

# Solar, Wind Energy a Missed Opportunity for Cuba

ANDREA RODRIGUEZ - Associated Press - Associated Press

The sleepy country setting that farmer Juan Alonso calls home hasn't changed much since he was born 74 years ago, with the two rustic wooden houses nestled among palm trees against a backdrop of green hills and clear skies.

Incongruously perched atop the homes are the only visual clues that his 150-acre (60-hectare) farm inhabits the 21st century: the gleaming solar panels that revolutionized the lives of Alonso and his family.

"Just imagine, you toil all day in the field and then when you get home you have to grope around doing things with a gas lantern, with a torch to illuminate the patio at night," Alonso said, describing life during decades past. Now his family has electric lights, a television and a DVD player. "It's a change as radical as night to day."

Cuba is proud of its success in using alternative energy to bring electricity to isolated hamlets like Ramon Gordo, 90 miles (150 kilometers) west of Havana. Some 2,000 schools and at least 400 hospitals are lit up by solar panels in rural areas not plugged into the national grid. But scientists say the island, blessed with year-around sunshine and sea breezes but plagued with chronic energy shortages, could be doing much more on the national level, and that its communist government is missing a golden opportunity to reduce its dependence on subsidized oil from uber-ally Venezuela, where President Hugo Chavez is sick with cancer.

It is vital that Cuba expand its energy horizons "so it doesn't remain at the mercy of political changes in the region that could affect it adversely," said Judith Cherni, an alternative energy expert at the Imperial College London Center for Environmental Policy.

The urgency to find alternative energy sources was driven home last month when an exploratory offshore oil well drilled by Spanish company Repsol turned out to be dry, a setback to Cuba's hopes for a big strike that could be a boon for the limping economy, though exploration continues.

Despite recent essays by revolutionary hero Fidel Castro on impending global catastrophe due to climate change, Cuba gets just 3.8 percent of its electricity from renewables, a pittance even by regional standards and far behind global leaders.

In the nearby Dominican Republic, where a 2007 law establishes tax breaks for investment in alternative energy, renewables account for 14 percent of electrical generation. Germany, the gold standard for high-tech green energy, gets 20 percent of its considerably larger electrical consumption from renewables, mostly from wind.

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The reality in Cuba today is that wind and solar energy sources are almost exclusively for local consumption and there has been little attempt to expand them to augment the national grid, which is powered mostly by fossil fuels. Scientists say the country lacks the investment and expertise for such a move.

Around the region, examples abound for Cuba to emulate. Central American nations are using hydroelectric facilities to harness the power of rivers. Caribbean islands are passing laws stimulating foreign investment in renewables. Wind and solar farms are popping up where viable. Faraway in Europe, and nearby in the United States, individuals with solar panels can get paid for any extra energy they generate that goes back into the grid.

"Possessing apt natural resources to generate energies is a tremendous boon, but that alone is not enough to create energy," said Cherni.

Another obstacle to boosting renewable energy is a stubbornly fixed mindset that equates development with oil.

Memories are still vivid here of the "Special Period" of the 1990s, when the island's economy tanked with the dissolution of the Soviet Union, ushering in years of hunger, prolonged blackouts and fuel shortages. People thumbed rides to work on the back of bicycles as cars sat idle and empty-tanked.

To cope, Cuba began installing its first solar panels, building small hydroelectric plants, restoring old windmills and extracting gas from animal waste.

But after Chavez's election in 1998 in oil-rich Venezuela, Cuba once again embraced fossil fuels wholeheartedly with the appearance of a new benefactor and ideological ally willing to help keep the lights on. Today Caracas provides nearly half Cuba's petroleum needs, shipping about 100,000 barrels of oil a day to the island on beneficial terms while Cuba sends doctors and technical advisers to Venezuela.

"Cuba is a nation that is dependent on oil, yes, but in addition the culture of its leaders and technicians, of its common citizens, is one of fossil fuels," said Alejandro Montesinos, director of Cubasolar, the island's chief NGO for sustainable energy.

In Havana, the fear is that the oil spigot could be turned off if Chavez is forced to leave office due to health problems or electoral defeat. Cuba has pinned its hopes on offshore oil deposits in the Gulf of Mexico that could hold between 5 billion and 9 billion barrels, but those have yet to be quantified, an initial exploration well came up dry and production is still years out in a best-case scenario.

"In the imagination of the people, there is this idea that oil is going to appear in the Gulf of Mexico and this country's problems will be solved," said Montesinos, who says that Cuba and its leaders must embrace the idea that expensive investments in solar and wind will pay off over the long run.

A push for green energy would also match well with the ecological leanings of the

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Castro brothers. Current President Raul Castro said June 21 at a summit in Rio de Janeiro that there is an urgent need for "a transcendental change" and a shift to sustainable development if the planet is to be saved.

Cuba began an alternative energy program in the 1980s and ramped it up the following decade. It has installed 9,000 solar panels and built four experimental wind farms, according to Manuel Mendez, director of renewable energy at the Ministry of Basic Industry. It also burns biomass from sugarcane, currently the island's largest source of renewable energy in Cuba, and officials plan an expansion.

Cuban authorities say that in recent months they have completed a study of the best places to install wind generators and made plans to inaugurate a wind farm on the island's north coast next year. Details have not been released. Around the turn of the year a new solar farm with a one-megawatt capacity should come online on the Island of Youth.

"What has been done is a little or a lot?" Mendez asked rhetorically during a recent TV appearance. "The answer is that ... more is required."

He added that officials aim to boost renewable electrical production to 16.5 percent of demand by 2020.

Alonso, the farmer in Ramon Gordo, said solar energy transformed his family's life and he believes in green energy's potential to work similar miracles on a national level.

"The sun is what gives the world energy, and it can power industry," Alonso said. "I think we lack strength, but we're on our way."

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