Planning and consenting

Summary

Our current planning systems across Great Britain are not working at the pace required to meet our target for clean power by 2030. Planning systems are devolved and the regimes vary across Scotland, England and Wales, although similar problems are encountered in each. Lengthy paperwork and often-delayed processes for infrastructure projects hinder our energy security, our economic growth, and fails to deliver for the natural environment. The increased risks to projects associated with delays in planning decisions also increase costs across the system.

Our planning system needs to quickly change to enable government's missions to grow the economy and deliver clean power. Since July, the government has taken decisive steps towards making planning work better for clean power and economic growth. We've lifted the de facto ban on onshore wind in England and have committed to updating our National Policy Statements. We must go further. Processes are not suitable nor are examining authorities well-equipped to deal with the increase in new clean power projects and wider infrastructure that we expect in the coming years to achieve government's missions. There is particular urgency to accelerate the planning process across Great Britain for energy infrastructure since we do not have long for many clean power projects to begin construction if they are to be operational for 2030, especially networks and offshore wind developments.

The urgent need for change means we must undertake a wide-ranging reform programme, encompassing not only deep changes through primary legislation over the course of this Parliament, but to also get moving with operational and regulatory reforms across the system within the next year. Therefore, to enable clean power 2030:

1. **We will equip organisations across the planning system with the tools they need to help deliver Clean Power 2030 and government's wider missions**, including the Planning Inspectorate, statutory consultees, local planning authorities, and government consenting teams. We will enable them to better flex and prioritise their resource so that they can examine mission-critical projects faster. To complement these more immediate changes, we will deliver workforce reform, enhanced training, and reformed career development packages for certain organisations involved in the planning system. We will review resourcing in key organisations to determine whether they are suitable for handling an increased number of projects in the coming years, including the Planning Inspectorate and departmental consenting teams. The Clean Power 2030 Unit will assist planners by convening early engagement between stakeholders for complex applications.

2. **We will update the National Policy Statements for Energy and Planning Policy Guidance in 2025, and we have confirmed changes to our National Planning Policy Framework** to reflect the needs of Clean Power 2030, improving policy certainty for developers and examining authorities.

3. **We will undertake an ambitious programme of legislative reform, including through the Planning and Infrastructure Bill.** Building on the reforms in the Nationally Significant Infrastructure action plan[45], we will introduce legislative changes to update the NSIP planning system in the Planning Act 2008 in England and Wales for all infrastructure projects. We will also reform the legislative framework for electricity infrastructure consenting in Scotland, where there is executive devolution but where legislation under the Electricity Act is reserved for Westminster, to deliver a streamlined and efficient framework that is fit for purpose. We will explore reforming Judicial Review processes following recommendations from Lord Banner's review.

4. **We will ensure that the protection of nature is embedded into the delivery of Clean Power 2030,** including by delivering the Marine Recovery Funds for Offshore Wind, and using development to fund nature recovery where currently both are stalled. The UK government and Scottish Government are exploring a separate Marine Recovery Fund for projects in Scotland

[45] Department for Levelling Up and Housing Communities (DLUHC) (2023), *'Nationally Significant Infrastructure: action plan for reforms to the planning process'* (viewed in December 2024)

5. **We will ensure communities directly benefit from clean energy infrastructure they host** by building upon existing approaches and encourage consistency in community benefits across technologies.

6. **The Scottish and Welsh Governments have implemented programmes of planning reform which support the delivery of clean power.** We are working closely with both the Scottish and Welsh Governments to accelerate reform further to deliver for 2030.

The challenge

The projects we need for Clean Power 2030 need to begin construction soon. Advice from the NESO indicated that there are enough projects in the pipeline for most technologies, but delivery of the pipeline would require accelerated rates of planning and consenting decisions[46]. Increased pace in the planning system is essential to support effective delivery of the connections queue and wider actions enabling Clean Power 2030. Though construction timelines for clean power technologies vary, it is clear we must act urgently to get them through the planning system, while also delivering positive outcomes for nature and communities.

- Most new transmission network and offshore wind projects will need all permissions for construction by 2026[47] if they are to be operational by 2030 with current construction timelines
- New onshore renewable and battery projects typically have shorter construction timelines, but most large-scale projects would likely still need to receive consent by around 2028[48]
- For much of the firm generation, low carbon-flexibility and unabated gas that we need to underpin a clean power system we have identified the pathways for delivery for 2030 and are working towards accelerating them, but we need to ensure the judicial and wider permitting processes work to reflect the critical importance of these projects.

Our planning reform programme for larger scale energy infrastructure will need to be tightly coordinated. Terrestrial and Marine planning regimes are either fully or executively devolved. The delivery of energy infrastructure in Great Britain is split between interacting systems that differ between nations, with varying roles for central, local, and devolved governments. Some of the planning reforms referenced in this plan relate to consenting in England (and Wales for large NSIPs) while others will affect Scotland given that elements of the legislation governing parts of the Scottish planning and consenting regime are reserved to Westminster. In addition, there are a range of actions also underway in Scotland and Wales.

NESO will be delivering the Strategic Spatial Energy Plan in 2026 to enable long-term planning of the energy system out to delivering Net Zero by 2050. We also need a long-term, holistic approach to managing growing demand for use of the seabed. The Crown Estate's Marine Delivery Routemap will provide an opportunity to positively plan

[46] NESO (2024), *'Clean Power 2030'*, (viewed in December 2024).
[47] Internal DESNZ estimate informed by stakeholder engagement.
[48] Internal DESNZ estimate informed by stakeholder engagement.

for shared outcomes across different sectors with an agreed set of design parameters that incentivise best environmental practice across the project lifecycle. This will encourage development areas to be brought forward in the right locations that avoid the most vulnerable areas of biodiversity.

For the planning and environmental reform package to facilitate Clean Power 2030, changes will need to be made that cut across many different areas, involving multiple organisations, including developers, supply chains, and investors. The different systems with different requirements and obligations across the planning landscape are complex and were not designed to deliver at the speed and volumes now required of them.

Figure 10: Nationally Signficant Infrastructure Project (NSIP) planning process flowchart

Notes: This flow chart details the process for NSIP energy projects only. Projects which are considered using TCPA follow a slightly different process.

Source: Planning Inspectorate (2024), 'Decision Making Process Guide'

It takes a long time for Nationally Significant Infrastructure Projects (NSIPs) to receive a consenting decision, with ever increasing volumes of information being dealt with at each stage, leading to delays and pressure for all parties. The timespan for Development Consent Orders is intended to be less than two years but can go well beyond this, and the documentation underpinning consents has been getting longer and in too many instances now runs to tens of thousands of pages. Increased litigation has caused delays and introduced additional risk and costs for

developers. A large number of infrastructure projects are expected in the next 3 years[49], and change is needed to meet the urgent need set out in the NESO advice for significant numbers of projects to progress to construction in the next 6-24 months.

For locally-consented energy infrastructure, decisive reform is also urgently needed to deliver clean power by 2030. In England, planning applications with local authorities under the Town and Country Planning Act can sometimes take up to 12 months to receive a decision[50], despite a four-month limit on energy infrastructure projects which require an Environmental Impact Assessment. Currently, the National Planning Policy Framework (NPPF) does not make clear that local planning authorities should consider the benefits associated with renewable energy generation, and proposals' contribution to meeting a net zero future when determining applications for these developments. The Planning Practice Guidance for renewable energy, which adds further detail to the policy contained within the NPPF, contains outdated guidance which requires updating to reflect new policies.

There are also challenges in the planning process for low carbon electricity infrastructure in Scotland, which differs from the systems in England and Wales. These challenges are delaying investment in critical infrastructure and are costly to consumers. Government has run a consultation on proposals for reforming the consenting processes in Scotland under the Electricity Act 1989 and working with the Scottish Government, timely implementation of the results of the consultation process will be essential.

We need to accelerate transformation of the system, building on the work set out in the NSIP Action Plan. In February 2023, the then government published the NSIP Action Plan which outlined five key reform areas to help make the NSIP planning system better, faster, greener, fairer and more resilient. Following on from this, changes to the NSIP system were implemented in Spring 2024 with the introduction of legislative amendments to key infrastructure planning legislation and new infrastructure planning guidance. We recognise previous reforms to the system are yet to be in full effect and will make a positive difference, like the designation of low-carbon nationally significant energy infrastructure projects as 'Critical National Priorities' through the energy National Policy Statements. However, existing reforms still do not match our ambition for Clean Power 2030, and so we must go further – using all tools at our disposal.

Our planning reform programme for energy infrastructure will need to be tightly coordinated. The delivery of energy infrastructure in Great Britain is split between interacting systems that differ between nations, with varying roles for central, local, and devolved governments. For the planning and environmental reform package to facilitate Clean Power 2030, changes will need to be made that cut across many different areas, involving multiple organisations, including developers, supply chains, and investors. The different systems with different requirements and obligations across the planning landscape are complex and were not designed to deliver at the speed and volumes now required of them.

[49] Prime Minister's Office, 10 Downing Street (2024), *'Plan for Change: Milestones for mission-led government'* (viewed in December 2024).
[50] DESNZ analysis based on the Renewable Energy Planning Database (REPD).

