



## **WP BOGDANCI II**



***Prepared by: Development and Investments Department***

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In order to diversify its portfolio, JSC ESM reviewed few possibilities for construction of new production units which use renewable energy sources as a resource.

The Wind Park (WP) Bogdanci was selected to be the first project of this type which will be realized in North Macedonia.

Taking into consideration the available financial resources in the given moment, it was decided that the wind park will be realized in **two phases**:

- **first phase** with 36,8 MW (16 wind turbines) and net annual production of 100 GWh and
- **second phase** with 13,8 MW and net production of 37 GWh.

### ***Realization of the Project – First phase***

**The construction of the first phase was completed in 2014.** The assets provided by KfW Development Bank were used for realization of the project and as part of the development-political cooperation between the Government of Republic of North Macedonia and the Government of the Federal Republic of Germany. The signed Protocol on 14.10.2009 provided loan of 32,9 million euros by KfW Bank for financing of the project and the Loan Agreement was signed on 09.04.2010. According to the Extract of the 165<sup>th</sup> Meeting held on 08.06.2010, The Government of Republic of North Macedonia concluded that the financial assets needed for realization of this project should be provided by KfW Bank – Germany. The Law on Guarantee of Republic of North Macedonia was adopted by the Government of Republic of North Macedonia. Thus, JSC ESM took over all activities for beginning of the realization of the Project. In order to provide faster and more efficient realization of the Project as well as successful performing of it, The Government of Federal Republic of Germany through KfW Bank assigned additional 15 million euros as part of the bilateral financial cooperation for 2012 for the projects in the field of Energy efficiency and renewable sources phase III. The Bilateral Agreement, Loan Agreement, Guarantee Agreement and the Agreement for Project Implementation are concluded on 25.07.2013 and the total participation of KfW is 47,9 million euros, while the own participation of JSC ESM is 7,9 million euros.

Taking into consideration the experiences of the construction of **the Wind Park Bogdanci – phase one** (36,8 MW), JSC ESM in the following period (2019-2021) is planning to entirely finish the project (total installed power of 50MW).

Planned value: 21.000.000 euros.

**The Wind Park Bogdanci – phase II** has 4 to 6 wind turbines (type SWT 2,3 – 93), each with nominal value of 3 to 4 MW and it will have total installed power of 13,8 MW and nominal annual electricity production of 37 GWh. In addition, the park includes construction of access roads and 20 kV cables.

The site will be part of the exiting Wind Park in the southeast part of Republic of North Macedonia, at the territory of municipality Bogdanci. The site is situated on the hills Ranavec and Glavite, at altitude of 300 – 500 meters and it has low vegetation and relatively rugged terrain.

The facility is already operating with more than half of the planned capacity with the already realized phase one (construction of access road, substation, transmission line, 36,8 MW installed power and connection to the EPS (Energy Power System) of RNM).

It is important to be emphasized that the necessary costs for realization of this type of facility will not be financed by the financial structure for realization of phase two, because they are realized in phase one.

### EXPECTED EFFECTS/BENEFITS

Realization and closing of the entire investment of this project is expected to achieve the following effects:

1. **The installed power of JSC ESM is increased** for 13,8 MW and annual production for additional 37 GWh, sufficient for providing with electricity of approximately 6000 households.
2. The project Wind Park Bogdanci is finalized with the designed installed power of 50 MW and total annual production of approximately 137 GWh.
3. The construction **will increase the participation of the renewable sources** in the electricity production of JSC ESM of approximately 3%. The Republic of North Macedonia has obligation to the European Union for fulfilling of the aims for 20% production of renewable sources in the energy balance, aim which is set and supported by all relevant institutions in Republic of North Macedonia.
4. **Savings** of the emission of CO<sub>2</sub> of approximately 35.000 t/annually.