

Decarbonising Energy Network Infrastructure Operations- Heavy Transport Fleets & Construction Activities

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: Decarbonising Network Operations

Network Areas: Electricity Distribution, Electricity Transmission, Gas Distribution, Gas Transmission

What is the problem?

As the UK moves closer to the net zero 2050 target, various legislation and regulations are expected to be put in place requiring various industries, including energy networks to decarbonise their fleet and reduce emissions in construction activities. Construction activities can include materials, equipment, machinery & welfare cabins. Currently networks face the need to increase the number of zero emission vehicles within their operational fleet, specifically heavy fleet including over 3.5 tonne vans, grab lorries, vac ex etc. At present it is difficult to know what opportunities are out there and how best can the networks increase the percentage of zero/low emission vehicles.

What are we looking for?

Ideally, initial work will look to complete a high-level technology assessment on existing solutions for zero emission plant & vehicles, sustainable materials, tooling & equipment, creating options dependant on work type (CAPEX/REPEX/OPEX) and will provide a high-level roadmap for implementation and change from existing carbon intensive approaches.

Further assessment is required to identify and evaluate future funding/business incentives for achieving net zero construction through a sustainable approach.

It is anticipated that most solutions will be of a high TRL, with some evidence of previous success, however there is scope to fund lower TRL projects, if appropriate and eligible for network innovation funding.

What are the constraints?

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

Solutions **should** be product or process focused and **must** be cost competitive against current practices where possible, to enable a valid cost benefit case for full implementation to be carried out.

Most networks currently deploy sustainable procurement practices, aiming to abide by key principles for reducing, reusing, and recycling to minimise carbon emissions, waste and harmful impacts on the environment.

Solutions **must** be deployable in line with existing sustainable procurement legislation.

Solutions may be eligible for innovation funding *via* Ofgem mechanisms (NIA/SIF), however higher TRL solutions may be evaluated/trialled for full implementation in the shorter term.

Who are the key players?

Energy Networks – Operations, Environment & Sustainability Teams, Procurement Teams, Strategy & Regulation.

Proposals are welcomed from all parties; however, it would be beneficial for solutions to be close to deployment/trial readiness to enable short term implementation plans to be developed.

Energy Innovation Basecamp 2024

Problem Statement EIP108

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

The problem statement utilises the assumption that electrical charging infrastructure, hydrogen and other low carbon refuelling stations remain a realistic option pre-2050.

Policy decisions will need to be considered, for example the ban of new sales for Internal Combustion Engine vehicles below 28 tonnes by 2035 and the over 28 tonnes by 2040.

This also includes the commitment to rollout 6,000 high powered EV charge points in the UK by 2035 and 300,000 public EV chargers by 2030. There are no official commitments by the UK government for Hydrogen refuelling stations, but the assumption can be made that they will be rolled out. Previous project such as NIA_NGN_420 provide evidence to suggest there is demand for Hydrogen for use in transport. The problem statement covers all current Network operations activities that are necessary today to meet our obligations as UK energy networks.

What else do you need to know?

Whilst this problem statement is formed in the strategic context of delivering net zero network infrastructure construction by 2050, it is also open to near term solutions which are rapidly deployable/scalable, in a cost-effective manner, to rapidly reduce carbon emissions of existing network construction methodologies.

Future gas & electricity network build out/repurposing to deliver net zero are expected to be highly carbon intensive from a plant & equipment perspective, but also from an embodied carbon perspective, therefore it is critical that all interested parties take a proactive approach to identifying, evaluating, investing in, and deploying at scale, low carbon, cost efficient construction initiatives.

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](#).