

# Forecast Development of Electricity Supply in the Indonesian Archipelago

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1. Indonesia archipelago country
2. Population growth 1,1%, at present population 250 M  
New data 16 % populations no electricity, before 30 %
3. Economy growth 5-6 % per year
4. Electricity demand growth 7% per year
5. Emission on the year 2020 should decrease 26 %

As a solutions, within the next five years the Indonesian Government plans to build power plants adding 35 GWe.

The forecast of electricity demand for 2050 will be around minimum 200 GWe

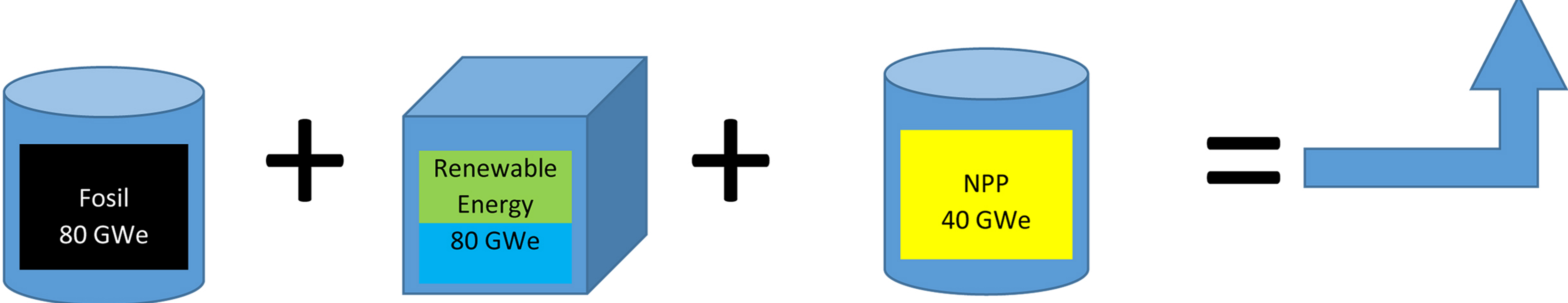


Figure 1 : Forecasting of potential location on the Map



Source: Analyzed by Tri Murni Soedyartomo, since 2012

Blue circle	Forecast location NPPs
Yellow square	Uranium resources
Red square	Thorium resources

Tabel 5: Forecasting of NPP Location in Indonesia

No	Location	Number of NPP	No	Location	Number of NPP	No	Location	Number of NPP
1	Panjang Island	4	4	Riau Island	6	7	East & North Kalimantan	6
2	Karimun Jawa Island	4	5	Bangka & Belitung Island	7	8	Madura	3
3	Tanah Laut Island	4	6	West & North Kalimantan	6			

## Discussion

Increased electricity generation is one of the keys to improve the quality of life Indonesian and achieving national prosperity. Indonesian Government Regulation Number 43 Of 2006 on Licensing Nuclear Reactors is the basis for building Nuclear Power Plants ( NPPs) in Indonesia, especially Chapter III Article 5, paragraph 3 on the construction, operation, and decommissioning of commercial or non commercial NPPs held by State-owned enterprises, cooperatives or private entities , and paragraph 4 on construction of commercial power reactors as referred to in paragraph (3) Nuclear power as a form of electricity generation, is determined by the minister responsible of electric power after consultation with the House of Representatives of the Republic of Indonesia.

The National Energy Council predicts that the demand for electricity will reach about by 400 GWe by 2050. Within the next 5 years (2015-2019) the Indonesian Government's plans to increase the provision of electricity by 35 GWe and under current conditions to generate power from renewables and fossil fuels. Moreover the Indonesian Government programme up to 2020 includes of green house gasses by 26%.

The forecast of electricity demand by the year 2050 of a minimum of 200 GWe is 50% of the National Energy Council's prediction and considers. The growth of the populations, economic and electricity demand. of these forecast of 200 GWe forecasting of electricity demands. 160 GWe will come from renewable and conventional energy sources and 40 GWe from alternative source such, as nuclear power. To meet the demand for electricity in Indonesia, an expansion strategy is needed for alternative sources of energy on the island between Kalimantan, east of Sumatra and north of Jawa islands, at location safe from earthquakes. Power plants are necessary to overcome the electricity crisis in Indonesia, by the empowerment of many small islands of the Indonesian archipelago. To overcome the power shortage with 40 GWe nuclear power, we need as many as 40 NPPs with a minimum of 1 GWe per year

## Conclusion

- Nuclear energy is vital to future prosperity and to the growth of the Indonesian economy and thus to improve the quality of life (Nawa Cita no.5).
- Nuclear energy makes a substantial contribution to the environment by generating electricity with almost no greenhouse gas emissions.
- The Indonesian Governments electricity demand will be 400 GWe in the year 2050. If the forecasting minimum electricity demand in Indonesia up to 2050 is estimated as 200 GWe, 80 GWe will come from renewable energy and 80 GWe from fossil fuel, coal and gas. To overcome the power shortage with 40 GWe from nuclear power we need as many as 40 NPPs with minimum 1 GWe each per year.
- The location of the NPPs will be in the Indonesian archipelago between the islands of Java Sea, the island of Kalimantan and the East Sumatra i