increased use of coal.
- Limited institutional capacity in partner institutions and risks of discontinuity in key partners staffing.
- Political and social tension may arise from elections in 2020 and 2024.

Strategic objectives:

The project has contributed to: meeting Indonesia's national energy demand in a more sustainable way; reach Indonesia's NDC goals by reducing GHG-emissions; fulfil SDG7 and SDG13 targets; and the achievement of the 23% renewable energy goal in 2025.

Justification for choice of partner:

Ministry of Energy and Mineral Resources is the strategic partner ministry and has the mandate by the Government of Indonesia for the outcomes and outputs that the INDODEPP focuses on. The has been validated in the ongoing Strategic Sector Cooperation in the energy sector.

Summary:

Outcome 1: Scenario-based long-term energy plans and regulation.
Outcome 2 Integration of variable renewable energy.
Outcome 3: Enhanced national strategy for energy efficiency, reducing the predicted increase in electricity demand making the green energy transition achievable in a cost-efficient manner.

Budget:

Outcome 1	DKK 13.5 mill.
Outcome 2	DKK 13.2 mill.
Outcome 3	DKK 10.8 mill.
Two long-term Advisors	DKK 13.0 mill.
Analyses and mandatory Mid-term Review	DKK 1.0 mill.
Unallocated funds and contingencies	DKK 6.0 mill.
DEA Project management	DKK 2.4 mill.
Total	DKK 60.0 mill.

Danish Ministry of Foreign Affairs of Denmark (MFA)
Danish Ministry of Climate, Energy and Utilities (MCEU)
Danish Energy Agency (DEA)
Indonesian Ministry of Energy and Mineral Resources (MEMR)
Indonesian State-Owned Electricity Utility (PLN)

**Indonesia-Denmark Energy Partnership Project
(INDODEPP)**

2020-2025

Project Document

30 September 2020

Ref: F2 2020-13768

List of key abbreviations and selected terminology

Note: For the key INDODEPP Indonesian national partner ministries/institutions, the English abbreviations are generally used (e.g. MEMR instead of ESDM), consistent with the generally used acronyms in an international cooperation context – while for regional entities, the Bahasa acronyms are generally used. Depending on the feedback received on this draft PD, this practice could be changed to more consistent use in either language.

ACE	ASEAN Centre for Energy
ADB	Asian Development Bank
AMG	MFA/Danida Aid Management Guidelines
ASEAN	Association of South East Asian Nations
Bahasa	Bahasa Indonesia, national language
BAPPEDA	Badan Perencana Pembangunan Daerah (Indonesian regional body for planning and development)
BAPPENAS	Ministry of Development Planning of the Government of Indonesia
BaU	Business-as-Usual
BEMS	Building energy management systems
CCEE	Copenhagen Centre on Energy Efficiency
CEM	Clean Energy Ministerial
CETP	Clean Energy Transitions Programme, an IEA global flagship programme providing support to Indonesia and other developing economies
COP	Conference of the parties (under the UNFCCC)
CO ₂	Carbon dioxide
CTCN	Climate Technology Centre and Network
Curtailment	Reduction of renewable energy production (e.g. of a wind farm by shutting-down wind turbines) to mitigate issues associated with export to the grid, or inflexibility of thermal power plants, etc.
DAC	Development Assistance Committee (OECD)
Danida	Brand name for Danish international development cooperation, under the Ministry of Foreign Affairs of Denmark
DEA	Danish Energy Agency
DED	Development Engagement Document
DEPP	Danish Energy Partnership Programme (China, Mexico, South Africa, and Vietnam)
DFC	Danida Fellowship Centre
DFID	UK Department for International Development
DGE	Directorate General of Electricity, MEMR
Dinas ESDM	Dinas Energi Sumber Daya dan Mineral (regional offices of ESDM – MEMR in English). Note: for regional entities, the Bahasa acronyms are generally used in this PD.
DKK	Danish Kroner
E4	IEA Energy Efficiency in Emerging Economies Project
EBTKE	Directorate General for New and Renewable Energy and Energy Conservation (DGNREEC), MEMR
EDC	Energy Development Commission
EE	Energy Efficiency
EIA	Environmental impact assessment
Energinet	Danish transmission system operation
ESCO	Energy service company
ESMAP	World Bank Energy Sector Management Assistance Program
ESP	Environmental Support Programme (1, 2 and 3 in Indonesia)
ES	Energy savings (used here for energy savings standards in buildings)
EUDP	Danish development and demonstration programme for energy technology

F2	MFA, RDE, MEUC, DEA electronic archive system
FFSR	Fossil Fuel Subsidy Reform
Flexibility	For the purpose of this Project, flexibility is the ability to handle variability and uncertainty in generation and demand while maintaining satisfactory reliability.
Forecasting	Forecasting is the prediction of power generation from variable energy sources such as wind and solar power and demand so that system operators can plan the schedule for power generation.
GGGI	Global Green Growth Institute
G20	The Group of Twenty (leading World economies)
GCF	Green Climate Fund
GDI	MFA Department for Green Diplomacy
GDP	Gross domestic product
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit, German technical cooperation agency
GOI	Government of Indonesia
GSI	Global Subsidies Initiative
GtG	Government-to-Government
GW	Gigawatt
HRBA	Human Rights-based Approach
INDODEPP	Indonesia-Denmark Energy Partnership Project
IDR	Indonesian Rupiah
IEA	International Energy Agency
IFU	(Danish) Investment Fund for Developing Countries
IISD	International Institute for Sustainable Development
IPP	Independent power producer
IRENA	International Renewable Energy Agency
Kementerian BUMN	Ministry of State-Owned Enterprises (MSOE) of the Government of Indonesia
KEN	National Energy Policy (formulated by NEC)
KfW	KfW Banking Group Germany (original name Kreditanstalt für Wiederaufbau)
KLHK	Ministry of Forestry and Environment (MOFE) of the Government of Indonesia
KLIK	Biro KLIK is the unit within MEMR that coordinates international cooperation
KPI	Key performance indicator
KPK	Indonesian independent anti-corruption unit
LCOE	Levelized cost of energy ¹ - the average lifetime costs of providing one MWh for a range of power production technologies or power savings and thus help compare and select the optimal technologies in future national energy supply.
LINTAS	A Clearing House for EE and RE as a one-stop information centre/hub used by government, energy-sector stakeholders and general public.
LOI	Letter of Intent
Long-term planning	For the purposes of this Project, long-term energy planning is understood ² as the process that sets a long-term direction for energy sector development, based on qualitative approaches and quantitative analysis.

¹ DEA has developed an LCOE Calculator that enables country specific comparisons of the average costs of conventional and new energy solutions, giving a holistic assessment of future costs focusing not only on project specific costs (investment, O&M, fuels, etc.), but also system and society costs.

² There are several steps and components that constitute long-term energy planning, with scenario analysis and modelling as foundations, accompanied with other key elements such as the development of a vision for the energy sector, assessment of resource potentials, the establishment of targets and related enabling policy, regulatory, institutional and financial frameworks.

LTA	Long-term advisor
LULUCF	Land-Use, Land-Use Change and Forestry
MCEU	Danish Ministry of Climate, Energy and Utilities
MEMR	Ministry of Energy and Mineral Resources, Government of Indonesia (MEMR is also referred to as ESDM in Bahasa). In this PD, the MEMR acronym for the Ministry is used, in line with common practice in international cooperation.
MFA	Ministry of Foreign Affairs of Denmark
Modelling	In the specific context of this Project, modelling ³ refers to a method to devise quantitative energy scenarios with the aid of computerised modelling tools.
MOF	Ministry of Finance of the Government of Indonesia
MOFE	Ministry of Forestry and Environment
MOM	Minutes of meeting
MOU	Memorandum of Understanding
MTR	Mid Term Review
NDC	Nationally Determined Contribution (under the Paris Agreement on Climate Change)
NEC	National Energy Council of Indonesia
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PD	Project Document
P4G	Partnering for Green Growth and the Global Goals 2030
PLN	PT Perusahaan Listrik Negara (Indonesian State-Owned Electricity Utility)
PP	Power plant
PPP	Purchasing Power Parity
PPA	Power purchase agreement
PPU	Power Processing Units
PV	Photo voltaic
Ramping	Ramp rate is the rate at which a power plant can increase or decrease output (e.g. % per minute)
RDE	Royal Danish Embassy in Indonesia (in some cases also referred to as the Embassy of Denmark (EDK))
RE	Renewable Energy
RENSTRA	Indonesian Rencana Strategis (national strategic plans)
RIKEN	Master plan for national energy conservation
RUED	Rencana Umum Energi Daerah (Regional master plan for energy system development, formulated by regional government)
RUEN	Rencana Umum Energi Nasional (Master Plan on National Energy, formulated by MEMR)
RUKN	Master plan on National Electricity (formulated by MEMR)
RUPTL	Rencana Usaha Penyediaan Tenaga Listrik (Electricity Supply Business Plan, formulated by PLN)
SC	Steering committee
Scenarios	Consistent projections of developments used to map future uncertainties, to support informed decision-making.
SDG	Sustainable Development Goal
SEforALL	Sustainable Energy for All
SII	Sustainable Island Initiative (SSC)

³ Many types of modelling approaches exist, with differences among them mainly related to their level of technological and economic representation. For example, certain models have detailed energy system representation with limited representation of economic feedbacks, while others have detailed representation of economic structure with limited representation of physical energy systems. Long-term energy scenarios are often developed using the first type of model, to understand possibilities and uncertainties around energy transitions, as physical realities are critically important in defining transition possibilities. The second type of model is important to understand the economic implications of transitions, which are often the critical factor in determining political feasibility.

SMART	Specific, measurable, attainable, relevant, timebound
SoMe	Social media
SSC	Strategic sector cooperation
SWOT	Strengths, weaknesses, opportunities, threats
TA	Technical assistance
TOC	Theory of Change
TOR	Terms of reference
TSO	Transmission system operator
UDP	UNEP DTU Partnership
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSG	United Nations Secretary General
UPR	The Danish Council for Development Policy
USAid	United States of America - International Development agency
USD	United States Dollar
VRE	Variable renewable energy (in the Concept Note referred to as fluctuating renewable energy)
WB	World Bank
WRI	World Resources Institute

1 IDR = 0.000428001 DKK

1 DKK = 2,336.44 IDR

27 September 2020

The Indonesian Financial Year is the calendar year

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1. Introduction

The United Nations (UN) Sustainable Development Goals Report 2020 shows that the world is way off-track to meet the Paris Agreement target⁴, and that despite commitments to SDG13 (Take urgent action to combat climate change and its impacts), the climate crisis continues unabated. The Report also shows that while the world continues to advance towards sustainable energy targets, efforts are not of the scale required to achieve SDG7 by 2030 (SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all). The Report emphasises that stepped-up efforts in renewable energy (RE) are needed to achieve long-term climate goals and that improvements in energy efficiency (EE) – key to reducing greenhouse gas emissions – are falling short of the SDG target. The Covid-19 (coronavirus) pandemic has brought a new urgency to expand sustainable energy solutions in support of a green and just recovery from this crisis.

Denmark has collaborated with the Government of Indonesia (GoI) on improvement of the environment in Indonesia since 2005 through the Environmental Support Programme (ESP). ESP phases 2 and 3 included cooperation in the energy sector and this has then continued since 2016 with the Strategic Sector Cooperation (SSC) projects in a Government-to-Government (GtG) energy partnership to support the Indonesian commitment to the Paris Agreement and SDGs, particularly SDG 7 and SDG13. In 2015 Indonesia and Denmark signed a Memorandum of Understanding concerning cooperation in renewable and clean energy and energy conservation (the MoU is included – in English version only - as Annex 16). Denmark thus has a Strategic Partnership with Indonesia and the Royals Danish Embassy (RDE) in Jakarta is one of the Climate Front Posts⁵ and a priority for Danish climate diplomacy. The partnership has also demonstrated the relevance of the Danish energy transition model to Indonesian partners who have found Denmark's and the Danish Energy Agency (DEA's) know-how and experience relevant and beneficial to support Indonesia transition to sustainable energy and to contribute to reaching the targets of Indonesia's Nationally Determined Contribution (NDC) under the Paris Agreement.

In support of the goals of the Paris Agreement, Denmark is committed to enhanced global efforts assisting the largest emitters of greenhouse gases (GHGs) to raise their national climate ambitions. Denmark's Strategy for Development Cooperation and Humanitarian Action, "The World 2030", has strong focus on the Paris Agreement and the SDGs to provide support and facilitate increased investments in areas related to climate change mitigation and sustainable energy where Denmark has strong expertise and experience.

Established in 2008, the Danish Climate Envelope is a mechanism for channelling dedicated climate funding to support international development cooperation at both bilateral and multilateral levels within mitigation and adaptation activities - in line with Denmark's commitment to contribute to international climate finance. The Climate Envelope targets the following impacts: i) reduced greenhouse gas emissions; ii) increased climate resilience, specifically for vulnerable and marginalised groups, and supports transformational change in emerging economies and developing countries. The Ministry of Foreign Affairs of Denmark (MFA) is overall responsible

⁴ The central aim of the Paris Agreement on Climate Change is keeping a global temperature rise well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius. Currently, global temperatures are on track to rise as much as 3.2°C by the end of the century. To meet the 1.5°C – or even the 2°C – maximum target called for in the Paris Agreement, greenhouse gas emissions must begin falling by 7.6 % each year starting in 2020.

⁵ <https://um.dk/en/news/newsdisplaypage/?newsid=cefe2525-154d-4d1f-9c27-34fa74f23c1a>

for the Danish Climate Envelope. The right to propose new initiatives is divided between the MFA and the Danish Ministry of Climate Energy and Utilities (MCEU). The Climate Envelope has funded energy-related climate change mitigation partnership programmes with China, Vietnam, South Africa and Mexico since 2012, with Ethiopia since 2016, and with India since 2019.

Based on initiative from MCEU the Danish Government's coordination committee has allocated DKK 37.5 million from the Climate Envelope⁶ 2020 for bilateral energy cooperation with Indonesia and a further DKK 22.5 million from the Climate Envelope in 2021, for a total of DKK 60.0 million.

2. Strategic Considerations and Justification

2.1 Project Identification and Formulation Process

In February 2020, the Indonesian Director General for New and Renewable Energy and Energy Conservation (DG-EBTKE), who is chairman of the Indonesian-Danish SCC Steering Committee, requested additional support for:

- 1) Strengthening the institutional capacity for energy modelling and planning in and across relevant institutions to increase quality and alignment of energy plans.
- 2) Assistance to Indonesia as GtG support with regard to regulation to attract investments in renewable energy.
- 3) Supporting the development of selected regional energy plans.
- 4) Capacity development for renewable energy integration, and exchange of experience with Denmark on management of a system with a large share of variable renewable energy.
- 5) Energy efficiency and energy demand management.

An identification and formulation process then proceeded, building upon the long-standing cooperation with the key Indonesian partners. In particular this includes the Ministry of Energy and Mineral Resources (MEMR) and its EBTKE and the MEMR Directorate General of Electricity (DGE), the National Energy Council (NEC), and the public utility company PLN. It has been discussed with them as a proposed deepening and widening of the ongoing SSC cooperation. A Concept Note for “Danish-Indonesian Energy Cooperation” prepared by RDE and DEA was discussed at the Danida Programme Committee meeting⁷ on 23 June 2020. A team of external consultants was mobilised at the end of July to assist the MFA Department for Green Diplomacy (GDI), DEA, and RDE in formulating the proposed partnership documentation. A series of meetings⁸ were held with Indonesian partners during August and September 2020 to identify and confirm Indonesian partner needs and priorities and further define the cooperation, while ensuring alignment with Indonesian policies and plans and ensuring the best match with Danish expertise, experience and added value. The consultation process has shown that the identified key partner priority needs, which Denmark is well placed to deliver on, are scenario-based long-term energy plans and regulation, grid integration of variable renewable energy, and energy efficiency. A Consultation Document has been an important tool in these close

⁶ The Climate Envelope is managed as an integrated part of Danish international development cooperation and follows the MFA's Aid Management Guidelines (AMG) including the Guiding Principles for the Danish Climate Envelope.

⁷ Among the Committee's key conclusions was the need to build the necessary flexibility and adaptability into the project, and to align to the DEPP III approach.

⁸ Due to the Covid-19 restrictions, the meetings were held on virtual platforms.

consultations. The Document, which has been through a number of revisions based on the meetings held and based on separate meetings among the Indonesian partners, contains the proposed Results Framework at Impact, Outcome and Outputs levels as well as indicative activities to produce the outputs; outline job profiles for the embedded long-term advisors (LTAs) are annexed to the document. An in-process appraisal led by the MFA Department for Department for Sustainable Investments, Job, and Equal Opportunities (GJL) has been undertaken during September, and the appraisal team has participated in meetings with Indonesian partners and commented on the draft INDODEPP Project Document (PD). Based on this process, a final Consultation Document was agreed in a meeting on 25 September between the Indonesian Chairman of the Steering Committee, other high level representatives of partner institutions, the Danish Ambassador, and DEA - and the Document was formally signed at the Steering Committee on 29 September, as a reflection of partner commitment to the chosen areas of cooperation, subject to the formal approval process for the Danish funding.

2.2 Strategic Considerations

The Indonesian Context

Indonesia is the fourth most populated country in the world with a population of about 270 million in an archipelago of 17.000 islands, where 6.000 are inhabited. Indonesia has the world's largest Muslim population and numerous religious minorities, and while religion plays a big role in Indonesian society, it is also characterized by tolerance and coexistence. Indonesia's dynamic democracy has free and fair elections and freedom-of-speech, but it is also a young and still maturing democracy. Through history, there have been cases of ethnic, religious and social tensions and unrest. While Indonesia has experienced steady economic growth in recent years and achieved substantial development progress, development across the country is uneven – poverty rates are seven times higher in Papua than in Java – and inequality remains a pressing challenge for the government. About 20% of Indonesia's population – about 25.1 million people – remain vulnerable to poverty⁹, with income just above the international poverty line. And it gets worse outside the islands of Java and Sumatra, which contribute about 80% of GDP. Due to the Covid-19 pandemic, Indonesian GDP has contracted with (minus) 5.32% in Q2 2020¹⁰. The government predicts that the unemployment rate would be between 7.7 – 9.1% next year. That would be a huge increase from the current unemployment rate of 4.9%.

Indonesia is ranked as the sixth largest global GHG emitter – mainly due to the large emissions from forestry.¹¹ This includes pressures on tropical rainforests due to palm oil production. The country has in recent years experiencing annual growth rates of approximately 5% for the national economy, energy consumption and CO₂ emissions. Thus, Indonesia is already facing needs for major investments in the energy system that will have a significant impact on the global greenhouse gas emissions in years to come. However, Indonesia also prioritizes 100% access to electricity¹² and cheap electricity to all for social protection and secure energy supply conditions for a growing middle-class in both urban and rural areas. Known technologies, namely coal, palm oil and natural gas, provide a stable and well-proven solution for achieving these goals and continued reliance on

⁹ <https://www.worldbank.org/en/country/indonesia/overview>

¹⁰ <https://www.bps.go.id/pressrelease/2020/08/05/1737/-ekonomi-indonesia-triwulan-ii-2020-turun-5-32-persen.html>

¹¹ <https://www.wri.org/our-work/topics/indonesia>

¹² <https://www.thejakartapost.com/news/2020/04/03/indonesia-to-electrify-433-remote-eastern-villages.html>

these sources could be the result if Indonesia were to choose an unsustainable post-Covid-19 recovery of economy, where increased use of coal would increase GHG-emissions significantly. Increased use of palm oil would also lead to more deforestation and loss of biodiversity.

Indonesia's Nationally Determined Contribution (NDC) to the Paris Agreement under the UNFCCC includes an unconditional target of 26% GHG reductions by 2020 and 29% by 2030 compared to Business-as-Usual (BaU). The current energy policy is projected to increase GHG-emissions significantly. Indonesia's NDC projected its 2030 BaU to be more than double 2010 GHG levels. (See table A-1.1: Indonesia's First NDC in Annex 1 for details). Indonesia "only" expects to reduce 10% of its GHG-emissions from forestry while the expected increase from the energy sector in the same period is expected to rise by as much as 268%. This clearly underlines the rationale for international support and links well with Danish core competences and the Danish SDG7 leadership. It also clearly linked to the conditional high target in the NDC, where Indonesia promises to increase ambitions from 29% to 41% reduction by 2030, if sufficient international support is provided.

Even with the current policy of reaching 23% RE by 2025 (an increase of 24 GW from 10 GW in 2019)¹³ it is expected that Indonesia will establish additional 30 GW fossil-fuelled power plants before 2025, which should be compared to the existing total capacity of 69 GW (both RE, coal, oil and gas). It is very important to note that Indonesia has great RE potential and that the Indonesian partners have underlined the importance of this partnership in support of realising this potential, particularly with regard to wind energy. It is estimated that Indonesia has a total potential of about 400 GW renewable energy sources, including hydro, wind, solar, tidal, sustainable bioenergy, and geothermal energy. DEA has in the current Indonesian-Danish SSC partnership calculated that if Indonesia accelerates the use of the enormous renewable energy resources in a cost-effective manner it would save the world from extra 400 million tons of CO₂-emissions each year. This equals 12 times the annual Danish CO₂ emission from energy production.

Political economy

The energy sector in Indonesia is driven by different political priorities, i.e. access to affordable energy, low electricity tariffs and low generation costs, quality and reliability of electricity supply, increased RE energy share in the energy mix and climate change mitigation, as well as the overall economic and industrial dimension of energy in terms of energy security, employment, and export. These priorities feed a constellation of conflicting interests and different stakeholder positions towards the energy transition and the GOI's high ambitions for RE. According to an IISD study (2019), the coal industry represents an important economic driver for Indonesia through coal export and employs around 125.000 people. Since 2007, the increases in electricity production to meet the growing demand have been largely met by an increase in coal generation capacity. The sector has received considerable government support in the form of loan guarantees, tax exemptions and price compensation, and this indirectly reduces the costs of coal-based electricity generation and affects the competitiveness of RE – and it challenges Indonesia's NDC targets, as coal-fired power plants represent a major source of GHG emissions. Concerning the palm oil industry, rising domestic demand for palm oil as a result of Indonesia's national biodiesel programme will hardly be met by current palm oil production or by efficiency improvements in the industry. According to a WRI study, it is estimated that increasing palm oil demand will

¹³<http://ebtke.esdm.go.id/post/2019/12/06/2419/kejar.target.bauran.energi.2025.dibutuhkan.investasi.ebt.hingga.usd3695.miliar>

encourage the clearing of 72,000 square kilometres of land. Palm oil is a monoculture with much lower carbon storage than native rainforest. Clearing forests to harvest biofuels releases far more carbon into the atmosphere than the carbon that biodiesel reduces by replacing fossil fuels – and it has a high negative impact on the environment and biodiversity. This net increase in emissions would thus eliminate the climate purpose of switching to biodiesel and challenge Indonesia's NDC. In 2019, the Indonesian President declared a moratorium on the issuance of new permits for palm oil plantations, although smallholders in particular are still clearing rainforest for palm oil production. MEMR and PLN have the mandate to drive the achievement of the 23% RE by 2025. The overall balancing act for the Ministry and PLN is to integrate more RE while ensuring an affordable, quality and reliable power supply, in a context where RE generation costs are not yet fully competitive with coal-based generation, and there is a shortage of skills and knowledge about RE. Then, setting tariffs at a rate that could be economically viable for both IPPs and PLN remains challenging. A number of approaches have been tested (feed-in tariff (FIT), price cap) but power purchase agreements between IPPs and PLN have been limited. While the Ministry of Finance and the National Parliament are not opposed to financial incentives for RE, they have several other priorities (e.g. State budget stability, PLN financial stability, priority to subsidise in support to poor people). According to an IISD study, the Ministry of Finance is almost the only branch of government that favours increasing electricity tariffs— subject to what is politically feasible— since this would reduce the size of the subsidy which the ministry needs to provide to PLN.

Key Danish strategic Considerations

Denmark and Indonesia have a long-standing partnership since 2005 and a Memorandum of Understanding on collaboration in energy. The Danish Government Strategy “The World 2030” prioritises SDG7 and SDG 13 interventions in emerging economies and as global public goods. The new Danish Climate Act points to the opportunities for Denmark to increase Denmark's international support to GHG-reductions among the largest GHG-emitters. The RDE is one of the Climate Front Posts and a priority for Danish climate diplomacy.

There is ongoing successful cooperation through SSC within 1) Energy and Climate, 2) the Sustainable Island Initiative, 3) Waste and Circular Economy and 4) Food and Agriculture, and these GtG-partnerships give Denmark a rather unique position in the bilateral climate diplomacy and development cooperation relations with Indonesia.

The identified topic areas for INDODEPP partnership focus on support within planning and regulation, RE, and EE, which can show a greener development path and facilitate a just transition that can also lead to significant job creation. EE will lower energy demand and thereby save expensive investments, induce industries and building resilience and reduce pollution from power production. These are areas where Denmark can draw on lessons learned from previous and ongoing cooperation as further described in Section 2.4 and where Denmark has a comparative strength and interest as further described in Section 2.5.

The partners and entry points for cooperation are those who have the mandate in the Indonesian institutional architecture for the selected outcomes and outputs - there are no alternatives to these project partners, as tested and confirmed through SSC cooperation.

A further strengthening and deepening of the ongoing cooperation within energy and climate will further contribute to the bilateral diplomacy on climate and sustainable development in a broad sense:

- Energy policy is an important tool in the Indonesian social policy with strong links to equality and a just transition, mitigating against risks of potential social unrest and thus also indirectly supporting the democratic development in Indonesia.
- Indonesian energy policy has potentially great positive/negative impact on GHG-emissions and on natural resource management in some of the remaining largest tropical rainforests on earth, also being habitat to endangered species such as orangutans, etc.
- Indonesia showed willingness to join climate-ambitious countries like Denmark in “Energy Transition Track” at the UN Climate Summit in September 2019, but it requires a persistent green diplomatic effort to withhold and keep the good collaboration.
- INDODEPP will be a key activity supported by the RDE serving as one of the MFA’s Climate Front Posts, elevating the energy policy dialogue and delivering climate diplomacy to senior GOI levels while also seeking to mainstream climate change and sustainable energy issues throughout Denmark’s foreign, development and trade policy.

Moreover, there is a strong potential for synergy in Indonesia between Denmark’s bilateral and multilateral development cooperation as further described in Section 2.6 and in Annex 14. This synergy between bilateral and multilateral cooperation is considered very important.

The INDODEPP delivery modality is centred on technical assistance (TA) delivered mainly as short-term inputs by DEA and with additional inputs from the Danish TSO Energinet and external consultants to be procured by DEA. Central to the TA delivery model are the planned two international long-term advisors (LTA) whose posting in partner institutions DGE and PLN will provide targeted expertise in ongoing peer-to-peer working relations and facilitate targeted short-term TA inputs and a sustained capacity development effort under the project, with a clear focus on institutional learning and uptake and application of knowledge and experience gained. This is a tested model for energy partnership collaboration that has proven its value in DEPP and other bilateral energy partnerships with over 15 countries. As INDODEPP is essentially a capacity development effort, there is strong emphasis on a capacity development strategy that focuses on partner uptake, institutional learning, and sustainable capacity development outcomes. A strategy for INDODEPP capacity development is given in Annex 10.

2.3 Justification¹⁴ for the Proposed Project in relation to OECD DAC Criteria

The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) has defined six evaluation criteria which serve as the reference frame for evaluating international cooperation projects and programmes and which are also a useful frame for the justification of the project, as reflected in the table below.

Table 2.1 below summarises the project justification related to OECD DAC criteria:

¹⁴ While this may not be directly related to the OECD DAC criteria, INDODEPP is highly relevant to Danish development priorities as articulated in “The World 2030” (its section 2.6 focuses on SDG 7 and 13 in transition and growth economies and in global public goods/Danish key issues) and to the Guiding Principles for the Danish Climate Envelope. The focus on RE and EE is directly relevant to the Danish Government’s priorities for development cooperation including the green ambitions and strategic importance of SDG 7 contained therein. The Project is also highly relevant to Danish strengths, interest and opportunities for engaging Danish public and private actors. This is illustrated by the strong role played by DEA in SSC where experience from the Danish energy model and its emphasis on RE and EE has been demonstrated and applied in response to partner needs.

Table 2.1 Project justification related to OECD DAC criteria

Criteria	Justification
Relevance	<ul style="list-style-type: none"> The Project is highly relevant to partner needs as it is directly aligned to and supportive of the target to achieve 23 % RE in the Indonesia national energy mix in 2025 and of the mitigation goals in Indonesia's NDC. The support was requested by the partner ministry MEMR and through the formulation process the strong relevance to partner needs has been confirmed and articulated through a consultation document which has been signed by the Steering Committee.¹⁵ The Project is relevant to the global sustainable development agenda, including SDG7, SDG13 and several other SDGs as well as the Paris Agreement on Climate Change.
Internal and external coherence	<ul style="list-style-type: none"> INDODEPP addresses interlinkages between this intervention and other activities carried out by the other government institutions in the sector (internal coherence) as well as complementarity and coordination with other international cooperation projects and programmes to avoid duplication of effort ("external coherence"). Coordination with other international cooperation partners will be ensured under the leadership of the host government and be monitored by the project Steering Committee. Coherence across sectors is also supported through the project's focus on supporting the energy transition whilst fostering Indonesian economic growth through building a cost-efficient electricity system and job creation in the RE/EE energy sector and its contribution to public health through reduced air pollution and GHG emission reduction, and to the country energy security.
Effectiveness	<ul style="list-style-type: none"> The project gives priority to interventions where transformational change can lead to build-up an enabling environment for the energy transition. This includes changes in systems and structures aligned to Indonesian priority needs, including designing scenario-based long-term energy plans and regulation, integration of renewable energy, and enhanced national strategy for energy efficiency. Its cooperation modality of peer-to-peer exchanges of good practice and paths to avoid also helps facilitate effectiveness through focus on what matters most in the transition, as per Danish experience and DEA experience from partnerships in other countries similar to Indonesia.
Efficiency	<ul style="list-style-type: none"> Current energy models, planning and policy data are not consistent, and targets are not sufficiently aligned across institutions. It is an explicit focus of INDODEPP to strengthen and align energy policy and planning among stakeholders, which can contribute to major efficiency gains (and better effectiveness). It is also a purpose of the cooperation to contribute to reaching Indonesian NDC targets on the share of renewable energy with a lowering cost level. The project builds upon the relationships, policy dialogue and experience of collaboration between the Embassy of Denmark and MEMR developed under the SSC projects and ESP programmes with partners in Indonesia since 2008. Lessons from other similar partnership programmes have shown that the combination of a Sector Counsellor at the Embassy, DEA short-term inputs, embedded LTAs and external consultants, can provide a flexible and efficient package of support in long term partnership for transformational change; the use of TOR to define the best combination of inputs for each major task in the agreed work plans will further enable attention to efficiency in resource utilisation. And while it is recognised that Danish TA is comparatively expensive, the proven model for DEA energy partnerships and DEA experience from such cooperation in over 15 countries including large countries such as China and India will further facilitate efficiency in delivery of technical assistance under INDODEPP and the lessons the DEPP II mid-term review in 2019 concerning programme efficiency will be borne in mind. The mechanism of cooperation has already been set-up under the SSC and the Steering committee/management structure has demonstrated flexibility to allow adjustments in project activities. Strong relationships have been developed with other donors and multilateral development partners under the SSC. The MEMR unit responsible for international cooperation facilitates coordination and synergies and added value of the project with other international cooperation.
Impact	<ul style="list-style-type: none"> The project's focus will lead to reduced GHGs and greater RE and EE investments from both public and private sectors. It is an explicit focus to secure a more attractive market for RE investments.

¹⁵ The Consultation Document included the INDODEPP results framework at outcome and output levels contains indicative activities to be undertaken to deliver outputs and outcomes. This document has been agreed with the key partners and was signed at the Steering Committee meeting on 29 September as a clear reflection of the relevance of this partnership.

	<ul style="list-style-type: none"> Indonesia will thus be in a better position to meet the national energy demand in a sustainable way, achieve the 23 % renewable energy goal in 2025 and contribute to its NDC goals, and the achievement of SDG7 and SDG13 targets. The project will also lay the basis for achieving a longer-term aim to increase ambitions in revisions of Indonesia's NDC.
Sustainability	<ul style="list-style-type: none"> As part of the Theory of Change, impact drivers have been identified and will be used pro-actively in project implementation. Strong emphasis on partner ownership to the project's activities and results, as reflected in the already agreed and signed Consultation Document. An exit strategy will be formulated by DEA and MEMR in preparation for the mandatory MFA mid-term Review of INDODEPP, which will assess and recommend on the exit of Danish support. Experience from other similar projects and programmes indicates that the chosen TA and capacity delivery model with embedded LTAs is likely to enhance targeting of delivery and effective partner uptake leading to sustainable results.

2.4 Lessons Learned from Previous and ongoing Collaboration under SSC and ESP

Lessons Learned from the Environmental Support Programme

The ESP was an Indonesia-Denmark development collaboration aimed at synergising achievements in economic growth and sustainable development. ESP had three phases (phase 1: 2006-2007, phase 2: 2008-2012, and phase 3: 2013-2018). Both ESP 2 and ESP3 engaged in energy by supporting the implementation of policies related to EE, RE and energy conservation (EC) with a focus on the local government level, and use of experience from pilot projects to strengthen national policies, strategies and climate change planning. Lessons learned showed that demonstration/pilot projects take a long time to establish and that using experience from these projects to inform and strengthen policies and planning is a longer process than a typical project timeframe. At the national level, the ESP2 and 3 supported the establishment of a Clearing House (now called LINTAS) for EE, RE and EC as a one-stop information centre/hub used by government, energy-sector stakeholders and general public. ESP 2 also supported the Online Energy Management Reporting System for energy intensive industries (<http://pome.ebtke.esdm.go.id/>). INDODEPP will strengthen capacities and systems for more energy efficient buildings and support implementation strategies for EE in industries and power plants, and in so doing build upon and strengthen these existing mechanisms and systems. Furthermore, the ESP lessons learned from setting-up such administrative units and mechanisms emphasized the need for ownership and carefully identified administrative processes to ensure the implementation and use. This consideration will be beneficial for INDODEPP's process of strengthening and/or reviving a one-stop-shop for Independent Power Producers licensing (Outcome 1).

Lessons learned from Strategic Sector Cooperation (SSC)

The current SSC¹⁶ started in 2016 and comprises two energy related projects. The most relevant lessons learned for the INDODEPP are from the SSC in the Energy Sector phase II, which runs during 2019-2021 – and the inspiration for INDODEPP originates primarily from this SSC cooperation. Both SSC and INDODEPP cover the three areas of energy modelling and planning,

¹⁶ The Strategic Energy Sector Cooperation Between Indonesia and Denmark. The other energy-related SSC is the Strategic Sector Cooperation on Sustainable Island Initiative (SII) that is focused on two regions, with primary partners being the Provincial Government of West Nusa Tenggara and the Provincial Government of Riau Island and includes partnership with MEMR.

integration of renewable energy, and energy efficiency. The intention is that INDODEPP will build on the work done by SSC, deepen it, expand the ambition level, introduce new partners and add new areas of focus e.g. tendering processes and support to, energy policy and regulation, coordination across institutions. The linkages between SSC and INDODEPP are illustrated in Annex 11. The budgets and progress between the two programmes will be clearly divided in the one year of overlapping.

Modelling and scenarios are the backbone of the Danish-Indonesian energy cooperation and has been since the first SSC programme started in 2016. Work with NEC and DGE has given DEA in-depth knowledge on how these organizations are structured and how to secure most value from the cooperation. The Indonesia Energy Outlook and regional outlooks are key activities, where DEA and NEC already have a mutual collaboration. A key lesson learned from the current cooperation is that the energy planning process is scattered resulting in different targets, unharmonized approaches and ineffective and inefficient use of data for decision making. By aligning plans across institutions, a stronger platform for discussion of climate ambitions will be achieved and result in a more transparent planning process among the government institutions. Furthermore, as a direct result of the current SSC, high-level decision-makers have requested further cooperation on policy and regulation, thus supporting continued bilateral climate diplomacy vs. SDG 13.

The current SSC has addressed integration of renewable energy with focus on forecasting of variable RE, e.g. weather reports predicting solar production in advance. The lessons learned so far are that the technical assistance for RE integration in the grid is well received by the Indonesian engineers. But as Indonesia is planning to have a larger share of RE in its energy mix, it is crucial to expand the support to other areas such as ensure capacities in system integration not to jeopardize security of supply, support the procurement system for additional renewable power plants through piloting of tenders, as well as support to least cost grid integration strategies and planning. The experience shows that successful integration of RE is key to securing new ambitious NDC targets in Indonesia (SDG 13) and is thus a strong rationale for the focus on RE integration under INDODEPP.

Although the current SSC has been successful in delivering assistance to new building codes in cities and also reducing fuel-consumption in power plants, it is clear that making progress on EE takes time. Therefore, the lessons learned indicate a need to take a new view on a more holistic EE-engagement in Indonesia. While the plans to establish a new Indonesian capital to replace Jakarta as administrative centre are presently on hold due to other priorities necessitated by the Covid-19 crisis, there is a momentum to showcase cost-efficient energy planning and demonstrate the potential for EE (and RE production) in urban areas. With the rapidly increasing energy consumption, there is also a need to strengthen capacities and systems for more energy efficient public and commercial buildings as well as for support to implementation strategies for energy efficiency in industries and power plants. A strengthened energy efficiency strategy will contribute to both SDGs 7 and 13.

It is also noted that the very recently started (2020-2022) Denmark-Indonesia Strategic Sector Cooperation on Sustainable Island Initiative (SII) is intended to contribute in relation to energy, including: 1) Assisting the local authorities in identifying and improving an integration of circular economy, solid waste management and renewable energy in the regulatory and practical framework, enhancing the implementation of provincial policies and action plans for circular

economy, waste management and energy; 2) Providing assessments of the potential and pre-feasibility of circular economy, solid waste management and waste-to-energy development on the two islands under both current and improved framework condition; 3) Supporting and promoting the foundation for private sector stakeholders' engagement and funding opportunities for waste-to-energy at Lombok and Riau Islands. The importance of expanding the integration of RE in regional master plans for energy system development (RUEDs) is clear from the SII and focus on RE integration in INDODEPP will thus be complementary with the SII, in terms of working at the national level and in other regions than SII.

An overall important lesson learned from Denmark's long engagement in Indonesia, including the last 4 years' SSC and the previous ESP, is that supporting transformational change takes time. Therefore, INDODEPP is designed for a longer time horizon of 5 years.

It is noted that an evaluation of Danish Strategic Sector Cooperation was undertaken by the MFA and reported in 2020. An Indonesia case study was part of this evaluation. Among its findings was that there was a high level of engagement between the Danish and Indonesian agencies; that Indonesian staff reported a close interaction between partners both formally and informally and that under the Energy SSC project, contacts and networks developed in the ESP3 were expanded. It was found that the SSC for energy performs a valuable role in connecting Danish agencies with Indonesian counterparts and that networks and trust among partners have been developed, as well as changes in mindsets and ways of thinking. It was noted that more than one hundred people from the SSC Energy project participated in DFC trainings. As one respondent in the energy sector put it: *I used to think renewable energy was dream, but then I went to Denmark and saw that it is possible!* Moreover, according to the Indonesian partners, Danish companies and DEA have also learnt more on renewable energy sources in Indonesia. There was no evidence of overlaps with other programmes or projects in Indonesia and there were several examples of synergies achieved in the SSC Energy project. For example, linkages were established with the Partnering for Green Growth (P4G) programme. It was also found that the Embassy and sector counsellor are activity engaged in discussions with other development partners in Indonesia and that there is good coordination with the World Bank and the Asian Development Bank on RE programme planning and policy reform.

