



Danish Energy
Agency

The joint
Danish-Indonesian
cooperation on
climate and energy



Key Data

Indonesia

Population (millions):	261.1 (2016)
CO ₂ -emissions (Mega tonnes):	441.9 (2015)
CO ₂ (t/capita):	1.17 (2015)
kg CO ₂ /GDP:	0.45 (2015)
Investment in RE (billion \$US):	0.5 (2016)

Source: IEA 2017, WorldBank 2016 and Frankfurt School-UNEP Centre/BNEF 2017

NDC goals - Indonesia

Indonesia has set unconditional reduction target of 29% and conditional reduction target up to 41 % of the business as usual scenario by 2030.



Denmark

Population (millions):	5.7 (2016)
CO ₂ -emissions (Mega tonnes):	32 (2015)
CO ₂ (t/capita):	5.63 (2015)
kg CO ₂ /GDP:	0.09 (2015)
Investment in RE (billion \$US):	2.5 (2016)

Source: IEA 2017, WorldBank 2016 and Frankfurt School-UNEP Centre/BNEF 2017



Green government-to-government cooperation

Inclusive, sustainable growth and development is a strategic objective of Denmark's development cooperation. Economies in transition and emerging economies are considered key players for achieving the global Sustainable Development Goals and it is important to provide support for their sustainable development, as they demand expertise, knowledge, technologies and investments to make appropriate strategic choices for their sustainable development. This is not least true with regard to development of their energy sector.

The Danish Energy Agency's global cooperation intends to assist partner countries with their transition to a low carbon pathway reaching the National Determined Contribution (NDC) targets they committed to at COP21.

The primary modality of the Danish Energy Agency is to engage in government-to-government cooperation to promote the common climate change agenda. It strives for true peer-to-peer exchange to advance the understanding of policy options, strengthen planning - and framework conditions, and strengthen enforcement of regulation.

The goal of the government-to-government cooperation between Denmark and Indonesia is to support Indonesia in its ambitious transition towards a low carbon energy sector transferring valuable Danish lessons learned on long term energy planning, RE integration and Energy Efficiency.

Facing the challenges

Indonesia has a population of 250 million of which 50% are under the age of 30 and where 13-14% of the population currently is living in areas without electricity.

Indonesia has a fast growing economy with an average annual growth rate of 6.2% between 2010 and 2013 and is member of G20. The expanding middleclass living in the urban areas implies increasing demand for high quality energy services and the energy demand in Indonesia has grown with 8.5% annually in the past 5 years. In order to expand the grid in the rural areas and to meet the demand in the urban areas, the Indonesian Government is currently planning how to expand the grid best possible in the future in order to supply all with cheap, reliable and preferably clean electricity.

Despite Indonesia's recent growth history, the electrification rate in Indonesia is a mere 86 % and the average electricity consumption per capita is 733 kWh - about half of the consumption of the ASEAN countries on average. The lack of access to electricity in the rural areas of Indonesia affects 30 million Indonesians in more than 10,000 villages and the lack of electricity affects - among others – local businesses, communal services e.g. education, health, etc..

Today, Indonesia's energy mix consists of mainly oil (41%), coal (29%) and natural gas (24%) and only 6% derives from renewable energy (RE) sources.

Another major challenge is Indonesia being the 6th largest GHG emitter in the world and bigger cities struggle with air pollution. The GHG-emissions are largely due to the forestry use and slash and burn practices which are contributing with approx. 62%.

Indonesian oil production has declined in recent years leading to a dependency on import of crude oil and oil products. Indonesia, with its 250 million people, therefore has an increasing wish in transforming their energy system in order to lower their dependency on oil import, reduce their CO2 emissions and secure electricity supply in urban and rural areas.

Indonesia also has abundant coal resources and is the world's 4th largest producer of coal .. According to the existing electricity plans it is therefore expected that almost 70% of the power capacity to be installed over the 5 years will be coal based.

The national Climate Change target in Indonesia is that renewable energy shall account for 23% of the primary energy mix in 2025, and that greenhouse gas emissions shall be reduced with 29% (or 41 % with international support) before 2030. Within Energy Efficiency the target is to reduce energy intensity with 1 % annually.





