Department for Energy Security & Net Zero

Government Response

to the National Infrastructure Commission's Study 'Electricity distribution networks: Creating capacity for the Future'

July 2025

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Any enquiries regarding this publication should be sent to us at: ESSupport@energysecurity.gov.uk

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Foreword from the Minister for Energy for Energy Security and Net Zero

Electricity networks have an important role to play supporting the delivery of clean power, energy independence and net zero, linking low-carbon generation and storage to increasing electricity demand. Networks are also vital to the government’s growth mission as a critical enabler of all forms of electricity demand, including new housing and new industries, such as gigafactories and data centres.

We have worked closely with Ofgem, the National Energy System Operator (NESO), businesses, trade unions, and others to accelerate towards our Clean Power Mission and Net Zero goals. We have established Great British Energy, which will immediately begin working with schools, the NHS, and devolved governments to install solar panels, build local clean power and bring down energy bills.

A key priority for achieving clean power is to accelerate the build of electricity network infrastructure and increase capacity in the network as new sources of low-cost, home grown and clean generation connect to the grid. To enable this, the government has been working hard to break down the barriers at both the high-voltage transmission and local distribution levels.

We are already working closely with Ofgem, NESO, and wider delivery partners to accelerate the delivery of transmission network infrastructure, for example by reforming planning, unlocking supply chains, and taking a strategic approach to skills and workforce. This includes speeding up the process and reforming the system to deprioritise stalled projects in the grid connections queue, so projects which support our 2030 clean power and growth goals can be connected rapidly.

Many of these important actions will also benefit the distribution network but we must also consider the specific needs and requirements at distribution level. To avoid the infrastructure delivery challenges experienced in the transmission network, it is critical that we act swiftly to ensure a robust and fit-for-purpose distribution network is in place as demand for electricity grows.

In this context, the National Infrastructure Commission’s (NIC) study ‘Electricity distribution networks: Creating capacity for the future’ is extremely helpful, and I would like to thank the NIC for its hard work in preparing its recommendations on readying the distribution network for net zero. I am glad that the study aligns well with work already underway by government, while helpfully outlining where we can go further, and I am particularly pleased with the call for proactive investment.

Expanding and upgrading the distribution network will ensure households can embrace sustainable, green technologies like heat pumps and EV charging, businesses can set up and expand with quick connections, as well as wider benefits such as reduced emissions, improved air quality and – crucially - enabling growth.

The government is committed to driving forward a transformation of the electricity network. The study is an important and timely contribution to our strategy, and we will continue to work closely with our delivery partners to address the challenges the NIC has laid out.

Minister Shanks MP

Minister for Energy for Energy Security and Net Zero

Executive summary

Electricity demand is expected to at least double by 2050, due to the rapid growth in power demand driven by decarbonisation efforts. The main drivers of this increase include the electrification of heating, transport and industrial processes.[1] Expanding the distribution network is critical to building a secure energy system that can bring down bills for households and businesses for good.

The National Infrastructure Commission (NIC) was commissioned by government to make recommendations on the policy actions needed for the distribution network to be ready for net zero. Its study 'Electricity distribution networks: Creating capacity for the future' was published 21 Feb 2025.[2] The study included 14 recommendations across seven themes including connections, price controls, skills, and flexibility.

On 1 April 2025, the NIC merged with the Infrastructure and Projects Authority (IPA) to form a new organisation, the National Infrastructure and Service Transformation Authority (NISTA), a unit within HM Treasury. As the distribution study was published prior to merging, we will continue to refer to them as the NIC in this publication.

The government strongly supports the study's overall theme of investment ahead of need and agrees with the NIC that a 'step change' is required. An anticipatory approach should be taken, based on strategic planning defining need, a conscious management of uncertainty and a price control framework that can provide forward looking priorities.

Following a thorough review of the study, the government agrees with all 14 recommendations. In a small number of cases, our response includes some small caveats on implementation process. Many of the recommendations are for Ofgem or NESO to implement, we have discussed our response with them, and they are in agreement. We have also sighted Distribution Network Operators (DNOs) and will continue to work closely with them for implementation.

Flexibility

The government agrees with the NIC that flexibility has a crucial role to play both for the distribution network and for the wider electricity system. We welcome the finding that flexibility can reduce the amount of investment needed in the distribution network by around 15%, with consequential benefits in reducing costs for electricity consumers. In the Clean Power 2030 Action Plan, government committed to publish a Clean Flexibility Roadmap in 2025 (previously the Low Carbon Flexibility Roadmap) to maximise the use of flexibility across the electricity system to support decarbonisation and lower electricity bills in line with our Clean Energy Superpower mission. The roadmap will set out a coherent and comprehensive vision for how

[1] DESNZ (2021), 'Net Zero Strategy: Build Back Greener – GOV.UK' (viewed April 2025)
[2] National Infrastructure Commission (2025), 'Electricity distribution networks: Creating capacity for the future' (viewed April 2025)

we will achieve the flexibility required to deliver clean power by 2030 and net zero by 2050. Government is well aligned with the report’s recommendation on flexibility, including on the specific measures identified which are also already underway and covered in the Clean Power 2030 Action Plan.

Maintaining the Reliability of the Network

The NIC recommends that government and Ofgem should review security of supply standards for distribution networks to ensure they are designed for future loads and that vulnerable customers are protected. NIC states that Ofgem should require distribution network operators (DNOs) to identify ‘no regrets’ activities that would improve security of supply, and that the government and Ofgem should work with DNOs to agree on work required to review security of supply standards.

The government agrees with this recommendation. Electricity security of supply and the continued reliability of distribution networks is a priority for government as we transition to Clean Power 2030 and beyond. We also agree with the NIC’s view that changes in the network such as automation, digitalisation and the use of flexibility, change the nature of the security of supply risk. DNOs are rolling out low voltage network monitoring in the current price control, which will help to inform this work and government, Ofgem and NESO are working at pace to consider the best approach to a full review of the current security of supply standards (this review may need a more flexible timescale than NIC’s recommended 2028 completion). Requiring DNOs to identify ‘no regrets’ activities that improve security of supply, forms part of the current ED2 price control via the Worst Served Customers funding stream, and the Storm Arwen Re-opener. Ofgem is currently reviewing, and has consulted on, whether the Interruptions Incentive Scheme remains fit for purpose for the next price control, ED3.

Strategic Planning

The NIC has identified that Regional Energy Strategic Plans (RESPs) should improve planning and data in the sector and proposed that NESO should create a register of projects in development and publish plans in an open data format accessible to all energy system actors, including local government. The NIC recommends that Ofgem and NESO should clearly define accountability for RESPs. This includes specifying the decisions the system operator can make, how network investment plans will be assessed, and the stages for input and challenge by different actors.

The government welcomes the publication of Ofgem’s policy framework decision on RESPs, which aligns with these recommendations, and its publication of the ED3 price control framework on 30 April 2025, which provides further detail on how these recommendations will be addressed. Government and Ofgem will support NESO in developing RESPs that look ahead to strategic investment, ensuring confidence in project feasibility.

The NIC recommends that local authorities and stakeholders should have structured ways to contribute to RESPs and that NESO should provide tools and advice to support local planning roles while Governments should assess and fund the necessary capacity for local authorities to engage effectively. The NIC also recommend that local authorities should have mechanisms to input into plans, even without formal local energy plans. They further recommend that local decarbonisation targets should be supported where projects have credible delivery plans.

The government already provides capacity support for local government to deliver net zero, for example, through the Local Net Zero Hubs Programme and we will explore how we can best utilise this support to feed into the RESP process.

The NIC recommends that Ofgem and NESO should set out a proportionate transitional plan for the RESPs to inform the next electricity distribution price control. We agree with this also and welcome the publication in February 2025 of an open letter from Ofgem to NESO outlining the scope and timeline for transitional RESP outputs, including consultations and final outputs, to support DNO business planning ahead of ED3. DESNZ will continue to work with Ofgem to facilitate strategic network investments for the RIIO-ED3 period (2028-2033).

Price Control Reforms

Network companies are monopolies regulated by Ofgem through a price control process which runs in 5-year periods. The process determines how much network companies can invest, sets an investible, but not excessive, rate of return, and embeds incentives for innovation. For each price control period network companies submit a business plan including targets to Ofgem and can be financially rewarded for meeting or exceeding agreed targets.

The next electricity distribution price control period, ED3, will run from 2028 to 2033. We welcome the approach Ofgem set out in its recently published ED3 Framework supporting strategic network planning and investment ahead of need, recognising the essential role of the distribution network in enabling net zero.

The NIC also recommends that Ofgem should base future price controls on long-term distribution network needs, balancing consumer value and costs. Objectives should include net zero and growth duties, strengthening network resilience, and high-quality customer service. Funding mechanisms should support proactive investments and a programmatic approach to enable low carbon technologies.

The government agrees the price control should enable prompt investment while effectively managing incentives and penalties to encourage positive behaviours that strengthen network resilience and cost efficiency. We will continue to work with Ofgem as it develops the ED3 price control, commencing in 2028, and through the Ofgem Review ensure Ofgem has the right tools to consider government strategic priorities in decision-making.