2.5 Considerations on Danish Strengths and Interests

Denmark has demonstrated that it is possible to decouple economic growth, GHG emissions and energy consumption, resulting in green growth. Wind energy contributed 47% of the electricity consumption in Denmark in 2019 and Denmark is likely to meet its goal of at least 50% wind in the electricity system by the end of 2020. The Danish energy model has demonstrated the importance of political agreements with broad consensus in parliament, which serve as a basis for setting and achieving ambitious long-term targets. A key feature of the model is also a holistic view based upon an energy agreement as a roadmap for development of energy supply and demand and long-term energy planning including the use of models and scenarios. Regulation and targeted investments in EE, and support for RE is provided through synergies between taxation schemes and policy. Public-private sector cooperation has fostered important innovation and breakthroughs in the Danish energy concepts and -systems and led to public engagement and acceptance, as well as general public support for the energy sector transition. Environmental and energy taxes contribute to a better reflection of the environmental costs of production, use, and disposal in consumer prices on energy. An effective integration and support for renewable energy

sources in Denmark combined with a well-functioning open power market with other countries in the region is key to maintaining a very high security of electricity supply closely linked to significant cross border connections. Also important in the model is power generation system flexibility combined with the integration of very high levels of variable RE and advancement of the Levelized Cost of Energy (LCOE) approach; and a broad and integrated one-stop-shop mandate of DEA to regulate the market and deliver on the above features of the Danish model. Denmark has a strong interest in sharing these experiences in a partnership with Indonesia for mutual benefit, which will also contribute to Denmark's interest in achieving global climate goals and meeting SDG targets. The Danish private sector is already engaged in Indonesia, and the large Indonesian market for sustainable energy solutions will be of major interest to the Danish resource base in the future. Denmark's tradition with an active civil society on energy over the recent decades has also been important in achieving the high levels of RE and building on this experience, the Embassy and its Energy Sector Counsellor and DEA will be cognisant of opportunities for engaging civil society in project activities.

2.6 Relation to other relevant Partners and Actors

Many stakeholders and development partners are engaged with Indonesia in climate and energy. Annex 14 summarises relevant examples of support in Indonesia from other bilateral donors and multilateral development agencies in areas related to INDODEPP's focus areas. It is very important to ensure additionality with other relevant projects and the Embassy of Denmark is actively engaged in the relevant coordination fora. And it is particularly important to ensure coordination with multilateral agencies that are supported by Denmark through multilateral cooperation.

Briefly, some of these are mentioned below:

The International Energy Agency (IEA), International Renewable Energy Agency (IRENA) and OECD are engaged in Indonesia in interventions related to long-term energy scenarios and energy policy and or regulation. There is close and regular coordination with these organisations in multilateral fora and at country level. IEA's **Clean Energy Transitions Programme (CETP)**¹⁷, which is supported by Denmark, aims to accelerate energy transitions in major emerging economies. Under CETP, the Energy Efficiency for Emerging Economies (E4) Programme supports energy efficiency activities in Indonesia and through the Association of Southeast Asian Nations (ASEAN). IEA plans to continue to support Indonesia, through work on data and indicators, transport sector, buildings and industry.

IRENA works closely with the ASEAN Centre for Energy (ACE) in Jakarta and ASEAN to accelerate renewable energy deployment across the region. Moreover, (also seen as an effort to help mitigate the effects of the Covid-19 pandemic on energy-related issues), IEA cooperates with MEMR and PLN¹⁸ to enhance RE integration and power system operation. IEA with the Clean Energy Ministerial (CEM) was also engaged in a Power System Flexibility Campaign that was co-led by China, Denmark and Germany (2018)¹⁹ in supporting system transformation by increasing flexibility of power plants.

¹⁷ <https://www.iea.org/areas-of-work/programmes-and-partnerships/clean-energy-transitions-programme>

¹⁸ <https://www.iea.org/news/indonesia-and-iea-deepen-cooperation-on-electricity-and-renewables-to-advance-energy-transitions>

¹⁹ <http://www.cleanenergyministerial.org/campaign-clean-energy-ministerial/advanced-power-plant-flexibility>

The World Bank (WB) main focus in the Indonesia energy sector is on infrastructure. In addition, the **WB Energy Sector Management Assistance Program (ESMAP)** which is supported by Denmark, provides analytical and advisory support in Indonesia including on RE integration. This includes support to analyse high RE load scenarios to the Java-Bali power system. As the WB is funding a pumped storage hydropower project on the Cisokan West Java, Indonesia (1040-MW in end 2020)²⁰, ESMAP's project aims to eliminate system constraints for RE scale-up and increase power capacity in the Java-Bali system. Another significant ESMAP project in solar PV is a first-of-its-kind report funded together with Denmark, on estimating the global potential of floating²¹ solar technologies, which is promising for Indonesia. A large plant named Cirata Floating Solar PV in West Java, Indonesia (145 MW in 2022) is being planned and will soon be installed. PLN's generation expansion plans for most islands presently include new coal power plants (as small as 5MW). ESMAP supports PLN to develop a new approach to RE deployment for these islands (under Indonesia Sustainable Least-cost Electrification (ISLE) in Eastern Islands Project).

The International Institute for Sustainable Development (IISD) is supported by Denmark and works on energy subsidy reform. In Indonesia IISD undertakes research and policy engagement on fossil fuel subsidies and as such engages with a range of policy actors across the public, private sectors and civil society. Recent combined impacts of the Covid-19 pandemic and a drop in global energy prices have hit hard on Indonesia's fossil fuel-based energy sector. While the country has been rolling out stimulus packages, most of these funds have been driven toward public health, social safety nets and economic stimulus. IISD showed there was a window of opportunity to design any subsidies and/or stimulus plans, in a way that supports a transition away from fossil fuels toward a more sustainable economy. The RDE has an IISD contact person for coordination with IISD in Jakarta.

In relation to clean energy's support to economy, the **OECD's** programme Clean Energy Finance and Investment Mobilization (CEFIM) supports governments in creating a robust clean energy finance and investment environment. The Programme covers five countries including Indonesia and is funded by Denmark. The main entry point in Indonesia is MEMR.

The Green Climate Fund (GCF) is supported by Denmark. The GCF National Designated Authority (NDA) in Indonesia is the Ministry of Finance. GCF supports geothermal development in Indonesia and the GCF Country Programme serves as a guideline for both nationally and internationally accredited entities in preparing proposals for their future projects/programmes in Indonesia. Table 2.2 below highlights areas where coordination is particularly critical.

Table 2.2 – Coordination with multilateral energy support in Indonesia

Development agency	Focus areas	Day-to-day coordination through
IEA	Integration of variable RE, flexibility in power plants, energy efficiency (CETP)	Sector counsellor at RDE and proposed LTA in PLN
IRENA	Long-term energy scenarios in collaboration with ASEAN Centre of Energy (ACE)	Proposed LTA in DGE and DEA (which has a person who coordinates with IRENA also at country level)
IISD	Fossil Fuel Subsidy Reform (FFSR)	Sector counsellor at RDE
OECD	Improved framework conditions and enabling environment for investments in RE and EE (Clean Energy Finance and Investment Mobilization (CEFIM))	Sector counsellor at RDE/ proposed LTA in PLN

²⁰ <https://www.esmap.org/node/70715>

²¹ <https://www.worldbank.org/en/topic/energy/publication/where-sun-meets-water>

ESMAP (World Bank)	Solar power, geothermal energy, integration of variable RE	Proposed LTA in PLN
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It is further noted that the EU is planning a major Indonesia Sustainable Energy Acceleration Programme. The RDE as representative of Denmark as an EU member state is engaged in coordination concerning this new initiative which is still at an early stage of conceptualisation. It is also important to note the presence of civil society organisations in the form of community groups, non-governmental organisations (NGOs), indigenous groups, charitable organizations, faith-based organizations, professional associations, and foundations that are important in advocacy and knowledge development related to the clean energy transition – some of these are mentioned in Annex 14 and where relevant these will be engaged, particularly in provincial activities. This will be considered as the INDODEPP workplan is developed during the start-up phase. Contact with local authorities is arranged through NEC and the local authorities is linking to local organizations, civil society, universities etc..

3. Presentation of the INDODEPP Project

3.1 Overall Objectives and Outcomes

The overall objectives and outcomes are summarised in the table below:

Table 3.1 – INDODEPP Objectives and Outcomes

Project	Indonesia-Denmark Energy Partnership Project (INDODEPP)
Project Objective	<p>Overall – The project has contributed to meeting Indonesia’s national energy demand in a more sustainable way; to its NDC goals by reducing GHG-emissions; to SDG7 and SDG13 targets; and more specifically to the achievement of the 23% renewable energy goal in 2025.</p> <p>An enabling environment for sustainable energy in Indonesia as a part of a cost-efficient electricity system with increased security of supply and reduced energy intensity. This will be reached through energy planning and modelling, larger shares of variable renewable energy sources and strong system integration, as well as increased energy efficiency.</p>
Outcome 1 Scenario-based long-term energy plans and regulation	Indonesia has a system of aligned energy plans across partner institutions and selected provinces, with clearly defined review-procedures and based on state-of-the-art long-term energy modelling tools and a regularly adjusted Indonesia specific technology catalogue. The long-term energy plans form the basis for monitoring and setting new political targets for renewable energy and provides a reliable RE pipeline to secure investor confidence and bring down cost of energy from renewable sources. The project will contribute to the creation of a foundation that will lead to an increase in Indonesia’s reputation as a reliable and ambitious partner within climate-negotiations and for creating an investment environment.
Outcome 2 Integration of renewable energy	Enhancement of national capacities to accelerate the application and integration of renewable energy to support further decarbonization of the power sector: PLN is able to integrate fluctuating renewable energy shares beyond the current share of 10 % in the grids with the highest share. The RE is integrated without curtailment and jeopardizing the security of supply. The integration is secured through handling of technical challenges, e.g. grid flexibility and maintaining security of supply through forecasting and economic effective load-dispatch. Efficient integration of RE contributes to lower the prices of reaching political targets for RE.
Outcome 3 Energy efficiency	Indonesia has an enhanced national strategy for energy efficiency, which reduces the predicted increase in electricity demand so the green energy transition can be achieved in a cost-efficient manner also taking cost savings in generation capacity and grid into consideration. This includes an increased focus on industries and energy efficient buildings, efficiency in power plants and energy efficiency in the new capital.

3.2 Theory of Change, key Assumptions, Impact Drivers, and Risks

The overall theory of change (ToC) is that a peer to peer sharing of the Danish energy model and transition experience will enable Indonesia to more rapidly attain its energy and climate goals and support a decarbonisation of its energy sector and a delinking between energy use and economic growth. The project will support the GoI in the goals of achieving 23 % renewable energy in 2025, increasing energy efficiency and maintaining inclusive economic growth to the benefit of the whole population. It will contribute to SDG 7 (specifically on targets 7.2 and 7.3 on renewable energy and energy efficiency) and SDG 13 by supporting Indonesia in its current NDC targets and work towards more ambitious NDC mitigation targets by providing technical assistance and capacity development of partners to accelerate low carbon energy planning, regulation promoting renewable energy, integration of renewable energy and energy efficiency.

What are the changes the project wants to contribute to?: The project aims to create change in three areas as defined by the outcomes: improved planning and regulation; greater integration of renewable energy and; improved energy efficiency.

- Within planning, the project aims to create the capacity and deepen the practice, appreciation and use of evidence and scenario-based energy planning. This will mean overcoming the current fragmented and inconsistent planning and target setting between institutions and building a critical mass of modelling expertise. Within regulation the main focus will be on improving the environment for private and public sector investment. Thus, there will be a focus on RE auctions and on streamlining procedures through the effective adoption of a one stop shop securing one entry to authorities for developers.
- Within integration of renewable energy, the project aims to contribute to an increase of the RE share in the electricity system by developing capacity, removing barriers and improving the operational systems for integrating renewable energy. It will do this by piloting and developing robust procedures and practices for launching wind power tenders. This will remove some of the barriers to private sector engagement as well as lower costs. The project also aims at improving the level of forecasting and system operation so that optimal use is made of increasing generation of renewable energy and curtailment minimised. Finally, the project aims to develop least cost scenarios that will enable efficient RE investment and integration planning.
- Within improved energy efficiency the project aims to lower the specific use of energy in the building, selected industry and power plants. It will do this by developing capacity for improving energy standards, managing data and developing strategies in key industries and power plants.

How will change happen in the specific context?: In concrete terms the expected change will happen through key partners in Indonesia being exposed to the practices in Denmark and then being supported by a range of technical cooperation initiatives to transfer good practice and lessons learnt to the Indonesian context. This will imply a number of study tours, short secondments to Denmark and both short and longer-term inputs by Danish experts in Indonesia. A range of interventions and activities will, based on experience of their use in other cooperation countries and also the ongoing SSC programme(s), be applied in Indonesia. The general approach will be to pilot implementation of new approaches in one or two pilot provinces and then seek to support replication to other provinces.

What is the role of the key partners in the change process? The project is aligned to the policies and strategies and plans of the relevant Indonesian partners. The Indonesian partners will lead on the implementation of these strategies and plans with the support of the project. The implementation of these strategies and plans involve considerable financial and human resources from the partners. At a high level they will also imply the use of political capital requiring high levels of continued commitment. The key partners in Indonesia will participate in study tours, and potentially short secondments, to become familiar with relevant elements of the Danish model. They will internalise the relevant approaches and where possible apply them to their area of mandate with the support of technical advisers from Denmark. At a higher level the Indonesia partners will engage in bilateral climate dialogue with Denmark and also other international actors for mutual learning and engagement in developing responses to energy and climate challenges.

What are the conditions that must be realized before the goal is achieved? The key conditions are that the Indonesia partners continue to find that elements of the Danish model are useful and that these elements can be adjusted and successfully transferred for the Indonesian context. This has already been tested under the ongoing SSC programme(s). The rate of change expected in improving planning and regulation and the integration of RE and adoption of improved EE practices is high. This will draw significantly on the financial and human resources of the Indonesian partners as well as the depth and persistence of the policy commitments to high levels of RE and EE. There are no absolute pre-conditions that have been identified but in many areas the project will need to be accompanied by a shift in current mindset and practice. The approach of the project is to support such shifts through demonstration of the Danish model and through the introduction and exposure to easy to use and convenient planning and operational tools and systems.

Who are the key partners that need to be engaged for this change to happen? The key partners at the national level for outcome 1 are MEMR and under it the DGE, EBTKE and NEC. For outcome 2 the key partner is PLN with the involvement of a variety of other agencies and actors. For outcome 3 the key partner is EBTKE again with the involvement of a variety of other agencies and actors. At provincial level the de-concentrated entities will be engaged as well as provincial actors and local governments.

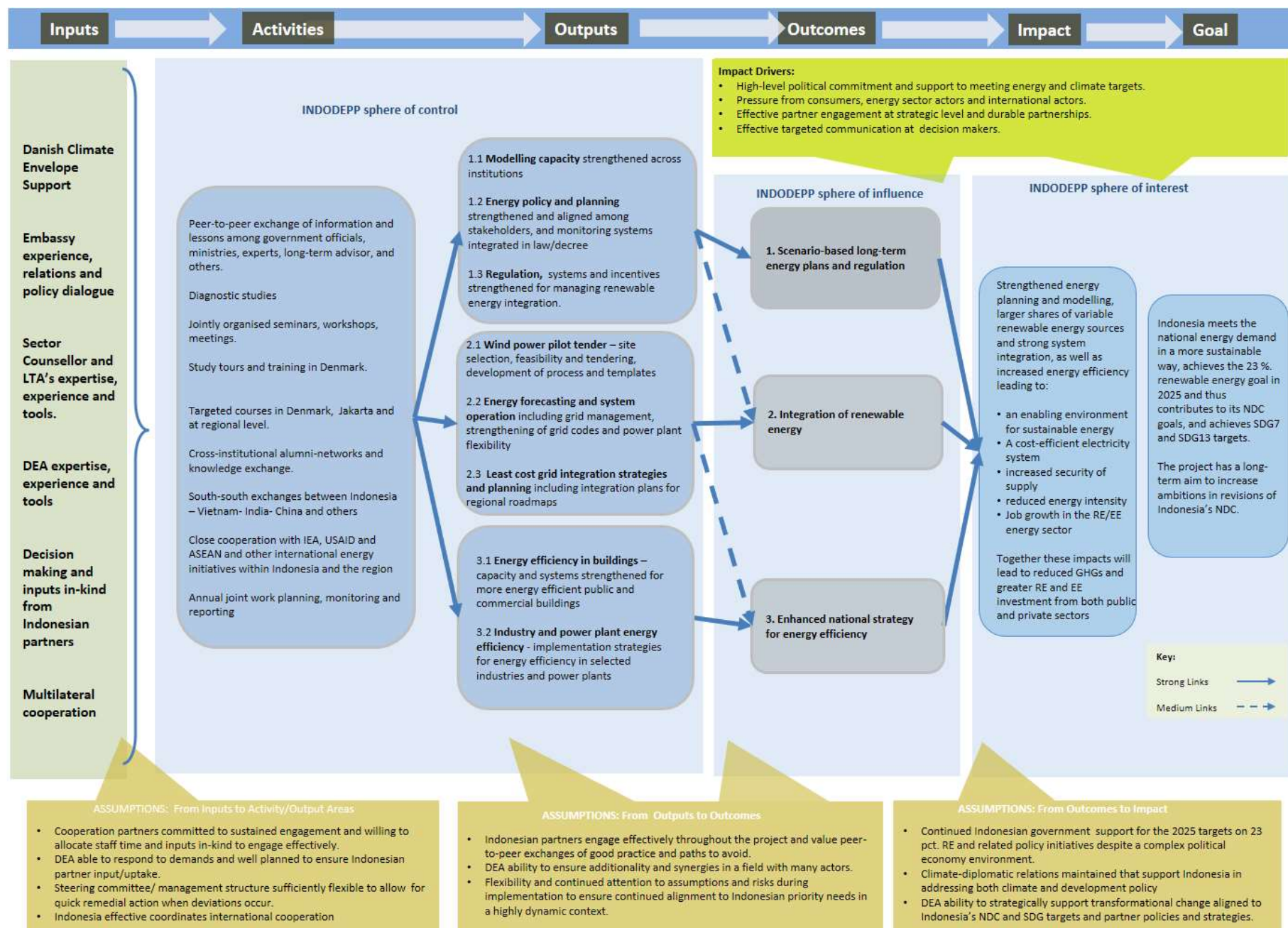
What is within and beyond the influence the key project partners? As illustrated in Figure 3.1 provided there is demand and sufficient levels of commitment by all relevant parties, the activities and outputs are to a large extent within the sphere of control of the project. The outcomes are within the sphere of influence as it is more difficult to ensure that the outputs created will be used and applied e.g. that the modelling capacity will be used to improve reporting and will be used to support improved decision making in practice. The effectiveness of ongoing public sector reforms and political and macro-economic situation will influence the attainment of outcomes and ultimately impacts related to increased RE and EE. These factors and elements of the political economy and influence of vested interests against the project aims are to a large extent beyond the project.

What assumptions are relevant for the change to happen? A key assumption between outcomes and impacts is that Indonesia retains the ambition and commitment to increasing the share of RE in the energy supply and to adhering to the NDC targets. At an institutional level, it is assumed that 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 Indonesian

partners find value in the strategic cooperation with Denmark for informed decision making to achieve Indonesian goals. As a result of recognising this value, all partners are expected to engage effectively throughout the project and benefit from peer-to-peer exchanges of good practice and paths to avoid. It is noted that the main thrust of the programme is to develop capacity in areas where the partner organisations are less experienced and where the Danish organisations are strong or have proven experience to share and transfer. The main areas where this takes place are: scenario planning, integration of renewable energy and energy efficiency approaches. Although there are gaps in knowledge and skills, the Indonesian partners in general have absorption capacity in terms of numbers of staff, their qualifications and experience in the energy sector. The main issue is not the inherent absorption capacity but on whether the programme is framed and communicated in a way that gives the high-level decision makers in Indonesia the confidence and conviction that Denmark and Danish know how is highly appropriate for their situation. A number of high-level meetings have consistently reiterated this confidence, but it will be important to continue to frame and communicate and deliver so that the capacity support is found relevant and made best use of. A range of capacity development strategies will be developed and employed, as further in chapter 2. At its essence, peer-to-peer on-the-job-training and mentoring will be combined with short courses, study tours, and remote mentoring.

The theory of change is illustrated in figure 3.1 accompanied with explanatory text below:

Figure 3.1 Graphic illustration of the theory of Change



From inputs to activities: The project will, through the Danish climate envelope funding and overall cooperation with Indonesia, provide and make available a range of inputs. This will involve mobilising DEA expertise through both long and short terms technical assistance. External consultants will also be mobilised, as well the involvement of specialist organisations such as Energinet Denmark. Moreover, the RDE and especially the sector counsellor will contribute to the project as will various multi-lateral cooperation efforts some of which are also co-financed by Denmark. High level dialogue will take place through the RDE. Decision making and inputs in kind will be provided by the Indonesia partners cooperating closely on joint workplans.

With a lead taken by DEA and MEMR, these inputs will be mobilised and will engage with and strengthen the capacity of the INDODEPP partner institutions through a range of cooperation mechanisms including: i) information exchange, ii) study tours, iii) diagnostic studies, iv) jointly organised seminars, v) targeted courses in Denmark and Indonesia, vi) fostering cross institutional networks including south-to-south exchange (especially between the countries also being supported by DEA through similar projects and, vii) promoting close cooperation with other complementary international initiatives. The experience from earlier and ongoing DEA cooperation in other countries and from the SSC programme(s) in Indonesia have shown that a combination of these intervention activities has been successful in developing capacity and making changes in the enabling environment.

From activities to outputs and outcomes: The experience from earlier and ongoing DEA cooperation in other countries and from the SSC projects in Indonesia have shown that a combination of the intervention activities outlined above and also expanded on in the strategy section (Chapter 2) have contributed to developing capacity in the energy sector and making changes in the enabling environment. The experience and expertise from the transition of Denmark's energy system within renewable energy and energy efficiency will be mobilised to contribute to the three main outcome areas through delivering on a number of supportive outputs

- Scenario based long-term energy planning and regulation – achieved through outputs related to developing an advanced energy model, a robust long-term planning and a regulatory environment that is conducive to investment in RE/EE. The modelling will provide a better basis for planning and for adjusting planning thus ensuring a more robust investment environment. At the same time improvements and streamlining of the regulation environment will encourage and facilitate greater private and public sector investment by lessening barriers to such investment. Key system changes that are aimed at under this project include developing the basis for RE auctions, improved data management and the enhancement of the one stop shop approach.
- Integration of renewable energy – achieved through outputs related to developing of wind power through effective site selection, feasibility and tendering, enhanced energy forecasting and system operation and least cost integration of renewable energy into the grid. The piloting of the development of a wind power site will support the integration of RE by streamlining the public administration of site selection and tendering. Improving the forecasting and system operation will help PLN to make better use of RE by ensuring for example that thermal power can be ramped up and down to compensate for RE variation as part of a least cost development and integration strategy;
- Enhanced national strategy for energy efficiency – achieved through outputs related to energy efficiency in buildings, a showcase for energy efficiency planning for the new capital city and through energy efficiency in industry and power plants. The contribution to the

national strategy will focus on development of EE standards for buildings (both public and private) and will make use of the opportunity afforded by the new capital to showcase high level ambitions in energy efficiency. By developing energy efficiency standards and implementation strategies for selected power plants and selected industries a contribution will be made to the potential for scaling up greater energy efficiency in these areas.

From outcomes to impacts: The outcomes will combine to strengthen the Indonesian partners' energy planning and modelling, the share and integration of variable renewable energy sources as well as increased energy efficiency. In turn these will contribute to:

- Lower greenhouse gas emissions and pollution - arising from a higher share of RE and greater EE generated through an improving enabling environment for sustainable energy that promotes increased investment in RE and EE by public and private sectors.
- Lower electricity prices or reduced public expenditure - arising from a more cost-efficient electricity system
- Increased security of supply – arising from improved planning and forecasting and integration of RE and greater EE.
- Reduced energy intensity and greater energy efficiency – arising from an enhanced national EE strategy
- Job growth in the RE/EE energy sector – arising through new industries and a more attractive investment market

Together these impacts will lead to reduced GHG emissions and greater RE and EE investment from both public and private sectors. Indonesia will thus be in a better position to meet the national energy demand in a sustainable way, achieve the 23 % renewable energy goal in 2025 and thus contribute to its NDC goals, and achieve SDG7 and SDG13 targets. The project will also lay the basis for ambitious revisions of Indonesia's NDC.

Impact drivers and assumptions: A key driver for the project is and will be the continued high-level political commitment and support for energy and climate targets. Pressure from consumers and energy sector actors for clean, reliable and low-cost energy as well as from international actors are among the factors that drive political commitment. Clear communication and demonstration of the advantages of advanced energy policies and capacities will be instrumental in maintaining and ensuring implementation of these commitments.

A key assumption between outcomes and impacts is that Indonesia retains the ambition and commitment to increasing the share of RE in the energy supply and to adhering to the NDC targets. This also implies that policy makers in Indonesia in both power sector and at the highest administrative levels are seeking and ready to adopt changes that promote energy efficiency, demand management and increased generation and more efficient use of renewable energy, leading to low-carbon energy generation. Underlying this assumption is that political economy environment does not deteriorate or create unsurmountable obstacles to the increasing the share of RE, improving EE and adhering to NDC targets. Fossil fuel subsidies for example are politically charged and threaten and complicate the generation and integration of high shares of RE. The energy sector is complex and, like in many countries, there are powerful vested interests that might oppose greater EE and higher shares of RE in the energy mix. It also implies that DEA and its Danish partners are in a position to provide high quality inputs on demand and that close cooperation with other international cooperation efforts is established to minimise overlaps and

gaps. Denmark is a small partner, so this theory of change requires continued engagement from GoI in seeing Denmark as a trustworthy partner in the energy-cooperation.

Box 3.2 summarises the assumptions and drivers identified as part of the theory of change.

Box 3.2 Key assumptions and impact drivers

Key Assumptions:

From inputs to activities:

- Cooperation partners committed to sustained engagement and willing to allocate staff time and inputs in-kind to engage effectively.
- DEA is able to respond to demands in a well-planned manner to ensure Indonesian partner input/uptake.
- Steering committee/ management structure sufficiently flexible to allow for quick remedial action when deviations occur.
- Indonesia effectively coordinates international cooperation

From activities to outputs to outcomes:

- Indonesian partners engage effectively throughout the project and value peer-to-peer exchanges of good practice and paths to avoid.
- DEA ability to ensure additionality and synergies in a field with many actors.
- Flexibility and continued attention to assumptions and risks during implementation to ensure continued alignment to Indonesian priority needs in a highly dynamic context.

From outcomes to impact:

- Continued Indonesian government support for the 2025 targets on 23 pct. RE and related policy initiatives despite a complex political economy environment.
- Climate-diplomatic relations maintained that support Indonesia in addressing both climate and development policy
- DEA ability to strategically support transformational change aligned to Indonesia's NDC and SDG targets and partner policies and strategies

Impact drivers:

- High-level political commitment and support to meeting energy and climate targets
- Pressure from consumers, energy sector actors and international actors
- Effective partner engagement at strategic level and durable partnerships.
- Effective targeted communication at decision makers.

The risk management matrix is found in Annex 5. Key contextual risks include decreasing prices on both oil and coal that could severely affect the political economy and lead to pressures for more domestic use of coal in order to conserve jobs in the coal industry, the effects of Covid-19 pandemic, and the political and social tensions that may arise from regional elections in December 2020 and Presidential and parliament (and possibly regional elections) in 2024.

Key programmatic risks include the Covid-19 crisis that could affect project implementation, any changes of priority given to the cooperation from partner organisations, lack of continuity of personnel in key positions in partner organisations (including staff who have benefited from learning opportunities under INDODEPP) and a potential lack of willingness in partner institutions to share available data, which could affect the quality of the technical assistance provided.

Key institutional risks include the risk of duplication of efforts or failures to recognise interfaces and synergies with other initiatives due to many donors and development partners – and if the project fails to deliver its outcomes, this will reflect negatively on DEA, MEMR, RDE, the MFA and MCEU.

Risk mitigation measures are proposed and integrated in project design leaving the residual risks at low-medium levels. The Steering Committee should regularly monitor and discuss risks, and the Mid-term Review should assess and update the risk analysis.

3.3 Choice of Partners

MEMR will be the overall national lead partner for the project and with its affiliated organisations will lead the outcomes under its area of responsibility with the active involvement of other relevant stakeholders. At the provincial level, the stakeholders will be initially focused on one or two pilot provinces. This will then be enlarged to include a less intensive engagement with provinces that seek replication of the approaches. For the project outcome and output areas, the partners chosen are those that have the government mandate for that area of work. There are a wide range of other stakeholders. These have been identified by the Indonesia lead partners and DEA and are shown in Annexes 1 and 2 as well as the table below. Civil society will be approached through regional stakeholders.

Lead partners	Outcomes	Outputs	Involved stakeholders
MEMR (EBTKE/ DGE/NEC)	1 Scenario-based long-term energy plans and regulation	1.1 Modelling capacity 1.2 Energy policy and planning 1.3 Regulation	<u>National stakeholders:</u> DGE, NEC, MEMR Data and Information Center PUSDATIN, DGE, EBTKE, PLN, BAPPENAS, KLHK, Ministry of Public works, Ministry of Finance, Ministry of State Owned Enterprises <u>Regional stakeholders:</u> Provincial Agencies (Dinas ESDM), Regional Planning Agency (BAPPEDA) and regional PLN offices.
PLN	2 Integration of renewable energy	2.1 Wind power pilot tender 2.2 Energy forecasting and system operation 2.3 Least cost grid integration strategies and planning	<u>National stakeholders:</u> NEC, EBTKE, DGE, <u>Regional stakeholders:</u> Provincial Agencies (Dinas ESDM), Regional Planning Agency (BAPPEDA), regional PLN offices.
MEMR/EBTKE	3 Enhanced national strategy for energy efficiency	3.1 Energy efficiency in buildings 3.2 Energy efficiency in industry and power plants	<u>National stakeholders:</u> EBTKE (partner), Ministry of Public Works, Green Building Council, Ministry of Home Affairs <u>Regional stakeholders:</u> Local governments (cities and provinces)

MEMR will lead on Outcomes 1 and 3. MEMR's Directorate General of Electricity (DGE) will take the lead on Outcome 1 (energy planning and regulation) with the close cooperation of NEC and EBTKE (Directorate General of Various New Energy and Renewable Energy). EBTKE (Directorate General of Energy Efficiency & Energy Conservation) will take the lead on Outcome 3 (energy efficiency). PLN will lead on Outcome 2. For all outcomes there will be a wide range of involved partners as shown above. The roles of key institutions are outlined in Annex 2.

3.4 Cross-cutting Concerns

In addition to climate change mitigation, the project will contribute to Indonesia's inclusive green growth through the co-benefits in relation to health, environment, human rights, gender, youth and job creation associated with a sustainable, low-carbon energy system with better energy security. Air quality has deteriorated in Indonesia. Contributors to poor air quality include the mining, oil, coal and gas industries, as well as vehicle emissions, and forest fires. Available data indicates that South Tangerang, Jakarta, Bekasi, Bogor, Surabaya, Yogyakarta, and Bandung can experience high levels of air pollution. The project aims at decarbonising the electricity sector, which is a major source of GHG emissions and air pollutants, as such it 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 the parts of the population that are not able to prevent them self from exposure of pollutants, cannot afford health care and are without – or have poor social security.

The project is expected to have a positive impact on the adoption of “fuel-free” technologies such as solar, wind and geothermal. Increased use of “fuel-free” technologies, and holistic scenario buildings may decrease the current Indonesian ambitions for using more palm oil in diesel generators and the transport sector. It will be very beneficial to reduce demand for palm oil, since it is difficult to produce even larger amounts of palm oil without harming the threatened tropical rainforest and its unique biodiversity.

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. INDODEPP will give attention to taking human rights into account and ensure inclusive, transparent and non-discriminative approach to the cooperation. No rights holders will be excluded from involvement, and where relevant the project will work with Indonesian partners to reach out to civil society and relevant NGOs as part of stakeholder consultations. For example, activities around the wind pilot tender will ensure that a high quality social and environmental impact assessment (ESIA) is conducted. To that effect, DEA technical advisors will familiarise themselves with Indonesian ESIA-related laws and obligations as well as Social and Environmental Safeguards best practices and advise in the recruitment of consultants that would lead ESIA in pilot wind projects, as well as support review of ESIA to ensure that it follows best practices, especially with regard to consultation with local communities, social acceptance of RE technology, respect of rights holders, and non-discriminatory job access. INDODEPP capacity development activities may also include modules on HRBA in its training activities, especially at provincial level. When relevant and timely, DEA may promote and technically support elements of a Strategic Environmental Assessment at policy and programming levels.

The number of women employed in the energy sector in Indonesia is moderate and could be increased. Also, at management-level in the energy sector and the INDODEPP-partner institutions the shares of male employees outnumber females, especially within PLN. One immediate approach for the INDODEPP is to target a gender balance in capacity building activities (including workshops and study trips). The project 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 project.

More cost efficient and sustainable energy systems – in supply and demand – offer opportunities for increased productivity of the economy and, through this, better opportunities for private and public sector to promote inclusive and sustainable growth, including job creation. More specifically, IRENA studies (See Annex 1) indicate that greater RE deployment will create more jobs and stimulate technology transfer. These studies demonstrate the potential for creation of 1.3 million jobs in the RE sector in Indonesia by 2030, up from just over 100,000 today. Scaling up the market for RE technologies provides significant opportunities for localising parts of the value chain, such as through local manufacture of solar panels and electric vehicles, with the associated technology transfer having the potential to come with additional positive effects to the economy. The INDODEPP, 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, EE professional associations.

3.5 Work Planning, Monitoring and Reporting

General: Annual work plans and budgets will be prepared and presented to the Steering Committee for approval. The work plans and budgets will take into account Indonesian priorities and will record the work done to date and as well as noting what is realistic for the remaining period of the project. Project progress and achievements will be monitored and reported against impact and outcome level indicators aligned with the guiding principles and monitoring guidelines for the Danish Climate Envelope, and as far as possible also aligned with the monitoring and reporting systems of Indonesian partner institutions. Indicators at output level have been identified in the detailed results framework in Annex 3. The project is aligned to the Indonesian targets for RE and in that way, they follow closely and will benefit from Indonesian monitoring of the project objective. The outcome and output indicators are specific to project interventions and by nature tailored to monitoring the actions of the external project rather than being part of the internal Indonesian partner M&E systems. This also allows them to be concrete and highly specific and more easily reflect actions that relate to more than one partner. Where relevant, indicators will be gender disaggregated as the work plans are developed.

Start-up phase. As much of the content project follows from the current SSC engagement, a full inception phase will not be needed. A short 3 month start-up phase will take place for new areas and in particular for Outcome 2 and to allow the further development and detailing of a capacity development strategy (based on the general approach set out in Annex 10) for the project including how to institutionalise capacity development perhaps through the use of universities, internal agency and government human resources and training departments. The start-up phase will also be an opportunity to fine tune the results framework and will be an opportunity to engage with civil society organisations where they are relevant particularly at the regional level to the aims of the project. During the start-up phase the relevance of inclusion of representatives from selected pilot provinces in the steering committee will also be considered. The LTA recruitment will start before the start-up phase to avoid delays as there is a long lead time for recruitment.

Mid-term Review. In accordance with MFA guidelines, the project will be subject to a mandatory Mid-term Review (MTR) managed by the MFA. This MTR is tentatively planned for 2023 but may be moved forward to 2022 if so decided. It will have a mandate to recommend adjustments to project outputs and inputs as relevant, and the MTR will assess the project's exit strategy, which will be explicitly articulated by DEA with MEMR as an input to the MTR. Criteria for successful exit is evidence of update and use of know-how that has been transferred. 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 INDODEPP and offering cost effective use of resources – and availability of funding.

Project management teams. Day-to-day progress on the agreed work programme targets will be followed by the project management teams who will manage the day-to-day implementation of each engagement and report progress towards the results framework at output and outcome levels of this engagement.

Workplans. Workplans should be matched with the partners' annual workplans and capacity development needs. The results framework (Annex 3) outlines a number of activities and areas of potential intervention. These are a menu of possible support areas discussed with the Indonesian partners during the formulation process, but will not necessarily all be done or involve the same intensity of cooperation. It will depend on the needs identified by the partners, the available project resources and what other international partners are doing. The annual workplan will provide the mechanism to prioritise which activities are done and to sequence them. To ensure that all DEA support will assist partners in achieving their goals, any INDODEPP workplan prepared, should reflect priorities in the partners' annual workplans and reflect DEA specialist availability. The work plans should: identify delivery options that match needs, making use of existing options where possible; articulate how level of ambitions in tasks matches resources available; focus on value-for-money with partners – getting the highest impact with the fewest resources; plan and prioritize resources across the outcomes to make sure they can be focused in the right areas; identify options for cooperation when high level climate diplomacy opportunities emerge and; ensure that capacity development is properly defined and integrated into all activities. Multi-year capacity development strategies and plans will be developed for the key areas of the project and these will help to strategically inform the annual workplans.

Progress reporting to the steering committee. The project management teams will submit progress reports at half-yearly steering committee meetings in accordance with yearly workplans. An annual progress report will be approved by the steering committee annually. The annual report will include an assessment of overall progress in relation to objectives and outcomes and will provide reporting against the results framework as well as against the approved workplan and budget. All reporting should, to the extent possible and when relevant, be disaggregated by gender and forwarded to the DEPP Advisory Group in Copenhagen, which follows the DEPP countries (China, Mexico, South Africa, and Vietnam) and INDEP in India.

In the monitoring towards workplan targets, reporting through the half-yearly progress reports will use a “traffic-light” system, where:

- “green” is on-track – implementation progresses as scheduled;
- “yellow” is partly on-track, which needs an explanation by the project management team to the steering committee, including actions taken to get back on-track and closer monitoring of progress by the steering committee;

- “red” is off-track, which requires a detailed explanation by the project management teams to the steering committee with recommendations of changes/remedial action to the implementation to get the engagement back on-track. If “red” in two consecutive reporting periods, the steering committee may require a short project management team report as a basis for considering deeper remedial action, including possible reallocation between outputs as deemed relevant.

This system will facilitate the steering committee’s role as an accountability mechanism and also facilitate the project management teams’ own proactive remedial action. The reporting will be a factual description of activities and outputs with the “traffic lights” used as a supplement for easy identification of problem areas.

Impact indicators and the Danish Climate Envelope Core Indicators - The overall objective is “Indonesia meets the national energy demand in a more sustainable way, achieves the 23 % renewable energy goal in 2025 and thus contributes to its NDC goals and achieves SDG7 targets related to RE and EE and SDG13 targets”. The project has a perspective to increase ambitions in revisions of Indonesia’s NDC. The project will contribute to emission reductions measured in tons of carbon dioxide equivalent, but this cannot be accurately estimated at the overall project level as impacts of the contribution are impossible to separate from those of many other initiatives in Indonesia. Moreover, impacts are likely to manifest themselves concretely in the longer term, beyond completion of the five-year project. The long-term planning and scenario modelling will be able to dimension CO₂ equivalent reduced and implied capital investment of meeting Indonesia’s target of 23 % RE by 2025 and also show the implication of decisions of a policy, institutional and investment nature and thus indicate the total likely emissions reduction and investments by 2025. The degree of the project’s contribution will need to be assessed qualitatively with all three outcomes potentially contributing to strengthened awareness and capacity of decision-makers and experts that will lead to more well-informed decision making contributing to the achievement of the targets set in SDG 7 and SDG 13 and Indonesia’s NDC.