Taking action

We will equip examining authorities with the tools they need to help deliver Clean Power 2030 and government's wider missions

We can unblock bottlenecks by improving resource, particularly shortages of critical specialisms, which are often noted as a main cause of statutory consultees' reasons for planning application deadline extensions[51]. In 2023-24, over 60% of delayed responses to planning applications from the Environment Agency were due to resourcing constraints[52], while Natural England have said the same for over 80% of the time they need to extend a deadline for a planning application[53]. Another statutory consultee, Historic England, have seen a 39% decrease in expenditure on heritage services in Local Planning Authorities in planning policy since 2009/10[54], impacting the delivery of developments. Reform of the planning system includes a need to better employ key skills and resource across a variety of bodies, which can be managed through targeted interventions and streamlining the system. We are expecting an increase in planning applications with the Clean Power 2030 target, providing further challenges than those the planning system is already experiencing. To manage this increase:

- **We will expand cost-recovery mechanisms** across relevant regimes to ensure that all organisations key to consenting have sustainable resourcing models which can match the demand of projects in the system into the future, to help deliver Clean Power 2030 and beyond.
- **We will continue to enhance the support that the Planning Inspectorate and statutory consultees give to developers through the planning process,** particularly at the pre-application stage.
- **We will review resourcing in key organisations to determine whether they are suitable for handling an increased number of projects in the coming years.** To ensure resource is making the most impact, we will drive operational efficiency in statutory consultees, to speed up consultation and examination timelines. Alongside a review of resourcing, we will establish new performance standards for all public-sector organisations, including central government teams, the Planning Inspectorate, statutory advisors, and local planning authorities; in addition to improving guidance and support for the private sector.
- **We plan to reform planning resourcing for the longer term**, including supporting existing strategies such as working with universities and skills providers to strengthen the intake of planners required for all infrastructure building. Additionally, we will look at options for attracting and retaining key specialists, such as through reviewing entry requirements for such roles.

[51] DESNZ (2023), *'Hydrogen projects: planning barriers and solutions – research findings'* (viewed in December 2024).
[52] Environment Agency (2024), *'Environment Agency's planning consultation response timelines: 2023 to 2024'* (viewed in December 2024).
[53] Natural England (2023), *'Natural England's response times to planning consultations in England'* (viewed in December 2024).
[54] Historic England (2024), *'Proposed reforms to the National Planning Policy Framework and other changes to the planning system: Consultation Response – September 2024'* (viewed in December 2024).

- **We will boost local planning capacity** including wider programmes of support, working with partners across the planning sector to ensure that local planning authorities have the skills they need both now and in the future. The government has announced a £46 million package of investment into the planning system to support capacity and capability including the recruitment and training of graduate and apprentice planners to support the planning system as a whole.
- **We will consider enhancing the quality standards energy NSIP applications must meet in order for their applications to be accepted into the regime and publish best practice** to help prevent resource being used unnecessarily in addressing issues with low quality or incomplete applications. Projects submitted to the Planning Inspectorate should be of a high quality, following best practice and guidance. Through constructive, early engagement with statutory consultees, and timely provision of information and evidence, developers will be able to better meet the high standards expected.
- **The Clean Power 2030 Unit will convene nature, communities and industry groups on complex projects**, in order to encourage and facilitate a high standard for projects, and stress-test them prior to application to identify any problems with input from across the planning system. This could enable an expedited pre-application process and help ease the burden on a system working at capacity.

We will update our national policy vehicles to reflect the needs of Clean Power 2030

Generally, where policy, legislation and guidance leaves room for doubt, examiners and decision-takers may adopt a more cautious approach to consenting and developers will lack clarity on what is required for their application to succeed. This results in added time, process and results in delays, and may open the door for more legal challenges post-decision. To address this, for NSIP policy:

- **We will update National Policy Statements** for energy in England. The Chancellor announced a 12-month review of National Policy Statements (NPSs) in July 2024. We will update our NPSs so that the Planning Inspectorate and other organisations involved in examining projects are given the clarity they need to provide robust advice on infrastructure critical in delivering Clean Power 2030;
- **We intend to take powers through primary legislation to ensure that NPSs are updated every five years through a quicker and easier process, giving increased certainty to developers and communities.**
- **We are reintroducing onshore wind into the NSIP regime at a new threshold of 100 MW and are altering the existing threshold for solar to 100 MW.** This will ensure the planning system is efficient with appropriate routes available that are proportionate to a project's scale, impact and complexity.

For local planning policy in England:

- **We have ended the de facto ban on onshore wind development**, and have now published our consultation response confirming changes to the National Planning Policy Framework (NPPF);
- **We will update the Planning Practice Guidance in 2025 to provide clarity on the application of planning policy** for renewable and low carbon development to support the updates to NPPF in practice. This will help local councils in developing policies for renewable and low carbon energy and identifies the

planning considerations associated with a proposal for development.

We will undertake legislative reform

We must reform the planning system, so it works better for energy projects and wider infrastructure for the long term beyond 2030 too. We will need to continue delivering new clean power infrastructure at pace after 2030 to keep up with increasing electricity demand. Government recognises the need to more strategically plan its long-term infrastructure needs and it needs the planning system to be responsive to this.

- **We will bring forward a Planning and Infrastructure Bill with measures to streamline the delivery of critical infrastructure in the planning process.**

The Bill will introduce new measures to prioritise and streamline the delivery process for critical infrastructure through the planning process, including accelerating upgrades to the electricity grid and boosting renewable energy which will benefit local communities. These proposed changes will move us away from a position where vital new infrastructure is being unnecessarily delayed whilst ensuring that it is sustainable, responsible and maintains high environmental and nature standards.

Since our proposed primary legislation is not a quick-fix and will be too late for some projects that are critical for Clean Power 2030:

- **We will review secondary legislation and other legal requirements (like licences) regarding the planning process for energy infrastructure to establish relevant changes to speed up delivery of projects for Clean Power 2030.**

Legal challenges to DCOs can create significant delay to the delivery of NSIPs in England and Wales. Judicial review is a constitutionally important mechanism which allows an individual or organisation to challenge the lawfulness of a DCO decision in court. However, there is a case for reviewing the process to identify ways in which it can be streamlined to ensure it does not unduly slow down vital infrastructure development. Most legal challenges against DCO decisions are unsuccessful, but it can take many years for the courts to reach the decision, and hear further appeals in higher courts, leading to uncertainty and delays. Delays to new infrastructure can increase costs to consumers where constraint payments to operators are required.

- **We will explore reforming the judicial review process for NSIPs following Lord Banner's recent independent report**. We have published a call for evidence on judicial review reform following this report which is due to close at the end of this year. The call for evidence is seeking views on Lord Banner's recommendations and invites suggestions on other options for reform to reduce delays to infrastructure projects in England and Wales. We intend to legislate at the earliest convenience for any desired changes requiring primary legislation following the call for evidence. For example, this could include changing the rules so that claimants in each case only have one attempt to seek permission for judicial review. Any changes that we decide to make will strike the right balance between reducing delays to infrastructure projects and maintaining access to justice in line with our domestic and international legal obligations. In Scotland, the recent consultation on reforms to electricity infrastructure consenting sought views on creating a unified and streamlined system for challenging the decisions of Scottish Ministers, taken under the Electricity Act 1989, through the courts.

We will ensure that the protection of nature is embedded into the delivery of Clean Power 2030

Our existing planning system is built on solid foundational principles. Our policy and legal frameworks were originally developed to ensure the timely delivery of vital new infrastructure and other development, whilst ensuring communities hosting infrastructure are fairly treated and the natural world is protected.

We know that the status quo is not working when it comes to delivering the nature and infrastructure we need. The poor state of our natural environment means that there is often insufficient environmental headroom to allow developments to come forward without significant costly intervention. Applicants can struggle to navigate or satisfy environmental requirements and conditions on habitats, species and protected areas. A lack of clarity for industry from government and statutory consultees, a low-risk appetite from developers, and at times a reluctance from developers to engage with environmental requirements or deliver quality applications can slow down the delivery of much-needed energy infrastructure.

All this can lead to lengthy case-by-case negotiations of mitigation and compensation measures with statutory consultees, and extensions to decision deadlines. Once consent is granted, developers must often meet 'post-consent conditions' whereby construction cannot start until the conditions are met. To embed the protection of nature in energy developments, actions will include:

- **We are considering how to use development to fund nature recovery unlocking a win-win outcome for the economy and for nature** – as set out in the King's Speech, we are working with nature delivery organisations, stakeholders and the sector to consider how we can better support the delivery of housing and infrastructure whilst driving better environmental outcomes;
- **We will undertake measures to reduce pressures on protected sites including through expansion of the Protected Sites Strategies in priority areas in England.** Protected sites face several pressures inhibiting their recovery. This gives rise to development constraints when sites are in unfavourable condition, even if a new development is a small contributor to the overall problem. Reducing pressures on protected sites will help to ease some of the constraints energy developments face when addressing the environmental impacts of their projects;
- **We will publish our roadmap to bring forward Environmental Outcomes Reports** in consultation with devolved government, introducing an outcomes-based approach will provide the certainty developers need to embed environmental considerations into the earliest stages of the project. This will allow stakeholders to focus on delivering for the environment rather than guarding against the risk of legal challenge which will reduce costs and delays from unnecessary work. The roadmap will include our approach to implementation to ensure a smooth transition for stakeholders;
- **We will establish industry-funded Marine Recovery Funds** into which applicants can pay to discharge their compensation obligations, underpinned by libraries of approved strategic

compensation measures. The UK government are engaging with the Scottish Government with a view to reaching agreement on the establishment of, and the delegation of appropriate functions to operate and manage, a separate Marine Recovery Fund for projects in Scotland. The Offshore Wind Environmental Improvement Package (OWEIP) as a whole will accelerate and de-risk the consent of offshore wind projects whilst continuing to protect the marine environment;

- **We will consider options for harmonising the offshore wind environmental data and modelling used** for assessing impacts of offshore wind projects on species and habitats to provide consistency in assessments. Standardised methodologies and inputs to models and data standards could be developed allowing developers access to harmonised, coherent public data, reducing disagreements between developers and Statutory Nature Conservation Bodies (SNCBs), and helping to shorten the pre-application timelines for all future projects;
- **We will consult on reforms to the environmental permitting regime to better enable Clean Power 2030**, and ensure that environmental regulators have the powers and evidence to promptly develop the pollution standards required for the permitting of emerging clean power technologies;
- **We will explore strategic approaches to managing environmental pressures around industrial clusters which engages effectively with the planning and permitting systems. This will help to enable cluster decarbonisation within environmental constraints and address emerging issues prior to projects entering the planning system;**
- **We will launch a public engagement exercise in early 2025** to invite stakeholders to submit their ideas on **how government can best encourage nature-positive best practice into energy infrastructure planning and development**. Feedback from this exercise will allow government to better understand how we can integrate nature restoration within Clean Power 2030.

