

EIP025

What are the market signals for electrification of heat?

Problem Statement Details

We expect electricity demand from heating to increase drastically from the late 2020s to meet our net zero targets, and have assumed a certain level of flexible consumption across ESO scenarios to minimise system costs (generation capacity, network reinforcement, SO services). It is unclear if the current market design (wholesale, policy support, SO services) is sufficient to enable this transition while managing network/system costs. This project will investigate what market signals (both investment and dispatch signals; from ESO, and wider markets such as wholesale, carbon, DSOs) and enablers (regulations and standardisation etc.) are required to incentivise energy customers to switch to electric heating technologies, adopt flexibility enabling technologies (smart controls etc.) and consume flexibility.

Key Stakeholders

ESOs Future Markets teams, DNOs, electric heating and enabling technology providers, BEIS policy teams, aggregators, suppliers.

Target Market

Enabling GB's net zero targets, including the 600,000 heat pumps target by 2028. This is likely to be a research-based project to investigate market signal and enablers and will include engagement with energy customers/potential customers.

Enablers and Constraints

Enabler: this project will build on existing understanding of technical capabilities of heating technologies, consumer heat demand profiles, and consumer response to different propositions.

Scalability and Target Implementation Date

The project should recommend changes to existing ESO (DSO) market designs to provide investment and operational signals for electric heating, which should be assessed and adopted by the ESO current service reform process (DSOs).

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>	Not applicable
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>	Primary
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>	Not applicable
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>	Not applicable
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>	Secondary