



Department for
Energy Security
& Net Zero

Transmission Acceleration Action Plan

Government response to the Electricity
Networks Commissioner's report on
accelerating electricity transmission network
build

November 2023



© Crown copyright 2023

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3 or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

Contents

Foreword from Secretary of State for Energy Security and Net Zero	8
Executive summary	11
Strategic spatial planning	12
Design standards	13
Regulatory approval	14
Planning approval	14
Supply chain and skills	15
Communities and engagement	16
Outage planning	17
End-to-end process and next steps	17
Introduction	19
Actions underway to address the challenge	19
The Electricity Networks Commissioner	20
Government response to the recommendations	21
Links and interdependencies	21
Monitoring implementation	23
1. Strategic spatial planning	24
Summary	24
Recommendation SS1: A Strategic Spatial Energy Plan (SSEP) should be developed to bridge the gap between government policy and Network Development Plans	25
Recommendation SS2: A Marine Environmental Assessment (MEA) and offshore delivery route map should be included as part of the Strategic Spatial Energy Plan (SSEP).	26
Recommendation SS3: Two Centralised Strategic Network Plans (CSNP) should be developed from the Strategic Spatial Energy Plan (SSEP) by the Future System Operator (FSO) – a shorter-term plan and a longer-term plan.	27
Recommendation SS4: Projects identified in the shorter-term Centralised Strategic Network Plan (CSNP) should become the baseline and the need for them should not be revisited in the next shorter-term CSNP.	29
Recommendation SS5: The longer-term Centralised Strategic Network Plan (CSNP) should be used to support Transmission Owner (TO) engagement with the supply chain and evidence the scale of investment required over a longer time period.	30

	Recommendation SS6: The longer-term and shorter-term Centralised Strategic Network Plans (CSNPs) are to be used to support long-term resource planning for all parties (e.g. Transmission Owners (TOs) and statutory consultees) within the end-to-end process. _	31
2.	Design standards _____	33
	Summary _____	33
	Recommendation RD1: Electricity Transmission Design Principles (ETDP) should be created to provide greater clarity on the type of asset to be used in different environments. _____	34
	Recommendation RD2: Engagement with communities hosting transmission infrastructure should be focused on the choices that they can influence within the ETDP design principles and guidelines. _____	35
	Recommendation SE1: A forum should be created between the Future System Operator (FSO), Transmission Owners (TOs), equipment manufacturers and Ofgem to review and update equipment standards used within Great Britain. _____	36
	Recommendation SE2: A process should be created to support and enable the work of this forum. _____	36
	Recommendation AR1: An automated corridor routing process should be adopted as standard practice. _____	37
	Recommendation AR2: A route design process that uses the Electricity Transmission Design Principles (ETDP) should be adopted. _____	37
3.	Regulatory approval _____	38
	Summary _____	38
	Recommendation RA1: Regulatory approval process should be removed from the critical path within the end-to-end process. _____	40
	Recommendation RA2: Ofgem should be given Net Zero objectives to support the delivery of electricity networks to meet UK government targets as provided within the Energy Act 2023. _____	41
	Recommendation CT1: Onshore network contestability should be delivered in phases, when certain criteria have been met, (i.e., contestability should not be introduced to all projects at the same time). _____	42
	Recommendation CBA1: All cost benefit analyses (CBA) that are carried out across the end-to-end process should be reviewed and updated to reflect whole project costs and wider societal benefits (e.g., constraint and carbon costs) where possible. _____	43
4.	Planning approval _____	45
	Summary _____	45
	Recommendation SP1: For planning decisions in Scotland (which are not covered by the Planning Act 2008), the Electricity Act 1989 should be amended to remove the automatic requirement for a public local inquiry when the planning authority objects. _____	46

Recommendation SP2: Further improvements should be made to the planning process in Scotland to reduce the time taken to obtain planning consent to twelve months. _____	46
Recommendation EWP1: The twelve month fast-track approval process should be used for approving all electricity transmission infrastructure in England and Wales. _____	47
Recommendation NP1: The National Policy Statements (NPS) and the Scottish National Planning Framework (NPF) should be updated regularly to support the need for new electricity transmission infrastructure. _____	49
Recommendation NP2: The National Policy Statements (NPS) and National Planning Framework (NPF) should refer to and allow ministers to endorse the Strategic Spatial Energy Plan (SSEP) and Centralised Strategic network Plan (CSNP), as statements of the projects required for nationally significant infrastructure. _____	51
Recommendation NP3: The Electricity Transmission Design Principles (ETDP) should be referenced and endorsed in the National Policy Statements (NPS) and National Planning Framework (NPF). _____	52
Recommendation ME1: A Marine Environmental Assessment (MEA) should be used to inform the Strategic Spatial Energy Plan (SSEP). _____	52
Recommendation ME2: Proactive actions should be taken to ensure the licensing processes for England, Scotland and Wales are able to deliver in a twelve-month period. _____	53
Recommendation LA1: The Transmission Owners (TOs) should be given the same statutory powers as other utilities to be able to access land for surveys when voluntary access has not been given. _____	55
Recommendation LA2: Compensation for wayleaves and purchase of land, voluntary and compulsory, should be set at a national level. _____	56
Recommendation LA3: Further work is required to understand impact of more changes being made to the current land purchase and wayleave process, both voluntary and compulsory. _____	56
5. Supply chain and skills _____	58
Summary _____	58
Recommendation SC1: The Transmission Owners (TOs) should form long-term relationships with the supply chain and look to book slots and bulk purchase equipment when possible. _____	59
Recommendation SC2: Contractors who will carry out the detailed design work should be procured earlier in the design process. _____	60
Recommendation SC3: Further work and collaboration is required between the Transmission Owners (TOs), supply chain and government to understand how manufacturing capability could be developed in the UK. _____	60

	Recommendation SJ1: Government should fund and lead an urgent review and work with industry and academia to identify the skills gaps and actions required to attract, recruit and retain the large workforce needed to deliver Net Zero. _____	61
6. Communities and engagement _____		64
Summary _____		64
	Recommendation CB1: Guidance on community benefits which are the subject of a current consultation should be delivered and adopted quickly. _____	65
	Recommendation CB2: Residents of properties close to new overhead lines should receive a defined direct payment. _____	65
	Recommendation NC1: A government-led national information campaign should be started on the need for electricity infrastructure and how this can lead to good outcomes for people and the communities in which they live and work. _____	66
	Recommendation NC2: An independent website, possibly hosted by the Institution of Engineering and Technology (IET) or a similar organisation, should be set up to provide information to the Public. _____	67
	Recommendation NC3: Information on all types of careers and opportunities should be provided in a variety of ways to appeal to different age groups. _____	68
7. Outage planning _____		69
Summary _____		69
	Recommendation OP1: Review and regular update of the guidance for the type of outages that can take place at different times of the year should be undertaken. _____	70
	Recommendation OP2: The Electricity System Operator (ESO) should investigate use case where operational rules can be relaxed to allow outages to go ahead. _____	70
	Recommendation OP3: The Electricity System Operator (ESO) should be involved in long-term outage planning during the route design stage. _____	70
	Recommendation OP4: The Electricity System Operator (ESO), in collaboration with industry, should lead a review of existing arrangements for outage planning in the short, medium and long term to develop actions. _____	70
8. End-to-end process _____		72
Summary _____		72
	Recommendation OE1: The government should establish an Energy System Delivery Board (ESDB) to monitor and drive delivery of the electricity transmission network delivery programme required to meet Net Zero. _____	73
	Recommendation OE2: The government should establish a Change Management Committee (CMC) as part of the Energy System Delivery Board (ESDB) to initiate and facilitate the changes that will be required. _____	73

Recommendation DS1: Coordinated data sharing amongst the parties should be established (where currently not happening), matured and mandated, with leadership for implementing this in practice assigned to the Future System Operator (FSO)._____ 74

Annex A - Action tracker _____ 76

Annex B - Transmission Acceleration Action Plan analytical note _____ 84

Foreword from Secretary of State for Energy Security and Net Zero

It is almost a hundred years since Prime Minister Stanley Baldwin pledged to transform living standards across Britain by building a new National Grid. The plans - to provide free-flowing electricity to every household in the country - were set out in the 1926 Electricity Supply Act. Just nine years later, the National Grid was born.

It was an extraordinary achievement. Yet the task we face today, modernising the network for a net zero, energy-secure age, is no less of a challenge. Although we are investing hundreds of billions as a nation in clean energy projects, and in powering Britain from Britain, we don't yet have the grid infrastructure to transmit that energy to households and businesses.



Over the past 13 years, we have made remarkable progress in decarbonising electricity generation. In the first quarter of this year, 48% of our electricity came from renewables, up from just 6% in the first quarter of 2010¹. We also have the world's five largest operational offshore wind projects². Energy security means national security, and by replacing imported fossil fuels with cheaper, cleaner, domestic sources of energy, we can ensure that the UK will never again suffer from the weaponisation of energy we saw after Putin invaded Ukraine at the start of last year.

As we increase electrification and decarbonise heat, transport and industry in our transition to net zero, we expect a doubling in demand for electricity by 2050³. This underlines just how important the grid will continue to be to our way of life, and we will need around four times as much new transmission network in the next seven years as we have built since 1990⁴. This Action Plan - the most radical modernisation of the grid since the 1950s - explains what we are doing to expand and strengthen the grid for the 21st century.

To help us to meet this challenge, we appointed Nick Winser CBE to the role of Electricity Networks Commissioner. His role was to work with government and provide advice on how to accelerate end-to-end build timelines. The Commissioner reported his findings earlier this summer and we published his report in August.

¹ Energy Trends 6.1, September 2023,

https://assets.publishing.service.gov.uk/media/65130d373d3718000d6d0c1d/ET_6.1_SEP_23.xlsx

² RenewableUK Energy Pulse, (2023) <https://www.renewableuk.com/page/EnergyPulse>

³ Department for Energy Security and Net Zero (2022), Electricity networks strategic framework: Enabling a secure, net zero energy system, Figure 2, <https://www.gov.uk/government/publications/electricity-networks-strategic-framework>

⁴ Calculated using data held by the Department on the length of historic and future transmission networks.

I want to thank Nick Winser for his comprehensive work as Electricity Networks Commissioner. He made clear that his report is not a list of options, but a set of interdependent actions that should be delivered together. The government agrees with this approach and that success depends on implementing the package as a whole. The government also agrees with the ambition behind each of the recommendations and in several cases our proposed actions go further. While this sets the bar very high, there is no alternative but to set stretching objectives and as we move to implement this Action Plan, we will assess what more we can do to further reduce the overall build timeline. We will be working closely with the Devolved Administrations to achieve these goals.

In his speech on Net Zero in September 2023, the Prime Minister laid out the government's ambitions for decarbonisation, long-term economic growth and energy security, and the essential role of transmission infrastructure to deliver them⁵.

Our plan will halve the timeline for building new infrastructure from 14 to 7 years. To facilitate this, our £960m Green Industries Growth Accelerator will support the expansion of strong, home-grown, clean energy supply chains and our Green Jobs Plan, which we will publish next year, will include a focus on electricity networks. And we will ensure communities hosting transmission network infrastructure can directly benefit from supporting the delivery of cheaper, secure, and low-carbon energy for all of Great Britain through our proposals for electricity bill discounts for properties close to infrastructure and wider benefits for local communities.

Successful delivery of the programme of work set out in this document is not just a priority to meet Net Zero and long-term energy security commitments, it will also provide huge economic benefits. This work is expected to reduce delays to network build, increase investment, support thousands of jobs and, crucially, reduce energy bills for households across Great Britain. It sits alongside our Connections Action Plan⁶, joint with Ofgem which will overhaul the way projects access the grid. This will release over 100GW of capacity from the current queue – equivalent to around a quarter of the electricity needed to power our economy in 2050 – and cut the average connection delay projects face to connect from 5 years to just 6 months. By reducing delays in network build and speeding up grid connections, the two Action Plans could bring forward around £90 billion of investment over the next 10 years⁷.

Our ambitions for the network necessarily involve working together with delivery partners. I am grateful for the progress that has already been made, which has given us a strong platform for future success. As we look forward to the National Grid's hundredth anniversary, this radical overhaul will transform the way that transmission networks are designed and built, and prepare the grid for a new era of Net Zero and energy security.

⁵ Prime Minister Speech on Net Zero (2023) <https://www.gov.uk/government/speeches/pm-speech-on-net-zero-20-september-2023>

⁶ Connections Action Plan (2023) <https://www.gov.uk/government/publications/electricity-networks-connections-action-plan>

⁷ This includes £15bn associated with the Transmission Acceleration Action Plan and £50-100bn (£75bn central estimate) associated with the Connections Action Plan. See annexed Analytical Note in both Action Plans for how this was calculated.

Like the pioneers who first brought electricity to communities across Britain almost a century ago, this new plan will create a grid fit for the future. When we fully decarbonise our economy and become energy-resilient in decades to come, we will look back on the decisions we are making today as instrumental in preparing Britain for the challenges ahead.

A handwritten signature in black ink, appearing to read 'Claire Coutinho', with a long horizontal stroke extending to the right.

Rt Hon Claire Coutinho MP
Secretary of State for Energy Security and Net Zero

Executive summary

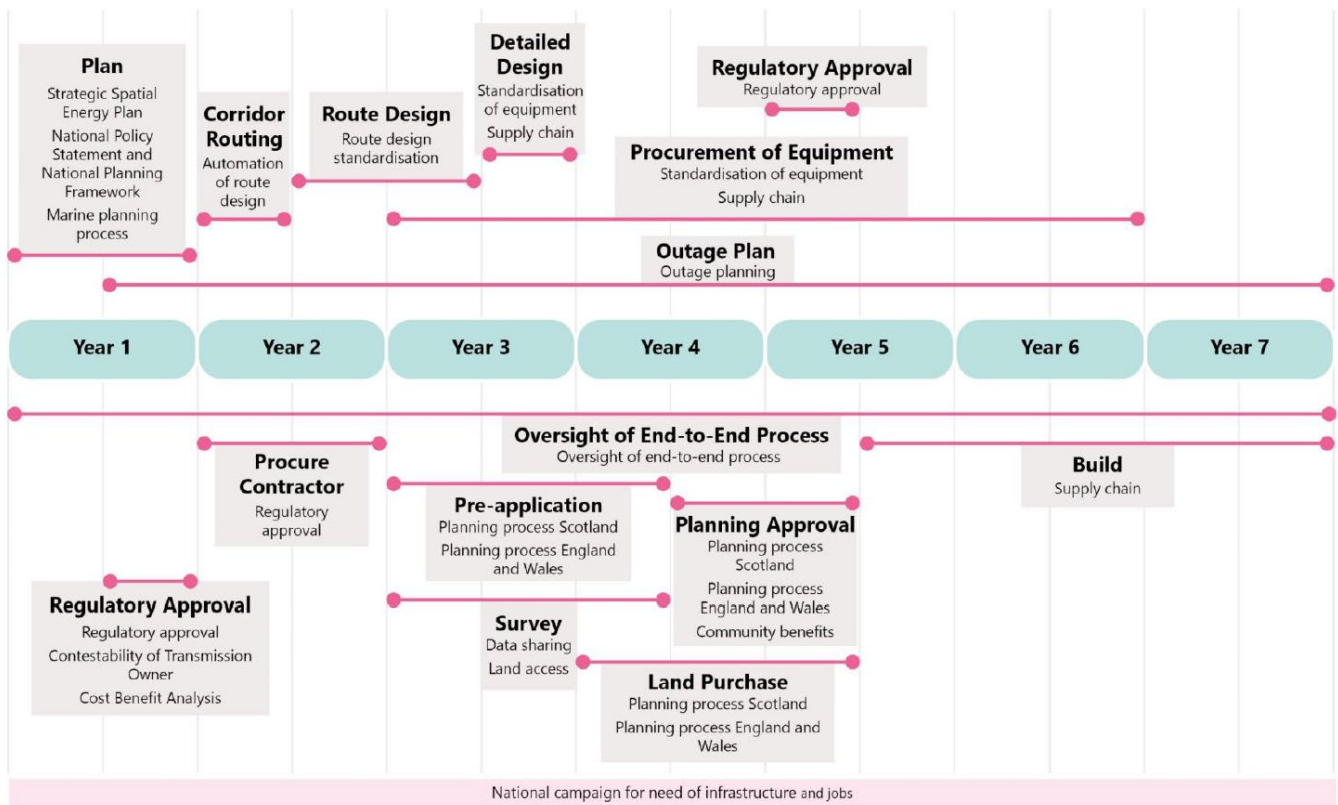
Great Britain's transmission network must undergo unprecedented expansion, as our economy electrifies to deliver energy security and Net Zero. With the increasing shift towards electrification of transport, heating and industrial processes, a significant amount of additional grid capacity is required. To deliver this expansion in time, we need to significantly reduce the current end-to-end build time for transmission infrastructure.

The government appointed Nick Winser CBE as Electricity Networks Commissioner in 2022 to work with and advise us on how to halve the build time for new transmission infrastructure from around 12-14 to 7 years. The Commissioner's report⁸ was published as a letter to the Secretary of State and a companion report including a set of 43 recommendations in August 2023. The government is grateful to the Commissioner for his work on this timely report, which offers useful recommendations to accelerate the deployment of transmission infrastructure. The government agrees with the package of recommendations, and in some cases seeks to go further so we can deliver on the ambition of halving the build time.

The report sets out a holistic approach looking at every part of the design and delivery of transmission infrastructure, seeking to reduce timelines to a minimum, while engaging communities effectively and providing community benefits for those hosting transmission infrastructure. The resulting process the Commissioner proposes is seven years end-to-end, from the point at which the need for new infrastructure is identified, to building and final commissioning. For this plan to be achieved, the Commissioner is clear that his recommendations should be implemented as a full package.

⁸ Accelerating electricity transmission network deployment: Electricity Networks Commissioner's recommendations (2023), <https://www.gov.uk/government/publications/accelerating-electricity-transmission-network-deployment-electricity-network-commissioners-recommendations>

Figure 1: The Commissioner’s new seven-year process map and recommendations required.



Source: Accelerating electricity transmission network deployment: Electricity Networks Commissioner’s recommendations (2023)⁹.

Strategic spatial planning

The Commissioner recommended the development of a Strategic Spatial Energy Plan (SSEP), including a Marine Environmental Assessment and an offshore delivery route map, to enable planning of the network in a strategic way. The Commissioner also recommended development of Centralised Strategic Network Plans (CSNPs) based on the SSEP, and that these should be used to enable resource planning.

