

EIP047

## What is the future of energy storage balancing?

### Problem Statement Details

Market participants that would like to operate limited storage assets are using workarounds involving manipulating data to inform the control room of their capability. This data manipulation does not fully consider the limited nature of their energy capacity and is more aligned to traditional thermal units. This means that these participants are often under-utilised or requested to provide services that are simply not possible. For the same reasons, connecting new assets to the wider grid can be seen as an unnecessarily complex process considering their flexibility and capability. How can storage units be onboarded and utilised based on both their true limitation and flexibility, and not be treated like a conventional unit?

### Key Stakeholders

ESO's control room engineers, balancing mechanism (BM) and OBP (future Open Balancing Platform) teams, and storage asset operators.

### Target Market

Enabling GB's net zero targets, expected uplift in both the number of storage assets and their capacity over the coming years.

### Enablers and Constraints

**Enabler** - This challenge will build on existing understanding of the technical capabilities of storage technologies and operational information for these. There is a storage stakeholder group recently established by the ESO to discuss and start defining storage capabilities, which this challenge will complement.

### Scalability and Target Implementation Date

Projects addressing this challenge could recommend changes to existing ESO market designs for usage of storage assets.

## Innovation Strategy Target Areas

Innovation Theme	Target Area	Primary or Secondary
<b>Data and Digitalisation</b>	<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>	Secondary
<b>Flexibility and Market Evolution</b>	<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>	Primary
<b>Net zero and the energy system transition</b>	<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
<b>Optimised assets and practices</b>	<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>	Secondary
<b>Supporting Consumers in Vulnerable Situations</b>	<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>	Not applicable
<b>Whole Energy System Transition</b>	<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>	Primary