



REPOWERING OF SEVERAL WIND PARKS

Client: miscellaneous

Development Period: 2020 to 2022

THE PROJECT

In the context of the development of renewable energy forms, numerous wind power stations were deployed in the last decades in the eastern region of Austria. Nowadays, existing wind farms are often repowered by new, mostly stronger wind energy plants.

Within the years 2020 to 2022, BGG Consult accompanied the repowering projects Wind Park Berg, Wind Park Hohenrappersdorf III, Wind Park Spannberg IV, Wind Park Trautmannsdorf and Wind Park Parndorf in the field of geotechnics. These projects comprise all together 39 new power stations with a nominal capacity of up to 5.6 MW per facility and hub heights of up to 166 m.

OUR FUNCTION

For these projects, BGG Consult was responsible for the geotechnical subsoil investigation based on the requirements of the plant manufacturer and the subsequent preparation of Geotechnical Expert's Reports, covering the dismantling of the existing plants, the new facilities, the access roads and the re-use of the material excavated in the course of the demolition.

The expert's reports contain essentially proposals for the foundation and soil improvement measures, individually adjusted to the underground situation at each location.

In the following design phase, consulting was provided for the heavy construction works and the dimensioning of the foundation. During construction, the foundation works and the implementation of the access roads were accompanied from a geotechnical point of view.

One-Stop Services Geotechnics and Soil Chemistry:

The underground investigation works and laboratory tests comprised the following services:

- Core drillings, cone penetration tests, dynamic probings, exploratory pits at all new power stations;
- Exploratory pits at the crane manipulation areas, new and existing access roads and in the area of the cover fill of existing foundations;
- Seismic refraction profiles;
- Dynamic and static load plate tests on existing roads and crane manipulation areas;
- Soil mechanical analyses regarding the re-utilisation of excavated material and regarding the new wind power stations;
- Soil chemical investigations according to the recycling regulation, the landfill regulation, federal waste management plan and in view of concrete aggressivity;
- Groundwater analyses (concrete aggressivity).

All of these investigations were included in the contract for the geotechnical services. Hence, the administrative effort for the client was minimized and the cost effectivity increased.



Underground improvement by means of vibro-displacement compaction at the Wind Park Trautmannsdorf