

## Repurposing Decommissioned Network Assets

The following problem statement has been developed by the innovation teams within the UK's Gas and Electricity Networks for the 2024 Energy Innovation Basecamp.

**Theme: Maximising Use of Existing Infrastructure**

**Network Areas: Gas Distribution, Electricity Distribution**

### What is the problem?

As the UK looks to decarbonise the Energy sectors and meet the climate goals set for 2050 there is a need to change today's energy sources. Currently there is an uncertainty in the future role of gas, and to what extent this will be used. Separate scenarios may arise in the future, with a whole systems approach in mind. Certain areas will be better suited to specific energy systems, some of which won't be suitable for gas, leading to decommissioning of assets.

GDNs are continuing to deliver the Iron Mains Replacement Programme (IMRP), which was introduced by the Health & Safety Executive (HSE) in 2002 specifically to address concerns about the failure of iron mains, particularly cast-iron mains due to fracture. The IMRP takes a tiered, risk driven approach, which requires the distribution companies to replace all 'at risk' iron mains (i.e. those within 30 metres of a property), with the largest volume of required replacement been occupied by all Tier 1 assets (8" diameter and below). Whilst the primary driver behind the IMRP is improving safety of gas distribution networks, there is increasing evidence that replacement of metallic assets with PE will also improve compatibility with system repurposing for other low carbon gases, such as hydrogen. In order for the customers to retain value of these assets and remove the risk for stranding such assets, Gas Networks will need to work proactively to find a solution.

The issues surrounding ongoing road works, ambitious fibre rollout plans and electrical grid capacity are a few issues that may not be readily solved as they still require masses of ground works. The ground works are intensive on cost, material, staff and time. Decommissioned gas pipelines may prove to play a vital role in tackling said issues.

### What are we looking for?

An exploratory piece of work detailing various opportunities or an individual opportunity that looks to utilise existing assets to reduce stranding infrastructure that can still provide benefit to the UK. Ideally the project will be identifying technical, operational, commercial and regulatory viability for such solutions, while clearly detailing the benefits case for the customer and the environment.

There are few existing pieces of work that have explored such solutions, so it is anticipated that the project will be a low TRL due to the nature of the work and novel approaches.

### What are the constraints?

Proposed solutions **should** be replicable across all networks (where applicable), with flexibility to adapt to individual organisation's procurement requirements.

Work **must** clearly detail the benefits for repurposing existing assets and **should** provide competitive options compared to existing techniques.

The solution(s) **could** be deployable in line with existing practices and **must** be deployable with modified practices.

Most networks currently decommission assets with no after life use leaving them stranded with the conditions unknown.

Gaining acceptance for the modification of existing industry codes and maintaining compliance with existing regulations. There is potential that only certain conditions will produce viable outcomes.

### Who are the key players?

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Primary - Gas Networks & asset owners, includes regulatory teams, planning.

Secondary - Electricity Networks (new connections teams, ops teams dealing with capacity), Optical fibre, synthetic fuel organisations, heat networks, telecommunications, local councils.

Proposals are welcome from all industries as long as they can cover the technical, operational, regulatory and commercial requirements. The project looks to achieve a more cost effective and environmentally friendly approach to deploying more infrastructure underground by utilising existing assets.

### **Does this problem statement build on existing or anticipated infrastructure, policy decisions, or previous innovation projects?**

This problem statement builds on work that looks at the future of the gas networks and Government decisions as a whole, around the future of the energy system. Policy decisions will need to be considered specifically decisions such as the go ahead on the Hydrogen Village & Town trials, Project Union, HyNet and East Coast Hydrogen all will inform the outcomes of this project.

The project looks to retain customers investment to achieve the best possible value for money and future benefits from the existing infrastructure. Existing projects such as NIA\_NGN\_424 – Network Diversification & Resilience, have previously looked at the base feasibility for deploying ducting into gas assets to house optical fibre that can be used for monitoring or use by fibre providers.

### **What else do you need to know?**

Whilst this problem statement is targeted at the future cases for decommissioned gas assets, it is also applicable to existing non-live assets and how they may be utilised.

The current practices for road works and the operations required for future upgrades/deployment for electrical, fibre, heat networks etc will continue to be carbon intensive and inflict a strain on transportation links, due to the nature of the work. It's vital that gas networks take a proactive approach to identifying opportunities in order to retain value from customers' investments while increasing efficiencies for other industry operations.

**Innovator submissions to this problem statement will be open [here](#) during March and April, but we encourage you to submit your response as early as possible, as networks will be able to review submissions as soon as they come in.**

**You can also use the virtual Q&A on the Smarter Networks Portal to ask for more information about this problem statement. Questions may be answered online or at the ENA Problem Statement Launch in March 2024. More information on last year's Basecamp programme can be found [here](#).**