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MEXICO ANNOUNCES PROJECTS THAT WOULD GREATLY EXPAND WIND-ENERGY CAPACITY

By Carlos Navarro

Mexico launched a number of projects in the first eight months of 2011 that would greatly expand the country's capability to produce electricity from wind power. The new projects are all funded with private capital, with the largest announced in late July. Under this project, the California-based Cannon Power Group had agreed to invest about US\$2.5 billion in the construction of three wind-power parks in Mexico. The facilities—in the states of Baja California, Zacatecas, and Quintana Roo—would have a combined capacity of 322 megawatts.

The new wind-powered projects are part of President Felipe Calderón's strategy to increase the use of renewable energy to reduce reliance on fossil fuels. "It is true that we are a country that has relied on petroleum," Calderón said at the ceremony announcing the Cannon Power Group investments. "But we are also aware that we need to speed up the development of renewable energy for the good of future generations."

Mexico currently produces about 51,000 MW of electricity from renewable sources, but much of this total comes from hydroelectric power.

The three projects would bring the country's total output from wind energy to almost 825 MW when added to Mexico's installed capacity of 500 MW. Other smaller projects in the works could add additional capacity to the nation's wind-power capability, including new facilities planned in Ensenada in Baja California, Parque Virgen de los Zacatecas in Zacatecas, and Ixtepec in Oaxaca.

The use of wind power has been expanding rapidly around the world. The World Wind Energy Association says the global wind-energy capacity has doubled every three and one-half years, with total output expected to reach at least 1.5 million MW by 2020.

Daniel Abraham, a business specialist at Schneider Electric México, said wind energy is relatively new in Latin America, and Mexico is one of six countries that have made investments in this renewable energy. The others are Brazil, Argentina, Uruguay, Cuba, and Chile. "We anticipate several new projects to be launched in 2011, including large wind parks in Mexico, Brazil, and other countries like the Dominican Republic," said Abraham.

Calderón said his goal is for Mexico to more than double the country's wind-power capacity to nearly 2,000 MW by the end of 2012.

A number of sites have been identified as viable for wind energy in Mexico. Some of these sites like La Rumorosa in Baja California and the Isthmus of Tehuantepec (primarily Oaxaca state) already have wind-energy projects in place. The other sites include the Guerrero Negro region in Baja California Sur, the Cerro de la Virgen in Zacatecas, the Tamaulipas coast, Campeche state, and the Yucatán Peninsula.

"Without a doubt, Mexico's potential is very high when it comes to renewable energy," said Abraham. "The Secretaría de Energía (SENER) estimates that 8% of electrical generation will be coming from alternative sources in 2012."

Mexico's most important wind projects to date are located in Oaxaca state, particularly large facilities installed in the state in 2009 at La Ventosa, near the coastal community of *Juchitán* de Zaragoza, and another in 2010 near Ingenio Santo Domingo.

Large project targeted for Zacatecas mining region

Cannon Group is just one of several companies that have committed to invest in wind energy in Mexico. The largest of its projects is in the Cerro de la Virgen in Zacatecas, where a planned wind facility would have the capacity to produce 180 MW of electricity. The project, conducted in direct consultation with the residents of collective farms (*ejidos*), will provide energy to mining companies operating in the region. About 4% of the project's gross earnings will be distributed to *ejido* dwellers and other owners of small properties in the region.

"Zacatecas is ready to join in the projects considered to be of great benefit to our country," said Gov. Alonso Reyes. "We gladly assume our responsibility to contribute to these efforts by embracing projects that promote environmental protection and job creation."

There is another wind-energy project in Zacatecas in addition to the project involving the Cannon Group. In early September, Spain-based Promotoras de Energías Alternas (Preneal) announced plans to construct a wind farm in the Cerro Virgen vicinity. The facility, which would be known as Parque Virgen de los Zacatecas, is expected to be ready for operation by the end of 2012.

"We have looked at all locations viable for wind power, and Oaxaca has the best conditions," Preneal director Jorge Mejías Carreón said at a press conference announcing the project. "The second-best conditions are found in Zacatecas."

Power Group is also involved in developing a wind farm in Cozumel, which would supply electricity to the Riviera Maya, a region that relies extensively on tourism for economic development. Cozumel Mayor Aurelio Omar Joaquín González said the plant, which would have the capacity to produce 60 MW of electricity, would be in the southeastern region of the Island of Cozumel.

