

Energy network price controls

OVERVIEW OF FINAL DETERMINATIONS

2021-2026



Foreword

Now more than ever, the world has its eyes on the future of energy.

Consumers are worried about their energy bills. They also care about climate change.

And the way we use energy is changing.

Cleaner ways of heating our homes and businesses are becoming available, such as electric heat pumps and hydrogen technology. At the same time, the era of diesel and petrol cars is coming to an end.

All of that is leading to changes in how we generate electricity too. Where big power stations used to dominate, there are now many thousands of smaller generators.

Last year the UK Government legislated to cut Britain's harmful carbon emissions down to net zero by 2050. They have since unveiled their 10-point green plan – with far reaching ambitions for offshore wind and hydrogen power. The Welsh and Scottish Governments have also made net zero commitments.

Our energy system needs ongoing investment to support these ambitions and ensure the excellent security and reliability that consumers deserve. And with that comes great opportunities to kick-start a green economic recovery.

Ofgem is central to helping Britain's energy system meet these aims. Our job as the regulator is to make sure that the monopoly network companies that run the energy infrastructure can invest to meet net zero targets, while keeping costs to consumers as low as possible.

We are doing this through our price controls, which we call "RIIO" (Revenue = Incentives + Innovation + Outputs).

Net zero challenge

Aim for 600,000 heat pump installations per year by 2028.

End of sale of new petrol and diesel cars and vans from 2030 paving the way for zero emission vehicles.

By 2030 the UK is aiming for 5GW of low carbon hydrogen production capacity which will change the way we heat our homes.

By 2030, we aim to produce 40GW of offshore wind.

Our electricity system could double in size by 2050 as demand for low-carbon electricity in sectors like heat and transport rises.



<https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>

What is a Network Price Control?

Britain's energy networks carry electricity and gas around the country and are funded by consumers through their energy bills.

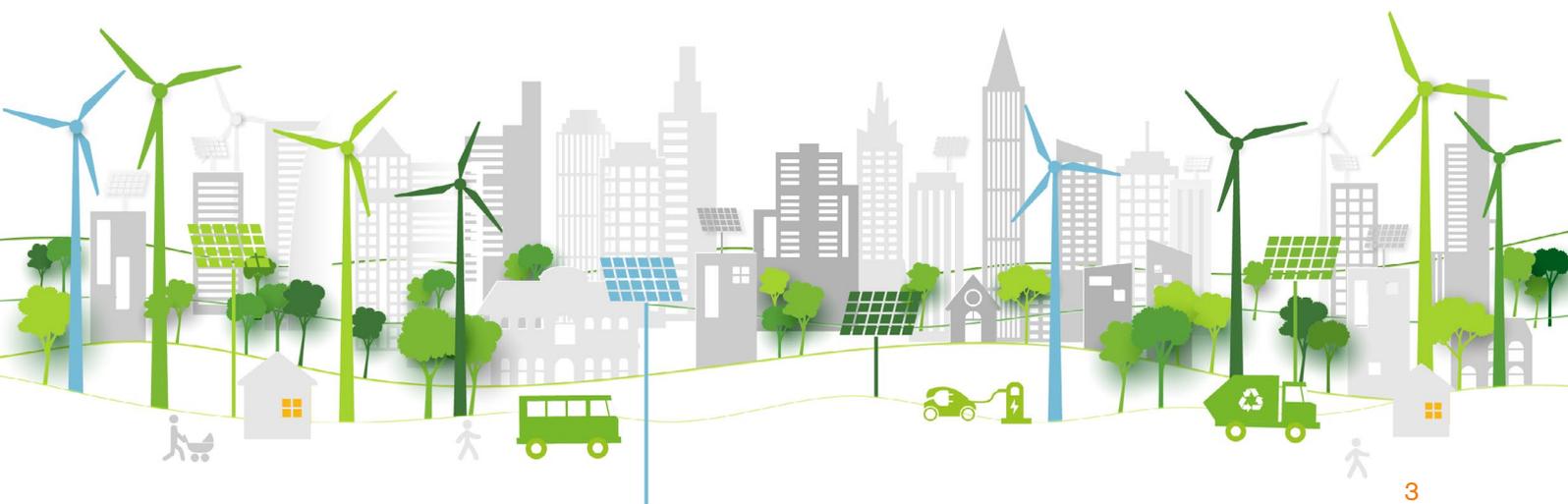
The networks are privately owned monopolies, so consumers can't choose their local network providers as there is only one in each area. This is why they need to be regulated and why Ofgem sets price controls.