The government broadly supports the Commissioner’s recommendations on strategic spatial planning and work has already begun towards the development of an SSEP. The SSEP will bridge the gap between government policy and infrastructure development plans. It will ultimately cover the whole energy system, land and sea, across Great Britain and will support the government in tandem with energy markets to determine the optimal location of energy infrastructure needed to transition to a greater supply of homegrown energy. It will set the foundation for holistic, cost-effective network planning; facilitate early engagement with the supply chain; and give more certainty to the planning and consenting process.

⁹ Electricity Networks Commissioner’s recommendations

In consultation with Ofgem and the Electricity System Operator (ESO), and with input from the Scottish and Welsh Governments, in early 2024 we will commission the ESO, in advance of becoming the Future System Operator (FSO), to work with government to develop the SSEP. In line with the Commissioner's recommendations, the first iteration of the plan will focus on power and hydrogen assets. The SSEP will reflect a strategic environmental assessment and a plan-level Habitats Regulation Assessment. It will also include an offshore delivery route map for energy assets within its scope. Consideration will also be given to how we best involve communities in the creation of the plan to ensure they have a voice in this process.

The FSO, once established, will produce short and longer-term CSNPs - high level plans for both on- and offshore networks. The CSNPs will support the connection of all transmission connected generation and demand, and seek opportunities to coordinate connections, reducing the amount of network infrastructure needed, building on the approach taken in the Holistic Network Design for offshore wind¹⁰.

Design standards

The Commissioner recommended principles to better standardise infrastructure and equipment design, to be clear with communities about where there are clear choices in decision-making and to speed up aspects of route design with automation.

The government agrees with these recommendations, which will make transmission projects quicker to design and deliver, will provide clearer parameters for communities to engage with and will enable more effective engagement with the supply chain. They will also support developers in meeting the expectations of the planning and consenting process.

The ESO (and then FSO, when established) will convene a working group with the Transmission Owners, UK, Scottish and Welsh Governments, Ofgem and Energy Networks Association to progress a set of Electricity Transmission Design Principles (ETDP). Subject to consultation we will reference the new principles in future updates of the National Policy Statements, giving them status in the planning system. Transmission Owners may decide to start using the ETDP, once agreed, as the basis of engagement with communities ahead of full implementation via the National Policy Statements.

The government supports the adoption of automated route design as standard practice by Transmission Owners and recognises the benefits it could bring in supporting corridor routing to help standardise and streamline the process. We will continue to work with industry to understand how the ETDP could be embedded in automation and to ensure that the automation is able to take account of community considerations and planning data; environmental sensitivities and mitigations, including on the advice of statutory nature conservation bodies.

¹⁰ Holistic Network Design – Pathway to 2030 (2022) <https://www.nationalgrideso.com/future-energy/pathway-2030-holistic-network-design>

Regulatory approval

The Commissioner recommended removing the regulatory approval process from the critical path within the end-to-end process for transmission infrastructure and delivering contestability in grid projects in a phased manner.

The government supports the need to streamline regulatory approvals process; is ambitious on introducing competition for transmission infrastructure projects where appropriate; and is clear that relevant cost benefit analyses must include all costs including constraint and carbon costs. The strategic spatial planning work described above will deliver a robust Centralised Strategic Network Plan, which will confirm the need for new transmission infrastructure, endorse the design solution and confirm the delivery body – removing these tasks, until now undertaken on a case-by-case basis by Ofgem, from the critical path and providing early certainty to network companies to allow them to focus on delivery. Ofgem's Future Networks and Systems Regulation review sets out the plan for this¹¹. It also confirms the intention that Ofgem will continue to move towards ex-post agreement of costs where appropriate, continuing to ensure that bill payers are protected from high and uncertain costs while allowing projects to secure the supply chain needed and get spades in the ground as quickly as possible.

As the regulatory framework is developing to support the energy transition, so is Ofgem continuing to build on its forward-leaning approach to strategic investment ahead of need, ensuring our networks are ready to meet the demand anticipated for our future secure, resilient, and decarbonised electricity system.

Planning approval

The Commissioner recommended a suite of reforms to planning processes, alongside wider work currently underway by government, to increase efficiency and enable projects to progress faster. His recommendations included use of fast-track approvals, further work on land purchasing and updates to the National Policy Statements (in England and Wales) and the National Planning Framework (in Scotland).

The government supports the need to reform the planning processes across Great Britain.

Alongside this Action Plan, the government has published a set of updated National Policy Statements (NPS) for energy infrastructure in England and Wales. Subject to the will of Parliament, the government aims to designate the updated NPS once the parliamentary process is complete¹². The National Policy Statements have been strengthened to ensure the right balance between the need to build vital infrastructure and the impacts this can have on the environment and communities. Low-carbon infrastructure, including large electricity grid

¹¹ Ofgem Decision on frameworks for future systems and network regulation (2023)

<https://www.ofgem.gov.uk/publications/decision-frameworks-future-systems-and-network-regulation>

¹² National Policy Statements (2023) <https://www.gov.uk/government/collections/national-policy-statements-for-energy-infrastructure>

infrastructure projects¹³, will be given 'Critical National Priority' status in the draft NPS currently laid before Parliament.

In the long term, the government will consider how to introduce a more flexible process for updating the NPS to ensure they can be updated more frequently when circumstances demand. We will ensure that the Strategic Spatial Energy Plan, Centralised Strategic Network Plan and Electricity Transmission Design Principles are all referenced in future versions of the NPS to give them weight in the planning system.

As part of wider planning reforms in England and Wales, the government is currently designing and trialling system improvements through the Early Adopters Programme¹⁴, looking at potential components of a future enhanced pre-application service for National Infrastructure. We fully support the use of the fast-track process for eligible network projects and, wherever possible, will help facilitate projects coming forward as early adopters or to participate when the process is formally launched in 2024. And we will publish new guidance to clarify compulsory purchase and land access rights for Transmission Owners.

The government recognises that reforms to electricity network consenting in Scotland are critical given the large proportion of new infrastructure that will be located there. Working closely with the Scottish Government we intend to carry out a thorough review of energy consenting rules in Scotland, with a consultation planned for next year on a wide-ranging set of proposals.

Supply chain and skills

The Commissioner recommended that government and industry should take a more strategic approach to procurement from the supply chain and to preparing for emerging workforce demands, to ensure that the right materials and contractors are in place to build the required transmission infrastructure.

We agree that enabling early engagement at scale with the supply chain and actions to support the domestic supply chain are vital. The government and Ofgem support a more strategic long-term approach to supply chain engagement and will ensure this approach is enabled through strategic network planning and regulatory frameworks. As part of the Future Networks and Systems Regulation review, Ofgem indicated its intention to review the Accelerated Strategic Transmission Investment framework to assess whether any further changes are required and if it should be extended to future projects¹⁵. Ofgem expect to fully consult on this in 2024.

A Supply Chain forum will be established comprising all relevant stakeholders including across industry, supply chains and the UK, Scottish and Welsh Governments. The forum will identify

¹³ 'Large' network infrastructure refers to network projects that are deemed to be Nationally Significant Infrastructure Projects (NSIPs) as determined by The Planning Act 2008. This includes network projects that are 132kV or over, or 2km or over.

¹⁴ Planning inspectorate launches pre-application trial with 7 Nationally Significant Infrastructure Projects (2023) <https://www.gov.uk/government/news/planning-inspectorate-launches-pre-application-trial-with-7-nationally-significant-infrastructure-projects>

¹⁵ Ofgem Decision on Frameworks for FSNR

cross-industry supply chain challenges and remove barriers to investment and greater domestic manufacturing capability.

To support the expansion of strong, home-grown, clean energy supply chains across the UK, the government has announced the Green Industries Growth Accelerator. This includes a commitment to providing £960m to support to key Net Zero sectors, including electricity networks, and will enable the UK to seize growth opportunities through the transition to Net Zero, building on our world-leading decarbonisation track record and strong deployment offer.

To tackle emerging and future workforce demands across the economy, we will publish a Green Jobs Plan in the first half of 2024, which will include a focus on electricity networks. We are also undertaking workforce planning and recruitment activity, to be supported by cost recovery, to boost infrastructure consenting as committed to in the Nationally Significant Infrastructure Action Plan¹⁶. 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.

Communities and engagement

The Commissioner recommended that there should be direct benefits for residents and communities who host visible grid infrastructure. He also recommended that an information campaign should be put in place to increase public understanding of the need for and benefits of an upgraded grid, including the career opportunities this presents.

In line with these recommendations, we want to ensure communities hosting transmission network infrastructure can directly benefit from supporting the delivery of cheaper, secure and low-carbon energy for all of Great Britain. It is important to bring communities with us, and we are committed to ensuring more consistent benefits for affected communities, set at a more appropriate level.

Following consultation earlier this year, we confirm that we are currently minded to provide both an electricity bill discount for properties located closest to transmission network infrastructure and a wider community benefit. The wider community benefit will be co-developed by the project developer and local community to best reflect community preferences. Our response to the consultation has been published alongside this document. We intend to publish guidance on wider community benefits in 2024. This guidance will be voluntary whilst we explore options for a mandatory approach. We will provide further information on the overall community benefits policy, including bill discounts and options for developing a mandatory approach, in 2024.

We agree that improving public understanding of electricity infrastructure and its associated benefits is essential to delivery of our objectives. Our approach to engagement should

¹⁶ Nationally Significant Infrastructure Projects (NSIP) reforms: action plan (2023)
<https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-nsip-reforms-action-plan/nationally-significant-infrastructure-action-plan-for-reforms-to-the-planning-process>

encompass all elements of network development and delivery, giving everybody a suitable grounding so that they can take part in the decisions that directly affect their lives.

We will establish a new joint entity including government, networks companies, operators and owners and regulators to deliver a communications campaign to set out the need for new infrastructure focusing on decarbonisation, lower consumer bills, new jobs and industries, security of energy supply and locally beneficial impacts. We anticipate this will incorporate a website to host key related information and promote relevant careers and opportunities.

Outage planning

The Commissioner recommended that the ESO should optimise outage planning arrangements and collaborate with industry to strategically plan outages in the short, medium and long term to enable transformation of the grid. Without this, the outage plan will become congested and could delay the final stages project delivery where new infrastructure is connected to the existing network.

The government supports these recommendations, which will be owned by the ESO (and then the FSO when established). Delivery of the recommendations will allow Great Britain's energy system to remain highly reliable and minimise costs to consumers, whilst also maximising the amount of system access that can be granted to add new infrastructure to the grid and complete upgrades. The greater visibility and certainty provided by these proposals will lower the risk of project delays and outage plan congestion.

End-to-end process and next steps

As the Commissioner outlines, the recommendations are interconnected, and we will therefore approach them as a cohesive package.

The Commissioner recommended the creation of governance boards to monitor and drive delivery of the overall package of recommendations. He also recommended that data sharing between all those involved in these recommendations should be matured and mandated.

The government supports these recommendations and recognises that appropriate governance will be vital. A new ministerially-chaired Transmission Acceleration Forum (End-to-End Process), and appropriate supporting governance, will convene industry CEOs, regulators and the Electricity System Operator, alongside representatives of the Devolved Administrations, to track delivery of the actions set out in this plan, and to monitor the impact on delivery of transmission infrastructure. This robust governance will help to ensure that rapid progress is made on delivery of the proposed actions and that future transmission infrastructure projects, and those in flight where appropriate, are supported to deliver against a more ambitious end to end timeline.

In addition, we will ensure the Transmission Acceleration governance aligns with the wider governance being established to support delivery of actions set out in the Connections Action Plan¹⁷.

We are confident that our package of reforms included here will deliver on our ambition to half the time it takes to build electricity network infrastructure. In doing so, we can take transmission infrastructure build off the critical path for major renewable energy and other energy projects, ensuring the network can be a vital enabler for an efficient, secure and fully decarbonised electricity system by 2035 and for the transition to Net Zero.

¹⁷ Connections Action Plan

Introduction

Across Great Britain, households, businesses and vital infrastructure all rely on the electricity network¹⁸. After decades of reliance on imported fossil fuels to power the grid, we have accelerated the transition to cheaper, cleaner, home-grown energy. We have led the world in this effort, transforming our energy portfolio by delivering over 1,200 TWh of renewable energy in Great Britain in the last two decades¹⁹, and increasing the amount of renewables connected to the grid more than fivefold since 2010²⁰. The government has committed to a fully decarbonised electricity system by 2035, subject to security of supply considerations, and Net Zero by 2050.

At the same time, electricity demand could at least double by 2050²¹ as we electrify sectors including transport, heating, and industry. In the nearer term, our ambitions for delivering more renewable and low-carbon generation, including up to 50GW of offshore wind power (including 5GW of floating wind) by 2030 and 24GW of new nuclear energy by 2050, are critical steps towards decarbonizing our economy and ensuring energy security by reducing our reliance on imported fossil fuels.

As we continue this drive, we also need to deliver the same transformation for the electricity grid itself.

Actions underway to address the challenge

Transmission networks act as the ‘motorways’ of our electricity system, carrying high-voltage power across the country. They are crucial for connecting home-grown energy sources, such as offshore wind farms, to our communities. Without sufficient transmission infrastructure, we will not be able to make full use of the huge success in growing low carbon energy – this impacts the rate at which we can decarbonise, and increases costs in the system, impacting bills.

Work is already underway across government to accelerate transmission network build. In the British Energy Security Strategy (BESS)²² we committed to significantly reducing timelines for delivering strategic onshore transmission infrastructure, as a vital dependency for delivering the BESS ambition of up to 50GW of offshore wind by 2030. The BESS also committed to publishing the first of a kind Holistic Network Design (HND), bringing together on and offshore network planning for the first time. The HND was published in July 2022, with a follow up

¹⁸ Northern Ireland operates on a separate electricity market (the Single Electricity Market) and is regulated by the Utility Regulator, which works with Ofgem to protect electricity interests across the jurisdictions. As a result, this report focuses on the transmission network in Great Britain (Scotland, England and Wales).

¹⁹ Department for Energy Security and Net Zero (2023), Energy Trends: UK Renewables, Renewable electricity capacity and generation (ET6.1 – quarterly) <https://www.gov.uk/government/statistics/energy-trends-section-6-renewables> and Department for Energy Security and Net Zero (2023), Regional Renewable Statistics, Regional Statistics 2003-2022: Generation, <https://www.gov.uk/government/statistics/regional-renewable-statistics>

²⁰ Energy Trends 6.1

²¹ DESNZ Electricity networks strategic framework

²² British Energy Security Strategy (2022) - <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

expected in early 2024 – in combination these exercises provide network designs to connect almost 45GW of offshore wind, maximising options for coordination and seeking to minimise impacts on communities and the environment²³. Building on this holistic approach, plans are underway for a Centralised Strategic Network Plan, which will be broader in scope in terms of generation and also consider strategic demand.

In February 2023, the government published the Nationally Significant Infrastructure Project (NSIP) Reform Action Plan, which sets out reforms to streamline and speed up consent of NSIPs, which include large network infrastructure projects in England and Wales²⁴. The NSIP Action Plan includes the introduction of a fast-track consenting process for projects which meet quality standards. The government consulted on proposed operational reforms to the NSIP consenting process in summer 2023²⁵. Reforms in Scotland are covered by separate recommendations (below).

In 2023, the government consulted on updates to the National Policy Statements (NPS), which set out national energy policy for England and Wales and form the framework for decision making on applications for NSIPs. The updated NPS drafts reflect the importance of strategic network planning, supporting the needs case for infrastructure, and subject to the will of parliament, the government aims to designate the updated NPS once the parliamentary process is complete.

In addition, the government has proceeded with the establishment of the Future System Operator (FSO), including through enabling legislation in the Energy Act 2023, and this will be key for the implementation of many of the recommendations in this Action Plan.

The Electricity Networks Commissioner

However, the government recognised that further action was needed and, in July 2022, appointed Nick Winser CBE to the role of Electricity Networks Commissioner to advise the government on accelerating electricity transmission network build. The Commissioner has extensive experience in the electricity networks field, sits on the National Infrastructure Commission and is Chair of the Energy Systems Catapult, which provides technical, commercial and policy expertise to drive innovation across the whole energy system.

His report²⁶ sets out a package of recommended actions. The Commissioner states that it is not a list of options to choose from, but a set of interdependent actions. The government agrees with this approach and is clear that the ambition lies in implementation of the package as a whole.

²³ Holistic Network Design Pathway to 2030

²⁴ NSIP Action Plan

²⁵ Consultation on operational reforms to the Nationally Significant Infrastructure Project (NSIP) consenting process (2023) <https://www.gov.uk/government/consultations/operational-reforms-to-the-nationally-significant-infrastructure-project-consenting-process/consultation-on-operational-reforms-to-the-nationally-significant-infrastructure-project-consenting-process>

²⁶ Electricity Networks Commissioner's recommendation report

Government response to the recommendations

We have worked across government and with Devolved Administrations, regulators and industry to give all the Commissioner's recommendations thorough consideration and analysis, including understanding deliverability challenges and areas of risk and how the recommendations relate to current and planned policies. We present here our response and how we plan to proceed with accelerating the development of electricity network infrastructure.

The government accepts the recommendations in all areas. In a limited number of cases the approach we set out in this Action Plan may differ in detail from the Commissioner's proposal, but we accept the majority of the recommendations in full and in some cases propose to go further.

The 8 sections set out in this Action Plan and the numbering of recommendations mirrors the key themes and structure of the Commissioner's report.

The programme of work set out in this Action Plan is expected to reduce delays to network build, which could increase investment by around £15bn over the next 10 years²⁷. Preventing network build delays also reduces constraint costs by decreasing the need to pay generators to turn-down due to network constraints. This could save electricity consumers around £20-30 on average per household per year between 2024-2035²⁸. However, earlier investment is also funded through electricity bills, so bringing this forward could put upward pressure on bills by around £5²⁹. Combining the two suggests a net saving of £15-25 on average per household per year between 2024-2035.

The recommendations will apply to electricity transmission in all of Great Britain, unless specified, and will require coordination across the jurisdictions of England, Wales and Scotland. The UK government will work closely with the Devolved Administrations in taking forward this Action Plan.