Our reform programme to deliver clean power infrastructure will keep nature at its heart. Whilst we want to accelerate infrastructure delivery, project developers must be clear that government expects them to continue delivering for communities and nature. We are not writing a blank cheque for low quality applications that fail to consider these outcomes.

We will work towards communities benefit from hosting new clean energy infrastructure

To realise our ambitions of becoming a clean energy superpower, some communities will see an increase in the amount of new energy infrastructure being built in their area. We must ensure that we bring all communities with us on this journey to Clean Power 2030. Maintaining public support is vital to the delivery of clean energy ambitions in Great Britain, and those asked to host energy infrastructure should feel tangible benefit from the role their areas play in building a low-cost electricity system[55]. Community benefits are already delivered on a voluntary basis in some sectors across Great Britain (e.g. solar and onshore wind), but this is not consistent across sectors and locations. Government wants to ensure that all communities hosting infrastructure receive high quality benefits in a consistent manner.

[55] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

We will ensure that communities directly benefit from clean energy infrastructure they host, and continue to explore how to do so. This will build on existing approaches to community benefits within the onshore wind sector, on which government intends to publish updated guidance for England in due course, and the work that Solar Energy UK have been taking forward to develop industry-led guidance for solar energy projects. In the interim, the government plans to publish new guidance on voluntary community funds so that communities benefit in a fairer, more ambitious and consistent way from new onshore electricity transmission infrastructure.

Planning reform in Scotland

Scotland is taking further action to improve the resourcing of the planning system. The Scottish Government's consultation on Investing in Planning set out of proposals aimed at increasing the capacity of the planning system in Scotland – the Scottish Government is now progressing a range of actions following the consultation. which set out a range of proposals aimed at increasing the capacity of the planning system in Scotland. Following the consultation we are now progressing a range of actions

The UK and the Scottish Government share the view that the consenting regime for larger scale electricity infrastructure in Scotland is not fit for purpose. Delays are caused by inefficient and outdated features of the existing legislative framework. The UK government, with the support of the Scottish Government, agree that the most pragmatic route to speeding up the deployment of low carbon electricity infrastructure is to reform the existing legislative framework. To address this:

We will seek powers to reform the current legislative framework for electricity infrastructure consenting in Scotland, with changes deployed by the Scottish Government. The Electricity Act 1989 could, for example, be amended to modernise and remove inefficiencies, whilst giving communities and statutory consultees meaningful opportunities to influence applications for consents.

The UK and Scottish Governments have worked together closely on reforms to electricity infrastructure consenting in Scotland referenced above. The recent consultation gathered evidence on a package of proposals which would help to streamline the existing outdated system in Scotland, which will encourage investment and acceleration towards our 2030 ambitions.

Additionally, with specific regard to consenting for offshore electricity infrastructure, the Scottish Government has been actively engaged with the UK government in the development and implementation of the reforms being delivered via the Offshore Wind Environmental Improvement Package under the Energy Act 2023, which will enable more efficient regulation of adverse environmental impacts arising from Scottish offshore wind developments. The Scottish Government also continues to pursue a continuous improvement approach to Scottish consenting processes through its Consenting Streamlining Unit, implementing more streamlined procedures where beneficial.

Planning reform in Wales

The Welsh Government has recently taken action to accelerate their infrastructure planning decisions. Immediate action has including enabling Planning and Environmental Decisions Wales (PEDW) to take decision on energy projects up to 50 MW, and prioritising applications for Developments of National Significance which have the greatest public benefits.

Longer term, the Infrastructure (Wales) Act sets out the new consenting process for significant infrastructure projects in Wales both on land and in the territorial sea[56]. This replaces multiple existing consenting processes with a single process. It will provide confidence and certainty in the decision-making process which is underpinned by clear policy that strikes the right balance between the need for infrastructure projects to help combat climate change whilst respecting our natural environment.

They have produced a consultation paper on development of a resilient and high performing planning service, including proposals for funding, performance monitoring, and increasing staffing skills and resilience[57].

[56] Welsh Government (2024), *'Implementing the Infrastructure (Wales) Act 2024'* (viewed in December 2024).
[57] Welsh Government (2024), *'Promoting a resilient and high performing planning service'* (viewed in December 2024).

Electricity Networks and connections

Summary

Our grid infrastructure needs strengthening. Failure to do so risks holding back our energy security, economic growth and other important infrastructure with lengthy delays. Across many walks of life, people see grid infrastructure as a massive impediment to their plans.

In truth, Great Britain's electricity network must undergo unprecedented expansion, as the economy electrifies, to deliver decarbonisation, energy affordability and energy security, and support economic growth. To connect new generation and meet future demand, around twice as much new transmission network infrastructure will be needed in Great Britain by 2030 as has been delivered in the past decade[58]. In addition to relevant cross-cutting actions on planning, supply chains, and skills we will take action to deliver the network we need at the right time:

Fundamentally reforming the connections process, working with NESO, Ofgem, TOs and DNOs to prioritise viable projects that align with the Clean Power 2030 Action Plan. Without these critical reforms, the queue will not align with our strategic needs and the projects we need will be delayed.

Regulatory reform to ensure that the Clean Power 2030 target is better integrated into planning and investment decision making, enabling investment in networks ahead of need. This includes working with Ofgem to explore the appropriateness of tightening the incentives and penalties to drive the acceleration of network build-out delivery.

Improving networks planning and consenting to provide the levers to accelerate the expansion and upgrades required across our transmission and distribution network to ensure energy infrastructure can support the delivery of the 2030 target.

Engaging with communities to enable them to benefit from living near new transmission network infrastructure.

[58] NESO (2024), '*Clean Power 2030*' (viewed in December 2024).

The challenge

Urgent action is required to ensure that the grid we need is in place for the connection of low-carbon generation and electrification of sectors such as transport, heating, and industry. Network build must be accelerated to address annual constraint costs, which are projected to increase without action from the already high level of around £2 billion per year in 2022[59] to around £8 billion per year[60] (or £80 per household per year) in the late 2020s[61], in a scenario where delays to network build persist. This cannot be allowed to happen.

Network constraints occur when the electricity system is unable to transmit power to electricity users because the maximum capacity of the circuit is reached. Constraint costs arise when NESO has to manage this problem by paying generators to reduce (turn-down) their electricity output in areas that are congested and switch on (turn-up) in locations closer to electricity users.

Work is required to significantly reduce the end-to-end delivery time for new transmission infrastructure. In the independent 2023 Report[62] by Nick Winser (Advisory Commissioner to the Clean Power 2030 Mission), he set out recommendations to halve timelines from 14 to 7 years, starting with strategic spatial planning of energy projects which would allow the network to be planned holistically ahead of need. Winser was clear that ambitious interventions were needed across every stage of the delivery process and government is working with delivery partners to drive the necessary change, including Ofgem, NESO and the network companies, who play a crucial role in delivery of new infrastructure on the ground.

To deliver a decarbonised power system by 2030, we will need to build on Winser's recommendations, going further and faster where necessary, to ensure the network we need is in place in time. NESO's Clean Power 2030 advice[63] confirms that all 80 transmission projects they identified as required to achieve clean power by 2030, including both upgrades to existing infrastructure and new transmission lines, are already in existing strategic network plans[64]. Of these, there are three with delivery dates post 2030, which we know need to be accelerated. Delivery of the full list of projects to such a short timeline is an unprecedented challenge. Government and the Clean Power Advisory Commission will work closely with partners to monitor delivery of individual projects and identify targeted interventions to accelerate delayed projects where necessary, including through prioritisation in the consenting process. Wherever renewables can connect to the distribution network, this should be encouraged for reasons of speed and efficiency.

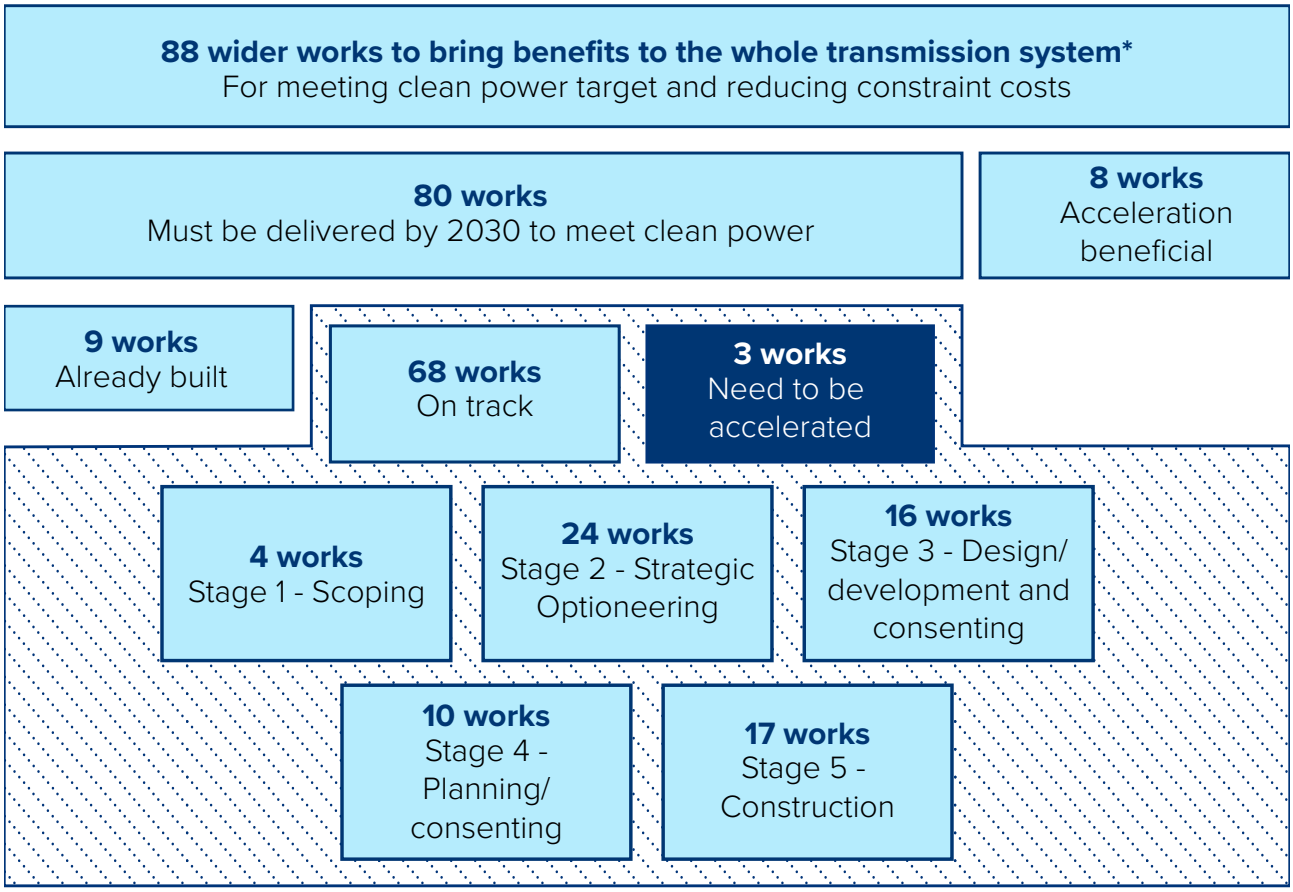
The distribution network is also in need of reform and, whilst it is less constrained than transmission level, large amounts of distribution-connected renewable

