EIP024

Can we streamline generator compliance assessments?

Problem Statement Details

The ESO has an ambition to achieve Zero Carbon Operation by 2025.The UK government has set out its ambition to deliver 50 GW of offshore wind by 2030. To achieve these targets, high penetration of Inverter Based Resources (IBR) is expected to be connected to the system. When new generators are to be connected to the system, to comply with the grid code, detailed system studies – such as system oscillation studies and control interaction studies – need to be carried out by users/developers. To carry out these studies, the ESO provides network models for the agreed scenarios.

The main challenge for the ESO to provide these network models is the difficulty in sharing already-connected generators' models, due to confidential data issues. In the current arrangement, the ESO will obtain a Non-Disclosure Agreement (NDA) with all parties involved. This process is very time-consuming and in some cases users/developers need to carry out analysis with some generic models.

The aims of this project are:

- to develop a platform where the ESO can publish the network for users/developers to carry out system studies, without providing other users' confidential data,
- to reduce the time spent on NDA agreements to share third party models, and hence to reduce the cost of connection, and
- to reduce the use of generic models to carry out compliance studies for new connections that will reduce the number of iterations required for model validation.

In addition to the new connections, the developed platform can also provide possibilities to share models to consultants, academics without sharing any confidential data.

Australian Energy Market Operator (AEMO) developed a Connection Simulation Tool for the same purpose.

Key Stakeholders

Transmission Owners (TOs), Offshore Transmission Owners (OFTO), Generators, Developers

Target Market

New connecting generators, TOs, new technology development.

Enablers and Constraints

Constraints: due to the confidential data and Intellectual Property (IP) details, there are difficulties in sharing the models to third parties. With the existing Grid Codes, the ESO can get models from

all generators but may not be able to share these models with third parties. In the current process, the ESO will agree an NDA agreement with all parties involved to share the models to third parties. This is a very time-consuming process that could impact the users'/developers' project timelines and could increase the cost of delivery.

Enablers: this project aims to develop a platform/portal where NGESO can provide the required models for third parties without sharing the confidential data. This will allow users/developers to carry out all compliance analysis in a timely manner that could reduce the connection delivery cost and the system security risks.

Scalability and Target Implementation Date

The development of a platform where the ESO can publish a network model without sharing confidential data is expected to take 2 to 2.5 years.

The platform/portal should have the capability for multiple users, connecting to different part of the system, able to carry out system analysis.

Innovation Strategy Target Areas

Innovation Theme	Target Area	Primary or Secondary
Data and Digitalisation	The shift to data-driven, digitally-enabled networks is critical as we move towards Net Zero. We need your help to drive standardisation, interoperability, security and digital skills whilst accelerating our transformation to data-driven networks by the mid 2030s.	Primary
Flexibility and Market Evolution	Energy networks must quickly and efficiently respond to the rapidly evolving needs of the energy system transition. We need your support to eliminate barriers to new market entrants, deploy novel commercial and network management solutions whilst ensuring fair participation and eliminating regulatory barriers within the RIIO-2 price control periods.	Not applicable
Net zero and the energy system transition	In order to meet the UK net zero targets of 2050 we must start converting our networks to deliver low carbon fuels today. We want to work with you to develop the role of our gas networks into the future by investigating, trialling, implementing and delivering safe, low carbon alternatives to natural gas such as Hydrogen.	Secondary
	Net Zero requires connection of more low and zero carbon sources of energy generation, storage and demand to both the transmission and distribution networks. We need your innovative methods for effective network management and accessing flexibility to improve visibility, forecasting and modelling of low carbon technologies.	
Optimised assets and practices	Innovation has a key role to play in ensuring our networks continue to remain reliable, safe, secure and resilient to our changing climate. We are constantly looking to improve and welcome support to identify methods to prevent interruptions, ensure resilience, reduce climate impact and future-proof our networks.	Secondary
Supporting Consumers in Vulnerable Situations	Equality and fairness are the foundations of a just transition to Net Zero. We hope you can provide insight into the transient and situational nature of vulnerability and how we can overcome the impact the energy system has on consumers, building strong relationships for the future.	Not applicable
Whole Energy System Transition	The energy system must consider the full range of opportunities, risks and interdependencies that exist across the energy networks to integrate and optimise them in a way that best serves the consumer. We are looking for ways to improve visibility of the networks and transitional options, co-ordinate approaches and collaborate across the UK.	Not applicable