EIP042

Can onshore substations (for offshore windfarms) be used to provide grid services more effectively?

# Problem Statement Details

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| The current Offshore Transmission Owner (OFTO) regime is a barrier to Windfarm Developers connecting equipment to provide Grid Services at the Windfarm’s onshore substation. The OFTO regime drives the minimum cost connection and, at transfer of the windfarm connection assets to the OFTO, a Windfarm Developer would not be reimbursed for any equipment that is installed that is not essential to transmit the Windfarm’s power to shore.  Co-location of Grid Service equipment such as synchronous condensers and energy storage at windfarm onshore substations would help address some of the issues currently faced with the introduction of renewables such as reduced Grid inertia, reducing short circuit levels and intermittency. Building this additional infrastructure at the same time as the windfarm connection would be more cost effective than the build being an independent project with a separate Grid connection.  Potential Solutions are to allow the Grid services equipment to use the OFTO asset for connection and allow it to be retained by the Windfarm Developer or to allow the additional infrastructure to be sold as part of the OFTO asset (with the Windfarm Developer being fully reimbursed) and the Grid services equipment operated by the OFTO providing them with additional revenue. |

# Key Stakeholders

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| Windfarm Developers, OFTOs, OFGEM, BEIS, Grid service providers |

# Target Market

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| National Grid ESO |

# Enablers and Constraints

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| Current OFTO regime |

# Scalability and Target Implementation Date

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| Can be implemented as part of the drive for 50GW of offshore wind by 2030. |

# Innovation Strategy Target Areas

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| 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. | Not applicable |
| 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. | Primary |
| 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. | Not applicable |
| 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. | Not applicable |
| 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 |