

Engineering Support for Grid Integration in Ireland

ITPenergised is an international consultancy with expertise in undertaking power systems modelling and analysis of renewable projects and the wider electrical systems into which they are integrated.

The power systems team can support all phases of a project from feasibility to as built compliance, ongoing compliance and support of assets. The team has substantial depth of knowledge of power systems design and grid code compliance requirements supported by capability with major power systems analysis tools including: DigSilent PowerFactory, PSS/E, PSCAD, MATLAB, Python

The team has experience of the challenges presented by the the EirGrid and SONI grid codes and the thorough approach taken by the TSOs gained during delivery of several large wind projects (Teevurcher, Carrickallen and Rathnacally).

The team can advise regarding turbine capability required to meet the challenging power control, frequency response and fault ride through requirements. We can also undertake steady state and dynamic power system modelling of projects to validate the design and deliver compliance studies in the required format.

The team has worked on developing SCADA interface and data logging solutions to allow wind generators to be directly controlled from the EirGrid Dublin control room as part of the wind dispatch mechanism.

The team has experience of undertaking onsite compliance testing over several days with EirGrid to prove compliance and preparing the detailed report and data submissions required.

Our services include:

Renewable generation grid connection services for onshore, offshore and hybrid renewables

- Grid code analysis
- Turbine capability review and gap analysis
- Load flow studies
- Reactive power capability, compensation equipment specification and optimisation
- Short circuit (fault level), equipment rating
- Network strength requirements (weak grid and SCR assessments)
- Electrical losses (and design optimisation of electrical losses)
- Transformer specification
- Harmonics including filter specification
- Resonance including sub synchronous control interaction (SSCI)
- Transient (EMT)/ dynamic analysis (fault ride through, inrush, voltage control, frequency

