

Private solar farm blazes clean energy trail in Mexico

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Author: Talli Nauman



LA PAZ, Mexico (Thomson Reuters Foundation) - Every morning, Gustavo Muñoz wakes up to see a pall of smog from a nearby power plant hovering over La Paz, the resort city on the Sea of Cortez where he works at a sparkling five-star waterfront hotel complex.

“We need to think of ways to shift to sustainable and renewable energy sources,” says the bar tender.

Many others in the tourist business - the main industry here in Mexico's northwestern state of Baja California Sur - also look askance at the daily morning haze.

Local tourism benefits from the natural attractions of the Vizcaino Biosphere Reserve and the Sea of Cortez, a UNESCO World Heritage Site dubbed “the aquarium of the world” by the late underwater explorer Jacques Cousteau.

But it also suffers from the pollution pumped out by the aging Punta Prieta thermoelectric plant, which uses some of the dirtiest petroleum products on earth: a mix of cheap, low-grade fuel oil and expensive high-sulfur diesel.

Regulatory loopholes permit legal use of this fuel combination – a situation that has mobilised the 250,000-strong community to hold public forums on ways of cleaning up the mess.

Local people cite respiratory health problems and the risk of cancer linked with contamination. Soot and cinders belched from the plant mingle with vehicle exhaust fumes and fine particles of desert beach sand to create a noxious mix in the air they breathe.

Fortunately, help is on the way. Just down the road from the old smokestacks, the biggest solar power plant in Latin America is poised to gradually replace outdated dirty power capacity with clean energy sourced from the sun.

EXAMPLE FOR MEXICO & BEYOND

The mayor of this sunny state capital, Esthela Ponce, says the Mexican president is expected to pay an inaugural visit to the solar farm soon, ushering in a new era of renewable energy for La Paz and the rest of the country.

Built on the site of an abandoned agricultural operation, the solar farm is linked via a high-voltage transmission line with the local-area power grid at the Olas Altas substation 3 km to the south, to which it began supplying power in September.

Aura Solar I is Mexico's premiere utility-scale photovoltaic (PV) power producer, as well as the first domestic private enterprise of its size to obtain both a development bank loan and an agreement to sell its electricity to the grid.

"The idea is to see how this type of merchant-risk deal can be replicated down the road, not only in Mexico and Latin America, but around the world," said Hector Olea, president and CEO of Gauss Energía, the construction contractor for the project.

The \$100 million installation of nearly 132,000 solar-panel modules on 100 hectares has the capacity to generate 30 megawatts (MW) of electricity - enough for 164,000 people, or 65 percent of La Paz households, year-round.

It is expected to replace output from local fossil-fuel facilities, reducing emissions of carbon dioxide, nitrogen oxide, sulfur oxide and particulates. In all, it will cut greenhouse gas emissions by 60,000 tonnes a year, according to the World Bank Group's International Financing Company (IFC).

The IFC extended a \$25 million credit line for the project, and helped structure another \$50 million in loans from the Mexican development bank Nacional Financiera (Nafin).

Mexico's energy ministry has set a target for 35 percent of the country's energy output to come from clean sources by 2024. The IFC estimates Mexico will reach installed capacity of 2 gigawatts (GW) of solar by 2020, up from 1 GW now.

"(Aura Solar I) will lead the way for more in the solar sector and renewable energy in Mexico," said Enrique Nieto, Nafin's sustainable projects finance director.

FROM BAKED GOODS TO SOLAR

Corporación Aura Solar, a startup company that owns Gauss and Aura Solar I and is led by prominent Mexican business man Daniel Servitje, was the beneficiary of the financing. Its subcontractors include Portuguese solar engineering firm Martifer and China-based PV panel maker Suntech Power Holdings Co. Ltd.

Better known for building a global empire in the production and distribution of baked goods, Servitje is also reputed to have a longstanding penchant for renewable power. He signed a multi-year contract to buy electricity for his Grupo Bimbo factories from the 90-MW Piedra Larga wind farm in southern Mexico in 2012.

Conventionally, the economic risks of power production and delivery are subsidised by government money through public utilities. In Mexico, the Federal Electricity Commission (CFE) assumed those risks until the last decade or so, with a monopoly on generating and supplying energy, including in La Paz.

Servitje's friend Olea helped change that when he was in charge of the national Energy Regulatory Commission from its inception in 1995 until 2000. There he laid the groundwork for innovative mechanisms to promote private participation and to boost the share of renewables in the electricity sector.

"I'm a big believer in environmental sustainability, but if we can't make it economically viable it's not going anywhere," Olea told Thomson Reuters Foundation. Aura Solar I was possible thanks to the participation of banks, and does not require direct government subsidies, such as feed-in tariffs, he noted.

REGULATORY SUPPORT

Under a “small producer” regime, private firms can sell up to 30 megawatts of power to CFE. This is being applied to a utility-scale project for the first time ever in the case of Corporación Aura Solar.

The CFE has contracted to buy the renewable energy supplier’s power for 20 years under a power purchase agreement, or PPA. However, the Mexican agency does not guarantee a fixed price to its suppliers, which must instead accept the floating rate offered by CFE at each monthly billing.

The supplier must also accept payment at a rate of 2 percent lower than the CFE’s own generation costs for the grid. Those terms may appear to handicap fledgling independent power producers like Corporación Aura Solar, but other circumstances help level the playing field.

One reason Aura Solar I has a shot at turning a good profit is the high costs incurred by the state’s fossil fuel plants.

The CFE’s thermoelectric, turbo gas and combined cycle facilities in Baja California Sur, the only other grid suppliers in the area, must pay top dollar to have fuel shipped from far away on tankers. As a result, the rate CFE pays to Aura Solar comfortably outstrips the company’s debt service fees.

Added to that, some of the sunniest conditions on the planet provide a stable source of free inputs, sharpening Aura Solar’s competitive edge.

Alfredo Bermudez, energy consultant and professor at the University of Baja California Sur, said renewable energy producers offer opportunities to strengthen the state’s energy independence.

The IFC has since closed three similar deals in Brazil, and Aura Solar is waiting for the right time to open more solar farms in Mexico, according to Gauss CEO Olea.

Talli Nauman is co-director of the consulting firm Journalism to Raise Environmental Awareness, based in Aguascalientes, Mexico.

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