

EXECUTIVE SUMMARY

Human can't survive without electricity in this day and age. Unfortunately, the numbers of fossil fuels reservation - which is known to be the most common energy source for conventional power plants - has been decreasing for the past couple years. New problems have arisen due to the situation, including fuel price fluctuation and higher uncertainty for investment, but it also allows us to look at renewable energy sources as a possible solution to fulfil human needs.

East Nusa Tenggara (NTT) is a province in east Indonesia that requires a lot of investment, especially when it comes to infrastructure. In 2018, NTT has the lowest GDP per capita in Indonesia to the amount of Rp 14.9 million and has relatively lower electrification ratio (60.82%) compared to Indonesian electrification ratio (97.13%).

Based on Ministerial Decree of Energy and Mineral Resources Number 3051 K/30/MEM/2015, Sumba Island is appointed to be an iconic renewable energy island. By 2020, 95% of its electricity should be generated from renewable energy and it should be 100% by 2025. As per September 2018, however, Sumba Island only has 38% electrification. It means that there are still 62% unelectrified area in the island. Additionally, generating electric power has always been a challenge for PT PLN (Persero) Sumba Region.

Sumba Island's electricity is mostly generated from fossil fuels, specifically from diesel oil, causing a high cost of electricity (Rp 2,964/kWh = USD 0.20). The cost is stated in Regulation of Minister of Energy and Mineral Resources (MEMR) from Indonesian Government No 50/2017 and renewed in Ministerial Decree of Energy and Mineral Resources Number 55 K/20/MEM/2019.

On the other hand, PT PLN (Persero) delivers their electricity to citizens and industries with a price range between Rp 415 and Rp 1,644 / kWh. The price gap is automatically causing operational loss for PT PLN (Persero) Sumba region. Based on Indonesian Central Bureau of Statistics data in 2017, most of Sumba Island's citizens are poorly educated with no permanent jobs, making it difficult for them to fulfil their needs.

PT Raja Energi Nusantara (PT REN) finds an investment opportunity in Sumba Island in order to provide efficient and affordable biomass power plant. To run this project, PT REN will need strategic partnerships with local government, local companies, PT PLN (Persero) Sumba region and also investors or other financial institutions.

PT REN is ready to do investment in Sumba Island incorporated with local 'koperasi' to plant Red Calliandra plantation as biomass power plant energy resources. Biomass supply from citizens, local 'koperasi' and also support from local government are the key resources for PT REN in order to deliver affordable and sustainable electricity for PT PLN (Persero).

PT REN is ready to invest Rp 37 billion to local 'koperasi' to plant, train, and harvest Red Calliandra. PT REN will not take any financial profit from this plantation investment and local 'koperasi' will return the investment within 14 years. In exchange PT REN will get exclusive biomass feedstock guarantee for 25 years to generate electricity. All generated profit from plantation will be distributed to citizens and local cooperation.

PT REN will deliver the electric power to PT PLN (Persero) Sumba region through 20 kV transmission line with contract price Rp 2,519 equivalent with 17.68 cent USD for 25 years contract with BOT (Build, Operate, and Transfer) scheme. Currently this contract price is inline with the latest Regulation of MEMR 50/2017.

PT Raja Energi Nusantara will invest Rp 224 billion for this Biomass Power Plant Project in Sumba. This project has 70:30 debt to equity (DER) financing scheme, with 10 % interest rate in IRR. Based on company simulation, Biomass Power Plant Project has estimated 14% IRR Project in Rupiah and estimated 7 years break even point (BEP).