[59] National Grid ESO (2022), *'Monthly Balancing Services Summary'* (viewed in December 2024).
[60] Undiscounted, 2022/23 prices.
[61] DESNZ (2023), *'Community benefits for electricity transmission network infrastructure: government response'* (viewed in December 2024).
[62] DESNZ (2023), *'Independent report: Accelerating electricity transmission network deployment: Electricity Networks Commissioner's recommendations'* (viewed in December 2024).
[63] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).
[64] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

generation and storage will need to be accelerated to achieve the 2030 target. Significant reinforcement and build out of the distribution network will also be required to support the electrification of sectors projected for the decades ahead, as well as to accommodate new demand in some locations for growing infrastructure and industrial uses, such as data centres and transport hubs.

In addition to those actions set out in this chapter, delivery of network infrastructure will rely on actions outlined elsewhere in this Action Plan, notably the interventions being developed by the Office for Clean Energy Jobs to secure a workforce with the right skills to deliver Clean Power, resourcing and reforming planning and consenting for energy infrastructure, and supply chain interventions.

Figure 11: Transmission network project maturity and delivery timeline



Source: NESO (2024), 'Clean Power 2030'

* These are wider transmission network reinforcements – they may not include all works, for example, works driven by connection enabling works, operability etc.

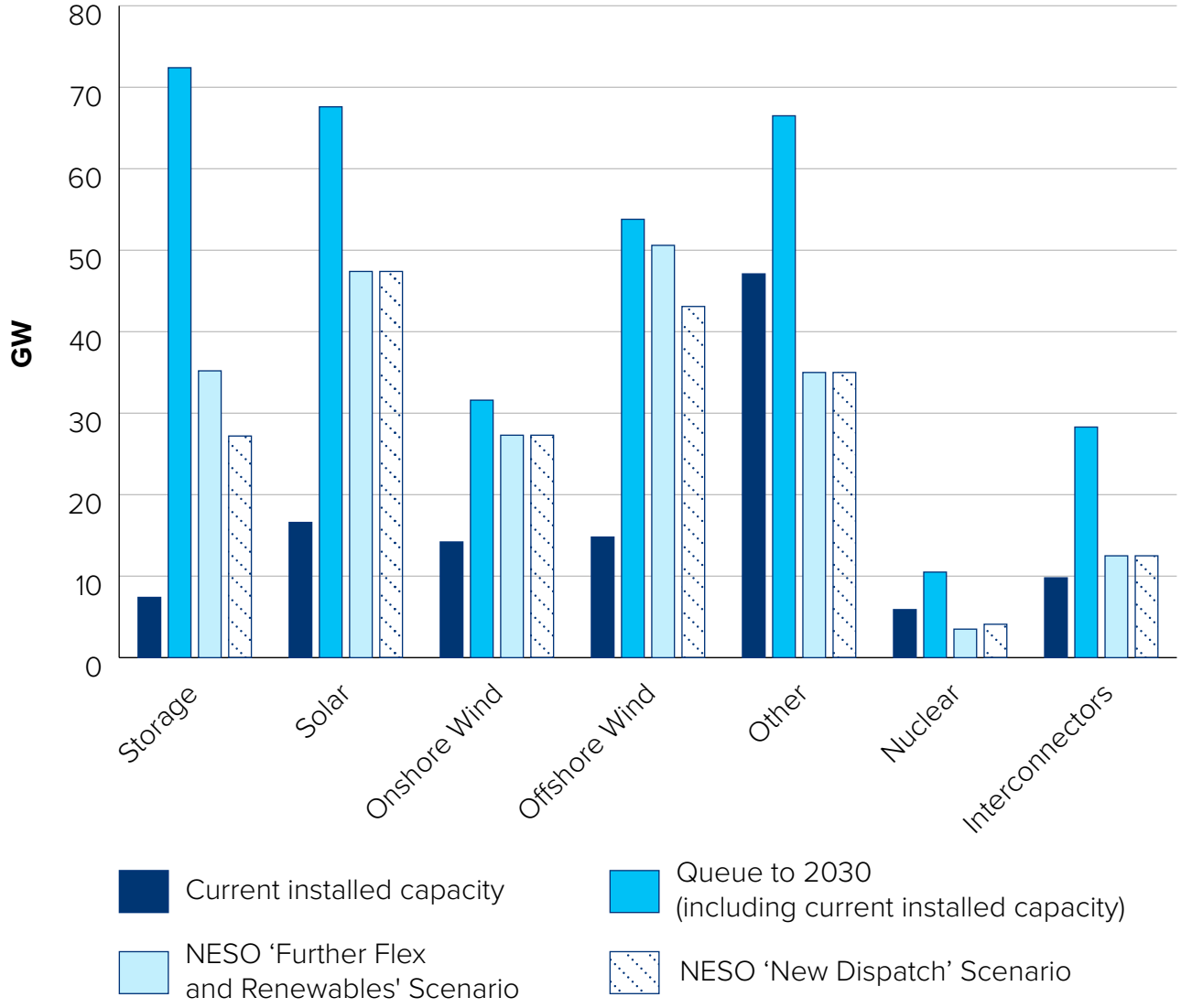
Taking action

Connections reform

Over the last five years, the grid connection queue has grown tenfold, and now contains an equivalent capacity of 739 GW[65]. Many of these projects are speculative or do not have the necessary funding or planning permission to progress, causing unacceptable connection delays for viable projects behind them. Fundamental reform of the connections process is critical and urgent – without it, the projects we need for Clean Power will not be able to connect on time.

We also need to accelerate towards net zero and ensure timely connections for demand including an increasing volume of low carbon technologies such as EV charge points and heat pumps, as we electrify the wider economy.

Figure 12: Current connections queue compared to current installed capacity and NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios (GW)



Note: Other includes biomass, unabated gas, coal, oil and other fuels for current installed capacity. 2030 capacity figures refer to unabated gas only.

Source: Table 1 & DESNZ (2024), 'DUKES' & NESO (2024), 'Clean Power 2030'

[65] Including Demand. Correct as of end-October 2024. Connections data is published monthly by the Connections Delivery Board.

The queue is currently managed on a 'first come, first served' basis which does not consider the required 'mix' of energy projects (e.g. solar, wind) or where this mix is best located. As such, we do not have the levers to ensure an optimised future energy system across all regions of Britain that responds to local energy planning as well as national needs.

To meet our 2030 ambition, we must act now to rationalise the queue and accelerate the projects that are critical to our goal. This means going beyond previous plans to remove slow-moving or stalled projects from the queue and prioritise based on readiness alone. These actions are still needed but to achieve Clean Power 2030, technological and locational factors need to be considered in the connection process so the right projects can connect in the right place at the right time.[66] This Action Plan can now provide the basis to do this.

By removing unviable projects, re-ordering the queue, and accelerating connection timescales for the projects we need most, connection reform is expected to unlock £billions of much-needed investment in renewable generation[67] and electrification of the wider economy – investment that has been held back for too long.

A strategically aligned connections process will also bring inherent efficiencies in network design, planning, and build, and provide long-term confidence not only for investors in renewable energy, but also for all demand sectors that will depend on clean energy for electrification (from data centres – including those vital for supporting AI (Artificial Intelligence) – and gigafactories, to EVs and heat pumps), as well as related supply chains and the jobs these will create.

Government, Ofgem, NESO and network companies have been working at pace[68] to strengthen existing 'first ready, first connected' proposals and NESO has now consulted on[69] the detailed methodologies that will enable it to filter the queue and prioritise connections using strategic plans, starting with capacity ranges for generation technologies required for clean power by 2030 that are laid out in this Action Plan. Government will:

- Work with NESO and Ofgem to **change the grid connections process** to operationalise the Action Plan, by providing a framework through which NESO can work with Transmission and Distribution Operators to prioritise aligned projects, resulting in updated offers being issued before the end of 2025. Further detail on this is set out in the connections reform annex of this publication. We will introduce legislation, when parliamentary time allows, to ensure connection reform aligns with strategic energy and network plans and supports delivery of clean power by 2030.
- Subject to Ofgem's approval, additional flexibilities will be included in the reformed connection process to manage project attrition and over- or under-supply. For example, projects that go beyond the 2030 pathway for a technology but are aligned to the relevant 2035 pathway will still be eligible to connect before 2030 where there is spare capacity, after all 2030 pathway projects have been assessed. NESO will also be able to make substitutions of the same technology

[66] See the connections reform annex for further detail on regional breakdowns of technology capacities.
[67] DESNZ & Ofgem (2023), *'Connections action plan: speeding up connections to the electricity network across Great Britain'* (viewed in December 2024)
[68] DESNZ & Ofgem (2024), *'Open letter from DESNZ and Ofgem: Aligning grid connections with strategic plans'* (viewed in December 2024).
[69] NESO (2024), *'Connections reform consultation'* (viewed in December 2024).

between zones to manage over- and under-supply, where this does not cause material network constraints.

