



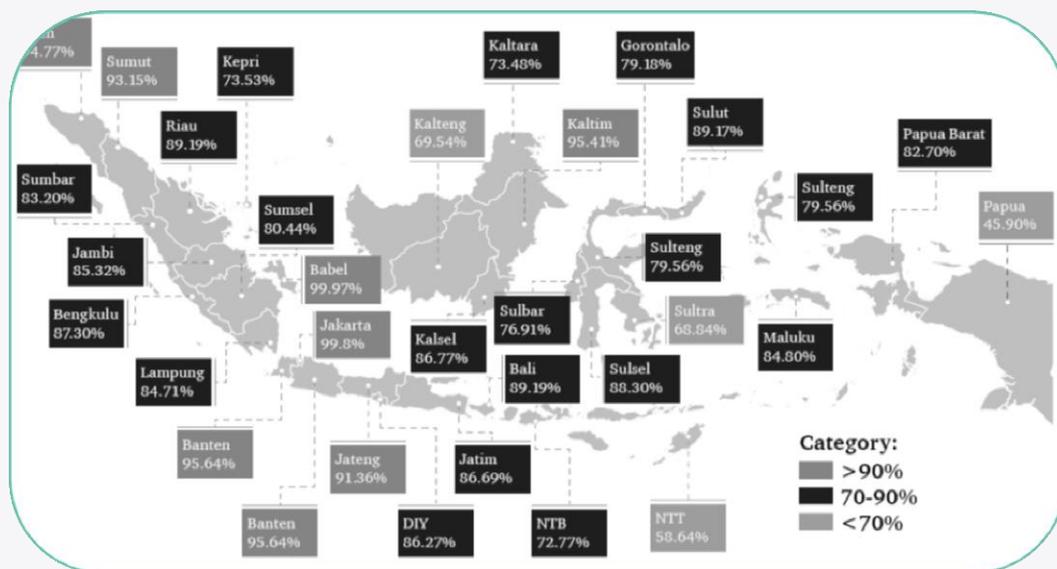
RENEWABLE ENERGY FIELD STUDY - EASTERN INDONESIA

The Australian Consulate-General in Makassar, in cooperation with the [Australia-Indonesia Centre](#) (AIC) Energy Cluster, will organise a Renewable Energy Field Study to Eastern Indonesia in March 2018. The field study will begin with a one-day seminar in Makassar with expert speakers from the AIC, from the state energy company PLN, from the Ministry of Energy and Mineral Resources, and from leading private sector renewable energy investors and experts in Indonesia. The second and third days will consist of field visits to a wind power project in development near Makassar, and an island off-grid PLN solar project in the Makassar Strait. Participants will then have the option of continuing on to a remote island energy study visit to Morotai, with the AIC.

BACKGROUND

To meet Indonesia's national development needs, President Joko Widodo has declared the goal of adding 35Gw (gigawatts) of power to the national network within the next few years. Most of this new energy will be supplied through private investment, mainly large-scale coal and gas power plants. A significant proportion however, will come from renewables: Indonesia has declared a renewable energy target of 23% by 2025 - twice current levels. There is potential for foreign investors to supply renewable energy into the national grid, run by state-owned enterprise PLN. For renewable energy projects over 10 Mw, up to 95% foreign ownership is permitted; between 1 – 10 Mw up to 49% is allowed, with the exception of geothermal at 67%.

Indonesia has made important strides towards universal access to power over the last decade, with an electrification rate of 84% (Asian Development Bank 2016). However, to provide electricity to the remaining 16% - some 42 million people – will be costly and technically challenging. Many of these people live in remote mountainous or island communities in eastern Indonesia. Below is a map of electrification rates across Indonesia (PWC 2016): in many cases it may be less costly to use renewable off-grid technologies, than extend the national grid to isolated districts, as has been assessed for the Island of Sumba, in East Nusa Tenggara (NTT). While there is not yet an over-arching policy framework for off-grid supply, there is recognition among national and provincial governments of the advantages of renewables and micro-grids in servicing remote communities, particularly in eastern Indonesia.



Electrification rates across Indonesia



While the regulatory and policy settings are evolving, Indonesia's energy plan, including the space for renewables and foreign investment, is captured in the Ministry of Energy and Mineral Resources [Business Plan for Supply of Electric Power \(RUPTL\)](#). For on-grid energy developments where the network already exists, this gives a detailed plan for energy projects to 2026, including allocations by province for foreign investment and renewable energy. Foreign investors are classified as Independent Power Producers (IPP). An IPP operates by obtaining a Purchasing Power Agreement (PPA) from PLN, as well as agreement from local government. If read in addition to the latest [ministerial decree on renewable energy No 50 2017](#), this provides a basis for understanding Indonesia's energy framework.

SOUTH SULAWESI FIELD SITES

South Sulawesi is unique in that it is one of only a few provinces on-track to meet the national renewable energy target. Renewable energy in the province comes mainly from larger hydro projects to the province's north and from neighbouring Central Sulawesi province. In addition, two 60 -74 Mw wind power projects are in development in Sidrap and Jeneponto regencies: these will be Indonesia's first large-scale wind power projects. Both are foreign IPP investments, and in both cases the IPPs have secured Power Purchasing Agreements (PPA) with PLN, as well as support from provincial and local governments and are planning to go online by end 2018. Moreover, the regency of Jeneponto is marketing itself as the wind energy capital of Indonesia and sees further potential for new projects. Local PLN advisors see limitations with the current grid, which may not be able to accommodate greater than 20% of power supplied from wind, without technology improvements - eg battery storage.

South Sulawesi has a near-90% electrification ratio: the remaining 10% of communities not yet connected to the grid are mainly in remote mountainous areas in the north or small island communities, eg in the Makassar Strait (Pangkep regency). Small but expensive PV systems – eg commercial 100kVa systems – have been installed by PLN in some island sites, but problems with maintenance and repair mean that communities can often go for months without power when systems fail after they have been installed.

AUSTRALIA-INDONESIA CENTRE ENERGY CLUSTER

The [Australia-Indonesia Centre \(AIC\)](#) has created an Energy Cluster of applied research projects to explore micro-grids and remote area networks, energy system transformation pathways and technology assessments. Projects will explore both local scale solutions and national scale strategy development. AIC Energy Cluster Co-Lead Dr Ariel Liebman and lead social researcher Dr Max Richter are leading on research, including into the socio-cultural and natural environmental factors that will influence renewable energy use in nine rural and remote districts. A recent Landscape Lifescape Analysis on Lombok, South Sulawesi and Sumba Island is available on the Australia-Indonesia Centre website: <http://australiaindonesiacentre.org/sumba-iconic-island-report-turning-alternative-renewables-reality-indonesia/>

REFERENCES

Asian Development Bank, 2016, Achieving Universal Energy Access in Indonesia, <https://www.adb.org/sites/default/files/publication/182314/achieving-electricity-access-ino.pdf>

Price Waterhouse Coopers Indonesia (PwC) November 2016. Power in Indonesia: investment and taxation guide, <https://www.pwc.com/id/en/energy-utilities-mining/assets/power/power-guide-2016.pdf>

Places are limited so for further information, or to express your interest in participating in this field study, please contact: Richard Mathews, Consul-General in Makassar, public-affairs-makassar@dfat.gov.au.