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Residents in the mountain village of Sabana Real near the Dominican Republic-Haiti border hope that electrification through a solar microgrid will help the town address population flight, economic challenges and worries about being hit by intense storms and hurricanes.

The main industry in town is coffee production, and short daylight hours and lack of light stymie the industry"s ability to thrive, said Abraham Espinal, chief of engineering at Enestar SRL, which designed and is helping deploy a solar microgrid that will serve about 50 residents in the village.

Not only would the coffee producers benefit from electrification, but so would schoolchildren who have no internet access and no light to help them study after dark. And residents complain that they can spend three days doing laundry when it"s raining; electricity and washing machines would help them immensely.

This isn"t the first microgrid to electrify a small town on the border of Haiti. A smaller microgrid was recently deployed in a nearby town, and Espinal - who is studying microgrids with University of Montana researchers - hopes to develop more.

"We are basically attacking every aspect of what a microgrid is and how it"s supposed to be handled, from conception to deployment," he said.

The $300,000 project in Sabana Real is being funded by the German government through the German Agency for International Cooperation, an organization that focuses on international cooperation for sustainable development. The microgrid includes a 240-kWh lithium battery bank - the largest in the country. The solar is 48 kW of alternating current power, said Espinal.

Caribbean countries like the Dominican Republic are adding minigrids and their costs are dropping, according to a new report from the World Bank, "The 2022 edition of the RISE" (Regulatory Indicators for Sustainable Energy).

In a blog, the World Bank defined a minigrid as "an electric power generation and distribution system that provides electricity to a localized community" and has said that they can include (along with solar) remote monitoring, smart meters and inexpensive battery storage plus geospatial analysis software to provide market intelligence.

The report shows that many countries, as part of their COVID-19 recovery plans, created new policies to boost their energy independence and cut energy costs.

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In fact, the number of countries with advanced minigrid policies more than doubled between 2019-2021, which demonstrates that minigrids and solar home systems are now seen as adequate substitutes for grid extension. More than 40% of the countries surveyed provide publicly funded financing options to help fund minigrid operators, said the report. This has lowered the cost of off-grid electricity. The unsubsidized levelized cost of minigrids dropped by a third, from 55 cents per kWh in 2018 to 38 cents per kWh in 2021, the report said.

The World Bank ranked each country based on regulatory indicators for sustainable energy and looked at electricity access, clean cooking, renewable energy and energy efficiency.

Latin American and Caribbean countries together scored one point higher than the global average in 2021, with nine countries scoring in the green zone, which means they have advanced policy frameworks. The regional average score was boosted by the strong performance of several countries, including Mexico, Brazil and Costa Rica.

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