Indonesian island hopes to spark green power revolution

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A Sumbanese woman gathers grass to feed farm animals beside a field of small wind turbines in Kamanggih village in Sumba island, Indonesia, which provide electricity to the local community, March 19, 2014

An Indonesian family of farmers eat cobs of corn outside their hut under the glow of a light bulb, as the women weave and young men play with mobile phones.

Until two years ago, most people in Kamanggih village on the island of

Sumba had no power at all. Now 300 homes have access to 24-hour electricity produced by a small hydroelectric generator in the river nearby.

"We have been using the river for water our whole lives, but we never knew it could give us electricity," Adriana Lawa Djati told AFP, as 1980s American pop songs drifted from a cassette player inside.

While Indonesia struggles to fuel its fast-growing economy, Sumba is harnessing power from the sun, wind, rivers and even pig dung in a bid to go 100 percent renewable by 2025.

The ambitious project, called the "Iconic Island", was started by Dutch development organisation Hivos and is now part of the national government's strategy to almost double renewables in its energy mix over the next 10 years.

Sumba, in central Indonesia, is an impoverished island of mostly subsistence farmers and fishermen. Access to power has made a huge difference to people like Djati.

"Since we started using electricity, so much has changed. The kids can study at night, I can weave baskets and mats for longer, and sell more at the market" she said.

While only around 30 percent of Sumba's 650,000 people have been hooked up to the power grid, more than 50 percent of electricity used now on the island comes from renewable sources, government data show.

As more communities gain access to power for the first time, the Iconic Island project envisages entire communities skipping dirty, fossil fuel-based energy altogether and jumping straight to green sources.

Hivos's field coordinator for Sumba, Adrianus Lagur, said that the NGO hoped the project would be replicated by other islands in the same province of East Nusa Tenggara, one of the country's poorest.

"The idea is not to give handouts. We support the building of green energy infrastructure, but it's up to the people to manage this resource and keep it going," Lagur said.

National energy crisis

Indonesia is the world's fourth most populous country, with around 250 million people, and is Southeast Asia's biggest economy.

Sumbanese grandmother Elisabeth Hadi Rendi attends to her pigs, the manure from which is fed into a mini bio-gas system generating methane - enough to supply her household cooking and lighting needs in Waingapu town on Sumba island

Yet it is one of the region's most poorly electrified, partly because it sprawls over 17,000 islands of which more than 6,000 are inhabited. Spreading infrastructure over such a vast area is no easy task.

Despite enjoying economic growth of around six percent annually in recent years, Indonesia is so short of energy that it rolls out scheduled power cuts that cripple entire cities and sometimes parts of the capital.

To keep up with growth, Indonesia is planning to boost its electricity capacity by 60 Gigawatts (GW) over a 10-year period to 2022. Twenty percent of that is to come from renewable sources.

"Indonesia has been a net importer of oil for years, and our oil reserves are limited, so renewables are an important part of our energy security," said Mochamad Sofyan, renewable energy chief of state electricity company PLN.

Hefty electricity and fuel subsidies have also been a serious burden on the state budget and a drain on the economy for years.

But small-scale infrastructure, like mini hydroelectric generators—known as "microhydro plants"—and small wind turbines that power Sumba are not enough to close the national energy gap, even if they were built on all Indonesia's islands.

Massive hydropower and geothermal projects, which use renewable energy extracted from underground pockets of heat, are needed to really tackle the nationwide problem, Sofyan said.

"Indonesia has enormous hydropower potential because it rains six months of the year in most parts. So that will be a big part of the answer

to the energy shortage," Sofyan said.

Indonesia, one of the world's most seismically active countries, also has the biggest reserves of geothermal, often near its many volcanoes and tectonic plate boundaries. It is considered one of the cleanest forms of energy available.

But geothermal is largely untapped as legislation to open up exploration moves slowly and the industry is bound in red tape.