

Cuba's first solar farm a step toward renewables

August 1 2013, by Andrea Rodriguez



In this July 18, 2013 photo, a farmer rides past a row of solar panels in Cantarana, Cuba. The country's first solar farm opened this spring with little fanfare and no prior announcement. It boasts 14,000 photovoltaic panels which in a stroke more than doubled the country's capacity to harvest energy from the sun. (AP Photo/Franklin Reyes)

It's like a vision of the space age, carved out of the jungle: Thousands of glassy panels surrounded by a lush canopy of green stretch as far as the eye can see, reflecting the few clouds that dot the sky on a scorching

Caribbean morning.

Cuba's first solar farm opened this spring with little fanfare and no prior announcement. It boasts 14,000 photovoltaic panels which in a stroke more than doubled the country's capacity to harvest [energy from the sun](#).

The project, one of seven such farms in the works, shows a possible road map to greater [energy independence](#) in cash-poor Cuba, where Communist leaders are being forced to consider renewables to help keep the lights on after four failed attempts to strike it rich with deep-water oil drilling and the death of petro-benefactor Hugo Chavez.

"For us this is the future," said Ovel Concepcion, a director with Hidroenergia, the state-run company tasked with building the solar park 190 miles (300 kilometers) east of Havana in the central province of Cienfuegos.

"This is just like having an oil well," he told The Associated Press on a recent tour of the facility.

Outside experts have chastised Cuba for missing an opportunity to develop [alternative energy sources](#); just 4 percent of its electricity comes from renewables. That lags behind not only standard-setter Germany (25 percent) but also comparable, developing Caribbean nations such as the Dominican Republic (14 percent).

Located on rural land unfit for farming, the [solar park](#) at Cantarrana, which translates roughly as "where frogs sing," is a tentative step toward redressing that oversight.

Construction began at the end of last year, about the same time that officials announced that a fourth exploratory [offshore oil](#) well drilled in 2012 was a bust and the only rig in the world that can drill in the [deep](#)

[waters](#) off Cuba under U.S. embargo rules set sail with no return date.

In April, the solar farm came online and began contributing the first solar power to the island's energy grid. Cuba already had about 9,000 panels in use, but all of them were for small-scale, isolated usage such as powering rural hamlets, schools and hospitals.

The solar farm now generates enough electricity to power 780 homes and had saved the equivalent of 145 tons of fossil fuels, or around 1,060 barrels of crude, through the end of July. Peak capacity is expected to hit 2.6 megawatts when the final panels are in place in September.

That's just a drop in the energy bucket, of course.

Cuba gets about 92,000 barrels of highly subsidized oil per day from Venezuela to meet about half its consumption needs, according to an estimate by University of Texas energy analyst Jorge Pinon.

But hopes are high that solar can be a big winner in Cuba, which enjoys direct sunlight year-round, allowing for consistent high yields of 5 kilowatt-hours per square meter of terrain.



In this July 18, 2013 photo, a woman holds an umbrella as protection from the sun in front of a sign that reads in Spanish; "Energy with Revolution" in Cantarrana, Cuba. Cantarrana is already saving the island around \$800 a day and will pay for itself after a little more than a decade into its 25-year expected lifespan. It's a notable change in the mindset for a country that relies on imports for half its energy consumption and is vulnerable to the political ebb and flow in other countries. (AP Photo/Franklin Reyes)

"The possibility of solar energy on a large scale could contribute to the island's future energy security," said Judith Cherni, an [alternative energy](#) expert at the Imperial College London Center for Environmental Policy who is familiar with Cuba's efforts.

Six other solar parks will come online in the coming months in Havana and the regions of Camaguey, Guantanamo, the Isle of Youth, Santiago and Villa Clara, though Concepcion did not specify their size.

Concepcion did not say how much the Cantarrana park cost, but said the industry standard for a facility of its size is \$3 million to \$4 million. The government, which controls nearly all economic activity in Cuba, financed construction, and the panels were manufactured at a factory in the western province of Pinar del Rio.

Cantarrana is already saving the island around \$800 a day and Concepcion said it should pay for itself after a little more than a decade into its 25-year expected lifespan.

The project is a notable change in mindset for a country that relies on imports for half its energy consumption and is vulnerable to the political ebb and flow in other countries.

After the dissolution of the Eastern Bloc in the early 1990s, a loss of Soviet subsidies plunged Cuba into a severe crisis. Blackouts sometimes darkened Havana for 12 hours at a time.

Chavez's election in Venezuela in 1998 helped ease the crunch, but his death this March made clear that Havana can hardly depend on the tap staying open forever.



In this July 17, 2013 photo, workers install a high-voltage power line that will carry the current generated by solar panels at Cuba's first solar farm in Cantarrana. In April, the solar farm came online and began contributing the first solar power to the island's energy grid. Cuba already had about 9,000 panels in use, but all of them were for small-scale, isolated usage like powering rural hamlets, schools and hospitals. (AP Photo/Franklin Reyes)

Chavez's handpicked successor, Nicolas Maduro, has vowed to maintain the special relationship with Cuba. But he won election by a razor-thin margin, and the Venezuelan opposition will almost certainly cut the Cuba subsidy if it wins power.

Pinon, of the University of Texas, predicted it will be at least three to five years before serious deep-water [oil drilling](#) can resume in Cuba.

Cuba's fuel uncertainty apparently prompted President Raul Castro to issue a decree in December creating seven working groups to chart a

15-year plan to develop alternative energy including solar, wind, biomass and others.

Cuba already has a handful of experimental wind farms and some small, isolated hydroelectric facilities, though experts say Cuba's shallow rivers are not ideal for large-scale power generation. The island has had the most success burning biomass from sugarcane, but harvests have fallen in recent years.

According to a government report from May, the island hopes to get 10 percent of its electricity from renewables by 2030.

"The reality is that cheap, abundant oil is over, and we have to turn toward these technologies," said Vicente Estrada Cajigal, a specialist on regional alternative energy initiatives and the former president of Mexico's National Association for Solar Energy. "That treasure in the Gulf (of Mexico), I have my doubts."



In this July 17, 2013 photo, workers are framed by solar panels at Cuba's first solar farm in Cantarrana. The project, one of seven such farms in the works, is a possible road map to greater energy independence in cash-poor Cuba, where leaders are being forced to consider renewables to help keep the lights on after four failed attempts to strike it rich with deep-water oil drilling and the death of petro-benefactor Hugo Chavez. (AP Photo/Franklin Reyes)

Estrada Cajigal said the cost of solar panels has fallen by 80 percent in recent years, making it an ever more attractive option.

But other experts were cautious about how much photovoltaic energy can contribute to the island.

Mexican energy consultant Francisco Acosta said that the shaky Cuban economy's intricate ties to fossil fuels are not easily undone, and the country has no choice but to continue to rely heavily on petroleum and derivatives.

Solar "is a good idea, but to a certain point. ... In a country like Cuba, stable energy is that which comes from hydrocarbons," Acosta said.

Cherni said unanswered questions remain about how Cuba will fund its alternative [energy](#) ambitions. But she said the island's goal for 2030 seems about right, given that more-developed nations with greater resources are committing to 15 or 20 percent from renewables by 2020.

"So 10 percent is a good start," Cherni said.

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