To avoid impacting projects whose development is already well advanced, NESO has proposed that any project that has been awarded a Contract for Difference or Capacity Market contract, an Interconnector or Offshore Hybrid Asset Cap and Floor agreement, Merchant Interconnector approval, or has secured planning permission as a Nationally Significant Infrastructure Project or via relevant Town and Country Planning Acts (including through devolved governments' planning regimes), will be included in the new reformed connections queue provided they have also met the Gate 2 Readiness Criteria.[70] Government will also use the publication of the SSEP in 2026 to examine the mix of technologies and consider whether capacity reserved for undersupplied technologies should be released for other technologies.

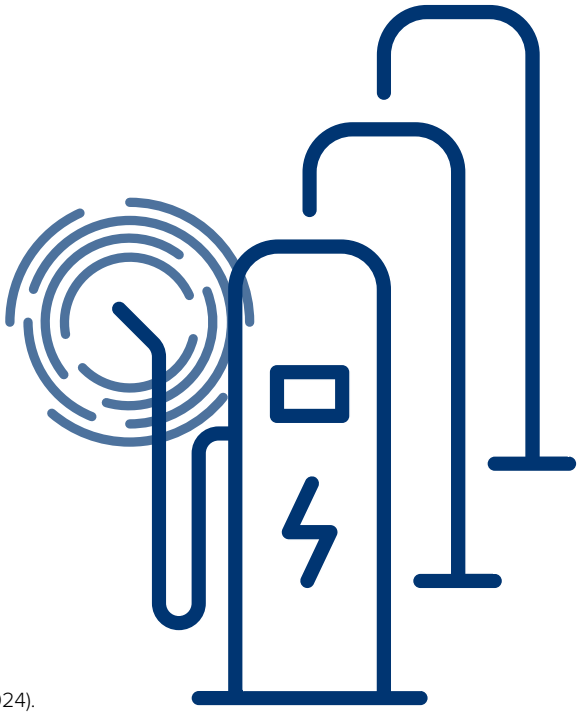
All parties involved must work at pace to secure swift and positive resolution of the reform process and explore all opportunities for faster implementation so that customers can received updated connection offers as soon as possible in 2025. In line with updating connection offers, the Transmission Owners will review and where necessary revise enabling and local works to comply with the requirements of the Security and Quality of Supply Standard. NESO also plays a role in ensuring overall compliance of the network with these standards.

Regulatory reform

Through its Accelerated Strategic Transmission Investment (ASTI) framework, Ofgem has prioritised the timely delivery of 26 large-scale strategically important transmission projects for delivery ahead of, or by, 2030. Of these, NESO have indicated that 21 need to be delivered by 2030 to deliver the Clean Power Plan. Delivery incentives apply to all 26 ASTI projects and Ofgem is building on this approach in future price controls for networks, which will be adaptive to efficiently fund additional build requirements. Timely delivery of these key projects remains very challenging and delivery incentives may need to be stronger to encourage ambition by the Transmission Owners.

To address these challenges, government will:

- Amend the Strategy and Policy Statement (which sets out government's strategic priorities that Ofgem must have regard to) to **ensure 2030 clean power and broader decarbonisation goals are sufficiently weighted in decision making** to approve strategic investments by network companies at an earlier stage.
- Work with Ofgem to explore the appropriateness of **tightening incentives and penalties for Transmission Owners and Distribution Network Operators** for delivery of strategically important network infrastructure. We will also work with Ofgem to ensure all incentives and penalties are robustly enforced.



[70] NESO (2024), *'Open letter on connections reform'* (viewed in December 2024).

Networks planning, land rights and consenting

Accelerating transmission and distribution network build required for 2030 is heavily dependent on the capacity of the planning system and wider reforms to planning and environmental requirements for all new energy infrastructure. This includes better resourcing of the planning system, reforms to consenting for energy projects in Scotland, and prioritisation of electricity networks projects in the consenting processes in England and Wales. Further details on these measures can be found in the Planning and Consenting for New Energy Infrastructure chapter.

At the distribution network level, current land rights processes in England and Wales can take between 2 to 4 years, which can lead to unnecessary delays[71]. A call for evidence undertaken by the previous government found that both network operators and landowners believe reform to these processes are necessary[72]. To address this, government will consult and engage in 2025 on proposals including:

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

The National Policy Statement for Electricity Networks Infrastructure (NPS-EN5) sets out the government's position on undergrounding, which is that there is a starting presumption for overhead lines for large network projects. The exception to this is in nationally designated landscapes, where undergrounding is the starting presumption. This position takes into account factors including cost and environmental impacts, and the government's view is that this sets an appropriate balance between overhead lines and undergrounding.

Community engagement

To bring communities with us, we will need to better engage and provide assurance to communities and ensure they benefit from living near new onshore energy infrastructure. This government believes that it is a vital principle that communities that host clean energy infrastructure should benefit from it.

To recognise the vital role of communities living near new onshore transmission network infrastructure, government will deliver a strong package of community benefits. We will:

- **Publish voluntary guidance** to increase the quantum and consistency of Community Funds for transmission networks. This guidance will detail the recommended level of benefit, scope, eligibility, delivery costs, and the role of communities and developers.

To improve understanding of the need for new transmission infrastructure and better set the context for discussions with communities on new projects, the government will:

- Support the launch of a **public communications campaign** developed by industry with government support, to encourage public awareness on the importance of networks infrastructure in supporting net zero. This will be launched in early 2025.

[71] Energy Networks Association (ENA) (2023), '*Common sense plan for planning*' (viewed in December 2024).
[72] DESNZ (2024), '*Land rights and consents for electricity network infrastructure: summary of responses*' (viewed in December 2024).

These actions, alongside ongoing work of the government and our delivery partners, including Ofgem, NESO, and the Transmission Owners, will further accelerate networks projects that are critical to achieve 2030 Clean Power and reduce constraints on the network. They will ensure that communities benefit from hosting network infrastructure, reform the grid connections process to ensure timely connection for generation that is ready and is required for Clean Power 2030, and ensure that the network is ready for increasing electricity demand and continued development of low carbon generation post-2030.

Great British Energy

Setting up Great British Energy is one of government's first steps for change, putting the UK on the path to become a clean energy superpower. Great British Energy will be 100% owned by the British people, for the British people.

Our new publicly-owned energy company is designed to drive clean energy deployment to boost energy independence, create jobs, and ensure UK taxpayers, billpayers and communities reap the benefits of clean, home-grown energy. Great British Energy's project development and local power functions will help support the Clean Power 2030 mission, including through the development of up to 8 GW of local and community energy projects. We will continue to see its impact after 2030, ensuring we can meet future demand as we further decarbonise the economy out to 2050.

Great British Energy will benefit all four nations, and we are working hard to ensure its functions can complement the green energy initiatives across Scotland, Wales and Northern Ireland, creating jobs and building supply chains across the UK, while respecting the devolution settlements. Achieving our shared net zero targets, having greater control over our own energy resources, and increasing our energy independence are challenges for the whole of the UK, and this is an excellent opportunity to learn from each other's expertise and experience.

We are making rapid progress in establishing Great British Energy. In July, we published Great British Energy's Founding Statement, which set out its five functions: project investment and ownership; project development; supply chains; the Local Power Plan; and Great British Nuclear. We also announced Juergen Maier as the start-up Chair, alongside GBE's first major partnership with The Crown Estate. Since then, Great British Energy has announced its Aberdeen headquarters and made key policy decisions, including plans to collaborate with the National Wealth Fund to accelerate investments. And finally, we have secured £125 million in funding for 2025/26 so that GBE can start its important work to drive forward clean energy deployment.

This is just the start. Great British Energy will be capitalised with £8.3 billion over the current Parliament. Through its five functions, the publicly-owned company will help to create a better investment offer for privately-owned energy companies and international investors who will continue to play a significant role in our transition to an affordable, decarbonised power sector.

Renewable and nuclear project delivery

Summary

Electricity generated by renewables and nuclear power will be the backbone of a clean electricity system by 2030. Actions set out in other chapters, to lower barriers to planning and environmental consent, electricity network connection, and access to necessary supply chains and workforce will go a long way to increasing deployment of renewable technologies. However, even with success in these areas, there are outstanding and specific barriers that we face to deploy the renewables needed for a clean power system in 2030. There are also hurdles facing our nuclear fleet and the scaling up of emerging renewable technologies.

To lower and remove these, we will:

Improve the way Contracts for Difference are allocated, particularly for Allocation Round 7 (AR7), to support clean power delivery and ensure it can procure the capacities needed to hit the target.

Coordinate the interaction between wind turbines and civil aviation and defence infrastructure, working to find mitigation solutions and unlock deployment of planned offshore and onshore wind projects.