The price control regime ensures network companies can, through efficient operation, earn a fair return on their activities while controlling the end cost to consumers. We also set performance targets too covering things like customer service, network reliability and environmental performance.

For the Transmission and Gas Distribution companies, the current 8-year RIIO-1 price control ends on 31 March 2021. RIIO-2 will take over from 1 April 2021.

For the first time we're also setting a price control for the Electricity System Operator (the ESO).

The ESO performs several important functions in the electricity sector. This includes operating the transmission system in real time, developing markets, and advising on network connections and investment. The ESO was separated from National Grid Electricity Transmission in April 2019 and RIIO-2 will mark its first, standalone price control. The price control has a number of unique design features, including a two-year business plan period and a tailored approach to incentives. The experience we gain from the first two-years will help inform our decisions from April 2023 onwards.



How we reached our decisions

In December 2019, the four transmission and four gas distribution energy network companies as well as the electricity system operator submitted their future plans to Ofgem. This was after a period of enhanced stakeholder engagement to improve the quality of the companies' plans. These plans set out their proposed expenditure for the five-year period from 2021-2026.

Under the enhanced stakeholder programme, we and the companies set up a number of independent groups of experts who were able to challenge proposals – this includes Ofgem's independent Consumer Challenge Group, and the companies' Consumer Engagement Groups (Gas Distribution), User Groups (Transmission), and the ESO's RIIO-2 Stakeholder Group.

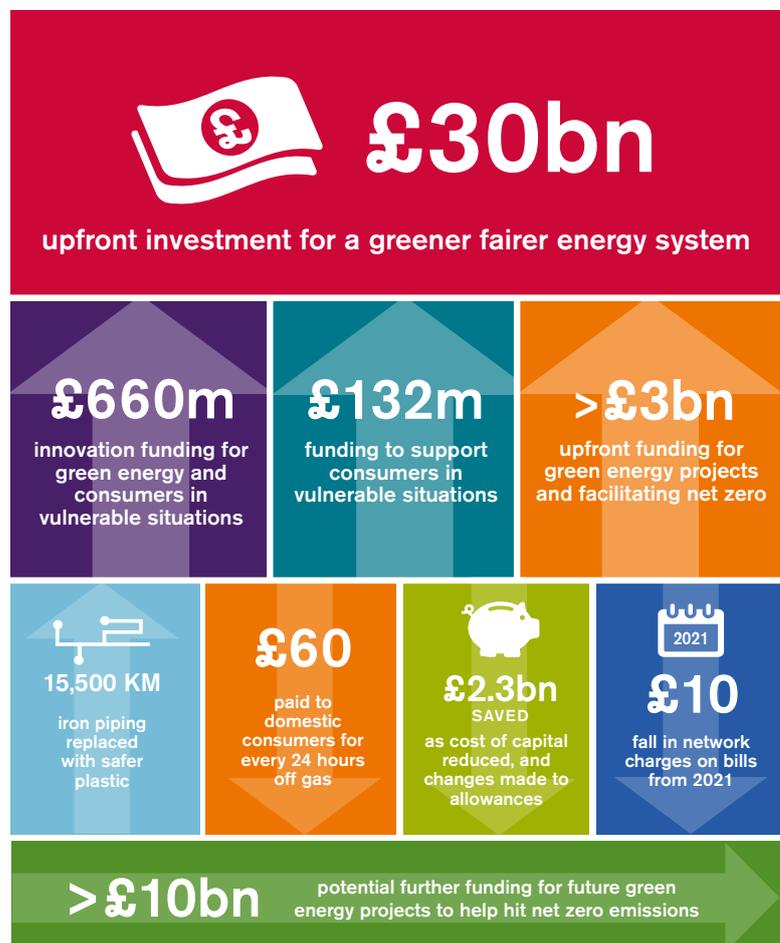
We then checked and challenged those plans, and what companies planned to spend to deliver them.