4. Management Set-up

The project will be managed by a Steering Committee chaired by Director General EBTKE and the Danish Ambassador to Indonesia, also including the Secretary General of NEC and Director of PLN, Director General of Electricity, as well as expert staff to the MEMR Minister and the Deputy Director from DEA and the sector counsellor from RDE. The Steering Committee will be the forum for the overall strategic dialogue between Indonesia and Denmark on energy cooperation and it will also serve as the steering committee for the SSCs on energy and sustainable islands initiative. During the start-up phase the relevance of inclusion of representatives from selected pilot provinces will be considered. The overall cooperation arrangements are outlined in an agreed memorandum between MEMR and the Embassy of Denmark (see Annex 17). The management set-up has been kept as simple and lean as possible, to ensure an efficient accountability mechanism for progress and results as well as an effective mechanism for giving strategic directions to the project. Therefore, the model agreed for the SSC has been used, and following this established practice, decision making will be by consensus. The Steering Committee will be responsible for:

- Approving annual work plans and related overall resource allocations;
- Monitoring progress against the theory of change and results framework, based on half-yearly progress reports that are systematic, analytic and issue-oriented, identifying

deviations from set targets and identifying the underlying causes and whether remedial action is needed;

- Monitoring assumptions for the theory of change, determining if adjustments are needed;
- Monitoring risks, determining whether changes to risk factors are required;
- Monitoring the communication of results.
- Follow up of guidance from the Advisory Group
- Broader dialogue on development in the sector and progress towards meeting Paris commitments

The set-up will also include Project Management Teams with DEA and participation of partner institutions, to manage the day-to-day implementation of the project including preparing material for the Steering Committee. The composition of the project management teams will be agreed between DEA and the lead partner institution and the teams will be responsible for:

- Managing and coordinating the implementation of outcome and outputs under their responsibility;
- Monitoring against the result frame indicators the outcome and outputs under their responsibility;
- Preparing reports every six months and annual reports, workplans and budget of the outcomes and outputs under their responsibility;
- Follow-up on the advice and guidance provided by the steering committee.

Two LTAs are planned as part of the project's support to MEMR and PLN. The outline job descriptions are given in an annex to the Consultation Document (Annex 17). The main role of the LTAs will be to provide technical inputs as well as coordinate the inputs of short-term experts. The LTAs will ensure that there is a continuous communication between DEA and its partners so that the cooperation can be adjusted and fine-tuned to the needs. The LTAs will take a special responsibility for monitoring the outcomes and outputs and especially the progress in capacity development.

Box 4.1 Roles of the sector counsellor and project support staff at the embassy

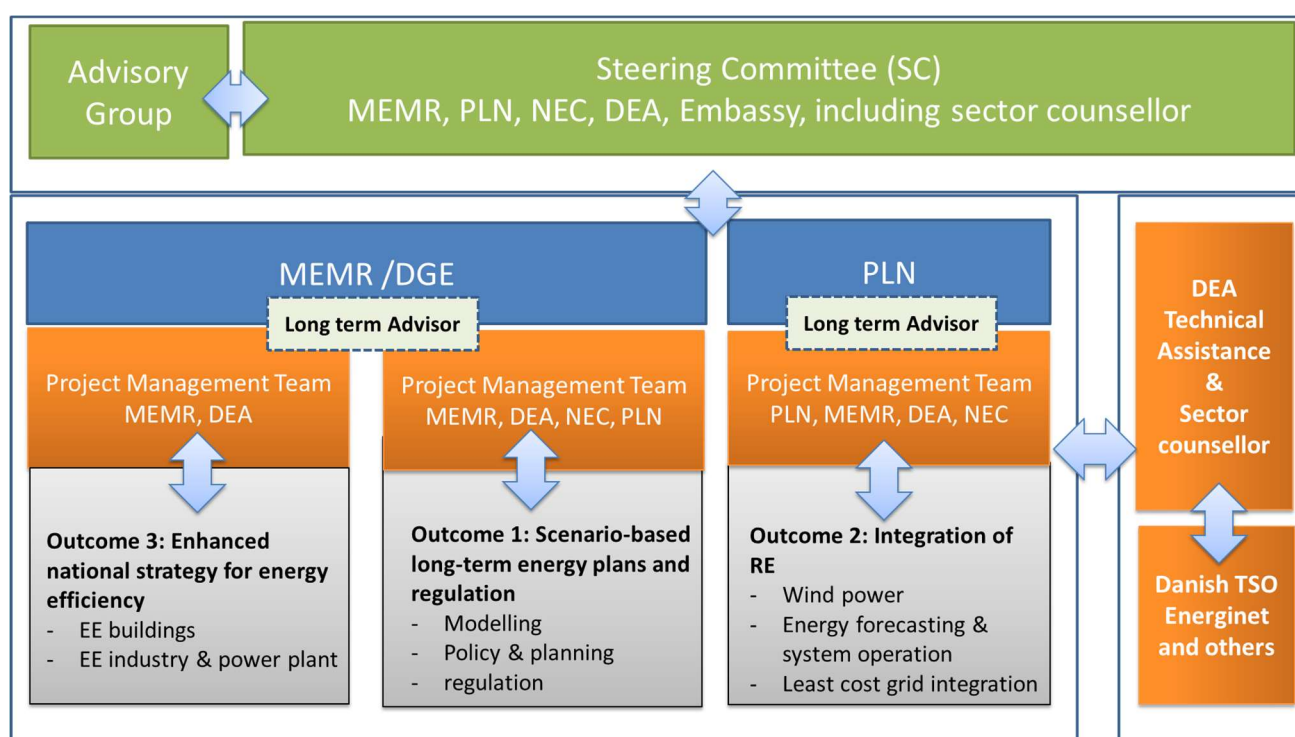
- Act as the link to the project's high-level partners in ministries and other organisations
- Be a part of the professional advisor team in the project together with Danish Energy Agency, Long Term Advisors and local partner organisations.
- Participate in the steering committee (sector counsellor) and the overall coordination of the project
- Play important role in ensuring high level communication and fostering climate and economic diplomacy.
- Contribute to the general climate diplomatic dialogue related to the bilateral relations between Denmark and Indonesia on SDG7, SDG13, NDC-targets, climate ambitions.
- Ensure that this project and the other support provided by Denmark through multi-lateral channels is well coordinated.
- Keep close dialogue with other donors on energy and climate cooperation present in Indonesia and aim for alignment
- Facilitate and contribute to other partners' roundtables, high-level policy dialogues, etc.
- Provide technical inputs where relevant
- Be a link between the project and the embassy's commercial activities (sector counsellor)
- Support DEA on the coordination and development of good operational working relations with Indonesian partners.
- Contribute to putting the advice by LTAs and DEA experts into the appropriate political Indonesian context

DEA will be responsible for financial management of the project. The Indonesian contributions will all be provided in-kind. As noted earlier, the project management teams will be responsible for drafting annual workplans to be approved by the steering committee. Implementation will be the joint responsibility of the partners and DEA as specified in the work plans.

The overall communication objective for the project is to increase awareness among decision makers and the broader public that a green transition of an energy sector is possible without harming security of supply or leading to a huge cost-increase of energy. As DEA is engaged in extensive energy partnership programmes in countries like China, India, South Africa, Mexico and Vietnam, South-South knowledge sharing on low-carbon development across partner countries will be relevant as a part of the results communication. This will be mostly done remotely through sharing information but could also take place during training visits in Denmark where these involve participants from more than one country.

INDODEPP will be included in the current DEPP Advisory Group in Copenhagen which has high-level representation from MFA, MCEU, and DEA. The Advisory Group will discuss project progress and will ensure cross-exchanges of experience and good practice from/with other bilateral cooperation. In addition, the Advisory Group will ensure that efforts are made to maximise synergies with Danish multilateral cooperation on climate change and sustainable energy including related financing issues, by leveraging Danish relationships with multilateral partners and i.e. promoting the use of knowledge products developed by multilateral partners. DEA will continue to act as secretary to the Advisory Group and meetings will be held on a half yearly basis.

Figure 4.1 Management organisation overview



5. Inputs, Budget, and Financial Management

The total budget for the 5-year project is DKK 60 million sourced from the Danish Climate Envelope 2020 (DKK 37.5 million) and 2021 (DKK 22.5 million.). The budget at outcome and

output level is given in Annex 4. Two embedded long-term advisors will be budgeted²² for a four and half year duration. In addition, a replacement of the sector counsellor from mid-2022 when the current advisor's contract expires will be financed (separately) by the MFA (dependent on available financial resources) for the entire period of the new project until 2025/26).

Other activities are the DEA and Energinet inputs and inputs by external international and Indonesian consultants procured through DEA. Funds will not be channelled through Indonesian partner systems. In line with Danida AMG provisions, an unallocated reserve and contingencies of approximately 10% is set planned for new and additional activities as well as unforeseen expenses and shortfalls on other budget lines. The rules and procedures for use of unallocated and contingency funds will follow the AMG guidelines ("January 2018 guidelines for programmes and project"). INDODEPP has no fund transfer to partner countries and hence, anti-corruption measures in the partner countries are focused on the process of tendering, award, or execution of contracts with local consultants. In this regard attention is given to detecting that no offer, payment, consideration or benefit of any kind, which could be regarded as an illegal or corrupt practice, are made, promised, sought or accepted - neither directly nor indirectly - as an inducement or reward in relation to activities funded under INDODEPP. Any such practice will be grounds for the immediate cancellation of the engagement or parts of it, and for such additional action, civil and/or criminal, as may be appropriate. Similarly, the same measures shall be exercised towards DEA in any tendering, award, or execution of contracts with local and international consultants. An outline budget at outcome level is shown in table 5.1 below:

Table 5.1 Budget at outcome level

Budget by year (mDKK)	2021	2022	2023	2024	2025	Total	%
Outcome 1	2.2	2.8	2.8	2.8	2.8	13.5	23%
Outcome 2	2.6	3.1	2.5	2.5	2.5	13.2	22%
Outcome 3	1.8	2.3	2.2	2.2	2.2	10.8	18%
Indo-DEPP Programme Management	0.5	0.5	0.5	0.5	0.5	2.4	4%
Long term advisers	1.8	2.8	2.8	2.8	2.8	13.0	22%
Analysis and review	0.0	0.0	1.0	0.0	0.0	1.0	2%
Contingencies	1.0	1.0	1.0	1.0	1.0	5.0	8%
Unallocated	0.1	0.2	0.2	0.2	0.3	1.0	2%
Total	10.0	12.8	13.1	12.1	12.2	60.0	100%

DEA will be responsible for the organisation and timely delivery of technical assistance inputs provided by DEA staff and Energinet and external consultants to activities guided by demands and priorities as defined in the annual work plans. Each major TA input will be defined in specific TOR²³. DEA has appointed a responsible country coordinator based in Copenhagen, who will serve as the DEA contact person for all matters related to the project. An implementation manual for DEA cooperation has been developed for the DEPP II programme (January 2018) and is subject to periodic adjustment which will bring it up to date with the DEPPIII and possibly also with a section to cover other cooperation countries outside DEPPIII. One of the most immediate

²² The standard MFA planning figures for long-term advisors are to be used in the formulation. The long-term advisors will not be employed by partner ministries but by the MFA as Danida advisor.

²³ Each workstream and within that each assignment should have a TOR for consultant and experts inputs which should specify the title of each assignment; the background and objectives and how the assignment relates to the work plan; the reference to the relevant Indonesian partner national strategy/action plan/ministerial work plan; the purpose, expected results, deliverables, scope of work and quality assurance for the assignment; the skills and experience required for each international and Indonesian consultant; the time input required by each consultant; identify the DEA task manager to whom the consultants are accountable; identify the key Indonesian partner staffing and capacity i.e. the partners with whom the consultants/experts need to work closely; specify local travel, events, and any expenses for which the consultants will be responsible; and set out a brief process action plan for follow-up from the assignment.

changes that will be made will be the project response to Covid-19 and how this will change elements in the capacity development strategy and balance between time with partners. The arrangements described in this project document follow to a large extent the principles and current practice as outlined in that manual (dealing among others with topics such as the ratio of home and field work as well as the procedures for applying and making use of unallocated funds). The project will develop an implementation manual for the cooperation in Indonesia (or contribute to the overall updated DEA manual for all DEPP programmed and projects) as soon as possible after start-up.

Annex 1: Context Analysis

1. Overall development challenges, opportunities and risks

Briefly summarise the key conclusions from the analyses consulted and their implications for the project regarding each of the following points:

General development challenges:

The population of Indonesia is around 270 million people, which makes it the 4th most populated country in the world. The population increases with around 1.1-1.2 % per year. The population density in Indonesia is 151 per km² and total land area is 1,811,570 km². The country consists of 17.000 islands, of which 6.000 are inhabited.

In Indonesia there are more than 300 ethnic groups, the main ones being the Javanese (about 40%), the Sundanese (about 15%), the Malay (4%), the Batak (4%). Indonesia has the World's largest Muslim population and numerous religious minorities, and while religion plays a big role in Indonesian society, it is also characterized by tolerance and coexistence.

Indonesia's dynamic democracy has free and fair elections and freedom-of-speech, but it is also a young and still maturing democracy. Through history, there have been cases of ethnic, religious and social tensions and unrest. Indonesia's economy is young and dynamic and has been growing rapidly for decades. While poverty has decreased significantly, Indonesia is still an unequal society with wealth concentrated around urban centres. A green energy transition is much more likely to be a success if it contributes to a fair and just social and economic development. Energy policy is part of social policies in Indonesia as quality, reliable and affordable electricity is an important component for the social development in Indonesia.

People in remote areas of Indonesia are hit hard by climate change, drought and rising sea levels, and the population in poor urban communities is severely bothered by air pollution from both traffic and power plants. Furthermore, there is pressure on natural resources in Indonesia, which relates to e.g. palm oil plantation, which historically have caused a lot of deforestation. Increased use of e.g. palm oil in diesel generators for electricity production in remote areas may cause increased pressure on the forests.

Denmark has an Energy Strategic Partnership with Indonesia and considers the country a Climate Front Post and a priority for Danish climate diplomacy. The Embassy in Jakarta coordinates and runs four Government-to-Government (GtG) main SSC-partnerships with Indonesia on the green agenda; within 1) Energy and Climate, 2) the Sustainable Island Initiative, 3) Waste and Circular Economy and 4) Food and Agriculture. The strong embassy presence through the GtG-partnerships gives Denmark a rather unique position in the bilateral diplomatic relations with Indonesia and multilateral development cooperation within climate, environment, energy, green transition and sustainable development.

Development in key economic indicators:

Indonesia's growth in GDP was 5.03% in 2019. A growth rate around 5% in GDP has been the standard for the last 10 years. The GDP per capita is USD 4,465, which makes Indonesia a lower-middle-income economy. It is the largest economy in Southeast Asia and an emerging market. Inflation is around 3% p.a., which has been the level for the last 5 years. Before 2015 the level was around 6 % p.a. Before 2009 the inflation was more unstable and frequently reached 10 % p.a.

While Indonesia has experienced steady economic growth in recent years and achieved substantial development progress, development across the country is uneven – poverty rates are seven times higher in Papua than in Java – and inequality remains a pressing challenge for the government. About 20% of Indonesia's population of 270 million – 50 million people – remains vulnerable to falling into

poverty, with income just above the international poverty line of USD 1.90 per day. And it gets worse outside the islands of Java and Sumatra, which contribute about 80% of GDP. Poverty rates are seven times higher in Papua than Jakarta, the capital. Gross national income per capita just USD 3,840, lower than Samoa, Tonga, Fiji, and neighbouring Malaysia and Thailand.

The GNI per capita in Purchasing Power Parity (PPP) is more than doubled since 2000.

	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (2011 PPP\$)
1990	62.3	10.1	3.3	4,399
1995	64.3	10.1	4.2	5,838
2000	65.8	10.6	6.7	5,422
2005	67.3	10.9	7.4	6,506
2010	69.2	12.2	7.4	8,234
2015	70.8	12.8	7.9	10,029
2016	71.0	12.9	8.0	10,419
2017	71.3	12.9	8.0	10,811
2018	71.5	12.9	8.0	11,256

The employment by sector (in % of total employment) is agriculture (30.3), industry (22.0) and services (47.8). The value added (in % of GDP) is agriculture (12.8), industry (39.7), services (43.6).

The unemployment rate is 7.5 % (2019).

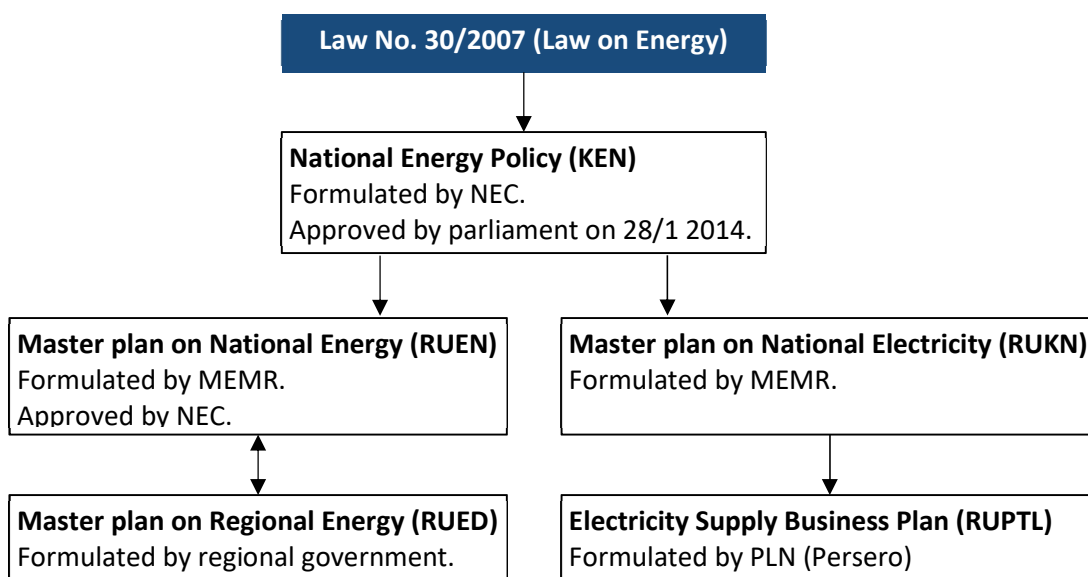
Due to the Covid-19 pandemic, the Indonesian GDP has contracted with(minus) 5.32% in Q2 2020. The government predicts that the unemployment rate would be between 7.7 – 9.1%in 2021. That would be a huge increase from the current unemployment rate of 4.9%. Employment opportunities from the RE and EE measures deployment should be considered in the Covid-19 sustainable recovery long term plans.

This current pandemic situation might alter government's priorities in making decisions at both national and regional level. Previous evidence has shown how investment in energy have shifted focus to stimulate the national economy. The low-carbon energy has been perceived as complicated, slow and expensive investment with existing barriers in knowledge capacity and technology. Though, by performing business as usual, Indonesia is at higher risk to confine itself in fossil-based technology and fail to achieve its climate commitment. Currently, Indonesia's energy sector has not been hard impacted by the Covid-19 crisis. Coal and LNG price have remained relatively stable and the future of the use of these resources will depend on the continued demand from Asian countries. The decrease in oil prices may help to lift the fuel subsidy burden on the State budget. The decreasing oil prices threatens the RE industry and may delay the uptake of RE. However, the Covid-19 crisis is also an opportunity for governments to engage in and fasten the transition toward inclusive green growth, which some States have already seized. It is an opportunity for GoI to revisit its energy security strategy and more generally its energy long term plans. INDODEPP support to energy modelling and planning, as well as attracting investors is a timely opportunity to influence policy and political orientations in the sector.

Analysis of the energy sector in Indonesia:

The energy sector in Indonesia is driven by the key energy policies and plans as shown in Figure A-1.1: below.

Figure A-1.1: Energy Policies and Plans Indonesia



The current policy targets a share of 23% RE by 2025 (an increase of 24 GW from 10 GW in 2019)²⁴. It is expected that Indonesia will establish additional 30 GW fossil-fuelled power plants before 2025, which should be compared to the existing total capacity of 69 GW (both RE, coal, oil and gas). It is very important to note that Indonesia has great RE potential and that the Indonesian partners have underlined the importance of this partnership in support of realising this potential, particularly with regard to wind energy. It is estimated that Indonesia has a total potential of about 400 GW renewable energy sources, including hydro, wind, solar, tidal, sustainable bioenergy and geothermal energy.

Based on IESR 2019 Clean Energy Outlook, and the 2019 Indonesia outlook the energy sector current challenges and needs are:

Energy demand:

- The energy demand is expected to grow at an average pace of 5% annually.
- The transportation sector has been the biggest contributor to the final energy demand since 2013 and is also a large source of GHG emission.
- Almost 40% of Indonesia's total electricity consumption in 2018 is in the residential sector at 62.7 million BOE or 106.5 TWh. Most of this residential's demand is caused by the use of home appliances, with air conditioner (AC) and lighting. The regulatory framework for EE buildings is developed, with a Green Building Code at national level and three cities' green building codes: i.e. Jakarta, Bandung, and Semarang (Surabaya, Manado and Makassar are still preparing their codes). The main barriers to the adoption of green buildings in Indonesia are the high investment costs, lack of funding scheme for the energy efficient building projects, and relatively low awareness of cost saving potential brought by a green concept.
- The industry is also a large demand driver.
- Government Regulation No. 70/2009 on energy conservation, requiring large energy consumers with consumption larger or equal to 6000 TOE to perform energy management and reporting to the online system Energy Management Online Reporting System (POME) is not well enforced. Out of 306, only 40% of large energy consumers reported their energy management programs. A

²⁴<http://ebtke.esdm.go.id/post/2019/12/06/2419/kejar.target.bauran.energi.2025.dibutuhkan.investasi.ebt.hingga.usd3695.miliar>

large majority of companies who failed to report their energy management programmes were coming from the iron and steel, textile, power generating, oil and gas, and pulp and paper industries.

Renewables:

- In the last six years, the renewables capacity has increased by 2.09 GW or an average increase of 348 MW per annum. Most of the capacity came from large hydropower and geothermal power plants. In 2019, renewables only contributed to 12.2% of installed capacity. The share of renewables has been stagnant since 2011.
- Frequent regulatory changes, unsupportive regulations (e.g. unattractive tariffs and unbalanced risk allocation), and inconsistent business processes have delayed the deployment of RE and there is a risk that the 23%RE share target will not be met.
- In general, the investment in REEC has been stagnant in the past five years, showing the low investment attractiveness in Indonesia, and the need for improving the current regulatory framework. A draft Presidential Regulation is likely to **introduce back** the Feed-in Tariff (FiT) policy, considering reasonable financial return and tariff staging (decrease over time) for renewable energy power plants. This will need to be operationalised in Ministry regulations.
- The renewable technologies are becoming increasingly cost-competitive. However, some barriers persist (e.g. poor risk allocation, regulatory uncertainty, financial schemes) which need to be addressed to ensure better economics of renewables projects.

Beyond planning, regulations and financial mechanisms, IRENA (2017) identified other areas for the deployment and uptake of RE and EE such as aligning the targets for renewable energy deployment among different stakeholders and incorporation of the expected deployment of VRE in transmission and distribution plans.

Energy Access:

In 2018, 98,5% of the population in Indonesia had access to electricity, however there are still regions with electrification ratio under 65%. Another energy access issue in Indonesia lies in the reliability and quality of affordable power supply to households. Grid availability and security of electricity supply remains uneven. Providing access to consistently reliable and quality electricity and energy services is a difficult and expensive proposition, complicated by limited capacity and the uneven availability of infrastructure.

Status and progress in relation to SDGs and NDC:

SDG 7: Clean Energy

Indonesia is progressing well towards SDG 7 in terms of access to energy. However, electricity in remote areas remains expensive and therefore not entirely in compliance with the SDG7-target of providing affordable energy to all. Furthermore, improvements are still needed in access to energy in terms of quality and reliability. Indonesia also needs to move faster to reach target 7.2 “*By 2030, increase substantially the share of renewable energy in the global energy mix*”, and 7.3 “*By 2030, double the global rate of improvement in energy efficiency*” INDODEPP will contribute to increase share of RE in the Indonesia energy mix, improvements in EE, and access to quality and reliable energy.

SDG 13: Climate Action

Historically Indonesia has focused on reducing land use, land use change and forestry (LULUCF) emissions – in particular from Forestry – in their GHG-reduction efforts. These efforts do to some extent pay-off resulting in a slower increase in emissions from forestry. The NDC-projection in GHG-emission from forestry from 2010 to 2030 in BaU-scenario is thus “only” 10%. The expected increase from the energy-sector in the same period from 2010 to 2030 in BaU-scenario is as much as 268%. The result of this is a major change in the emission-profile for Indonesia, as the energy sector in 2030 BaU is expected to emit more than double the emissions for forestry and agriculture combined. See

Table A-1.1 below According to the National Energy Plan (RUEN) by NEC the capacity of all power generation should increase from 69.1 GW in 2019 of which 9 % is RE to 115 GW in 2030 of which 23 % should be RE. This means that even if meeting the RE-target of 23 % in the electricity sector the fossil-fuelled capacity would also increase with more than 30 GW from 2019 to 2025. Furthermore, the RE-development is lacking behind in reaching the 23 % target due to several years of unstable conditions for RE-solutions. In addition, Covid-19 may affect the deployment of RE. This increases the importance of an extended effort in Indonesia for the best solutions in order to secure green growth.

Table A-1.1: Source: Indonesia's first NDC

No	Sector	GHG Emission Level 2010*	GHG Emission Level 2030			GHG Emission Reduction				Annual Average Growth BAU (2010-2030)	Average Growth 2000-2012*
		MTon CO ₂ e	(MTon CO ₂ e)			(MTon CO ₂ e)		% of Total BaU			
			BaU	CM1	CM2	CM1	CM2	CM1	CM2		
1	Energy*	453.2	1,669	1,355	1,271	314	398	11%	14%	6.7%	4.50%
2	Waste	88	296	285	270	11	26	0.38%	1%	6.3%	4.00%
3	IPPU	36	69.6	66.85	66.35	2.75	3.25	0.10%	0.11%	3.4%	0.10%
4	Agriculture	110.5	119.66	110.39	115.86	9	4	0.32%	0.13%	0.4%	1.30%
5	Forestry**	647	714	217	64	497	650	17.2%	23%	0.5%	2.70%
	TOTAL	1,334	2,869	2,034	1,787	834	1,081	29%	38%	3.9%	3.20%

* Including fugitive

**Including peat fire

Notes: **CM1** = Counter Measure (*unconditional mitigation scenario*)

CM2 = Counter Measure (*conditional mitigation scenario*)

In a 2017 study, WRI noted that: with the energy sector projected to dominate Indonesia's GHG emissions by 2026–2027, promoting renewable energy sources and energy conservation offers significant emissions abatement potential. Achieving a renewable energy mix target could reduce emissions from the Reference scenario by approximately 266 MtCO₂ by 2030. Combined with an energy conservation policy, the potential emissions reduction could increase to approximately 544 MtCO₂ by that year. Early actions to promote clean and renewable energy and implement energy conservation measures will reduce the expense of achieving further emission reductions in the long term. Delaying these actions could lead to infrastructure developments that lock in emissions-intensive pathways that may be expensive or impossible to change in time to limit warming. Furthermore, the deployment of “fuel free technologies” (e.g. solar, wind power) can decrease emission from the use of palm oil. The ICCT has shown that palm expansion is a major driver of deforestation and peat drainage, resulting in massive CO₂ emissions.

Indonesia's Nationally Determined Contribution (NDC)

Indonesia is ranked as the sixth largest global GHG emitter. Indonesia's Nationally Determined Contribution (NDC) to the Paris Agreement under the UNFCCC includes an unconditional target of 26% GHG reductions by 2020 and 29% by 2030 compared to Business-as-Usual (BaU). The country promised to increase ambitions from 29% to 41% GHG emission reduction by 2030 subject to international assistance and financial support.

Indonesia's national climate plans (NDC) are under the authority of Ministry of Forestry and Environment (MOFE). The NDCs need to be updated every five years. Since 2015, there is new opportunities such as cheaper and more accessible RE. Moreover, a growing appreciation that climate mitigation is an opportunity for economic growth. A synthesis report on the NDCs submitted will be released at COP26 in Glasgow, assessing the collective progress and alignment with former ambition toward the goals of the Paris Agreement. Indonesia's MOFE stated in April 2020, that the Updated

NDC implementation Report has now been completed but still awaiting further processes at the relevant ministries before it submitted to the UNFCCC Secretariat.

The need for an accelerated decarbonisation of the energy sector to support Indonesia in the achievement of its NDC target as well as to promote the more ambitious scenario underlines the rationale for international support and links well with Danish core competences and the Danish SDG7 leadership. DEA has in the current Indonesian-Danish SSC partnership calculated that if Indonesia accelerates the use of the enormous renewable energy resources in a cost-effective manner it would save the world from extra 400 million tons of CO₂-emissions each year. This equals 12 times the annual Danish CO₂ emission from energy production.

Political economy of energy in Indonesia²⁵:

The energy sector in Indonesia is driven by different political priorities: i.e. access to affordable energy, low electricity tariffs and low generation costs, quality and reliability of electricity supply, increased renewable energy share in the energy mix and climate change mitigation, as well as the overall economic and industrial dimension of energy (employment, energy security and export).

These political priorities feed a constellation of conflicting interests and different stakeholders positioning towards development of RE as an alternative source.

- **The weight of the coal industry.**

According to a IISD study (2019), the importance of the coal industry means that coal mining groups have a very close relationship to the government. The coal industry represents an important economic driver for Indonesia through coal export and employs around 125.000 people. Since 2007, the increases in electricity production to meet the growing demand have been largely met by an increase in coal generation capacity. The sector has received considerable government support in the form of loan guarantees, tax exemptions and price compensation. This support indirectly reduces the costs of coal-based electricity generation and affects the competitiveness of RE. It also challenges Indonesia's NDC ambition, as coal-fired power plants represent a major source of GHG emissions.

- **RE versus diesel generators in remote areas**

According to IISD study (2019) PLN's subsidiary Pertamina Power has an interest in diesel-based power generation in some remote areas. The replacement of diesel with renewable systems would result in fuel supply reductions affecting these interests.

- **The weight of palm oil industry**

Rising domestic demand for palm oil as a result of Indonesia's national biodiesel program will hardly be able to be met by current palm oil production or by efficiency improvements in the palm oil industry. According to a study by the World Resources Institute (WRI), the B100 program is estimated to lead to an increase in palm oil demand of 56.98 million tonnes annually by 2025, which will encourage the clearing of 72,000 square kilometers of land. Palm oil is grown in the tropical rainforest belt around the Equator and is a monoculture with much lower carbon storage than native rainforest. Clearing forests to harvest biofuels releases far more carbon into the atmosphere than the carbon that biodiesel reduces by replacing fossil fuels. This net increase in emissions would thus eliminate the climate purpose of switching to biodiesel and challenge Indonesia NDC. It takes a long time for rainforest to grow densely and store this carbon. So if native rainforests are burned for the purpose of growing palm oil (biofuel), it will take many decades to restore nature's own CO₂ bank. Indonesian President Jokowi Widodo, however, last year declared a moratorium on the issuance of new permits

²⁵ This is a non-comprehensive analysis related to the main areas of intervention for INDODEPP – according to EDK there is no comprehensive political economy analysis of the energy sector.

for palm oil plantations, although smallholders in particular are still clearing rainforest for palm oil production.

- **RE target.**

The Ministry of Energy and Mineral Resources, and the State Owned Enterprise PLN have the mandate to drive the achievement of the 23% RE by 2025. The overall balancing act for the Ministry and PLN is to integrate more RE while ensuring an affordable, quality and reliable power supply. According to the IISD study, several challenges need to be addressed to ensure a full support and engagement of the MEMR and PLN:

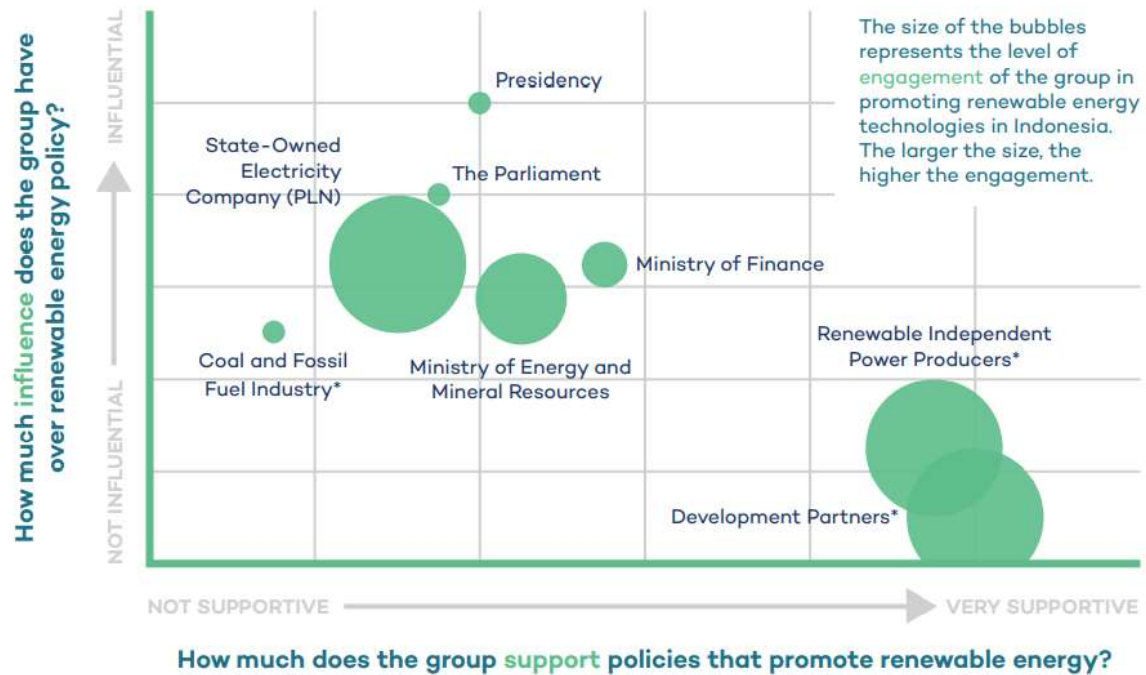
- The cost of RE which may lead to an increased price of electricity,
- The costs of procuring renewable energy over fossil fuels may worsen PLN financial situation.
- Ensuring the grid stability and an efficient RE integration.
- There are relatively few PLN staff that have the skills and knowledge about renewables necessary to implement a major expansion.

- **Supportive feed-in tariffs and other financial incentives for the deployment of RE.**

IPPs have been reluctant to invest in Indonesia due to low and changing FiTs. Furthermore, setting tariffs at a rate that could satisfy both IPPs and PT PLN remains challenging. A number of approaches have been tested (FIT, price cap) but power purchase agreements between IPPs and PLN have been limited. While the Ministry of Finance and the National Parliament are not opposed to financial incentives for RE, they have several other priorities (e.g. State budget stability, PLN financial stability, priority to subsidise in support to poor people). (Halimanjaya, 2019). According to the IISD study, the Ministry of Finance is almost the only branch of government that favours increasing electricity tariffs—subject to what is politically feasible—since this would reduce the size of the subsidy which the ministry needs to provide to PLN.

The figure below presents the different stakeholders' groups support, influence and level of engagement for policies promoting renewable energy,

Figure A-1.2: Relative support for policies promoting renewable energy, influence and level of engagement of stakeholder group (Source: IISD, 2019)



The Covid-19 crisis has not led to major changes in the above mentioned political priorities. The generation capacity is planned to be increased through both fossil fuel and RE-powered plants. The government has taken a stand on tax rebates for coal mining and at the same time is trying to attract RE investment by drafting a decree on VAT-exemption and tax holiday as well as higher Feed-in-Tariffs.

The timing of INDODEPP is in that sense right as it can demonstrate the potential for a green and just economic recovery through RE deployment and increased EE. INDODEPP aims at further enabling MEMR and PLN to benefit from the Danish experience in transitioning the energy system and transferring good practice and lessons learnt to the Indonesian context. Targeted at the main concerns the MEMR and PLN may face for RE deployment, INDODEPP aims to provide technical arguments and evidence-based scenarios to political discussions of RE-targets and strengthen the regulatory, financial and technical conditions for investments in RE and lowered prices of RE generation costs.

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IESR 2019. Clean Energy Outlook Tracking Progress and Review of Clean Energy Development in Indonesia

NEC/DEN 2019. Indonesia Energy Outlokk 2019

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

No additional studies or analytical work required.

2. Fragility, conflict, migration and resilience

Briefly summarise the key conclusions and implications for the project of the analysis of the below points:

Indonesia is not classified as a fragile or conflict state. There is generally peace and stability within the country, although there have been localized political and social disputes.

The project's focus on climate change mitigation and the clean and green energy transition will mean a positive but indirect effect on migration and resilience issues. Energy policies are supporting social policies, as access to affordable energy are used to reduce conflict in society. Through its contribution to the deployment of RE, the project can contribute to achieve better electricity access in frontier,

outermost and least developed areas as renewable energy is often cheaper and more reliable than diesel-generators on smaller islands. Therefore, improved policies on renewable energy and enabling investments in RE can be one way to accelerate access to affordable and reliable energy in remote and poor provinces, which are vulnerable to climate change. Access to electricity can also reduce internal migration in Indonesia and reduce pressure on especially the mega-city Jakarta, which is target for huge migration patterns from poorer regions in the country.

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

No additional studies or analytical work required.

3. Assessment of human rights situation (HRBA) and gender²⁶

Briefly summarise the key conclusions and implications for the project of the analysis of the below points:

Government of Indonesia is committed to promote and protect human rights. Several efforts include the strengthening of institutional and human resource capacity as well as legal framework to promote non-discriminatory laws and policies at the national and local levels. As part of a national mechanism that promotes accountability, Indonesia's national human rights institutions continue to empower and strengthen their complaint mechanism on cases related to human rights. Despite these efforts, in 2018 the Ministry of Legal and Human Rights identified 114 local regulations as discriminatory against women. The government is engaged in ensuring that local bylaws and regulations align with the national legal framework. The Ministry of Home Affairs sets forth human rights parameters for the formulation of bylaws and local regulations, and there is a need to further enhance capacity and knowledge on human rights for state apparatus in provinces and cities.

INDODEPP will give attention to taking human rights into account and ensure inclusive, transparent and non-discriminative approach to the cooperation. No rights holders will be excluded from involvement, and where relevant the project will reach out to civil society and relevant NGOs as part of stakeholder consultations. For example, activities around the wind pilot tender will ensure that a high quality social and environmental impact assessment (ESIA) is conducted. To that effect, DEA technical advisors will familiarise with Indonesian ESIA-related laws and obligations as well as Social and Environmental Safeguards best practices and assist in supervising the recruitment of consultants that will undertake the ESIA, as well as assist in review of ESIA to ensure that it follows best practices, especially with regard to local communities consultation, social acceptance of wind energy, respect of rights holders, and non-discriminatory job access. INDODEPP may also consider to integrate modules on HRBA in its training activities, especially at provincial level. When relevant and timely, DEA will promote a Strategic Environmental Assessment at policy and programming levels.

Indonesia's HDI (Human Development Index) value for 2018 is 0.707— which puts the country in the high human development category—positioning it at 111 out of 189 countries and territories. Between 1990 and 2018, Indonesia's HDI value increased from 0.525 to 0.707, an increase of 34.6 percent. Between 1990 and 2018, Indonesia's life expectancy at birth increased by 9.2 years, mean years of schooling increased by 4.7 years and expected years of schooling increased by 2.8 years. Indonesia's GNI per capita increased by about 155.9 percent between 1990 and 2018.

Furthermore, Indonesia as an island nation, is sensitive to climate change and the decarbonisation of the power sector through deployment of renewable energies and measure to reduce the energy demand contributes to climate change mitigation. Climate change mitigation in Indonesia, and thereby the long-

²⁶ The purpose of the analysis is to facilitate and strengthen the application of the Human Rights Based Approach and integrate gender in Danish development cooperation. The analysis should identify the main human rights issues in respect of social and economic rights, cultural rights, and civil and political rights. Gender is an integral part of all three categories.

term impact of the cooperation, will have co-benefits in terms of reduction of pollutants associated with fossil fuel value chains, which affects air quality, contaminate natural resources and pose a series of health risks. Sustainable low carbon transition of the energy sector also help increase access to affordable and sustainable energy services. While access to affordable, reliable, sustainable and modern energy for all is a SDG (#7), 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.