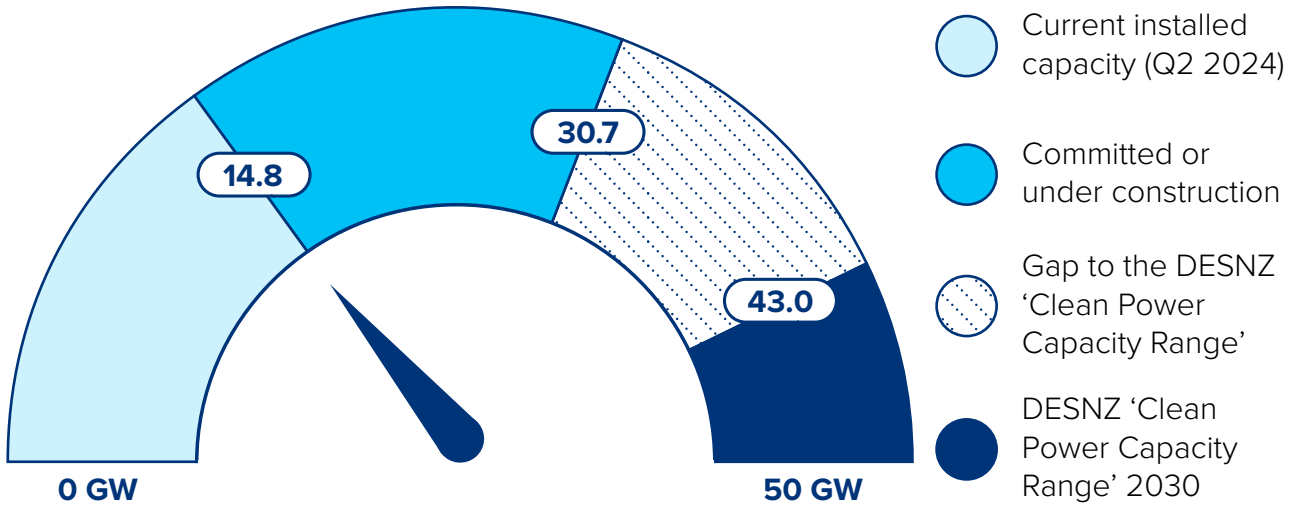
Leverage Great British Energy and deploy further policy measures to increase the rollout of local and community generation, including for homes, businesses, public buildings and land, and shared spaces.

Manage assets reaching the end of existing government support terms to minimise any capacity that may be lost before 2030, including through supporting repowering through the Contracts for Difference scheme.

Work with EDF to support the delivery of Hinkley Point C and support the development and technology readiness of emerging clean technologies that will play an important role beyond 2030.

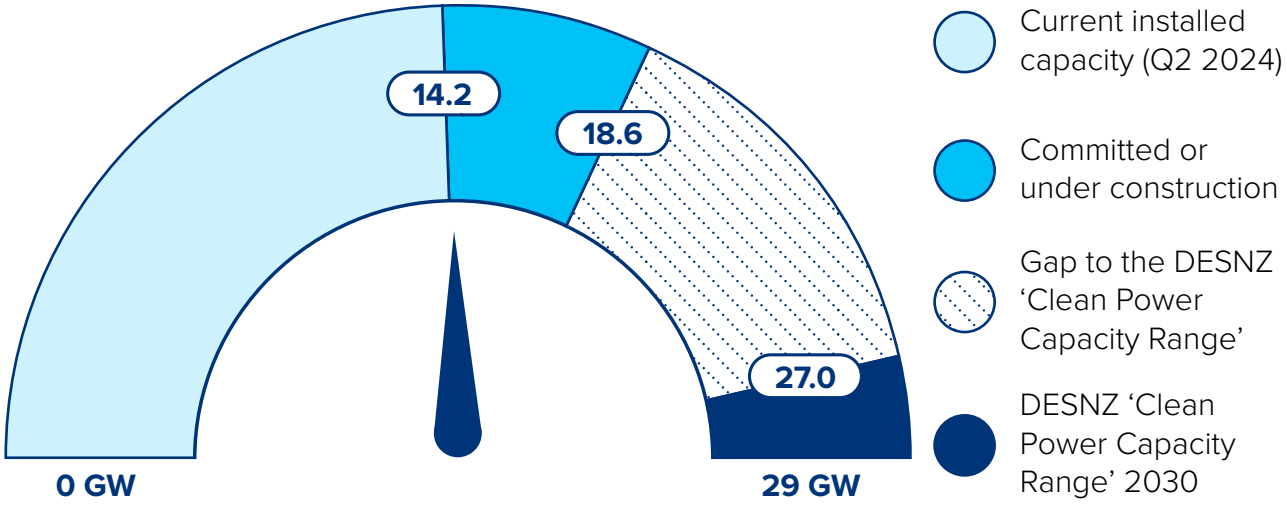
Offshore Wind

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



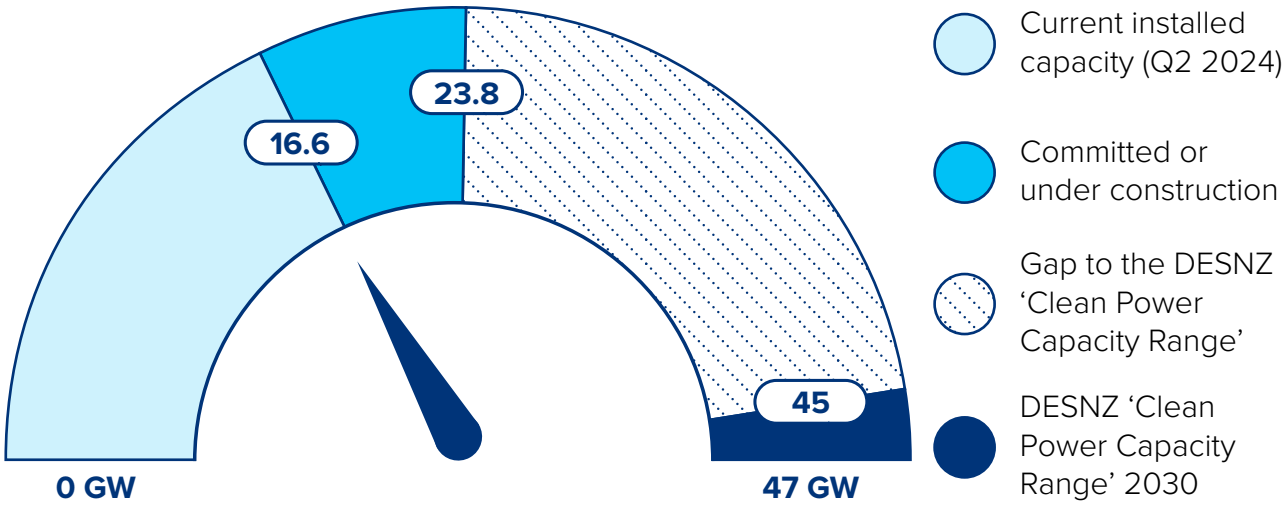
Onshore Wind

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Solar

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Source(s): Table 1, Low Carbon Contracts Company (LCCC) (2024), '*CfD register*' (viewed in November 2024).

Notes: Committed / under construction is defined as projects that have secured a Contract for Difference (CfD) but not yet become fully operational. For onshore wind and solar PV, 'merchant' (non-CfD) capacity that has not yet deployed has not been counted. Any pre-2030 asset retirements are not considered in these estimates.

The challenge

Renewable technologies will form the foundation of our clean power system, and we need to see very significant deployment to make this a reality. Meeting the renewable capacities set out in the DESNZ 'Clean Power Capacity Range' is achievable, but will require deployment at a sharply accelerated scale and pace. This can only be delivered by unblocking delivery challenges throughout the development lifecycle.

Accelerating delivery is exceptionally critical for **offshore wind**, where lead times for projects are often more than a decade[73]. This means that all that can be deployed by 2030 has either already been consented or is in the development and consenting process. Procurement and final investment decisions of these projects will need to be in place over the next 1-3 years.

There is greater potential to bring new **onshore wind** and **solar** projects forward and deliver additional capacity beyond what is already planned by 2030, due to shorter lead times[74]. But again, many 2030 projects are likely to already be in various stages of development, and final investment decisions on these projects will still need to be made well before our 2030 target.

Actions in this chapter, alongside cross-cutting enablers set out in other chapters, will support the delivery of renewable generation projects by de-risking the existing pipeline, accelerating new projects through the pipeline, and maximising the potential of existing capacity as assets approach end-of-life.

Nuclear power will also play a key role in achieving Clean Power 2030 and beyond by providing low-carbon, baseload generation on the system.

Taking action

Improving the way that Contracts for Difference are allocated to support 2030

The Contracts for Difference (CfD) scheme is the government's flagship policy for incentivising new low carbon electricity generating projects in Great Britain. The CfD and its predecessor investment contracts have seen around 9 GW of renewables start generating under them already, with a further 26 GW contracted to become operational by 2030[75].

Though the CfD has delivered substantial volumes of renewable capacity over the last decade, AR5 was a round that failed to deliver any offshore wind, which was a massive setback for industry and meant consumers were left more exposed to fossil fuel markets. We need consistency of success and scaling up to protect customers and meet Clean Power 2030. There is currently around 31 GW of either constructed or contracted offshore wind capacity. This will need to rise to 43-50 GW in 2030. The government will therefore seek to secure at least 12 GW across the next two to three allocation rounds – AR7, AR8 and, depending on the speed at which projects deploy, AR9.

This government has shown its ability to get the offshore wind sector back on its feet. While AR5 secured 0 GW of offshore wind, AR6 supported over 5 GW, at a price that was cheaper to build and operate than new fossil fuels. The government will ensure it secures the right volumes of offshore wind at a competitive price.

It is also the case that industry has long been calling for CfD reform to remove some of the uncertainty and give greater line of sight to support industrial strategy. That is why the government is developing

[73] DESNZ (2023), '*Seizing Our Opportunities: Independent Report of the Offshore Wind Champion*' (viewed in November 2024).
[74] DESNZ (2023), '*Electricity generation costs 2023*' (viewed in December 2024).
[75] LCCC (2024), '*CfD Register*' (viewed in December 2024).

targeted reforms to the CfD mechanism to ensure it is able to support the volume of new capacity – in particular, fixed-bottom offshore wind – needed to deliver the renewable contribution to the Clean Power 2030 target whilst continuing to minimise the costs of doing so to consumers. Subject to further assessment, including of the merits, feasibility and any further consultation where relevant, for AR7, the government is currently minded to implement:

- **A relaxation of CfD eligibility criteria for fixed-bottom offshore wind projects** to permit projects that have not yet obtained full planning consents to participate in near-term allocation rounds. This would award CfDs at an earlier stage in the offshore wind development cycle compared to the current model. Coupled with wider reforms, this could improve competition and enable earlier supply chain engagement.
- **Changes to what information the Secretary of State uses to inform the final budget for fixed-bottom offshore wind**, to avoid a repeat of AR5 and cost effectively maximise the volume of capacity that could be contracted from each round. This includes providing greater visibility over sealed bid information for the Secretary of State ahead of finalising the budget, so that there can be more certainty on how much capacity a given CfD budget will procure.
- **An auction schedule**, including capacity ambitions for upcoming allocation rounds, to improve transparency and predictability in the timing and scale of ambition for the CfD.
- **A review of auction parameters**, including our approach to Reference Prices (estimates of the average GB market price for electricity) used to estimate the budgetary impact of projects bidding into allocation rounds. The government recognises industry concerns and feedback about Reference Prices and the implications for CfD budgets and is seeking to ensure these concerns are balanced with our strong ambitions for the power sector for 2030 and beyond.