The government agrees with the NIC recommendation that allowances should be set as far as possible before price controls begin, ensuring funding mechanisms support proactive investment and using re-openers only for genuine long-term uncertainty and setting allowances

to enable a 'touch-the-network-once to 2050' approach. We will work with Ofgem as they progress through the ED3 price control process (please see the ED3 timeline in recommendation 9) and support them in the use of uncertainty mechanisms and reopeners where appropriate. We will continue to work with Ofgem and NESO on the delivery of RESPs (see recommendations 4 and 6) and will ensure that they form an integral part of the price control to reduce reliance on uncertainty mechanisms.

The NIC also recommends that Ofgem should accelerate no regrets activities such as proactive unlooping and off-gas grid reinforcement. It recommends that government should set a date for eliminating looped supplies to inform Ofgem's approach and enable DNOs to develop a programme across multiple price controls.

The government broadly agrees with this recommendation but does not agree that a date should be set for the elimination of looped supplies. We do agree that Ofgem should accelerate unlooping. Targeted proactive unlooping should support timely installation and connection of low carbon technologies. Alternative solutions, such as load-limiting devices and smart charging, may be suitable alternatives in some cases, at least in the short-term. We welcome Ofgem's expectation, set out in its ED3 framework decision[3], that DNOs should take a more programmatic approach to the delivery of certain activities, including proactive unlooping.

The relationship between government and Ofgem

Ofgem is Great Britain's independent energy regulator. It is a non-ministerial government department, directly accountable to Parliament for its performance and decisions. The government is responsible for setting the policy for the energy sector and proposing any changes to the statutory framework. The Strategy and Policy Statement (SPS) for Energy Policy in Great Britain sets out government's strategic priorities and policy outcomes for the sector. Ofgem must have regard to the strategic priorities set out in the strategy and policy statement when carrying out regulatory functions.

The NIC recommends that by the end of 2025, the government should provide a stronger strategic vision to Ofgem through an updated SPS. This should include clarity on a more focused set of priorities and outcomes for the energy sector, better reflecting government objectives and the trade-offs between them. The revised SPS should emphasise the importance of proactive investment in the distribution network.

An SPS has been in force since May 2024. The current government is reviewing Ofgem's objectives and duties as part of the Ofgem Review, announced in December 2024. This review will ensure the energy regulator is fit for the future, including that it has the right mandate, duties, scope, and remit. The Ofgem Review includes consideration of how a revised SPS could fit within a new framework of streamlined duties. We anticipate given timescales needed to complete the procedural requirements, a new SPS will be in force from Q4 2026.

[3] Ofgem (2024), 'Framework consultation: electricity distribution price control (ED3)' (viewed April 2025)

Connections

The NIC recommends that Ofgem should introduce minimum standards for DNOs, including agreed connections guidance, enabling applications for multiple low carbon technologies, and developing common digitised connection documentation.

The government agrees with this recommendation to ensure timely connections and high levels of customer service, crucial for achieving clean power by 2030 and net zero by 2050. Clear, digital information will help customers make well-informed applications, reducing delays. Simplifying the process for installing low carbon technologies (LCTs) is essential, and allowing multiple LCTs per application will speed up installations.

Ongoing efforts, such as the Energy Networks Association’s (ENA’s) ConnectDirect platform and UKPN’s Smart Connect, are improving the connection upgrade processes. Ofgem’s End-to-End Review seeks to enhance service standards across the connection process.

The NIC also recommends that Ofgem should strengthen incentives for delivering major connections in the next price control. Reformed incentives should cover performance across the major connections process, measure distribution network operator performance, and offer rewards for high performance and penalties for poor performance.

The government agrees with this. Although incentives are already in place, improvements are needed. Pre-application activities and timely scheduling of works, for example, which are not currently incentivised would benefit connection customers.

The government will continue to work with Ofgem to ensure effective connection incentives are included in the next (ED3) price control.

Planning and Consenting

The NIC recommends that the government should reform the planning and consenting system for distribution infrastructure by the end of 2025 to enable new connections and network upgrades to be made more quickly. This includes amending regulations to permit a wider range of projects to proceed without the need to submit a planning application, addressing ambiguities regarding the acquisition of rights in private streets and extending access rights for operators conducting maintenance on third-party land.

The government recognises the importance of these reforms for meeting future electricity demand and achieving Clean Power by 2030. Reducing regulatory barriers will accelerate the roll out of critical infrastructure projects, enhancing the resilience of the distribution network and supporting the transition to net zero. Work is already underway in this area. The government has reconvened the Land Access and Consents working group to consider and test proposals for reform and has committed to consult on land rights and consents measures to accelerate the development and maintenance of electricity network infrastructure later this

year. The government agrees with the NIC's recommendations on planning and consenting and will include the reforms proposed by the NIC in the planned consultation.

All of the NIC recommendations for planning and consenting will require legislative changes to be implemented.

Supply Chain and Skills

The NIC recommends that government should identify the skills gaps and actions required to attract, recruit and retain the large workforce needed to deliver the energy transition. They also recommend that this should form the basis of a net zero skills and workforce strategy, published by the end of 2025.

The government agrees with this recommendation. We are committed to identifying and addressing the skills gaps to attract, recruit, and retain the workforce needed for the energy transition.

The government's initial assessment of the challenges of building the skilled workforce to deliver the Mission has been outlined in a number of key government publications including the Clean Power 2030 Action Plan.[4] The Plan includes an Evidence Annex[5] which provides a basis for government to better understand the 2030 workforce requirements and support targeted skills planning. The Skills England Report: Driving Growth and Widening Opportunities further provides an analysis of the skills system, identifying the 'green workforce' as a key growth sector.[6]

DESNZ has set up the Office for Clean Energy Jobs (OCEJ) which is focusing on coordinating work to ensure we have the skilled workforce in core energy and net zero sectors critical to meeting the government's Clean Energy Superpower Mission. The OCEJ is working closely with Department for Education (DfE), Skills England, Department of Work and Pensions (DWP), and Devolved Governments to develop a shared assessment and approach to skills reform.

OCEJ will publish further details on the strategy to deliver the clean energy workforce in due course. DESNZ is also leading wider network sector-specific engagement with industry, which will include DNOs and the supply chain, to identify wider actions that could be taken forward across the electricity network sector.

[4] DESNZ (2024), 'Clean Power 2030 Action Plan' (viewed April 2025)
[5] DESNZ (2024), 'Clean Power 2030 Action Plan: Assessment of the clean energy skills challenge' (viewed April 2025)
[6] DESNZ (2024), 'Skills England report: driving growth and widening opportunities' (viewed April 2025)

Introduction

An electricity network that can meet growing demand and accommodate low-carbon generation is vital for the government's ambitions of Clean Power 2030 and Net Zero 2050.

Electricity demand is expected to at least double by 2050, due to the rapid growth in power demand driven by decarbonisation efforts. The main drivers of this increase include the electrification of heating, transport and industrial processes.[7] Expanding and upgrading the distribution network is critical to building a secure energy system that can bring down bills for households and businesses for good.

It is also a key enabler for growth, providing capacity to ensure that new infrastructure and business investments are able to connect to the grid in a timely way and access the power they need.

The Distribution Network

The electricity network is split into the transmission and distribution networks. Transmission lines are the high voltage 'motorways' that connect the major power stations around the country to centres of energy use. The distribution system has a more local role, covering everything from smaller pylons and cables to the wires running under city streets to individual houses.

The vast majority of electricity demand and an increasing proportion of generation, connects to the electricity network at the distribution level. For example, houses, most businesses and some renewable energy projects. It will be important that the network needed is available at the right time. Whilst capacity constraints have so far been felt more acutely in the transmission network, we must act swiftly to ensure a robust distribution network is in place as the demand for electricity grows.

Much of our current work on the electricity network more broadly will further delivery of the distribution network. The reforms we are implementing, including taking a strategic approach to planning, streamlining the planning and consenting processes and making major changes to the grid connections queue, will benefit distribution as well as transmission. The NIC distribution study supports and builds upon our current work and brings a necessary focus to the distribution network.

[7] DESNZ (2021), 'Net Zero Strategy: Build Back Greener - GOV.UK' (viewed April 2025)

The National Infrastructure Commission

The National Infrastructure Commission provided the government with impartial, expert advice on major long-term infrastructure challenges. It assessed national infrastructure needs, carrying out in-depth studies into the UK's most pressing infrastructure challenges, and making recommendations to the government. It also monitored the government's progress in delivering infrastructure projects and programmes recommended by the NIC.

The NIC distribution study was announced by government in the Autumn Statement 2023 to make recommendations on the policy actions needed for the distribution network to be ready for net zero. The study 'Electricity distribution networks: Creating capacity for the future' was then published by NIC on 21 Feb 2025.[8] This delivered to government, Ofgem and NESO, 14 policy recommendations to prepare the distribution network for net zero across seven themes including connections, price controls, skills, and flexibility. In this government response to the study, we detail the government view of the recommendations and the steps we are taking to implement them.

On 1 April 2025, the NIC merged with the Infrastructure and Projects Authority (IPA) to form a new organisation, the National Infrastructure and Service Transformation Authority (NISTA), a unit within HM Treasury. NISTA combines the long-term strategic policy expertise of the Commission with the IPA's major project delivery and assurance specialism into a new centre of infrastructure expertise within government.