Links and interdependencies

Just as there are interdependencies within the Action Plan, this programme of work will also interact with wider government ambitions including and beyond energy such as:

Connections Action Plan

Our success in stimulating renewable investment means the 'queue' to connect to the transmission network is extremely congested, with around 400GW of projects holding

²⁷ See annexed Analytical Note in this Action Plan for how this was calculated

²⁸ Based on data provided by National Grid ESO showing the difference in constraint costs with a 3-year delay vs. no delay. Internal analysis by the Department for Energy Security and Net Zero translates this into bill impacts using data on total electricity consumption and average household electricity consumption. Undiscounted, 2023 prices.

²⁹ Internal analysis by the Department for Energy Security and Net Zero translates the investment estimate in this document into bill impacts by assuming a 45-year recovery period and using data on total electricity consumption and average household electricity consumption. Undiscounted, 2023 prices.

transmission connection agreements³⁰ (compared to ~70GW of generation currently connected at transmission³¹). This has resulted in renewable energy developers and other customers receiving connection offers into the 2030s. Alongside this document, the government, jointly with Ofgem, has published the Connections Action Plan³², which sets out an ambitious set of actions to reduce connection timescales. It focuses on the processes and systems that provide connection agreements and management of this pipeline of projects waiting to connect to the grid at both transmission and distribution levels.

We cannot truly address connections issues without also increasing the amount of network infrastructure, at scale and pace, which the Transmission Acceleration Action Plan looks to develop. The two Action Plans are closely linked, for example considerations on how to allocate spare capacity for connections must be integrated with the approach to strategic and spatial planning as set out in this document.

Review of Electricity Market Arrangements

The Review of Electricity Market Arrangements (REMA)³³ is the government's flagship policy to enable a Net Zero power sector by 2035 subject to security of supply, and the Powering Up Britain ambition for Great Britain to have amongst the cheapest wholesale electricity in Europe³⁴. REMA is crucial to achieving a smooth lowest-cost transition towards these goals, alongside other key enablers such as networks and planning reform. The previous Electricity Market Reform programme gave us the tools to start this transformation – REMA will complete this journey towards a future dominated by cheap clean domestic renewables, and replacing the key role that unabated gas currently plays within the electricity system. There are strong links to the work in this Action Plan particularly in relation to options for providing locational signals and the impact this may have on network needs. However, an acceleration of transmission network build is required regardless of the market reforms that will be decided under REMA.

Smarter Regulation

This Action Plan forms part of the government's Smarter Regulation programme of regulatory reform announcements that began in May 2023 with the publication of Smarter Regulation to Grow the Economy³⁵. Smarter regulation is about improving regulation across the board, ensuring it is as clear, proportionate and does not unnecessarily restrict innovation and growth. This plan and the regulatory reforms included within, will enable further investment, innovation and growth in the UK energy sector.

³⁰ National Grid ESO Transmission Entry Capacity Register as of October 2023,

<https://www.nationalgrideso.com/data-portal/transmission-entry-capacity-tec-register>

³¹ Digest of UK Energy Statistics (DUKES), Table 5.12, (2023)

<https://www.gov.uk/government/statistics/electricity-chapter-5-digest-of-united-kingdom-energy-statistics-dukes>

³² Connections Action Plan

³³ Review of electricity market arrangements (2023) <https://www.gov.uk/government/consultations/review-of-electricity-market-arrangements>

³⁴ Powering up Britain (2023) <https://www.gov.uk/government/publications/powering-up-britain/powering-up-britain>

³⁵ Smarter regulation to grow the economy (2023) <https://www.gov.uk/government/publications/smarter-regulation-to-grow-the-economy/smarter-regulation-to-grow-the-economy>

Flexibility markets, storage, and measures to increase capacity of infrastructure

The Commissioner's letter to the Secretary of State stresses the importance of a smart and flexible system to reduce the need for new transmission infrastructure, in particular regional flexibility markets. Flexibility from technologies such as electricity storage, smart charging of EVs, and interconnection could save up to £10bn per year by 2050 by reducing the amount of generation and network needed to decarbonise³⁶. In July 2021 Government set out its approach in the Smart Systems and Flexibility Plan, and the Energy Digitalisation Strategy^{37,38}. The work to implement this Transmission Acceleration Action Plan will regularly review relevant interdependencies.

Establishment of the Future System Operator (FSO)

The government has taken powers in the Energy Act 2023, to establish a new, publicly owned Future System Operator (referred to as the Independent System Operator and Planner in legislation). The FSO will be independent, not only from other energy sector interests, but also with operational independence from government. It will be licensed and regulated by Ofgem and funded by consumers through price control arrangements.

The FSO will be a trusted and expert body at the heart of the energy sector, with objectives to drive progress towards Net Zero while maintaining energy security and minimising costs for consumers. The FSO will be responsible for all the existing functions of the ESO, as well as longer-term strategic gas planning and forecasting functions and will ultimately take a whole energy system approach when planning and developing the network.

As highlighted above, the ESO and FSO will be key to the delivery of many of the recommendations set out in this Action Plan. Any actions set out in this Action Plan for the ESO will continue to be taken on by the FSO once it is established.

The government and Ofgem continue to work closely with National Grid, the ESO and National Gas Transmission (NGT) to establish the FSO, including developing the relevant licenses and detailed implementation plans. Depending on a number of factors, including discussing timelines with key parties, our aim continues to be for the FSO to be operational in 2024.

Monitoring implementation

As we progress implementation of the Action Plan, we will continue to monitor the impact of these policies and the effect they are having on projects across Great Britain. The Transmission Acceleration Forum (End-to-end process) will oversee delivery of the actions in this plan and monitor success in reducing overall timelines. This governance will hold government and industry accountable for ensuring we deliver, unblocking issues where required.

³⁶ Transitioning to a Net Zero energy system: smart systems and flexibility plan 2021 (2021)
<https://www.gov.uk/government/publications/transitioning-to-a-net-zero-energy-system-smart-systems-and-flexibility-plan-2021>

³⁷ Ibid

³⁸ Digitalising our energy system for Net Zero: strategy and action plan (2021)
<https://www.gov.uk/government/publications/digitalising-our-energy-system-for-net-zero-strategy-and-action-plan>

1. Strategic spatial planning

Summary

Taking a strategic approach will enable better consideration of the interactions between the components of the energy system when taking decisions about what to build where and when.

Good progress has already been made on strategic planning of the electricity transmission networks. We describe in the introduction work to produce the Holistic Network Design (HND), focused on connections for offshore wind, and the Centralised Strategic Network Plan (CSNP), for all onshore and offshore transmission networks³⁹.

By considering economic cost, deliverability, impact on communities and impact on the environment early in the process, these plans should support the rationale for the individual infrastructure projects contained within them when these are examined in the consenting process and help inform the needs case for infrastructure when assessed by Ofgem.

However, the Electricity Networks Commissioner recommended a step up from this approach by considering generation and transmission together in an integrated way through a Strategic Spatial Energy Plan (SSEP).

In September, the Prime Minister announced that the government will produce a spatial plan. In line with the Electricity Networks Commissioner's recommendation, the government agrees a SSEP will help determine the most efficient locations and types of energy infrastructure needed to support decarbonising the power system by 2035 and achieving Net Zero in a pragmatic manner⁴⁰.

We believe a more strategic approach to spatial planning will reduce duplication and inefficiency in infrastructure build, ensure generation build corresponds with the capabilities of the local transmission network, and increase certainty for industry and investors.

We will be commissioning the ESO, in advance of becoming the FSO, to work with the government to develop an interim SSEP. This will cover infrastructure for power generation, including offshore generation in Great British waters, and hydrogen assets, so we can create a more efficient electricity network and reduce waiting times for generation projects to connect to the grid. This will move to a whole energy system plan in the future.

³⁹ Holistic Network Design

⁴⁰ PM Net Zero Speech

Recommendation SS1: A Strategic Spatial Energy Plan (SSEP) should be developed to bridge the gap between government policy and Network Development Plans

Action Owner

Government and Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

The SSEP will ultimately cover the whole energy system, land and sea, across Great Britain to support the government in tandem with energy markets to determine the optimal location of energy infrastructure needed to transition to homegrown energy. However, producing a comprehensive multi-vector plan will take time and this government is keen to get on with ensuring we have the right infrastructure to power Britain from Britain and achieve Net Zero in a pragmatic manner.

We have, therefore, been working closely with the ESO, Ofgem and industry to develop options for a SSEP that will define the optimal location of generation and infrastructure required to meet forecast demand and our 2050 targets. This will allow us to provide industries with the certainty they need and enable the creation of a transmission network blueprint in the CSNP.

The first iteration of the SSEP will cover associated infrastructure for power generation, including offshore generation in Great British waters, and hydrogen assets, so we can create a more efficient electricity system design and enable the reduction of waiting times for generation projects to connect to the grid. We want to take a coordinated approach that forms a pathway from which more plans like the CSNP and sectoral energy plans would flow.

We agree that the FSO, once established, is the most suitable body to work with the government to develop the plan. The FSO will build on the ESO's capabilities, given its additional whole system responsibilities beyond the power sector, i.e. for gas and hydrogen.

The FSO will work with the government to develop the SSEP using policy inputs and priorities provided by government, including technology-specific targets, with oversight from Ofgem. We are engaging with the ESO, Ofgem, the Scottish and Welsh Governments, and other UK government departments to understand the sophisticated input data needed to inform such policy and targets, as well as expected future demand, pipeline of expected projects, and geographies.

Next Steps

In consultation with Ofgem and ESO, and with input from the Scottish and Welsh Governments, the UK government will commission the ESO in early 2024 to work with government to develop the SSEP in line with the Commissioner's recommendations. The publication of the SSEP will be determined as part of this commission.

We are working with Scottish and Welsh Government officials to ensure the SSEP commission takes into consideration specific devolved elements of the planning system across England, Wales and Scotland. We will also consider how we best involve communities in the creation of the plan through engagement and representation, to ensure they have a voice in this process.

We want the SSEP to give industry, developers and investors the certainty they need to build with confidence. Therefore, we are continuing to engage with them regularly to ensure we account for their needs and learn from their valued expertise.

Finally, we recognise a spatial plan needs to consider competing demands for space and interact with other activities and sectors such as shipping, military, nature restoration and fishing as well as local and national planning processes. We are, therefore, engaging across government to ensure that initial and future iterations of the SSEP align with existing statutory planning and consenting processes, wider planning reform and work to map out economy-wide land and marine use, such as the Land Use Framework and Marine Spatial Prioritisation programme, as well as wider planning reform, whilst respecting devolved competencies.

Recommendation SS2: A Marine Environmental Assessment (MEA) and offshore delivery route map should be included as part of the Strategic Spatial Energy Plan (SSEP).

Action owner

The government and Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

A strategic environmental assessment (SEA) is the relevant assessment for the SSEP, which is a process that aims to ensure that environmental issues are taken into account at every stage in the preparation, implementation, monitoring and review of plans, programmes and strategies of a public nature.

We agree that a future SSEP will require an onshore and offshore strategic environmental assessment, or an equivalent assessment under the Environmental Outcomes Report system once in force, and a plan-level Habitats Regulation Assessment (HRA). It should also include an offshore delivery route map for energy assets within its scope.

We will not be starting from scratch. The UK has an Offshore Energy Strategic Environmental Assessment (OESEA), last updated in 2022, in place⁴¹. With regards to the delivery route map, the ESO published The Pathway to 2030 Holistic Network Design (HND) in July 2022 which set out a coordinated approach for connecting 23GW of offshore wind⁴². The ESO will publish

⁴¹ Offshore Energy Strategic Environmental Assessment (OESEA) (2023) <https://www.gov.uk/guidance/offshore-energy-strategic-environmental-assessment-sea-an-overview-of-the-sea-process>

⁴² Holistic Network Design

the transitional Centralised Strategic Network Plan setting out coordinated connection for a further 25GW offshore wind in Q1 2024.

Next Steps

In consultation with ESO, Ofgem, and with input from the Scottish and Welsh Governments, the UK government will determine the scope of the proposed SSEP, including how it will include a strategic environmental assessment (covering onshore and offshore elements) and offshore delivery route map. These discussions will include how to build on existing work done by the ESO, the Department for Environment, Food and Rural Affairs (Defra), the Marine Management Organisation, The Crown Estate and others, including through the cross-government Marine Spatial Prioritisation programme. We will also seek integration with existing sectoral plans. Any assessment will need to take account of new and existing environmental targets.

The strategic environmental assessment, HRA and offshore delivery route map will be developed across 2024.

The draft energy National Policy Statements published alongside this document, make reference to the future Strategic Spatial Energy Plan and its role in supporting future planning decisions.

Recommendation SS3: Two Centralised Strategic Network Plans (CSNP) should be developed from the Strategic Spatial Energy Plan (SSEP) by the Future System Operator (FSO) – a shorter-term plan and a longer-term plan.

Action owner

Electricity System Operator (and then the Future System Operator, once established) and Ofgem

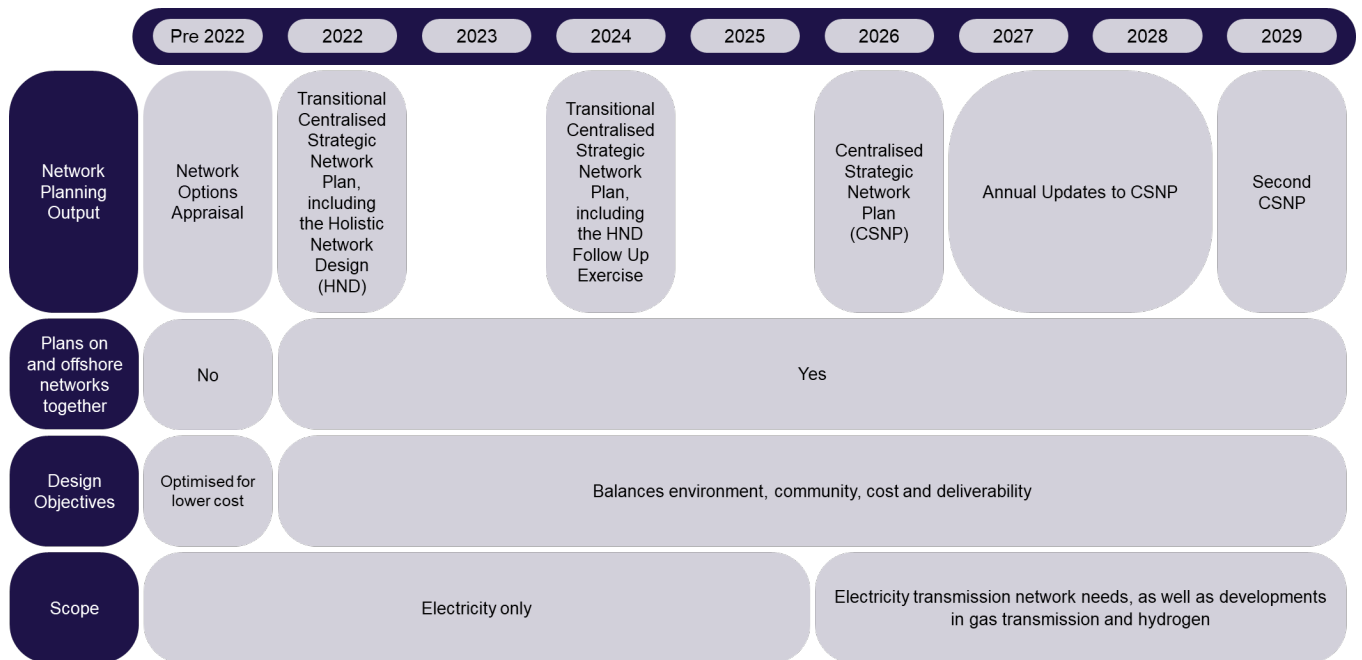
Action already undertaken

Action has already been undertaken to implement holistic network planning in Great Britain. This approach to network design seeks to balance the impact on the environment, the impact on communities, economic costs and deliverability of network infrastructure. Figure 2 provides an indicative timeline for the development of strategic network plans.

In November 2022, Ofgem set out their decision that the FSO should deliver a new network planning output called the CSNP. The CSNP will be a high-level plan for both on and offshore electricity transmission networks⁴³.

⁴³ The CSNP will also incorporate new FSO responsibilities in the areas of gas transmission and hydrogen network planning.

Figure 2: Timeline of Major Network Planning Outputs



In June 2023, Ofgem consulted on the CSNP framework for identifying and assessing transmission investment need and options out to 2050⁴⁴. This included plans for a longer-term CSNP, published every three years from 2026, that will consider long-term investment and system operability needs out to at least 2050.

Ofgem has also proposed that the FSO publish a shorter-term CSNP on an annual basis looking out approximately 12 years ahead⁴⁵, moving projects identified in the longer-term CSNP into a firm delivery pipeline where the needs case becomes sufficiently certain. It would also look at near-term system needs to enable the deployment or procurement of additional solutions to address residual network constraints and operability issues.

The government supports Ofgem’s consultation position, which is broadly in line with the Electricity Networks Commissioner’s recommendation. Whilst the FSO should hold overall responsibility for the creation of both the short and long-term CSNPs, Ofgem is supporting the development of the methodology, and the government will maintain oversight and ensure the FSO is discharging its responsibilities in line with the terms of reference.

We also support the publication of a ‘full’ CSNP in 2026, reflecting the time needed to undertake the necessary analysis, and to enable the ESO (and then the FSO, when

⁴⁴ Centralised Strategic Network Plan: Consultation on framework for identifying and assessing transmission investment options (2023) <https://www.ofgem.gov.uk/sites/default/files/2023-07/Centralised%20Strategic%20Network%20Plan%20-%20Consultation%20on%20framework%20for%20identifying%20and%20assessing%20transmission%20investment%20options.pdf>

⁴⁵ 12 years broadly aligns to current network infrastructure build time - initial inception through to operation. This is expected to be reduced, in which case this period would be expected to reduce also.

established) to continue to build on the approach in the Holistic Network Design to deliver recommended designs for the network.

Next Steps

As government works with the FSO to develop the SSEP, we will set out how it will inform, and be informed by, the CSNP. Ofgem expects to issue its decision on the CSNP framework for identifying and assessing transmission investment options in December 2023.

Both the SSEP and CSNP are clearly referenced in the revised draft energy National Policy Statements which set the basis for planning decisions and are published alongside this document.

Recommendation SS4: Projects identified in the shorter-term Centralised Strategic Network Plan (CSNP) should become the baseline and the need for them should not be revisited in the next shorter-term CSNP.

