EIP063

How can we balance renewable supply/demand across seasons?

# Problem Statement Details

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| The energy system must balance supply and demand 24/7/365. In relative terms, energy supply is far more abundant in the summer, with demand more abundant in the winter (utilisation issue).  Sizing the energy system to winter use will lead it massive underutilisation in the summer; sizing the energy system to summer use will lead a lack of energy in the winter. |

# Key Stakeholders

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| Energy users, generators/energy production, energy storage, energy transportation, energy retailers. |

# Target Market

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| 30,000,000 users - size of market varies by solution. |

# Enablers and Constraints

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| Where storage is proposed, charge, discharge and self-discharge rates must be appropriate.  Any solution should also, wherever possible:   * Be as resilient to storms as the gas system is today. * Increase the number of effective energy vectors. * Be technically effective and financially efficient. * Be socially acceptable, acceptably safe and logistically feasible (inc. during delivery). |

# Scalability and Target Implementation Date

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| Assuming a methane boiler ban from 2025 (TBC) a solution will be needed by 2030 at the latest. Roll-out timescales will depend on the solution type and the roll-out logistics that imposes - similarly for scalability. |

# 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. |  |
| 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. |  |
| 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. | Primary |
| 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. |  |
| 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. | Primary |