



Making a positive difference
for energy consumers

Making Britain's energy networks better

Our gas and electricity networks need to become more flexible and efficient. Ofgem runs innovation competitions to fund projects that encourage new approaches that will help make the system smarter and save consumers' money. The Network Innovation Competitions (NICs) for electricity and gas help develop crucial knowledge and expertise to share across the industry. This year we will provide up to £46.8 million of funding for four projects which, when combined with the companies' contributions and external funding, will see up to £82.7 million being invested in innovation.



2018 NIC projects

2018 is the sixth year we have run the NICs.

This year's projects cover an exciting range of areas across the gas and electricity networks. Each project tackles problems facing the networks now or in the future.

This year, the **projects explore issues such as:**

Trialling the injection of hydrogen gas into the public gas network.

H₂

Exploring the network impact of electric vehicles, including commercial fleets and the mapping of charge points against network capacity.



Demonstrating the technical, organisational and commercial arrangements required to restore the electricity network from distributed generators following a blackout.



What is the NIC?

The NIC is open to applications from GB distribution and transmission networks. Network companies submit and deliver projects in partnership with the wider energy industry, such as energy suppliers, universities or technology providers.

How we've judged each project

Each successful project must meet specific criteria to ensure it benefits network consumers. Two expert panels (one for electricity and one for gas) advise us for each of the competitions. They help us decide which projects should be funded.

Our criteria are that a project must:

- Generate new knowledge that can be shared among all network operators.
- Be cost-effective and provide value for money to network customers.
- Accelerate the move to a low carbon energy sector and/or deliver environmental benefits, and potentially bring net financial benefits to network customers now and in the future.

Each submission must also demonstrate that the project:

- Is innovative.
- Is robust and ready to implement.
- Involves appropriate partners and external funding.
- Is relevant and timely.

Stimulating innovation

The NICs are designed to stimulate innovation by network operators. This means the industry can better meet network consumers' changing needs and **move to a low carbon economy** by:

- Connecting new low carbon sources of gas or electricity.
- Meeting the needs of small-scale and intermittent generation and new sources of gas.
- Using new sources of data and trialling new practices to improve network performance.
- Helping consumers reduce their carbon footprint and cut bills by lowering their energy consumption.
- Addressing an increase in novel vehicle technologies, heat pumps, smart domestic appliances and other low carbon technologies.
- Sharing learning from the projects through the Energy Network Association's [Smarter Networks Portal](#).
- Ensuring that network customers can benefit from each project.

Read on for details of this year's projects.



Electricity NIC project

Project:
Black Start from Distributed Energy Resources (DER)

Company name:
National Grid Electricity Transmission (Electricity System Operator)

The concept:
Trialling the organisational, commercial and technical arrangements required to deliver black start services from DER.

NIC funding awarded:
£10.27 million

Additional company contribution/ external funding:
£879.6k from NGET with additional funding of £411.9k from project partners.

Period of project:
3 years, 4 months



The project will aim to:

- develop and demonstrate the ability of DER to restart an electricity system following blackout
- develop and demonstrate the coordination and control solutions, including restoration times and defines roles and responsibilities for black start services from DER
- develop and demonstrate the procurement and regulatory frameworks required to deliver black start from DER.

Electricity NIC project

Project:
Charge

Company name:
SP Manweb Plc (SP Energy Networks)

The concept:
Overlaying transport planning and network mapping to give visibility of network capacity for electric vehicle (EV) charging points, including conducting trials of on street residential and destination charging in preparation for the delivery of flexible connections.

NIC funding awarded:
£6.85m

Additional company contribution/ external funding:
£1.022m from SP Manweb with additional funding of £571k from project partners.

Period of project:
3 years



The project will aim to:

- produce a geographic plot of the location of likely charge points and network headroom down to EHV
- define the solutions to enable lower cost connections for destination and on-street residential charging
- produce an interactive software tool for customers, to display network headroom down to LV and connection cost estimates.

Electricity NIC project

Project:
Optimise Prime

Company name:
London Power Networks Plc (UKPN)

The concept:
Conducting trials and gathering data on the charging patterns of different commercial electric vehicle (EV) fleets and their network impact.

NIC funding awarded:
£16.40m

Additional company contribution/
external funding:
£1.85m from LPN with additional funding of
16.24m from project partners.

Period of project:
3 years

Gas NIC project

Project:
HyDeploy2

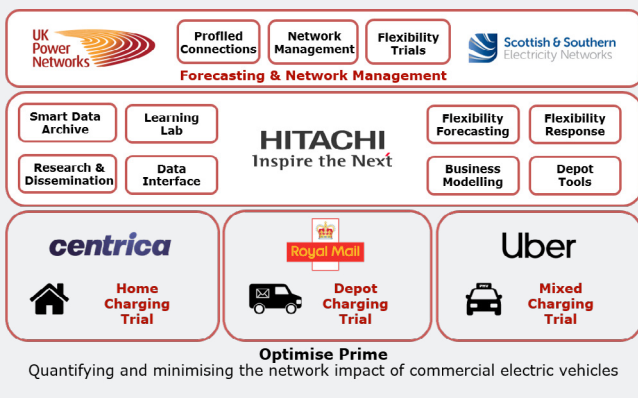
Company name:
Cadent Gas Ltd

The concept:
Building upon the principles of HyDeploy, carried out on Keele's closed private network, HyDeploy2 will trial hydrogen blending on two public gas networks.

NIC funding awarded:
13.28m

Additional company contribution/
external funding:
1.5m from Cadent

Period of project:
4 years



The project will aim to:

- develop and demonstrate smart demand response for commercial EV charging on domestic connections, depot energy optimisation and planning tools for profiled connections, and gather data on the mixed charging and journeys of electric private-hire vehicles
- gather and analyse data from trials on Hitachi common platform to determine alternative solutions to unnecessary reinforcement as a result of commercial EV charging.

The project will aim to:

- develop an evidence base for the safety of hydrogen blending on the public network
- carry out trials on the public network
- develop a roadmap for GB wide deployment of blended hydrogen.

The Electricity NIC Expert Panel

- Jo Armstrong (Chair)
- Alan Bryce
- Maxine Frerk
- Mike Kay
- Jiggy Lloyd

The Gas NIC Expert Panel

- Miriam Greenwood OBE DL (Chair)
- Ron Chapman
- Trisha McAuley OBE
- Prof. David Newbery
- Sean Sutcliffe

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