

# Natural Power Design Advisory Services for the Operational Phase



Natural Power provides technical support services throughout the lifecycle of projects, including the operational phase. Our experienced civil, structural, and geotechnical engineers and technicians provide services for the maintenance and management of existing assets.



By supporting operational asset management teams we are able to assist with routine, preventative and reactive maintenance, as well as working on projects to extend the lifetime of an asset. Some of the typical services Natural Power can undertake include:

- Topographical surveys of existing infrastructure to facilitate future maintenance and extension requirements
- Detailed civil engineering design and specification of site infrastructure, such as hardstand extensions to facilitate major maintenance activities and replacement of key turbine components
- Structural reviews of existing turbine foundations and capacity to support blade tip and life extensions
- Assessment of the existing condition of tracks and designs to maintain their lifetime
- 3D civil design and analysis of tracks and earthworks
- Design and review of drainage systems / SUDS

// our commitment is to optimise initial and whole life costs and release locked in value in any project site //

**Ralph Spernagel**, Director of Construction





## Case Study **Crystal Rig Wind Farm**

### Assessment of existing tracks and drainage

Natural Power undertook an assessment of the existing access tracks at Crystal Rig I and II Wind Farms to review their condition after several years of operation. We provided recommendations on maintenance options based on our site inspections and experience as designers of wind farm infrastructure. As part of our scope, we provided a proposal for repairing and maintaining the site infrastructure. This involved performing detailed site inspections to prepare a plan for reinstating and upgrading track-side drainage ditches, repairing the running surface of the access tracks along specific sections of the wind farm, as well as installing surface runoff drainage grips at appropriate locations on the tracks to assist drainage and long term maintenance of the running surface.

### Crane hardstand extension works

Natural Power provided design services to assist with the routine maintenance of Crystal Rig wind farm. The existing crane pads were too small to accommodate cranes required to perform the lifting manoeuvre for replacement of bearings on turbines. Natural Power Civil Engineers prepared detailed designs for construction of the hardstand extensions by working with the heavy lifting specialist and turbine company to design the extension of the crane pad.

Natural Power undertook site investigations to confirm the existing ground conditions, as well as surveys to establish existing constraints including confirmation of the locations of the wind farm cables. Natural Power presented a number of design options to the client looking at the benefit of different lifting scenarios, cranes and earthworks before gaining agreement from all parties on a finalised design.



For more information contact:

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