The Role of Ofgem

Ofgem is responsible for regulation of the network. The government supports Ofgem in setting out a price control that enables the investment needed to deliver a secure, resilient, net zero network in an efficient way.

In December 2024, the government launched a review of Ofgem that considers how it can better drive the government's missions for clean power and economic growth by supporting the private sector to invest in the energy infrastructure required. A report will be published, outlining next steps on the Ofgem review, in summer 2025.

The Role of NESO

On 1 October 2024, the National Energy System Operator was established and has taken on responsibilities across electricity, gas, and hydrogen, including all the functions previously undertaken by the Electricity System Operator (ESO).

[8] National Infrastructure Commission (2025), 'Electricity distribution networks: Creating capacity for the future' (viewed April 2025)

The legal framework for NESO, including its duties and functions, is set out in the Energy Act 2023.[9] NESO is a public corporation, with operational independence from government, and is licensed and regulated by Ofgem.

It has roles across the energy system, including advising government and Ofgem and strategically planning the integrated energy system needed to secure the government’s energy security, net zero and affordability goals. It has also been announced by Ofgem that NESO will take on Regional Energy Strategic Planning (RESP).

[9] DESNZ (2023), ‘Energy Act 2023’ (viewed April 2025)

Flexibility

Summary of policy area

Moving to a smarter and more flexible electricity system is crucial to delivering our mission to reach clean power in 2030 and to accelerate to net zero emissions, as well as to reduce energy bills for consumers. Consumer-led flexibility, electricity storage, interconnection and other low carbon flexibility technologies can help to balance supply and demand, minimising the amount of peaking generation and avoiding or deferring the need for additional costly network reinforcement. The NIC study finds that flexibility alone can reduce the amount of investment needed in the distribution network by around 15%. This represents savings of £6.7-£7.9 billion across the period from 2024 to 2050.

Consumer-led flexibility, batteries and interconnectors are forecast to generate savings for all households, and consumers who are choosing to participate in consumer-led flexibility can save additionally. For example, an average-consumption household with an EV could already save around £330 annually by smart-charging on a time-of-use tariff when compared to a static one.[10] Flexibility also offers significant opportunities for growth and investment in leading-edge technologies.

Government recently summarised its position and actions on low carbon flexibility in the Clean Power 2030 Action Plan. Actions include publishing a Clean Flexibility Roadmap in 2025. The Roadmap will set out a coherent and comprehensive vision for how we will achieve the flexibility required to deliver clean power by 2030 and net zero by 2050.

Under the current price control, DNOs can procure flexibility instead of reinforcing the network, where doing so would be cheaper (known as flexibility first). This has led to the growth of local flexibility markets, with 3.2GW of flexibility being contracted by distribution networks in the period from June 2023 to June 2024. The Energy Networks Association (ENA) Open Networks programme has been working to standardise and simplify these markets to lower barriers to participation and improve coordination with national markets. Suppliers also play an important role in bringing accessible flexibility options to consumers.

The Market Facilitator is being established, following Ofgem decisions, to build on this work as a single, expert entity with a mandate to align local and national flexibility market arrangements. This role, which Ofgem has assigned to Elexon, will be responsible for aligning market rules, improving coordination and establishing primacy rules to govern which instructions should take precedence when there are conflicts between national and local flexibility needs. Ofgem recently consulted on the policy framework for the Market Facilitator, including proposing a target for this market alignment to be achieved by no later than the end of 2027.

[10] DESNZ (2024), 'Future default tariffs: Call for evidence' (viewed April 2025)

NIC Recommendation 1:

Government should introduce measures to maximise the use of flexibility across the electricity system, working with the National Energy System Operator and Ofgem to deliver the Low Carbon Flexibility Roadmap (now the Clean Flexibility Roadmap) by the end of 2025. This should cover the role of flexibility and digitalisation across all parts of the electricity system, including:

1. working with Ofgem to update the smart meter rollout plan by the end of 2025, including measures to fix smart meters not currently operating in smart mode
2. implementing the smart appliance mandate for heat pumps in 2026
3. working with Ofgem and Elexon to deliver market-wide half-hourly settlement by 2027 without further delay
4. supporting industry to improve flexible asset registration.

1. Smart metering

Government view

The government considers the flexibility facilitated by smart metering as critical to achieving clean power by 2030. We agree the need to accelerate the rollout and improve consumer experience, by continuing to drive high levels of first-time installations, increasing the levels of smart meters operating in smart mode, and by ensuring a smooth transition to 4G communications. We agree with the recommendation and are already working with Ofgem to update the regulatory framework for smart metering by early 2026, including measures to increase the numbers of meters operating in smart mode.

Action owner

DESNZ – continue developing the future regulatory framework for areas within its remit.

Ofgem – overseeing energy supplier compliance with licence conditions. Developing future regulations for areas within its remit, including introducing Guaranteed Standards of Performance for smart metering.

Next steps

Government will be consulting on proposed regulatory interventions in due course to drive the smart meter rollout. Further to this, Ofgem, having worked closely with government, has recently published a consultation[11] on introducing new Guaranteed Standards of Performance relating to smart metering. These proposals include standards relating to the timely installation and maintenance of smart meters, with automatic compensation for consumers where they are not met.

[11] Ofgem (2024), 'Smart meter guaranteed standards: Supplier Guaranteed Standards of Performance' (viewed April 2025)

It is vital that industry fulfil their obligations to install smart meters and ensure they are operating correctly. It is therefore also important that Ofgem continues to regulate the industry, including by taking timely and robust compliance and enforcement action where necessary against industry obligations to both install smart meters and ensure they are operating correctly.

2. Smart heating appliance mandate

Government view

The government agrees that the adoption of smart heating appliances, such as heat pumps, with the highest potential for flexibility will be a key part of the Clean Energy Superpower mission. The scaling up of the electrification of heat will significantly increase the demand on the electricity network. Mandating smart functionality for electric heating appliances, including heat pumps, will help manage the increased demand on the network and ensure smart heating is adopted at the necessary rate to achieve benefits for the grid.

Government action in this area will encourage wider consumer trust and adoption of smart heating appliances and support the growth of a competitive and secure consumer-led flexibility market to mitigate energy security and grid stability risks. This will help build in the benefits of flexibility in parallel to scaling up deployment of electric heating, helping ensure we can effectively integrate the expected rapid increase of heat pumps into the energy system in the most cost-effective and beneficial way for consumers.

Action owner

DESNZ is responsible for the development of the Energy Smart Appliance (ESA) regulations that will deliver the smart mandate.

Next steps

The smart heat mandate will be implemented as part of the Smart Secure Electricity Systems (SSES) programme, as a key enabler of consumer-led flexibility. The proposed ESA regulations will require smart functionality and set minimum requirements for heat pumps and other electric heating appliances, up to 45kW, to enable participation in consumer-led flexibility services. The government response to the April 2024 SSES Energy Smart Appliance consultation, setting out the minimum smart functionality requirements and regulatory framework, was published in April 2025.[12]

The government will, subject to parliamentary approval, bring secondary legislation on ESAs into legal effect within the next year, following consultation with industry. Once made, an implementation period of up to 20 months will allow industry to update production cycles before the regulatory requirements will be enforced by the end of 2027.

[12] DESNZ (2024), 'Delivering a smart and secure electricity system: implementation - GOV.UK' (viewed April 2025)

3. Market-wide half-hourly settlement

Government view

The government agrees that the timely delivery of the market-wide half-hourly settlement (MHHS) Programme, which Ofgem oversees, without further delay is crucial for delivering more consumer-led flexibility. It will expose energy suppliers to the true costs associated with their customers’ actual electricity use throughout the day, replacing the existing system which relies on estimates of when customers have used electricity within each day. MHHS incentivises energy suppliers to offer more products that reward consumer-led flexibility and enables better management of the system as heat and transport are electrified by shifting these loads away from peak times. Swift introduction of market-wide half-hourly settlement is vital for the delivery of the Clean Energy Superpower mission.

Action owner

Ofgem is accountable for the delivery of the MHHS Programme outcomes. As sponsor, Ofgem decided that Elexon should be the programme Senior Responsible Owner. Government has no formal role in the governance of MHHS but tracks progress closely, with Ofgem providing MHHS updates to the department.

Next steps

In the Clean Power 2030 Action Plan, Ofgem committed to review the MHHS programme by the end of FY24/25, including to ensure that industry parties have credible plans to complete market-wide half-hourly settlement in a timely way and maximise the amount of half-hourly consumption data available. Ofgem reviewed a significant amount of information presented by the programme and consequently introduced a series of regulatory measures. The first element in this package of regulatory measures, including directions and potential licence modifications, was a direction to the MHHS Implementation Manager.

The direction requires the MHHS Implementation Manager (Elexon) to provide regular reports to Ofgem and - at the same time - to the MHHS Independent Assurance Provider (PwC) on a number of key plan milestones. The direction also requires the MHHS Implementation Manager to provide greater clarity of roles and responsibilities within and between MHHS Testing cohorts.

To support the MHHS Implementation Manager, on Monday 10 March Ofgem issued its consultation on a direction to all MHHS participants to respond in a timely manner to any reasonable request for information (including where this information is required for the purposes of reporting to Ofgem and to the Independent Programme Assurance Provider under this direction).