Our Final Determinations follow several months of consultation since publishing our draft proposals in July 2020.

During that time, we held a series of webinars that helped equip stakeholders with the knowledge required to submit their responses to the Draft Determinations. We also held a series of Open Meetings that gave companies and stakeholders the opportunity to discuss any areas of contention, and raise any concerns directly with Ofgem's leadership team.

Altogether, this work has led us to develop a game-changing £40 billion investment package. This includes £30bn upfront investment, with at least £10bn potential further funding. This will prepare the network companies to deliver net zero at the lowest cost to consumers, maintain a system with world-class reliability, and protect those energy consumers in vulnerable situations.

Network Price Controls Final Determinations at a glance



KEY OUTCOMES

Boosting recovery, achieving net zero

Our price control for 2021-26 will play an unprecedented role in shaping the energy system in a way that works for current and future generations.

In February 2020, we published Ofgem's Decarbonisation Action Plan. This set out our intentions to make "the network price control regulatory regime more adaptive to deliver the most effective transition at lowest cost".

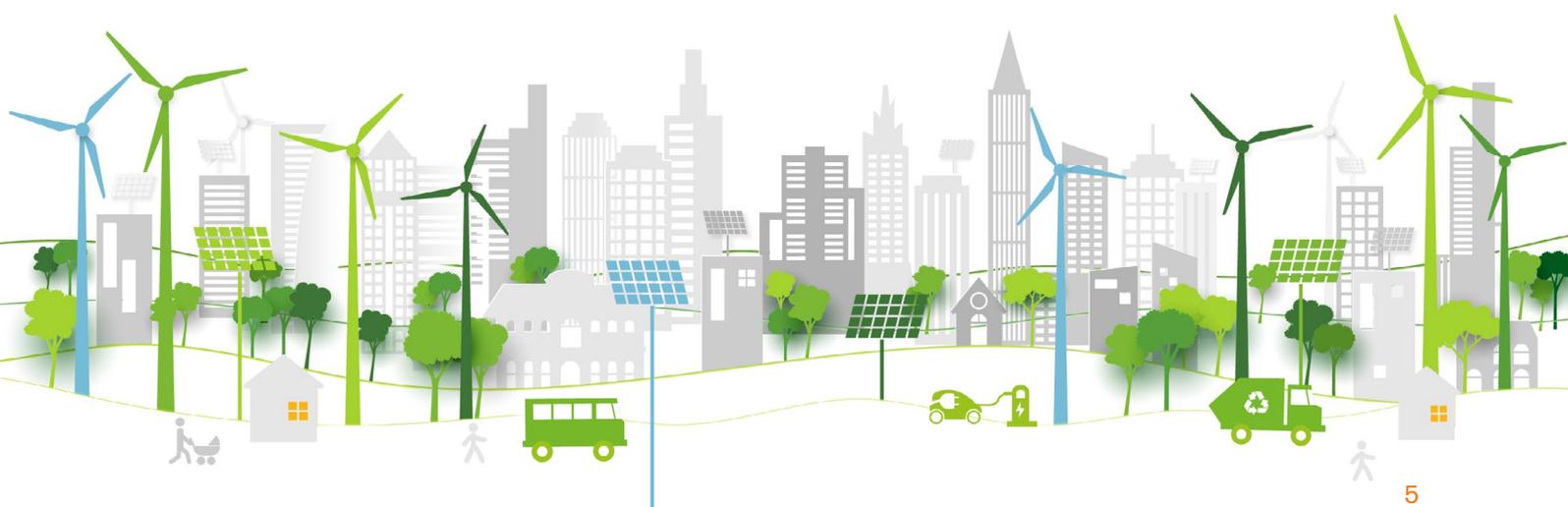
This led us to step up our efforts to support the achievement of net zero targets across England, Scotland and Wales with a new set of adaptable funding mechanisms. These will help to propel future green energy projects.