Gender

The 2018 female HDI value for Indonesia is 0.681 in contrast with 0.727 for males, resulting in a GDI (Gender Development Index) value of 0.937. In comparison the GDI for East Asia and the Pacific is 0.960. Especially the economic indicators affect the Indonesian GDI, where female GNI is almost half of the male GNI, while education is more equal to gender, although not entirely equal.

Indonesia has a GII (Gender Inequality Index) value of 0.451, ranking it 103 out of 162 countries in the 2018 index. In Indonesia, 19.8 percent of parliamentary seats are held by women, and 44.5 percent of adult women have reached at least a secondary level of education compared to 53.2 percent of their male counterparts. Female participation in the labour market as a whole is 52.2 percent compared to 82.0 for men.

The RPJPN 2005-2025 provides direction for women empowerment, namely (1) improve the quality of life and the role of women in various development sectors; (2) decrease the number of violence, exploitation and discrimination of women; and (3) strengthen institutionalization and network of gender mainstreaming. The government has also established a Task Force for Equal Employment Opportunity (EEO) and continued to increase the capacity and concern of government officials and other stakeholders in the implementation of EEO. The provincial Equal Employment Opportunity (EEO) Task Force is expected to play an active role in disseminating information related to EEO. The Task 97 Force is also expected to raise the awareness of both workers and employers on the application of non-discrimination and equality at the workplace. The Government continues to increase the participation of women as policy-makers. There were 14.43% of women in senior position and 13.06% in mid-level position in bureaucracies in 2018.

The number of women employed in the energy sector in Indonesia is moderate but could be increased. Also, at management-level in the energy sector and the INDODEPP-partner institutions the shares of male employees outnumber the females, especially within PLN.

One immediate approach for the INDODEPP is to target a gender balance in capacity development activities (including workshops and study trips). The project will monitor the gender balance in capacity development activities, and identify factors that may affect the gender balance if it is not achieved. The reporting on capacity development activities will be gender disaggregated. The Steering Committee may discuss potential strategies to address gender issue in the project.

Youth

Youth unemployment is still one of the major concerns for the government. Although the rate has been declining in the past years, Indonesia still has the highest youth unemployment in ASEAN. In 2018, almost 20% of young people (15-24 years old) were unemployed. Several factors were identified as barriers to youth employment such as youth with higher educational levels tend to prefer the service sector beyond what the labour market has to offer, a long transition between leaving school and their first job, etc. The government has increased vocational training budget and is promoting work-based learning, including apprenticeships.

According to IRENA study (2017), greater renewable energy deployment will create more jobs and stimulate technology transfer. The IRENA studies indicated the potential for 1.3 million jobs in the

renewable energy sector in Indonesia by 2030, up from just over 100 000 today. This could potentially benefit youth employment. In 2019, USAID ICED II and CoAction Indonesia, an Indonesian nongovernmental organization, organised a discussion on green jobs opportunity within renewable energy, including employment and business opportunities.

Several universities have developed RE and EE-related curriculum (See stakeholder analysis section). The Sumatra Institute of Technology (ITERA) has started the construction of a Solar Power Plant (PLTS) on an area of 1 ha in the campus area. The PLTS will produce 1 MW and, upon its completion in October 2020, will be the largest PLTS in Indonesia built on campus as well as a renewable energy laboratory. This newest initiative also shows that young people have essential roles in achieving sustainable development agenda. Young people can take part as active agents in the energy sector.

INDODEPP does not directly target youth employment, but through building up an enabling environment for RE and EE to accelerate deployment of RE and EE will contribute to creation of jobs. Furthermore, the engagement of universities in capacity development activities will bridge education with potential source of employment, e.g. industry associations, EE professional associations.

Key documentation and sources used for the analysis:

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<http://ebtke.esdm.go.id/post/2017/12/13/1841/ditjen.ebtke.terima.lesson.learned.report.kerja.sama.esp.dari.pemerintah.denmark?lang=id>

ESMAP : Social Inclusion in the Energy Sector, <https://www.esmap.org/EnergyandGender>

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

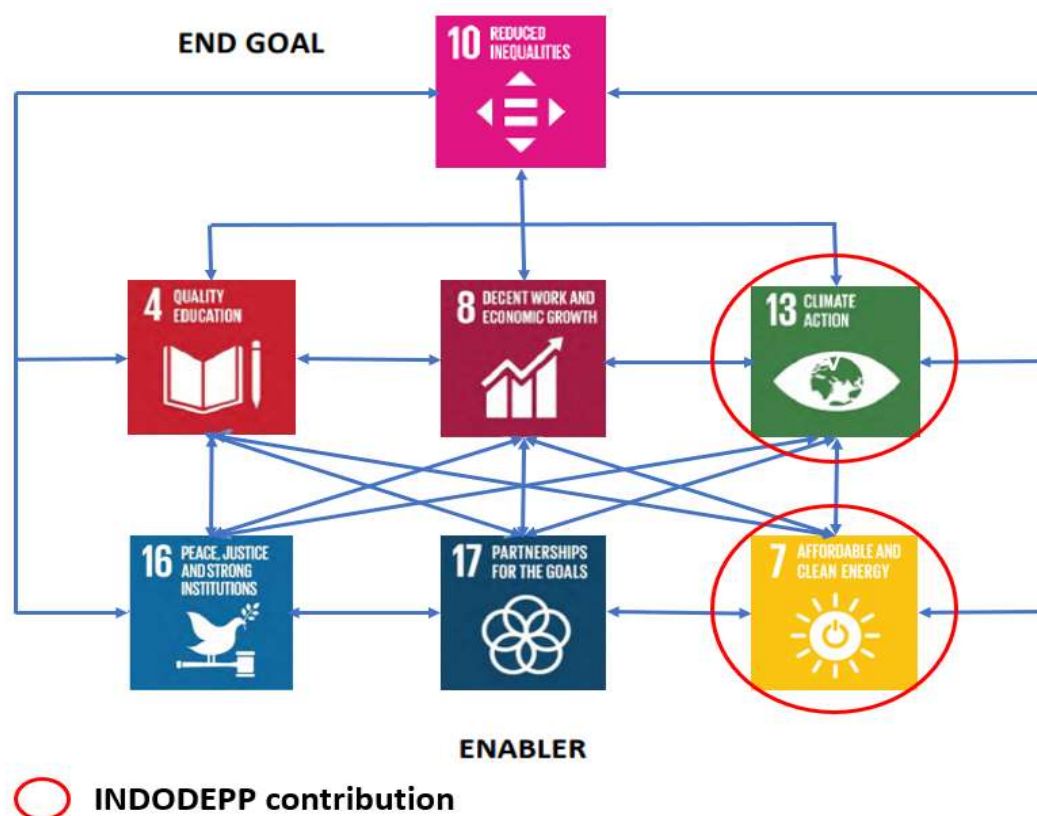
No additional studies or analytical work required.

4. Inclusive sustainable growth, climate change and environment

Briefly summarise the key conclusions and implications for the project of the analysis of the below points:

The Figure below presents the dynamic relations between SDGs and Indonesia engagement in Inclusive sustainable growth, climate change and environment. INDODEPP project has a direct focus on sustainable energy and climate change mitigation.

Figure A-1.3: Dynamic of Inclusive and Sustainable Growth in Indonesia (adapted from GOI, *Voluntary National Reviews*, 2019).



In its Voluntary National Review, the GoI identified several challenges related to energy and climate change which hampered Indonesia's inclusive green economic growth.

- Energy imports is a contributor of Indonesia's regional GDP deficit. Due to depletion of Indonesia's fossil fuels such as oil, gas and coal, the domestic energy supply is estimated to only meet 75% of the national energy demand by 2030 and will continue to decline to 28% in 2045. Optimization of energy diversification must become a national priority by increasing the proportion of new renewable energy. This way, it would be possible to increase the domestic energy supply, while also considerably reducing GHG emissions from the energy sector.
- As a country which relies on the commodity and natural resources sector, Indonesia's economic growth is predicted to be weakened and hampered if the depletion of natural resources and degradation of environmental quality continues. For example, Indonesia's forest cover continues to decrease every year. The average rate of deforestation that occurred during 1990-2017 reached 1 million hectares per year. Although the rate of deforestation has fallen to 480 thousand hectares in 2017, the reduction in land cover will continue due to the forces driving development.
- In central and east region of Indonesia, access to energy is still limited and shows inequality. Similarly, in provision of natural gas infrastructure, especially for household, industry and transportation, the distribution is relatively unequal and can only be accessed by limited people.

Opportunities to support inclusive green growth and transformation to a low carbon and climate resilient economy

The overall goal of the project is to support the GoI in the goals of achieving 23% renewable energy in 2025, increasing energy efficiency and maintaining inclusive green economic growth to the benefit of the whole population.

The deployment of cost-effective RE may allow to expand access to affordable, reliable and quality energy services in remote areas which are not yet electrified or still reliant on diesel generators. Thus, reducing inequalities across regions. According to IRENA study (2017), greater renewable energy deployment will create more jobs and stimulate technology transfer. The IRENA studies indicated the potential for 1.3 million jobs in the renewable energy sector in Indonesia by 2030, up from just over 100 000 today. Scaling up the market for renewable energy technologies provides significant opportunities for localising parts of the value chain, such as through local manufacture of solar panels and electric vehicles, with the associated technology transfer having the potential to come with additional positive effects to the economy.

The project may have a positive impact on the adoption of “fuel-free” technologies such as solar, wind and geothermal. Increased use of “fuel-free” technologies, and energy scenarios giving choice awareness of benefits with RE may decrease the current Indonesian ambitions for using more palm oil in diesel generators and transport sector. It will be very positive to reduce demand for palm oil, since it is difficult to produce even larger amounts of palm oil without harming the threatened tropical rainforest and its unique biodiversity.

The project aims at decarbonising the electricity sector which is a major source of GHG emissions, as such it 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 risk will benefit most the part of the population that are not able to prevent them self from exposure of pollutants, cannot afford health care and is without – or have poor social security.

According to IRENA study (2017), scaling up renewables can also save Indonesia between USD 15.6 billion and USD 51.7 billion per year when the impacts on air pollution and climate change are included. With REmap, the avoidance of premature deaths and the savings that come with reduced health costs from reductions in outdoor air pollution are valued at USD 3.0 billion to USD 9.7 billion per year. Reduced externalities from indoor air pollution account for another USD 10.4 billion to USD 31.3 billion per year, due to the substitution of traditional uses of bioenergy for cooking. As said, the REmap Options also would lead to a reduction of 150 Mt of CO₂ emissions per year which, with a carbon price of USD 17 to USD 80 per tonne equates to savings of USD 2.2 billion to USD 10.7 billion per year in 2030. The reduced system costs and externality savings equal 0.5% to 1.7% of Indonesia’s forecasted gross domestic product in 2030.

Risks:

Potential associated social and environmental risks arising from the project activities will be carefully considered. For example, activities around the wind pilot tender will ensure that a high quality social and environmental impact assessment (ESIA) is conducted. To that effect, DEA technical advisor will familiarise itself with Indonesian ESIA-related laws and obligations as well as Social and Environmental Safeguards best practices and be engaged in supervising the recruitment of the company to lead the ESIA, as well as supports its review to ensure that it follows best practices. When relevant and timely, DEA may promote a Strategic Environmental Assessment at policy and programming levels.

Key documentation and sources used for the analysis:

Same as are listed above plus IRENA 2017. Indonesia Renewable Energy Roadmap, Executive Summary. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Mar/IRENA_REmap_Indonesia_summary_2017.pdf?la=en&hash=F530E18BAFC979C8F1A0254AFA77C9EBC9A0EC44

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

No additional studies or analytical work required.

5. Capacity of public sector, public financial management and corruption

Briefly summarise the key conclusions and implications for the project of the analysis of the below points:

Capacity of the public sector for policy making, enforcement and service delivery.

In the current and previous programmes there has been a large capacity building elements with courses and study trips to Denmark. Indonesia is however a very large country and the administrations are also large. Moreover, the capacity of regional government is also low. So, despite the previous engagements, the institutions in GoI are still lacking human resources with know-how and technical capabilities within a broad range of areas related to sustainable economic growth and low carbon economy. Capacity building in government institutions (national and regional) is therefore still important.

Furthermore, the limited knowledge within energy planning, renewable energy integration and energy efficiency is also visible at the university level where there is not sufficient research and education available. The current SSC have involved universities and supported events with participation when possible. Universities were encouraged to apply for research grants together with Danish partner universities under the DFC-facility. The INDODEPP will – as its work programmes are developed – plan and develop training courses as well as training of trainers engaging professional associations, research centres and universities to secure a pool of future experts and create a sustainable change.

The energy sector is also challenged by a lack of harmonisation of plans and targets across institutions. According to Indonesian stakeholders, different institutions are working with different assumptions, models and data. Stakeholders' capacity was not mentioned as a factor explaining the lack of alignment between plans and targets. INDODEPP will conduct a capacity development needs assessment to analyse current capacities, identify capacity gaps, staff resources shortage and capacity building measures across partner institutions. The assessment will also consider the overall institution capacity: e.g. mandate, mechanisms for coordination of plans and targets with other institutions and what is limiting alignment.

Corruption situation

Indonesia ranks #85 of 180 countries on Transparency International's Corruption Perceptions Index 2019. The independent anti-corruption unit KPK has undertaken a very serious role in fighting corruption. The law regulating KPK was however revised in 2019, which reduced the independence of KPK and put the institution under more political control. The law caused many demonstrations in Jakarta showing that there is a public awareness of importance to reduce corruption.

Key documentation and sources used for the analysis:

Same as above

Transparency International.

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

No additional studies or analytical work required.

6. Matching with Danish strengths and interests, engaging Danish actors, seeking synergy

Briefly summarise the key conclusions and implications for the project of the analysis of the below points:

The Danish Energy Agency (and other Danish energy institutions such as Energinet) has strong competences in long-term model-based energy scenarios and energy planning, including grid integration of high proportions of variable renewable energy and power system flexibility. Denmark has demonstrated that it is possible to decouple economic growth from GHG-emissions and energy

consumption, resulting in green growth. Denmark's experience has also demonstrated the importance to GHG-emissions reductions of an integrated approach to energy management and planning, and the value of civil society engagement, academia and private sector to push for renewable energy and climate change mitigation. Denmark has a strong interest in sharing this experience as well as energy modelling, and planning competencies in a partnership with Indonesia for mutual benefit and for contributing to Denmark's interest in achieving global climate goals and meeting SDG targets. The cooperation, which aims at facilitating investments in RE and EE and building a competitive environment through clear planning and investments procedures, bears the potential to attract Danish private sector, among other potential private investors.

Identify:

- where we have the most at stake – interests and values,
- where we can (have) influence through strategic use of positions of strength, expertise and experience, and
- where we see that Denmark can play a role through active partnerships for a common aim/agenda or see the need for Denmark to take lead in pushing an agenda forward.

Indonesia is facing an enormous challenge within the Energy sector in order to reach their ambitious RE targets in 2030 and at the same time reach the 100 %, electrification to the outer, remote and less developed areas. Indonesia also needs to increase the resilience and security of supply and continuously keep the electricity price at a minimum.

The cheapest way to reach the 100% electrification for remote areas is to expand RE from wind turbines and solar PV. However, this requires that the electricity system is ready to integrate the variable renewable energy – both institutional and technical.

If the electricity-system is not ready for the fluctuating electricity, then the following will happen:

1. The financial risk of the developer will be very high hence the price for the RE development will be higher than conventional power generating units
2. The installed RE capacity will not be integrated into the system due to lack of proper forecasting, lack of flexibility in the grid or lack of flexibility in other power producing units.
3. Security of supply will be challenged with increased blackouts OR the overall system price will be a lot higher because the system operator would need to secure a full thermal back-up system.

Indonesia still has very limited share of RE in the system (around 12 %) even though countries like Denmark has shown that it is the cheapest and most sustainable way to expand the electricity system.

In order to transform the energy system into a cheaper, more reliable and more sustainable system – Indonesia is actively asking for

	<p>increased cooperation and experience sharing within all aspects of electricity sector transformation - in order to deal with the technical and institutional challenges that Indonesia is facing.</p> <p>There is not “one size fits all” when it comes to energy systems in different countries and in different contexts.</p> <p>The Danish Energy Agency is therefore providing full access to all lessons learned from the last 45 years of energy transition in Denmark – combined with capacity development of key personnel within the 3 main pillars of the Danish Energy model:</p> <ul style="list-style-type: none"> • Energy modelling, planning and regulation • RE integration • Energy efficiency and energy conservation <p>A successful cooperation on the expansion of the energy system in Indonesia will lead to a cheaper, greener and more reliable energy system..</p>
<p>Brief mapping of areas where there is potential for increased commercial engagement, trade relations and investment as well as involvement of Danish local and central authorities, civil society organisations and academia.</p>	<p>The Danish private sector is already engaged in Indonesia, and the large Indonesian market for sustainable energy solutions will be of major interest to the Danish resource base in future. The GtG energy partnership will pave the way for an increased interest within high quality renewable energy technology and energy efficient appliances and products. From the Danish side that would especially involve the wind sector, the biomass boiler producers, energy efficient equipments and energy consulting companies with expertise within RE and EE.</p> <p>Danish energy solutions and companies investments are directly requested from the current Indonesian partners. Supporting Indonesia in RE regulation and EE standards will build an enabling environment and ensure interest from Danish and other international RE and EE investors. The Energy Sector Counsellor at the Embassy will also work with the Embassy’s commercial section in contributing to engage Danish private sector interests in RE and EE.</p> <p>Denmark’s tradition with an active civil society on energy over the recent decades has also been</p>

	important in achieving the high levels of RE and building on this experience, the Embassy and its Energy Sector Counsellor and DEA will be cognisant of opportunities for engaging civil society in project activities.
Assessment of the donor landscape and coordination, and opportunities for Denmark to deliver results through partners including through multilaterals and EU	<p>Many development partners are engaged in the energy sector in Indonesia (See Annex 14) for detailed key initiatives supported by other development partners). Through its long term presence in Indonesia, Denmark has well established relations with most of them.</p> <p>The Embassy of Denmark is taking part in a donor coordination group within the energy sector where WB, USAid, GIZ, IEA, EU, IRENA as well as British, Swedish, Japanese and Norwegian partners are participating. The aim of these meetings is to secure that no parallel/overlapping programmes or projects are initiated and to share experiences and join forces where appropriate.</p> <p>Denmark is also supporting organisations; i.e. IEA, IISD and IRENA with targeted programmes and complementary interventions in Indonesia. (See Annex 14)</p> <p>General coordination with other development partners will be ensured in different ways through the national partners (MEMR has a bureau dealing with international cooperation). The Steering Committee will also pay attention to synergies and potential overlaps with support from other development partners. The energy sector counsellor at RDE, as well as the two long-term advisers will also facilitate the coordination, in particular with multilateral agencies with closely related programmes/projects to ensure complementarity and synergies of supports (i.e. IEA, IRENA, IISD, OECD, ESMAP/WB)</p>
Key documentation and sources used for the analysis:	
Same as above and DEA on the Danish Energy Model	
Are additional studies / analytic work needed? How and when will it be done?	
No additional studies or analytical work required – but a continued effort is important during project implementation to ensure coordination with support from other development partners in a highly dynamic context.	

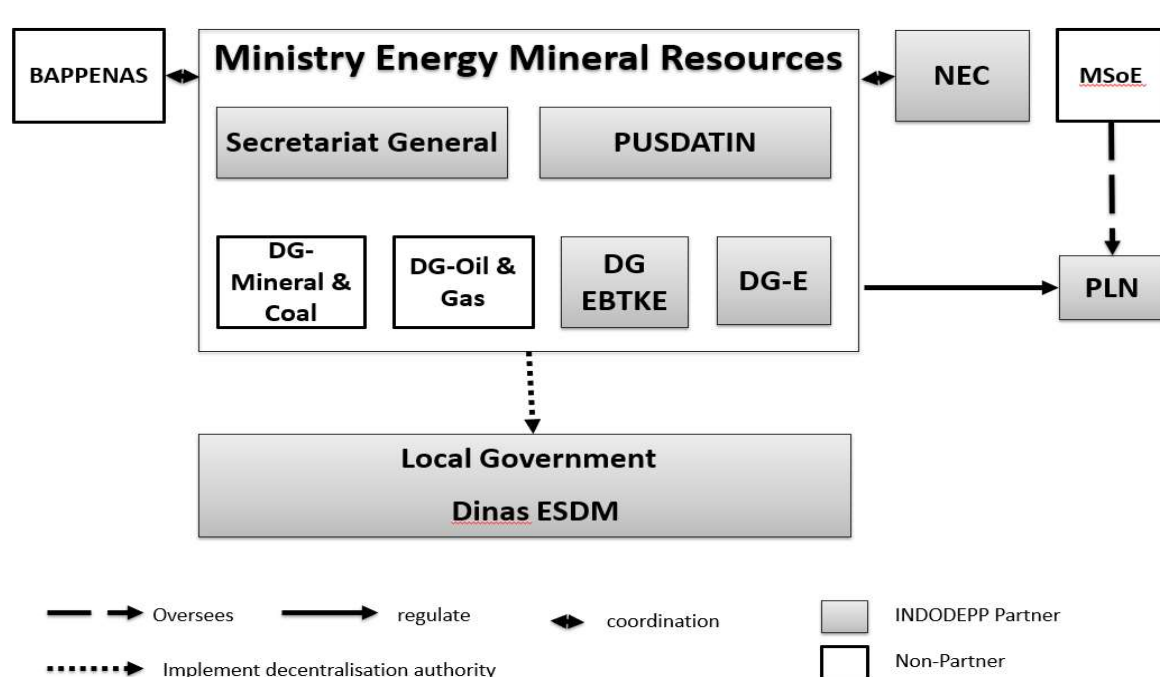
7. Stakeholder analysis

Briefly summarise the key conclusions and implications for the project of the analysis of the below points:

Overview of planning process and stakeholders in Indonesian energy sector with a focus on the electricity sub-sector

The key partners in the project are the Ministry of Energy and Mineral Resources (MEMR) and affiliated organisations: the National Energy Council (NEC) and the Indonesian State-Owned Electricity Utility, PT Perusahaan Listrik Negara (PLN), which is the national electricity company, as presented in the organigram below.

Figure A-1.4: General Overview of INDODEPP Partner organisations



The Ministry of Energy and Mineral Resources (MEMR/ESDM) is responsible for national and technical policy formulation, policy implementation and implementation of government policies in the field of energy and mineral resources. MEMR formulates the master plan on national energy (RUEN) and the master plan on national electricity (RUKN). RUEN is also the basis for the master plan for national energy conservation (RIKEN). As part of institutional structure there are four Directorate Generals within MEMR: the Directorate General of Electricity (DGE), the Directorate General for New and Renewable Energy and Energy Conservation (EBTKE), DG Mineral and Coal and DG Oil and Gas. Under MEMR there is also five centres, one of them is the Research and Technology Development Centre and Centre for Data and Information Technology (PUSDATIN). Within MEMR Secretariat General the Planning and Cooperation Bureau coordinate national planning and programming. It will also be important for the project to coordinate with this Bureau.

The Directorate General of New and Renewable Energy and Energy Conservation (EBTKE) mandate is to formulate and implement policies and technical standardisation in the field of new energy, renewable, and energy conservation. Under the EBTKE are six directorates: the EBTKE Secretariat General, the Directorate of Energy Efficiency & Energy Conservation, the Directorate of Various New Energy and Renewable Energy, the Directorate of Bioenergy, the Directorate of Geothermal and Directorate EBTKE Infrastructures Planning and Construction.

The Directorate General of Electricity (DGE) has the task of carrying out the formulation and implementation of policies in the electricity sector. DGE consists of: Secretariat of the Directorate General of Electricity, Directorate of Electricity Program Development, Directorate of Electricity Business Development, and Directorate of Electricity Engineering and Environment.

The National Energy Council (NEC) is responsible for designing and formulating the National Energy Policy (KEN), developing a master plan on national energy (RUEN), determining responses to energy crisis and emergency conditions and monitoring the implementation of cross-sectorial policies on energy. The KEN focuses on re-directing the country's energy resources from export to domestic use and transforming the energy mix by 2050. Since autumn 2015, The Ministry of National Development Planning (BAPPENAS) has appointed NEC to establish a more comprehensive energy modelling team to ensure coherent energy planning in Indonesia. The board of NEC consists of the president, vice-president, 8 ministries and 8 other relevant stakeholders. A Secretariat General has been established to provide technical and administrative support to NEC.

The state-owned electricity company PLN (PT Perusahaan Listrik Negara). PLN is vertically integrated and manages transmission, distribution and generation of electricity in Indonesia. It is supervised from a technical perspective by the MEMR and from a management perspective by the Ministry of State-Owned Enterprises. The power generation sector is open to independent power producers (IPPs) and Private Power Utilities (PPUs). 60.9% of the generation capacity is owned by PLN and its subsidiaries, 26% operated by IPPs, 7.8% by Operation Licence, 5.1% is delivered by PPU, and the last 0.1% is owned by MEMR (GoI)²⁷ In terms of the grid operation, PLN has monopoly. PLN is responsible for negotiating power purchase agreements (PPAs) and the terms & conditions are negotiated on a case-by-case basis. PLN has also a mandate to electrify the country while keeping the prices at a low level²⁸.

Key stakeholders (beyond partners MEMR, NEC and PLN) are:

BAPPENAS. The National Development Planning Agency of Republic of Indonesia (abbreviated as Bappenas) is a central government institution that has responsibility in formulating national development plans, including the National Medium-Term Development Plan (abbreviated as RPJMN) as well as to integrate environmental and climate change policies into the national planning.. RPJMN provides direction to all ministries and government agencies for formulating their respective Strategic Plans (e.g. RENSTRA). Local governments must also take the RPJMN into account when formulating their regional development policies. Furthermore, BAPPENAS also coordinates with MEMR on energy planning. The RUEN and RUKN are integrated into the general national development plans. As a result of Indonesia's NDC commitment towards the Paris Agreement, Bappenas through its latest RPJMN 2020-2024 document has set different targets and strategies to reduce the GHG emissions in energy sector by focusing its efforts in the area of energy conservation and energy efficiency, renewable energy utilization for power sector, Clean Coal Technology (CCT) utilization, biofuel (Mandatory B30) utilization for transport sector, and fuel switching program to gas networks.

To meet the emission reduction target in energy sector and accelerate the clean energy development in Indonesia, Bappenas is coordinating closely with all relevant implementing Ministries and State Owned Enterprises in the energy sector which includes Ministry of Energy and Mineral Resources and Ministry of State Owned Enterprises, PT PLN (Persero), Pertamina, PGN.

²⁷ <https://jdih.esdm.go.id/storage/document/Kepmen-esdm-143-Thn%202019%20RUKN%202019.pdf>

²⁸ http://iesr.or.id/wp-content/uploads/2019/05/IESR_Research_Igniting-a-Rapid-Deployment-of-RE-in-Indonesia.pdf

Ministry of Finance. The Ministry of Finance has the responsibility in ensuring that the needs for climate change funding are a reflection of the budget priorities, pricing policies, and market financial regulation. The Ministry of Finance has two different divisions that have tasks related to the climate change financing: 1) Directorate General of Fiscal Risk Management which has a role in funds tracking 2) Fiscal Policy Agency (abbreviated as BKF) which regulated the fiscal policy and has been assigned as the National Designated Authority (NDA) or Focal Point for the Green Climate Fund (GCF) in Indonesia. As the NDA, BKF has the responsibility to provide broad strategic oversight of the GCF's activities in Indonesia and communicate the country priorities for financing low-emission and climate resilient development.

As part of its role as NDA, the Ministry of Finance is focusing its efforts in formulating strategic planning and budgeting for green development in Indonesia. Formulating mitigation fiscal framework for Indonesia action plan on GHG emissions reduction, provide budget and special allocation fund for climate change related programs conducted by Ministries/Institutions, and providing fiscal incentive to support the development of renewable energy such as tax facilities and relief of import duties.

BKF took part in the discussion of upcoming Presidential Regulation on Renewable Energy with Ministry of Energy and Mineral Resources with regards to budgeting incentives and support to IPPs. While there seems to be a consensus on State support to incentives and feed-in tariffs, there was recommendation to consider private financing mechanisms for geothermal exploration.

Ministry of State-Owned Enterprises (Kementerian BUMN). The Ministry of State-Owned Enterprises (abbreviated as Kementerian BUMN) has the principal duties and functions in fostering state-owned enterprises (SOEs) in Indonesia. The Ministry of State of Owned Enterprises also has the authority for SOEs including the national electricity company, PT PLN. In 2019, the State-owned Enterprises (SOE) Minister simplified the bureaucracy within SOEs and will issue a new regulation aiming at giving SOE commissioners a bigger authority and role to direct their SOEs²⁹. MEMR should coordinate with BUMN on any issues related to INDODEPP.

Ministry of Environment and Forestry (MoEF/KLHK). Based on Presidential Regulation No. 16/ 2015 on Ministry of Environment and Forestry Ministry of Environment and Forestry (abbreviated KLHK) the implementation of climate change control is coordinated by Ministry of Environment and Forestry through Directorate General of Climate Change Control. DG of Climate Change Control has received a mandate from the President to act as National Focal Point (NFP) for United Nations Framework Convention of Climate Change (UNFCCC) to facilitate the formulation and implementation of policies related to climate change that have been carried out by various Ministries/ Institutions from difference sectors, including energy sector. This includes Indonesia's NDC. Before submitting Indonesia's position paper, reporting of progress documents and other required document to the UNFCCC Secretariat, the DG Climate Change Control has the responsibility to communicate and collaborate with cross sectoral Ministries/Institutions and other relevant stakeholders in compiling the substance of Indonesian negotiation positions before the COP UNFCCC. MEMR should coordinate with KLHK on any issues related to INDODEPP.

Ministry of Public Works (MoPW)

The Ministry of Public Works (MoPW) has the task of carrying out government affairs in the field of public works and public housing. This Ministry was given responsibility to accelerate infrastructure spending while ramping up the ministry's employment scheme for labour intensive industries for the National Economic Recovery. The recent RE project under this ministry is 9000 MW Kayan in North

²⁹ <https://www.thejakartapost.com/news/2019/12/02/minister-seeks-transfer-of-authorities-to-better-tackle-soes-troubles.html>

Kalimantan³⁰. Furthermore, the ministry is also responsible for national Guidelines for Green Buildings and as such is an important stakeholder to be engaged/consulted in the project energy efficiency activities. MEMR should coordinate with MoPW on any issues related to INDODEPP.

Ministry of Industry (MoI)

Within the Ministry of Industry, the Green Industry Centre has the task of carrying out the preparation of policies, implementation, monitoring of green industry sector, including energy efficiency in industry. It also annually issues Green Industry Award. This award is part of government campaign to encourage industries to reduce consumptions of materials, energy and water. There are three categories of awards based on the size of the industries, namely large, medium and small industries awards. Verification and assessment are performed by technical teams and Advisory Council, which composes of representatives of government, industries, research agencies and other institutions.

Green Building Council (GBC Indonesia)

The Green Building Council Indonesia (GBC Indonesia) is an independent organization established in 2009 by professionals in design and construction industry who are concerned about green building practices. The main focus of GBC Indonesia is to raise stakeholders' awareness and pursue the transformation of sustainable green principles, particularly in building construction industry in Indonesia. In organising its activities, GBC Indonesia collaborates with all building stakeholders, including professional, government and private sectors. GBC Indonesia have 4 main programs, namely market transformation, training & education, green building certification and stakeholder engagement. GBC Indonesia is an established member of World Green Building Council (WorldGBC)

Ministry of Home Affairs.

Ministry of Home Affairs is a ministry of the Government of Indonesia responsible for internal matters of the state. The responsibilities are, among others, formulation, establishment and implementation of policies in the field of politics and public administration, decentralisation, development of the regional administration, coaching the village administration, coaching and development of local government affairs, local financial coaching, as well as the population and civil registration, in accordance with the provisions of the legislation. The Ministry supports the President in the provincial governance. This Ministry will need to be informed on any activities which are taking place at provincial and municipality levels.

Provincial Agencies (Dinas ESDM)

Indonesia has 34 provinces and each province has a Provincial Agency on Energy and Mineral Resources (Provincial MEMR). The head of this agency is directly responsible to the governor. Due to decentralisation and regional government laws, the provincial governments are authorised in the management and licensing of local resources, namely water, mineral, land, forest, coast and sea resources. In particular, in accordance to the latest law (Law No 23/2014), the provincial governments issue licence on the domestic investment on the mining of minerals, metals and coals.

Districts/Municipalities

Based on the decentralisation system in Indonesia, local regulations (*Perda*) which are stipulated by districts/municipalities shall be elaborated from higher regulations by taking into account characteristics of each region. Thus, regulations related to building codes/licensing and permitting which are issued by central government shall be referred to when districts/municipalities are developing their own. Moreover, according to the new Local Government Law No. 23/2014

³⁰ <https://www.thejakartapost.com/news/2020/07/29/kayan-cirata-renewable-power-plant-projects-continue-despite-pandemic.html>

concerning Local Government, districts/municipalities have no longer authorities on energy and mineral resources. Regarding the licensing process, the central government issue licence on foreign investment on the mining, while the municipal government issue licence on renewable energy.³¹

In addition, the following stakeholders need to be considered either as participant to the program, or consulted/engaged in the project activities:

- Private stakeholders:
- Independent Power Producers
- Professional associations
- Industry associations
- Civil Society and Academia – (The main organisations are presented below)
- Financial institutions/stakeholders engaged in RE financing mechanisms

Institute for Essential Services Reform (IESR³²) is a think-tank in the field of energy and environment, Formerly initiated as Working Group on Power Sector Restructuring (WGPSR) in 1998, WGPSR advocated for electricity sector reform in Indonesia. WGPSR was the first civil society organization to encourage public participation in the formulation of policies and decisions in the Indonesian electricity sector. Changed to IESR in 2007, now its works and initiatives covers research, policy analysis, and capacity building on energy related issue.

Indonesian Institute for Energy Economics IIEE³³ is a non-profit organization in the field of research and development of energy and environmental policies . Created on 1995, IIEE aims to contribute in building public awareness about energy, as well as contributing to energy sector policy. IIEE's analysis on RUEN noted that RUEN must be a reference and gives direction for other energy planning. However, the national and regional energy plannings and Regional Electricity General Plan are differ in the most basic assumptions such as economic and population growth. IIEE suggested as common platform that can accommodate the process of preparing an evidence base policy that ensures stakeholder involvement and data transparency.

The Indonesia Low Emissions Network (Jejaring Indonesia Rendah Emisi - JIRE³⁴) is community organisation that aims to assist the government and the Indonesian people in achieving the national GHG emission reduction target by 2030. JIRE operates under the Green Partner Foundation (Yayasan Mitra Hijau - YMH). YMH is a national NGO that was founded in 2013. On December 2019, JIRE sent a letter to GoI stated that energy efficiency efforts are inadequate in Indonesia for various reasons, including high required investment at the initial stage, low awareness of energy users, less supportive government regulations. On the other hand, energy efficiency is one of the most feasible efforts to to reduce production costs, increase profits, increase competitiveness, reduce energy consumption, and reduce GHG emissions.

Energy study centres in Universities:

- **University of Indonesia** – UI (Centre of Energy Analysis) Centre on energy modelling and energy analysis (http://pusatriset.ui.ac.id/pusatriset/?page_id=662)
- **Sepuluh November Institute of Technology** – ITS (Centre of Sustainable Energy). The only research centre that has a focus on energy efficiency and energy conservation, along

³¹ <https://www.neliti.com/publications/19200/tugas-dan-kewenangan-dinas-energi-dan-sumber-daya-mineral-provinsi-jawa-barat-da>

³² <https://iesr.or.id/en/iesr-profile>

³³ <https://iiee.or.id/>

³⁴ <https://greening.id/jejaring-indonesia-rendah-emisi-jire-2/>

with renewable energy (<https://www.its.ac.id/drpm/beranda/pusat/pusat-penelitian/puslit-energi-terbarukan/>)

- **University of Gadjah Mada** – UGM (Energy Centre). One of the biggest research centres with a lot of projects (<https://pse.ugm.ac.id/>)

Financial institutions/stakeholders engaged in RE financing mechanisms:

This could include financial institutions and multinational organisations such as UK, OECD, IEA, ADB, DSIF, IFU and EKF as partners or contributors

Key documentation and sources used for the analysis:

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

No additional studies or analytical work required.

Annex 2: Partners

Summary of stakeholder analysis

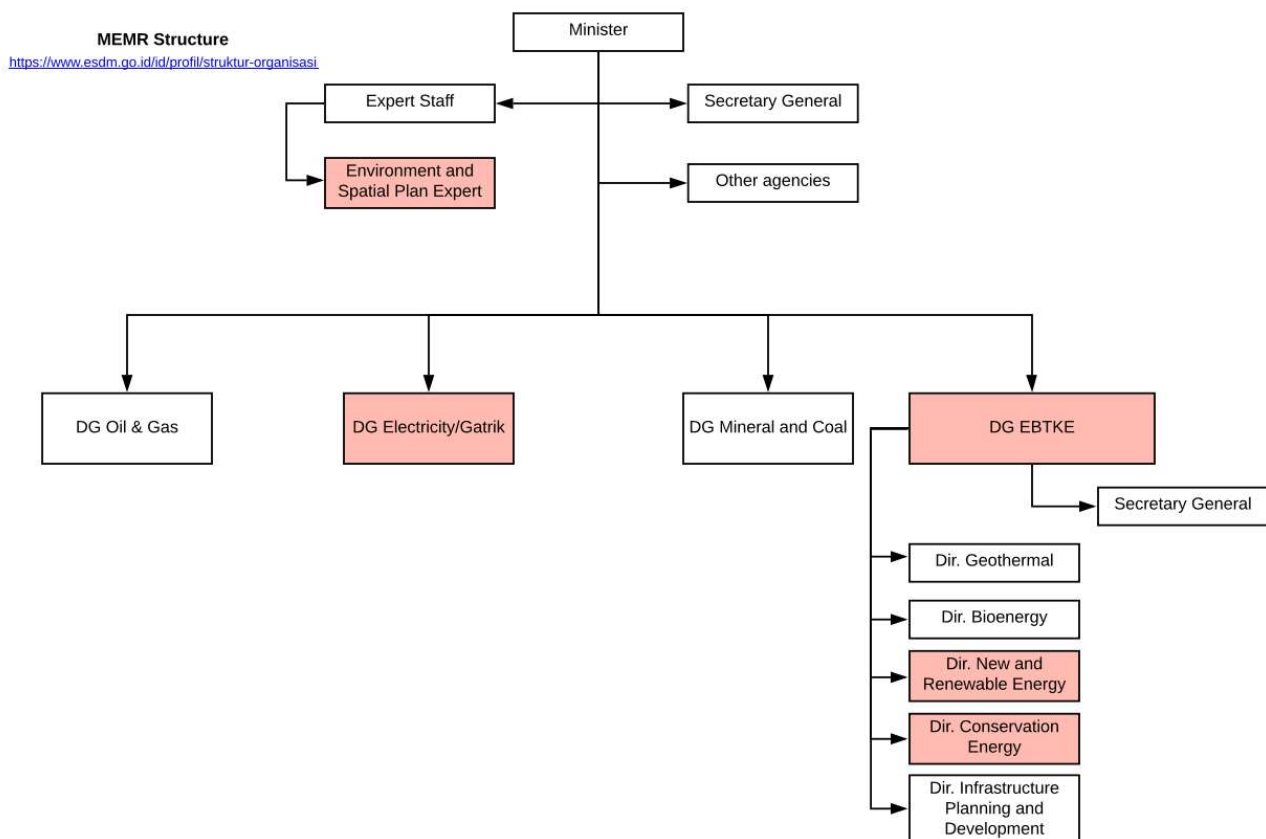
The INDODEPP Project lead national partner is the Ministry of Energy and Mineral Resources (MEMR). Other leading national partners, responsible for specific project outcomes, are NEC, MEMR DGE, EBTKE, and PLN. These partners have been identified by the Indonesia lead partners and DEA and chosen because they have the government mandate in the areas chosen for INDODEPP outcomes and outputs. The selection of partners and stakeholders has been confirmed in the INDODEPP formulation process, including through the approved Consultation Document in Annex 17.