On 8 April 2025, Ofgem published a joint open letter from the Secretary of State for Energy Security and Net Zero, Ed Miliband and Ofgem CEO, Jonathan Brearley to the MHHS

implementation manager and Programme Participants.[13] The letter highlighted the importance of allocating sufficient resources to the timely delivery of MHHS.

4. Asset Visibility

Government view

The government agrees that better visibility of distributed energy assets is needed in the energy sector, and recognised in the Clean Power 2030 Action Plan that improvements are necessary as part of the transition to a decarbonised energy system in 2030. To demonstrate the potential for technical solutions to improve asset visibility, the government funded the Automatic Asset Registration Programme through the Net Zero Innovation Portfolio. GreenSync and Energy Systems Catapult developed 'LCT Connect' through the programme, which concluded in March 2025.

Action owner

Ofgem recently decided that the Market Facilitator, Elexon, should take on the role of Flexibility Market Asset Registration delivery body, responsible for the deployment and operation of new digital infrastructure to align national and local flexibility market asset registration processes. Government is considering further intervention options for supporting industry with other asset visibility use cases.

Next steps

As stated in the Clean Power 2030 Action Plan, DESNZ and Ofgem will work with NESO to set out measures in the Clean Flexibility Roadmap in 2025 to enable greater visibility of distributed energy assets to unlock further flexibility and assist with network planning, to help avoid unnecessary spend on network infrastructure.

[13] DESNZ and Ofgem (2025), Joint letter on MHHS Implementation (viewed April 2025)

Maintaining the reliability of the network

Summary of policy area

The reliability of GB's distribution network has increased significantly since the 2010s and power cuts are rare events for most consumers. As the electricity system becomes more complex and digitised, as demand on the network increases and as we face an increase in the frequency of extreme weather events, a high level of reliability must be maintained.

Current distribution security of supply standards assumes low levels of flexibility and low diversity of demand, as well as low levels of digital network capability and smart device integration. The NIC study states that investment and modelling should lessen the amount of network build required to maintain a high level of security of supply. Therefore, the role of flexibility and 'smarter' solutions will be important to consider, alongside additional investment in maintaining security of supply.

Ofgem's Interruptions Incentive Scheme is an incentive for DNOs to improve the overall reliability of their networks by reducing the number and duration of interruptions. Ofgem is reviewing, and has consulted on, whether the current approach towards reliability remains fit for purpose for the next price control, ED3.

Ofgem's Worst Served Customers (WSC) is a funding mechanism specifically targeted at improving reliability of known poor performing areas of the distribution network. In the current price control, ED2, Ofgem allowed £86m of funding for WSC.[14]

The Storm Arwen Re-opener in the current price control allowed all DNOs to submit plans to increase their networks resilience to storms as a direct result of the recommendations from Ofgem and government's reviews of Storm Arwen, with Ofgem allowing £149.64m of funding.

NIC Recommendation 2:

Government and Ofgem should review security of supply standards for distribution networks to ensure that they are designed for future loads and vulnerable customers are protected.

As part of business planning for the next price control:

- Ofgem should require distribution network operators to identify 'no regrets' activities that would improve security of supply
- government and Ofgem should work with distribution network operators to agree the detailed work required to review security of supply standards and how this will be undertaken.

[14] WSCs are defined as 'customer experiencing on average at least four interruptions at higher voltage distribution per regulatory year, over a three regulatory year period'.

The full review of security of supply standards should then be completed by the end of 2028.

Government view

The government agrees with this recommendation, electricity security of supply and the continued reliability of distribution networks is a priority for government as we transition to Clean Power 2030 and beyond.

As part of the energy transition, government, Ofgem and the National Energy System Operator (NESO) are working together to ensure the current and future electricity system meets customer needs – and this will include the need for security of supply.

We agree with the NIC’s view that changes in the network such as automation, digitalisation and the use of flexibility change the nature of the security of supply risk. In particular flexibility markets are developing and will continue to expand as consumers adopt greater volumes of low carbon technologies. Reassessing the role of flexibility in a deterministic security of supply standard for distribution networks will require data from network monitoring. DNOs are rolling out Low Voltage (LV) network monitoring in the current price control, which will help to inform this work and government, Ofgem and NESO are working at pace to consider the best approach to a full review of the current security of supply standards. The review itself may need a more flexible timescale than completion by 2028.

The Interruptions Incentive Scheme (IIS) should also continue to apply to ensure any disruption caused by asset maintenance is minimised, and consumers are quickly restored in the event of weather-related outages. Ofgem should consider the impact of an increase in severe weather occurrences and required interruptions from increasing capacity build when setting the IIS during the next price control.

Action owner

Joint ownership. The government will work alongside Ofgem, DNOs, and NESO on the plans to maintain future reliability of networks as part of the planning process for the next price control period starting in 2028, including a review of security of supply standards.

Next steps

Government will be working closely with NESO to consider resilience standards for the energy sector. Ofgem will take forward engagement to scope the work required on the review of distribution security of supply standards, an update will be provided in the ED3 Sector Specific Methodology Consultation later this year.

Requiring DNOs to identify ‘no regrets’ activities that improve security of supply forms part of the current ED2 price control via the Worst Served Customers funding stream, and the Storm Arwen Re-opener. Ofgem is currently reviewing, and has consulted on, whether the Interruptions Incentive Scheme remains fit for purpose for the next price control, ED3.

Strategic planning and role of Regional Energy Strategic Plans (RESPs)

Summary of policy area

In November 2023, Ofgem confirmed the introduction of a new regional strategic planning function delivered by NESO.[15] This will be integral to the delivery of a more strategic approach to the energy transition, alongside the national level Centralised Strategic Network Plan (CSNP) and Strategic Spatial Energy Plan (SSEP), also to be produced by NESO.[16]

Regional Energy Strategic Plans (RESPs) will be an important strategic planning enabler for electricity distribution networks, setting the foundation for determining the capacity required and the long-term strategic investment needed on a regional basis. They will deliver strategic plans at the level of distribution networks to support net zero delivery, considering both the national targets set by government, the local needs and the most appropriate approach in each area. They will also look beyond the distribution network, aligning electricity and gas, with scope to potentially include heat, hydrogen and other vectors.

Ofgem consulted on the RESP policy framework between 30 July and 9 October 2024 and published its decision on 2 April 2025.[17] This sets out Ofgem decisions on key elements that each RESP should comprise, RESP interactions with network planning, governance arrangements and regional boundaries. NESO will develop and consult on RESP methodology in line with this policy framework.

NIC Recommendation 3:

Ofgem and the National Energy System Operator should set out a clear statement of accountability for the Regional Energy Strategic Plans. This should include the decisions that the system operator will be empowered to take in developing the plan, how they will assess network investment plans in a proportionate way, and the stages at which different actors will have the ability to input and challenge.

Government view

The government agrees with this recommendation. We recognise the importance of strategic distribution level planning to support net zero delivery and agree with the need for a clear

[15] Ofgem (2023), 'Future of local energy institutions and governance' (viewed April 2025)
[16] The SSEP is a spatial plan for the energy system, specifically electricity generation and storage, and hydrogen production and storage. It will set out the amount and type of energy generation and storage infrastructure we recommend should be built where and by when in GB.
The CSNP will determine the transmission infrastructure required to deliver future energy requirements. It will consider the connections between energy generation and its relationship with the wider transmission system.
[17] Ofgem (2025), 'Regional Energy Strategic Plan policy framework decision | Ofgem' (viewed April 2025)

statement of accountability for RESPs. We also welcome the publication of Ofgem’s policy framework decision on RESPs, which is aligned with the NIC view on strategic planning.

The framework decision provides clarity on expectations and responsibilities of NESO with regard to RESP development and delivery. It sets out a clear system of governance for RESPs: NESO is expected to establish regional strategic boards to steer and oversee plan development and sign off RESPs where a clear majority position can be reached. Each Strategic Board will include local democratic and network company representatives, as well as wider cross-sector actors.

NESO will establish a GB-wide National Steering Committee (to include representatives from NESO, government and Ofgem) to provide strategic oversight, expertise and advice during RESP Methodology development and to oversee coordination of strategic planning.

Ofgem’s publication of the ED3 price control framework on 30 April 2025 sets out its view on the NIC’s recommendations in greater detail.

Action owner

Ofgem and NESO.

Next steps

NESO will establish a National Steering Committee, and government will engage further on NESO’s methodology through DESNZ’s role on this Committee. NESO are expected to consult on its draft methodology by Q4 2025.

NIC Recommendation 4:

Ofgem and the National Energy System Operator should develop structured ways for local authorities and other local stakeholders to input into Regional Energy Strategic Plans.

The National Energy System Operator should proceed with plans to make tools and advice available to local stakeholders to support their planning role. Government should also assess what additional capacity and capability is required for local authorities to engage meaningfully with the process and provide the necessary financial support for them to do so.

Local authorities must have structured mechanisms to input meaningfully into Regional Energy Strategic Plans, even if they are not on the strategic board or have not completed a formal local energy plan.

Local decarbonisation targets and strategies should be enabled as far as reasonably possible, where projects are underpinned by credible plans for delivery.