That's why we are giving the thumbs-up to around £3.6 billion of funding to support the growth of green energy and facilitate net zero. In terms of green energy growth, much of this will go directly towards connecting new low carbon generation. Smaller amounts of funding have also been allocated to support the development costs associated with new net zero projects, and incentivise companies to reduce their own business carbon footprints.

This money will also include £660 million of innovation funding via the Strategic Innovation Fund and Network Innovation Allowance. This will boost high-value innovation projects that address key challenges facing energy networks to get to grips with the energy system transition and net zero. This could include funding trials of hydrogen in gas networks for example.

We recognise that neither we nor the network companies can anticipate the development of new technologies and policies in the coming years. Nevertheless, we know that these will require new funding that we want to provide as soon as possible. That's why we've announced a series of funding mechanisms designed to facilitate the early design work on net zero-related projects and the construction of lower materiality projects to facilitate green gas. At the same time, we're making sure that our new funding mechanisms will be flexible enough so that we can allow for significant additional funding to be provided at any point over the next five years.

A further £10bn of net zero investment could be unlocked during the price control, to help make new ideas a reality, and adjust to any changes across policy, technology and the markets. We won't set a limit on future green energy funding. We'll provide more funding if companies can justify every pound they're intending to spend.



KEY OUTCOMES

Net zero challenge

In their spending plans, companies signalled potential major investments for the future. For example, National Grid Electricity Transmission are exploring options to coordinate the connection of offshore wind to the grid along the East Coast of England as Britain ushers in 40GW of offshore wind in the North Sea. Similarly, Scottish Hydro Electric Transmission (SHET) have flagged potential additional investment as part of their aims to connect higher levels of renewables generation in Scotland. In the Gas distribution sector, Cadent have been funded to undertake a feasibility study for a hydrogen network in the north west of England. The outcomes of this work could inform further spending in future on the development of hydrogen.

As we consider projects like these and others in the future, we are committed to streamlining our decision-making processes to ensure that we can quickly deliver money where it is needed, when it is needed. That means putting in place assessment processes that are tailored to the cost and complexity of projects before us.

The Electricity System Operator (ESO) will also play a critical role in net zero, we're challenging it to be even more ambitious. We've also asked it to work more closely with stakeholders to ensure that there is a coordinated, whole system approach to solving net zero challenges. We have accepted almost all of the ESO's proposed funding ask. This will give the ESO the resources and incentives it needs to deliver its net zero ambitions at pace.

We want to continue to make more investments that will boost Britain's progress to net zero. To do that, we will improve our co-ordination with the government and other key stakeholders – including the National Infrastructure Commission, the Committee on Climate Change, and the devolved administrations. At the heart of this work is a Net Zero Advisory Group and our own sub-committee of the cross-Government Net Zero Innovation Board. Both these groups bring key stakeholders together, and provide us with the useful input to decide on the big strategic investments of the future.

KEY OUTCOMES

Promoting investment while keeping costs to consumers as low as possible

Our price control for 2021-26 represents a major investment programme in Britain's energy system – not only for meeting our ambition for a greener energy system. Our investment programme will also deliver fairer outcomes for consumers and companies.

Investors play a vital role in Britain's energy networks – around £47bn is currently invested in network assets.¹ The returns those investors receive through RIIO-2 should reflect the levels of service and cost efficiency delivered for consumers while being proportionate to the level of risk of that investment.

Our Final Determinations put Ofgem in the middle of international comparators when it comes to the level of allowed investor returns. Reducing these in RIIO-2 to reflect current market rates will not only make green growth more affordable, but provide a fair return to companies and investors that is in line with other regulatory regimes.

The price control will not only support the necessary investment to maintain Britain's world leading performance and reliability. It will also make funding available to support the transformation of the energy network to achieve net zero goals.

We're pushing companies to be as efficient as possible in how they run and finance themselves, while challenging them to deliver improved levels of service. This means delivering outputs at a more efficient cost. We're adjusting funding that companies asked for, down by 16%² on average.