Action owner

Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

The projects that were identified in the Holistic Network Design are captured in Ofgem's new Accelerated Strategic Transmission Investment (ASTI)⁴⁶ regulatory framework to fund the large strategic onshore transmission projects required to deliver the government's 2030 ambitions. Under this framework Ofgem accepted the needs case for these projects in terms of the technical capabilities reflected in the HND. Ofgem's consultation on the framework for identifying and assessing transmission investment options for the CSNP closed in August 2023⁴⁷. The consultation outlined proposals for a 'delivery pipeline' of projects, where certainty of need for the project is sufficiently high. The consultation proposes that once a project is in the CSNP delivery pipeline it should not be re-evaluated again, unless the project has significant changes to parameters such as delivery dates and costs, or where there are significant changes to the system need. This position broadly aligns with the Commissioner's recommendation.

In its consultation on the CSNP framework for identifying and assessing transmission investment, Ofgem proposed that a Strategic Environmental Assessment should form part of the CSNP process⁴⁸. Assessing and considering environmental impacts upfront supports the broader needs case for infrastructure in specific locations and should help to reduce calls to change designs later in the process.

⁴⁶ Ofgem Decision on accelerating onshore electricity transmission investment (2022)
<https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment>

⁴⁷ CSNP Consultation

⁴⁸ CSNP Consultation

Next Steps

Ofgem expects to issue its decision on the CSNP framework for identifying and assessing transmission investment options in December.

Recommendation SS5: The longer-term Centralised Strategic Network Plan (CSNP) should be used to support Transmission Owner (TO) engagement with the supply chain and evidence the scale of investment required over a longer time period.

Action owner

Electricity System Operator (and then the Future System Operator, when established),
Transmission Owners

Action already undertaken

We agree that long term clarity over network infrastructure requirements and associated scales of investment provided by the CSNP will be beneficial to the supply chain through providing greater pipeline certainty and investor confidence. And it is important that the Transmission Owners (TOs) can engage the supply chain early and at scale.

The network plans provided by the Holistic Network Design (HND) and the transitional CSNP (to be published in Q1 2024) give a strong indication of the type and scale of infrastructure required in the medium-term to both TOs and the supply chain. The CSNP will build on this by providing long-term clarity of network infrastructure requirements.

Next Steps

The government will continue to work with the supply chain, TOs and the ESO (and then FSO, when established) to ensure the longer-term CSNP can provide greater clarity of future demand to provide pipeline certainty to the supply chain. This, along with the commitments in response to recommendations on contestability and supply chains should prevent delays and facilitate supply chain engagement.

Ofgem expects the next transitional CSNP (to be published in early 2024) to inform the majority of the TO load related business plans for the next transmission network price control period (2026-31). In funding these projects Ofgem will learn from and adapt ASTI as quickly as possible and implement key parts of its recent framework decision on the future of network regulation, as appropriate⁴⁹. This will continue the progress driven by ASTI in enabling TOs to engage with the supply chain early, on a portfolio basis, and with confidence of cost recovery – all of which are fundamental to fast delivery of transmission infrastructure.

⁴⁹ Ofgem ASTI Decision

Recommendation SS6: The longer-term and shorter-term Centralised Strategic Network Plans (CSNPs) are to be used to support long-term resource planning for all parties (e.g. Transmission Owners (TOs) and statutory consultees) within the end-to-end process.

Action owner

All parties within the end-to-end process

Action already undertaken

We agree that longer term resource planning will be beneficial to all parties involved in the process, from identifying generation and transmission needs through to planning, consenting and delivery. The introduction of the CSNP will increase long term visibility of network infrastructure requirements and provide greater insight into the volume of work required by all parties in the future, improving investor confidence through strong market signals. In turn, this will support investment into the skills and training necessary to deliver on this transformation, from better resource planning to improved recruitment and training offers.

The increased visibility should allow Transmission Owners and statutory consultees, as well as other parties involved in the process, to facilitate engagement with universities and training institutions to ensure there are appropriate routes to enter the sector, as well as signal to people across the country that there is a high demand for roles within electricity networks.

The government and industry have established a Green Jobs Delivery Group to set out plans to grow a green workforce⁵⁰. The group builds upon existing work by the government and industry to prepare the existing workforce for the green economy and boost the pipeline of skilled workers.

As part of Powering Up Britain: The Net Zero Growth Plan, we published a set of head start actions and principles of intent from the Power and Networks working group – a subgroup to the Green Jobs Delivery Group⁵¹. A suite of further actions for this sector was also published in summer 2023⁵². Over summer, the Power and Networks working group, led by industry, has also conducted a workforce assessment to expand its understanding of workforce and skills challenges that sectors are experiencing, or expect to experience as part of the transition to Net Zero.

It is also important to note that skills funding is devolved across the UK. The sector will need to work with the Devolved Administrations as well as with Department for Education (DfE) in England to progress activity across the UK.

⁵⁰ Green Jobs Delivery Group <https://www.gov.uk/government/groups/green-jobs-delivery-group>

⁵¹ Powering up Britain

⁵² Green Jobs Delivery Group: Power and Networks Summer 2023 Publication (2023) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1175264/power-and-networks-summer-publication.pdf

Next Steps

The government will work with Ofgem, the ESO (and then FSO, when established), Devolved Administrations, TOs and statutory consultees to understand how the CSNP and, where possible, the SSEP can be used to support long-term resource planning.

To address emerging and future workforce demands across the economy, the Green Jobs Delivery Group is focused on the creation of a Green Jobs Plan, which will be published in the first half of 2024. The workforce assessments mentioned previously will inform policy and actions in this plan.

Within government, the Department for Environment, Food and Rural Affairs and its arm's length bodies (Defra Group) are developing workforce strategies, as committed to in the NSIP Action Plan. These will address identified issues such as recruitment and retention of staff; ensuring an effective, resourced and resilient statutory planning service in the future. Defra Group and the Department for Energy Security and Net Zero (DESNZ) will work together to ensure that these workforce strategies feed into wider work on green skills and the Green Jobs Plan.

To further help with these activities, the government will review existing work on planning skills and explore establishing a cross-government planning workforce skills group by the end of 2024 to address the challenges highlighted in this report.

2. Design standards

Summary

There are already rules in place to cover the design and sighting of overhead lines and substations, but these are not comprehensive and have not been updated for some time⁵³. The government agrees with the proposal to create new Electricity Transmission Design Principles (ETDP), which have the potential to provide clarity on how infrastructure design could be improved and where alternative options could be considered such as different pylon designs or more detailed criteria for undergrounding cables, allowing for more meaningful discussion about choices with host communities.

The ESO is well placed to lead on developing these principles. The National Policy Statement for electricity networks makes clear the importance of design standards as part of the planning process. The ETDP can be used to frame the choices that communities hosting infrastructure may be able to make. The government will reference the ETDP in any future NPS designations. We also agree that the principles could be used in automated route design processes, which we support the adoption of as standard practice by Transmission Owners.

The government supports the recommendation to review and update equipment standards. This could help to improve speed and efficiency of supply chains, by supporting greater consistency in standards both within Great Britain and with other countries, where appropriate. Achieving greater equipment standardisation is dependent on cross-industry participation. The Electricity Networks Association will therefore initiate coordination of industry participation on equipment standards by the end of 2023, with the ESO and Ofgem providing a supporting function.

⁵³ The Holford Rules (1959) can be accessed here: <https://www.nationalgrid.com/sites/default/files/documents/13795-The%20Holford%20Rules.pdf> and Horlock Rules (2009) here: <https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf>

Recommendation RD1: Electricity Transmission Design Principles (ETDP) should be created to provide greater clarity on the type of asset to be used in different environments.

Action owner

Electricity System Operator (and then the Future System Operator, when established) and Government

Action already undertaken

The government has published the updated energy National Policy Statements (NPS) alongside this document. Subject to the will of Parliament, the government aims to designate the updated NPS once the parliamentary process is complete. The NPS sets out planning policy for the development and consenting of Nationally Significant Infrastructure Projects, including large electricity network projects in England and Wales. The NPS includes the requirement to consider good design (in accordance with the Planning Act 2008) and for electricity networks projects to be developed in accordance with the Holford and Horlock Rules, which cover the design and siting of overhead lines and substations respectively.

Next Steps

The ESO will convene a working group with relevant stakeholders to develop and progress the objectives, scope and delivery plan for the design standards. Transmission Owners will be expected to take a key role in the development of the ETDP, reflecting the requirement for them to follow the ETDP when making network proposals in the future. The first meeting of the group will take place in Q1 2024 and focus on getting clarity on the intention and scope of the standards.

Following initial scoping, the working group will develop the ETDP and consult on them publicly to ensure that public views are fully considered as part of the final principles. This will also consider how the ETDP will interact with any existing guidance in this area, such as the Holford and Horlock rules^{54,55}.

Information about the ETDP in relation to the National Policy Statements (England and Wales) and the National Planning Framework (Scotland) are provided in Section 4 below (Planning Approvals).

⁵⁴ Ibid

⁵⁵ Ibid

Recommendation RD2: Engagement with communities hosting transmission infrastructure should be focused on the choices that they can influence within the ETDP design principles and guidelines.

Action owner

The government to implement and industry to deliver

Action already undertaken

The Planning Act 2008 requires developers to have regard to the views of affected communities, and to demonstrate how these views have been considered and which measures have been taken as a result, as part of the Development Consent Order (DCO) application. Within the NSIP Action Plan, the government set out its intention to develop guidance on community engagement expectations to ensure that infrastructure developers consider at the outset of their programmes how their projects can address the legitimate concerns of affected communities, regularly engaging with them throughout the pre-application phase and beyond⁵⁶. The consultation on Operational Reforms to the NSIP consenting process set out that the government will revise pre-application guidance to provide greater clarity on community engagement expectations and proportionality throughout the consenting process⁵⁷.

The government has recently consulted on the implementation of a new fast-track route, which will be available to all projects that meet a new proposed quality standard, designed to ensure early and effective engagement between applicants and communities at pre-application and to drive a shorter timetable for the consenting decision. The government is currently considering consultation responses and intends to publish revised guidance on how this will operate in Spring 2024.

Next Steps

The ESO led working group will consider how choices for community engagement could be considered in the development of any ETDP. Information about the ETDP in relation to the National Policy Statements (England and Wales) and the National Planning Framework (Scotland) is provided in Section 4 below (Planning Approvals).

⁵⁶ NSIP Action Plan

⁵⁷ NSIP Consultation

Recommendation SE1: A forum should be created between the Future System Operator (FSO), Transmission Owners (TOs), equipment manufacturers and Ofgem to review and update equipment standards used within Great Britain.

Recommendation SE2: A process should be created to support and enable the work of this forum.

Action owner

Electricity Networks Association, Transmission Owners, Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

The government agrees that greater coordination between the ESO and later the FSO (once established), Ofgem, TOs and equipment manufacturers on equipment standards would be beneficial. The Electricity Networks Association will establish a forum with key stakeholders, including TOs and equipment manufacturers, in partnership with Ofgem, to review decisions to ensure that any agreed standards are able to be accounted for when assessing the needs.

Implementation of updates to rationalise and align equipment standards recommended through the forum will require a process to scrutinise and assess proposed changes. This process will need to comply with existing and future grid codes and be approved by the ESO (and then FSO, when established). The TOs and the ESO/FSO will develop a process to implement equipment standardisation recommendations agreed at the forum. It is suggested that the existing code modification process is used as a starting point.

Next Steps

The forum will continue to provide a platform through which equipment standards can be reviewed and updated. Key stakeholders will convene in 2023 to discuss manufacturing efficiency and international compatibility benefits associated with standardisation proposals that fall within the scope of its function.

The TOs, and ESO (and then FSO, when established) will design a process to implement equipment standardisation recommendations, agreed at the forum, by the end of 2024.

Recommendation AR1: An automated corridor routing process should be adopted as standard practice.

Recommendation AR2: A route design process that uses the Electricity Transmission Design Principles (ETDP) should be adopted.

Action owner

Transmission Owners

Action already undertaken

Route automation is already being used by some Transmission Owners.

Next Steps

The government supports these recommendations and the benefits that route automation could bring in standardising and streamlining corridor routing as part of project development. We are keen to work with industry and other key stakeholders to help understand how ETDP could be adopted into route automation. Any design principles will be developed in close collaboration with the Scottish and Welsh Governments, other relevant stakeholders, and with an understanding of environmental and community impacts.

Route automation would be able to provide a standardised approach across industry for initial scoping of route options. We expect Transmission Owners to adopt route automation as part of their design process. However, it should not be used as a substitute for a full and detailed assessment of route planning and design; individual projects must still be assessed on a case-by-case basis and route automation may not be appropriate for all projects. Any application that uses route automation will still be subject to the UK's robust and thorough planning process. Government also recognises that the quality and availability of data inputs for route automation is key for this recommendation.

This recommendation is dependent on the development of the ETDP, which is detailed above in Recommendation RD1.

3. Regulatory approval

Summary

Traditionally, Ofgem's role in the delivery of new electricity transmission network has consisted of four key elements: assessing the need for new infrastructure, endorsing the design solution, confirming the delivery body, and ensuring efficient costs for delivery. Historically, Ofgem's assessment of these elements has taken place across several stages and the final need and determination of efficient costs would typically only be approved once planning approval was in place. This staged process was designed to avoid consumers paying for unnecessary or inefficient work. However, in the context of the pressing need to invest for Net Zero, this process can often be seen to take too long, as the network companies have indicated that late confirmation of project need and funding presents them with an unacceptable level of risk, both of which lead to delays.

Moving to a strategically planned approach for the transmission network allows a different approach, where strategic plans determine the need for projects, and a separate needs case assessment is not required for regulatory approval. This was the rationale behind Ofgem's ASTI decision that streamlined regulatory approval for projects identified in the Holistic Network Design⁵⁸.

Building on that approach, the government agrees with the Commissioner's recommendation that regulatory approvals should be removed from the critical path of key transmission projects. For future price controls, Ofgem will use the Centralised Strategic Network Plan to determine the needs case, will use a hybrid of ex-post and ex-ante cost setting to maximise efficiency and will embed an Independent Technical Advisor within network companies to provide the confidence to allow faster decision-making.

New powers in the Energy Act 2023 to introduce competition in electricity networks will improve efficiency and stimulate innovation and government will look to launch the first competitions in 2024. Consumers should benefit from competitions being run and the government agrees with the Commissioner that early clarity is needed on which projects will be subject to competition, to allow Transmission Owners to proceed at pace and engage supply chains at scale for those projects that they will deliver. As strategic network plans are published in the future, Ofgem and the Electricity System Operator will work together to provide the certainty needed by making quick decisions on whether new projects are suitable for competition or not during the planning process.

In line with the Commissioner's recommendations, these changes to regulatory approvals will be supported by the Net Zero duty placed on Ofgem through the Energy Act 2023 (in addition to its existing duty to protect consumers and the growth duty that government has confirmed it will extend to economic regulators, following consultation over the summer). These changes will also be supported by developing a transparent and consistent cost benefit analysis

⁵⁸ Ofgem ASTI Decision

methodology – reflecting wider costs and benefits including constraints and carbon costs - for all stages of the end-to-end development process.

Recommendation RA1: Regulatory approval process should be removed from the critical path within the end-to-end process.

Action owner

Ofgem

Action already undertaken

Following the publication of the Holistic Network Design by the ESO, Ofgem developed a new streamlined regulatory regime to accelerate the strategic investment identified in that plan. This was done at pace, and unlocked £20bn of strategic transmission network build, to deliver on the 2030 offshore wind ambitions. This ASTI regime confirmed the need for the projects, the delivery bodies, and set tough financial incentives on the Transmission Owners for delivery. It enabled Transmission Owners to take a programmatic approach to delivering this infrastructure, and created a visible, longer pipeline of projects.

Ofgem has also recently published its framework decision, following its Future Systems and Network Regulation review (FSNR), for its approach in the next price controls (RIIO-3) which start in 2026⁵⁹. As part of the FSNR review, Ofgem has undertaken a consultative process with industry and wider stakeholders, including network companies and consumer groups, to review the regulatory framework to ensure it is fit for purpose to achieve an effective energy transition. The framework decision sets out the policy priorities for RIIO-3 and the broad regulatory approvals approach for major new electricity transmission projects. This includes the need for major electricity transmission projects being determined by the FSO as part of the Centralised Strategic Network Plan (CSNP). It also proposes building on ASTI to enable a streamlined regulatory process to unlock investment as it is identified in each CSNP, incentivising cost efficiency whilst ensuring the regulatory approvals are not on the critical path. Ofgem is deploying a hybrid approach to setting costs: balancing price, quality and speed of delivery, however, Ofgem will keep the incentive and penalty mechanism under review, to optimise consumer outcomes.

Next Steps

Confirming the need for new transmission infrastructure, endorsing the design solution and confirming the delivery body will, in the future, all be done as part of or in parallel with the development of the CSNP. This means that three of the four key elements of Ofgem's role are removed from the critical path. This leaves Ofgem's role to ensure efficient costs for delivery.

Ofgem will continue to build on the progress from its new ASTI regime, to ensure regulatory approvals are off the critical path. In advance of the first full CSNP (in 2026) Ofgem intends to unlock strategic transmission investment identified in the next network plan (the transitional CSNP to be published in early 2024), building on the ASTI approach.

The next electricity transmission price control will commence in April 2026, delivering upon the framework set out in Ofgem's Future Systems and Network Regulation review (FSNR) in

⁵⁹ Ofgem Decision on frameworks for FSNR

October. Further detail to build upon the FSNR decision will come in the Sector Specific Methodology Consultation for the next electricity transmission price control, which is expected in December 2023. The government expects this price control to be more ambitious and forward-leaning than previous price controls, building on the strategic anticipatory investment Ofgem has allowed over the last few years to support the projects on the critical path to the energy transition. We expect this to give Transmission Owners confidence about which projects they will progress to allow for early engagement with their supply chains early to support the projects' delivery. The government will continue to work closely with Ofgem as the price control is developed and frameworks implemented.

Recommendation RA2: Ofgem should be given Net Zero objectives to support the delivery of electricity networks to meet UK government targets as provided within the Energy Act 2023.

Action owner

Government

Action already undertaken

As part of the Energy Act 2023, the government has introduced legislation to place a duty on Ofgem to take Net Zero into consideration in the delivery of its functions. While this mandate builds on what Ofgem already does; for the first time, it will directly link consumers' interests to specific Net Zero targets. Building new electricity networks, in the right place, at the right time, and having access to cheaper, renewable generation, is key to the Net Zero transition. As part of its Smarter Regulation programme, following a consultation over the summer, the government has confirmed it will also extend the Growth Duty to Ofgem provided for in the Deregulation Act 2015 (alongside Ofwat and Ofcom).

