

Annexe

**Strategic Innovation Fund Round 2 Discovery Phase:
innovation projects approved for funding.**

[Link: Watch short videos about each of the 53 projects](#)

1) Energy networks with projects approved

Network type	Lead project partner	No of approved projects
Electricity transmission	Scottish Hydro Electric Transmission (SSEN: SHET)	3
	SP Energy Networks (SPEN)	1
	National Grid Electricity Transmission (NGET)	3
Electricity distribution	Electricity North West (ENWL)	3
	National Grid Electricity Distribution (NGED)	5
	Northern Powergrid (NP)	4
	Scottish and Southern Energy Power Distribution: Southern Electricity Power Distribution (SSEN: SEPD)	3
	SP Energy Networks (SPEN)	1
	UK Power Networks (UKPN)	15
Electricity system operator	National Grid Electricity System Operator (NGESO)	2
Gas transmission	National Gas Transmission (NGT)	3
Gas distribution	Southern Gas Networks (SGN)	6
	Northern Gas Networks (NGN)	1
	Cadent Gas (Cadent)	1
	Wales & West Utilities (WWU)	2

2) Summary of projects approved

Network type	Project number, title and description	Lead applicant	Initial net funding required
Challenge area: Supporting a just energy transition			
Electricity distribution	Net Zero Terrace <i>Showing how to decarbonise an entire terraced street using a smart local energy system that is affordable to consumers and easily replicable elsewhere.</i>	ENWL	£129,519
	EV Respond <i>Developing a rapid-response service using electric vehicles to restore power for people whose health and wellbeing relies on electricity, such as dialysis patients.</i>	NGED	£121,384

	Guidelight <i>Developing ways to help ensure vulnerable households benefit from low-carbon heating technologies supplied by local authority landlords.</i>	UKPN	£119,628
	SHIELD: Smart Heat and Intelligent Energy in Low-income Districts <i>New approaches and business models to make the decarbonisation of heat and energy affordable and therefore accessible to vulnerable consumers.</i>	UKPN	£82,163
	VIVID Vulnerability Identification Via Informative Data <i>Using smart meter and public data to identify which consumers would most benefit from support by local authorities, charities and energy companies.</i>	SSEN: SEPD	£94,459
Gas distribution	Hy-Fair <i>Meeting vulnerable customers' needs for tailored support, to help make the hydrogen transition work for everyone.</i>	SGN	£111,854

Challenge area: Preparing for a net zero power system			
Electricity distribution	Shifting Currents <i>Looking at how the water industry and electricity networks can work together to increase electricity system flexibility and reduce demand.</i>	NGED	£99,092
	Artificial Forecasting <i>Harnessing machine learning and data to develop the dynamic load forecasts and predictive modelling needed for an active low-carbon electricity distribution network.</i>	NP	£126,722
	CRDo+ - Climate Resilience Demonstrator (extension to new climate risks) <i>Developing tools to help predict likely risks to energy networks from extreme weather events.</i>	UKPN	£112,284
	Power Block <i>Seeking to unlock the untapped value in commercial buildings providing flexibility for energy networks.</i>	UKPN	£42,355
	Diversified Flexible Queue Management <i>Developing a data-driven approach to managing electricity network capacity, helping speed up integration of renewable energy and storage.</i>	UKPN	£147,151
Electricity system operator	Powering Wales Renewably <i>Network companies and local government collaborating to accelerate low-carbon energy in Wales, taking a whole electricity system approach.</i>	NGESO	£135,491
Electricity transmission	INSIGHT <i>Seeking to understand, predict and manage new forms of instability that may occur on a future net zero electricity network.</i>	SSEN: SHET	£83,515

Gas transmission	Electrolyser Improvements Driven by Waste Heat Recovery <i>Looking at more efficient ways to generate hydrogen to run gas compressors, using waste heat.</i>	NGT	£95,714
	Hybrid Storage Systems for Site Safety and Efficiency <i>Exploring hybrid systems to store hydrogen in both solid and gas forms, depending on operational and safety needs.</i>	NGT	£133,656

Challenge area: Improving energy system resilience and robustness

Electricity distribution	D-suite <i>Exploring how power electronics devices can help monitor and manage low-voltage distribution networks, in the face of growing demand for electricity.</i>	SPEN	£131,875
	Resilient Customer Response <i>Exploring how electricity customers with their own renewable energy sources or storage can help themselves and others in the event of network outages.</i>	NP	£117,889
	CommsConnect <i>Aims to provide reliable, resilient and more cost-effective communications for power grid operation, by combining public and private communication networks.</i>	UKPN	£110,138
	WARN Weather Alerts and Risk Analysis for Network Operators <i>Developing and testing an integrated digital solution for monitoring weather and climate-related risks to electricity distribution networks.</i>	UKPN	£109,647
	Connectrolyser <i>Researching new types of electricity connections to power the electrolysers needed to make green hydrogen.</i>	UKPN	£118,525
	Trinity <i>Developing advanced energy network control room simulators, to help staff dealing with increasing complexity driven by the net zero transition.</i>	UKPN	£134,793
	REWIRE Residential Whole System Integrated Resilience <i>Exploring the potential of gas-to-power and power-to-gas technologies to provide energy storage, add flexibility and reduce costs for domestic customers.</i>	ENWL	£149,947
	Dynamic Networks <i>Exploring ways to manage networks to speed up connection of low carbon technologies in residential developments</i>	SSEN: SEPD	£139,273