1. Ministry of Energy and Mineral Resources (MEMR)

The MEMR implements Indonesia's energy policy. plans, leads, coordinates and monitors overall energy/power sector development in Indonesia.

The MEMR's organization is fairly large with the Secretary General's office, four Directorates General, an Inspectorate General and three agencies. The organization of MEMR and the directorates and agencies are as presented in the following organigram:

Figure A-2.1: Ministry of Energy and Mineral Resources Structure



The Bureau of Planning and Cooperation under the Secretariat General works with long term planning and drafts the RUEN.

The state budget (APBN) is distributed to the four DGs to run the ministerial programme. Thus, the DGs play a pivotal role in the immediate perspective to provide guidance and ensure implementation of the policies.

In terms of institutional capacity, MEMR is staffed with experts throughout DGs, agencies, centres and bureaus for specific tasks and functions. MEMR, specifically EBTKE, has a specific mandate on renewable energy which is stated in one of objectives of its Strategic Plan (RENSTRA) 2020-2024: *Optimisation of sustainable management of new and renewable energy in the framework of increasing added value*. The objective is translated into strategic goals and priority programmes/projects/activities

MEMR has established a network to coordinate cooperation with international institutions and development partners, including UNDP, USAID, World Bank, European Union, GIZ, Danida and DFID.

Within the MEMR, the SSC project worked with the Bureau for Planning and Cooperation (under Secretary General's office) and the Directorate General (DG) for New Energy, Renewable and Energy Conservation, EBTKE. The INDODEPP will further this collaboration with EBTKE, and expand it to the Directorate General of Electricity (DGE).

DG-EBTKE mandate is to formulate and implement policies and technical standardization in the field of new energy, renewable, and energy conservation.

There are 5 directorates under EBTKE. Of these directorates, the programme will primarily work with Directorate of Various New Energy and Renewable Energy and Directorate of Energy Conservation. The functions of the two directorates include:

- Formulation of policies in the field of new and renewable energy, and energy conservation
- Implementation of policies in the field of new and renewable energy, energy conservation
- Formulation of norms, standards, procedures, and criteria in the field of new and renewable energy, and energy conservation
- Providing technical guidance and evaluation in the field of new and renewable energy, energy conservation

DG EBTKE has total 342 staff (225 male and 117 female)³⁵. The Directorate of Various New and Renewable Energy has 59 staff and Directorate of Energy Conservation has 49 staff.

DGE mandate is to formulate and supervise the implementation of policies in the electricity sector. Its main functions are:

- Formulation of electricity investment development policies, as well as future development plans and National Electricity Plan (RUKN);
- Preparation and management of power generation and electricity data/information;
- Responsible for primary energy source utilization analysis;
- Responsible for cooperation between Regional Governments, certification bodies and associations, and international cooperation;
- Supervision of electricity business activities;

³⁵ <https://www.esdm.go.id/assets/media/content/content-laporan-kinerja-ditjen-ebtke-2019.pdf> (p.2 human resources capacity)

- Formulation and implementation of technical support for policies/regulations.
- Regulation, technical guidance, and environmental protection and supporting businesses in the electricity sector

DGE has total 311 staff (237 male and 74 female)³⁶.

SWOT assessment of MEMR as key cooperation partner

Strength: Institution relevant for the project by mandate and function.

Weakness: Limited staff deals with ambitious goals, there are currently around 20 staff with energy modelling background. However, the Ministry evaluates its needs to around 40 staff with modelling capacity across directorates ³⁷. furthermore, there are various programmes and activities funded by various resources (state-owned budget/APBN, other donors and developing agencies).

Opportunities: The project can strengthen knowledge and capacity across relevant DGs to contribute to the achievement of RENSTRA 2020 – 2024 targets. In addition, it is a possibility to cooperate with various projects/development partners engaged with MEMR, to streamline with support and achieve impact at scale.

Threats: Absorption capacity: abundance of cooperation topics can contribute to lack of focus for different units/assigned staff. Retention of trained staff.

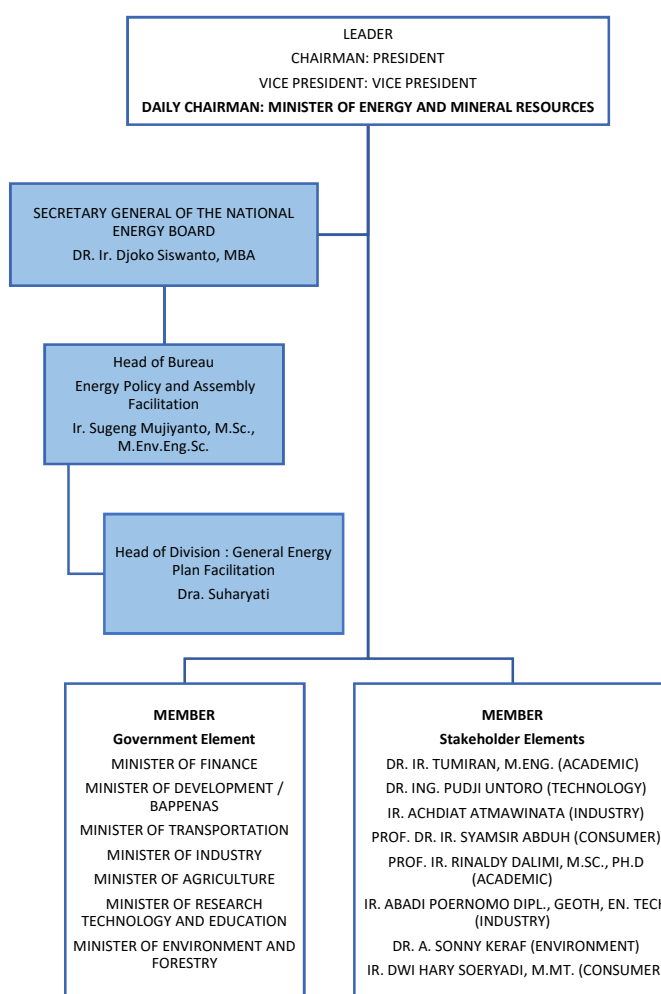
2. National Energy Council

The NEC was set up in 2007 as a measure to implement the Energy Law No. 30/2007. NEC is chaired by the President and Vice President, run by the Minister of Energy & Mineral Resources as Executive Chairperson, with other relevant ministries are represented in the board. To have a broader perspective and underline the importance of the energy sector, the NEC also has eight non-government members, including academics, environmentalists, consumer advocates and industry and technology representatives, as presented in the organigram below.

³⁶ <https://www.esdm.go.id/assets/media/content/content-laporan-kinerja-ditjen-ketenagalistrikan-2019.pdf> (p. 10 on human resource and organisation)

³⁷ Communication with Mr Qatro Romandhi, Head of Div. Program Planning and Reporting in DG EBTKE, 27 September 2020

Figure A-2.2: National Energy Council Structure



NEC mission is to:

- Formulate the National Energy Policy (KEN)
- Develop Guidance for Crisis Conditions and Energy Emergencies (KRISDAREN)
- Supervise intra/cross sectoral energy policies
- Monitor the implementation of regional energy planning and see how it contributes to the RUEN targets.

NEC has significant human capacity for overall planning, however, technical capacities for energy modelling is at an intermediate level. NEC has 143 staff of which 20 are analysts and/or policy planners. The NEC evaluates its needs for modelling experts to around 5-8 staff.³⁸ NEC has shown great commitment to the SSC project, as the SSC partnership offers relevant technical support for NEC's key functions. This can be used in the INDODEPP project. The close proximity to Indonesian decision making and effects throughout the central administration implies NEC is a very relevant collaboration partner.

SWOT assessment of NEC as key cooperation partner

³⁸ Communication with Ms Suharyati Head of Div. General Energy Plan, 26 September 2020

Strength: In terms of mandate to shape policy-making for renewable energy and efficiency, NEC is strong, as its main duty is to design and formulate national energy policy to be stipulated by the Indonesian government under approval and House of Parliament (DPR).

Weakness: NEC's focus is on the long-term perspective.

Opportunity: Strategic sector cooperation with NEC provides a unique opportunity to provide support and technical assistance to a major decision body on energy topics in Indonesia.

Threats: Absorption capacity: Limitation in terms of staff dedicated or assigned to cooperation and their analytical capacity. Retention of trained staff.

3. PT Perusahaan Listrik Negara (PLN)

PLN is the state-owned electricity company of Indonesia. PLN is responsible for the generation as well as operation of the transmission and distribution networks. PLN formulates the RUPPL and is responsible for negotiating power purchase agreements with independent power producers. Furthermore, PLN is to a large extent responsible for implementing national policies for targeting enhanced electrification and renewable energy.

It is supervised from a technical perspective by MEMR and from a management perspective by the Ministry of State-Owned Enterprises. PLN receives a large-scale financial subsidy by the Ministry of Finance to maintain a zero balance between costs of production and revenue from sale of electricity. This is also discussed in Annex 1 under the political economy analysis.

PLN is to a large extent responsible for developing power generation based on renewable resources in Indonesia. PLN has several directorates of which the Directorate of Corporate Planning is the most relevant to the INDODEPP. Under this directorate the EVP Electricity System Planning division has expressed strong interest in working together with DEA on technical integration of renewable energy and energy modelling. This division is responsible for:

- Developing and managing Electricity Supply National Plan(RUPPL)
- Forecast and design of the transmission and electricity generation system
- Planning and managing of international relations, cooperation for electricity infrastructure development and technical cooperation with regional utility companies

SWOT assessment of PLN as key cooperation partner

Strength: PLN has capacity and mandate to steer the development of the power sector in Indonesia.

Weakness: PLN applies a high degree of bureaucracy with limited transparency for decision making. Similarly, PLN has to some degree a financial interest in maintaining the application of fossil fuels for their power producing units. Finally, PLN is financially unsustainable and is dependent on financial support from Ministry of Finance.

Opportunities: Engaging PLN on better power sector planning and integration of renewable energy represent a high-impact area for the INDODEPP project. Also, political pressure from Ministry of Finance and/or Ministry of State-Owned Enterprises may trigger a healthy development towards a more open PLN.

Threats: Internal financial interests and perverse incentives for PLN's production model may entail limited focus on renewable energy and energy efficiency by PLN. Relatively few PLN staff that have the skills and knowledge about renewables necessary to implement major expansion.

Criteria for selecting project partners

The project builds upon the current SSC projects, and as such will engage with the same partners. This will further strengthen the collaboration with those partners and support the request from GoI.

The main criteria for selecting project partners were:

- Those who have the government mandates in the chosen areas of cooperation
- Mitigation of climate change
- Energy efficiency and energy related activities
- Energy and climate policy making
- Energy planning
- Inputs to and influence on mid and long-term strategies and plans, including development of input to update the NDC
- Previous cooperation with Denmark.

Brief presentation of partners:

Partner name	Core business	Importance	Influence	Contribution	Capacity Issues	Exit strategy
MEMR	<p>Responsible for energy policy in its broadest sense.</p> <p>MEMR have several general directorates, where Directorate General (DG) of New, Renewable Energy and Energy Conservation as well as DG of Electricity (DGE) are main partners for this programme.</p>	High	High	<p>Main partner for the programme, and directly responsible for the affiliate's contributions.</p> <p>MEMR will give in-kind contribution by providing dedicated staff, office space for LTA in DGE.</p>	<p>MEMR is relatively small compared to other ten big ministries and institutions (<i>Kementerian/Lembaga</i> or <i>K/L</i>) in Indonesia, in term of budget and number of staff. MEMR has regional offices in provinces and cities/regencies (<i>Dinas ESDM</i>).</p> <p>RE targets cannot be achieved through activities funded by state budget (APBN) only. Support from donors and development agencies are key factors to support MEMR. However, limited number of staff may become a challenge to absorb technical assistance. Coordination of activities conducted by MEMR (under APBN), donors and development agencies to ensure effectiveness.</p>	Evidence of uptake and use of know-how that has been transferred and capacity developed
NEC	<p>NEC was established in 2007 to design and formulate national energy policy, develop general plan for national energy/ RUEN, formulate measures to overcome energy crisis and emergency condition, and supervise cross-sectoral energy policy.</p>	High	Medium	<p>Key partner for the project, and directly responsible for modelling activities in relation to policy development.</p> <p>NEC will give in-kind contribution by providing dedicated staff and facilities.</p>	<p>NEC has an important task to develop Indonesian energy policy. However, it has limited staff with knowledge and capabilities.</p>	Evidence of uptake and use of know-how that has been transferred and capacity developed
PLN	<p>National Electricity Company (<i>PLN</i>) is a state-owned enterprise (SoE) responsible for most Indonesia's power generation and infrastructure. PLN is managed by Ministry of State-owned Enterprise (MSoE)</p>	High	High	<p>PLN has exclusive rights to the transmission, distribution and supply of electricity, and will therefore play a key role in Outcome 2.</p>	<p>PLN has sufficient number of staff to cooperate in the technical assistance, but relatively few have the skills and knowledge about renewables necessary to implement major expansion.</p>	Evidence of uptake and use of know-how that has been transferred and capacity developed.

				PLN should be able to offer sufficient data and offices for in-house cooperation.		
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Annex 3: Results Framework at Outcome and Output Levels

Overview:

Objective	Outcomes	Outputs
The project has contributed to: meeting Indonesia's national energy demand in a more sustainable way; to its NDC goals; SDG7 and SDG13 targets; and, more specifically, to the achievement of the 23% renewable energy goal in 2025.	1 Scenario-based long-term energy plans and regulation	1.1 Modelling capacity
		1.2 Energy policy and planning
		1.3 Regulation
	2 Integration of renewable energy	2.1 Wind power pilot tender
		2.2 Energy forecasting and system operation
		2.3 Least cost grid integration strategies and planning
	3 Enhanced national strategy for energy efficiency	3.1 Energy efficiency in buildings
		3.2 Energy efficiency in industry and power plants

Detailed Project Results Framework

Project	Indonesia-Denmark Energy Partnership Project (INDODEPP)
Project Objective	<p>Overall – The project has contributed to: meeting Indonesia's national energy demand in a more sustainable way; to its NDC goals by reducing GHG-emissions; SDG7 and SDG13 targets and; more specifically the achievement of the 23% renewable energy goal in 2025.</p> <p>An enabling environment for sustainable energy in Indonesia as a part of a cost-efficient electricity system with increased security of supply and reduced energy intensity. This will be reached through energy planning and modelling, larger shares of variable renewable energy sources and strong system integration, as well as increased energy efficiency.</p>
Outcome 1 Scenario-based long-term energy plans and regulation	<p>Indonesia has a system of aligned energy plans across partner institutions and selected provinces, with clearly defined review-procedures and based on state-of-the-art long-term energy modelling tools and a regularly adjusted Indonesia specific technology catalogue. The long-term energy plans form the basis for monitoring and setting new political targets for renewable energy and provides a reliable RE pipeline to secure investor confidence and bring down cost of energy from renewable sources. The project will contribute to the creation of a foundation that will lead to an increase in Indonesia's reputation as a reliable and ambitious partner within climate-negotiations and for creating an investment environment.</p> <p>Partner: MEMR (DGE/NEC/ EBTKE)</p>
Outcome indicator	<p>Energy plans made by DGE, NEC and PLN are aligned. (the plans are in a system which leads to political discussions of RE-targets and in order to attain those targets, amongst other aspects, creates a reliable RE pipeline in form of RE quotas to secure investor confidence).</p>

Baseline	Year	2020	RPJMN, RUKN, RUEN and RUPTL are all plans with various RE targets. Indonesia Energy Outlook is a long-term outlook, but it has not been integrated in the other energy plans.
Target	Year	2025	National Energy plans, including RPJMN, RUKN, RUEN and RUPTL, are well aligned and coordinated and in accordance with NDC targets.
Output 1.1 Modelling capacity		<p>Across institutions modelling capacity is strengthened and they are capable of running state-of-the-art energy models on their own.</p> <p>Involved parties: National stakeholders: NEC (partner), DGE, MEMR Data and Information Center PUSDATIN, EBTKE, PLN. Regional stakeholders: MEMR Provincial Agencies (Dinas ESDM), Regional Planning Agency (BAPPEDA) and regional PLN offices. Danish stakeholders: DEA (partner), Energinet</p>	
Output indicator		The development of energy policy is based on consolidated data and scenario-based analyses which lead to choice awareness for decision makers	
Baseline	Year	2020	Staff have been exposed to model training under the SSC but are not yet in sufficient numbers able to use the modelling confidently in the Indonesian context
Mid-target	Year 3	2023	<p>Model information is regularly used for reporting (more than annually) and thematic publications and has an influence on policy and investor decisions and public confidence and Indonesia Energy Outlook is being used by policy makers.</p> <p>Selected provinces are using the model for the energy outlook at the province level (at pilot level).</p> <p>Capacity development has been institutionalised and is gender balanced.</p>
Target	Year 5	2025	Selected provinces regularly use the energy modelling tools for the energy outlook at the province level and the pilot of model use at selected provinces have been replicated in other provinces.
Output 1.2 Energy policy and planning		<p>Energy policy and planning is strengthened and aligned among stakeholders, and monitoring systems for implementing the plans are integrated in law/decreed</p> <p>Involved parties: National stakeholders: DGE (partner), NEC, BAPPENAS, KLHK. Regional stakeholders: Dinas ESDM and BAPPEDA. Danish stakeholder: DEA (partner).</p>	
Output indicator		Advances in energy policy and planning tools lead to formulation of scenarios and pathways to reach RE and EE target on both a provincial and national level.	
Baseline ³⁹	Year	2020	Current energy models, planning and policy data are not consistent, and targets are not sufficiently aligned across institutions
Mid-target	Year 3	2023	<p>Data and assumptions between various strategies and planning systems are consistent and synchronised according to their purpose</p> <p>Decision makers use enhanced energy policy and planning based on energy scenarios. Maintaining and monitoring of RE pipeline are enforced.</p>
Target	Year 5	2025	Enhanced energy policy and planning is leading to a greater contribution towards NDC/SDG targets that are refined and made more ambitious over the years.

³⁹ It should include a reflection of process made under SSC.

Output 1.3 Regulation		Strengthened system, regulation and incentives for managing renewable energy integration. Securing a more attractive market for RE investments.	
		Involved parties: National stakeholders: EBTKE (partner) , DGE/MEMR, PLN, Ministry of Finance (MoF), Ministry of State-Owned Enterprises, Ministry of Public Work. Danish stakeholder: DEA (partner).	
Output indicator		Regulatory environment for higher RE share and RE investments leads to increased share of RE.	
Baseline	Year	2020	Regulatory environment is not optimal for RE development and investment (e.g. the current regulation and procedures are complicated and time consuming for RE investors)
Mid-target	Year 3	2023	Data base on RE regulations to support one stop shop together with plan for improvement in the one stop shop function. Investment in RE is increasing in line with targets
Annual target	Year 5	2025	One stop shop set up function is operating in an improved manner, in line with the plan and investment in RE is increasing in line with targets. Enhanced regulatory environment is leading to reduced time to complete procedures and increase volume of investment (in line with the targets set in the plan)

Outcome 2 Integration of renewable energy		Enhancement of national capacities to accelerate the application and integration of renewable energy to support further decarbonization of the power sector: PLN is able to integrate fluctuating renewable energy shares beyond the current share of 10 % in the grids with the highest share. The RE is integrated without curtailment and jeopardizing the security of supply. The integration is secured through handling of technical challenges, e.g. grid flexibility and maintaining security of supply through forecasting and economic effective load-dispatch. Efficient integration of RE contributes to lower the prices of reaching political targets for RE.	
		Partner: PLN	
Outcome indicator		The Indonesian NDC targets on the share of renewable energy are reached with a lowering cost level	
Baseline	Year	2020	9-12% ⁴⁰ renewable energy share with baseline kWh cost unknown
Target	Year	2025	23% renewable energy share with kWh cost for new projects on track to fall below a targeted price of less than 5 US cents (2020 price level)

Output 2.1 Wind power pilot tender		Wind power pilot tender	
		National stakeholders: PLN (partner) , DGE, NEC, EBTKE Regional stakeholder: local PLN and Dinas ESDM Danish stakeholders: DEA (partner)	
Output indicator		Pilot tender for a wind power development is completed (i.e. has demonstrated means of optimizing costs, attracting bidders and providing a basis for commercial and/or concessional financing and ready for wider replication)	

⁴⁰ Different official sources mention different numbers for the current RE share.

Baseline		2020	Tendering for wind power development in Indonesia is not guided by tested procedures and templates and not achieving cost optimization and attracting enough bidders.
Short-term-target	Year 1-2	2021/2022	Site selected for pilot project, feasibility study completed and tender documents finalized and tender ready to launch.
Mid-Target	Year 3	2023	PLN able to make a RE tender with international best practice experience included in the design.
Final Target	Year 5	2025	PLN has some experience in running complex RE tenders and achieve competitive prices aiming the target below 5 US-cent-kWh.

Output 2.2 Energy forecasting and system operation		Enhanced integration of RE National stakeholders: PLN (partner) , DGE, NEC, EBTKE, Regional stakeholder: Local PLN and Dinas ESDM Danish stakeholders: DEA (partner) and Energinet	
Output indicator		PLN staff confident in forecasting and systems operation for RE to the extent that that by the end of year 5, PLN have the capacity to achieve the targeted share of RE (23% with effective integration of the required additional new variable RE capacity).	
Baseline		2020	Ability to accurate forecasting is limited. Training is made in a few targeted provinces.
Short-term target	Year 1	2021	Capacity development and training design in place with baseline and annual targets on capacity development and institutionalization (staff numbers, skill set, gender balance)
Mid-Target	Year 3	2023	<ul style="list-style-type: none"> - PLN staff capacity for forecasting and system operation improved in line with capacity development plan target (involving selected pilot provinces and replication to other provinces) set in year 1 e.g. discrepancies in forecasting of RE production are reduced in <u>all</u> provinces. - Discrepancies in forecasting of RE production are reduced in <u>pilot</u> provinces - Replication to other provinces ensuring a complete <u>national</u> overview and understanding in implementation
Final Target	Year 5	2025	Need to be elaborated later, but potentially PLN have established own system for securing education in forecasting for all PLN regional offices with fluctuating RE sources in the grid.

Output 2.3 Least cost grid integration strategies and planning		Integration strategies for RE <u>Involved parties:</u> National stakeholders: PLN (partner) , DGE, NEC, EBTKE Regional stakeholder: local PLN and Dinas ESDM Danish/international stakeholders: DEA (partner), Energinet	
Output indicator		Least cost strategy and action plan developed, updated and under implementation (within to be chosen pilot province and replicated to other provinces)	
Baseline		2020	Least cost strategies are fragmented and in need of updating supported by solid data and modelling
Short-term Target	Year 1	2021	Least cost strategy for RE integration developed for a selected province.

Mid- Target	Year 3	2023	Least cost strategy developed in year 1 updated and adjusted under implementation according to plan (involving more pilot provinces and replication to others)
Final Target	Year 5	2025	Need to be elaborated later, but potentially cost-effective RE integration is a part of all planning processes and well aligned with RUPTL.

Outcome 3 Energy efficiency		Indonesia has an enhanced national strategy for energy efficiency, which reduces the predicted increase in electricity demand so the green energy transition can be achieved in a cost-efficient manner also taking cost savings in generation capacity and grid into consideration. This includes an increased focus on industries and energy efficient buildings, efficiency in power plants and energy efficiency in the new capital. Partner: MEMR EBTKE	
Outcome indicator		An enhanced national EE policy with specific strategies for EE in selected industries, power plants and selected types of commercial and public owned buildings.	
Baseline	Year	2020	Status of EE strategy is uncertain regarding targeted industries. Approach and EE ambitions to new and existing buildings is not determined. The EE potential in power plants is mapped and shows a large potential for EE.
Target	Year	2025	An enhanced national EE strategy with increased focus on industries and energy efficient buildings, efficiency in power plants and energy efficiency in the new capital. The national energy policy (KEN) reflects a renewed EE-approach.
Output 3.1 Energy efficiency in buildings		Capacities developed and system strengthened for energy efficiency measures in buildings. Involved parties: National stakeholders: EBTKE (partner) , Ministry of Public Works, Green Building Council, Ministry of Home Affairs Regional and provincial stakeholders: To be determined Danish/international stakeholders: DEA (partner)	
Output indicator		Energy efficiency standards and targets are defined and updated, assistance on the evaluation of the sustainability plan for the new capital and airport. Evaluation of the system for implementing energy management in large buildings.	
Baseline	Year	2020	Energy savings (ES) standards insufficiently defined
Mid-target	Year 3	2023	Energy efficiency and sustainability targets are included in the plans for the new capital and airport. Assistance to the development of an energy management training scheme including training and workshops for energy experts. Roadmap for the development of ultra-high energy efficiency standards in line with green and net zero emission building concepts. Workshops and capacity building on improved building codes and how to achieve compliance. Energy requirements are evaluated in order to be included in the project plans for new constructions e.g. the new Capital and the new airport. Capacity developed is institutionalised and gender balanced.

Target	Year 5	2025	<p>A road map is made with suggestion for revising the building energy code towards nearly zero energy buildings and the implementation of the building codes on a municipal level.</p> <p>Energy requirements and energy targets are included in the construction of new large buildings and projects like the new Capital and the new airport.</p> <p>A coherent scheme for the implementation of energy management in large existing buildings is implemented</p>

Output 3.2 Energy Efficiency in industry and power plants		Involved parties: National stakeholders: EBTKE (partner) , DGE, PLN, Ministry of Industry, relevant industry associations Danish/international stakeholders: DEA (partner)	
Output indicator		EE strategy and action plan for selected industries and power plants is developed and under implementation	
Baseline	Year	2020	Elements of energy efficiency strategy for industries and power production plants are in place but fragmented and incomplete
Annual target	Year 3	2023	Input to EE strategy and action plan developed based on 1) review of existing policy elements, 2) mapping of selected energy intensive industries and 3) best-practice identified through pilot projects and study tours discussed with national and local authorities and stakeholders in capacity building activities and 4) EE Benchmark studies for power plants.
Target	Year 5	2025	EE strategy and action plan for selected industries and power plants is enhanced, updated and implemented in accordance with the input to EE strategy and action plan, including integrating findings of EE in energy intensive industries and power plants in the Energy Savings Scenarios. Implementation of EE in energy intensive industry underway incl. links to financing of EE initiatives, incentive model and lessons learned. EE in selected power plants is being implemented.

Annex 4: Budget Details at Output Level

Table A-4.1: Overall Budget by outcome and output

Outcome	Output	Outline Budget (mDKK)								% within each outcome
		TA			Long term Advisers	Analysis and reviews	Totals		Totals %	
		DEA	Workshops, study tours, etc.	Consultants						
1 Scenario-based long-term energy plans and regulation	1.1 Modelling capacity	2.41	0.30	1.40	2.10		6.22	19.81	33%	31%
	1.2 Energy policy and planning	3.19	0.30	1.40	2.10		7.00			35%
	1.3 Regulation	3.19	0.30	1.00	2.10		6.60			33%
2 Integration of renewable energy	2.1 Wind power pilot tender	2.20	0.30	2.20	2.10		6.80	19.52	33%	35%
	2.2 Energy forecasting and system operation	2.41	0.30	1.90	2.10		6.72			34%
	2.3 Least cost grid integration strategies and planning	2.20	0.30	1.40	2.10		6.00			31%
3 Enhanced national strategy for energy efficiency	3.1 Energy efficiency in buildings	2.41	0.30	1.03			3.75	10.82	18%	35%
	3.2 Industry and power plant energy efficiency	3.37	0.30	3.40			7.07			65%
Cross cutting	Programme management	2.45	0.00	0.00			2.45	2.45	4%	
	Recruitment costs				0.40		0.40	0.40	1%	
	Reviews					1.00	1.00	1.00	2%	
	Contingencies						5.00	5.00	8%	
	Unallocated funds						1.00	1.00	2%	
Total		23.83	2.44	13.73	13.00	1.00	60.00	60.00	100%	

Notes

Notes		Explanation
1	Hourly rate of DEA (DKK)	614.0 see 'Hour rate DEA' sheet
2	DEA travel expenses (DKK m)	3.2 see 'Travel expenses' sheet
3	Long term adviser cost per year (DKK m), for 4.5 years with first year only 6 months	1.4
4	Mid term review managed by MFA (DKK m)	1.0
5	Recruitment costs, 4 recruitments of DKK 100.000 (DKK m)	0.4
6	Workshop, study tours etc. For 5 years (DKK m)	2.4 See sheet 'Study trips and workshops'
7	Programme management across outputs (DKK m)	2.4 Tasks under the programme management include: Coordination across outputs and team management; tender and management of framework contract; financial controlling of budgets and expenditures; preparation and follow-up on Advisory Group- and steering committee meetings; management of application of unallocated funds; and wider anchoring within DEA.
8	Contingencies, budget-margin for unforeseen output expenses (DKK m)	5.0 The outputs cover all general areas of activities in the programme. This is a buffer for output-activities their might show to have a greater request or unforeseen expenses not expected
9	Unallocated funds, new activities/outputs not included (DKK m)	1.0 A small buffer for the possibility of an output not already accounted for.

Table A-4.2: Budgets by year - expenditure type

Budget by year (mDKK)	2021	2022	2023	2024	2025	Total	%
DEA Staff resources	3.4	4.3	4.3	4.3	4.3	20.6	34%
DEA travel, hotel, per diem	0.5	0.7	0.7	0.7	0.7	3.2	5%
Consultants	2.6	3.3	2.6	2.6	2.6	13.7	23%
Workshops, study tours etc.	0.5	0.5	0.5	0.5	0.5	2.4	4%
Long term advisers	1.8	2.8	2.8	2.8	2.8	13.0	22%
Analysis and review	0.0	0.0	1.0	0.0	0.0	1.0	2%
Contingencies	1.0	1.0	1.0	1.0	1.0	5.0	8%
Unallocated	0.1	0.2	0.2	0.2	0.3	1.0	2%
Total	10.0	12.8	13.1	12.1	12.2	60.0	100%

Budget by year (mDKK)	Notes:
DEA Staff resources	In accordance with expected use on outputs
DEA travel, hotel, per diem	See sheet 'Travel expenses'
Consultants	In accordance with expected use on outputs
Workshops, study tours etc.	Based on experience from study tour and workshop costs in the current SSC programme. Workshops and study tours is expected to go across outputs and therefore combine the budgets in relevant matter. 1-2 study tours is expected per year and 3 local workshops a year. Some tasks
Long term advisers	Based on costs from former DEPP programmes
Analysis and review	Price for one MTR
Contingencies	The outputs cover all general areas of activities in the programme. This is a buffer for output-activities their might show to have a greater request or unforeseen expenses not expected
Unallocated	Unallocated in order to be flexible across the program doing its 5 year period.

Table A-4.3 Budgets by year - Outcomes

Budget by year (mDKK)	2021	2022	2023	2024	2025	Total	%
Outcome 1	2.2	2.8	2.8	2.8	2.8	13.5	23%
Outcome 2	2.6	3.1	2.5	2.5	2.5	13.2	22%
Outcome 3	1.8	2.3	2.2	2.2	2.2	10.8	18%
Indo-DEPP Programme Management	0.5	0.5	0.5	0.5	0.5	2.4	4%
Long term advisers	1.8	2.8	2.8	2.8	2.8	13.0	22%
Analysis and review	0.0	0.0	1.0	0.0	0.0	1.0	2%
Unallocated	0.1	0.2	0.2	0.2	0.3	1.0	2%
Total	9.0	11.8	12.1	11.1	11.2	55.0	92%

Table A-4.4: DEA staff hours and expenses per output

Output	DEA total costs and expenses			
	Hours	Hours costs (mDKK)	Expenses (mDKK)	Total (mDKK)
1.1 Modelling capacity	3400	2.09	0.32	2.41
1.2 Energy policy and planning	4500	2.76	0.43	3.19
1.3 Regulation	4500	2.76	0.43	3.19
2.1 Wind power pilot tender	3100	1.90	0.30	2.20
2.2 Energy forecasting and system operation	3400	2.09	0.32	2.41
2.3 Least cost grid integration strategies and planning	3100	1.90	0.30	2.20
3.1 Energy efficiency in buildings	3400	2.09	0.32	2.41
3.2 Industry and power plant energy efficiency	4750	2.92	0.45	3.37
Programme management	3450	2.12	0.33	2.45
Recruitment costs				
Reviews				
Contingencies				
Unallocated funds				
Total	33600	20.6	3.2	23.8

Table A-4.5: DEA hours per year, DEA cost and expenses and other consultant/workshop and study tours per year

Output	DEA hours per year						DEA costs and expenses per year (mDKK)						Total DEA, consultant, workshop and study tour per year (mDKK)					
	2021	2022	2023	2024	2025	Total	2021	2022	2023	2024	2025	Total	2021	2022	2023	2024	2025	Total
1.1 Modelling capacity	600	700	700	700	700	3400	0.43	0.50	0.50	0.50	0.50	2.41	0.69	0.86	0.86	0.86	0.86	4.12
1.2 Energy policy and planning	700	950	950	950	950	4500	0.50	0.67	0.67	0.67	0.67	3.19	0.76	1.03	1.03	1.03	1.03	4.90
1.3 Regulation	700	950	950	950	950	4500	0.50	0.67	0.67	0.67	0.67	3.19	0.76	0.93	0.93	0.93	0.93	4.50
2.1 Wind power pilot tender	500	650	650	650	650	3100	0.35	0.46	0.46	0.46	0.46	2.20	1.22	1.32	0.72	0.72	0.72	4.70
2.2 Energy forecasting and system operation	600	700	700	700	700	3400	0.43	0.50	0.50	0.50	0.50	2.41	0.79	0.96	0.96	0.96	0.96	4.62
2.3 Least cost grid integration strategies and planning	500	650	650	650	650	3100	0.35	0.46	0.46	0.46	0.46	2.20	0.62	0.82	0.82	0.82	0.82	3.90
3.1 Energy efficiency in buildings	600	700	700	700	700	3400	0.43	0.50	0.50	0.50	0.50	2.41	0.62	0.86	0.76	0.76	0.76	3.75
3.2 Industry and power plant energy efficiency	750	1000	1000	1000	1000	4750	0.53	0.71	0.71	0.71	0.71	3.37	1.19	1.47	1.47	1.47	1.47	7.07
Programme management	650	700	700	700	700	3450	0.46	0.50	0.50	0.50	0.50	2.45	0.46	0.50	0.50	0.50	0.50	2.45
Recruitment costs																		
Reviews																		
Contingencies																		
Unallocated funds																		
Total	5600	7000	7000	7000	7000	33600	3.97	4.96	4.96	4.96	4.96	23.83	7.09	8.75	8.05	8.05	8.05	40.00

Annex 5: Risk Management Matrix

Contextual risks⁴¹:

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
The Covid-19 pandemic causes economic crisis, changes of national focus and potentially political and social tensions	likely	medium	The project is designed to be flexible, to adjust the activities annually aligned with partners' annual plan while keeping the outcome indicators. The activities to be planned based on close monitoring of situation.	medium	The negative impact of the pandemic in the first half of 2020 is higher than anticipated and the recovery in the second half of 2020 and 2021 is projected to be more gradual than expected. This can impact the available resources of the partners to be allocated to the project as well as the focus in achieving NDC and RE targets.
Vested interests in the political economy including the coal and palm oil industry can work against the green energy transition	likely	high	The project design has taken into account these interests and described in the context analysis and INDODEPP is a partnership with those government institutions that have the mandate and the power to regulate the electricity sector	medium	The political economy in the sector, as always, has its drivers and opponents of transformational change
Regional elections in December 2020, Presidential and parliament (and possibly regional elections) in 2024 could cause political and social tensions	likely	high	The project is designed to ensure that important indicators to be achieved, or at least secured by 2023. The project aims to contribute to the development of RPJMN. For pilot activities, the project to work on provinces or districts which have governor or mayor who are still on	medium	Political and social tensions arise in 2023, affecting the context for the cooperation with partner institutions. Since the current president is in his second term, he cannot run the election in 2024 anymore. New government and new composition in the parliament may introduce new policies in 2024.

⁴¹ 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).

			their positions during the duration of activities.		
Government subsidies and internal financial interests and perverse incentives for PLN's production model that could results in limited focus on renewable energy and energy efficiency	likely	high	PLN has made a clear commitment to work as a partner in INDODEPP and support its RE and EE focus	medium	Government subsidies and internal financial interests and perverse incentives, and PLN's economic viability and mandate of supplying cheap electricity can work against the green energy transition.
Plan to move to new capital in 2024 may influence partners' focus (plan presently on hold due to Covid-19 priorities)	medium	medium	The project to monitor the situation and adjust the 2024 annual plan if necessary. GOI has presently put the plan on hold.	low	The original plan is moving the main government institutions to the new capital in 2024. This plan is delayed due to Covid-19, which impacts government budgets.

Programmatic Risks⁴²:

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
Any changes of priority given to the cooperation from partner organisations	Unlikely	Major	To sign the Implementation Agreement with the partner to ensure that the project is registered under MoF until 2025. Thus, it can be used as reference for new officials of partners.	Minor	Changing of the government after 2024 elections will change the minister and officials which could change focus of the plans (RPJMN, RENSTRA)
Lack of willingness to share the available data can affect	Likely	Major	To put contributions of each party in the Implementation Agreement, including	Medium	The agreement which is signed at high-level officials may not be

⁴² 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.

the quality of the technical assistance provided.			sharing data and inform the agreement to the relevant working units.		shared to the working units which work together with DEA.
Covid-19 pandemic may hamper project implementation.	Likely	Medium	LTAs may support the partners remotely in 2021 and be deployed in country only when situation permits. Activities such as meetings and workshops in 2021 should be designed while monitoring the situation, i.e. through online applications such webinars. Pilot activities to be planned based on Covid-19 situation in the respective regions.	Medium	Each province has different stage of Covid-19 situation and different approach and regulations. It is predicted that the social restriction regulations may be re-enforced once there is an outbreak in specific province, including Jakarta.
Limited absorption capacity and lack of staff retention in key positions across partners institutions	Likely	Medium	Solid energy sector administration is central for conducting sector regulation. It is necessary to engage in a true partnership, where the Indonesian partners are actively involved and reserve the required resources for capacity building. Try to create a stronger commitment from partner organisations to let participants in courses use their learning in their job. Strengthen alumni-network across institutions.	Minor	The partnership is based on the assumption that it is a mutual cooperation where resources for knowledge transfer is available. There have been examples of participants in modelling courses having been moved to other tasks than modelling in their organisations.

Institutional risks⁴³:

Risk Factor	Likelihood	Impact	Risk response	Residual risk	Background to assessment
The project could duplicate existing activities and/or fails to recognise interfaces and synergies with	Likely	Major	Careful identification done of other relevant bilateral donor and multilateral development partner support. Denmark participate active in EU's donor-coordination within	Medium	Clean energy development is a crowded field in Indonesia. Denmark is a small development partner, but the unique value added of authority-to-authority cooperation is a key feature of the project and the set-up something

⁴³ 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).

other initiatives due to many donors.			energy and environment and coordinate actively with other non-EU donors.		very few other development partners provides. The only partner in Indonesia, which have almost same approach for energy, is IEA, with whom Denmark coordinate directly.
The project could fail to deliver its outcomes, which will reflect negatively on DEA, MEMR, and the MFA.	Unlikely	Major	The theory of change and results framework indicators will be designed with realistic and measurable targets.	Minor	This project is strategic and high-profiled.