Next Steps

Ofgem's Net Zero duty will come into effect on 26 December 2023, two months after the Energy Act received Royal Assent. The government will continue to work with Ofgem to understand how the duty can support network investment as part of the next price control, which will start in 2026 for electricity transmission. The first significant milestone towards this will be in Ofgem's Sector Specific Methodology Consultation for the next price control period, expected in December.

Recommendation CT1: Onshore network contestability should be delivered in phases, when certain criteria have been met, (i.e., contestability should not be introduced to all projects at the same time).

Action owner

Government and Ofgem

Action already undertaken

Introducing competition to the onshore electricity networks is vital for the transformation of the grid, it will bring forward efficiencies and innovation, saving consumers up to £1bn by 2050⁶⁰. That is why, through the Energy Act 2023, the government has taken powers to allow tenders to be run when certain criteria are met.

These criteria will be set out in regulations and are designed to ensure network projects that are tendered are those where there is a benefit to consumers from doing so. An important factor in considering benefit to consumers is the speed of network delivery to support the transition towards Net Zero, including any constraint cost impact of changes to delivery timelines through competing projects. The criteria for late-stage competition (competition once planning approvals and designs are agreed and approved) are that the project should be i) new; ii) separable and iii) worth £100m or more. For early-stage competition (competition ahead of planning approvals for the project being complete), the criteria are that the project is i) new; ii) separable; and iii) there is a greater benefit to the project being competed than not.

Next Steps

The government is committed to introducing competition as soon as reasonably possible, to gain its benefits: savings for consumers of up to £1bn by 2050, and greater levels of inward investment into Great British networks.

Alongside government taking powers to allow tenders to be run, it is necessary for Ofgem and the ESO to continue to develop working competition models; including the supporting regulatory and commercial arrangements to allow for competitive tenders to drive savings to consumers. Ofgem will be able to identify the first projects eligible for competition in Summer 2024, announcing the launch of a competitive process as soon as possible later in the year once the relevant competition models have been sufficiently developed.

In order to address concerns raised by network companies, that uncertainty over when competition will apply could impede their ability to contract with their supply chains and so slow overall project delivery, we will continue to build on the successful approach taken under ASTI, where Ofgem exempted nearly £20bn of strategic transmission projects from competition, confirming that the Transmission Owners would be the delivery bodies.

⁶⁰ Energy Security Bill factsheet: Competition in onshore electricity networks (2023)
<https://www.gov.uk/government/publications/energy-security-bill-factsheets/energy-security-bill-factsheet-competition-in-onshore-electricity-networks>

The ESO will consider which strategic transmission projects included in the Transitional CSNP, due to be published in early 2024, may be eligible for competition. ESO, as part of this plan, will work to identify which of these projects could be competed, although the majority will be likely to be exempted to achieve delivery dates of 2035. Ofgem will then consider the needs case for those projects in a similar way to the ASTI process, as signalled in their FSNR decision in October. This needs case will include whether to exempt those projects from competition which will be done within six months of the transitional CSNP publication.

Longer-term decisions on competition will be fully integrated into the strategic network planning process. The Commissioner suggested that onshore network projects involving subsea cables could be a first opportunity for competition. This will be considered, alongside other delivery options for these projects, by ESO and Ofgem during the development of the strategic network plans. This will mean that such decisions do not delay delivery.

Recommendation CBA1: All cost benefit analyses (CBA) that are carried out across the end-to-end process should be reviewed and updated to reflect whole project costs and wider societal benefits (e.g., constraint and carbon costs) where possible.

Action owner

Electricity System Operator (and then the Future System Operator, when established), Ofgem and Transmission Owners (TOs)

Action already undertaken

Currently, assessments are carried out at 3 stages in the end-to-end process:

- **During the planning stage there is an options assessment** – CBA at this stage are carried out by the ESO and compare the cost of reinforcing the network and reducing constraint costs vs. not reinforcing the network and maintaining constraint costs. Network projects receive a ‘proceed’ signal if the former has a lower total cost. Currently, CBA at this stage do not consider some of the wider societal impacts of network investment. However, Ofgem recently consulted on the CSNP which requires ESO to expand the CBA methodology used at this stage.
- **During regulatory approval there is a cost assessment** – the assessment at this stage is carried out by TOs and submitted to Ofgem to ensure the detailed route and design for each network project is the most economic option for electricity consumers. Currently, this assessment considers efficiency for consumers – Ofgem benchmark projects against unit cost data or the cost of similar projects. It also looks to determine whether the proposed solution represents the most optimal design, having taken account of cost and environmental/community impacts, but is not a full cost-benefits analysis - it does not consider network delays, outage costs and wider societal impacts such as emissions, economic impacts, etc.

- **During outage planning there is a planning and impact assessment** – new network projects must connect to the existing network, which requires outage planning. The assessment at this stage considers the impact of outages on constraint costs and security of supply only – it does not consider the wider impacts outlined above, although minimising constraints reduces emissions, so these are considered indirectly.

Next Steps

We agree with this recommendation and will work with ESO (and then FSO, when established) and Ofgem to develop an appropriate, transparent and consistent CBA methodology for all stages of the end-to-end process. The CSNP will play an important role in this - Ofgem intend to publish their decision on the CSNP consultation at the end of 2023. The decision will cover how CBA should be applied in options assessment during the planning stage, but it will not cover how CBA should be applied during regulatory approval and outage planning. We will work with the ESO (and then FSO, when established) and Ofgem to develop the CSNP CBA methodology further, along with a CBA methodology for the other stages of the end-to-end process.

4. Planning approval

Summary

The UK has a robust and thorough planning process that considers a number of relevant factors associated with a proposed project. The process can vary depending on the size and location of the project.

In England and Wales, applications for approval of projects that meet the threshold for being Nationally Significant Infrastructure Projects (NSIPs)⁶¹ are determined in accordance with relevant National Policy Statements and other factors set out in the Planning Act 2008. The suite of relevant National Policy Statements (NPS) includes EN-1 which sets out government planning policy across all energy infrastructure, and EN-5 which is a statement of government policy on electricity networks.

The NPS has been strengthened and clarified following a public consultation in 2021 and a further consultation earlier this year, which was necessitated by recent global developments and the increasing importance of this country speeding up the development of its own energy infrastructure. Delivering faster planning decisions is important but must be done in a way that ensures a fair and thorough examination process is undertaken. Each new network project faces the challenge of designing routes that satisfy the regulatory approval requirements and establish the need case as set out in the NPS, whilst considering and dealing with local, adverse impacts. There is a tension between the need for infrastructure to support social and economic well-being and the impact that this infrastructure has on the environment, people and communities. Failure to address and resolve this tension, which is an issue not only for electricity networks but for all new infrastructure, will jeopardise the journey to a secure, Net Zero future. Our objective therefore is to achieve the right balance between national need and local impacts, guided by all the relevant information and through constructive engagement with stakeholders. That is what the updated suite of energy NPS, and the wider planning reforms announced earlier this year, are designed to do.

The National Policy Statements and the reforms to the Nationally Significant Infrastructure system apply in England and Wales, under the Planning Act 2008. This Act does not apply to Scotland. In Scotland, planning decisions on electricity networks, whatever their size, are taken by the Scottish authorities, under the earlier Electricity Act 1989. Scottish Government recently published National Planning Framework 4 (NPF4), that sets out their spatial principles, regional priorities, national developments and national planning policy⁶².

⁶¹ Or are directed in under Section 35 of the Planning Act 2008 by the Secretary of State.

⁶² Scottish Government National Policy Framework 4 (2023)
<https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf>

Recommendation SP1: For planning decisions in Scotland (which are not covered by the Planning Act 2008), the Electricity Act 1989 should be amended to remove the automatic requirement for a public local inquiry when the planning authority objects. An alternative process should be introduced that would allow Scottish Government ministers to hear more about a specific issue raised by statutory consultees as an alternative to a public inquiry.

Recommendation SP2: Further improvements should be made to the planning process in Scotland to reduce the time taken to obtain planning consent to twelve months.

Action owner

UK government working with Scottish Government

Action already undertaken

We recognise that the speed of electricity network consenting in Scotland is critical to the whole of Britain's economy and that reform of the planning system for electricity networks in Scotland is required if we are to meet 2030 and other Net Zero and energy security targets.

We agree that there are particular issues in Scotland, and this includes the automatic trigger of a public local inquiry. It can currently take years for a project to receive consent if an inquiry is triggered. We recognise in particular the issue that this poses, and we are urgently exploring solutions.

Local authorities and statutory consultees rightly need to have a role in the planning approval process; however, we need to balance the impact of network infrastructure on local communities and the environment with the clear economic, environmental, and security need for this infrastructure to be delivered swiftly. This is only possible if existing planning and consenting processes are streamlined.

In Scotland, planning decision-making for energy infrastructure is devolved to Scottish Government ministers and local authorities, but the underpinning legislation, the Electricity Act 1989, is reserved to the UK government. This means that the Scottish Parliament cannot introduce or amend the legislative processes for consenting beyond its limited powers to make regulations relating to procedure. To amend the automatic trigger of a public local inquiry requires primary legislation by the UK government.

Next Steps

We agree with the Commissioner and the Scottish Government that the Scottish energy consenting system requires accelerating and that reforms are needed to ensure that decisions for network connections in Scotland can proceed in a more efficient and timely way.

We believe that the case for reform of energy planning extends beyond grid connections and should address a number of long running process issues which are holding back vital development to deliver energy security and Net Zero across Britain. For that reason, we will

carry out a thorough review of energy consenting rules in Scotland. We will work closely with the Scottish Government to present a wide-ranging set of proposals for consultation next year, which will cover the specific recommendations made by the Electricity Networks Commissioner, as well as wider concerns that have been raised with us by Scottish Ministers, developers and key stakeholders.

Recommendation EWP1: The twelve month fast-track approval process should be used for approving all electricity transmission infrastructure in England and Wales.

Action owner

Government

Action already taken

Earlier this year, the government published its Nationally Significant Infrastructure Project (NSIP) Reform Action Plan⁶³, which sets out reforms to streamline and speed up the consent of NSIPs, including the introduction of a fast-track consenting timeframe for projects which meet quality standards. Eligible projects will be supported to progress through the process with a non-statutory 12-month target timescale from acceptance to decision, including a shorter maximum examination timescale.

The government is currently trialling system improvements through the Early Adopters Programme that is trialling potential components of a future enhanced pre-application service for National Infrastructure⁶⁴. This programme will be extended to trial part of the fast-track scheme. The new pre-application services will also be available to support non-fast-track developments to make for a smoother consenting journey and offer wider benefit to the whole regime.

A number of other reforms are also part of this Action Plan and will benefit networks amongst other nationally significant infrastructure. In addition to the pre-application service from the Planning Inspectorate, these reforms include statutory advisory bodies funded by new cost-recovery powers; and accelerated digitalisation across the service.

In his announcement on 20 September 2023, the Prime Minister emphasised the importance of grid infrastructure for our energy security, highlighting that a fast track through our nationally significant infrastructure project planning regime is available for eligible major transmission projects⁶⁵.

⁶³ NSIP Action Plan

⁶⁴ Planning inspectorate NSIP announcement

⁶⁵ Press release: PM recommits UK to Net Zero by 2050 and pledges a “fairer” path to achieving target to ease the financial burden on British families (2023)

<https://www.gov.uk/government/news/pm-recommits-uk-to-net-zero-by-2050-and-pledges-a-fairer-path-to-achieving-target-to-ease-the-financial-burden-on-british-families>

Next Steps

The government fully supports the use of the fast-track process for eligible network projects and, wherever possible, will help facilitate projects coming forward as early adopters or to participate when the process is formally launched in 2024. We want to help streamline the process for consenting transmission network projects as much as possible and are keen to work with developers to ensure that they are able to meet the quality standard, and will be encouraged to apply for the fast-track process. It is the government's responsibility to design an efficient and streamlined process that is easily accessible to a wide range of potential projects. Guidance and secondary legislation will be put in place so that all NSIP projects will be able to apply for the fast-track process (including eligible NSIP network projects), provided they are able to demonstrate they meet the quality standards that were consulted on in July and that will shortly be set out in NSIP planning guidance. From April 2024, the Planning Inspectorate will offer improved pre-application services leading to a new 'fast-track' route for NSIPs that meet a quality standard⁶⁶.

It is highly unlikely that all transmission network projects will apply for fast-track consenting, some will not be suitable for a variety of reasons. It is up to the developer how they manage their application and whether they want it fast-tracked or not. Each project has its own specific issues, and it will always be the case that some projects are able to acquire their approvals and consents more swiftly and smoothly than others. No consenting decisions can be taken for granted, some will be lengthier than others, and some will be turned down for a variety of reasons.

Nevertheless, other reforms covered in the NSIP Action Plan, including more resource for statutory advisory bodies and a greater focus on constructive engagement at the pre-application stage, are aimed at all routes through the planning system, not just the new fast-track route. Moreover, reforms outlined in this Action Plan, such as design standards and spatial planning, are aimed at helping make the delivery of transmission projects easier and more streamlined.

⁶⁶ Getting Great Britain Building Again: Speeding up Infrastructure Delivery (2023)
<https://www.gov.uk/government/publications/getting-great-britain-building-again-speeding-up-infrastructure-delivery>

Recommendation NP1: The National Policy Statements (NPS) and the Scottish National Planning Framework (NPF) should be updated regularly to support the need for new electricity transmission infrastructure. The NPS and NPF should be reviewed and updated every five years and allow for smaller changes to be made between the five-year updates.

Action owner

UK government and Scottish Government

Action already undertaken

England and Wales – NPS

National Policy Statements (NPS) set out national energy policy for planning purposes and form the framework for decision-making on applications for nationally significant infrastructure projects (NSIPs) in England and Wales, which includes large electricity network projects.

The Planning Act 2008 states that National Policy Statements should be updated whenever the relevant Secretary of State deems it appropriate to do so, considering any significant changes in circumstances since publication of existing policy. It is expected that a public announcement on the consideration as to whether a review is required should be made at least every 5 years⁶⁷.

In 2021, the government consulted on five energy NPS. These were not finalised to the original timetable due to the massive upheaval in global energy markets prompted by the Russian invasion of Ukraine early the following year. The large increases in energy bills for consumers, and further evidence of the need to act on the climate crisis made further updates necessary. All these factors placed even more urgency on this country developing its own low carbon energy infrastructure as rapidly as possible. It is important that the energy NPS reflect this to support the planning process. The government therefore reconsulted in 2023. The updated NPS published alongside this document will shortly be laid before Parliament, and now fully reflect the strategic importance of new energy infrastructure for delivering energy security, affordability and Net Zero⁶⁸. Subject to the will of Parliament, the government aims to designate the updated NPS once the parliamentary process is complete.

⁶⁷ Planning Act 2008: Guidance on the process for carrying out a review of existing National Policy Statements (2021) <https://www.gov.uk/guidance/planning-act-2008-guidance-on-the-process-for-carrying-out-a-review-of-existing-national-policy-statements#ftnref2>

⁶⁸ NPS Publication

As part of their report in April 2023, the National Infrastructure Commission (NIC) also called for a more regular (5-yearly) review of the NPS to be put on a statutory footing⁶⁹. A response to the report, including this recommendation, has been published alongside this document⁷⁰.

Scotland – NPF

The Scottish Government recently published National Planning Framework 4 (NPF4)⁷¹, that sets out its spatial principles, regional priorities, national developments and national planning policy. As outlined in NPF4, development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported by Scottish Government, including enabling works, such as grid transmission and distribution infrastructure.

Strategic Renewable Electricity Generation and Transmission Infrastructure is identified as a significant development of national importance in NPF4 (National Development 3). National development status establishes the need for such infrastructure and ensures the principle of development does not need to be assessed again at the consenting stage. This helps provide more certainty for developers and communities.

Next Steps

England and Wales – NPS

The UK government strongly agrees that the energy NPS needs to be kept up to date and reviewed regularly, and as outlined above a public announcement on the consideration of whether to review is required at least every 5 years. Alongside this document we have published five amended energy NPS that were consulted on earlier in the year, which included the networks-specific NPS.

Government is actively looking at ways to streamline the process for refreshing the NPS, ensuring that the process is more flexible. There is more detail on this in our response to the National Infrastructure Commission’s report published alongside this Action Plan⁷². We will continue to review the NPS in line with current legislative requirements, specifically when there are significant changes in policy.

Scotland – NPF

Legislation sets a 10-year cycle within which Scottish ministers are required to keep the National Planning Framework (NPF) under review. The Town and Country Planning (Scotland) Act 1997 (as amended) allows Scottish ministers to amend the National Planning Framework and the process for making amendments to NPF4 within the 10-year cycle will be covered in

⁶⁹ Delivering Net Zero, climate resilience and growth Improving nationally significant infrastructure planning (2023) <https://nic.org.uk/studies-reports/infrastructure-planning-system/delivering-net-zero-climate-resilience-growth/>

⁷⁰ Government Response to the NIC Report (2023) <https://www.gov.uk/government/publications/government-response-to-the-national-infrastructure-commission-report-on-improving-nationally-significant-infrastructure-planning>

⁷¹ Scottish Government NPF4

⁷² Government Response to the NIC Report

new regulations which will be consulted on and are expected to be brought forward in due course.

Changes of substance would not be made to the NPF without appropriate evidence, engagement and consultation, and the amendment regulations being prepared will bring out the handling arrangements and procedure for making changes to the NPF. Any changes would also be subject to any relevant statutory and other impact assessment requirements.

Recommendation NP2: The National Policy Statements (NPS) and National Planning Framework (NPF) should refer to and allow ministers to endorse the Strategic Spatial Energy Plan (SSEP) and Centralised Strategic network Plan (CSNP), as statements of the projects required for nationally significant infrastructure.

Action owner

UK government and Scottish Government

Action already undertaken

England and Wales (For Scotland, see text under NP1)

As noted above, the government recently updated, and consulted on, draft National Policy Statements (NPS). Amendments included reflecting the importance of strategic network planning. The NPS recognises that the Holistic Network Design and subsequent network design exercises (e.g. the CSNP) are likely to contain information that is important and relevant in the consideration of consent applications for infrastructure resulting from those exercises. In the updated NPS published alongside this document, the government has also committed to working with the ESO (and then FSO, when established) to develop the SSEP to bridge the gap between government policy and infrastructure development plans⁷³.