Government view

The government agrees with this recommendation. Ofgem’s framework decision sets clear expectations for NESO to develop structured, transparent and accessible routes for stakeholder engagement through the RESP methodology, as well as confirming expectations for NESO to provide proportionate support to local government. We look forward to working with NESO and Ofgem as this methodology is developed through the government’s role on the National Steering Committee. As Ofgem has made clear, regional working groups will be a key mechanism to gather insights and views during RESP development.

On local government capacity we recognise that formal local energy plans are not necessary to engage with the RESP process, and that a wide range of information for example on planning, strategic investment and local net zero action will be needed to support RESPs. Government already provides capacity support for local government to deliver net zero, for example, through the Local Net Zero Hubs Programme (in England) and we will explore how we can best utilise this support to feed into the RESP process.

Action owner

DESNZ, Ofgem, NESO.

Next steps

Government will build on existing capacity, capability and engagement work, including through our Local Net Zero Hubs Programme (in England), to support local authorities to prepare for both tRESPs (transitional RESP outputs timed to support DNO business planning ahead of ED3) and RESPs. We will work closely with Ofgem and NESO on this through DESNZ’s role on the National Steering Committee.

We will ensure appropriate representation from devolved governments as key stakeholders in this process, and in the support and involvement of local authorities under devolved government administration.

NIC Recommendation 5:

Ofgem and the National Energy System Operator should use the Regional Energy Strategic Plans as a vehicle to improve planning and data in the sector. As part of the process, the National Energy System Operator should:

- develop a register of projects ‘in development’ that have not yet had connection applications submitted
- publish the plans in both an open data format, and through a publication that is accessible and understandable to all energy system actors, including local government.

Government view

The government agrees with this recommendation. Ofgem's recent framework decision on RESPs, which is aligned with this recommendation, sets out expectations that NESO will work with relevant local actors to develop an in-development register of early-stage projects within each region. The register should capture regional ambitions while ensuring RESPs are based on credible inputs. Ofgem also expects the plan publications to be accessible and easy to understand and published in an open data format.

Action owner

Ofgem and NESO.

Next steps

NESO's RESP methodology will further develop criteria to assess the credibility of RESP data inputs, the creation of a central data collection hub and facilitation of data sharing in an agreed standardised format. NESO are expected to consult on their draft methodology by Q4 2025.

NIC Recommendation 6:

Ofgem and the National Energy System Operator should set out a proportionate transitional plan for the Regional Energy Strategic Plans to inform the next electricity distribution price control. This should be delivered far enough ahead of decisions about the price control to enable network business planning and give network operators confidence in the investment pathway for the whole price control period.

Government view

The government agrees with this recommendation and is working closely with Ofgem to take it forward. We recognise the importance of transitional RESP outputs in informing RIIO-ED3 (price control period for 2028 to 2033), enabling Ofgem to support strategic investments in anticipation of demand.

In February 2025, Ofgem wrote to NESO on the scope of the transitional RESP.[18] This provides a high-level view of the expected scope of the transitional RESP outputs and the development approach, timeline, and governance arrangements for delivery. The timeline includes:

- Phase 1 scoping work, including pathway methodology (tRESPs), in Q1 2025,
- A public consultation on draft transitional RESP outputs in September 2025, and
- Final transitional RESP outputs in January 2026.

These timings have been set to be cognisant of and complementary to both DNO business planning and ED3 price control setting timelines. It is expected that transitional RESP outputs

[18] Ofgem 2025, 'Scope of the transitional Regional Energy Strategic Plan' (viewed April 2025)

in January 2026 will support DNO business planning. DNOs will be required to submit final business plans in Q4 2026.

Action owner

Ofgem and NESO.

Next steps

NESO are expected to consult on transitional RESP outputs in September 2025.

Price control reform

Summary of policy area

Network companies are monopolies regulated by Ofgem through a price control process known as RIIO (Revenue = Incentives + Innovation + Outputs) which runs in 5-year periods. RIIO determines how much network companies can invest, sets an investible, but not excessive, rate of return and embeds incentives for innovation. For each RIIO period network companies submit a business plan including targets to Ofgem and can be financially rewarded for meeting and exceeding agreed targets.

Ofgem is preparing for the next electricity distribution price control period, ED3, which will run from 2028 to 2033, and recently published the ED3 Framework. We welcome the approach Ofgem set out in the ED3 Framework supporting strategic network planning and investment ahead of need, recognising the essential role of the distribution network in enabling net zero.

While price control decisions are for Ofgem as the independent regulator, the government works closely with Ofgem to ensure that price controls are aligned with government priorities and agrees with the NIC that a shift towards more proactive investment is needed. The ED3 framework makes clear the imperative for investment ahead of need to support the electrification of transport, heat, and industry. It also emphasises the importance of powering demand in high-growth and energy-hungry sectors such as data centres, whilst embedding distributed generation and flexible assets for Clean Power 2030 and beyond.

As set out in Ofgem’s ED3 framework decision, strategic planning through the Regional Energy Strategic Plans (RESPs) will guide both DNO investment plans and Ofgem’s decisions. ED3 will also address supply chain and skills needs, connections reform and customer service, and the role of data and digitalisation.

NIC Recommendation 7:

Ofgem should base future price controls around a rebalanced set of objectives focused on long term requirements for the distribution network that deliver wider consumer value, alongside consumer costs. These objectives should include Ofgem’s net zero and growth duties, as well as strengthening network resilience and delivering high quality customer service, including connection outcomes. Funding mechanisms and incentives should be designed to deliver these objectives.

Government view

The government agrees with this recommendation. We agree that future price controls must consider wider socioeconomic benefits in addition to consumer cost considerations. Ofgem’s

ED3 distribution price control (ED3, 2028 to 2033) Framework Decision[19] has made progress in identifying the need for significant investment and regulatory changes for the net zero transition, while protecting consumers from high prices. The government will work with Ofgem and DNOs to ensure strategic considerations are reflected in DNOs' ED3 business plans. Through the Ofgem Review, government is ensuring Ofgem has the right balance of duties, and we will publish its findings and next steps in summer 2025.

It is crucial that DNOs are financeable through the price control. Financial parameters can be adjusted to achieve fairness, protect consumers, and consider intergenerational fairness. The price control must continue to address investability to attract and retain equity capital for future investments.

Government agrees that incentives and penalties should drive behaviours that enable investment and growth and incentivise high quality customer service. RESPs should inform DNOs' investment decisions, focusing on delivery and outputs that benefit consumers. Incentives should target both load-related and non-load-related outcomes associated with the business plans, such as connection outcomes and low carbon technology (LCT) deployment. The price control should continue to encourage network resilience, and we support Ofgem to identify any improvements to existing incentives to ensure this is achieved, for instance Network Asset Risk Metrics. We agree the price control should ensure network resilience, and we have provided our thoughts to this in recommendation 2.

Ofgem is reviewing distribution connection outcomes and customer service in its End-to-End review[20] of connections, and the outputs from this review will be implemented through the ED3 price control. Suitable reforms to incentives should ensure network build efficiency does not compromise delivery for connection customers and consumers more widely. Load-related outcome incentives based on network capacity and clawback mechanisms for unmet capacity should be considered. The government supports Ofgem's approach in its ED3 Framework Decision to hold companies accountable for their investment plans using price control deliverables.

It is important that efficiencies are realised where it is possible for network companies to do so, and the benefits are passed onto consumers whilst not exposing them to undue over expenditure risk. We see the Totex Incentive Mechanism as the appropriate tool for this, though we agree it requires suitable reforms to mitigate perverse incentives to avoid capital spend.

Action owner

Ofgem as the independent regulator to set the price control. DESNZ to ensure Ofgem has the right balance of duties and objectives.

[19] Ofgem (2025), 'Framework decision: electricity distribution price control (ED3) | Ofgem' (viewed April 2025)
[20] Ofgem (2024), 'Connections end-to-end review of the regulatory framework' (viewed April 2025)

Next steps

Government will continue to work with Ofgem to ensure that the next price control period will be designed to enable the required timely investment in the network ahead of need. The outcome of the Ofgem Review, published in summer 2025, and subsequent delivery steps, will inform the balancing and rebalancing of Ofgem’s duties to support this.

NIC Recommendation 8:

Ofgem should orientate the next price control around allowances set before the price control begins. Funding mechanisms should be set at a sufficient level to enable proactive investment. This should include:

- using re-opener mechanisms only where there is genuine long-term uncertainty and the process and objectives for re-openers is proportionate to the investment being considered
- setting allowances to enable a ’touch-the-network-once to 2050’ approach as standard, to build resilience and minimise the overall costs of investment to deliver net zero.

Government view

The government agrees with this recommendation, and we support Ofgem in the design of a baseline funding mechanism that enables proactive strategic investment in the networks. More certainty in the baseline facilitates longer term strategic planning, allows for earlier supply chain engagement, and is a more efficient funding approvals process. Using uncertainty mechanisms only when necessary will reduce regulatory complexity and promote timely delivery, as well as creating a more open regulatory model that allows for greater innovation on the part of the DNOs. However, we also support Ofgem’s intention to use a range of uncertainty mechanisms, including reopeners, to manage in-period uncertainties.

