

ABSTRAK

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STUDI KELAYAKAN TEKNIS POTENSI PEMBANGKIT LISTRIK TENAGA MINI HYDRO DI DESA GOAL KECAMATAN SAHU TIMUR KABUPATEN HALMAHERA BARAT. (Studi kasus pada sungai Aklamo Kecamatan Sahu Timur Kabupaten Halmahera Barat).

Komitmen Pemerintah mengenai *net zero emission* (netralitas karbon) di tahun 2060 atau lebih awal. Salah satunya upaya penurunan emisi yaitu dengan pengesahan Rencana Umum Penyediaan Tenaga Listrik (RUPTL) PT Perusahaan Listrik Negara 2021 - 2030 dimana porsi sumber energi berbasis EBT melebihi porsi energi fosil, yaitu sebesar 51,6% atau setara dengan 20,9 Giga Watt (GW).

Air merupakan salah satu potensi untuk pengembangan energi terbarukan, seperti PLTM (Pembangkit Listrik Tenaga Mini Hydro). Indonesia memiliki Potensi Energi Baru Terbarukan (EBT) yang cukup besar diantaranya, mini/micro hydro sebesar 450 MW dan pada prov. Maluku Utara sebesar 145,1 MW. Salah satu isu strategis nasional wilayah sungai maluku utara yaitu mengenai ketahanan energi. Wilayah Sungai (WS) yang membahas tentang potensi pembangkit listrik mikro hydro adalah WS Halmahera Utara dengan wilayah administrasi meliputi Kabupaten Halmahera Barat, Kabupaten Halmahera Utara dan Kabupaten Pulau Morotai.

Agar dapat dimanfaatkan potensi EBT dan menjalankan isu strategis ketahanan energi perlu diadakan penelitian terkait perencanaan PLTM di desa Goal kasus pada sungai Akelamo. Dari hasil penelitian dan analisa didapatkan debit 7,86 m³/det dan head 16 meter dengan menggunakan turbin Kaplan sehingga potensi daya yang dibangkitkan sebesar 817,21 kW.

Kata kunci : Net Zero Emission, Potensi Energi, PLTM, Daya.

ABSTRACT

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TECHNICAL FEASIBILITY STUDY OF THE MINI HYDRO POWER PLANT POTENTIAL IN GOAL VILLAGE, SAHU TIMUR DISTRICT, HALMAHERA BARAT REGENCY. (A Case Study on the Akelamo River, East Sahu District, West Halmahera Regency)

The Government's commitment to net zero emission (carbon neutrality) in 2060 or earlier, one of which is emission reduction efforts. The government ratified the General Plan for the Provision of Electricity (RUPTL) at the State Electricity Company (PT PLN) in 2021 - 2030, with the portion of EBT-based energy sources exceeding the portion of fossil energy, which is 51.6% or equivalent to 20.9 Giga Watt (GW).

Water is one of the potentials for the development of renewable energy, such as in Mini Hydro Power Plants (PLTM). Indonesia has a considerable New Renewable Energy (EBT) potential, including mini/micro hydro of 450 MW, and in North Maluku province it is of 145.1 MW. One of the national strategic issues in the North Maluku river basin is its energy security. The river area (WS) that has the potential for the micro hydro power plant is the North Halmahera WS, with the administrative area covering West Halmahera Regency, North Halmahera Regency, and Morotai Island Regency.

To develop the potential of renewable energy and strategic issues of energy security, it is necessary to conduct research related to the planning of PLTM in Goal village, especially in the Akelamo river. From the results of research and analysis, the flow rate is 7.86 m³/s and the head is 16 meters using a Kaplan turbine, so the potential power generated is 817.21 kW.

Keywords : Net Zero Emission, Potential Energy, PLTM, Power.