Next Steps

National Policy Statements are the primary document for relevant NSIP decisions and can also be material considerations in other planning decisions and plan making. The government recognises the value of the CSNP and the SSEP in the planning process, including to help support the need case for application. A more strategic approach to spatial planning will make clearer the overall geographic requirements for the energy system and increase efficiency in the system, helping reduce transmission costs for generators and consumers of electricity.

The government will recognise the CSNP and SSEP in future iterations of the NPS. The level of endorsement that the government can provide in the NPS will be subject to appropriate governance of the plans and suitable environmental assessments being undertaken that should include an appropriate level of public consultation. Government will also consider the

⁷³ NPS Publication

timing of these products as they develop in line with future reviews of the NPS, as detailed above in NP1 'Next Steps'. Further policy work and engagement with the ESO (and then FSO once established) is required as these two strategic plans develop to understand the role and weighting that these documents will have in the planning process.

Recommendation NP3: The Electricity Transmission Design Principles (ETDP) should be referenced and endorsed in the National Policy Statements (NPS) and National Planning Framework (NPF).

Action owner

UK government and Scottish Government

Action already undertaken

Please see Section 2 (Design Standards) for full details of the ETDP

Next Steps

England and Wales (For Scotland, see text under NP1)

The UK government supports this recommendation and, subject to the final outcome of the ETDP and timings of future NPS reviews (see 'Next Steps' in NP1 above), plans to endorse the ETDP in future NPS. As detailed in Section 2, (Design Standards), the government will proactively participate in the working group that will be set up to develop and consult on the ETDP.

The UK government will ensure that Scottish and Welsh Government, alongside other relevant stakeholders, are included in discussions around development of these design principles.

Recommendation ME1: A Marine Environmental Assessment (MEA) should be used to inform the Strategic Spatial Energy Plan (SSEP).

Action owner

Government and Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

A strategic environmental assessment (SEA) is the relevant assessment for the SSEP, which is a process that aims to ensure that environmental issues are taken into account at every stage in the preparation, implementation, monitoring and review of plans, programmes and strategies of a public nature.

We agree that a future SSEP will require an onshore and offshore strategic environmental assessment, or an equivalent assessment under the Environmental Outcomes Report system once in force, and a plan-level Habitats Regulation Assessment (HRA).

The UK has an Offshore Energy Strategic Environmental Assessment (OESEA), last updated in 2022, in place⁷⁴.

Next Steps

In consultation with ESO, the government will determine how the SSEP should include a strategic environmental assessment, in early 2024. Any assessment will need to take account of new and existing environmental targets.

Recommendation ME2: Proactive actions should be taken to ensure the licensing processes for England, Scotland and Wales are able to deliver in a twelve-month period.

Action owner

UK government in partnership with the Scottish and Welsh Governments, Marine Management Organisation (MMO), Marine Scotland, Natural Resource Wales (NRW) and statutory nature conservation bodies (Natural England, NatureScot, NRW and JNCC)

Action already undertaken

We agree that marine licensing is a vital part of the development of the transmission network and are committed to ensuring it does not slow developments. Consent for onshore energy transmission in England and Wales can be granted as part of the NSIP/DCO process, with any offshore or intertidal elements requiring provision of a Deemed Marine Licence (DML), which is included within a DCO. Whilst granting consent of DCOs and any associated DMLs is the responsibility of Secretary of State for Energy Security and Net Zero, the MMO, Marine Scotland and Natural Resource Wales are responsible for enforcing, post-consent monitoring, varying, suspending and revoking any DML.

The following actions are underway to address licensing processes:

- The government has committed to creating a resource and skills strategy as part of their NSIP Action Plan published in February, work on this has already begun⁷⁵. This strategy will address skills and capabilities caps in government agencies and take steps to improve the NSIP system's ability to predict demand and build capacity to meet it. This is in addition to existing work on regulator resource through Pathways to Growth, an assessment of skills and resources needed for NSIP reform reporting to the NSIP

⁷⁴ OESEA

⁷⁵ NSIP Action Plan

Board. The output of these workstreams will help assess the capability and capacity needed in regulators to meet UK government ambitions.

- The government is carrying out a review of the marine licensing system focusing on reducing uncertainty and risks of delay in marine licensing. A consultation on marine licensing efficiencies and cost recovery will be published shortly. Cost recovery will allow MMO to better secure resources to provide its services efficiently and reduce reliance on Grant-in-Aid funding. New licensing exemptions and 'self-service' activities will also free up MMO case officer time to focus on issues that better reflect Government priorities, for example larger infrastructure developments, and ensure that MMO's efforts are directed to more complex cases and more significant opportunities for environmental gains.
- The government will also be using new powers in the Levelling Up and Regeneration Act 2023 to give MMO the ability to increase their ability to cost recover.
- The offshore wind environment improvement package includes actions to streamline the consenting process for offshore wind, with earlier agreement between developers and Statutory Nature Conservation Bodies on consenting conditions related to the environment.
- In July, the government published a consultation on operational reforms to the NSIP consenting process⁷⁶. The proposals include ensuring the system is adequately resourced through strengthening performance of the government's expert bodies, including enabling cost recovery for key Defra arm's length bodies, which include the MMO.
- In 2022, the Welsh Government commissioned an independent review of the marine licensing process⁷⁷. In response, to deliver against the review recommendations, the Welsh Ministers have provided additional resource to Natural Resources Wales to ensure marine licensing in Wales is agile, enabling and proportionate. This funding will also ensure the licensing regime is adequately resourced to meet future demand in relation to marine renewable energy.
- In Scotland, the Marine Directorate – Licensing Operations Team, who administer the marine licensing functions, have significantly increased resource over the last two years in anticipation of the increased workload associated with offshore renewable projects. They have also developed a team to streamline the regulatory process within the current legal requirements, and have begun to review process, seek stakeholders feedback and implement updated guidance.

Next Steps

The UK government recognises the need for timely consenting decisions and is working in partnership with the Scottish Government and the Welsh Government to accelerate and de-risk

⁷⁶ NSIP Consultation

⁷⁷ End-to-end review of the Marine Licensing process: summary report (2022) <https://www.gov.wales/end-end-review-marine-licensing-process-summary-report>

consenting. Specifically, the Welsh Government is considering how reforms to environmental assessments could improve consenting; and the Scottish Government is working on feedback from stakeholders, provision of guidance on the regulatory approval process, publication of guidance and improvements to process to ensure timely decisions are made.

The UK government is also considering responses to our consultation on operational reforms to the NSIP process and associated proposals for resourcing and will provide a response in December 2023⁷⁸.

We will monitor progress against all these actions as part of the Transmission Acceleration Forum (Section 8, End-to-End Process) delivery governance.

Recommendation LA1: The Transmission Owners (TOs) should be given the same statutory powers as other utilities to be able to access land for surveys when voluntary access has not been given.

Action owner

Government

Action already undertaken

The government has clarified the existing legal powers determining access to land for surveys.

For England and Wales, the government has established that Transmission Owners have the same statutory powers as other utilities to access land, and that Transmission Owners are able to access land for surveys without voluntary agreement from landowners. A warrant to access land is only required when the Transmission Owner needs to use force to enter the land. Transmission Owners in England and Wales also have powers to access land under the Planning Act 2008.

Next Steps

The government will update the existing guidance on the compulsory purchase process in 2024 to reflect the reforms being implemented through the Levelling Up and Regeneration Act 2023 to streamline and modernise the compulsory purchase order process. The update will include clarifying and enhancing the guidance on the legal powers to access land under the Housing and Planning Act 2016, and their application.

Beyond updating the guidance, we will keep under review whether any further amendments are needed to the processes for accessing land for surveys. For example, the time it takes to obtain a warrant when one is needed.

⁷⁸ NSIP Consultation

Recommendation LA2: Compensation for wayleaves and purchase of land, voluntary and compulsory, should be set at a national level.

Recommendation LA3: Further work is required to understand impact of more changes being made to the current land purchase and wayleave process, both voluntary and compulsory.

Areas of consideration should include and are not limited to:

- *how to introduce a variations process for small changes from the original land purchase or wayleave*
- *how to set timeframes for compulsory purchase and necessary wayleave process*
- *how the land right and wayleave process sits alongside planning approval.*

Action owner

Government

Action already undertaken

The government published a call for evidence last year seeking views on land rights and consents processes⁷⁹. Stakeholders raised concerns regarding fair and transparent compensation as well as suggestions on how land right processes could be improved. Work is underway to consider ‘quick win’ policy measures that can be implemented in the short term and longer-term legislative change.

Reforms to the compulsory purchase order process are being implemented through the Levelling Up and Regeneration Act 2023 with implementation of the Act due to commence in 2024. The government plans to reform the compulsory purchase process through measures in the bill. The government has also asked the Law Commission to review the law on compulsory purchase procedure with a view to consolidation to modernise and improve access to the legislation.

Next Steps

We will publish our response to the call for evidence on land rights and consents in spring 2024, setting out next steps and agreed policy measures.

The government will set up a working group, reporting into the Transmission Acceleration Forum (Section 8, End-to-End Process), with TOs, Distribution Network Operators, the ESO (and then FSO, when established), the Planning Inspectorate (PINS) and Scottish Government, to look at what further changes could be made to the land purchase and wayleave processes, both voluntary and compulsory, to support accelerating the delivery of

⁷⁹ Land rights and consents for electricity network infrastructure: call for evidence (2022)
<https://www.gov.uk/government/calls-for-evidence/land-rights-and-consents-for-electricity-network-infrastructure-call-for-evidence#:~:text=Call%20for%20evidence%20description,buid%20of%20electricity%20network%20infrastructure>

electricity network infrastructure. This will include reviewing the recommendations from the call for evidence response. Examples from other utilities and best practice will be considered as part of this working group. The working group will report by the end of 2024.

5. Supply chain and skills

Summary

Ensuring access to key infrastructure components, materials and skills is essential to delivering the government's ambitions for both renewable generation and network build. However, global supply chains for electricity network equipment and components are not expected to keep pace with the growth in international demand over the next decade. This challenge is particularly acute in the mid-term out to 2030, where it is estimated that industry needs to deliver four times the amount of electricity transmission infrastructure in the next seven years than has been built in the past thirty years, to meet the 50GW offshore wind generation ambition.

Whilst the sector is highly globalised, the UK has strengths in the manufacture of converters, transformers and cables. The challenges noted above could impact on delivery of key strategic transmission infrastructure in Great Britain, but the UK is well positioned to build competitive advantage in critical components, not least given the long-term certainty that this Action Plan will provide to developers.

With this in mind, the government agrees with the Commissioner that enabling early engagement at scale with the supply chain, and continuing to support the domestic supply chain, are vital. Alongside activity by the Transmission Owners (TOs) and Ofgem, the government will convene a forum to bring together industry, the supply chain, and the Devolved Administrations to identify supply chain challenges and remove barriers to investment.

The government's aims for the grid also depend on the UK having the right workforce with the right skills and capacity in the right locations across the UK, noting that skills funding is devolved, and the sector will need to work with the UK government, Devolved Administrations, and local authorities in England. The Green Jobs Delivery Group is the central forum for continued action on green jobs and skills, working collaboratively with government, industry, the skills and education sector, local government, trade unions and other key stakeholders. The Delivery Group will consider the workforce needs of this sector alongside a variety of others and will be publishing a Green Jobs Plan in the first half of 2024. Alongside the Delivery Group, government policies and ambitions will support up to 480,000 green jobs across the UK in 2030.

Recommendation SC1: The Transmission Owners (TOs) should form long-term relationships with the supply chain and look to book slots and bulk purchase equipment when possible.

Action owner

Transmission Owners, Ofgem

Action already undertaken

Transmission Owners are adapting their approach to procurement to adapt to current and anticipated supply chain challenges. This includes through transitioning away from project-by-project procurement towards a partnership approach and committing to capacity reservation agreements, which require an up-front payment to secure continued contractor commitment to the project. Capacity reservation agreements have already been deployed by some Transmission Owners, securing the first round of manufacturing and install for the 2030 strategic investment programme. The network owners are now exploring extension of those supply chain relationships into the investment programme for mid 2030s.

The government supports the efforts made by TOs and the changes implemented through Ofgem’s Accelerated Strategic Transmission Investment (ASTI) framework that was introduced to support TOs engagement with the supply chain by providing greater flexibility.

Next steps

Transmission Owners are private companies and responsible for their own supply chain relationship management and procurement. This includes determining the level of acceptable risk when reserving manufacturing capacity or bulk purchasing equipment. The government and Ofgem are supportive of a more strategic long-term approach to supply chain engagement and will work to ensure this approach is enabled through strategic network planning and regulatory frameworks.

Ofgem will continue to review the ASTI framework to ensure it has sufficient flexibility to encourage and facilitate early contractor involvement and development of longer-term supplier relationships. Ofgem will also work with TOs and the supply chain to ensure the wider regulatory environment is in place to enable this. Ofgem will also assess the risk sharing and pricing mechanisms used by TOs in their procurement processes to determine whether these represent the most efficient value for consumers and demonstrate effective supply chain management.

Furthermore, Ofgem will work with the TOs and supply chain to explore options for bundling up TO orders in 2024.

Recommendation SC2: Contractors who will carry out the detailed design work should be procured earlier in the design process.

Action owner

Transmission Owners

Action already undertaken

For some TOs, early contractor involvement in the design of the investment projects is now a standard contracting approach.

Next steps

TOs will procure design contractors earlier in the design process to support supply chain engagement and assist in the planning stage. Whilst TOs are private companies and responsible for planning their design process, the government is committed to supporting where possible.

Recommendation SC3: Further work and collaboration is required between the Transmission Owners (TOs), supply chain and government to understand how manufacturing capability could be developed in the UK.

Action owner

Government, Transmission Owners and British Electrotechnical and Allied Manufacturers Association (BEAMA)

Action already undertaken

The government recognises that ensuring electricity transmission projects in Great Britain can compete for existing supply chain capacity, will be critical to achieving our 2030 offshore wind generation ambition, 2035 decarbonisation of the power system and broader Net Zero by 2050 targets. That should include developing domestic manufacturing capacity by building on existing capabilities and supporting new investments.

Ofgem's recent introduction of a new Accelerated Strategic Transmission Investment (ASTI) framework provided Transmission Owners greater flexibility to engage with supply chains earlier.

The government is engaging with stakeholders across industry, including Transmission Owners and equipment suppliers, to identify key supply chain related challenges. The outputs of these discussions are being used to inform work across the Department for Energy Security and Net Zero, the Department for Business and Trade and Ofgem on developing potential mitigation options. This includes Ofgem taking greater consideration for long-term value in addition to short-term cost.

In addition, the UK Infrastructure Bank can invest in critical supply chains and advanced manufacturing where there are links to the Bank's objectives of tackling climate change and supporting regional and local economic growth. This could include manufacturing facilities for electricity network components.

Next steps

To respond to this challenge, BEAMA will establish a forum by early 2024 comprising representatives from all relevant stakeholders from the government, the Devolved Administrations, and across the supply chain. The forum will be used as a platform to identify cross-industry supply chain challenges and discuss options for removing barriers to investment and developing domestic manufacturing capability.

The forum will need to consider both near and long-term supply chain challenges. Near-term supply chain considerations will centre around ensuring projects in Great Britain can access sufficient supply chain capacity to deliver infrastructure required to meet both the 2030 offshore wind and 2035 power system decarbonisation ambitions. Long-term considerations will need to address developing appropriate levels of manufacturing capacity in the UK. This will include exploring actions needed to grow a skilled workforce able to support the appropriate level of domestic manufacturing. The forum will be central in driving the development of long-term solutions so by the 2030s we have a robust, responsive UK supply chain in place.

The government will go further than this recommendation in supporting the expansion of strong, home-grown, clean energy supply chains across the UK, illustrated through the recent announcement of the Green Industries Growth Accelerator. This includes a commitment to providing £960m to support key Net Zero sectors, including electricity networks, and will enable the UK to seize growth opportunities through the transition to Net Zero, building on our world-leading decarbonisation track record and strong deployment offer.

Recommendation SJ1: Government should fund and lead an urgent review and work with industry and academia to identify the skills gaps and actions required to attract, recruit and retain the large workforce needed to deliver Net Zero.

Action owner

Joint government-industry initiative working with further and higher education institutions

Action already undertaken

The government and industry have established a Green Jobs Delivery Group to set out plans to grow a green workforce. This responds to calls from the Green Jobs Taskforce (in July 2021) for government and industry to work together⁸⁰. The Delivery Group is the primary forum

⁸⁰ Green Jobs Taskforce report (2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1185360/green-jobs-taskforce-report-2021.pdf

for government ministerial engagement with representatives from energy, education, local government, academia and wider sectors. The Group builds upon existing work by the government and industry to prepare the existing workforce for the green economy and boost the pipeline of skilled workers.

As part of the Powering Up Britain: The Net Zero Growth Plan, we published a set of head start actions and principles of intent from the pilot Power and Networks working group – a subgroup to the Green Jobs Delivery Group⁸¹. These actions can be found on the Green Jobs Delivery Group page⁸². To further support the Green Jobs Delivery Group’s work, a number of time-limited industry-led task and finish groups are being established.

The Group has commissioned an industry-led workforce assessment across multiple power and networks sectors to identify key occupations which have shortages, including for electricity networks.

As set out in Powering up Britain, industry representatives were invited to work with the government to identify skills demands and to propose new Skills Bootcamps in FY 2023-24 aimed at addressing immediate workforce skills needs in key low carbon sectors. The government has now completed its procurement for Skills Bootcamps to support these sectors. They will begin delivery from early 2024.

The Institute for Apprenticeships and Technical Education (IfATE) is engaged in these Green Jobs Delivery Groups and will continue to work with employers to create and revise occupational standards which underpin quality apprenticeships and technical qualifications. IfATE have approved several transmission-relevant standards, including L4 electrical power and networks engineer and electrical power protection and plant commissioning engineer, and are working with employers to develop more for 2024, including a new L3 Power Network Craftsperson standard, and improved Maintenance Operations and Technician Standard.

Next Steps

To tackle emerging and future workforce demands across the economy, the Green Jobs Delivery Group will publish a Green Jobs Plan in the first half of 2024, including a focus on electricity networks. The government will continue to work with the Devolved Administrations and industry in developing this plan.

The Green Jobs Plan will be informed by a variety of sectoral assessments on workforce needs being undertaken by task and finish groups, which the Group will use as part of understanding where there may be workforce shortages and skills gaps. We may build on the outputs to ensure we continue to understand the networks’ future workforce needs.

