

EIP052

## How can we protect customers during supply interruptions?

### Problem Statement Details

How can the GDNs keep customers warm and safe during gas supply interruptions? Existing measures often require plugging in a device - which customers are more reluctant to do given energy costs and wider cost of living crisis. Mass deployment of temporary electrical appliances (2 kWh fan heaters, 2 kWh oil radiators, hot plates, electric blankets...) can also cause issues to the electricity grid at peak times.

Future gas network conversions from natural gas to hydrogen will see a large increase in the number of customers facing interruptions for longer periods than with our current planned work, so low-cost solutions that take the cost worry from the customer are required.

### Key Stakeholders

Gas and Electricity Networks, British Gas, domestic customers – particular those in vulnerable situations, housing associations and private landlords, local authorities – resilience forums, local health organisations.

### Target Market

Customers who are impacted through a lack of heating or the ability to cook hot meals due to the gas supply interruption - these are generally older people, those with health conditions and families with young children, but everyone can be vulnerable if the interruption is over a number of days and the temperature is low.

### Enablers and Constraints

We are interested in existing products or adaptations of existing technology rather than prototyping new devices due to the challenges of productionising. Devices need to be portable and deployable en masse by engineers and customer support staff in cars and small vans.

There is not yet visibility of the effects on the electricity networks of customer behaviour off-gas.

Some engagement with Ofgem may be required to determine how networks can satisfy GSOP without necessarily giving power options.

### Scalability and Target Implementation Date

Networks have obligations to offer and provide alternative heating and cooking to customers on the Priority Service Register (around 22% of homes). With 10,000s homes interrupted each year due to planned replacement works and emergencies - including the occasional incident with a

large number of homes impacted - there is an immediate demand for alternatives to traditional support.

A hydrogen conversion programme in the future would see 1,000s of homes interrupted daily with a roll out likely to start in the 2030s.

## 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>	
<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>	
<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>	
<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>	
<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>	Primary
<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>	Secondary