Annex 6: List of supplementary materials

Documents / Material	Source
Numerous reports and material references in the Context Analysis in Annex 1 - not repeated here	Numerous
Project Documents for Strategic Sector Cooperation (SSC) in the Energy Sector between Denmark and Indonesia and for the Strategic Islands Initiative (SII)	MFA
MoM 7th SSC Steering Committee Meeting, 28 Feb 2019	MFA
MoM 8 th SSC Steering Committee Meeting 4 Oct 2019	MFA
MoM 9th SSC Steering Committee Meeting 19 feb 2020	MFA
SSC Progress report for 9th SCM. Feb. 19th 2020	MFA
Annual Narrative Report (internal use) for Strategic Sector Cooperation SSC for 2019	MFA
National Energy Council. <i>Indonesia Energy Outlook 2019</i>	https://www.esdm.go.id/assets/media/content/content-indonesia-energy-outlook-2019-english-version.pdf
Purwanto, Widodo Wahyu and Pratama, Wienda Yoga. <i>Analysis of Indonesia's Renewable Energy Policy - Status, Barriers, & Opportunities</i> . Jakarta : Sustainable Energy Systems & Policy Reasearch Cluster. Universitas Indonesia, 2017	
Danish Energy Agency (DEA) and Ea Energy Analyse, Energinet, <i>Powering Indonesia by Wind - Integration of Wind Energy in Power Systems</i> . 2017	https://www.ea-energianalyse.dk/reports/1650_powering_indonesia_by_wind.pdf
Danish Energy Agency (DEA), Ea Energy Analyse, Danish Embassy of Indonesia, in <i>Technology Data for the Indonesian Power Sector</i> . 2017	https://ens.dk/sites/ens.dk/files/Globalcooperation/Publications_reports_papers/technology_data_in_donesian_power_ector_dec2017-2.pdf
Danish Energy Agency (DEA) and Ea Energy Analyses in collaboration with the Embassy of Denmark in Indonesia, National Energy Council, PLN NTB and Dinas ESDM. <i>Lombok Energy Outlook</i> , 2018	https://ens.dk/sites/ens.dk/files/Globalcooperation/lombok_energy_outlook_-_jan_2019.pdf
Danish Energy Agency (DEA) and Ea Energy Analyses, <i>Regional Energy Outlooks: 4 Indonesian Provinces</i> , 2019	https://www.ea-energianalyse.dk/en/cases/regional-energy-modelling-in-four-indonesian-provinces/
Prefeasibility Studies on Renewable Energy Solutions in Lombok. 2019	https://ens.dk/sites/ens.dk/files/Globalcooperation/prefeasibility_s

	tudies on re solutions in lombo k - jan 2019.pdf
DEA on the Danish Energy Model	https://ens.dk/en/our-responsibilities/global-cooperation/danish-energy-model
First Nationally Determined Contribution (NDC) Republic of Indonesia	https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Indonesia%20First/First%20NDC%20Indonesia_submitted%20to%20UNFCCC%20Set_November%20%202016.pdf
Transparency International and local corruption assessments (corruption diagnostics and barometer reports, etc.)	https://www.transparency.org/en/countries/indonesia#
Wind Energy Resources of Indonesia (3 km) EMD-WRF Indonesia, Environmental Support Programme Phase 3 (ESP 3)	http://indonesia.windprospecting.com/
International Energy Agency (IEA)/OECD. Indonesia 2015 - Energy Policies Beyond IEA Countries	https://www.oecd.org/publications/energy-policies-beyond-iea-countries-indonesia-2015-9789264065277-en.htm
Inequalities in Human Development in the 21st Century, <i>Briefing note for countries on the 2019 Human Development Report</i> , Indonesia.	http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/IDN.pdf
National Electricity Company, <i>Perusahaan Listrik Negara</i> (PT PLN) Indonesia	https://web.pln.co.id/en/about-us/company-profile
Strategic Planning Directorate General of Various New Energy, Renewable Energy, Energy Conservation and Energy Efficiency 2020-2024	http://ebtke.esdm.go.id/post/2020/05/18/2540/rencana.strategis.renstra.ditjen.ebtke.2020-2024
National Medium Term Strategic Planning 2020-2024, <i>Rencana Pembangunan Jangka Menengah Nasional (RPJMN 2020-2024)</i>	https://www.bappenas.go.id/id/bk-berita-dan-siaran-pers/rencana-pembangunan-jangka-menengah-nasional-rpjmn-2020-2024/

Annex 7: Plan for communication of Results

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 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 project implementation.

What? (the message)	When? (the timing)	How? (the mechanism)	Audience(s)	Responsible
<p>News that Indonesia-Denmark Energy Partnership Project (INDODEPP) approved.</p> <p>Results and impact stories, replicable examples of good practice.</p> <p>Denmark's partnership with Indonesia and its intended contributions to the objectives of the Indonesia's NDC and Paris Agreement.</p> <p>INDODEPP contributions to SDG 13. INDODEPP contributions to SDG 7.</p>	<p>When INDODEPP approved by all parties.</p> <p>During implementation as soon as available.</p> <p>COP26 UN climate change conference set to take place in Glasgow in November 2021</p>	<p>Press release and news item on the Ministry of Foreign Affairs (MFA) website and the Royal Danish Embassy in Jakarta (RDE) website.</p> <p>MFA public diplomacy Denmark</p> <p>Daily newsletters, World's Best News campaign.</p> <p>State of Green.</p>	<p>Political decision makers and practitioners.</p> <p>Danish private enterprises interested in Indonesia.</p> <p>The general public.</p> <p>International partners.</p>	MFA/MKL and RDE
<p>News that INDODEPP approved.</p> <p>Results and impact stories, replicable examples of good practice.</p> <p>Contributions made toward to goals of Indonesia's NDC and relevant SDGs</p>	As above	<p>MCEU website and State of Green.</p>	<p>Danish resource base.</p> <p>International development partners</p>	MCEU
<p>News that INDODEPP approved.</p> <p>Results and impact stories, replicable examples of good practice.</p>	As above	<p>DEA website and State of Green.</p> <p>Proactive sharing of INDODEPP results and lessons in the DEPP Advisory Group.</p>	The Danish professional community/resource base /Danish enterprises.	DEA

What? (the message)	When? (the timing)	How? (the mechanism)	Audience(s)	Responsible
Contributions made toward to goals of Indonesia's NDC and relevant SDGs		Proactive facilitation of exchanges between INDODEPP and other DEA partnership countries.	International development partners. Other DEA partner countries	
<p>News that Indonesia-Denmark Energy Partnership Project (INDODEPP) approved.</p> <p>Results and impact stories, replicable examples of good practice and impacts to the overall achievement of National Energy Planning (RUEN) and SDG targets.</p> <p>Indonesia's partnership with Denmark and its intended contributions to the objectives of the Indonesia's NDC and Paris Agreement.</p>	As above	<p>Webinars – formal launch of the project, open for public.</p> <p>Websites, newsletters, seminars (online-offline).</p> <p>SocMed channels (YouTube channels of Indonesian partners).</p> <p>Press conference (to be consulted with Indonesian partners due to the need for co-funding)</p>	<p>Decision makers in Indonesia, Partner ministries, policy makers.</p> <p>Academia</p> <p>Private sector enterprises</p> <p>General public</p>	Indonesian partner institutions (MEMR, NEC, PT.PLN, BAPPENAS, MOFE etc.)
To communicate the value and effect of the Danish international engagement under INDODEPP as part of the Danish Climate Act	Whenever an opportunity arises.	Dedicated results stories on the impact of INDODEPP, media outreach, social media and articles etc	Danish decision makers, opinion leaders, media and the general public	DEA
<p>As part of the DEA communication strategy, major messages and stories will be identified in cooperation with RDE.</p> <p>The INDODEPP is working to accelerate a low carbon path in Indonesia by demonstrating, in a government to government partnership, the need for and focusing on renewable energy and energy</p>	<p>Whenever an opportunity arises. The messages should be communicated instantly when an event have happened.</p> <p>SoMe give room for smaller quick stories when events appear.</p>	<p>Communication strategies will be prepared and implemented, ensuring that the communication initiatives focus at relevant levels and in a timely manner.</p> <p>Communication strategies will refer to the situation of Covid-19 pandemic (health safety protocol and transmission routes)</p>	<p>Decision makers in Indonesia and Denmark.</p> <p>In general the Indonesian population as a whole, local developers and decision makers.</p>	<p>DEA Indonesia team together with RDE and DEA communication team.</p> <p>Energy Advisors (LTA) and</p>

What? (the message)	When? (the timing)	How? (the mechanism)	Audience(s)	Responsible
<p>efficiency solutions in energy policy development.</p> <p>Major results like:</p> <ul style="list-style-type: none"> • New regulation • Wind power developments • High level meetings • Capacity building stories • Success stories emerging from the INDODEPP cooperation, including successful interventions on climate diplomacy <p>Along with linkage from already done projects to the current media agenda</p>		<p>Communication strategies have references to lessons learned for instance on IEA on Webinars – study on Indonesian online platform</p> <p>Through high-level policy dialogue with decision makers in Indonesia</p> <p>Through joint press releases, social media platforms, newspaper articles etc.</p> <p>For local news in Indonesia it is essential to have a local employer at the RDE to ensure adaptation in local media both cultural and language wise.</p> <p>Stories will also be shared with our partners through their news channels.</p>	<p>In Denmark it is mainly people and companies within the energy sector.</p> <p>General public.</p>	<p>INDODEPP partners (MEMR, NEC, PT PLN and other partners etc)</p>
<p>Development of key strategic messages to promote a low carbon approach to energy production and conservation.</p>	<p>At the on-set of the project</p>	<p>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 INDODEPP implementation period</p>	<p>Key messages will be addressing one specific target group – this could be:</p> <p>Decision makers in Indonesia</p> <p>Academia, Private sector enterprises</p> <p>General public</p>	<p>DEA/MCEU communication department</p>

Annex 8: Process Action Plan

Action	Date	Key responsible
Formulation process on the Danish side		
Programme Committee meeting	23 June	MFA
Kick-off meeting for formulation process	23 July	RDE
Inception note	30 July	Formulation consultants
Regular weekly meetings of RDE, DEA, GDI, MCEU with formulation consultants	31 July, 5-12-19 August, 2-9-16 September	DEA/RDE
1 st draft Project Document (PD)	20 August	Formulation consultants
Meeting to discuss 1 st draft PD	24 August	Formulation consultants
2 nd draft PD	31 August	Formulation consultants
Formulation process with Indonesian partners		
Introletter to Indonesian partners	6 August	RDE
High level (online) meeting PLN/DEA	14 August	DEA/RDE
Meetings with MEMR/KLIK	14 August	RDE/national formulation consultants
Updated consultation document to Indonesian partners	31 August	RDE
Online meetings at Director level with: i) MEMR/GDE; ii) MEMR/ EBTKE; iii) MEMR DG Energy Conservation; iv) NEC; vi) PLN	11-12-19 August, 2-16 September	RDE
Follow-up meetings with Indonesian partners	1 st week September	RDE/national formulation consultants
Internal MEMR meeting on Consultation Document	10 September	MEMR
Revised final consultation document	24 September	RDE/Formulation consultants
Consultation with Chairman of SSC Steering Committee	25 September	RDE
Appraisal		
2 nd draft PD to appraisal team	31 August	Formulation consultants
Start of appraisal	1 September	Appraisal team
Opening appraisal meeting	8 September	Appraisal team
Weekly meetings	September	Appraisal team
Provisional appraisal conclusions and recommendations	14 September	Appraisal team
Meeting to discuss provisional appraisal conclusions and recommendations	15 September	Appraisal team

Responses to discuss provisional appraisal conclusions and recommendations	18 September	Formulation consultants
Draft final PD with cover page	27 September	Formulation consultants
Light check on draft final PD	28/29 September	Appraisal team
Appraisal report	29 September	MFA/GJL
Finalisation of Documents and Approval Process:		
Draft final PD with cover page to GDI and DEA for internal quality control	27 September	Formulation consultants
SSC Steering Committee to agree and sign-off on final Consultation Document (i.e. not the INDODEPP PD)	29 September	RDE with Indonesian partners
Internal final check on PD	28 September - 5 October	GDI with DEA
Submit final PD to UPR Secretariat	5 October	GDI
Council for Development Policy (UPR) to approve the INDODEPP grant	29 October	UPR/MFA
Approval by the Danish Minister for Development Cooperation	Early November	MFA
Legal documents to the Danish Parliament's Finance Committee and approval of the grant	Late November	MFA
Agreement MFA-DEA	December	MFA/DEA
Agreements with Indonesian partners	December	DEA/partners
Start of implementation	January 2021	RDE/DEA

Annex 9: Summary of Recommendations of the Appraisal

Title of Project	Indonesia-Denmark Energy Partnership Project (INDODEPP) 2020-2025
File number/F2 reference	F2 2020-34198
Appraisal report date	30. September, 2020
Council for Development Policy meeting date	28. October, 2020
Summary of possible recommendations not followed The Danish Energy Agency (DEA) welcomes the recommendations from the appraisal of INDODEPP 2020-2025. As described in the “follow up” column in the table below all recommendations have been reflected in the final project document.	

Overall conclusion of the appraisal: According to the Ministry of Foreign Affairs (MFA) guidelines for project and programme management (2019) the purpose of an appraisal in the preparation of Danish aid programmes is “to provide the final quality assurance check before a funding decision” and this report represents the documentation of this process.

The appraisal of the proposed INDODEPP has been conducted as an *in-process* appraisal, where the formulation and appraisal was conducted simultaneously, in parallel. A detailed assessment was therefore conducted of the second draft of the project document reflecting the recommendations in the present version of Annex 9. A final read-through of the third draft (and final project document) was made to ensure compliance with DANIDA Danida Aid Management Guidelines which in general demonstrated that the recommendations of the Appraisal Team have been addressed.

Reducing CO₂ emissions by improving energy modelling and planning is the overall objective of INDODEPP. Furthermore the project will introduce the possibilities of using renewable energy sources (e.g. wind and solar); and, promulgating energy efficiency measures (in buildings and industry) to reduce the intensity of energy consumption and constrain the growth in demand for power.

INDODEPP is highly relevant in terms of reflecting Danish ambitions of support to the implementation of the Paris Agreement and the Danish SDG7-leadership as well as the government’s objective of strengthening Danish green diplomacy. The project is also much aligned with the Danish strategy for development cooperation and humanitarian action “The World 2030“, the Danish Climate Envelope and the Danish Climate Act of 2019.

Partners⁴⁴ from the Indonesian energy administration have continuously asked for Danish support in order to help reaching Indonesia’s Nationally Determined Contributions (NDC, Paris Agreement). Specifically DEA and the Indonesian partners have had substantial discussions on Indonesia’s NDC target to achieve 23 percent of renewable energy by 2025. It is a clear wish from the Indonesian side that Denmark (DEA) engages in cooperation on the regulative processes and the technical matters behind a transition towards a sustainable and low carbon pathway (for Indonesia). INDODEPP mirrors that approach used by Denmark in other emerging and rapidly growing economies, which have been effective in achieving transformational change to reduce CO₂ emissions (China and Vietnam, DEPP). The project adopts the DEA’s Government-to-Government approach, a tested and proven delivery mechanism. INDODEPP will take a stand in previous and current cooperation with Indonesia on the green agenda (see footnote no. 1).

The project document outlines three outcomes and an "indicative list" of activities. Extensive work has been done through iterative discussions with partners. This to ensure project outputs meet partner’s demands and align with national ambitions/work plans.

<p>The document does leave flexibility to select (new) specific activities in response to partner's immediate needs as the project progresses. This approach needs to be informed by an overall strategy so that the interventions still form a coherent package that can bring about the intended changes.</p> <p>The basic design of the program is considered sound, but there remained several areas where the path from the program outcomes to the desired changes could be strengthened in the second draft of the PD, and it was not entirely clear that the program resources were sufficient for the level of ambition to which the program aspires. Further, it was recommended to streamline flow between indicators, targets and agreed institutional changes, and it was therefore recommended to follow up with an Inception Review or early mid-term review. Lastly, the appraisal team note that, after a read through of the draft final project document, the project document now is appropriate and that recommendations of the appraisal team have been addressed. The project is recommended for approval with minor adjustments.</p>	
Recommendations by the appraisal team	Follow up by the responsible unit
<i>Political economy of the energy and climate sectors in Indonesia relating to Project aims</i>	
<p>Recommendation No. 1. The PD should include a section on the political economy of the energy sector in Indonesia that addresses key influencers and their underlying objectives and motivations and explains how this influence project design, risks and risk response.</p>	<p>Chapter 2 in the PD now addresses the political economy of the energy sector in Indonesia describing key challenges and identifying key influencers. Furthermore, Annex 1 describes objectives and motivations. Section 3.2 holds the risk analysis and Annex 5 presents a risk matrix where risk-responses are summarised.</p>
Strategic Technical Assistance	

⁴⁴ Denmark has previously been collaborating with Indonesian partners under the Environmental Support Programme (ESP) and is currently cooperation with the Indonesian energy authorities in the Strategic Sector Cooperation (SSC).

<p>Recommendation No. 2. The PD should include a section describing the strategic choices made to address the challenges of working in Indonesia using the chosen modality and with the limited inputs available. The section should include, <i>inter alia</i>, a description of the points of entry, leverage and synergy with ongoing cooperation and other development partners; and, the selection, use and management of technical long-term advisors and/or consultants.</p>	<p>Accordingly strategic choices made to address the challenges are described in chapter 2 in the PD, including the chosen entry points, partners and linkages with interventions supported by other development partners – not least those supported by Denmark through multilateral organizations. Chapter 2 also explains the rationale for the government-to-government technical assistance delivery modality (e.g. DEA short-term inputs, embedded long-term advisors, and external consultants).</p>
<p><i>Theory of change</i></p>	
<p>Recommendation No. 3. The theory of change could be strengthened so that the outputs include the policy, legislative and guidance instruments that will be necessary to effect the desired changes. This could be done by linking outputs to outcomes and the outcomes to impact. At each stage, the desired change should be worded more precisely so the success of interventions can be assessed and monitored.</p>	<p>Regarding outputs: key instruments such as one stop shop, energy efficiency standards and grid codes have been included.</p> <p>Regarding theory of change: the seven standard questions of theory of change from DANIDA Guidelines are now answered. In short, the desired change is to pave the way for integration of a larger share of renewable energy, and improved energy efficiency in the Indonesian energy system. A flexible approach in the collaboration is key and therefore the project work aims at different stages (e.g. technical assistance, regulatory recommendations, and policy dialogue and climate diplomacy).</p>
<p><i>Capacity development strategy</i></p>	

<p>Recommendation No. 4. The PD should include a capacity development strategy, as capacity development is the cornerstone of the project. This should reflect the recently revised approach to Capacity Development that has been adopted by the Danish Energy Agency and include information on what the strategy and approach to capacity development will be, why this approach has been chosen, and give an indication of the current capacities of the partners, what internal resources they have access to and what their priorities and needs are. If information is not available at this stage, the PD should describe work that will be done during the transition period to the new project.</p>	<p>A capacity development strategy is added in Chapter 2 (PD) and in detail in annex 10. The approach is inspired by the similar strategy used in DEPPIII 2020-2025, and it reflects experiences from working with the Indonesian partners. Currently available information on partner capacity is provided in the PD. Further needs for information are taken into consideration and will be explored in the context of current SSC-cooperation up until the start of INDODEPP. Lastly, it should be mentioned that capacity development as an approach and theme was also discussed at the Danish-Indonesian Steering Committee at the meeting on September 29th 2020. At the meeting, the Danish side expressed the importance of partners take in the best practice experiences from DEA and assimilated the ideas and concepts in their institutions – also beyond the project timespan.</p>
<p><i>Lessons learned</i></p>	
<p>Recommendation No. 5. The section on “lessons learned” should be expanded to indicate where positive and negative experience has been derived from reviews, appraisals and board submissions of similar Danish Energy Agency programmes and how this experience has been used to form the project design.</p>	<p>Lessons learned from DEPP II (2017-2020) and the ongoing SSC-projects have now been included in Chapter 2. Furthermore, experiences from other similar interventions supported by DEA are reflected. In addition, the recommendations of the Council for Development Policy on DEPP III (meeting on September 10th 2020) has been taken into account.</p>
<p>Choice of partners</p>	

<p>Recommendation No. 6. The selection of partners should be justified, and the selection criteria explained. Such justification should include reference to: demand for the support, willingness to commit resources to the project; institutional remit; ability to undertake, promote or influence the changes necessary to achieve outcomes; and, current institutional capacity. In addition, there should be a brief description of other potential partners who might have been considered but were ultimately rejected. Other key stakeholders should be identified and a strategy for their involvement should be presented.</p>	<p>Justification of the selected partners has been added and detailed in the text. In this regard, it is important to note that the selection reflects the Indonesian mandates for the specific project outputs, which has also been tested and confirmed by the current SSC-projects. As such, there are no alternatives to the chosen (primary) partners. Following the advice and guidance of the Indonesian partners a wide range of stakeholders (at national and regional level) have been included.</p> <p>Partner choice is described in Chapter 3 and in Annex 2.</p>
<p><i>Cross cutting issues</i></p>	

<p>Recommendation No. 7. The PD should describe how the project will address the principles of the Human Right-Based Approach and the measures that will be taken to ensure that Danish gender, youth and environment policy will be met. Further, broader development impacts from the Danish support could be described in more details by outlining synergies to growth, affordable energy and employment.</p> <p>The principle of a “just transition” whereby change should take place within a framework that secures workers' jobs and livelihoods and protects the most vulnerable, should be integrated into implementation planning.</p> <p>Where the support will contribute to developments that have potential significant social or environmental effects/impacts, (e.g. policy changes that promote changes in modes of power generation or establishing wind farms in specific locations) the PD should describe procedures that will ensure proper assessment of the policy or project. Any costs of such procedures should be reflected in the budget.</p>	<p>Section 3.4 (PD) describes how the Human Right-Based Approach (HRBA) is addressed. Also reflections on broader development impacts including ‘just transition’ are presented.</p> <p>In the case of a tender process for a wind pilot it will be of uttermost importance and priority to ensure that an Environmental and Social Impact Assessment (ESIA) is conducted. The ESIA will be financed by the potential investor e.g PLN which is an Indonesian State-Owned Electricity Utility. No budget allocation from the INDODEPP project is expected. If relevant and timely, DEA may promote a Strategic Environmental Assessment at policy and programming level. Finally, it is noted that the <i>capacity development strategy</i> mentions the need to consider including modules on HRBA aspects and ESIA best practise in the capacity development activities with the provinces.</p>
<p><i>Results Framework (version presented in the 2nd draft project document)</i></p>	

<p>Recommendation No. 8. The project outcomes should be formulated in a way so they can be objectively assessed and monitored. To assisted monitoring, a baseline, a mid-term target and an end of project target should be included in the Results Framework for all outputs and outcomes. Targets and indicators should be formulated to ensure that they are truly Specific, Measurable, Achievable, Relevant and Time-bound (SMART). Since this is work in progress, there should be follow up with an inception review or early mid-term review.</p>	<p>Following recommendation #8 the PD was revised and extra attention was given to make sure that indicators capture both specific capacity development aspects and are Specific, Measurable, Achievable, Relevant and Time-bound (SMART). Further, the result framework was improved and more clear, transparent and measureable mid-term targets and end-targets for each output were defined. The improved results framework was finally agreed upon with the Indonesian partners at the steering committee meeting on 29th of September 2020. At the meeting the “<i>consultation document</i>⁴⁵” including the result framework was signed by Ministry of Energy and Mineral Resources and DEA. See Annex 12 for the consultation document.</p> <p>Finally, it is noted that the programme committee (23rd of June) suggested not having an inception phase but rather plan for an early mid-term review. Accordingly, DEA has agreed on an early mid-term review with the Indonesian partners and that annual work plans and progress reports must support relevant and time-bound activities and transparent monitoring.</p>
<p><i>Budget</i></p>	

⁴⁵ The Consultation Document was drafted to ease the process of consultations with partners. The document included the results framework at outcome and output levels and introduced the activities, outputs and outcomes.

<p>Recommendation No. 9. The PD should include some explanatory text with the budget that describes how much time short term consultants will spend in contact with Indonesian counterparts and why this will be sufficient. It is necessary to develop specific criteria for how to allocate unallocated funds. A standard paragraph on Anti-Corruption Measures should be included or an explanation of why this is not relevant.</p>	<p>The PD has been updated with the ratio of field to home office work and the criteria for use of unallocated funds have revised. In addition, the implementation manual of DEPP II 2017-2020 has been consulted in order to align INDODEPP with previous designs of DEPP. Anti-Corruption Measures are addressed in the PD.</p>
<p>Management</p>	
<p>Recommendation No. 10: Key management roles and functions should be more fully defined to include the roles of the Steering Committee, responsibility for decisions on unallocated funds and on reallocation of funds between outcomes; reporting hierarchies including arrangements for the management of Long-Term Advisors; responsibility for monitoring the outcomes and outputs and especially the progress in capacity development. Also, description of arrangements for coordination between the SSC and INDODEPP including the role of the energy sector counsellor should be included.</p>	<p>Following recommendation # 10 the PD contains information on:</p> <ul style="list-style-type: none"> • Description of the role of the steering committee, the role of the project management teams and role of the sector counsellor • The responsibility for decisions on unallocated funds • The responsibility for monitoring of outcomes and outputs <p>The coordination of the SSC and INDODEPP will mainly be adjusted in sessions with the joint steering committee (e.g. when work plans and budgets are approved).</p>

I hereby confirm that the above-mentioned issues have been addressed properly as part of the appraisal and that the appraisal team has provided the recommendations stated above.

Signed in..... on the

representative

Appraisal Team leader/TQS

I hereby confirm that the responsible unit has undertaken the follow-up activities stated above. In cases where recommendations have not been accepted, reasons for this are given either in the table or in the notes enclosed.

Signed in.....on the.....

Head of Unit/Mission

Annex 10: Approach to Capacity Development

INDODEPP's approach to capacity development is based on the OECD/ DAC definition⁴⁶: *“capacity is the ability of people, organisations and society as a whole to manage their affairs successfully and capacity development is the process whereby people, organisations and society as a whole strengthen, create, adapt, unleash and maintain capacity over time.”*

This means in the context of the INDODEPP partnership that the focus is on capacity development outcomes in partner institutions that lead to follow-up action and are sustainable over time, after the exit of the technical assistance provided under the project. In turn, this means that there is a focus on systemic transformational change and institutional uptake and replication of new knowledge and good practice rather than a focus on delivery of training to individuals. As an example, under Output 1.2. the baseline is that current energy models, planning and policy data are not consistent, and targets are not sufficiently aligned across institutions. Here the aim at output level is that energy policy and planning is strengthened and aligned among stakeholders, and monitoring systems for implementing the plans are integrated in law/decrees. This in turn leads to a sustainable result at outcome level that long-term energy plans form the basis for monitoring and setting new political targets for renewable energy and provide a reliable RE pipeline to secure investor confidence and bring down cost of energy from renewable sources. During the project period the partner institutions will become secure in maintaining and performing this without any support.

DEA's approach to capacity development has been successively developed and tested through its many bilateral energy partnership programmes in over 15 countries and through SSC cooperation in Indonesia. Most recently, the DEA capacity development approach has been articulated in the DEPP III documents that have in September 2020 been approved by the Council for Development Policy.

The key elements of the INDODEPP capacity development approach are summarised below:

- The capacity development must be needs based and demand-driven, taking as its point of departure, an updated needs assessment during the start-up phase, based on the mandated functions of the partner institutions/directorate/units and their current and expected staffing.
- DEA draws on its expertise and experience as responsible in Denmark for creating a well-informed and evidence-based environment for policy decisions for Denmark to meet the climate mitigation targets of the Danish Climate Act within the energy sector. DEA is also responsible for formulation and implementation of energy related policies and regulation in Denmark. This encompasses four decades of experience for promoting green growth by securing evidence-based decision making, formulation of policies and regulatory frameworks as well implementation of policies and regulation for the energy sector.
- DEA's capacity development work in INDODEPP is based on the well-tested GtG modality for sharing relevant Danish competences on low carbon development and how to combine economic growth while reducing GHG-emissions. DEA contributes unique and hands-on experience for securing frontier levels of energy efficiency, long-term energy planning, favourable framework conditions for renewable energy, and integrating variable renewable

⁴⁶ OECD, 2006: DAC Guidelines and Reference Series. Good Practice Guidance for Development Co-operation

energy and security of supply. To a large extent, these experiences are only available to INDODEPP partner institutions via the GtG modality as other development partners and consultancies do not hold such information.

- INDODEPP provides access for partners to learn from Danish experiences through a peer-to-peer modality. This form of direct exchange between partner line ministries/agencies and DEA has proven effective and is to a large degree unrivalled and not provided by other development institutions and cannot be procured on the market.
- The GtG modality and the DEA as representatives of the Danish central government provide a high level of credibility and access to high-level decision makers in Indonesia – this recognized high level of credibility is also a driving force and clear commitment for DEA to deliver world-class expertise to its partners under INDODEPP.
- The GtG modality with exchange of experience and adjusting to national and local challenges and contexts and the flexibility built into the INDODEPP design enables and high degree of demand responsiveness, within the framework of progress towards the agreed objectives, to the immediate needs of the partner as part of the peer-to-peer approach.
- The peer-to-peer cooperation provides for a gradual process through which, as the cooperation progresses, the partners take increasingly greater responsibility for activities and outputs with the aim they can produce and replicate the activities outputs on their own also after the exit of Danish TA.
- Establishment of an enduring institutional capacity and the ways in which this can be assured will also be incorporated into the INDODEPP implementation manual⁴⁷, LTA TOR, consultant TOR, monitoring systems and dialogues during the Steering Committee meetings.
- Capacity development interventions will be monitored against indicators as defined in the work plans. Applied indicators will ensure progress and internal quality control towards the objectives of these interventions.
- The placement of LTAs in DGE and PLN provides for on-going day-to-day technical support as well the ability to acquire the information and insights necessary to design and facilitate the implementation of effective demand-driven capacity development interventions to be delivered by DEA, Energinet, and consultants.
- DEA tools and techniques will be contextualized to partner needs and will cater for a wider institutionalization of the approach for capacity development.
- Capacity Development activities will be formulated as part of the TOR for each medium to long-term activity in direct collaboration with partners. TOR will include particular attention to documenting the needs of the partner, clearly setting out the scope and objectives of the capacity development activities and reaffirming that indicators capture the capacity development aspect and are SMART.
- High level policy dialogue with senior policy and decision makers in partner institutions that helps transform the enabling environment for capacity development and build political support for policy and strategic changes, awareness raising aimed at further policy outreach; knowledge management which ensures that learning, change and development are retained when staff move; and, organisational strengthening where necessary to remove barriers to reform, and acceptable to the partner.
- It is a general principle to target a gender balance in capacity development activities (including workshops and study trips). The project will monitor the gender balance in capacity

⁴⁷ Or updated general DEA implementation manual for DEPP programmes and projects

development activities and consider how best to address the issue if there is a gender imbalance as an average over several capacity development activities.

- More specifically, INDODEPP will, in its capacity development approach, make use of the following:
 - twinning of Indonesian and Danish specialists, expert-to-expert for on-the-job learning;
 - training courses (including courses offered by the Danida Fellowship Centre);
 - attention should be given when selecting participants for courses abroad to their potential as trainers of colleagues and peers, in a “training-of-trainers” (TOT) approach.
 - learnings from training courses will ensure that the participants are secure in the application and contextualisation of the Danish approach and share it in their institution. That partner institutions is well-familiar with the methodology and approach is key to build capacities and trust.
 - lectures from invited specialists;
 - seminars that might include a wider range of stakeholders, including from Indonesian civil society, research and educational institutions, and the private sector – local universities will be included in capacity development activities as relevant, particularly at provincial level;
 - use of external consultants will be considered where relevant for replicating tasks, particularly in regional interventions. A TOT approach may be adopted;
 - exposure of partners to new approaches through study tours and field visits “Seeing is believing; the power of the example” - well-prepared study visits to Denmark and other destinations abroad, with selection of participants in study visits on the basis of job relevance and institutional uptake potential, including potentials as trainers of colleagues and peers;
 - use of internet platforms and social media, for instance making use of the many webinars that are offered by international development partners on sustainable energy and climate change topics;
 - it may be considered to integrate modules on HRBA in training activities, especially at provincial level to support the GoI efforts;
 - use of knowledge products developed by multilateral development institutions including those supported by Denmark through multilateral channels (e.g. [IEA](#), World Bank [ESMAP](#), [IRENA](#), [IISD](#), [UNEP-DTU Partnership](#), [CTCN](#), [WRI](#), etc.); from a Danish point of view, synergies can thus also be strengthened between Danish bilateral and multilateral energy cooperation.
 - with reference to agreed implementation procedures (set out in an implementation manual), a set of generic indicators for measuring capacity development of partner institutions and staff, as well as evaluation templates for training courses, will be developed as standard reporting, monitoring and evaluation. These generic indicators and templates will be applied in all TOR and underlying activities of INDODEPP. Using the indicators for capacity development, the collected values from each activity will be applied to underpin the overall progress towards expected outputs and outcomes in combination with measuring the quality of INDODEPP’s capacity development activities. With reference to procedures set out as part of the implementation manual, aggregation of collected values for capacity activities will be possible across activities, development engagements and countries.
- A narrative reporting on capacity development will be part of the reporting to the Advisory Group as part of standard reporting formats. In addition, INDODEPP will explore options

for reporting on capacity development as separate topic to the Steering Committee. The reporting on capacity development activities will be gender disaggregated.

- The Covid-19 pandemic has resulted in major changes to daily work routines and to learning opportunities, with more emphasis on the use of internet platforms. The implication for the INODEPP capacity development approach will be further assessed during the start-up phase depending on how the pandemic has developed.
- There will be a continued emphasis on results in the capacity development approach and a close link to communication. Impact stories can be a good impact driver and the “power of the example” can be strong”. This will also involve the DEA strategic communications focal point.

Annex 11: Alignment between the SSC and INDODEPP

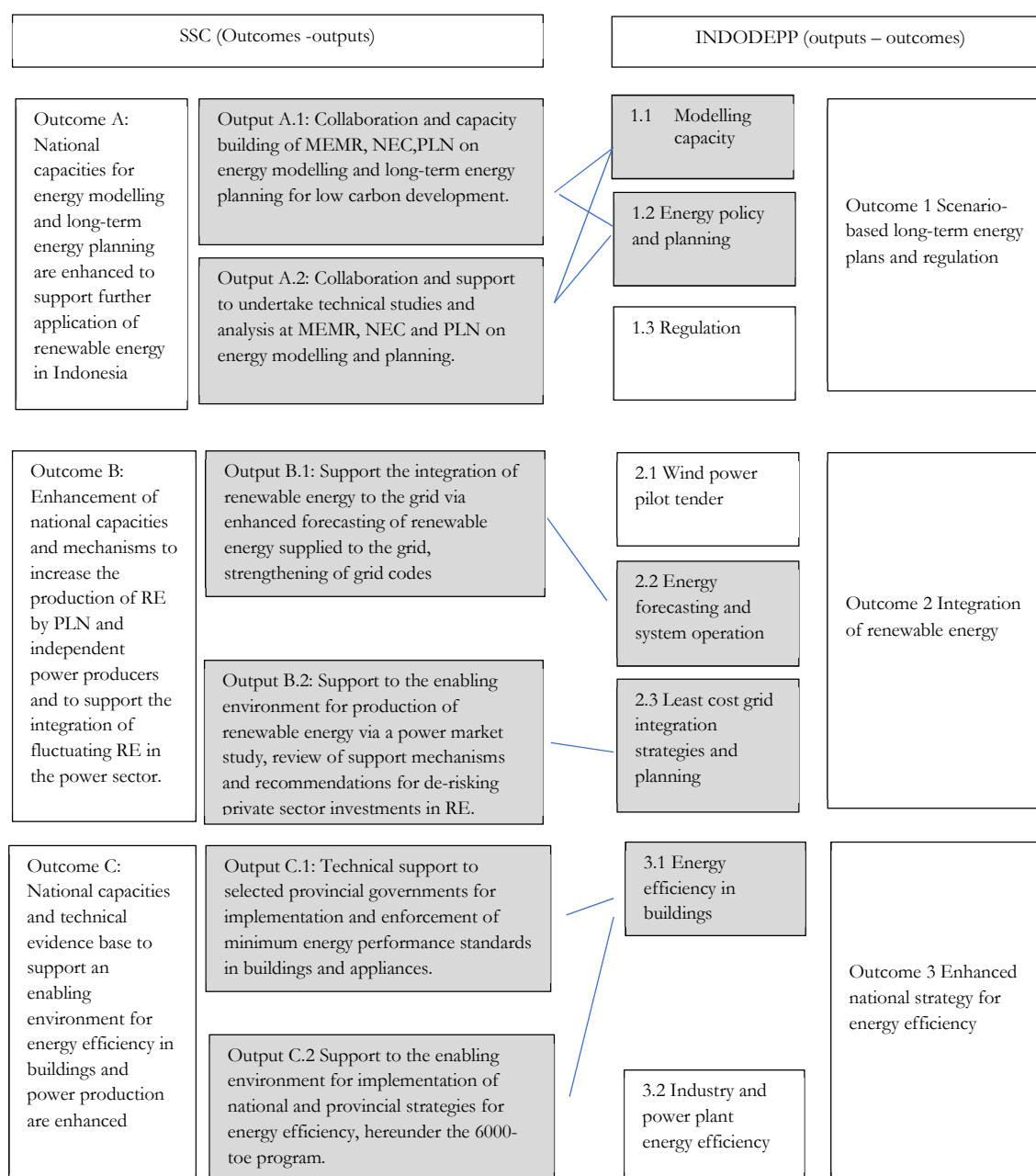
The alignment framework between the SSC and the INDODEPP project is specified below for both reporting and results framework.

The current SSC consists of two projects: the Denmark-Indonesia Strategic Sector Cooperation in the Energy Sector and the Denmark-Indonesia Strategic Sector Cooperation on Sustainable Island Initiative (SII)⁴⁸. The most relevant for the INDODEPP is the SSC in the Energy Sector phase II, which runs from 2019-2021. The SSC built on earlier cooperation between Denmark and Indonesia and forms a base of experience and cooperation for INDODEPP. Both SSC and INDODEPP cover the three areas of: energy modelling and planning; integration of renewable energy and energy efficiency. The intention is that the INDODEPP will build on the work done by SSC, deepen it, expand the level of ambition, and add some new areas of focus. The linkages are illustrated in figure A10.1 where common areas are shaded.

As described in the main text of this project document, the SSC and INDODEPP will be under the same governance and decision-making body (the steering committee) and will present workplans and budgets and reports at the same time. This will ensure good coordination while at the same time enabling DEA and the MFA to clearly separate results vs. budget/expenditure for SSC and IDEP, respectively - the workplans and budgets for each project will therefore be presented separately by DEA to ensure a transparent and easy to follow division of inputs between the projects.

⁴⁸ This cooperation engaged at local level contributes to: 1) Assisting the local authorities in identifying and improving an integration of circular economy, solid waste management and renewable energy in the regulatory and practical framework, enhancing the implementation of provincial policies and action plans for circular economy, waste management and energy; 2) Provide assessments of the potential and pre-feasibility of circular economy, solid waste management and waste-to-energy development on the two islands under both current and improved framework condition; 3) Support and promote the foundation for private sector stakeholders' engagement and funding opportunities for waste-to-energy at Lombok and Riau Islands. Synergies with the INDODEPP are around integration of RE in RUEDs

Figure A-11 linkages between SSC and INDODEPP



Annex 12: Consultation Document

Proposed Indonesia-Denmark Energy Partnership Project (INDODEPP)

24 September 2020

Background

Indonesia and Denmark cooperate in the energy sector in the framework of Strategic Sector Cooperation (SSC⁴⁹). With a view to deepening and widening the cooperation, the Danish Government has identified additional resources under the Danish Climate Envelope. Subject to the ongoing formulation process and agreement with the Indonesian partners, followed by the formal approval by the Danish authorities, the proposed Indonesia-Denmark Energy Partnership Project (INDODEPP) would start in early 2021. The formulation is based on a resource frame of DKK 60 million (in the order of IDR 140 bn) of grant funds for in-kind technical assistance (TA) and capacity development. The Danish Energy Agency (DEA) will deliver TA under government-to-government cooperation with the key Indonesian partners and a part of the TA delivery model is embedded international long-term advisors (LTAs).

