

EIP045

Can we accelerate connections for offshore wind?

Problem Statement Details

At present, offshore windfarms can be built faster than TOs can connect them, and the connections are perceived as high-risk investments before the windfarms are fully developed.
Can we mitigate those risks, unblock and speed up the connections process?

Key Stakeholders

Offshore windfarm developers, Energy Generators, Crown Estate, All networks – primarily TOs

Target Market

Offshore windfarm site owners, onshore asset site owners, Crown Estate & Crown Estate Scotland, Ofgem.

Enablers and Constraints

Enablers:

- ESO Connections reform (e.g., Holistic Network Design) – check compatibility.
- Digitisation of Connections process through ENA and member Networks.
- Huge increase in demand and generation anticipated with high certainty of many more windfarms coming online to support. Odds of a stranded asset are low right now; most upgrades will be fully utilised.
- Flexibility and flexibility markets are fundamental to solving this problem.

Constraints:

- Central issue with legal mandated targets. The faster we get connected the more power we can produce allowing co-benefits such as exports, innovation revenue, and jobs growth.
- Co-location of storage; allows small connection initially with connection growth as capacity develops.
- Policy needs to be bottomed out; the right balance between DNOs and TNOs putting copper in the ground through anticipatory investment. All of this will be put on customers' bills so this must be cost effective and with increased certainty that the right capacity will be deployed and utilised. Principle of "best value as opposed to lowest cost". Wires are cheap in the larger context compared to the cost of not having enough.

Scalability and Target Implementation Date

In line with offshore windfarm development plans; aligned with UK and devolved Government policies.

Seed Question

Can the supply chain cope with an increase in the pace of connections or do we need to scale-up first?

Innovation Strategy Target Areas

Innovation Theme	Target Area	Primary or Secondary
Data and Digitalisation	<p>The shift to data-driven, digitally-enabled networks is critical as we move towards Net Zero.</p> <p>We need your help to drive standardisation, interoperability, security and digital skills whilst accelerating our transformation to data-driven networks by the mid 2030s.</p>	
Flexibility and Market Evolution	<p>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.</p>	
Net zero and the energy system transition	<p>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.</p> <p>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.</p>	Primary
Optimised assets and practices	<p>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.</p>	
Supporting Consumers in Vulnerable Situations	<p>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.</p>	
Whole Energy System Transition	<p>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.</p>	