⁸¹ Power up Britain: The Net Zero Growth Plan

⁸² Green Jobs Delivery Group

Within government, Defra Group is developing workforce strategies as committed to in the NSIP Action Plan. Defra Group and DESNZ will work together to ensure that these feed into wider work on green skills and the Green Jobs Plan.

The government and industry will continue to work with further and higher education to ensure that education and training aligns with the needs of the sector. Progress against these milestones will be tracked in the Transmission Acceleration Forum (Section 8, End-to-End Process).

6. Communities and engagement

Summary

The transition to Net Zero will need to be underpinned by new network infrastructure across Great Britain, both onshore and offshore, to meet the scale and pace of demand, and to transport electricity where it is best placed to be generated, to where it is needed most. This means that more communities across Great Britain will be living close to transmission network infrastructure, and it is vital that we bring these communities with us in the transition to Net Zero.

To achieve this, we need first and foremost to minimise the overall increase in network infrastructure, and where infrastructure is needed, communities need to be empowered and engaged to give their views on the design and development of a project as part of the planning process. Actions to improve strategic planning of the system described above will help coordinate connections and reduce the overall amount of network infrastructure needed.

We also need to take communities with us and keep them informed as to why such infrastructure is being built in the first place. This requires the provision of information that is easily available and understandable to all, so everybody can take part in the decisions that directly affect their lives.

New infrastructure can provide many new opportunities, and the government is looking at ways to ensure communities can benefit directly, including guidance for community benefits for those hosting transmission network infrastructure.

We are committed to developing a workforce that can meet the demands of expanding electricity networks. Along with those set out in the previous chapter, these recommendations collectively support the overarching goal of developing a skilled and diverse workforce within networks whilst ensuring public awareness and support for infrastructure development. By aligning these efforts, we aim to create a sustainable and resilient sector that can achieve the goal to halve the timescale of the end-to-end process.

We recognise the importance of increasing understanding of the contribution network infrastructure plays in our day to day lives. The electricity network is a critical enabler for our priorities to lower consumer bills, secure our energy supply, decarbonise our electricity system by 2035 and boost economic investment in the UK. Communicating the importance of this work will be of huge importance and we will ensure that clear, open and independent messaging on all aspects of networks development and related information is made available to the public and we are working with relevant stakeholders to deliver on the Commissioner's recommendations in this area.

Recommendation CB1: Guidance on community benefits which are the subject of a current consultation should be delivered and adopted quickly.

Recommendation CB2: Residents of properties close to new overhead lines should receive a defined direct payment.

Action owner

Government

Actions already undertaken

The government published a consultation on community benefits for transmission network infrastructure in March 2023⁸³, to ensure communities can directly benefit from hosting electricity transmission network infrastructure. The consultation proposed the introduction of voluntary guidance on the appropriate levels and forms of benefits, to give communities the knowledge, power and flexibility to decide what benefits they want in consultation with the project developer.

The government has been engaging with community groups, industry and Ofgem to develop these proposals so that communities who host future electricity transmission network projects are recognised for their contribution to supporting the delivery of low-carbon, cheaper and more secure energy generation for all of Great Britain.

Next steps

We agree with the Commissioner's recommendations and want to ensure communities hosting transmission network infrastructure can directly benefit from supporting the delivery of cheaper, secure and low-carbon energy for all of Great Britain. Therefore, alongside the Action Plan, the government has published the Community Benefits for Electricity Transmission Network Infrastructure Government Response⁸⁴.

The government believes that the levels of benefit should be more consistent, and that the type and level of benefit should be appropriate to recognise the role played by local communities.

Based on feedback from the consultation and the social research, we conclude that there is a preference for a combination of electricity bill discounts and wider community benefits, and that communities would prefer a mandatory scheme.

Based on analysis to date, we are currently minded to move forward with a package of:

1. Electricity bill discount for properties located closest to transmission network infrastructure. Whilst the exact scheme design is still under development, we estimate

⁸³ Community benefits for electricity transmission network infrastructure (2023)
<https://www.gov.uk/government/consultations/community-benefits-for-electricity-transmission-network-infrastructure>

⁸⁴ Community benefit for electricity transmission network infrastructure consultation government response (2023)
<https://www.gov.uk/government/consultations/community-benefits-for-electricity-transmission-network-infrastructure>

this could offer, for example, *up to* £10,000 per property (£1,000 per year, ~£80 per month, over 10 years), in addition to

2. A wider benefit for the local community of around £200,000/km (~£320,000/mile) for overhead lines, £40,000/km (~£60,000/mile) for underground cables, and £200,000 per substation.

Further work is needed to design the detail and implementation of the overall scheme, and we will work with industry, Ofgem and community representatives to ensure that the scheme works for communities and can be effectively delivered and administered. Its effectiveness will be reviewed once implemented.

We intend to publish guidance on wider community benefits in 2024. This guidance will be voluntary whilst we explore options for a mandatory approach. We will provide further information on the overall community benefits policy, including bill discounts, and options for developing a mandatory approach in 2024.

We believe that this approach and proposed level of funding ensures that the role communities are playing in hosting new infrastructure has been reflected fairly. This will be achieved by introducing a consistent approach with clear expectations for industry and local communities, which differs from what is currently offered for network infrastructure, whilst minimising the cost to wider electricity consumers. Our analysis suggests that by improving community acceptability of new infrastructure through community benefits, thereby supporting accelerated delivery, the overall impact on electricity consumers could be broadly neutral depending on the option selected, as a result of reduced constraints on the network. See the 'Supporting analysis' section of the Community Benefits Government Response for more detail⁸⁵.

To ensure that the policy delivers benefits and improves acceptability for communities hosting new transmission infrastructure, we will monitor the impact, including through the Transmission Acceleration Forum (Section 8, End-to-End Process).

Recommendation NC1: A government-led national information campaign should be started on the need for electricity infrastructure and how this can lead to good outcomes for people and the communities in which they live and work.

Action owner

The UK government will initiate a joint entity, which will include transmission networks companies. The joint entity will then lead and fund the communications campaign. UK government to be present on the Steering Board with Scottish and Welsh Governments also invited to join

⁸⁵ Ibid

Action already undertaken

The government recognises the need to make the case for the critical role transmission infrastructure will play in building a low carbon energy system which grows the economy, reduces consumer bills, secures our energy supply and reduces carbon. We see an information campaign playing a vital role in informing the public of the need for increased electricity network investment.

We propose an approach which is established and overseen by those entities which own, run, manage, invest in and plan the electricity network at transmission level as well as involvement for companies which generate low carbon electricity and distribution companies.

We have agreed to meet this recommendation via an industry initiated, government backed, GB-wide communications campaign to raise awareness of the need for, and benefits of, electricity infrastructure. In this approach the Transmission Owners and the ESO will oversee a process to appoint an entity, which will develop and deliver a public awareness campaign. The campaign will be supported by a Steering Board comprising members representing a range of interests and perspectives outside of the network operators. The UK government, Scottish and Welsh Governments will back this campaign and collectively we will communicate how electricity infrastructure investment helps the country to decarbonise sooner, lower consumer bills, support new jobs and industries and maintain our security of energy supply.

Next steps

Work to establish the campaign will begin in the new year with a view to launching in 2024.

Recommendation NC2: An independent website, possibly hosted by the Institution of Engineering and Technology (IET) or a similar organisation, should be set up to provide information to the Public.

Action owner

Industry / Joint entity partnership.

Action already undertaken

We anticipate that the joint entity described above should also take on this responsibility and that this website should become part of the wider campaign on network infrastructure.

Next Steps

Proposals and processes for the website will be developed as part of stakeholder actions for the information campaign outlined above.

The website will serve as a clear, independent and publicly accessible source of information relating to grid infrastructure. This could improve community acceptability, foster informed debate and positively influence the achievement of grid decarbonisation targets. The website

will be separate from gov.uk to avoid potential misunderstanding that government is responsible for transmission infrastructure.

The timing of publication of the website will be determined once the joint-entity and the website workstream has been well established.

Recommendation NC3: Information on all types of careers and opportunities should be provided in a variety of ways to appeal to different age groups; examples include use of profiles of real people, videos, content creation to appeal to younger audiences, using influencers and animations.

Action owner

Industry / Joint entity partnership for NC1

Action already undertaken

The government agrees with this recommendation. Recognising the need to engage people of all ages with green careers, the government published a Sustainability and Climate Change Strategy for the Education and Children's Services Systems in April 2022. Commitments in this strategy set out how the government will support education settings to equip children, young people, and adult learners with the knowledge and skills to contribute to the green economy⁸⁶. We anticipate this is also included in the joint entity approach outlined above.

The Welsh Government launched their Net Zero Skills Plan in March 2023, and the Scottish Government and Skills Development Scotland launched their Climate Emergency Skills Action Plan 2020-2025 in 2020^{87,88}.

Next Steps

This action will be taken forward as part of the joint-entity proposal outlined above, as well as in dialogue with wider industry.

⁸⁶ Sustainability and Climate Change Strategy for the Education and Children's Services Systems (2022) <https://www.gov.uk/government/publications/sustainability-and-climate-change-strategy>

⁸⁷ Net Zero Skills Action Plan (2023) <https://www.gov.wales/net-zero-skills-action-plan>

⁸⁸ Climate Emergency Skills Action Plan 2020-2025 (2020) <https://www.skillsdevelopmentscotland.co.uk/media/47336/climate-emergency-skills-action-plan-2020-2025.pdf>

7. Outage planning

Summary

The outage plan facilitates access to the network to carry out maintenance, add new infrastructure and make upgrades to the network. With an increasing number of transmission infrastructure projects needing to access the network, we aim to maximise the amount of system access that can be granted at any single point in time and minimise the overall cost to consumers, to avoid outage planning becoming a bottleneck. Minimising changes to outage plans, particularly in the short term, allows much greater optimisation of the system and in turn system access. A more firmly settled outage plan built across short, medium and long-term time horizons, for all foreseeable outages, will be a key enabler of the transformation of the power system.

We are working with the ESO/FSO to develop a project plan for delivering the outage planning recommendations for consultation with the energy industry and other stakeholders. There are four outage planning recommendations, and we propose to look at them as one set given that they require a coordinated response.

Recommendation OP1: Review and regular update of the guidance for the type of outages that can take place at different times of the year should be undertaken.

Recommendation OP2: The Electricity System Operator (ESO) should investigate use case where operational rules can be relaxed to allow outages to go ahead, for example, relaxing network security from network minus 3 circuits (N-3) to network minus 2 circuits (N-2) during the right conditions.

Recommendation OP3: The Electricity System Operator (ESO) should be involved in long-term outage planning during the route design stage.

Recommendation OP4: The Electricity System Operator (ESO), in collaboration with industry, should lead a review of existing arrangements for outage planning (including, transmission outages, relevant distribution outages and generation outages) in the short, medium and long term to develop actions.

Action owner

Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

We have engaged with the ESO on the outage planning recommendations and next steps. Discussions have begun to define the scope of work in response to the recommendations. Some recent ESO work will help to support delivery of recommendations, such as more flexibility on allowing winter outages, and development of outage planning tools. The ESO is already increasing focus on speeding up new connections and recently issued a consultation on Connection Reform, which has implications for outage planning⁸⁹.

The government has formed a new unit focused on ensuring the security and resilience of electricity and gas infrastructure responsible for long-term policy and incident and emergency response which will consider the government's future risk appetite as an enabler of these recommendations.

Next steps

The government will work with the ESO to develop a project plan by the end of 2023 to investigate opportunities to improve outage planning and share the plan with Transmission Owners and other key stakeholders.

The outage planning project will undertake activities in 2024 with input from a joint industry group to identify changes to improve outage planning, as well as highlighting any investment requirements to enable the changes or key risks such as potential consumer impacts. Findings

⁸⁹ NG ESO Connections Reform Consultation (2023)
<https://www.nationalgrideso.com/document/281561/download>

from the project will be used to propose changes to existing guidance and codes governing outage planning for consultation with key stakeholders and the energy industry.

Following consultation, where a decision is made by government with the agreement of the ESO and Ofgem to take forward proposed changes, and after any trial period to gather supporting evidence, the changes will be incorporated into draft revised codes for consideration by existing code review panels before publication. After publication, the codes will be reviewed on a yearly basis. These activities will take place in late 2024 and into 2025.

In the future, the ESO hopes to move to a situational model for allowing outages that would balance failure risk with the economic advantages of having faster access to the network, in cases where the impact of failure would be localised and contained. The Great British energy system is highly reliable, and we are committed to maintaining our high levels of energy resilience as the sector decarbonises.

8. End-to-end process

Summary

Establishing appropriate governance will be vital for ensuring we can meet the overall aim to accelerate the development of transmission infrastructure. This governance will monitor the progress of, and issues arising from, delivery of the Action Plan and will host discussions that allow for strong inter-government and industry engagement so delivery issues can be escalated to decision makers and unblocked as required. The UK government's role will be to develop appropriate governance forums and ensure close working with industry and the Devolved Administrations. This ensures industry has the direction and policy clarity needed from government, but ultimately is empowered to lead on delivery of the actions, as appropriate.

We agree with the recommendation that senior-level governance, in particular governance forums chaired by ministers, where appropriate, is crucial to this end-to-end process. We will therefore establish a ministerially-chaired forum to support implementation of the actions and provide the oversight required to accelerate transmission infrastructure development. Both the ministerially-chaired forum and its supporting governance will also ensure alignment with the wider energy sector and Net Zero targets.

Recommendation OE1: The government should establish an Energy System Delivery Board (ESDB) to monitor and drive delivery of the electricity transmission network delivery programme required to meet Net Zero.

Recommendation OE2: The government should establish a Change Management Committee (CMC) as part of the Energy System Delivery Board (ESDB) to initiate and facilitate the changes that will be required.

Action owner

Government

Action already undertaken

The government has worked closely with regulators, Scottish and Welsh Governments, Transmission Owners, the Electricity System Operator, and electricity sector trade bodies in its consideration of the Commissioner's report. This joint working will now evolve into formal implementation governance to drive and monitor the acceleration of the delivery of electricity transmission infrastructure.

Next Steps

As we move into implementation of this Action Plan, we are establishing a ministerially-chaired Transmission Acceleration Forum to drive delivery of transmission infrastructure acceleration. The Forum will comprise regulators, the Electricity System Operator/Future System Operator, the devolved administrations, and key industry delivery partners where there is ownership of actions in the plan. It will meet quarterly, with an initial meeting in December 2023, and monitor progress against the Action Plan. It will ensure delivery partners are held to account and unblock the most pressing delivery issues. While Government is not responsible for delivery of individual projects, this forum will also monitor overall progress by transmission development projects on the ground, with continued delineation between this and the Secretary of State's role in individual planning decisions.

This forum will be supported by a Transmission Acceleration Board comprising senior working level representatives from the same set of organisations, which will also receive reports from the technical forums referred to in this Action Plan. The Board will also dock into wider government governance, including across the energy space, to inform and be informed by relevant policy as it evolves.

In addition, we will ensure the Transmission Acceleration governance aligns with the wider governance being established to support delivery of actions set out in the Connections Action Plan⁹⁰.

⁹⁰ Connections Action Plan

Recommendation DS1: Coordinated data sharing amongst the parties should be established (where currently not happening), matured and mandated, with leadership for implementing this in practice assigned to the Future System Operator (FSO).

Action owner

Government / Ofgem / Electricity System Operator (and then the Future System Operator, when established)

Action already undertaken

The government and Ofgem made it clear that effective, secure data sharing will be critical to building a smart, low-carbon system in the Energy Digitalisation Strategy⁹¹, and the joint response to the Energy Digitalisation Taskforce⁹².

Ofgem's development and implementation of Energy Data Best Practice Guidance⁹³ intends to improve interoperability in data across the energy sector, and the government is exploring technical feasibility and governance options for coordinated energy data sharing through the energy system 'digital spine' feasibility study⁹⁴. Ofgem has also stated in its Future Systems and Networks Regulation consultation decision that coordinated data sharing should be a key objective of the next set of price controls⁹⁵.

As set out in the Strategy and Policy Statement consultation⁹⁶, the FSO is expected to be a data-led organisation, with a strong digital and IT systems capability. Once established, the FSO should lead by example in improving sectoral energy data practices that are integral to the well-coordinated and cost-effective delivery of Net Zero.

As part of its RIIO-BP2 Final Determinations decision⁹⁷, Ofgem set out how it expects the ESO to meet and exceed expectations regarding data and digitalisation from 2023-25, and the FSO should be able to build on and continue developments made in these areas from Day 1.

The ESO has also identified the need for sector-wide data sharing and are leading several programmes and initiatives that contribute to addressing this recommendation. In particular,

⁹¹ Energy Digitalisation Taskforce report: joint response by BEIS, Ofgem and Innovate UK (2022) <https://www.gov.uk/government/publications/digitalising-our-energy-system-for-net-zero-strategy-and-action-plan/energy-digitalisation-taskforce-report-joint-response-by-beis-ofgem-and-innovate-uk>

⁹² Ibid

⁹³ Decision on updates to Data Best Practice Guidance and Digitalisation Strategy and Action Plan Guidance (2023) <https://www.ofgem.gov.uk/publications/decision-updates-data-best-practice-guidance-and-digitalisation-strategy-and-action-plan-guidance#:~:text=Ofgem's%20Data%20Best%20Practice%20Guidance,Zero%20carbon%20emissions%20by%202050.>

⁹⁴ Energy system 'digital spine' feasibility study (closed to applications) (2023) <https://www.gov.uk/government/publications/energy-system-digital-spine-feasibility-study>

⁹⁵ Ofgem decision on Frameworks for FSNR

⁹⁶ Strategy and Policy Statement for energy policy in Great Britain (2023) <https://www.gov.uk/government/consultations/strategy-and-policy-statement-for-energy-policy-in-great-britain>

⁹⁷ Business Plan 2 Final Determinations – Electricity System Operator (2023) <https://www.ofgem.gov.uk/publications/business-plan-2-final-determinations-electricity-system-operator>

the Virtual Energy System Programme⁹⁸ is creating a common data sharing infrastructure to enable an ecosystem of connected digital twins, to facilitate the transition to Net Zero.

Next steps

The development of a 'data catalogue' is an area of priority for the ESO, which it is considering through both its sector-wide Virtual Energy System Programme. The ESO intends to undertake technical alignment work to consider functionalities and requirements of key technical components of a data sharing infrastructure, including a data catalogue. This is estimated to conclude in January 2024, while the data catalogue will be finalised by the end of 2024.

