

# Bogdanci Wind Park Phase 1 Pilot Project

## Project Financing

WBIF Grant	TA-MKD-02 € 400,000
KFW Loan	€ 32,900,000
KFW Loan	€ 15,000,000
ELEM Own Contribution	€ 9,700,000
<b>Total</b>	<b>€ 58,000,000</b>
Total Grants	€ 400,000
Total Loans	€ 47,900,000

## Project Description

North Macedonia is keen to establish new renewable energy generation. The electricity generation company, ELEM (AD ELEM Macedonian Power Plants Elektrani na Makedonija), has progressed this aim with the help of WBIF: a feasibility study was undertaken for a pilot wind farm that will demonstrate the technology, prove the viability of wind energy, and encourage private investment in further such renewable energy projects.

The selected site, Bogdanci windfarm, is the first to be built in North Macedonia and is located in the southeast of the country close to the border with Greece. This position was chosen after an extensive evaluation of wind data and the carrying out of two wind measurement campaigns, the first of which lasted 3.5 years and covered a large area of the country. As part of the feasibility study, a thorough environmental impact analysis and a social impact study were carried out, resulting in no adverse findings. Since the conclusion of the feasibility study, two loan agreements were signed between ELEM and KfW to finance a first phase of the project implementation - one in the amount of EUR 32.9 million in April 2012 and one in the amount of EUR 15 million in July 2013.

The 16 turbines have a 36.8 MW capacity and annual production averaged 120 GWh over the first 3 years of operations (2015-2017), ahead of plan, thanks to stronger than expected summer winds. This is approximately one week of the Macedonian power production. ELEM is now considering a second phase to bring total capacity to 50 MW according to the original plan. This second phase should be finalised by the end of 2019.

The electricity sector has been unbundled with separate companies being responsible for generation and transmission. ELEM, the project's promoter, is a successful operator of thermal and hydropower plants and has the capacity, ability, and experience to ensure the successful long-term sustainability of the project. They have targeted 2% of current generation capacity to be from wind generation. With Bogdanci now producing, they have successfully embarked on reaching this target.

This project is of particular note from a WBIF perspective. The grant was in the first batch of awards back in 2008 when the project was just at a conceptual phase. Over the intervening six years the project has moved through all the development cycle stages: concept, study, and assessment, design and specification, funding, tendering, construction, commissioning and becoming operational.

## Results and Benefits

- Generation of additional quantities of electricity from renewable sources.
- **Countries:** North Macedonia
- **Code:** PRJ-MKD-ENE-001
- **Sector:** Energy
- **Lead IFI:** KFW
- **Status:** Completed
- **Beneficiary:** AD ELEM Macedonian Power Plants