Alongside increased certainty around the auction and the potential capacity it can secure, **the government is also considering changes to CfD contract terms that would give longer market certainty once contracts are awarded,** including consideration of the merits of increasing the current 15-year CfD term to reduce overall project costs. The department intends to consult on this in early 2025, and to move ahead, would need evidence that this was in the interests of consumers.

Given the level of investment required, the government recognises the need to ensure that reforms provide stability and confidence to the sector, including the supply chain, and are delivered in a timely way. The government will consult on reforms in early 2025 ahead of the next allocation round, with a view to implementing any changes in time for Allocation Round 7 to open in summer 2025.

In addition to these proposals, there are wider measures that contribute further to ensuring the CfD mechanism is fit for purpose, including the Clean Industry Bonus (see the ‘Supply chains and workforce’ chapter) and reforms to the network charging regime in time for future CfD allocation rounds (see the ‘Reforms to electricity markets’ chapter).

Coordinating the interaction between wind turbines and civil aviation and defence infrastructure

Wind turbine generation must be done in a way that does not interfere with aviation and defence surveillance systems. At present, requirements are placed on proposed onshore and offshore wind projects that are impacting upwards of 20 GW[76] of capacity. The identification and implementation of interim and enduring solutions to this long-standing problem is therefore critical for Clean Power 2030.

The government has been working with the Offshore Wind Industry Council via a Joint Taskforce to drive collaborative agreements, seeking to find solution(s) so that offshore wind and military radar infrastructure can coexist now and in the future. The Onshore Wind Industry Taskforce has established its working group on aviation and defence to review the same issues.

Military radar

The Ministry of Defence (MoD) has launched Programme Njord, which will work with colleagues from DESNZ, The Crown Estate, Crown Estate Scotland, the devolved governments and the Offshore Wind Industry Council to identify, procure and implement a mitigation to resolve this problem for military radar.

The full costs of the long-term radar mitigation solutions identified by Programme Njord will be funded via an alternative route, delivered by government, and the funding requirement is therefore removed from **offshore wind** developers.

For **onshore wind** development which impacts military aviation, DESNZ and MoD are working at pace to seek an acceptable mitigation.

Civil radar

- DESNZ and the Department for Transport are working with the Civil Aviation Authority and the aviation industry to **agree a transparent and fair process to resolving objections**.
- The Onshore Wind Industry Taskforce is exploring the best specific approach, and will set out further detail to mitigate civil radar objections in the upcoming Taskforce Policy Statement.

Eskdalemuir

The Eskdalemuir Seismic Array is a facility in southern Scotland monitoring global nuclear activity. Wind turbines produce seismic ground vibrations which can compromise the Array. To safeguard the Array, MoD manages a finite seismic noise capacity to prevent compromising the detection capabilities of the Array. Scottish Government, MoD and DESNZ are collaborating to implement an updated approach to managing onshore developments around the Array.

- **MoD are consulting on their approach to safeguarding the Array, and following further work being undertaken by MoD the Scottish Government will consult on its development management guidance for new onshore wind projects in the Eskdalemuir consultation zone**. This will include a proposal on how onshore wind can be maximised within the array's consultation zone.
- The Onshore Wind Industry Taskforce will continue to examine these issues and will report by Spring 2025, covering a range of issues from supply chains and skills, to aviation and defence.

[76] Internal estimate based on stakeholder engagement.

Great British Energy Project Development

Developers are facing high risks, rising costs, and lengthy delays to energy projects developed in the UK, slowing down our rate of deployment. Alongside process change, the UK needs significant delivery acceleration in order to meet Clean Power 2030. GBE will accelerate the delivery of onshore and offshore clean energy projects by leading or co-leading (alongside public and private sector partners) projects through the pre-development phase and, in some cases, construction and operation – getting shovels into the ground quicker and improving UK energy security through publicly-owned energy projects.

- On private land, **GBE will align with NESO's publications and the government's response to identify locations for new generation projects** where additional capacity is needed to support the UK's spatial and wider energy system needs. GBE will work in partnership with the private sector to deliver these opportunities and provide a service that is additional to the market, maximising geographical opportunities and speeding up deployment of clean energy.
- **GBE will also undertake development on public land**, unlocking additional scope for generation capacity on government-owned estates to support decarbonisation, including in partnership with the private sector. GBE will seek to work with government to access the land and actively partner with government landowners who will host generation assets and provide power directly to public buildings, in addition to connecting into the grid.

Developing on both public and private land will support large-scale generation capacity in key strategic areas of the UK, improving system efficiency and accelerating the overall rate of deployment.

Unlocking local and community energy

Much of the generation capacity that will be deployed by 2030 is likely to come from large-scale, commercial energy infrastructure. However, local and community renewable energy will also play a vital role in delivering our ambitions, contributing to the capacity mix on an aggregate basis, delivering significant local benefits and reducing network system losses by bringing generation supply closer to electricity demand. Local and community power generation can contribute significantly to the prosperity of local places, driving down electricity bills, encouraging people to engage with the green economy, providing energy resilience, and promoting skilled jobs.

- That is why one of GBE's five functions will **provide support to deliver the Local Power Plan, putting local authorities and communities at the heart of restructuring our energy economy**. GBE will partner with, and provide funding and support to Local Authorities, Mayoral Combined Authorities, Community Energy Groups and others, as well as working with and through the devolved governments, to roll out local and community energy projects (mainly onshore wind and solar) to develop up to 8 GW of clean power in England, Scotland, Wales and Northern Ireland in support of the Clean Power 2030 Mission.

Alongside the work of GBE, government is also taking specific actions to remove barriers to, and further the deployment of, local energy. These will support deployment across local settings:

In homes and local businesses:

There is great potential for rooftop solar installation across the UK's warehouse and industrial sectors. Research commissioned by UK Warehousing Association (UKWA) indicates that the UK's 20% largest warehouses alone can provide 75 million square metres of roof space, and all warehousing roof space has the potential to support up to 15 GW of rooftop solar capacity[77].

- The Solar Taskforce has examined government and industry actions that can unlock this potential through its rooftop subgroup and will publish the Solar Roadmap in Spring 2025.

New standards will be introduced next year which will amend the energy efficiency standards in the Building Regulations in England. This will ensure all new homes and buildings in England are zero-carbon ready, meaning they will become zero-carbon when the electricity grid decarbonises without the need for any retrofit work. The Future Homes and Buildings Standards consultation was published in December 2023 and closed in March 2024. It set out detailed technical proposals for what future standards could entail, including proposals relating to solar panels.

- **We are reviewing proposals and feedback from the consultation and will publish the government response in due course.**

As part of the government's Warm Homes Plan, we are considering the role that finance may play in supporting homeowners with the upfront costs of energy efficiency improvements, solar panels, and installing low carbon heating.

[77] UK Warehousing Association (UKWA) / Delta Energy & Environment (2022), '*Investment case for rooftop solar power in warehousing*' (viewed in December 2024).

- Solar can be a cost-effective way to lower energy bills for fuel poor households, especially when paired with the adoption of a heat pumps, and **is an eligible measure in existing programmes like the Warm Homes Local Grant and Warm Homes Social Housing Fund. We will provide further details on how else solar could be supported in the Warm Homes Plan after the second phase of the Spending Review.**

In shared spaces:

Outdoor carparks provide potential to deploy solar canopies providing clean electricity, potential for electric vehicle charging and shelter for cars. Following the implementation of a new permitted development right to allow for the installation of solar canopies in non-domestic off-street carparks in England, it is now easier and quicker to deploy this technology.

- **The government will assess the potential to drive the construction of solar canopies on outdoor carparks over a certain size through a call for evidence next year.**

Finally, the National Wealth Fund's local authority advisory and lending function has a £4 billion capitalisation. It offers: commercial and financial advisory services to help local authorities undertake ambitious projects with confidence; and, lending on flexible terms at a market leading rate to local authorities who are developing projects, including in the clean energy sector.

Managing assets reaching the end of existing support

The UK-wide Renewables Obligation (RO) scheme was introduced in 2002 for GB (2005 for Northern Ireland) and it currently supports around 30% of the UK's electricity supply[78]. It is made up of three separate but complementary obligations covering England and Wales, and Scotland and Northern Ireland, and it closed to most new entrants in 2017. The Scottish Government runs the Renewables Obligation Scotland Scheme and we are working with them as we look forward to the next stages of the RO.

From 2027 onwards a large volume of renewable assets will stop receiving RO support. In total, across the GB RO schemes, around 1,000 active RO generators at approximately 9 GW of capacity will be reaching the end of subsidy by December 2030[79]. If these assets retire early, the renewable deployment required to achieve Clean Power 2030 targets and CB6 would have to increase to replace this lost renewable generation.

- We have surveyed existing RO generators to gather site-specific evidence on future plans and **are conducting further analysis to inform possible policy options to manage this risk**.

- We have already made a decision to **enable access to the CfD for repowered onshore wind from Allocation Round 7**[80] to ensure there is a route to continued generation for projects that require significant capital investment to continue operations.

- We are also implementing wider measures that will support the repowering and life extension of renewable assets, including through planning policy and through Ofgem's work on Offshore Transmission Owner (OFTO) asset life extensions.