Electricity system operator	<p>Scenarios for Extreme Events <i>Creating a strategic planning methodology for events which are unlikely but could have severe repercussions on energy networks.</i></p>	NGESO	£149,999
Electricity transmission	<p>SIF Blade SIF Black Start Demonstrator from Offshore Wind <i>Investigating how new technology can enable wind farms to restore the grid following a blackout, instead of fossil fuel generators.</i></p>	SPEN	£149,226
	<p>SECURE <i>Building a strong supply chain for high-voltage direct current connectors, needed to enable growth in offshore wind power generation.</i></p>	SSEN: SHET	£147,909
	<p>REACT Rapid Evaluation Areal Connection Tool <i>Creating a geographical planning tool to help in connecting low-carbon energy technologies to the grid in the right places, while maintaining resilience.</i></p>	SSEN: SHET	£149,320
	<p>SF6 whole life strategy <i>Exploring ways to end the use of sulphur hexafluoride, a potent greenhouse gas, in electrical systems.</i></p>	NGET	£119,607
	<p>SCOHL Superconductor Overhead Lines <i>Investigating the potential for using high temperature superconductor technology on overhead line power lines in the UK.</i></p>	NGET	£132,507
	<p>WELLNESS Whole Energy System Resilience Vulnerability Assessment <i>Developing a standardised approach to embed resilience into decision-making across the whole energy network, as it becomes more complex and varied.</i></p>	NGET	£142,820
Gas distribution	<p>DNIM Distribution Network Information Modelling <i>Developing a robotic system to internally map and analyse the gas distribution network, preparing for alternative fuels such as hydrogen.</i></p> <p><i>This project is part of the SIF portfolio and will be eligible for later phases although most of its funding is currently from other sources.</i></p>	SGN	£2
	<p>HyCoRe Hydrogen Cost Reduction <i>Studying the best and most cost-effective locations for producing hydrogen using power from offshore wind, to develop a software planning tool.</i></p>	NGN	£137,262

	NextGen Electrolysis – Wastewater to Green Hydrogen <i>Aiming to reduce the cost of producing hydrogen, by using wastewater rather than high-purity water for the electrolysis process.</i>	WWU	£81,422
	Looking-Glass <i>Developing new analytic techniques and technology to measure the performance and effectiveness of security controls in energy networks.</i>	SGN	£88,007
	Digital Inspector <i>Developing advanced systems for monitoring and managing welded joints in gas pipes.</i>	Cadent	£47,600
Gas transmission	Supply Chain Resilience in the Transition <i>Mapping the supply chain required to move gas networks to alternatives such as hydrogen, so that valves and other equipment are available when needed.</i>	NGT	£77,893

Challenge area: Accelerating decarbonisation of major energy demands

Electricity distribution	RetroMeter <i>Demonstrating a ‘metered energy savings approach’ to financing insulation and energy efficiency in homes, based on a live retrofit scheme in Manchester.</i>	ENWL	£148,081
	LEO-N <i>Exploring coordination of a new approach to decarbonising homes and businesses, combined with local energy planning, to accelerate net zero.</i>	SSEN: SEPD	£141,756
	Tyseley Environmental Enterprise District (TEED) <i>Planning a complex energy system, with local generation and storage, to benefit and regenerate a mixed residential and industrial area in Birmingham.</i>	NGED	£145,216
	PRIDE Planning Regional Infrastructure in a Digital Environment <i>Using a ‘digital twin’ to model changes to electricity, heat, gas, transport, digital and water infrastructure, informing decisions on investing in decarbonisation.</i>	NGED	£130,641
	Inform <i>Developing an automated energy use and connections estimator, to accelerate the decarbonisation of larger sites and non-domestic buildings.</i>	NP	£123,196
	PIONEER Proportional Investment of Networks in Energy Efficiency Retrofit <i>Commercial models and analysis to help electricity distribution companies invest in insulation and energy efficiency for homes.</i>	NGED	£126,662
	Park & Flex	UKPN	£108,554

	<i>Exploring how large car parks full of electric vehicles could in effect be used as large-scale batteries, giving power back to the grid.</i>		
	Indus <i>Developing a network-led business model for decarbonising heat and power in mid-sized industrial parks.</i>	UKPN	£141,349
	Heatropolis <i>A study in King's Cross using data to maximise the use of electricity network capacity, so that heat networks can be decarbonised faster.</i>	UKPN	£146,195
	Full Circle <i>A framework to recover waste heat from energy network transformers, to make low-carbon heating more affordable for vulnerable and hard-to-reach customers.</i>	UKPN	£108,453
	Lightspeed <i>Designing two-way electric vehicle charging points mounted on lampposts, that can increase charging availability and provide flexibility to the grid.</i>	UKPN	£140,552
	Watt Heat <i>Investigating the potential of thermal storage such as heat batteries or water tanks to make home heating with heat pumps more flexible and economical.</i>	UKPN	£86,697
	Heat Risers <i>Developing ways to accelerate the often complex decarbonisation of heating in multi-occupancy buildings.</i>	UKPN	£92,341
Gas distribution	Integrated Hydrogen Transport Hubs <i>Placing hydrogen fuel production and refuelling sites alongside district heating systems for greater efficiency and lower costs.</i>	WWU	£135,169
	Calfacto Latent Energy <i>Increasing the efficiency of hybrid heat pumps coupled with heat storage, to reduce costs and improve customer experience.</i>	SGN	£82,469
	Net Zero Community Energy Hubs <i>Developing a model and control system to accelerate the rollout of affordable, low-carbon heat using community energy hubs.</i>	SGN	£81,315
	Carnot Gas Plant <i>Developing a system for energy storage and release integrated with a heat network, to improve efficiency and flexibility.</i>	SGN	£93,952