The many energy challenges in Indonesia calls for an energy reform with a holistic approach, not just in regard to the production of energy or use of energy efficient measures, but also in regard to long term energy planning and the definition (modelling) of future energy demand.

Joint effort to accelerate green development

The Danish government has initiated a government to government cooperation with Indonesia on energy to strengthen the partnership between the two countries.

The framework of the partnership between Indonesia and Denmark is a Memorandum of Understanding (MoU) that was signed between the Indonesian Ministry of Energy and Mineral Resources (MEMR) and the

Danish Ministry of Energy, Utilities and Climate on October 22, 2015.

Sector Cooperation

The energy partnership comprises a Strategic Sector Cooperation (SSC) program, which facilitates government-to-government collaboration within the renewable energy transition where Denmark has decades of experience, that is very valuable to Indonesia when transferred into an Indonesian context. Experiences include low carbon transition, scenarios and long-term planning, and a gradual reduction of energy intensity.

The nature of the SSC is a peer-to-peer cooperation between departments in the Indonesian and Danish energy and climate ministries, making Danish experience available and relevant in the Indonesian



context. In addition, the cooperation aims at bringing together the private sector and stakeholders where relevant.

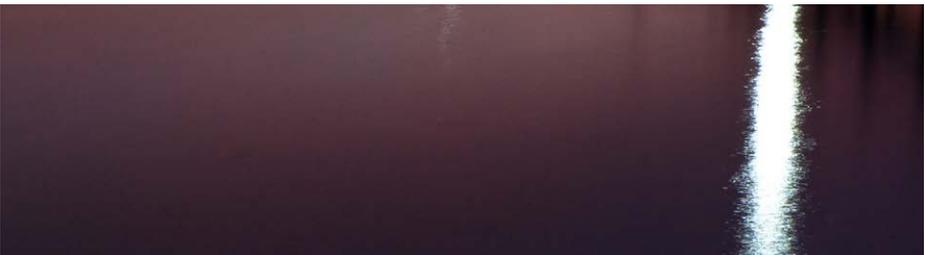
The current SSC is a three year program from 2016-2018 and a new program from 2019-2021 is currently being developed in order to continue the fruitful cooperation between Denmark and Indonesia. The new program will continue to assist the Indonesian government agencies and other relevant stakeholders in developing relevant policies, strategies and solutions to increase the electrification rate and to achieve the government's long-term RE and EE objectives.

The cooperation is on both technical and institutional level and the main outcome of the SSC will be the support to improved modelling and energy planning, extended integration of RE in the energy system and the reduction of the energy demand through EE measures.

The cooperation is managed by the Danish Energy Agency in Denmark and is supported by a Danish Energy advisor who is posted at the Danish Embassy in Jakarta.

The work program was developed in close cooperation with MEMR and NEC and PLN is an active partner in the implementation. The work program is divided into three main components:

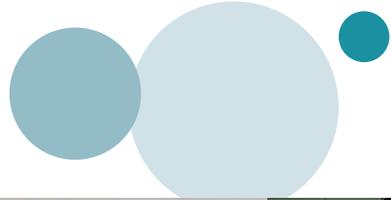
1. "Modelling and long term energy planning". Focusing on energy model design, new modelling tools and consolidation of energy data such as: technology catalogues, energy forecasting and cost benefit calculations and developing the Indonesian Energy Outlook. Furthermore Danish lessons learned within strategic energy planning is transferred to the regional energy planning





2. "Renewable energy integration". The main output of this component is to transfer Danish experiences within integration of fluctuating renewable energy into the power system and through work sessions discussing technical and regulatory aspects of renewable energy integration

3. "Energy Efficiency". Assisting in the development of the Indonesian National Master Plan on Energy Efficiency and transferring Danish lessons learned within EE within the Industry and building sector.





The Danish Energy Agency's Centre for Global Cooperation supports emerging economies to combine sustainable future energy supplies with economic growth. The initiative is based on four decades of Danish experience with renewable energy and energy efficiency, transforming the energy sectors to deploy increasingly more low-carbon technologies.

Learn more on our website:

<https://ens.dk/en/our-responsibilities/global-cooperation/country-cooperation>

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