Nobody wants to pay more than is needed for a clean and secure energy supply. It will be welcome news for many then, that our new price controls enable greater levels of investment in greener energy infrastructure alongside an immediate reduction in average bills. This will amount to about a £10 reduction on consumer bills from the start of the price control when compared with network bills through RIIO-1. This represents around £2.3bn of savings to consumers over 5 years. This means that as spending increases to achieve net zero targets, it should not result in an overall increase in consumer bills.

¹ Average level of the Regulated Asset Value for GD and Transmission sectors through the 5 years of RIIO2, in 2018/19 prices

² Reductions in the Gas Distribution sector are on average 11.1% compared to company business plans. Reductions in the Transmission sector are on average 24% compared to company plans

KEY OUTCOMES

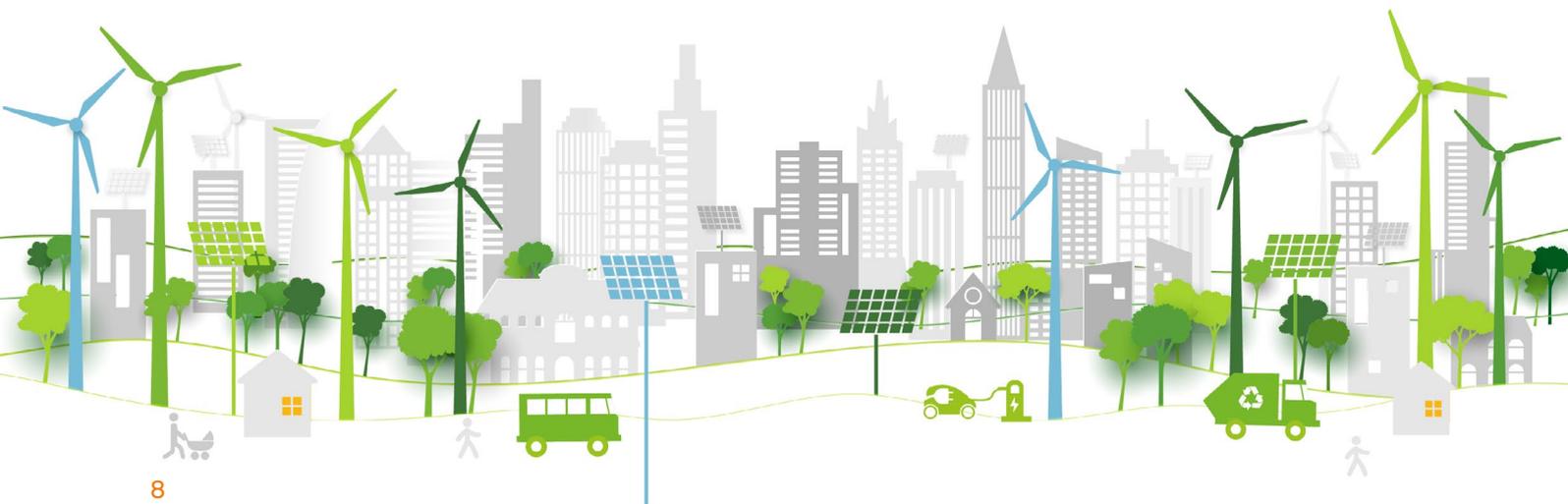
Maintain world class levels of service and reliability

Britain boasts one of the world's most reliable energy systems – the network ran at 99.9% reliability during RIIO-1. As our energy system continues to change, we know that investment is needed to maintain world-class standards. That's why we're allowing £12bn for essential repair, maintenance and upgrades work.

We have engaged extensively with the network companies to challenge, understand and give feedback on their spending plans. The price controls will ensure companies have access to vital funds needed to efficiently maintain and operate networks safely and to address unforeseen maintenance issues during the price control period where these works are justified.

We are doing this while also learning lessons from the past. We want to ensure adequate controls are in place to avoid windfall gains to the network companies resulting from inefficient, or short-term investment practices. We are encouraging the companies to be innovative in how they resolve network issues, and are allowing them the flexibility to achieve this. But we are also putting in place mechanisms to review spending to ensure companies will only be paid for what they deliver.