Under Ofgem’s proposals DNOs will provide longer term strategic network investment plans to 2050, based on the outputs of the RESPs. These investment plans will take into consideration multiple inputs including climate resilience targets, asset health, and load and non-load outcomes. Within these plans, DNOs should be encouraged to examine network upgrade requirements holistically with the Transmission Owners (TOs) and identify areas of the network where transmission upgrades can be done in tandem with distribution. Longer-term strategies and ambitions will also set out more efficient network upgrades that ‘touch the network once’, provide continuity between price controls, and overall deliver greater value to consumers. These mechanisms should lead to ex ante funding approvals within the baseline, and a clear method to monitor DNO delivery.

NESO will identify and resolve gaps or inconsistencies in DNO investment plans and take a whole system needs perspective. Decisions on investment plans remain with Ofgem.

Action owner

Ofgem, DNOs, NESO.

Next steps

We will work with Ofgem as they progress through the ED3 price control process and support them in the use of uncertainty mechanisms and reopeners where appropriate. We will continue to work with Ofgem and NESO on the delivery of RESPs and ensure that they form an integral part of the price control to reduce reliance on uncertainty mechanisms.

NIC Recommendation 9:

Ofgem should accelerate no regrets activities such as proactive unlooping and off-gas grid reinforcement. Government should also set a date for the elimination of looped supplies to inform Ofgem's approach to delivery and enable distribution network operators to develop a programme for completing the work across multiple price controls.

Government view

The government broadly agrees with this recommendation but does not agree that a date should be set for the elimination of looped supplies. We support Ofgem accelerating no regret activities including off-gas grid reinforcement by empowering DNOs to take a more consistent, holistic and long-term approach to network planning.

In its ED3 framework decision[21], Ofgem expects DNOs to utilise a programmatic approach to proactive unlooping, low carbon technology (LCT) deployment, and off-gas grid reinforcement. We recognise regional variations means the challenges surrounding reinforcement of the low voltage network will differ between licence areas. Therefore, we expect DNOs to assess the scale of the challenge and set out regional programmes over extended periods, utilising outputs of the RESPs to inform their planning. Ofgem will be expecting DNOs to present bespoke programmes of low regret actions in their long-term strategic network plans, which will ensure delivery across multiple price control periods.

We also agree that Ofgem should accelerate unlooping.[22] There needs to be an increased focus on targeted proactive unlooping to enable customers to install and connect LCTs in a timely manner, and we expect Ofgem and the DNOs to establish an appropriate trajectory across the ED3 price control and beyond.

Specifically, unlooping presents complex challenges, particularly at scale, including a lack of information on the number and location of properties with looped supplies and the disruption it can cause. Unlooping may not always be necessary, as other solutions are available. For example, customers seeking electric vehicle charge points may prefer a load-limiting device

[21] Ofgem (2024), 'Framework consultation: electricity distribution price control (ED3)' (viewed April 2025)
[22] 'Unlooping' is the process of separating a shared electricity service cable (known as a looped service) between two or more properties. Resulting in both/all properties having separate service cables to the main network.

that allows their car to charge at a slower rate at certain times, avoiding the disruption of replacing the service cable. Smart charging solutions are also available, though they are more suitable for EV charge points than heat pumps, which are less able to shift demand without impacting customers. Therefore, we do not agree that government should set a date for eliminating looped supplies which may result in unnecessary work. However, we would expect Ofgem to work with DNOs to identify ways to overcome data barriers and increase visibility at the lower voltage level to address the lack of information on looped properties.

We encourage Ofgem to consider new incentives to support improvements in domestic connection upgrades, potentially including unlooping, as well as monitoring DNOs against their wider investment plans. Unlooping was highlighted in Ofgem's ongoing End-to-End Review[23] of the connections obligations and incentives framework as a barrier to domestic LCT deployment. It sought views on proposals to improve consistency and raise standards of service for minor connections. We will support Ofgem working with DNOs to develop a position on an appropriate mechanism for incentivising and monitoring proactive unlooping.

Action owner

Ofgem, DNOs.

Next steps

Government will continue to support Ofgem to integrate a programme of low regret activities into ED3 that are aligned with government strategic priorities. We will also work with Ofgem to ensure the DNOs have the tools to proactively implement low regret actions within the current regulatory framework.

ED3 Timeline

Spring 2025	Framework Decision
Q1 2026	Transitional RESP Output
Spring 2026	Sector Specific Methodology Decision published
Q4 2026	DNO Business Plan Submission
Q2 2027	Draft Determinations
Q4 2027	Final Determinations
Q4 2027	First complete RESP
1 April 2028	ED3 begins

[23] Ofgem (2024), 'Connections end-to-end review of the regulatory framework' (viewed April 2025)

The relationship between government and Ofgem

Summary of government-Ofgem relationship

Ofgem is Great Britain's independent energy regulator. Ofgem works in accordance with its principal objective, shared with the Secretary of State, to protect the interests of existing and future consumers, including consumers' interests in:

- the net zero 2050 target and five-year carbon budgets, and
- the security of supply of gas and electricity

And, as with all regulators, Ofgem has a duty to have regard to the impact of its regulatory decisions on the growth of businesses, especially minimising burdens.

Ofgem operates in a statutory framework set by Parliament and, as a non-ministerial government department, is directly accountable to Parliament for its performance and decisions. Government is responsible for setting the policy for the energy sector and proposing any changes to this statutory framework.

Summary of policy area

The Strategy and Policy Statement (SPS) for Energy Policy in Great Britain sets out government's strategic priorities and policy outcomes for the sector. The first ever SPS[24] was put into force in May 2024 under the previous government.

Ofgem must have regard to the strategic priorities set out in the strategy and policy statement when carrying out regulatory functions.

The Secretary of State and the Authority must carry out their respective regulatory functions in the manner which the Secretary of State or the Authority (as the case may be) considers is best calculated to further the delivery of the policy outcomes.

NESO was established in October 2024 and must also have regard to the strategic priorities set out in the SPS, as set out in the Energy Act 2023. Given that the latest SPS was published before NESO's establishment and roles were still in development, references to it were kept at a higher level.

Government, Ofgem and NESO will need to work together to deliver on energy ambitions, in line with our respective roles and responsibilities. Government sets the policy direction. Ofgem as the independent regulator (including regulation of NESO) makes decisions on business and

[24] DESNZ (2024), 'Strategy and policy statement for energy policy in Great Britain' (viewed April 2025)

investment plans. NESO is the whole system planner, the operator of the electricity system and expert advisor to government and Ofgem as key decision makers.

NIC Recommendation 10:

By the end of 2025, government should provide a stronger strategic vision to Ofgem through an updated Strategy and Policy Statement. This should include clarity on a more focused set of priorities and outcomes for the energy sector, that better reflects government's objectives and the trade-offs between them. The revised strategy and policy statement should include the importance of proactive investment in the distribution network.

Government view

The government agrees with the recommendation to revise the SPS in light of the Ofgem review, noting that the SPS provides strategic alignment for both Ofgem and NESO. The government is looking at Ofgem's objectives and duties as part of the Review of Ofgem[25], announced in December 2024. The review is aligned with the broader Action Plan for regulators on growth[26] and will ensure the energy regulator is fit for the future, with the right mandate, duties, scope, and remit. The Ofgem Review includes consideration of how a revised Strategy and Policy Statement could fit within a new framework of streamlined duties.

Action owner

DESNZ.

Next steps

We are aiming to publish a report outlining our next steps on the Ofgem review in summer 2025. Primary legislation may be required as a result of changes to Ofgem's duties, and to the SPS which works in support of those statutory duties. We anticipate, given the timescales needed to complete the procedural requirements, that a new SPS will be in force from Q4 2026.

[25] DESNZ (2024), 'Review of Ofgem: call for evidence' (viewed April 2025)
[26] HMT (2025), 'New approach to ensure regulators and regulation support growth' (viewed April 2025)

Connections

Summary of policy area

Government is working with Ofgem, NESO and network companies to take urgent action to reform the electricity network connections process (the process by which completed generation and demand projects are connected to the grid). The previous 'first-come, first-served' approach to the sequencing of connections contributed to bottlenecks and a pipeline of projects that does not align with the required energy mix for a clean power system. The queue for transmission and distribution of generation and storage projects has cumulatively reached over 700GW – far in excess of the amount needed for net zero. The aim of reforms is to ensure timely, efficient, and equitable access to the grid for all viable projects that support the UK's strategic needs, including delivering clean power by 2030. There is a strong interaction between the transmission and distribution networks' roles in our strategic ambitions, and we will ensure that this is reflected in how the queue and wider connections processes are managed. Some distribution connections do not impact on the transmission network and, while not directly affected by these reforms, we will also ensure these are able to connect in a timely manner.

The reforms will deprioritise stalled and speculative projects in the queue, prioritising generation and storage projects that are ready and strategically aligned with the Clean Power 2030 Action Plan and wider growth. In April, Ofgem approved connection reform proposals from NESO[27] which will deprioritise almost 500GW of projects in the oversubscribed connections queue. NESO will reform the connections queue within this approved framework following the required standstill period.

Work is also underway to ensure the distribution connections process improves alongside transmission connections, including through the Energy Networks Association Strategic Connections Group.[28] Under the work of this Group, as of March 2025, 218 generation and storage projects (8GW) have accepted non-firm connection offers[29] enabling them to connect an average of 7 years earlier.