The present Consultation Document is focused on the proposed INDODEPP Results Framework (RF), i.e. outcomes and outputs with related indicators, baselines and annual targets - and indicative activities. This RF has been developed based on consultations with MEMR, NEC, and PLN.

The Consultation Document serves as an input to meetings of the Indonesian partners, and the SSC Steering Committee in a meeting scheduled for 29 September will discuss and sign-off on the Document as a reflection of the joint commitment to the proposed project before the final approval process by Danish authorities during October-early December.

The management set-up is shown in the figure below. It is proposed that MEMR will be lead on Outcomes 1 and 3. MEMR's Directorate General of Electricity (DGE) will take the lead on Outcome 1 (energy planning and regulation) with the close cooperation of NEC and EBTKE (Directorate General of Various New Energy and Renewable Energy). EBTKE (Directorate General of Energy Efficiency & Energy Conservation) will take the lead on Outcome 3 (energy efficiency). It is proposed that PLN will take lead on Outcome 2 with close cooperation with both Directorate General of Electricity and Directorate General of Various New Energy and Renewable Energy. For all outcomes there will be a wide range of involved stakeholders and parties as reflected in the Results Framework.

A preliminary draft job profile for each of the two LTAs (entirely financed by Denmark) are included as Annex. It is currently envisaged that the LTAs will be anchored in DGE and PLN respectively, who will in-kind provide office with internet access, etc. and a daily partner contact

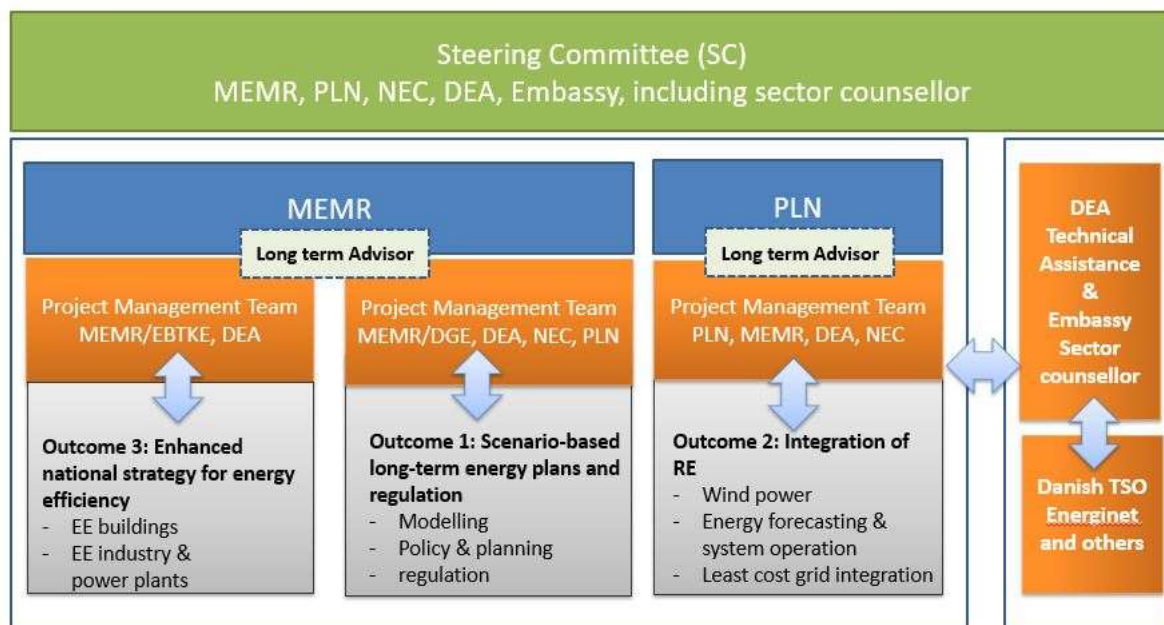
⁴⁹ Danish-Indonesian Strategic Sector Cooperation on clean energy, renewable energy and energy efficiency, phase II (2019-2021) and Sustainable Island Initiative in Energy and Environment (SII) (2020-2022).

point in the host organisation at director-level. The LTA recruitment will be for 2 years with possibility of extension with 2-3 years.

Expert staff from DEA will – as in today’s SSC-programmes – be available for different activities in the INDODEPP Project, e.g. support for capacity development regulation and modelling in relation to Indonesia Energy Outlook, other more frequent publications, etc. The Sector Counsellor at the Embassy of Denmark will similarly be closely involved in INDODEPP, as reflected in the illustration below.

INDODEPP Management Set-up:

It is proposed to continue and strengthen the management set-up for the current SSC-programmes meaning that the Steering Committee will be chaired by DG EBTKE in order to secure broad coordination between the various activities. The Steering Committee will on an annual basis approve the INDODEPP work programme that outlines the year’s specific tasks under the overall results framework.



INDODEPP Results Framework at Outcome and Output Levels:

Overview:

Objective	Outcomes	Outputs
The project has contributed to: meeting Indonesia's national energy demand in a more sustainable way; to its NDC goals; SDG7 and SDG13 targets; and, more specifically, to the achievement of the 23% renewable energy goal in 2025.	1 Scenario-based long-term energy plans and regulation	1.1 Modelling capacity
		1.2 Energy policy and planning
		1.3 Regulation
	2 Integration of renewable energy	2.1 Wind power pilot tender
		2.2 Energy forecasting and system operation
		2.3 Least cost grid integration strategies and planning
	3 Enhanced national strategy for energy efficiency	3.1 Energy efficiency in buildings
		3.2 Energy efficiency in industry and power plants

Detailed Project Results Framework

Project	Indonesia-Denmark Energy Partnership Project (INDODEPP)
Project Objective	<p>Overall – The project has contributed to: meeting Indonesia's national energy demand in a more sustainable way; to its NDC goals by reducing GHG-emissions; SDG7 and SDG13 targets and; more specifically the achievement of the 23% renewable energy goal in 2025.</p> <p>An enabling environment for sustainable energy in Indonesia as a part of a cost-efficient electricity system with increased security of supply and reduced energy intensity. This will be reached through energy planning and modelling, larger shares of variable renewable energy sources and strong system integration, as well as increased energy efficiency.</p>
Outcome 1 Scenario-based long-term energy plans and regulation	<p>Indonesia has a system of aligned energy plans across partner institutions and selected provinces, with clearly defined review-procedures and based on state-of-the-art long-term energy modelling tools and a regularly adjusted Indonesia specific technology catalogue. The long-term energy plans form the basis for monitoring and setting new political targets for renewable energy and provides a reliable RE pipeline to secure investor confidence and bring down cost of energy from renewable sources. The project will contribute to the creation of a foundation that will lead to an increase in Indonesia's reputation as a reliable and ambitious partner within climate-negotiations and for creating an investment environment.</p> <p>Partner: MEMR (DGE/NEC/ EBTKE)</p>

Outcome indicator		Energy plans made by DGE, NEC and PLN are aligned. (the plans are in a system which leads to political discussions of RE-targets and in order to attain those targets, amongst other aspects, creates a reliable RE pipeline in form of RE quotas to secure investor confidence).	
Baseline	Year	2020	RPJMN, RUKN, RUEN and RUPTL are all plans with various RE targets. Indonesia Energy Outlook is a long-term outlook, but it has not been integrated in the other energy plans.
Target	Year	2025	National Energy plans, including RPJMN, RUKN, RUEN and RUPTL, are well aligned and coordinated and in accordance with NDC targets.
Output 1.1 Modelling capacity		<p>Across institutions modelling capacity is strengthened and they are capable of running state-of-the-art energy models on their own.</p> <p>Involved parties: National stakeholders: NEC (partner), DGE, MEMR Data and Information Center PUSDATIN, EBTKE, PLN. Regional stakeholders: MEMR Provincial Agencies (Dinas ESDM), Regional Planning Agency (BAPPEDA) and regional PLN offices. Danish stakeholders: DEA (partner), Energinet</p>	
Indicative Activities		<ul style="list-style-type: none"> a) Assistance to NEC in developing the annual Indonesia Energy Outlook b) Regular update of Technology Catalogue for energy and including emerging topics such as waste to energy c) Fuel price projections including effects of increased electrification of transport sector d) Regular demand projections e) Applied training on Balmorel, LEAP and Sisfos; with target organisations: DGE, EBTKE, NEC, PLN, MEMR Provincial Agencies (Dinas ESDM) and 2-5 selected provincial authorities. f) Frozen policy scenarios, low emission scenario, outlook reports and other energy system analyses. g) Close coordination with other long-term scenarios, e.g. IRENA's work with ASEAN Centre of Energy h) Short-term modelling exercises providing relevant information to public and Ministry about performance and main energy supply trends (e.g. production and prices). i) Study of Covid-19 impacts and how it affects energy sector. Inputs to Covid-19 recovery plan. j) Training courses in the Danida Fellowship Centre (outside INDODEPP budget) 	
Output indicator		The development of energy policy is based on consolidated data and scenario-based analyses which lead to choice awareness for decision makers	
Baseline	Year	2020	Staff have been exposed to model training under the SSC but are not yet in sufficient numbers able to use the modelling confidently in the Indonesian context
Mid-target	Year 3	2023	<p>Model information is regularly used for reporting (more than annually) and thematic publications and has an influence on policy and investor decisions and public confidence and Indonesia Energy Outlook is being used by policy makers.</p> <p>Selected provinces are using the model for the energy outlook at the province level (at pilot level).</p> <p>Capacity development has been institutionalised and is gender balanced.</p>

Target	Year 5	2025	Selected provinces regularly use the energy modelling tools for the energy outlook at the province level and the pilot of model use at selected provinces have been replicated in other provinces.
Output 1.2 Energy policy and planning		<p>Energy policy and planning is strengthened and aligned among stakeholders, and monitoring systems for implementing the plans are integrated in law/decrees</p> <p>Involved parties: National stakeholders: DGE (partner), NEC, BAPPENAS, KLHK. Regional stakeholders: Dinas ESDM and BAPPEDA. Danish stakeholder: DEA (partner).</p>	
Indicative Activities		<p>a) Building upon training on long term energy scenario analyses (output 1.1) training on how to translate the results of these analyses into policy and planning recommendation with attention on areas such as:</p> <ul style="list-style-type: none"> ○ Renewable Energy (including penetration of renewable energy sources to the grid) ○ Waste to Energy ○ Adoption of electric vehicles (busses, cars and motorbikes) ○ Estimate changes in GHG emissions from development in the energy mix, which would provide valuable input for monitoring the fulfilment of Indonesia's NDC ○ Ensuring stability of the electricity systems (avoidance of black outs) ○ Planning of energy supply to the new capital <p>b) Technical assistance to DGE and Dinas ESDM in the development of RUKN and RUKD respectively.</p> <p>c) RUKN and RUKD are interlinked</p> <p>d) Definition of mechanisms to synchronise data quality assurance and management, as well as assumptions used for modelling across institutions (e.g. DG EBTKE provides data inputs for EE; PLN provides inputs on electricity data) and institutional level (local/regional/national).</p> <p>e) Implementing a regulatory system for maintaining and monitoring compliance with a RE pipeline for the Indonesian electricity supply.</p> <p>f) Development of a Centre of Excellence within modelling and scenarios in order to strengthen the cooperation through capacity building and increasing bridges within stakeholders and assist in the alignment of the various strategies (i.e. RUEN, RUED, RUKN, RUPTL).</p>	
Output indicator		Advances in energy policy and planning tools lead to formulation of scenarios and pathways to reach RE and EE target on both a provincial and national level.	
Baseline ⁵⁰	Year	2020	Current energy models, planning and policy data are not consistent, and targets are not sufficiently aligned across institutions
Mid-target	Year 3	2023	Data and assumptions between various strategies and planning systems are consistent and synchronised according to their purpose Decision makers use enhanced energy policy and planning based on energy scenarios. Maintaining and monitoring of RE pipeline are enforced.
Target	Year 5	2025	Enhanced energy policy and planning is leading to a greater contribution towards NDC/SDG targets that are refined and made more ambitious over the years.

⁵⁰ It should include a reflection of process made under SSC.

Output 1.3 Regulation		Strengthened system, regulation and incentives for managing renewable energy integration. Securing a more attractive market for RE investments.	
		Involved parties: National stakeholders: EBTKE (partner) , DGE/MEMR, PLN, Ministry of Finance (MoF), Ministry of State-Owned Enterprises, Ministry of Public Work. Danish stakeholder: DEA (partner).	
Indicative Activities		<ul style="list-style-type: none"> a) Consolidate available data about RE potential and map where updates would be most valuable. Raising awareness of national stakeholders on available data. b) Assisting the development of a database for data management and analysis on RE cost of technologies, etc. in close coordination with IEA. Would become the basis for a one-stop-shop securing single access to authorities for RE developers c) Study and recommendation on RE financing mechanisms and transfer mechanisms for incentives, including recommendations for de-risking private sector investment in renewable energy. (This could include financial institutions and multinational organisations such as UK, OECD, IEA, ADB, DSIF, IFU and EKF as partners or contributors). d) Design of RE auctions (complementary to ADB project on solar auctions) e) Introduction to electricity markets or least cost dispatch. f) PPA guidelines development to create enabling RE environment. g) Development of regulation on equal access to the grid (e.g. how to allow equal access to the grid for all producers – linked to output 2.2. h) Training workshop for IPPs on bankable projects in close coordination with OECD and others. i) Technical assistance to support process of operationalising the presidential decree on RE expected in 2020 into ministerial regulations (focus on fiscal incentives for RE) j) Study RE certificates (e.g. How to set up a RE certificate system which allows consumers to buy RE in a trustworthy manner) k) Technical assistance to support definition and alignment of RE targets and setting up KPIs. 	
Output indicator		Regulatory environment for higher RE share and RE investments leads to increased share of RE.	
Baseline	Year	2020	Regulatory environment is not optimal for RE development and investment (e.g. the current regulation and procedures are complicated and time consuming for RE investors)
Mid-target	Year 3	2023	Data base on RE regulations to support one stop shop together with plan for improvement in the one stop shop function. Investment in RE is increasing in line with targets
Annual target	Year 5	2025	One stop shop set up function is operating in an improved manner, in line with the plan and investment in RE is increasing in line with targets. Enhanced regulatory environment is leading to reduced time to complete procedures and increase volume of investment (in line with the targets set in the plan)

Outcome 2 Integration of renewable energy	Enhancement of national capacities to accelerate the application and integration of renewable energy to support further decarbonization of the power sector: PLN is able to integrate fluctuating renewable energy shares beyond the current share of 10 % in the grids with the highest share. The RE is integrated without curtailment
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			and jeopardizing the security of supply. The integration is secured through handling of technical challenges, e.g. grid flexibility and maintaining security of supply through forecasting and economic effective load-dispatch. Efficient integration of RE contributes to lower the prices of reaching political targets for RE.
			Partner: PLN
Outcome indicator			The Indonesian NDC targets on the share of renewable energy are reached with a lowering cost level
Baseline	Year	2020	9-12% ⁵¹ renewable energy share with baseline kWh cost unknown
Target	Year	2025	23% renewable energy share with kWh cost for new projects on track to fall below a targeted price of less than 5 US cents (2020 price level)

Output 2.1 Wind power pilot tender		Wind power pilot tender National stakeholders: PLN (partner) , DGE, NEC, EBTKE Regional stakeholder: local PLN and Dinas ESDM Danish stakeholders: DEA (partner)	
Indicative Activities		Facilitate a first pilot tender project on wind power in Indonesia, tasks include: a. Share best practice learnings from Denmark to accompany PLN in deciding on tender procedure, feasibility study and make a plan on how to get a new wind farm with attractive price. b. Participate in selection of site for a wind power tender project, and potentially assist in making the set-up for providing site specific wind measurement. c. Assist in developing sound procurement strategy and practice including: i) sharing best practice experience on tender material, feasibility studies and other background documents, for IPP scheme and EPC scheme such as PPA and EPC templates and selection criteria and ii) Assistance to design tender process with Danish experience and potentially assisting in the PPA process d. Secure alignment with ADB's pilot project tender on PV's in Sumatra and RE development and regulation as stipulated by EBTKE. e. Develop lessons learnt through a synthesis report about experience from the pilot tender combined with international experience. The focus in report should be to achieve prices on RE that are comparable to other countries, e.g. emerging economies and Denmark.	
Output indicator		Pilot tender for a wind power development is completed (i.e. has demonstrated means of optimizing costs, attracting bidders and providing a basis for commercial and/or concessional financing and ready for wider replication)	
Baseline		2020	Tendering for wind power development in Indonesia is not guided by tested procedures and templates and not achieving cost optimization and attracting enough bidders.
Short-term-target	Year 1-2	2021/2022	Site selected for pilot project, feasibility study completed and tender documents finalized and tender ready to launch.
Mid-Target	Year 3	2023	PLN able to make a RE tender with international best practice experience included in the design.
Final Target	Year 5	2025	PLN has some experience in running complex RE tenders and achieve competitive prices aiming the target below 5 US-cent-kWh.

Output 2.2	Enhanced integration of RE
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⁵¹ Different official sources mention different numbers for the current RE share.

Energy forecasting and system operation		National stakeholders: PLN (partner) , DGE, NEC, EBTKE, Regional stakeholder: Local PLN and Dinas ESDM Danish stakeholders: DEA (partner) and Energinet	
Indicative Activities		a. Support operation of wind farms (capacity factor, performance, improve accuracy in projected production) mentioned under output 2.1 b. Capacity development plan and implementation of the plan for PLN staff on forecasting, system operation and planning for emergency responses. c. Develop training material on grid management and RE integration, which can be used in PLN regional offices with RE. d. Capacity development on grid management, system operation procedures and integration of the renewable energy e. Grid code support (e.g. technical assessment and technical assistance to the Grid Code Committee) f. Develop a showcase of control room management and grid strategy for larger systems in areas with high penetration of renewable energy g. Training courses in the Danida Fellowship Centre (outside INDODEPP budget)	
Output indicator		PLN staff confident in forecasting and systems operation for RE to the extent that that by the end of year 5, PLN have the capacity to achieve the targeted share of RE (23% with effective integration of the required additional new variable RE capacity).	
Baseline		2020	Ability to accurate forecasting is limited. Training is made in a few targeted provinces.
Short-term target	Year 1	2021	Capacity development and training design in place with baseline and annual targets on capacity development and institutionalization (staff numbers, skill set, gender balance)
Mid-Target	Year 3	2023	<ul style="list-style-type: none"> - PLN staff capacity for forecasting and system operation improved in line with capacity development plan target (involving selected pilot provinces and replication to other provinces) set in year 1 e.g. discrepancies in forecasting of RE production are reduced in <u>all</u> provinces. - Discrepancies in forecasting of RE production are reduced in <u>pilot</u> provinces - Replication to other provinces ensuring a complete <u>national</u> overview and understanding in implementation
Final Target	Year 5	2025	Need to be elaborated later, but potentially PLN have established own system for securing education in forecasting for all PLN regional offices with fluctuating RE sources in the grid.

Output 2.3 Least cost grid integration strategies and planning		Integration strategies for RE <u>Involved parties:</u> National stakeholders: PLN (partner) , DGE, NEC, EBTKE Regional stakeholder: local PLN and Dinas ESDM Danish/international stakeholders: DEA (partner), Energinet	
Indicative Activities		a. Assessment using models to compare total generation costs of flexible to non-flexible fleet, e.g. of the Java-Bali system (this could be Balmorel or Plexos with a focus on model principles, data and interpretation of outputs).	

		b. Development of road map for Indonesia to successfully reach the target of 23% RE in 2025 in the RUPTL with lowest possible costs and not neglecting security of supply c. Procurement of energy forecasts d. Assessment of need of ancillary services (e.g. how to remunerate different kinds of ancillary services and allow equal access for providing them) e. Analysis of least cost RE integration strategies through grid strengthening, batteries, flexibility of thermal power plants, SCADA systems, flexibility in hydropower or other initiatives- focus on pilot provinces/grid with replication strategy f. Provide recommendations (technical or financial) for improving RE integration and making load dispatch more cost-efficient g. Develop and update cost-efficient RE integration strategies h. Dialogue about grid planning approaches for the new capital in Kalimantan i. Training courses in the Danida Fellowship Centre (outside INDODEPP budget)	
Output indicator		Least cost strategy and action plan developed, updated and under implementation (within to be chosen pilot province and replicated to other provinces)	
Baseline		2020	Least cost strategies are fragmented and in need of updating supported by solid data and modelling
Short-term Target	Year 1	2021	Least cost strategy for RE integration developed for a selected province.
Mid-Target	Year 3	2023	Least cost strategy developed in year 1 updated and adjusted under implementation according to plan (involving more pilot provinces and replication to others)
Target	Year 5	2025	Need to be elaborated later, but potentially cost-effective RE integration is a part of all planning processes and well aligned with RUPTL.

Outcome 3		Indonesia has an enhanced national strategy for energy efficiency, which reduces the predicted increase in electricity demand so the green energy transition can be achieved in a cost-efficient manner also taking cost savings in generation capacity and grid into consideration. This includes an increased focus on industries and energy efficient buildings, efficiency in power plants and energy efficiency in the new capital. Partner: MEMR EBTKE	
Outcome indicator		An enhanced national EE policy with specific strategies for EE in selected industries, power plants and selected types of commercial and public owned buildings.	
Baseline	Year	2020	Status of EE strategy is uncertain regarding targeted industries. Approach and EE ambitions to new and existing buildings is not determined. The EE potential in power plants is mapped and shows a large potential for EE.
Target	Year	2025	An enhanced national EE strategy with increased focus on industries and energy efficient buildings, efficiency in power plants and energy efficiency in the new capital. The national energy policy (KEN) reflects a renewed EE-approach.

Output 3.1 Energy efficiency in buildings		Capacities developed and system strengthened for energy efficiency measures in buildings. Involved parties: National stakeholders: EBTKE (partner) , Ministry of Public Works, Green Building Council, Ministry of Home Affairs Regional and provincial stakeholders: To be determined Danish/international stakeholders: DEA (partner)	
Indicative Activities		<u>New buildings:</u> a) Implementation of the energy building code for selected public and commercial buildings including good administrative set-up for approval and consultation of the energy requirements in the building codes b) Assisting developing ultra-high energy efficiency standards in line with green and net zero emission building concepts c) Assistance on government level to develop strategies for energy efficiency in city planning and Smart Cities using the planned new Capital and the construction of a new airport as showcases. <u>Existing buildings (public and commercial):</u> d) Support to the implementation of The Government Regulation on Energy Conservation no. 70/2009 regarding energy management of large public and commercial buildings (as a follow up to an ongoing IEA project on establishing a database for collection of energy data for public and commercial buildings) e) Updated Energy Savings (ES) scenarios with input to updated EE targets. f) Develop pipeline of EE projects in selected public or commercial buildings. g) Study on investment and financing mechanisms for EE to create link from EE initiatives to financing. <u>Capacity development on:</u> h) Experiences in the use of energy building codes and compliance. i) Development of low-energy building codes j) How to include requirements about energy efficiency and sustainability into tender procedures with the new Capital and the new airport as showcases. k) Training courses on energy audits for energy auditors, as well as training of trainers for public and commercial buildings (including institutionalisation in universities and professional associations) with focus on ventilation systems, lighting systems, air conditioning systems, use of building energy management systems (BEMS). l) Performance of energy audits and implementation of energy demand management in existing commercial and public buildings m) Procurement of energy efficient products and services.	
Output indicator		Energy efficiency standards and targets are defined and updated, assistance on the evaluation of the sustainability plan for the new capital and airport. Evaluation of the system for implementing energy management in large buildings.	
Baseline	Year	2020	Energy savings (ES) standards insufficiently defined
Mid-target	Year 3	2023	Energy efficiency and sustainability targets are included in the plans for the new capital and airport. Assistance to the development of an energy management training scheme including training and workshops for energy experts.

			<p>Roadmap for the development of ultra-high energy efficiency standards in line with green and net zero emission building concepts. Workshops and capacity building on improved building codes and how to achieve compliance.</p> <p>Energy requirements are evaluated in order to be included in the project plans for new constructions e.g. the new Capital and the new airport.</p> <p>Capacity developed is institutionalised and gender balanced.</p>
Target	Year 5	2025	<p>A roadplan is made with suggestion for revising the building energy code towards nearly zero energy buildings and the implementation of the building codes on a municipal level.</p> <p>Energy requirements and energy targets are included in the construction of new large buildings and projects like the new Capital and the new airport.</p> <p>A coherent scheme for the implementation of energy management in large existing buildings is implemented</p>
Output 3.2 Energy Efficiency in industry and power plants			<p>Involved parties:</p> <p>National stakeholders: EBTKE (partner), DGE, PLN, BAPPENAS, Ministry of Public Works</p> <p>Regional stakeholders: Local governments (cities and provinces)</p> <p>Danish/international stakeholders: DEA (partner)</p>
Indicative Activities			<p><u>EE in industry:</u></p> <ol style="list-style-type: none"> Mapping of energy consumption in selected energy intensive industrial sectors (e.g. cement, metal and food) to identify target industries. Coordinating with other donors Identification and review of energy audit data in selected pilot industries to document EE saving potentials including training in Energy Management, ISO 50001 etc. (coordination with relevant multilateral organisations e.g. IEA, GIZ etc.) Capacity building activities with relevant authorities (national as well as local) with a view to improving the level of compliance according to existing regulation, reporting requirements. Assistance in facilitating pilot projects/implementation of EE solutions with selected local authorities and industries in regions/provinces Study trips to DK with visits focusing on best practice with EE in industry. Introduce the authorities to the Danish incentive schemes for EE in industry (e.g. voluntary agreement scheme for industry, Utilities EE scheme) Provide input and technical assistance for Energy Savings scenarios, and updated EE targets in national strategy for EE and national framework. <p><u>EE in power plants (PPs):</u></p> <ol style="list-style-type: none"> Analyse and review diagnostic studies conducted in selected power plants based on a screening of most polluting coal power plants Analyse and review EE benchmark studies for selected power plants focusing on business cases (coordination with relevant donor parties e.g. USAID) Utilise results from diagnostic studies and EE benchmark studies to provide input and technical assistance for Energy Savings scenarios, and updated EE targets in national strategy for EE and national regulatory framework.

Output indicator		EE strategy and action plan for selected industries and power plants is developed and under implementation	
Baseline	Year	2020	Elements of energy efficiency strategy for industries and power production plants are in place but fragmented and incomplete
Annual target	Year 3	2023	Input to EE strategy and action plan developed based on 1) review of existing policy elements, 2) mapping of selected energy intensive industries and 3) best-practice identified through pilot projects and study tours discussed with national and local authorities and stakeholders in capacity building activities and 4) EE Benchmark studies for power plants.
Target	Year 5	2025	EE strategy and action plan for selected industries and power plants is enhanced, updated and implemented in accordance with the input to EE strategy and action plan, including integrating findings of EE in energy intensive industries and power plants in the Energy Savings Scenarios. Implementation of EE in energy intensive industry underway incl. links to financing of EE initiatives, incentive model and lessons learned. EE in selected power plants is being implemented.

Signatures:

F.X. Sutijastoto, Director General of EBTKE (**Head of Delegation**)

Date

Martin Hansen, Deputy Director General, Danish Energy Agency (**Head of Delegation**)

Date

Annex to the Consultation Document: Outline Job Profiles for Long-term Advisors (LTAs)

Financing: The two long-term advisors will be entirely financed by Denmark. The host organisations (MEMR DGE and PLN, respectively), will in-kind provide office with internet access, etc. and a daily partner contact point in the host organisation at director-level.

1. Outline Job Profile for LTA, MEMR-DGE:

The outline job profile below will be developed into a specific job description, and a detailed plan will be made for the recruitment of the LTA. The advisor will be selected as an energy system planning and energy modelling expert; preferably with specific knowledge about Balmorel, LEAP and Syfos. Experience with capacity development, training and technical secondments would be preferred.

Main tasks for the advisor could be (depending on duration of posting):

1. Provide technical assistance and build capacity in the MEMR and related agencies/affiliates (DGE, NEC, DG EBKTE, PUSDATIN, PLN) on energy modelling and planning, in particular forecasting, and building scenarios in close cooperation with DEA experts as well as other international and local experts.
2. Contribute to strengthening the capacity of MEMR and relevant agencies/affiliates in planning and execution of modelling workshops.
3. Contribute to strengthening the capacity of MEMR and relevant agencies/affiliates in setting up coordination and harmonisation mechanisms that will govern the energy planning and integration of renewable energy in Indonesia.
4. Coordinate and contribute to the formulation of the National Electricity Plan RUKN as well as coordination with the Indonesian Energy Outlook, and regional outlooks, as well as other scenario analysis for the Indonesian renewable energy system and technical materials needed (e.g. data consolidation, technology catalogue, other studies)
5. Keep updated on Indonesian energy sector development and provide input to policy dialogues relevant for the partners and INDODEPP. 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.
6. Participate in the working groups under INDODEPP and follow up on progress in project activities.
7. Advise on the implementation of INDODEPP in a cohesive and coordinated manner that aligns with Indonesian plans and priorities.
8. Actively explore synergies between INDODEPP and the multilateral fora, and other cooperation, where Denmark is active, e.g. IRENA and ASEAN Centre for Energy.
9. Coordinate with the Danish Embassy in Indonesia to explore synergies between INDODEPP and the activities carried out by the Embassy.

Requirements and expectations concerning the qualifications of the candidate

- Solid knowledge of Danish energy policy and energy planning and integration of renewable energy is a requirement
- A master level degree or corresponding qualifications in energy planning/power sector management, engineering and/or subjects relevant
- Extensive experience working with one or more related fields such as: long-term modelling of energy systems, power market design with regards to increased renewables.
- Project management and coordination experience and experience from delivery of technical assistance, exchange visits and technical secondments
- Experience from emerging economies or developing countries, preferably Indonesia will be an advantage
- Knowledge of the energy technology providers an advantage
- Fluency in English, written and spoken, is required. Fluency in Danish is an advantage. Knowledge of Bahasa Indonesia is an advantage.

- Good 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, social sensitivity, with respect for other cultures
- Capacity to manage and facilitate working processes involving parties at different levels

2. Outline Job Profile for LTA, PLN:

Proposed profile for the advisor: The advisor will be selected as an RE expert; preferably with specific knowledge about wind power. Experience with RE feasibility studies and RE auctions would be preferred.

Experience with integration of RE in the Nordic Countries power system (Denmark, Norway, Sweden and Finland) would be an advantage. The first two years posting is likely to focus on the development of a pilot wind power tender and procurement strategy. In later years the focus is likely to be on developing capacity within forecasting and least cost RE-integration strategies.

Main tasks for the advisor would be for the first two year period:

1) Facilitate a first pilot tender project on wind power in Indonesia, tasks include:

- Participate in selection of site for a wind power tender project
- Assist in providing site specific wind measurement
- Accompany PLN on a feasibility study for a wind farm at selected site. Assistance in developing sound procurement strategy and practice including: i) assisting PLN in preparing tender material including feasibility study and other background documents, such as PPA-template and selection criteria and ii) Assistance to design tender process with Danish experience potentially assisting in the process of PPA process (Danish Energy Agency Experts may be involved)
- Assist in the PPA process
- Assist in securing alignment with ADB's project tender on PV's in Sumatra and RE development and regulation as stipulated by EBTKE.
- After the tender, write a synthesis report about experience from the pilot tender combined with international experience. The focus in report should be on how to attract sufficient number of bidders and to achieve prices on RE that are comparable to other countries, e.g. emerging economies and Denmark.
- The advisor will follow the tendering process from A-Z

Support tasks on

2) Forecasting on variable renewable energy

- Follow the operation of the wind farm (capacity factor, performance, improve accuracy in projected production)
- Facilitate training for PLN staff on forecasting
- Assist in making training material on grid management and RE integration which can be used in PLN regional offices with RE.
- Assist in making a regional showcase of control room management and grid strategy with for regional with high penetration of renewable energy
- Be a focal point for training sessions at Energinet in Denmark for selected PLN staff on grid management, system operation procedures and integration of the renewable energy
- Facilitate training for PLN staff on forecasting

- Grid code support (e.g. technical assessment from Energinet and DEA, technical assistance to the Grid Code Committee)
- Be focal point for PLN staff joining courses and study trips in Denmark before and after the course study trip

3) Least-cost strategies for RE integration

- Analysis of RE integration strategies through grid strengthening, batteries, flexibility of thermal power plants, SCADA systems, flexibility in hydropower or other initiatives
- Provide recommendations (technical or financial) for improving RE integration and making load dispatch more cost-efficient
- Facilitate courses and study trips on cost-efficient RE integration strategies with Energinet in Denmark
- Assist in better procurement of forecast services for variable RE sources
- Assess need of ancillary services (e.g. how to remunerate different kinds of ancillary services and allow equal access for providing them)

Duration: 2 years with possibility of extension with 2-3 years. (in depth assistance with RE-integration best possible if duration is more than 2 years)

Data: The advisor and implementing Danish partner, “Danish Energy Agency”, will sign a non-disclosure agreement on confidential data.

Signature page

Signatures:



F.X. Sutijastoto, Director General of EBTKE (**Head of Delegation**)

29/09/2020

Date



Martin Hansen, Deputy Director General, Danish Energy Agency (**Head of Delegation**)

5/10/2020

Date

Annex 13: List of key Persons Interviewed during the Formulation Process

Name:	Title/Function:
Danish partners	
Thomas Capral Henriksen	Head of Energy Cooperation, Embassy of Denmark, Indonesia
Nindya Natasasmita	Energy Advisor, Embassy of Denmark, Indonesia
Anders Kruse	Advisor, Danish Energy Agency
Ole Emmik Sørensen	Deputy Director, Danish Energy Agency
Casper Due Petersen	Ministry of Climate, Energy and Utilities, Denmark
Tilde Hellsten	Chief Advisor, Ministry of Foreign Affairs, Denmark
Jan Wesarg Riemer	Chief Advisor, Ministry of Foreign Affairs, Denmark
Indonesian partners	
DG EBTKE : Energy Efficiency and Energy Conservation	
Harriyanto	Director of Energy Efficiency and Energy Conservation
F.F. Hendro Gunawan	Deputy Director: Technical Assistance and Cooperation of Energy Efficiency and Energy Conservation
Devi Laksmi	Deputy Director: Preparation of Energy Efficiency and Energy Conservation Programme
Endra Dedy Tamtama	Deputy Director: Monitoring of Energy Efficiency and Energy Conservation
Harish Mafaaza	Section Head: Incentives and Disincentives
Supriyadi	Section Head: Technical Evaluation
Kunaefi	Section Head: Cooperation
Rima Agustin	Staff
National Energy Council (NEC)	
Sugeng Mujiyanto	Head of Bureau: Energy Policy and Assembly Facilitation
Suharyati	Head of Division: General Energy Plan Facilitation
Daud Bontua	Staff (energy security analyst)
Nanang	Staff (KSG)
EBTKE : Various New Energy and Renewable Energy	
Harris Yahya	Director of Various New Energy and Renewable Energy
Ani Wiyanti	Deputy Director : Investment and Cooperation
Ira Ayuthia Herdiani	Section Head Cooperation
Pandu Ismutadi	Deputy Director: Various New Energy and Renewable Energy Development
Praptono Adhi	Deputy Director: Planning
Bunga Chrismaya	Staff
Nur Arinta DP	Staff
Etis Meilandari	Staff
Agus Riawan Tri	Staff

Communication, Public Information Services, and Cooperation Bureau under Secretariat General of MEMR	
Gita Lestari	Section Head: Bilateral Cooperation
M Vagunaldi	Staff
Sripeni Inten	Minister Special Advisor on Electricity
Directorate General of Electricity	
Senda Hurmuzan Kanam	Deputy Director: Electricity Cooperation (under: Director of Electricity Program Development)
Yoga Kenyo	Sub.Dir. Electricity Cooperation
A. Willy Kurniawan	Sub.Dir. Electricity Cooperation
Luky	Staff, Directorate of Electricity Business Development
Sigit Cahyo	Staff, Directorate of Electricity Engineering and Environment
Andi Nur Arief	Staff, Directorate of Electricity Engineering and Environment
Andi Hanif	Staff, Directorate of Electricity Engineering and Environment
Ir. Jisman Hutajulu	Director of Electricity Program Development
PLN	
Muh. Ikbal Nur	Director of Corporate Planning
Muh. Ikhsan Asaad	Director of Mega Project
Cita Dewi	Executive Vice President for New & Renewable Energy,
Hot Martua Bakara	Senior Manager of International Relation
Anasthasia	Staff Div, Corporate Planning
Noor	Staff Div, Corporate Planning

Annex 14: Relevant Key Initiatives Supported by Selected Other Development Partners

As noted in Section 2.6 the table below served to highlight areas, where coordination vs INDODEPP is particularly critical and where the Embassy of Denmark and the planned long-term advisors will play a key role.

Development agency	Focus areas	Day-to-day coordination through
IEA	Integration of variable RE, flexibility in power plants, EE (Clean Energy Transition Programme (CETP))	sector counsellor at RDE/ LTA in PLN
IRENA	Long-term energy scenarios in collaboration with ASEAN Centre of Energy	LTA in DGE
IISD	Fossil Fuel Subsidy Reform (FFSR)	Sector counsellor at RDE
OECD	Improved framework conditions and enabling environment for investments in RE and EE (Clean Energy Finance and Investment Mobilization (CEFIM))	Sector counsellor at RDE/LTA in PLN
ESMAP (World Bank)	Solar power, geothermal energy, integration of variable RE	LTA in PLN

Further notes are made below on selected multilateral and bilateral energy cooperation in areas related to the focus areas of INDODEPP.

World Bank/ESMAP

The World Bank Group is renewing its partnership with Indonesia through the Country Partnership Framework (CPF) for the period of 2016-2020. The CPF outlines six areas of engagement:

1. National infrastructure programs essential for growth and improving the lives of Indonesians
2. Energy sector, in order to increase sustainable energy and connect people to reliable electricity;
3. Programs to build the maritime economy and improve connectivity;
4. Government efforts to collect more revenue and spend it more effectively;
5. Local governments to provide better services for healthcare, education, sanitation and clean water;
6. Holistic landscape management efforts to protect Indonesia's vast natural resources, including efforts to fight peat fires and deforestation

The Energy Sector Management Assistance Program (ESMAP) is a technical assistance program administered by the World Bank. ESMAP provides analytical and advisory services to low- and middle-income countries to increase their know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth. ESMAP's work in Indonesia on energy sector include RE integration. The Bank is preparing the 1,040 MW Upper Cisokan Pumped Storage project. The primarily coal-based 35 GW Java-Bali grid is the main target for increased RE integration, which is constrained by ramping capability of existing generation assets. Increased storage capacity would include not only decentralized battery systems but also pumped hydro, which is more cost-efficient at large scale. ESMAP support includes for simulation of the Java-Bali power system with high RE load scenarios to see how and where pumped and battery storage solutions can be applied to eliminate system constraints for RE scale-up.

ESMAP has developed best practices on gender mainstreaming for the geothermal industry. A social study to understand local cultural attitudes and misconceptions around opportunities for women in technical roles, design an outreach programme to increase women participating on the geothermal technical curricula implemented by Vocational Training Centres, design a toolkit for developers to broaden the Female Talent Pipeline and provide support to the MEMR in strengthening the sector guidance on gender-sensitive workplace health and safety.

The International Energy Agency (IEA):

- In 2019, the IEA's work on energy efficiency focused on policy reform, improving data collection methods and reporting. MEMR is currently revising the DJ ETKE energy conservation regulation (regulation 70/2009). The IEA provided detailed guidelines on best practice for energy efficiency policy and is working closely with the ministry to provide inputs where requested.
- Capacity building and knowledge sharing. Since 2018, the E4 Programme has engaged a local consultant based at EBTKE, who works closely with the Ministry, which has greatly aided cooperation between Indonesia and the E4 Programme to support progress on energy efficiency policy.
- Improving industrial energy efficiency programmes. In addition to the IEA's work on energy-intensive sectors across G20 countries, the E4 Programme has been working with MEMR to review and redesign its industrial energy efficiency programmes.
- The IEA Energy Efficiency in Emerging Economies (E4) Programme, which is supported by Denmark, has Indonesia as one of its key partner countries.
- In RE IEA works on an assessment of the Cirata floating PV (150 MW), in terms of system integration into the Java-Bali grid. It is a project on system enhancement of the Java-Bali grid looking at how to integrate RE in a smart way, both from the institutional and operational perspective as well as a modelling exercise to look at flexibility. This assessment will include an assessment of the need of smart technology to integrate RE. The project will be delivered in parts starting with the Cirata floating PV (50 MW) and the institutional part on 2020 and the modelling on 2021.