We are continuing to develop these mechanisms to allow greater visibility of risk related to things like the age, condition and use of network assets. This is important when thinking about how much to invest going forward to ensure the networks remain resilient. We're continuing to assess and monitor the impact of the network companies RIIO2 spending proposals – especially when it comes to managing risk. While not a direct measure of reliability, this work will allow us to generate a risk score. That will allow us to hold companies to account should there be poor performance and recognise great performance where it occurs.



KEY OUTCOMES

Making sure no one is left behind

Our price control will also include a step change in funding for consumers in vulnerable situations with a £132 million funding package. This package includes a £60 million allowance for consumers in vulnerable situations to get the support they need from the gas distribution network companies (GDNs).

This allowance will enable companies to kick start a variety of exciting projects working with each other, and with local partners, to provide new products and information to support consumers in vulnerable situations and to increase protections against the dangers of carbon monoxide.

Based on what companies have told us about their own vulnerability strategies, these projects will range from new efforts to raise awareness of carbon monoxide – including through holding events at schools and providing carbon monoxide alarms – to the provision of energy advice and having more joined-up working between different utility providers to identify those in most need of support.

The allowance will also help prevent consumers in vulnerable situations being left without gas, following an interruption or emergency visit, as funding for essential boiler repairs is now included within the scope of the allowance.

Next steps

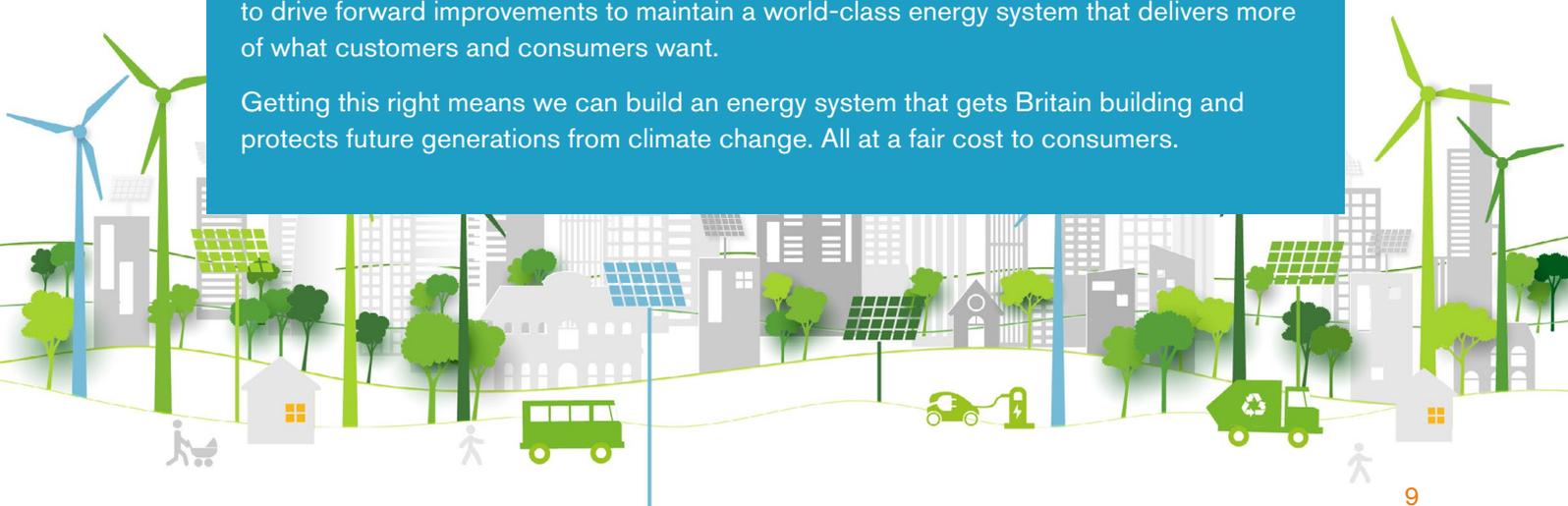
These Final Determinations are not the end of the process.