We expect connection reforms to further accelerate demand connections by freeing up capacity on the network. The government is committed to further accelerating connection timelines for strategically important demand projects and improving the connections process for key investors.

[27] Ofgem (2025), 'Connections reform: our minded-to decisions' (viewed April 2025)
[28] Comprising DNOs, TOs, NESO, Ofgem and government to provide direction to, and consistency in, distribution connections reform.
[29] The connection customer receives an earlier connection date, accepting that under certain network conditions they may have their generation curtailed.

More broadly, Ofgem's End-to-End review of network company incentives and obligations will improve customer service and connection timescales across both transmission and distribution networks by strengthening the regulatory framework for network companies.[30]

Investment in the network can reduce connection timescales and costs. At the local level, DNOs manage the grid and are incentivised to invest proactively in their networks in anticipation of future needs. It is also important that transmission and distribution network investment is undertaken holistically to ensure, for example, that distribution connections are not delayed by the need for transmission investment. Building on the current arrangements, we support Ofgem's RIIO-ED3 framework decision to take a more proactive approach to network investment in the next price control.

NIC Recommendation 11:

Ofgem should introduce minimum standards for distribution network operators. These standards should include:

- agreed connections guidance for all customer types and all distribution network operators, including indicative pricing and connection timescales
- enabling all domestic customers to apply for the installation of more than one low carbon technology through a single application, regardless of where they live
- developing common digitised connection documentation to be used across all network operators.

Government view

The government agrees with this recommendation. Enabling timely connections by improving processes and customer service is key. Ofgem's End-to-End Review is reviewing network companies' standards of service. The first phase of consultation for the review concluded 12 February 2025.[31]

Guidance for connection customers including indicative pricing and timescales for different connections is provided by DNOs. There is scope for improvements, for example, in transparency of pricing and increased consistency between DNOs, so that the same high-quality information can be obtained across the country.

It is important that the process for domestic customers to adopt low carbon technologies (LCTs) such as heat pumps and electric vehicle charge points is as simple as possible. Allowing households to apply for more than one LCT in a single application will speed up roll out.

[30] Ofgem (2024), 'Connections end-to-end review of the regulatory framework' (viewed April 2025)
[31] Ofgem (2024), 'Connections end-to-end review of the regulatory framework' (viewed April 2025)

DNOs are improving the connection upgrade processes for smaller projects, for example ENA's ConnectDirect platform[32], UKPN's Smart Connect[33], and the G99 fast track process.[34]

Action owner

Ofgem.

Next steps

Ofgem's End-to-End review consultation, which included the three strands of this recommendation, closed on 12 February 2025. Ofgem plans to include actions in the development of the ED3 methodology and expects to publish next steps in summer 2025.

NIC Recommendation 12:

Ofgem should strengthen the incentives for delivering major connections in the next price control, with a view to sustaining this approach in future price controls. The reformed incentives should:

- appropriately incentivise performance across each part of the major connections process, including 'pre-application' engagement and post-offer 'negotiation' phases, through financial rewards and penalties based on clearer performance expectations
- measure distribution network operator performance robustly, with requirements to publish connections performance data, including timeliness of connection offers and actual connections delivery
- offer appropriate rewards for high performance, as well as penalties for poor performance.

Government view

The government agrees with this recommendation. Network companies already have incentives under the current price control to deliver major connections effectively. However, we are aware of cases where network companies' performance on timely connections and customer service could be improved.

Connections customers benefit significantly from 'pre-application' activities, such as informal discussions on available network capacity and timely scheduling of works once a connection offer has been accepted and it is in the post-offer phase. Stakeholders report that it can be challenging to engage with DNOs in these areas. Unlike the provision of connection offers, these parts of the process are not currently subject to any standards of service.

[32] The ENA (2024), 'ENA Connect Direct' (viewed April 2025)
[33] UK Power Networks (2021), 'Smart Connect - Automated portal for installers' (viewed April 2025)
[34] allowing a faster connection of small generation or storage provided certain criteria are met – The ENA, 'Connecting commercial generation to the electricity networks' (viewed April 2025)

Making the intention to incentivise network companies to improve connections performance in the next price control known at this stage provides a clear signal. This is important to allow them to prepare for the next price control in 2028 (see also recommendation 7). In its RIIO-ED3 framework decision, Ofgem outlines its approach to incentivising services to major connections customers.

Action owner

Ofgem.

Next steps

Ofgem’s End-to-End review consultation, published in November 2024, closed on 12 February 2025. Ofgem plans to include any actions in the development of the RIIO-ED3 methodology.

Government will continue to work with Ofgem to ensure effective incentives for major connections are incorporated in the RIIO-ED3 price control, commencing in 2028.

Planning and consenting

Summary of policy area

The consenting and land rights processes play a pivotal role in the expansion of the distribution network. In most cases, DNOs must obtain consent for the installation and upgrading of electricity infrastructure. The consenting process ensures that all stakeholders, including local communities and landowners, can provide input, which helps address concerns and mitigate potential impacts. In addition, DNOs often need to access private land to install, maintain or upgrade assets. This requires an appropriate agreement with the private landowner and for compensation to be paid. Different network assets, for example overhead lines or substations, are subject to differing land rights and consents processes.

The process of acquiring consents and land rights for electricity distribution infrastructure can be complex, costly, time-consuming and disproportionate to the scale of the project, ultimately impacting billpayers.

The government is committed to the reform of the land rights and consenting processes to address these challenges.

NIC Recommendation 13:

Government should reform the planning and consenting system by the end of 2025 to enable new connections and network upgrades to be made more quickly. Changes should include:

- amending the Overhead Lines (Exemption) (England & Wales) Regulations 2009 and the process for seeking consent under section 37 of the Electricity Act 1989 to allow a wider set of alterations to overhead lines to be made without the need for planning permission
- addressing the ambiguity in the process for acquiring rights in private streets under Section 10 and Schedule 4, Paragraph 1 of the Electricity Act 1989
- amending Schedule 6 Paragraph 9 of the Electricity Act 1989 to extend access for operators conducting maintenance activities on third party land, so that they can cross as much land as is necessary, when that route is the most efficient
- amending the Town and Country Planning (General Permitted Development) (England) Order 1995 to increase the volume threshold for substations to be built with permitted development rights from 29 cubic metres to 45 cubic metres.

Government view

The government agrees with this recommendation which promotes a more efficient and streamlined approach to upgrading and expanding the distribution network.

Following a Call for Evidence[35], DESNZ committed to take forward a number of interim reform measures ahead of further action. Since November, DESNZ has:

- Reconvened the Land Access and Consents working group as a forum for discussing reforms that could form part of a government consultation with developer and landowner representatives.
- Worked closely with the Central Association for Agricultural Valuers (CAAV) to introduce an industry-led voluntary Code of Practice for negotiations between landowners and network operators and encouraged industry to sign-up. This was published on 30 May.

In the Clean Power 2030 Action Plan[36], the government also committed to consult in 2025 on further reforms including:

- Expanding planning consent exemptions to include low voltage connections and upgrades, including upgrading single phase to 3 phase overhead lines (with voltage remaining the same) by amending the Section 37 regulations as they apply in England and Wales.
- Providing further flexibilities on the consenting of electricity substations.

These initiatives align with two of the reforms recommended by the Commission.

Amending the Overhead Lines (Exemption) (England & Wales) Regulations 2009 and the process for seeking consent under section 37 of the Electricity Act 1989

The government agrees with the Commission that there is a pressing need to reform the Overhead Lines (Exemption) (England and Wales) Regulations 2009.

The government will consult this summer on proposed changes to enable a broader range of alterations to overhead lines to be made, particularly where alterations are minor, have minimal visual impact and to not have a significant impact on affected landowners.

Addressing the ambiguity in the process for acquiring rights in private streets

The government agrees there is a strong case for addressing the ambiguity in the process for acquiring rights in private streets and will consult on the proposed change later this year.

Installing electrical cables in private streets requires the explicit permission of all property owners that the cable passes by or their representatives. Obtaining explicit permission can be complicated and time-consuming, with a single objection or absent landlord potentially blocking a project. This can prevent DNOs from providing the electrical capacity required for homeowners and businesses who are transitioning to electric vehicles and heat pumps.

The rights provided under the Electricity Act 1989 and the Gas Act 1986 differ regarding installation of infrastructure in private streets. Gas installers do not need consents to lay or maintain pipes, as it is considered a permitted development, similar to the rights granted to gas

[35] DESNZ (2022), 'Land Rights and Consents for Electricity Network Infrastructure: a call for evidence' (viewed April 2025)
[36] DESNZ (2024), 'Clean Power 2030 Action Plan' (viewed April 2025)

and electricity network installers on public highways. However, electrical cable installations face stricter consent requirements compared to gas infrastructure. The telecommunications sector also benefits from strengthened installation rights, leading to significant differences in approval times across the utilities. Electricity projects typically take the longest to seek approval, with the full process taking as much as 14-27 months for a new installation.

Amending Schedule 6 Paragraph 9 of the Electricity Act 1989 to extend access for operators conducting maintenance activities on third party land, so that they can cross as much land as is necessary, when that route is the most efficient

The government agrees that there is ambiguity regarding the application of Schedule 6, Paragraph 9 of the Electricity Act with respect to access to adjoining land.

