



## WIND FARM ANDLERSDORF-ORTH

Client: ENERCON GmbH

Development Period: 10/2015 to 02/2017

### THE PROJECT

In the municipal area of Andlersdorf and Orth an der Donau (district Gänserndorf, federal state of Lower Austria) a total of 13 new wind power stations has been built in the course of the objective project.

Each of the facilities features a rated power of 3 MW, a hub height of 97 m (Orth an der Donau) and of 133 m (Andlersdorf) respectively, and a rotor diameter of 101 m.

The wind farm produces 95.000 MWh clean electricity (for 27.000 households) and reduces the yearly CO<sub>2</sub>-emission by 57.000 t.

### OUR FUNCTION

As a basis for the permission documents, BGG Consult first conducted geotechnical underground explorations. At each power station, one core drilling and three dynamic probings were carried out. Furthermore, the dynamic soil parameters were established by a seismic refraction survey and the electric resistance by geoelectric methods. Based on these, a geotechnical expert's report was prepared.

In the following planning phase, consulting with regard to the special heavy construction works was performed and foundation calculations verified. During construction, the foundation works and the preparation of the access roads were accompanied in the field of geotechnics.

#### *Underground Improvement by means of Vibro-Compaction:*

At the location of all the wind power stations, quaternary gravel exists at a depth between 3.0 m to 3.6 m below a fine-grained cover layer. However, zones with a very loose density were found consistently down to a depth of 10 m. With consideration of the high dynamic loads, a conventional shallow foundation was not possible. As a significantly more economical foundation method in comparison to a deep foundation by means of piles, a shallow foundation after a soil improvement (vibro-compaction method) has been proposed and implemented.



*Underground improvement works*