

MARKET OPPORTUNITY

Indonesia



**GREEN
ENERGY
TECHNOLOGIES**

Overview

- While reliance on domestic coal and imported petroleum products has grown, Indonesia has started adding more renewables to its energy mix. Indonesia has set out to achieve 23% renewable energy use by 2025 and 31% by 2050.
- The initiative requires over €12.9 billion of investments per year in renewable power capability over the period to 2030.
- Majority of Indonesia's primary energy supply comes from fossil fuels: oil (46.08%), coal (30.90%), and gas (18.26%). The share of other renewable energy resources in the energy mix was below 5%, mostly through hydropower (3.21%), geothermal power (1.15%), and biofuel (0.40%).

Business Opportunities for EU companies

- The **private sector** is expected to play a larger role in the energy sector. Electricity Law No. 30/2009 ended the state-owned Perusahaan Listrik Negara (PT PLN)'s legal monopoly over Indonesia's power generation, transmission and distribution, and created the legal basis for the private sector to enter each stage of the power sector. According to PT PLN, over half of the investment funding needed over 2015–2019 has been assigned to the private sector.
- Next to power generation, Indonesia's greatest renewable energy use will be in buildings. Companies involved with **infrastructure or building energy technology** can benefit from Indonesia's transitioning market. Including the contribution of renewable electricity, the share of renewable energy in buildings will increase to 37% in 2030.
- The country has identified potential for 47 gigawatts of installed **solar energy capacity** by 2030. This includes plans to use solar PV to provide electricity to nearly 1.1 million households in remote areas that currently lack adequate access to electricity. In 2013, the government also put in place a pricing regime for solar PV power intended to attract foreign investment. Solar companies can take advantage of this growing market.
- Companies with innovative **electric vehicle solutions** can tap into increasing interest generated by government initiatives. Indonesia's government plans to support 3 million electric four-wheeled vehicles and 42.5 million electric two- and three-wheelers on the road by 2030.

Sector Characteristics

- Indonesia is among the world's fastest growing countries in terms of energy consumption. The country is the largest energy user in the Association of Southeast Asian Nations (ASEAN), accounting for nearly 40% of total energy use among ASEAN members.
- Indonesia's electricity consumption will more than triple by 2030. Indonesia is expanding electricity access in remote areas and islands. More than 10% of the country's population still lacks access to electricity, but the government is aiming for near-100% electrification by 2026.
- State-owned enterprises like PT PLN play a key role in the Indonesian energy sector. PT PLN is the major provider of all public electricity and electricity infrastructure in Indonesia, including power generation, transmission, distribution, and retail sales of electricity.
- One of the country's largest new and renewable energy resources is geothermal, having reserves of 29,544 MW but with only 1,643.5 MW or 5.5% having been utilised.
- Another major renewable energy source in Indonesia is hydropower with a potential of 75,000 MW and only around 5,383 MW currently being utilised. PT PLN is in the midst of constructing a hydropower plant (PLTA) in Jatigede, Sumedang, with a capacity of 2 x 55 MW.



World's 3rd
largest producer
of geothermal
energy

World's 5th
largest coal
producer

Renewable energy
use to increase to
31% by 2050.



Funded by
the European Union

Sources: Asian Development Bank, Ministry of Energy and Mineral Resources of the Republic of Indonesia, International Energy Agency, PwC Indonesia Energy report, IRENA, GBG Indonesia, Rambou Energy.

MARKET OPPORTUNITY

Indonesia



GREEN ENERGY TECHNOLOGIES

OVERVIEW

- Indonesia has immense renewable energy resources, but low renewable energy consumption.
- Sustainable resources such as solar, geothermal and wind energy remain largely unutilised while the hydropower and biofuel sectors are more established.

Key Players

Ranked by revenue (2016)

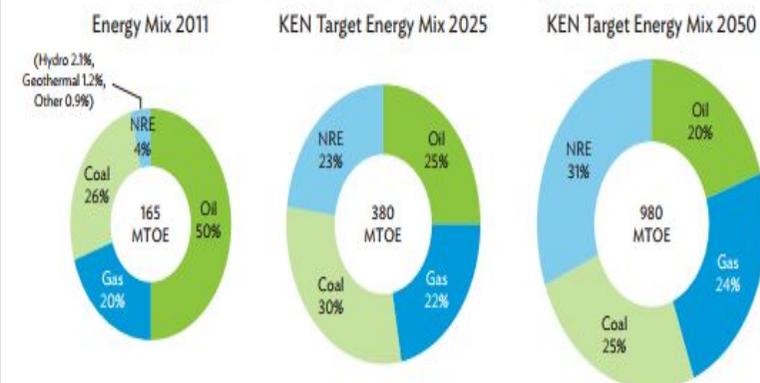
	Company	Total Revenue (€)	Generating Capacity
1	Pt Pertamina Persero Indonesian state-owned oil and gas company	32,980.00 Mil	Oil: 311.56 MBOPD; Geothermal steam: 3,043 GWh; Gas: 1,960.93 MMSCFD ; Refinery crude & gas: total 327 Mil barrels
2	Pt Perusahaan Gas Negara Indonesian state-owned natural gas company	2,715.42 Mil	Gas: 1,598 MMSCFD delivered
3	Pt Adaro Energy Tbk Indonesian energy company with focus on coal mining	2,459.55 Mil	Coal: 52.6 Mil tons production
4	Medco Energi Oil and gas exploration company	1,086.93 Mil	1.733 GW of electricity from six power plants
5	Pt Berau Coal Energy Tbk Fifth largest coal producer in Indonesia	1,030.34 Mil (2014)	Coal: 24.2 Mil tons production (2014)
6	Pt Energi Mega Persada Tbk Indonesian independent oil and gas company	480.70 Mil	Oil: 8.6 MBOPD, Gas: 200 MMSCFD
7	Pt Bumi Resources Tbk Indonesian mining company and biggest thermal coal producer	329.92 Mil	Coal: 87.5 Mil tons production
8	Pt Elnusa Tbk Indonesian state-owned geothermal company	247.74 Mil	Pt Elnusa Petrofin (subsidiary): 4,400 KL fuel

Key Sectors

Ranked by consumption (2011)

	Sector	Energy Consumption (Million BOE)
1	Industry	316 (43%)
2	Transportation	279 (38%)
3	Household	85 (12%)
4	Commercial	32 (4%)
5	Other (agriculture, construction and mining)	25 (3%)

Figure 1: Current and Targeted Energy Mix



Legend:

- BOE: Barrel of Oil Equivalent
- KEN: National Energy Policy
- MBOPD: Thousand Barrels of Oil Per Day
- MMSCFD: Million Standard Cubic Feet Per Day
- MTOE: Million Tons of Oil Equivalent
- NRE: New and Renewable Energy



Funded by the European Union

eu-gateway.eu