Schedule 6, Paragraph 9 grants the power for a DNO to enter any premises (which includes land) for the purpose of installing new electric lines or plant where there is an existing line or plant lawfully installed. Therefore, while it is arguable that Paragraph 9 already extends to adjoining land, it is not explicit. The government will consult this year on the proposal to amend Paragraph 9 to make it clearer that it extends to access rights over adjoining land.

DNOs can access existing apparatus on private land to carry out works that are critical to ensure the smooth running of the distribution network. These include essential inspections, maintenance and replacement works. These works enable operators to upgrade apparatus and restore power when there is a fault, supporting network resilience and providing a reliable supply to customers. Except in the case of an emergency, the network operator must give at least five working days' notice to the landowner or occupier before entry.

Network operators have reported that access to this infrastructure must often be gained by passing through adjacent land which is owned by a third party. The ambiguity outlined above can lead to landowners refusing access, delaying essential works from being carried out and impeding operators' ability to upgrade infrastructure and restore power. This problem is exacerbated if operators need to cross the land of multiple parties. If we are to meet the increasing customer demand, whilst ensuring resilience and reliability of the network, we will need to upgrade the distribution network at pace.

Amending the Town and Country Planning (General Permitted Development) (England) Order 1995[37] to increase the volume threshold for substations to be built with permitted development rights

The government agrees that there may be value in providing further flexibilities on the volume thresholds of electricity substations in England and will consult later this year. While the recommendation of the Commission is to align the threshold for permitted development of substations in both England and Wales with the increased Permitted Development Rights

[37] While the NIC report refers to the Town and Country Planning (General Permitted Development) (England) Order 1995, this matter is devolved and there are two separate pieces of legislation that apply to England and Wales. The Town and Country Planning (General Permitted Development) (England) Order 2015 applies in England, and the Town and Country Planning (General Permitted Development) Order 1995 applies in Wales. Any changes in this area for Wales are a matter for the Welsh Government.

threshold in Scotland, our response deals only with permitted development in England. Matters relating to town and country planning are devolved to Wales and therefore any changes in this area for Wales would be for the Welsh Government to implement. The Welsh Government has carried out a consultation regarding ‘Changes to Permitted Development Rights’. The consultation sought views on an increase in volume of permitted development of an electricity installation from 29m3 to 45m3. The consultation closed on the 1 July 2025.The Scottish Government increased the threshold for permitted development of substations in Scotland to 45m3 on 24 May 2024.

In England, substations housed in a chamber of up to 29m3 fall within the threshold for permitted development as set out in the Town and Country Planning (General Permitted Development) (England) Order 2015. Statutory undertakers do not need to submit a planning application for substations below this threshold, where they meet the specified conditions. However, for substations larger than this threshold, statutory undertakers must submit a planning application via the relevant local planning authority.

Additional substation infrastructure will be required in areas of demand as electricity networks are upgraded and extended to support the rollout of low carbon technologies such as heat pumps and EV charge points. In some cases, this will require larger apparatus to be installed, requiring a larger enclosure and footprint. The Independent Networks Association has anecdotally indicated that 76% of substations for electric vehicle charging stations are larger than 29m3 and therefore require planning permission.

Rather than increasing the capacity of an existing substation (which would take it above the current 29m3 threshold), network operators often achieve the necessary capacity by installing a second substation directly next to an existing one. However, in many cases it would be more efficient, cost effective, and potentially less visually impactful, to build a single, larger substation.

We expect that this is likely to be exacerbated over the coming years, with a significant increase in demand meaning many existing substations will need to be reinforced to create additional capacity in the distribution network. Additionally, new substation infrastructure will be required in areas of high demand as networks are upgraded and extended.

Increasing the size threshold of electricity substations through permitted development rights would support the expansion and reinforcement of the distribution network by reducing the timeframes and costs associated with planning permission and enabling substations to be installed, maintained, and reinforced more readily. This in turn would enable developers to deliver capacity upgrades and connections without delay. It would also have the added benefit of reducing administrative burdens on the local planning authorities that process the applications.

Action owner

The recommendations requiring changes to the Electricity Act 1989 and the Overhead Lines (England and Wales) Regulations 2009 sit with DESNZ. The recommendation to amend the Town and Country Planning (General Permitted Development) Order 2015 falls within the

Ministry of Housing, Communities, and Local Government’s remit, notwithstanding the specific policy responsibility for this is with DESNZ. Responsibility for any changes to the threshold for the permitted development of substations in Wales via the Town and Country Planning (General Permitted Development) Order 1995 lies with the Welsh Government.

Next steps

The government will consult on measures to accelerate the development and maintenance of electricity network infrastructure this year.

All the reforms recommended by the NIC require legislation to implement.

Reform of the exemptions under Section 37 requires amendments to be made to secondary legislation, namely the Overhead Lines (Exemption) (England & Wales) Regulations 2009.

If following consultation, it is considered appropriate to increase the size threshold of electricity substations, an amendment will need to be made to the Town and Country Planning (General Permitted Development) (England) Order 2015. The government will engage with the Welsh Government regarding the threshold for the permitted development of substations in Wales.

The proposed reforms to the process for consents in private streets and access rights to apparatus for access and maintenance both require primary legislation to make changes to the Electricity Act 1989.

The timeline for any future legislative changes is dependent on the availability of suitable legislative vehicles and parliamentary time.

Supply chain and skills

Summary of policy area

The government's aims for the grid depend on the UK having the right workforce with the right skills and capacity in the right locations. It is vital that we prepare for emerging workforce demands to build the required electricity infrastructure.

Action is required across industry, government, and the regulator to mitigate potential impacts and secure the economic opportunities associated with the 2030 power decarbonisation target.

The government and networks industry will continue to work with further and higher education institutions to ensure that education and training aligns with the needs of the sector.

NIC Recommendation 14:

Government should identify the skills gaps and actions required to attract, recruit and retain the large workforce needed to deliver the energy transition. This should form the basis of a net zero skills and workforce strategy, published by the end of 2025.

Government view

The government agrees with this recommendation, while acknowledging the need for government, industry and others to work together to address skills challenges. Meeting the UK's Clean Energy Superpower Mission, delivering Clean Power by 2030 and accelerating to net zero are vital to enhancing our economic and energy security whilst driving economic growth. The wider transition to net zero is expected to support hundreds of thousands of jobs which will cross a range of skill levels and occupations.

The government's initial assessment of the challenges of building the skilled workforce to deliver the Mission has been outlined in a number of key government publications including the Clean Power 2030 Action Plan.[38] The Plan provides a strategic framework for delivering the 2030 clean energy targets, including considerations of the workforce and supply chain challenges. The Plan includes an Evidence Annex[39] which provides a basis for government to better understand the 2030 workforce requirements and support targeted skills planning. The Skills England Report: Driving Growth and Widening Opportunities further provides an analysis of the skills system, identifying the 'green workforce' as a key growth sector.[40]

[38] DESNZ (2024), 'Clean Power 2030 Action Plan' (viewed April 2025)
[39] DESNZ (2024), 'Clean Power 2030 Action Plan: Assessment of the clean energy skills challenge' (viewed April 2025)
[40] DESNZ (2024), 'Skills England report: driving growth and widening opportunities' (viewed April 2025)

The initial assessments undertaken for the Clean Power Action Plan and Skills England Report reflect a clear, evidence-based approach to identifying and addressing the skills needs across critical energy and net zero sectors.

DESNZ has set up the Office for Clean Energy Jobs (OCEJ) which is focusing on coordinating work to ensure we have the skilled workforce in core energy and net zero sectors critical to meeting the government’s Clean Energy Superpower Mission. The OCEJ is working closely with Department for Education (DfE), Skills England, Department of Work and Pensions (DWP), and Devolved Governments to develop a shared assessment and approach to skills reform.

The OCEJ’s initial focus has been assessing the skills needed to deliver the Clean Energy Superpower Mission in order to inform government policy and contribute to workforce planning in clean energy sectors. This will be complemented by sector-specific engagement with stakeholders to examine the specific challenges and potential solutions to skills issues facing distribution networks.

Action owner

Government (DfE (in England) and DESNZ’s Office for Clean Energy Jobs), Skills England, Ofgem.

Skills policy is devolved with the Department for Education working closely with Devolved Governments.

Next steps

DESNZ’s OCEJ will publish further details on the strategy to deliver the clean energy workforce in due course. DESNZ is also leading wider network sector-specific engagement with industry, which will include DNOs and the supply chain, to identify wider actions that could be taken forward across the electricity network sector.

Skills England will support DfE (in England) by providing an authoritative assessment of national and regional skills needs, unifying the skills landscape, shaping technical education to respond to skills needs, and advising on the highly trained workforce needed to deliver a clear, long-term plan for the future economy.

Ofgem will enhance network-specific workforce planning by requiring DNOs to submit long-term, integrated network development plans, based on NESO’s independent transitional RESP pathways. These plans will be supported by higher ex ante investment baseline and a robust accountability framework.

This publication is available from: www.gov.uk/government/publications/electricity-distribution-networks-study-government-response

If you need a version of this document in a more accessible format, please email alt.formats@energysecurity.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.