The conversation will continue. Later this month, the statutory consultation on licence modifications will be published. In February 2021, we plan to publish RIIO-2 licences and Regulatory Instructions and Guidance. In the lead up to the start of RIIO-2, we also plan to consult on and publish our guidance documents.

After that, RIIO-2 price controls for gas and electricity transmission, gas distribution and system operator will commence from 1 April 2021.

Companies will continue to be held accountable. Each year we will assess performance to drive forward improvements to maintain a world-class energy system that delivers more of what customers and consumers want.

Getting this right means we can build an energy system that gets Britain building and protects future generations from climate change. All at a fair cost to consumers.





Transmission operators Case studies



ELECTRICITY AND GAS TRANSMISSION NETWORKS

- Scottish Hydro Electric Transmission (SHE)
- Scottish Power Transmission (SPT)
- National Grid Gas (Transmission)(NGGT)
- National Grid Electricity Transmission (NGET)

CASE STUDY

Big Infrastructure – Connecting low carbon generation

Eastern High Voltage Direct Current (HVDC) Link.

Britain is seeing a massive boost in renewable energy generation so we can meet our net zero targets. But the energy isn't always generated where it's most needed, so it has to be transported across Britain. We're making this happen by approving development funding to support companies' big infrastructure projects.

For example, we're providing funding to support the early development of Scottish Hydro Electric Transmission plc (SHE) and National Grid Electricity Transmissions (NGET) plans to lay a subsea cable to connect Peterhead in the North East of Scotland, to Drax Power Station in the East Midlands. Scottish Power Transmission plc (SPT) and NGET have laid out similar plans for connecting Torness, East of Edinburgh to Hawthorn Pit, a substation in County Durham.



CASE STUDY

Shovel Ready – net zero projects in the baseline

The renewable generation connected to the north of Scotland transmission system will reach nearly 10 GW by March 2026 and the total generation will be 11.2 GW.

Reinforcements to the transmission system are vital so that renewable energy can be transported from the north where the energy is generated to south Scotland and beyond, where it is needed. We're approving the East Coast onshore upgrades, which are a phased onshore reinforcement on the 275kV electricity network on the East Coast of Scotland.

These onshore reinforcements cover both the SSE Transmission and SPT area, with the bulk of the works in the SSE Transmission area.

SSE Transmission will invest over £250m across the RIIO-2 period with initial delivery in 2023.