Organisation for Economic Cooperation and Development (OECD):

- In 2019, OECD and Government of Indonesia (GoI) have launched Clean Energy Finance and Investment Mobilisation (CEFIM) programme in Indonesia. It marks the start of multi-year engagement with the GoI to support Indonesia's efforts to scale up domestic and foreign sources of finance for grid connected renewables and energy efficiency. To achieve the Programme's objectives, OECD will join forces with other key stakeholders from government, private sector, finance sector and other development partners to strengthening policy frameworks to overcome key barriers in developing and financing clean energy projects.
- The OECD also provides technical assistance in the design and development of financing instruments and mechanisms that can support a scale up of bankable clean energy projects to meet Indonesia's ambitious change, sustainable finance and clean energy goals.

The International Institute for Sustainable Development (IISD)

- The Global Subsidies Initiative (GSI) programme for Indonesia includes research and policy engagement on subsidies for fuel consumers and producers, as well as breaking down barriers to renewable energy and ensuring long-term, sustainable reform processes
- The GSI programme has collaborated with a number of organizations, including *Tim Nasional Percepatan Penanggulangan Kemiskinan*, Universitas Gadjah Mada, European Climate Foundation, ENERGIA, and the Embassies of Denmark and Sweden.

The International Renewable Energy Agency (IRENA):

- Denmark supports IRENA in the area of long-term energy planning.

- IRENA planned to conduct a socio-economic impact of Indonesia's renewable energy outlook on 2021. The study will be conducted with MEMR, Ministry of Industry and Ministry of Finance GoI.
- IRENA has worked intensively with the ASEAN Centre for Energy (ACE) and ASEAN's ten member states to find ways to accelerate renewable energy deployment in line with the region's goal. ASEAN members have set out to make 23% of its primary energy renewable by 2025, compared to 9.4% in 2014. Yet current policies - including those still under consideration – only suffice to reach just fewer than 17% .In order to fulfil its mandate, ACE produces outputs as per 3 critical roles: catalyst, knowledge hub, and policy advisory in energy sector.

The Global Green Growth Institute (GGGI):

- Denmark supports GGGI
- GGGI is to assist the Government of Indonesia in delivering green growth by driving investment and designing green projects with social, environmental and economic benefits and to support Indonesia to reach its goals and priorities, as well as its global SDGs and NDC commitments.

Green Climate Fund (GCF)

The Green Climate Fund (GCF) is the world's largest dedicated fund helping developing countries reduce their greenhouse gas emissions and enhance their ability to respond to climate change. GCF has a crucial role in serving the Paris Agreement, by channelling climate finance to developing countries. In Indonesia, the GCF has been working with Ministry of Finance, the Fiscal Policy Office and Global Green Growth Institute (GGGI) since 2017. Working with GCF are two other Indonesian institutions: private infrastructure company Indonesia Infrastructure Finance (IIF) and civil society group Partnership for Governance Reform (Kemitraan) and PT Sarana Multi Infrastruktur (PT SMI). GCF also supports Indonesia's energy transition with de-risking geothermal development. In August 2020 GCF has promised it will ramp up efforts to help developing countries tackle climate challenges as they strive to recover from the pandemic and backing for 15 new projects around the world. Moreover, 27 countries presenting pledges to replenish GCF fund. Of these, 13 countries (Denmark, among others) doubled or more than doubled their pledges from the Fund's initial resource mobilization⁵².

European Union:

It was also noted in Section 2.5 that the EU is planning a major Indonesia Sustainable Energy Acceleration Programme. The RDE as representative of Denmark as an EU member state is engaged in coordination concerning this new initiative which is still at an early stage of conceptualisation. Preliminary indications of the scope of the EU programme are that it could include support for energy planning and modelling, strengthening of the private sector enabling environment, fossil fuel subsidy reform, EE, circular economy, community managed RE systems benefiting especially remote areas. The programme would also include grants for a project development facility and investment grants and guarantees to accompany energy loan facilities from the European development / investment banks. In the spirit of SDG 17 'Partnerships for the Goals', the EU cooperates closely with its Member countries to support strategic investment projects, through grant funding to Indonesia's national infrastructure financing institution PT SMI and its platform 'SDG Indonesia One'. The EU also supports Indonesia's reform agenda through technical assistance together with its Member countries' Development Banks KfW and AFD, through the Asia Investment Facility.

Asian Development Bank

The Asian Development Bank's (ADB) approved two loans totalling up to \$1.1 billion to strengthen and diversify Indonesia's energy sector—considered key to promoting inclusive growth and sustainable development in the country (14 Sept 2017). The first is a \$500 million policy-based loan (including \$100 million from the ASEAN Infrastructure Fund) for the Sustainable and Inclusive Energy Program—

⁵² <https://sdg.iisd.org/news/gcf-receives-usd-9-776-billion-in-pledges-from-27-countries/>

Subprogram 2. The second is a \$600 million results-based loan to the State Electricity Corporation (PLN), guaranteed by the Republic of Indonesia, which will boost access to sustainable and modern energy services in eastern Indonesia.

ADB has RE and EE programme: Sustainable Infrastructure Assistance Program Phase II (SIAP 2), Subproject 2: Supporting Sustainable and Efficient Energy Policies and Investments, running from 2018 to 2024.

UNDP:

UNDP-UNEP-GEF new programme on Advancing Indonesia's Lighting Market to High Efficient Technologies (ADLIGHT) initiates to support Indonesia to advance its market to EE lighting technologies (2020-2023). The programme will conduct of research and surveys to gather barriers of manufacturing and application of high efficiency lighting technologies, transforms of the national lighting market, and performs various pilots on the application EE lighting devices in street lighting.

UNDP-KOICA-ACCESS. UNDP, with GtoG development grant funding support from the Korea International Cooperation Agency (KOICA) Indonesia, implements a 4 years project titled "Accelerating Clean Energy Access to Reduce Inequality (ACCESS)." The project will be implemented in Indonesia and Timor-Leste in collaboration with UNDP Timor-Leste. In Indonesia, renewable-based energy (Solar PV) infrastructures will be constructed, providing access to electricity for households in 23 targeted villages of 4 Provinces (in East Nusa Tenggara, West Sulawesi, Southeast Sulawesi, and Central Kalimantan Provinces) that can be monitored remotely⁵³

Germany - The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

German-Indonesian cooperation focuses on three priority areas: energy, environmental protection and technical and vocational education and training (TVET)/economic development. The energy partnership has been supporting rural electrification through renewable energy since 2009. In the area of environment and climate change, the supported energy projects are:

- Green Chillers and Energy Efficiency 2014-2019
- Sustainable Urban Transport Programme Indonesia – NAMA 2016-2020
- Low-Emissions Oil Palm Development (LEOPALD) 2017-2022

In the area of sustainable infrastructure, the supported energy projects are:

- Strategic Exploration of Economic Mitigation through Renewable Energy (EXPLORE) 2018-2021
- Electrification through Renewable Energy (ELREN) 2017-2019
- 1,000 Islands – Renewable Energy for Electrification Programme (REEP) 2017-2020
- Energising Development (EnDev) 2009-2019
- Working together for sustainable energy in the ASEAN region 2016-2019

GIZ energy programme includes RE integration and capacity building to PLN and EBTKE. However, GIZ approach is more consultant-based than the Danish government-to-government approach, meaning the external consultants will carry the work load and produce the results. Moreover, their capacity building is more focused on the RE financing and procurement.

UK-Indonesia Low Carbon Partnership (MENTARI)

MENTARI (2020-2023) is part of the UK Prosperity Fund⁵⁴, (£13.5m ODA) which aims to reduce poverty through stimulating inclusive economic growth. The programme will deliver interventions across four strands of activity:

- Policy: supporting the Government of Indonesia to develop a policy environment that incentivises private sector investment and increases renewable energy generation share.

⁵³ <http://ika.ppnas.ac.id/info-lowongan-kerja-tahun-2020/koica-indonesia-undp-memrs/>

⁵⁴ <https://www.gov.uk/government/publications/prosperity-fund-fco-programme-summaries-countries>

- Brokerage: technical assistance to secure external finance for delivery of renewable energy infrastructure, with a **focus on eastern Indonesia**.
- Demonstrating potential: delivery of small-scale renewable energy infrastructure in eastern Indonesia to demonstrate the potential of renewable energy to reduce poverty and stimulate economic growth.
- Collaboration: increased international and domestic networking and collaboration to facilitate renewable energy knowledge transfer, innovation and good practice

This programme was started on May 2020 and more project-specific than the cooperation proposed by the Danish programme. Their support to PLN is focused on technical assistance on planning procurement transparency and contracting procedures. The Danish programme focuses on institutional framework, capacity building and integration of RE renewable energy to replace coal-fired power plants among others. There are areas where synergy with INDODEPP must be ensured and overlap must be avoided – an area of complementarity is Policy and Collaboration.

USAID ICED II Indonesia Clean Energy Development II

ICED II (2015-2020) project is the second phase of the United States Agency for International Development (USAID) clean energy program in Indonesia. ICED II works with national and regional government agencies, the national utility (PLN), private sector project developers and suppliers, banks and financial institutions, and other stakeholders in opening the market for renewable energy projects and technologies in Indonesia. Key activity areas include:

- Increase Capacity for Low Emissions Energy Sector Planning and Implementation
- Policy and Regulatory Reform Support for Clean Energy Project Development
- Advanced Project Development and Investment Promotion
- Increased Local Capacity of Science, Technology, Innovation and Human Resource for Clean Energy Growth
- Sustainable finance and capacity building
- The next phase ICED III (SINAR) will start in 2021 to 2024.

Donor coordination in MEMR:

- EBTKE develops a non-formal coordination mechanism, have meetings at regular intervals and share work plans, etc. This works well and could be expanded with other Directorates General (DGE). A donor mapping (in Indonesian language) was done in 2019 EBTKE.
- The registration number in the EBTKE's donor mapping is registered from Ministry of Finance as part of quarterly report.

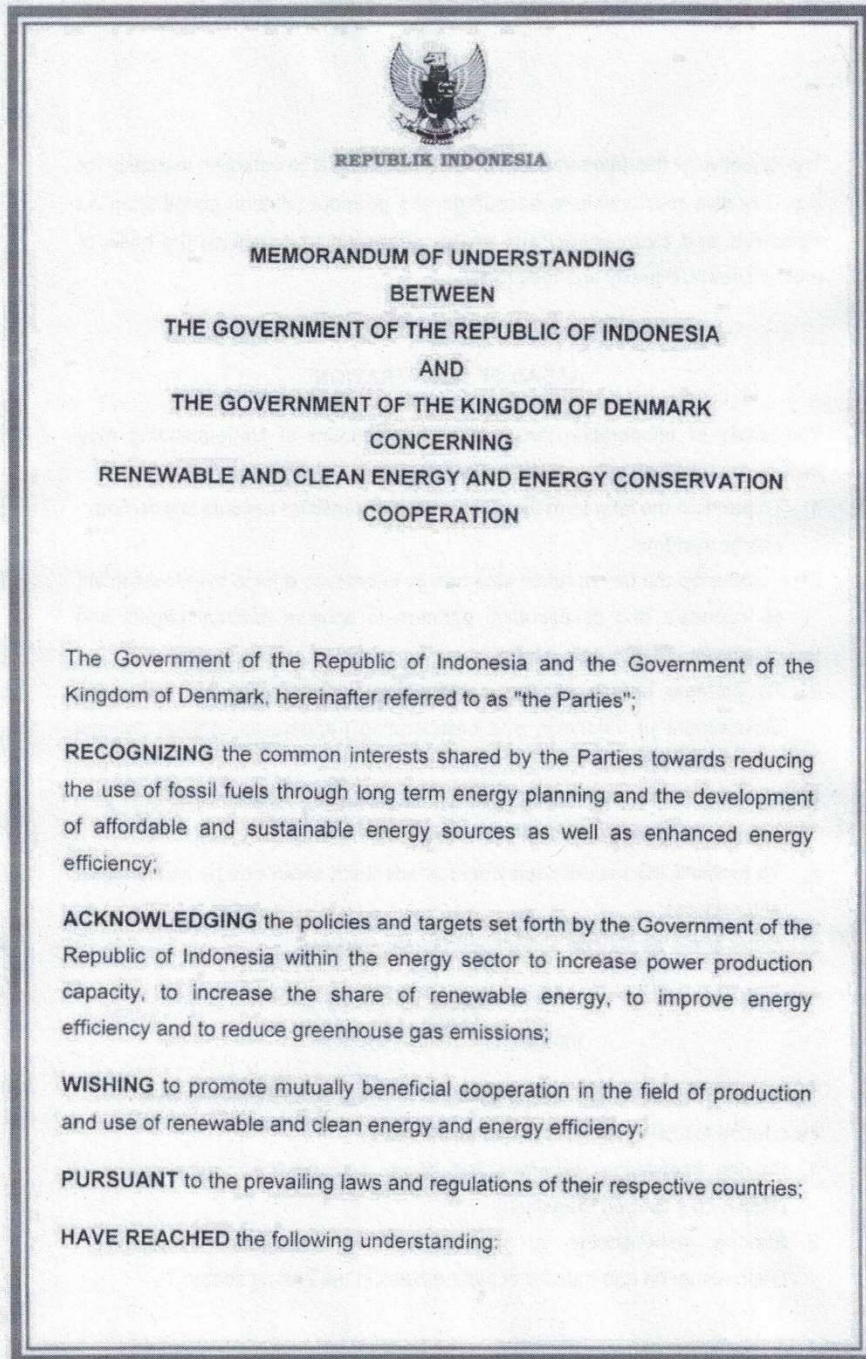
Annex 15: Responses to the Danida Programme Committee Conclusions

The table below summarised how the formulation has addressed the conclusions from the Danida Programme Committee (PC)

PC Conclusions on Concept Note	How addressed
Take into consideration lessons learned from DEPP: The role of the Danish Embassy with respect to the important and necessary higher-level policy dialogue,	Mentioned in the ToC and the Management set-up
Take into consideration lessons learned from DEPP: The relation between the SSC advisor and the LTAs positioned in the partner institutions	Reflected in the Management set-up
Take into consideration lessons learned from DEPP: The day-to-day setup and work mode for the LTAs and national counterparts	Reflected in the draft outline LTA job profiles
Take into consideration lessons learned from DEPP: Ensuring similar budget and cost structure.	Addressed in the budget structure in Annex 4
Focus the project on deliveries within the four major outcomes and lower the ambitions with respect to wider effects and impacts.	Reduced number of outcomes to 3.
Focused and simplified Theory of Change	Simplified ToC section 3.2
Further describing causes and effects, risk and assumptions.	Description of causes and effects, risk and assumptions section 3.2
Better description of expected socio-economic effects of the programme.	Description included in section 3.4 (cross-cutting issues and Annex 1)
Develop monitoring framework (results linked to the Nationally Determined Contributions (NDC) and alignments with recipient institutions' strategies (important for ownership and incentive structures) during formulation process.	Development of indicators aligned in consultation with Indonesian partners and aligned with their strategies. Annex 3 and 12 (Results Framework)
Include support to Covid-19 recovery plan	Mentioned in the results framework
DDD principles to build the necessary flexibility and adaptability of the program, not only with respect to changes in the institutional/political context, but also to be able to adapt into the capacity and responsiveness of the partners to uptake of knowledge and capacity development	Doing Development Differently is a new concept under development in the MFA – its implications for INDODEPP include flexibility in work planning that will be agreed by the INDODEPP governance and management structure, a demand-driven approach to capacity development that goes beyond training of individuals to a focus on institutional learning, and an emphasis on synergies with Danish multilateral cooperation.
Proper results framework with key annual indicators	Annex 3 and 12 (Results Framework)
Effective response dialogue with key partners to disclose and react upon lack of progress or needs for change in implementation strategy.	Section 4 (Management set-up) and approach to work planning
Increased transparency and anti-corruption as a prioritized cross-cutting issue with the programme	Transparency underlined in the PD and the project focus on modelling and planning and improved data on EE

	have a strong transparency focus. No funds are channelled through partner institutions.
Steering Committee approves annual work plans and budgets, and the project managements team reports on achievements in accordance with the approve results framework and targets.	Included in Section 4 Management set-up
The SC to decide on major changes and deviations if needed. In this way the coordination between the use of TA within various instruments can be coordinated and applied strategically. DEA should be responsible for day-to-day administration.	Section 4 Management set-up.
Describe the management setup in Copenhagen between MFA and KEFM, e.g. linking it to the current Advisory Group for other energy programmes financed by the Climate Envelope.	Mentioned in the Management set-up

Annex 16: MoU between Indonesia and Denmark



Article I
OBJECTIVE

The objective of this Memorandum of Understanding is to establish the basis for a cooperative relationship to encourage and promote bilateral cooperation on renewable and clean energy and energy conservation issues on the basis of mutual benefit, equality and reciprocity.

Article II
AREAS OF COOPERATION

The areas of cooperation under this Memorandum of Understanding may include the following subjects of mutual interests:

1. To promote the long term development for a transition towards low carbon energy systems;
2. To develop the use of renewable energy in order to enable the Government of Indonesia and collaborating partners to achieve national targets and objectives of renewable energy;
3. To promote energy efficiency and energy conservation to enable the Government of Indonesia and collaborating partners to achieve national targets and objectives;
4. To facilitate the overall deployment of adequate renewable energy and energy efficiency technologies and services;
5. To facilitate the overall deployment of adequate clean energy technologies and services;
6. Other areas as may be agreed upon by the Parties.

Article III
FORMS OF COOPERATION

The forms of cooperation under this Memorandum of Understanding may include the following subjects of mutual interests:

1. Sharing knowledge, expertise and lesson learned from four decades of Danish Low Carbon Transition;
2. Sharing experiences in making policies regulation in planning, implementation and transfer of technologies in the energy sector;

3. Developing capacity building, education and services;
4. Other forms as may be agreed upon by the Parties.

Article IV

IMPLEMENTATION

1. Cooperation between the Parties under this Memorandum of Understanding may be conducted in the form of:
 - a. A three year (2016-2018) Strategic Sector Cooperation on energy planning, renewable and clean energy, energy efficiency and energy conservation.
 - b. Other forms of renewable and clean energy, energy efficiency and energy conservation cooperation as mutually agreed upon that could include public and/or private sector stakeholders.
 - c. Develop pilot projects for renewable energy, energy efficiency and energy conservation, also taking into consideration and seeking synergies with similar activities under the Environmental Support Programme Phase 3 (ESP3) 2013-2018.
 - d. Develop pilot projects for clean energy.
2. The detailed provisions relating to forms, methods, financial obligations and the condition of the agreed areas of cooperation shall be set forth in separate implementing arrangements to be concluded between the Parties.
3. Separate implementing arrangements may be concluded between other relevant stakeholders. This may include where relevant the engagement of the private sector and may facilitate business to business cooperation.

Article V

EXECUTING INSTITUTION

The Executing Institutions for this cooperation shall be:

1. For the Government of the Republic of Indonesia: the Ministry of Energy and Mineral Resources; and
2. For the Government of the Kingdom of Denmark: the Ministry of Energy, Utilities and Climate.

Article VI
WORKING GROUP

1. For the purpose of discussion and implementation of various issues pertaining of this Memorandum of Understanding, the Parties may set up a Joint Working Group. The Joint Working Group will elaborate cooperation under this Memorandum of Understanding.
2. The Joint Working Group, consisting of the representatives of the Parties, may meet periodically on mutually determined dates by the Parties alternately in Indonesia and Denmark. Each Party will cover its expenses relating to participation in the meetings of a Joint Working Group.

Article VII
PARTICIPATION OF THIRD PARTIES

When it is considered essential, the Joint Working Group may invite third parties participation from scientific institutions, research centres, universities, the private sector or any other entity for the implementation of this Memorandum of Understanding.

Article VIII
CONFIDENTIALITY

1. Each Party shall undertake to observe the confidentiality and secrecy of confidential documents, information and other data received or supplied directly or indirectly to the other Party under this Memorandum of Understanding.
2. If either of the Party wishes to disclose confidential activities under this Memorandum of Understanding to any third party, the disclosing Party must obtain prior consent from the other Party before any disclosure can be made.
3. The provisions of this Article shall not prejudice the prevailing laws and regulations of the Parties.

Article IX
INTELLECTUAL PROPERTY RIGHTS

1. The protection of intellectual property rights shall be enforced in accordance with laws and regulations of the Parties.
2. The Parties agree that any intellectual property arising from the implementation of this Memorandum of Understanding will be jointly owned and its utilization shall be subject to a separate arrangement between the Parties.

Article X
LIMITATION OF PERSONNEL ACTIVITIES

Any nationals of a Party engaged in activities under this Memorandum of Understanding in the territory of the other Party shall respect and not interfere with the political independence, sovereignty, and territorial integrity of the latter, and avoid any activities inconsistent with the purpose and objectives of this MoU.

Article XI
SETTLEMENT OF DIFFERENCES

Any differences arising out this Memorandum of Understanding may be settled amicably by mutual consultation or negotiation between the Parties, through diplomatic channels.

Article XII
AMENDMENT

This Memorandum of Understanding can be amended at any time by mutual written consent of the Parties. Any amendments may come into force on the date agreed by the Parties. The amendments shall form as an integral part of this Memorandum of Understanding.

Article XIII

ENTRY INTO FORCE, DURATION AND TERMINATION

1. This Memorandum of Understanding shall enter into force on the date of its signing.
2. This Memorandum of Understanding shall remain for a period of 3 (three) years and shall be automatically renewed for consecutive periods of 3 (three) years.
3. Either Parties may terminate this Memorandum of Understanding at any time by giving written notification to the other Parties regarding its intention to terminate this Memorandum of Understanding at least 90 (ninety) days prior to the intended date of termination.
4. Termination shall not affect the completion of program made under this Memorandum of Understanding, unless the Parties agree otherwise.

IN WITNESS WHEREOF, the undersigned, have signed this Memorandum of Understanding.

DONE in duplicate at Jakarta on 22 October 2015 in English and Indonesian, all texts being equally authentic. In case of any divergence in interpretation, the English text shall prevail.

**FOR THE GOVERNMENT OF THE
KINGDOM OF DENMARK**

Signed

Lars Christian Lilleholt
Minister for Energy, Utilities and Climate

**FOR THE GOVERNMENT OF THE
REPUBLIC OF INDONESIA**

Signed

Sudirman Said
Minister of Energy and Mineral Resources

Annex 17: Memorandum of meeting with MEMR, Biro KLIK

Note: the memorandum of the meeting has been included here unchanged – but INDODEPP is now consistently referred to as a project and it will not be the project document that is to be signed by both parties in September 2020 but rather the Consultation Document presented to the Steering Committee Meeting on 29 September.

Date/Time	Friday, 14 August 2020, 08:00 – 09:00
Venue	Online meeting
Participants	MEMR, <i>Biro KLIK</i> 1. Ibu Gita Lestari 2. Bapak Vagunadi Royal Danish Embassy 3. Thomas Capral Henriksen 4. Nindya Natasasmita PEMconsult: 5. Devina Anasusron 6. Monica Kappiantari
MEETING DESCRIPTION	
Objectives	Understanding the agreement process for the preparation of Indonesia-Denmark Energy Partnership Programme 2021-2025
Notes and results	<p>The Embassy</p> <ol style="list-style-type: none"> The Indonesia-Denmark Energy Partnership Programme (“the Programme”) will start in 2021 and end in 2025 In order to get the Programme approved by the Danish Ministry of Foreign Affairs the programme document needs to be signed by both parties in September 2020 The Danish Energy Agency (DEA) will sign the agreement related to the Programme <p>MEMR, <i>Biro KLIK</i></p> <p><u>Agreement process:</u></p> <ol style="list-style-type: none"> The agreement related to the Programme will refer to the MoU between the Danish Government (MEUC) and Indonesian Government (MEMR) signed in 2015 and amended in 2018 There is no need to renew the MoU, since the MoU lasts in 2024 without requiring renewal process in between The MoU does not restrict the implementation period of programme activities after 2024, thus the Programme can last in 2025 even if the MoU should not be extended Director General of EBTKE on behalf of MEMR will sign the agreement <p><u>Implementation Agreement</u></p> <ol style="list-style-type: none"> If the Programme to be recorded at the Ministry of Finance (MoF) as (Technical Assistance) grant to MEMR, both parties (DG EBTKE & DEA) to sign the Implementation Agreement (IA) The IA will at least consist of: <ul style="list-style-type: none"> Overall objectives and outcomes

	<ul style="list-style-type: none"> • Contributions of each party • Steering structure and management setup <p>10. If the Programme involves other parties (in addition to EBTKE) as partners, i.e. PLN and DGE MEMR, those parties can be mentioned in the IA with specific roles and responsibilities related to specific outcomes and/or in the steering structure</p> <p>11. PLN and DGE do not need to sign separate agreements; PLN as a SoE cannot sign the (grant) agreement</p> <p>12. If the IA signed, MEMR can facilitate administrative process to provide</p> <ul style="list-style-type: none"> • Tax exemption • Visas, working permits and relevant permits for the Long-Term Advisor(s) assigned by DEA <p><u>Coordination with BAPPENAS</u></p> <p>13. BAPPENAS does not need to be involved in the agreement signing since the activities of this Programme will not directly involve BAPPENAS</p> <p>14. If it is required during the preparation of the Programme, MEMR will do coordination with BAPPENAS</p> <p><u>IA Implementation and Reporting mechanism</u></p> <p>15. Once the IA signed, MEMR will register the Programme to MoF and receive a “Registration Number”</p> <p>16. MEMR will send quarterly report (<i>BAST: Berita Acara Serah Terima</i>) of the Programme using the “Registration Number” to MoF and BAPPENAS. As the Programme will provide technical assistance without any direct funds flow, the report will mention TA expenditure and short description of the TA activities</p> <p>17. If other parties involved in the Programme as partners, the parties (i.e. DGE) will submit their respective BAST using the “Registration Number” in specific outcomes/outputs to MEMR. As PLN is an SoE, its BAST will be signed by DGE for PLN’s outcomes/outputs.</p>
Follow-up	<p>1. The Embassy to send the minutes to Biro KLIK to get confirmation whether process and procedures are understood correctly</p> <p>2. Biro KLIK to send IA template to the Embassy</p> <p>3. Question to MEMR: would it be possible to get the MEMR’s RENSTRA draft 2020-2024?</p>
Attachment	n/a

Summary of recommendations of the appraisal

Title of Project	Indonesia-Denmark Energy Partnership Project (INDODEPP) 2020-2025
File number/F2 reference	F2 2020-34198
Appraisal report date	30. September, 2020
Council for Development Policy meeting date	28. October, 2020
Summary of possible recommendations not followed The Danish Energy Agency (DEA) welcomes the recommendations from the appraisal of INDODEPP 2020-2025. As described in the “follow up” column in the table below all recommendations have been reflected in the final project document.	

Overall conclusion of the appraisal: According to the Ministry of Foreign Affairs (MFA) guidelines for project and programme management (2019) the purpose of an appraisal in the preparation of Danish aid programmes is “to provide the final quality assurance check before a funding decision” and this report represents the documentation of this process.

The appraisal of the proposed INDODEPP has been conducted as an *in-process* appraisal, where the formulation and appraisal was conducted simultaneously. in parallel. A detailed assessment was therefore conducted of the second draft of the project document reflecting the recommendations in the present version of Annex 9. A final read-through of the third draft (and final project document) was made to ensure compliance with DANIDA Danida Aid Management Guidelines which in general demonstrated that the recommendations of the Appraisal Team have been addressed.

Reducing CO₂ emissions by improving energy modelling and planning is the overall objective of INDODEPP. Furthermore the project will introduce the possibilities of using renewable energy sources (e.g. wind and solar); and, promulgating energy efficiency measures (in buildings and industry) to reduce the intensity of energy consumption and constrain the growth in demand for power.

INDODEPP is highly relevant in terms of reflecting Danish ambitions of support to the implementation of the Paris Agreement and the Danish SDG7-leadership as well as the government’s objective of strengthening Danish green diplomacy. The project is also much aligned with the Danish strategy for development cooperation and humanitarian action “The World 2030”, the Danish Climate Envelope and the Danish Climate Act of 2019.

Partners¹ from the Indonesian energy administration have continuously asked for Danish support in order to help reaching Indonesia’s Nationally Determined Contributions (NDC, Paris Agreement). Specifically DEA and the Indonesian partners have had substantial discussions on Indonesia’s NDC target to achieve 23 percent of renewable energy by 2025. It is a clear wish from the Indonesian side that Denmark (DEA) engages in cooperation on the regulative processes and the technical matters behind a transition towards a sustainable and low carbon pathway (for Indonesia). INDODEPP mirrors that approach used by Denmark in other emerging and rapidly growing economies, which have been effective in achieving transformational change to reduce CO₂ emissions (China and Vietnam, DEPP). The project adopts the DEA’s Government-to-Government approach, a tested and proven delivery mechanism. INDODEPP will take a stand in previous and current cooperation with Indonesia on the green agenda (see footnote no. 1).

The project document outlines three outcomes and an "indicative list" of activities. Extensive work has been done through iterative discussions with partners. This to ensure project outputs meet partner’s demands and align with national ambitions/work plans. The document does leave flexibility to select (new) specific activities in response to partner’s immediate needs as the project progresses. This approach needs to be informed by an overall strategy so that the interventions still form a coherent package that can bring about the intended changes.

The basic design of the program is considered sound, but there remained several areas where the path from the program outcomes to the desired changes could be strengthened in the second draft of the PD, and it was not entirely clear that the program resources were sufficient for the level of ambition to which the program aspires. Further, it was recommended to streamline flow between indicators, targets and agreed institutional changes, and it was therefore recommended to follow up with an Inception Review or

early mid-term review. Lastly, the appraisal team note that, after a read through of the draft final project document, the project document now is appropriate and that recommendations of the appraisal team have been addressed. The project is recommended for approval with minor adjustments.	
Recommendations by the appraisal team	Follow up by the responsible unit
<i>Political economy of the energy and climate sectors in Indonesia relating to Project aims</i>	
Recommendation No. 1. The PD should include a section on the political economy of the energy sector in Indonesia that addresses key influencers and their underlying objectives and motivations and explains how this influence project design, risks and risk response.	Chapter 2 in the PD now addresses the political economy of the energy sector in Indonesia describing key challenges and identifying key influencers. Furthermore, Annex 1 describes objectives and motivations. Section 3.2 holds the risk analysis and Annex 5 presents a risk matrix where risk-responses are summarised.
Strategic Technical Assistance	
Recommendation No. 2. The PD should include a section describing the strategic choices made to address the challenges of working in Indonesia using the chosen modality and with the limited inputs available. The section should include, <i>inter alia</i> , a description of the points of entry, leverage and synergy with ongoing cooperation and other development partners; and, the selection, use and management of technical long-term advisors and/or consultants.	Accordingly strategic choices made to address the challenges are described in chapter 2 in the PD, including the chosen entry points, partners and linkages with interventions supported by other development partners – not least those supported by Denmark through multilateral organizations. Chapter 2 also explains the rationale for the government-to-government technical assistance delivery modality (e.g. DEA short-term inputs, embedded long-term advisors, and external consultants).
<i>Theory of change</i>	

¹ Denmark has previously been collaborating with Indonesian partners under the Environmental Support Programme (ESP) and is currently cooperation with the Indonesian energy authorities in the Strategic Sector Cooperation (SSC).

<p>Recommendation No. 3. The theory of change could be strengthened so that the outputs include the policy, legislative and guidance instruments that will be necessary to effect the desired changes. This could be done by linking outputs to outcomes and the outcomes to impact. At each stage, the desired change should be worded more precisely so the success of interventions can be assessed and monitored.</p>	<p>Regarding outputs: key instruments such as one stop shop, energy efficiency standards and grid codes have been included.</p> <p>Regarding theory of change: the seven standard questions of theory of change from DANIDA Guidelines are now answered. In short, the desired change is to pave the way for integration of a larger share of renewable energy, and improved energy efficiency in the Indonesian energy system. A flexible approach in the collaboration is key and therefore the project work aims at different stages (e.g. technical assistance, regulatory recommendations, and policy dialogue and climate diplomacy).</p>
<p>Capacity development strategy</p>	
<p>Recommendation No. 4. The PD should include a capacity development strategy, as capacity development is the cornerstone of the project. This should reflect the recently revised approach to Capacity Development that has been adopted by the Danish Energy Agency and include information on what the strategy and approach to capacity development will be, why this approach has been chosen, and give an indication of the current capacities of the partners, what internal resources they have access to and what their priorities and needs are. If information is not available at this stage, the PD should describe work that will be done during the transition period to the new project.</p>	<p>A capacity development strategy is added in Chapter 2 (PD) and in detail in annex 10. The approach is inspired by the similar strategy used in DEPIII 2020-2025, and it reflects experiences from working with the Indonesian partners. Currently available information on partner capacity is provided in the PD. Further needs for information are taken into consideration and will be explored in the context of current SSC-cooperation up until the start of INDODEPP. Lastly, it should be mentioned that capacity development as an approach and theme was also discussed at the Danish-Indonesian Steering Committee at the meeting on September 29th 2020. At the meeting, the Danish side expressed the importance of partners take in the best practice experiences from DEA and assimilated the ideas and concepts in their institutions – also beyond the project timespan.</p>
<p>Lessons learned</p>	

<p>Recommendation No. 5. The section on “lessons learned” should be expanded to indicate where positive and negative experience has been derived from reviews, appraisals and board submissions of similar Danish Energy Agency programmes and how this experience has been used to form the project design.</p>	<p>Lessons learned from DEPP II (2017-2020) and the ongoing SSC-projects have now been included in Chapter 2. Furthermore, experiences from other similar interventions supported by DEA are reflected. In addition, the recommendations of the Council for Development Policy on DEPP III (meeting on September 10th 2020) has been taken into account.</p>
<p>Choice of partners</p>	
<p>Recommendation No. 6. The selection of partners should be justified, and the selection criteria explained. Such justification should include reference to: demand for the support, willingness to commit resources to the project; institutional remit; ability to undertake, promote or influence the changes necessary to achieve outcomes; and, current institutional capacity. In addition, there should be a brief description of other potential partners who might have been considered but were ultimately rejected. Other key stakeholders should be identified and a strategy for their involvement should be presented.</p>	<p>Justification of the selected partners has been added and detailed in the text. In this regard, it is important to note that the selection reflects the Indonesian mandates for the specific project outputs, which has also been tested and confirmed by the current SSC-projects. As such, there are no alternatives to the chosen (primary) partners. Following the advice and guidance of the Indonesian partners a wide range of stakeholders (at national and regional level) have been included.</p> <p>Partner choice is described in Chapter 3 and in Annex 2.</p>
<p><i>Cross cutting issues</i></p>	

<p>Recommendation No. 7. The PD should describe how the project will address the principles of the Human Right-Based Approach and the measures that will be taken to ensure that Danish gender, youth and environment policy will be met. Further, broader development impacts from the Danish support could be described in more details by outlining synergies to growth, affordable energy and employment.</p> <p>The principle of a “just transition” whereby change should take place within a framework that secures workers' jobs and livelihoods and protects the most vulnerable, should be integrated into implementation planning.</p> <p>Where the support will contribute to developments that have potential significant social or environmental effects/impacts, (e.g. policy changes that promote changes in modes of power generation or establishing wind farms in specific locations) the PD should describe procedures that will ensure proper assessment of the policy or project. Any costs of such procedures should be reflected in the budget.</p>	<p>Section 3.4 (PD) describes how the Human Right-Based Approach (HRBA) is addressed. Also reflections on broader development impacts including ‘just transition’ are presented.</p> <p>In the case of a tender process for a wind pilot it will be of uttermost importance and priority to ensure that an Environmental and Social Impact Assessment (ESIA) is conducted. The ESIA will be financed by the potential investor e.g PLN which is an Indonesian State-Owned Electricity Utility. No budget allocation from the INDODEPP project is expected. If relevant and timely, DEA may promote a Strategic Environmental Assessment at policy and programming level. Finally, it is noted that the <i>capacity development strategy</i> mentions the need to consider including modules on HRBA aspects and ESIA best practise in the capacity development activities with the provinces.</p>
<p>Results Framework (version presented in the 2nd draft project document)</p>	

<p>Recommendation No. 8. The project outcomes should be formulated in a way so they can be objectively assessed and monitored. To assisted monitoring, a baseline, a mid-term target and an end of project target should be included in the Results Framework for all outputs and outcomes. Targets and indicators should be formulated to ensure that they are truly Specific, Measurable, Achievable, Relevant and Time-bound (SMART). Since this is work in progress, there should be follow up with an inception review or early mid-term review.</p>	<p>Following recommendation #8 the PD was revised and extra attention was given to make sure that indicators capture both specific capacity development aspects and are Specific, Measurable, Achievable, Relevant and Time-bound (SMART). Further, the result framework was improved and more clear, transparent and measureable mid-term targets and end-targets for each output were defined. The improved results framework was finally agreed upon with the Indonesian partners at the steering committee meeting on 29th of September 2020. At the meeting the “<i>consultation document</i>²” including the result framework was signed by Ministry of Energy and Mineral Resources and DEA. See Annex 12 for the consultation document.</p> <p>Finally, it is noted that the programme committee (23rd of June) suggested not having an inception phase but rather plan for an early mid-term review. Accordingly, DEA has agreed on an early mid-term review with the Indonesian partners and that annual work plans and progress reports must support relevant and time-bound activities and transparent monitoring.</p>
<p>Budget</p>	
<p>Recommendation No. 9. The PD should include some explanatory text with the budget that describes how much time short term consultants will spend in contact with Indonesian counterparts and why this will be sufficient. It is necessary to develop specific criteria for how to allocate unallocated funds. A standard paragraph on Anti-Corruption Measures should be included or an explanation of why this is not relevant.</p>	<p>The PD has been updated with the ratio of field to home office work and the criteria for use of unallocated funds have revised. In addition, the implementation manual of DEPP II 2017-2020 has been consulted in order to align INDODEPP with previous designs of DEPP. Anti-Corruption Measures are addressed in the PD.</p>
<p>Management</p>	

² The Consultation Document was drafted to ease the process of consultations with partners. The document included the results framework at outcome and output levels and introduced the activities, outputs and outcomes.

<p>Recommendation No. 10: Key management roles and functions should be more fully defined to include the roles of the Steering Committee, responsibility for decisions on unallocated funds and on reallocation of funds between outcomes; reporting hierarchies including arrangements for the management of Long-Term Advisors; responsibility for monitoring the outcomes and outputs and especially the progress in capacity development. Also, description of arrangements for coordination between the SSC and INDODEPP including the role of the energy sector counsellor should be included.</p>	<p>Following recommendation # 10 the PD contains information on:</p> <ul style="list-style-type: none"> • Description of the role of the steering committee, the role of the project management teams and role of the sector counsellor • The responsibility for decisions on unallocated funds • The responsibility for monitoring of outcomes and outputs <p>The coordination of the SSC and INDODEPP will mainly be adjusted in sessions with the joint steering committee (e.g. when work plans and budgets are approved).</p>
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I hereby confirm that the above-mentioned issues have been addressed properly as part of the appraisal and that the appraisal team has provided the recommendations stated above.

Signed in..... on the

Appraisal Team leader/TQS representative

I hereby confirm that the responsible unit has undertaken the follow-up activities stated above. In cases where recommendations have not been accepted, reasons for this are given either in the table or in the notes enclosed.

Signed in.....on the.....

Head of Unit/Mission