The third project by Power Group, to be located near Tecate in Baja California state, would produce 72 MW of electricity. The project, known as La Rumorosa II, would complement La Rumorosa I wind park, which was inaugurated in 2010 to supply the electricity needs of the city of Mexicali. The new plant would supply energy to government buildings, hospitals, schools, and the waterworks facilities in Tijuana.

Baja California Gov. José Guadalupe Osuna said the new La Rumorosa project is another step in consolidating the state's "green agenda and its efforts to protect the environment and the citizens of the state."

Another wind project in the works in Baja California is planned by Fuerza Eólica de San Matías, which has received permission to construct a plant in the community of Kiliwa south of Ensenada. Project developers, who were in the process of finalizing agreements with the landowners in mid-September, say the proposed plant would sell electricity to the Comisión Federal de Electricidad (CFE).

New development plans are also underway in Oaxaca state, with the nonprofit Yansa Group planning to develop a wind farm in Ixtepec that will produce 100 MW. Unlike other projects in Oaxaca, the wind farm in Ixtepec is a joint effort between the developer and the local community, a model that has been used successfully in Europe, particularly Germany. "The Yansa Group partners with communities that want to make use of their renewable energy sources as a means to building sustainable and participatory local economies," the company said on its Web site. "Yansa provides the project financing, technology, management and community training, and our community partners provide the land and renewable resource."

Calderón promotes economic-development benefits of wind power

In announcing the Power Group investments, Calderón touted the economic-development possibilities of the projects, which would create about 900 direct jobs and thousands more indirect positions.

The president also underscored the links between energy sustainability and growth. "We need to generate the energy needed by Mexico to continue its development," said the president. "But our path should be to reduce the use of fossil fuels while promoting projects that produce electricity without the need to burn anything."

Several enterprises and business organizations have also started to look at wind power as a viable option to cut costs and remain competitive. In early August, directors from the Consejo Nacional de la Industria Maquiladora de Exportación (CNIME) issued a statement pointing out that the high costs of electricity threaten the ability of maquiladora plants to remain competitive.

The CNIME is taking a two-pronged approach to the problem, promoting conservation and looking at renewable options for a company or group of companies to produce electricity for their own consumption. "There has been some research about the types of renewable energy that industry could use, and one option could be wind power in locations like Baja California or Coahuila," said the daily newspaper *Vanguardia*, based in the city of Saltillo.

In May, Walmart de México y Centroamérica announced that 348 of its self-service stores, pricing clubs, and restaurants in central Mexico had started to use wind-powered energy from the Oaxaca Lamatalaventosa facility in Oaxaca state. The Walmart stores and restaurants are in Mexico City, México state, and Morelos. Officials said the move represents a step in the company's goal to power Walmart facilities in the region with 100% renewable energy by 2025. In addition to Walmart stores, the company operates a number of discount stores and

supermarkets, including Bodega Aurrerá and Superama, as well as the Vips, Portón, and Ragazzi restaurant chains.

Some experts pointed out that, despite an increasing commitment to wind energy, Mexico is not taking full advantage of development possibilities. Jorge M. Huacuz Villamar, a specialist at Instituto de Investigaciones Eléctricas (IIE), said 75% of the earnings provided by wind technologies come from the manufacture of turbines, which Mexico is importing from other countries rather than promoting the construction of factories to build them at home.

Analysts have consistently pointed out that, despite current commitments to boost wind energy, Mexico could go far beyond current efforts. For example, Huacuz Villamar said Mexican legislators and the president could devote a larger share of the national budget to promote development of renewables. At present, he said, Mexico allocates at most 2% of the energy expenditures to renewables compared with the more than 80% spent on fossil fuels.

Huacuz Villamar said Mexico's expenditures on renewables compare very unfavorably with other emerging economies like Brazil, China, and India. He noted that China spends 19% of its energy budget on renewable energy.

Other experts concurred with the assessment. "According to the government's proposal on public works and investment of the energy sector, the current plans appear to be continued expenditures on the construction of facilities that promote the use of fossil fuels," said Eduardo Rincón, a researcher and engineer at the Universidad Autónoma del Estado de Morelos (UAEM).