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Mexico City Launches Project to Produce Electricity from Biogas Emissions at Recently Closed Landfill

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Mexico City Mayor Marcelo Ebrard Casaubón has unveiled a bold plan to use biogas emissions from the recently closed Bordo Poniente landfill to produce electricity for street lighting and the subway system in the Mexican capital. Even as Ebrard is moving forward with the project, the mayor must respond to a complaint from the federal water commission (Comisión Nacional del Agua, CONAGUA), which alleges that the Mexico City government has allowed hazardous materials from the landfill to filter into the ground and the air.

Ebrard had informally floated the plan for Bordo Poniente in mid-2011, but the project did not officially become a reality until the mayor opened bids in late February to private companies interested in developing a plant to convert trash into electricity. In describing the project, Ebrard said the environment was a major consideration. "We're going to eliminate 1.5 million tons of methane gas per year from the landfill. That's what is most important," the mayor said at a ceremony announcing the project. The plan would help Mexico City meet its goal of reducing harmful emissions in the capital by 7 million tons within a five-year period.

Bordo Poniente, which holds about 70 million tons of trash, is one of the largest landfills in Mexico. After 26 years of operation, the facility was taken out of operation in December 2011. Even before Bordo Poniente reached its capacity of 16.9 million tons last year, authorities had put a plan in place to reduce the amount of trash entering the landfill. A problem for the Ebrard administration is finding an alternate site to dispose of waste, since the Mexico City metropolitan area, which has about 20 million residents, generates about 12,000 tons of trash daily.

Mayor reaches out to international companies

Even though the landfill is now closed, other major costs were incurred in permanently shutting down the facility. That left the government with no other option than to seek private participants to construct the facility to convert methane gas at Bordo Poniente into electricity. "It was going to cost more than 1 billion pesos [US\$78.6 million] to simply clean the facility," said Ebrard, who invited Britain, France, Spain, Japan, and the US to the ceremony. Those countries are home to the 50 companies that have expressed interest in the project.

Mexico City authorities are planning to accept bids through the end of July and would like to select a winner for the 25-year project by the start of August. The successful bidder would be responsible for cleaning up the landfill, in addition to constructing the plant that would convert biogas into electricity.

A biogas conversion plant at the facility could produce anywhere from 15 to 50 gigawatts of electricity, which would be sufficient to provide electricity for 40,000 households annually, said Fernando Menéndez, president of the solid-waste commission in the capital (Comisión Integral de Residuos Sólidos del Distrito Federal). Studies from the Secretaría de Medio Ambiente in Mexico City indicate residents of the capital consume about 160,000 GW of electricity per hour.

But the electricity produced at the plant will be used for public venues, not for residences. First and foremost, the power produced at the plant would be used to illuminate primary and secondary streets in the Mexican capital. The electricity would also supplement the power used to run El Metro, the Mexico City subway system.

The Mexico City legislature (Asamblea Legislativa del Distrito Federal, ALDF) endorsed the project, but some legislators asked the Ebrard administration to ensure transparency in the bidding process. "We want the project to be profitable, environmentally viable, and financially competitive," said members of the Partido Verde Ecologista de México (PVEM) in the ALDF.

Federal complaint against landfill

Even as the Ebrard administration was celebrating the launch of the project, CONAGUA filed an official complaint against the Mexico City government for violating Mexico's environmental norms at Bordo Poniente.

CONAGUA contends that authorities failed to take steps to prevent contaminants from entering the soil even after the use of the landfill was discontinued in 2011. "There is a huge difference between the closure of the facility to new residues and the lack of enforcement of federal environmental norms by the Mexico City government," said Miguel Ángel Vázquez, director of the Cuenca del Valle de México, the CONAGUA division that monitors water quality in Mexico City and surrounding areas.

"No effort has been made to address the problems related to the presence of contaminated oils and other materials leaching into the soil," said Daniel Chacón, a CONAGUA consultant. "A large quantity of liquids originating at the landfill are filtering into the Rio Churubusco and reaching nearby irrigation districts."

"There could be severe penalties because the discharge of contaminants into any body of water, including wastewater, is a federal crime," said CONAGUA director José Luis Luege Tamargo.

CONAGUA said the Mexico City government must also take care of the hazardous substances at Bordo Poniente that are still contributing to air pollution in Mexico City. "The violation has been documented, and CONAGUA's main concern is that further contamination to the air and to water bodies be avoided," added Luege.

The Ebrard administration immediately rejected the charges. The Secretaría de Obras pointed out that the closure of the landfill was supervised and endorsed by the Secretaría del Medio Ambiente y Recursos Naturales (SEMARNAT) and by the environmental watchdog agency (Procuraduría Federal de Protección al Ambiente, PROFEPA). The agency said two separate federal inspections, one on May 4, 2011, and another on Dec. 14, 2011, verified that Mexico City was complying with all environmental norms related to the closure of Bordo Poniente. [Peso-dollar conversions in this article are based on the Interbank rate in effect on March 13, 2012, reported at 12.71 pesos per US \$1.00.]

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