CASE STUDY

Funding the future

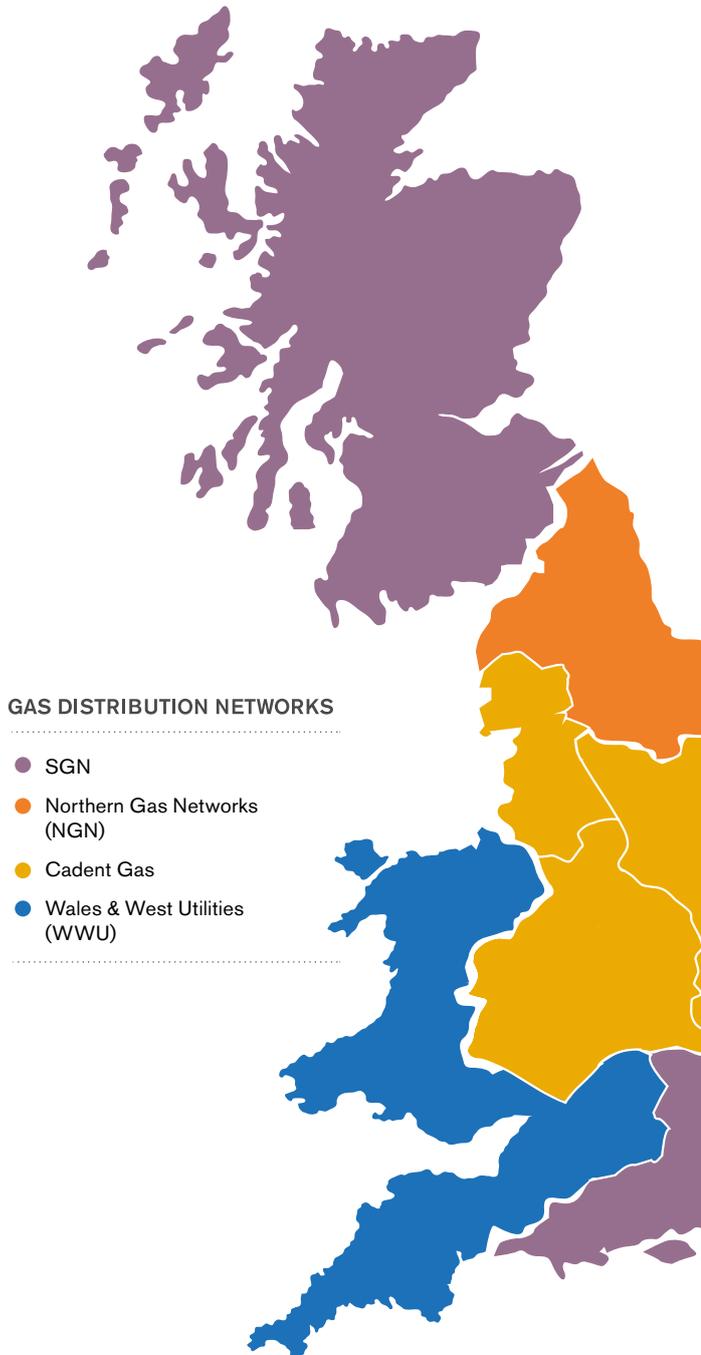
No one can anticipate the future of new ideas and technology. But we want to be ready to fund these developments in the coming years.

Right now, the network is taking on more renewable generation. At the same time, we're also seeing an accelerating decommissioning of larger, older generating plants. It's more complex keeping the electricity system stable with many thousands of smaller generators and we have to address this challenge to maintain the high levels of reliability that Britain already has. Synchronous Compensators are a potential solution to manage stability so we have approved funding for SPT to carry out development works to inform a future reopener.

Harker substation, Carlisle, has seen an increase in renewable generation connections. It also has many condition related issues including leaking sulphur hexafluoride (SF6), a highly potent greenhouse gas. The site needs to be rebuilt with cleaner infrastructure, but plans were not ready for the RIIO-2 assessment process. The work must start in the RIIO-2 price control, so we've approved development funding to inform a future reopener for NGET on the basis of future need.



Gas distribution networks Case studies



CASE STUDY

Hydrogen – an alternative de-carbonised fuel source for many large industries

With a hydrogen fuel source and carbon capture and storage, large industries and power generators can develop on-site technologies to meet their de-carbonisation targets set by government. Networked hydrogen will also accelerate decarbonisation of other hard to reach sectors including heat, dispatchable power generation and transport. The HyNet project aims to provide 30TWh/y of low carbon hydrogen across the North West of England and the project could save over 8Mt of CO₂ emissions per year with further expansion beyond this.

The project is being delivered by a consortia with Cadent undertaking the design work for a hydrogen distribution system and associated hydrogen above ground installations. The hydrogen distribution system will connect to two existing gas offtakes, to around eight major industries to the north and east of the hydrogen production plant and the proposed hydrogen storage facilities. This distribution system will comprise 8 to 14 above ground installations. The initial phase of the hydrogen distribution system is around 85km of high pressure pipeline ranging from 300 to 900mm diameter.

Other members of the consortia will be developing the offshore CO₂ capture and storage, the onshore CO₂ capture and pipeline from the hydrogen production plant, the expansion of the existing hydrogen production at the Essar refinery at Runcorn and the hydrogen storage facilities in the Cheshire salt basins. These storage facilities will have an indicative storage volume of 370 million cubic meters of hydrogen or 1.3 TWh.

Further Information

The full package of Final Determinations and further information on network price controls can be found on our website at www.ofgem.gov.uk/regulating-energy-networks/

For more information, contact
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