



## PUBLIC-PRIVATE PARTNERSHIPS BRIEFS

## Nicaragua: Eolo Wind Farm



## Overview

Globeleq Mesoamerica Energy Limited (GME Wind) is operating a 44 MW wind farm project through its wholly owned Nicaraguan subsidiary, Eolo de Nicaragua, S.A., under a public-private partnership contract with the Government of Nicaragua. The Eolo Wind Farm is located in the province of Rivas on the shores of Lake Nicaragua, about 123 kilometers south of the capital, Managua. Eolo is estimated to generate 178 GWh of electricity per year from a renewable energy source.

MIGA is supporting GME Wind by providing coverage against the risks of transfer restriction, expropriation, and war and civil disturbance for the Eolo Wind Farm project for up to 20 years.

This series showcases how the World Bank Group supports the development and implementation of public-private partnerships. This support comes in the form of public sector loans, private sector finance, sector and transaction advice, guarantees, and output-based aid.

## Background

Nicaragua's electrification rate is among the lowest in Central America. Additionally, reliance on thermal (oil-fired) generating plants has made the long-term marginal costs the highest in the region. However, Nicaragua's combined renewable energy sources—geothermal, wind, and biomass—produce around 320 MW of clean energy during the windiest months of the dry season. During the rainy season, hydroelectric plants provide an additional 100 MW of power.

Nicaragua is now covering almost half its energy demand through renewable sources—up from 20 percent just a few years ago. Ultimately, the Eolo Wind Farm's 22 turbines will produce 7 percent of the country's annual energy demand.

## Project Description

Eolo Wind Farm is being implemented by Eolo de Nicaragua through a 25-year engineering, procurement, and construction (EPC) contract and a 10-year operation and maintenance contract with Gamesa Eolica (Gamesa). The electricity is fed into the national grid and purchased by two local electricity distribution companies.

The Eolo project consists of 22 Gamesa G90 2 MW wind turbine generators (WTGs) for a total installed capacity of 44 MW. The project also includes a 60 MVA transformer and corresponding substation and a 200 meter 230 kV transmission line to connect to the regional high-voltage transmission line, which is part of the national grid. The WTGs will be installed

on 78 meter hub height tubular towers and have rotor diameters of 90 meters. Eolo was selected on the basis of availability of wind resources, access to the site, minimal land use conversion, and relatively close proximity to the national electricity grid.

## World Bank Group Role

In August 2012, MIGA issued guarantees of \$16.3 million to GME, covering its equity investment in the project. MIGA's coverage is for a period of up to 20 years against the risks of transfer restriction, expropriation, and war and civil disturbance. Eolo is the first wind farm project guaranteed by MIGA. By providing this investment guarantee, MIGA has helped assure commercial lenders of the bankability of the project. The MIGA guarantee helps promote stable regulatory frameworks and enhances the equity investors' confidence investing in a relatively high risk sector.

## Outcomes

By providing additional generation capacity that is renewable and clean, Eolo helps reduce the average marginal cost of generation, resulting in an overall reduced cost of electricity to users. Electricity generated by the Eolo Wind Farm is estimated around 170 GWh per year, which is equivalent to approximately 7 percent of all of Nicaragua's annual electricity needs, and is expected to displace approximately 110,054 tons of carbon emissions per year.



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