

Annexe

Strategic Innovation Fund Round 1 Discovery Phase:
innovation projects approved for funding.

1) Energy networks with projects approved

Network type	Lead project partner	No of approved projects
Electricity transmission	Scottish Hydro Electric (SHE) Transmission Plc	3
	SP Energy Networks (SPT)	9
	National Grid Electricity Transmission Plc (NGET)	3
Electricity system operator	National Grid Electricity System Operator (NGESO)	2
Gas transmission	National Grid Gas Transmission (NGGT)	10
Gas distribution	Scotland Gas Networks and Southern Gas Networks (SGN)	6
	Northern Gas Networks Limited (NGN)	5
	Cadent Gas Limited (Cadent)	1
	Wales & West Utilities Limited (WWU)	1

2) Summary of projects approved

Network type	Project number, title and description	Lead applicant	Initial net funding required
Challenge area: Whole System Integration			
Electricity transmission	INCENTIVE - Innovative Control and Energy Storage for Ancillary Services in Offshore Wind <i>Exploring the opportunity to stabilise the grid through voltage, current and frequency control technologies for offshore wind</i>	SHE	£121,002
	Network-DC <i>Developing and testing DC circuit breakers for the direct connection of renewable generation onto a DC network in coastal communities to reduce cost and impact</i>	SHE	£142,288
	Fast Flex <i>Exploring methods for distributed energy assets to participate in flexibility services</i>	SPT	£112,221
	Asset Reuse and Recovery Collaboration (ARRC) <i>Applying circular economy principles to managing high value network assets</i>	SPT	£75,963
	SCADENT - SuperConductor Applications for Dense Energy Transmission <i>Understanding the impact and benefits of using High Temperature Superconductor cables</i>	NGET	£148,440
	SEGIL - Sustainable Electrical Gas Insulated Lines	NGET	£133,814

	<i>Evaluation of long-distance Gas Insulated Lines to reduce cost and impact of new overhead line installations</i>		
Electricity system operator	Crowdflex: Discovery <i>Exploring consumer characteristics and parameters to participate in flexibility services</i>	NGESO	£70,057
Gas transmission	HyNTS Compression <i>Exploring if current assets and methods of working are suitable for hydrogen compression</i>	NGGT	£146,659
	Green Hydrogen Injection into the NTS <i>Establishing a framework for green hydrogen injection into the gas grid</i>	NGGT	£114,652
	Nuclear Net-Zero Opportunities (N-NZO) <i>Defining a set of end-user scenarios for low carbon hydrogen demand alongside nuclear generation</i>	NGGT	£107,494
Gas distribution	Excess gas turbine energy generation <i>Exploring if energy generated from gas losses can be used to generate energy for storage or feeding back into the network</i>	NGN	£134,161
Challenge area: Data and Digitalisation			
Electricity transmission	NIMBUS - Network Innovation and Meteorology to BUild for Sustainability <i>Investigating the use of weather data to model and predict the impacts of weather and climate change across the whole life of a network asset</i>	SHE	£148,476
	EN-twin-e <i>Development of a digital twin of the electricity distribution system to aid in decision making when managing and balancing assets</i>	SPT	£143,480
	Predict4Resilience <i>Using weather data and AI to produce forecasts of specific network faults and risks from extreme weather events</i>	SPT	£109,401
	Digi-GIFT <i>Designing a holistic data connector for real-time monitoring and analysis of assets</i>	SPT	£136,236
	Eye in the Sky - Utilising satellite data to improve grid resilience in emergency <i>Investigating remote sensing satellite data analytics to inform and predict asset management, network faults and impacts of extreme weather events</i>	NGET	£119,105
Electricity system operator	Virtual Energy System <i>Development of a common framework to enable interoperability of a wide range of digital twins using open data</i>	NGESO	£149,921
Gas transmission	Gas Analyser Systems for Hydrogen Blends <i>Investigating the feasibility of a fuel cell-based gas sensor for controlling different blends of hydrogen for the gas network</i>	NGGT	£113,414
	Hydrogen Metering <i>Investigation different metering solutions for hydrogen adoption</i>	NGGT	£86,378

	HyNTS Pipeline DataSet <i>Developing the tools and processes to determine the state and capability of gas transmission pipelines carry hydrogen</i>	NGGT	£95,571
	Gas Networks Interoperable Digital Twin <i>Investigation into the requirements for interoperability between different approaches to digital twins</i>	NGGT	£78,779
Gas distribution	Predictive Safety Interventions <i>Data integration with AI to predict and prevent safety incidents</i>	SGN	£58,729
	Digital Twin - Exploring the societal, operational, and cross industry whole system benefits on the Gas Distribution Network <i>Development of a digital twin to support strategic decision making to optimise operations under different scenarios</i>	SGN	£119,127
	Intelligent Gas Grid <i>Using weather data and AI to autonomously and intelligently monitor and control network gas pressure</i>	SGN	£116,401
	Digital Twins: Exploring the commercial, societal and operational benefits on green hydrogen projects <i>Exploring the benefits that could be derived from the deployment of a digital twin on a green hydrogen use case</i>	SGN	£124,265
	Thermal imagery analysis - Condition assessment fluid and pressure <i>Thermal imagery to identify gas losses and leakages to improve safety for hydrogen usage</i>	NGN	£71,182
	Digital Platform for Leakage Analytics <i>Exploring new methods to capture and analyse data to reduce gas network leakages</i>	Cadent	£114,576
	CEV: Critical factors for the adoption of smart homes for energy efficiency and implications for consumers and providers <i>Investigating the enablers and barriers to adoption, and network impacts and benefits of smart home technology</i>	NGN	£55,395
Challenge area: Heat			
Electricity transmission	Flexible Heat <i>Assessing thermal storage technologies with smart control for domestic flexibility</i>	SPT	£137,858
	HEAT BALANCE <i>Understanding the role large scale thermal storage can provide for heat pump flexibility</i>	SPT	£125,695
Gas transmission	Ch4rge - Emissions Capture <i>Investigating a viable solution for compressor machinery train to capture gas losses from hydrogen for reinjection into the network</i>	NGGT	£144,782
	Hydrogen Barrier Coatings for Gas Network Assets <i>Evaluating coating for pipes to prevent accelerated wear and tear from hydrogen transmission</i>	NGGT	£74,706

Gas distribution	Velocity Design with Hydrogen <i>Assessing different techniques to improve impacts of hydrogen pressure on the pipe network</i>	SGN	£55,542
Challenge area: Zero Emission Transport			
Electricity transmission	A Holistic Hydrogen Approach to Heavy Duty Transport (H2H) <i>Exploring energy options for decarbonisation of the rail system</i>	SPT	£108,238
	Resilient and Flexible Railway Multi-Energy Hub Networks for Integrated Green Mobility <i>Exploring decarbonised rail as a source of flexibility through integration</i>	SPT	£118,780
Gas transmission	HyNTS Deblending <i>Exploring options for different hydrogen blends to allow for refuelling stations directly on the network</i>	NGGT	£148,141
Gas distribution	NAVIGATION <i>Developing a multi-disciplinary solution for EV charging hubs which could be supported by gas networks</i>	SGN	£149,724
	Rail Decarbonisation Planning <i>Development of an overarching implementation strategy and a methodology to decarbonise rail</i>	NGN	£113,594
	Multimodal Hydrogen Transport Refuelling Study <i>Evaluation of the potential for using hydrogen for heavy duty vehicles</i>	NGN	£89,445
	HyPark <i>Development of an intelligent EV charging hub supported by the gas network for constrained urban areas</i>	WWU	£150,000

[Watch short videos about each of the 40 projects](#)