This recommendation should also be considered as a key part of broader work regarding energy system digitalisation and data sharing. The government and Ofgem will continue work to identify appropriate approaches for energy data sharing governance across the energy system. We are carefully considering the conclusions of the energy system 'digital spine' feasibility study⁹⁹. Ofgem will publish further thinking on data sharing infrastructure governance in Spring 2024.

We will continue to review the capabilities of the FSO, once established, regarding the digitalisation of the energy system and consider its role alongside other governance options for sector-wide data sharing. This will allow the government to establish whether the FSO is well-placed to pursue specific digitalisation programmes.

⁹⁸ Virtual Energy System (2023) <https://www.nationalgrideso.com/future-energy/virtual-energy-system>

⁹⁹ Energy system 'digital spine' feasibility study

Annex A - Action tracker

All action dates are provisional and subject to change as policy areas develop their work

Table 1. Action Tracker for Strategic Spatial Planning

Action	Recommendation	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Decision issued on the CSNP framework for identifying and assessing transmission investment options	SS3, SS4, SS5	Ofgem	Action completion date							
Government to commission the ESO/FSO to produce a SSEP	SS1	ESO/FSO		Action completion date						
Produce a strategic environmental assessment, Habitats Regulation Assessment and offshore delivery route map as part of the SSEP	SS2	UK government, ESO/FSO	Activities being completed							
Green Jobs Plan published	SS6, SJ1	UK government			Action completion date					
Defra and DESNZ to feed the workforce strategies into the Green Jobs Plan	SS6, SJ1	UK government			Action completion date					
Establishment of cross-government planning workforce skills group	SS6	UK government					Action completion date			
Publication of a full CSNP	SS3, SS5	FSO							Action completion date	
Understand how the CSNP and, where possible, the SSEP can be used to support long-term resource planning	SS6	UK government							Action completion date	

Transmission Acceleration Action Plan

FSO to work with government to produce the SSEP	SS1	FSO	Timings will be developed through the commission process				
---	-----	-----	--	--	--	--	--

Table 2. Action Tracker for Design Standards

Action	Recommendation	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Transmission Owners to adopt route automation as part of their design process	AR1, AR2	TOs	Action completion date							
Establish a forum on equipment standards	SE1	ENA	Action completion date							
Establish a working group to develop and progress the objectives, scope and delivery plan for the design standards	RD1, RD2	ESO/FSO		Action completion date						
Develop a process to implement equipment standardisation recommendations	SE2	ESO/FSO, ENA, TOs					Action completion date			
Develop the ETDP and consult on them publicly	RD1	ESO/FSO	Timings will be determined once the workstream is fully established							

Table 3. Action Tracker for Regulatory Approvals

Action	Recommendation	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards	
Sector Specific Methodology Consultation for the next electricity transmission price control	RA1	Ofgem	Action completion date								
Decision on how CBA should be applied in options assessment during the planning stage (as part of Ofgem publishing their CSNP consultation)	CBA1	ESO/FSO, Ofgem, TOs	Action completion date								
Net Zero duty comes into effect	RA2	UK government	Action completion date								
ESO to consider which strategic transmission projects included in the tCNSP may be suitable for competition	CT1	ESO/FSO				Action completion date					
Identify the first projects eligible for competition	CT1	Ofgem, UK government				Action completion date					
Start competition process for onshore electricity networks	CT1	Ofgem, UK government				Action completion date					
Next electricity transmission price control	RA1	Ofgem							Action completion date		
Fully integrate decisions on competition into future iterations of the CSNP	CT1	UK government, ESO/FSO								Action completion date	
Develop the CSNP CBA methodology further, along with a CBA methodology for the other stages of the end-to-end process	CBA1	UK government, ESO/FSO, Ofgem	Timings will be determined once the workstream is fully established								

Table 4. Action Tracker for Planning Approvals

Action	Recommendations	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Public announcement on whether a review is required should be made at least every 5 years	NP1	UK and Scottish Government	Action completion date							
Designate the 5 revised energy NPSs	NP1	UK and Scottish Government	Action completion date							
The government will reference the CSNP and SSEP in future iterations of the NPS	NP2	UK and Scottish Government	Action completion date							
UK government response to consultation on operational reforms to the NSIP process and associated proposals for resourcing	ME2	UK government	Action completion date							
Determine how the SSEP should include a strategic environmental assessment	ME1	UK government, ESO/FSO		Action completion date						
The Planning Inspectorate to offer improved pre-application services leading to a new 'fast-track' route for Nationally Significant Infrastructure Projects that meet a quality standard	EWP1	UK government			Action completion date					
Publish response to the call for evidence on land rights and consents	LA2, LA3	UK government			Action completion date					
Update the existing guidance on Compulsory Purchase Process	LA1	UK government					Action completion date			
Review energy consenting rules in Scotland and present proposals for consultation	SP1, SP2	UK and Scottish Government					Action completion date			

Table 5. Action Tracker for Supply Chain and Skills

Action	Recommendations	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Transmission Owners to assess and where appropriate make changes to their approach to procurement to adapt to current and anticipated supply chain challenges	SC1	Transmission Owners	Action completion date							
Transmission Owners to procure design contractors earlier in the design process to support supply chain engagement and assist in the planning stage	SC2	Transmission Owners		Action completion date						
Establish a supply chain forum	SC3	BEAMA		Action completion date						
Publish Green Jobs Plan	SJ1, SS6	UK government			Action completion date					
Defra and DESNZ to feed workforce strategies into the Green Jobs Plan	SJ1, SS6	UK government			Action completion date					
Ofgem to work with the Transmission Owners and the supply chain to ensure the wider regulatory framework is in place to support supply chain engagement	SC1	Ofgem					Action completion date			
Develop and deliver sector support under the Green Industries Growth Accelerator	SC3	UK government		Timings will be determined once the workstream is fully established						

Table 6. Action Tracker for Communities and Engagement

Action	Recommendation	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Publish the Community Benefits for Electricity Transmission Network Infrastructure Government response	CB1, CB2	UK government	Action completion date							
Formally set up joint entity and initiate campaign development	NC1	Joint entity		Action completion date						
Publish guidance on wider Community Benefits, then provide further information on overall Community Benefits policy	CB1, CB2	UK government			Action completion date		Action completion date			
Launched network information campaign (including information on skills and jobs)	NC1, NC3	Joint entity			Action completion date					
Website launched (including information on skills and jobs)	NC2, NC3	Joint entity	Timings will be determined once the workstream is fully established							

Table 7. Action Tracker for Outage Planning

Action	Recommendation	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Outage planning project plan created	OP1, OP2, OP3, OP4	UK government, ESO/FSO	Action completion date							
Outage planning project activities	OP1, OP2, OP3, OP4	UK government, ESO/FSO		Action completion dates throughout 2024						
Consultation on Outage Planning and resulting code reviews and their publication	OP1, OP2, OP3, OP4	UK government, ESO/FSO				Action completion dates across this time period				

Table 8. Action Tracker for End-to-End Process

Action	Recommendation	Owner	2023	2024 – Q1	2024 – Q2	2024 – Q3	2024 – Q4	2025	2026	2027 onwards
Establish a ministerially-chaired Transmission Acceleration Forum and supporting Transmission Acceleration Board	OE1, OE2	UK government	Action completion date							
Develop a data catalogue to support data sharing	DS1	ESO/FSO					Action completion date			

Annex B - Transmission Acceleration Action Plan analytical note

This note underpins the investment line in the Transmission Acceleration Action Plan:

“The programme of work set out in this Action Plan is expected to reduce delays to network build, which could increase investment by up to around £15bn over the next 10 years.”

This estimate was developed based on a set of assumptions that are uncertain but have been tested with external stakeholders¹⁰⁰. It forms part of a grid investment package, which combines investment expected from the Transmission Acceleration Action Plan with investment expected from the Connections Action Plan. The two can be combined without double counting as Transmission Acceleration Action Plan investment is in the onshore transmission network, whereas Connections Action Plan investment is in the generation and storage waiting to be connected to the grid.

The Transmission Acceleration Action Plan seeks to reduce the time taken for the end-to-end process for building transmission networks to a minimum, an important part of which is reducing delays in the completion and electrification of new infrastructure. Reducing delays to network build will bring forward investment in the transmission network, and this note seeks to quantify the amount of investment that could be brought forward due to reduced delays.

The Electricity Networks Strategic Framework (ENSF) suggests that £80-120bn of investment in the onshore electricity transmission network could be required by 2050 to meet Net Zero¹⁰¹. This illustrates the level of investment required to meet Net Zero, rather than a forecast of what investment could be by 2050 if we continue on the current trajectory. Therefore, the analysis in this note assumes the level of investment outlined in the ENSF is the ‘policy scenario’, i.e., the scenario with delivery of the Transmission Acceleration Action Plan, whilst the ‘baseline scenario’ assumes that investment outlined in the ENSF is delayed by 3 years. This is based on analysis by FTI consulting which suggests that, historically, delays to transmission network build have been around 3 years¹⁰². Therefore, this analysis quantifies the difference in investment between the two scenarios below to estimate the amount of investment that could be brought forward due to reduced delays as a result of the Action Plan.

- **Baseline scenario:** Estimated level of investment *without* delivery of the Transmission Acceleration Action Plan – Onshore transmission network investment outlined in the ENSF, but delayed by 3 years on average. This assumption is uncertain, but we have tested this with external stakeholders.

¹⁰⁰ This includes a review of the methodology by the Energy Systems Catapult, to be published on their website.

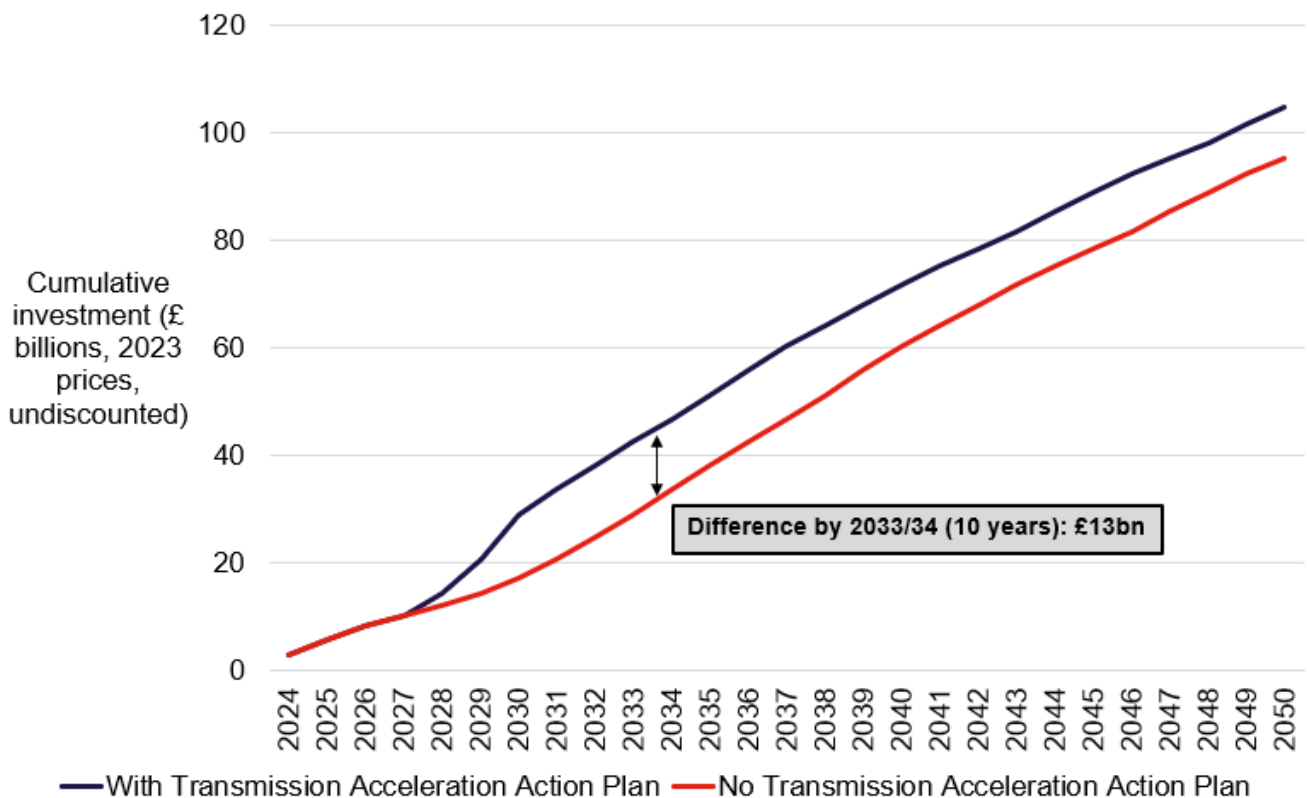
¹⁰¹ DESNZ Electricity Networks Strategic Framework, Appendix 1, Figure 8

¹⁰² FTI Consulting updated modelling results

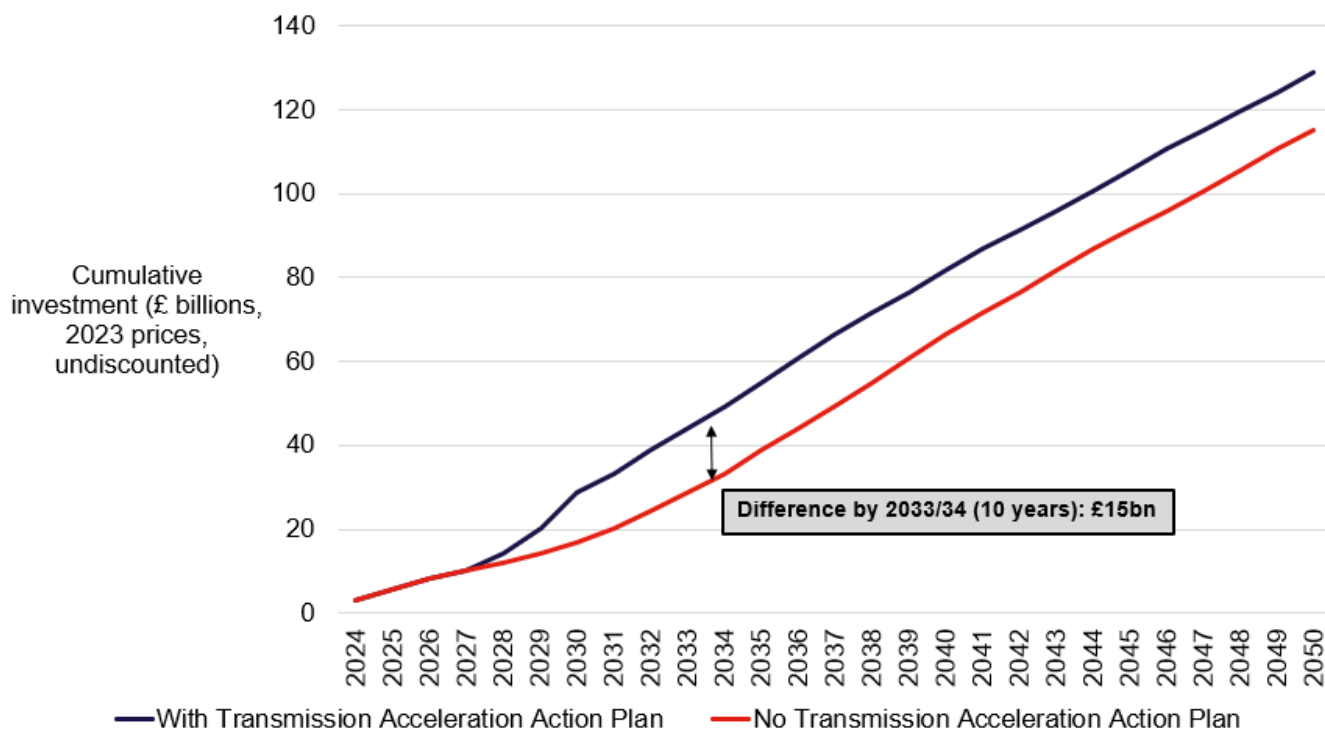
- Policy scenario:** Estimated level of investment *with* delivery of the Transmission Acceleration Action Plan – Onshore transmission network investment outlined in the ENSF, with a 3-year delay between 2024-2027 whilst the actions are implemented, then a gradual reduction in delays between 2028-2030 until there are no delays from 2030 onwards. This assumption is uncertain, but we have tested this with external stakeholders.

Figures 3 and 4 show cumulative onshore transmission network investment with and without the Transmission Acceleration Action Plan between 2024-2050 in the ‘Net Zero lower’ and ‘Net Zero higher’¹⁰³ scenarios respectively. They highlight that the programme of work in the Transmission Acceleration Action Plan is expected to reduce delays to network build, **which could increase investment by up to around £15bn over the next 10 years**. In addition, Table 9 shows the annual profile of investment over the next 10 years. Note that, post 2050, once the network investment required to meet Net Zero is complete, this impact may fall away. However, we have not assessed the investment profile post 2050. In addition, we have not assessed how this investment is funded or whether it displaces other business investment in Great Britain. Finally, note that this is *private* investment.

Figure 3: ‘Net Zero lower’ scenario, Cumulative onshore transmission network investment with vs. without the Transmission Acceleration Action Plan, 2024-50



¹⁰³ DESNZ Electricity Networks Strategic Framework, Appendix 1, 1.3 Illustrative Net Zero scenarios

Figure 4: 'Net Zero higher' scenario, Cumulative onshore transmission network investment with vs. without the Transmission Acceleration Action Plan, 2024-50**Table 9: Annual onshore transmission network investment brought forward due to the Transmission Acceleration Action Plan (£ billion, 2023 prices, undiscounted)**

	2024/25	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	Total
Net Zero lower	0.0	0.0	0.6	2.8	4.3	4.4	0.9	0.5	-0.2 ¹⁰⁴	13.3
Net Zero higher	0.0	0.0	0.6	2.6	4.3	4.5	1.2	1.3	0.9	15.5
Central	0.0	0.0	0.6	2.7	4.3	4.5	1.1	0.9	0.4	14.4

¹⁰⁴ This estimate takes the difference between annual investment in the 'baseline scenario' and 'policy scenario'. The annual investment profile in both scenarios has peaks and troughs, so it is negative in this instance because investment in the 'baseline scenario' is higher than investment in the 'policy scenario' in 2033/34.

This publication is available from: www.gov.uk/government/publications/electricity-networks-transmission-acceleration-action-plan.

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.