[78] Ofgem (2024), '*Renewables Obligation (RO) Annual Report 2022-23 - (Scheme Year 21)*' (viewed in December 2024).
[79] Ofgem (2024), '*The Renewables and CHP Register*' (viewed in December 2024).
[80] DESNZ (2024), '*Consultation outcome: Proposed amendments to Contracts for Difference for Allocation Round 7 and future rounds*' (viewed in December 2024).

Biomass: existing low-carbon firm & flexible generation

Sustainably sourced biomass can be used as a low carbon fuel for renewable electricity generation[81] and so could play an important role in Clean Power 2030 by providing flexible or firm generation. Last year, biogenic sources of electricity, including conventional biomass, anaerobic digestion and biogenic energy from waste provided nearly 34TWh (equivalent to 25% of all UK renewable electricity and 12% of overall electricity generation)[82].

Support arrangements for a variety of large and small-scale biomass generators (including biogas technologies) conclude by 2030, or earlier. The previous government consulted on future support for large-scale biomass[83]. The current government is considering whether there is a strong value-for-money case to provide future support for these generators. Any future support would need to have greater protection for consumers and would be subject to robust sustainability criteria. No decisions have yet been taken; however, we plan to respond to the consultation shortly.

Large scale biomass plants also have the potential to transition to power BECCS. This carbon capture technology can combine the conversion of sustainable biomass, biogas and biogenic wastes into electricity while capturing a high percentage of the CO_2 emissions contained in that biomass in long-term storage in geological sequestration. Large scale power BECCS has the potential to support low carbon electricity and deliver negative emissions, helping to balance residual emissions from hard-to-abate sectors.

Nuclear and emerging technologies

Nuclear

Nuclear will play a key role in achieving Clean Power 2030 in the United Kingdom and our long-term net zero objectives by providing firm, low carbon baseload power at scale to generate alongside intermittent renewable generation – see Table 2.

[81] DESNZ (2023), '*Biomass Strategy*' (viewed in December 2024).
[82] DESNZ (2024), '*DUKES*' (viewed in December 2024).
[83] DESNZ (2024), '*Transitional support mechanism for large-scale biomass electricity generators*' (viewed in December 2024).

Table 2: Nuclear reactors that will impact installed capacity in 2030

Nuclear Power Station	Type of reactor(s)	Capacity	Status
Heysham 1	Advanced gas-cooled reactor	1.1 GW	Online – currently expected to come offline in 2027
Hartlepool	Advanced gas-cooled reactor	1.2 GW	Online – currently expected to come offline in 2027
Heysham 2	Advanced gas-cooled reactor	1.2 GW	Online – currently expected to come offline in 2030
Torness	Advanced gas-cooled reactor	1.2 GW	Online – currently expected to come offline in 2030
Sizewell B	Pressurised water reactor	1.2 GW	Online – currently expected to come offline in 2035
Hinkley Point C	European pressurised reactor	3.2 GW	Construction – expected to come online between 2029 and 2031

To help deliver Clean Power 2030, government will work with EDF to support the delivery of Hinkley Point C, with Unit 1 scheduled for completion between 2029 and 2031, enabling consumers to benefit from the project's generation as soon as possible. EDF have also confirmed they will be further extending the lives of the four generating Advanced Gas-cooled Reactor (AGR) stations, following inspections and regulatory approvals. This means that two of the AGR fleet, Heysham 2 and Torness, are expected to be generating and providing clean power until 2030.

The impact of these activities could be significant in helping ensure a reliable supply of low-carbon electricity, reducing greenhouse gas emissions, and supporting the overall decarbonisation of the power sector. However, there are uncertainties associated with having Hinkley Point C online by the end of the decade, given delays in the past few years.

As set out in the Budget, the government is also progressing the post-2030 generation interventions, with final decisions on Sizewell C and the Great British Nuclear-led Small Modular Reactor programme to be taken at the Spending Review. The government will continue to seek to streamline regulatory processes, and foster innovation in nuclear technology, to ensure that new nuclear continues to play an important role in the net zero transition after 2030. We also acknowledge the policy of the Scottish Government is not to support new nuclear developments in Scotland.

Emerging renewable technologies

Whilst emerging renewable technologies, like floating offshore wind and tidal stream, are expected to play a limited role in the 2030 energy mix, our ability to deploy them at scale could be important to the UK's achievement of longer-term decarbonisation objectives. For example, floating offshore wind could unlock the ability to take advantage of the strong winds at deeper water depths, providing additional capacity as our seabed becomes increasingly constrained. Emerging technologies could also provide broader system benefits,

including by enabling renewables deployment in a wide range of locations or power generation that is uncorrelated with other energy sources, such as tidal stream.

In addition, early investment in the deployment of emerging technologies like floating offshore wind could provide wider economic benefits and export opportunities for the UK.[84] The Supply Chains and Workforce chapter sets out further detail on how government is realising these benefits, such as through the Floating Offshore Wind Manufacturing Investment Scheme.

The UK already has the world's largest pipeline of floating offshore wind projects based on confirmed seabed exclusivity, including around 25 GW already in development in Scotland. The Crown Estate has made available seabed capable of supporting up to a further 4.5 GW in the Celtic Sea, and the partnership announced between GBE and The Crown Estate will bring forward new offshore wind developments.

The government will continue to work with the industry to identify ways to support the development of innovative new renewable generation technologies to ensure that they can play the necessary role in the UK's long term energy mix. The government response to the consultation on amendments to the Contracts for Difference scheme announced that floating offshore wind projects successful in future allocation rounds would be granted the ability to build out in up to three phases, providing developers more flexibility in the construction phase and reducing project risk[85]. The National Wealth Fund will also continue to explore opportunities to finance nascent renewable generation projects, seeking to mobilise private capital into them and enable final investment decisions to be reached.

Next steps

We expect the actions set out above, delivered alongside cross-cutting enabling actions in other chapters, will set the framework for the delivery of renewable and nuclear deployment needed to meet the 2030 clean power capacity range. But there will be further action required to get these projects over the line, and the Clean Power 2030 Unit will continue to work across government, the devolved administrations and industry to ensure the implementation of enabling actions.

This includes through the ongoing work of the Offshore Wind Industry Council, the Solar Taskforce and the Onshore Wind Industry Taskforce, and through addressing delivery risks for renewable projects as they emerge (see the below case study as an example).

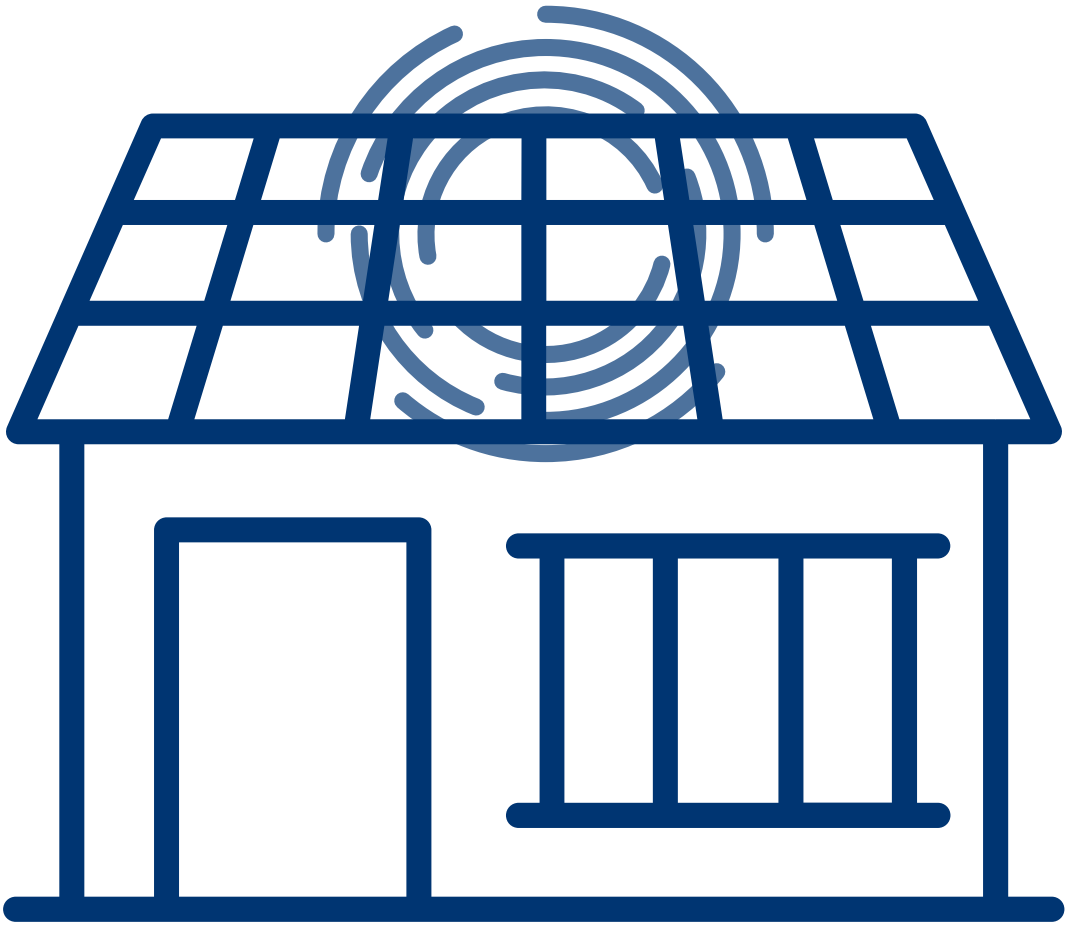
In the devolved nations, work is also underway to deliver this GB-wide target, with actions such as the Scottish Government's forthcoming Solar Vision, whose commitments will enable greater deployment of solar in Scotland.

Key upcoming milestones:

- The Solar Roadmap and the Onshore Wind Industry Taskforce report will both be published by Spring 2025.
- Consultation on relevant reforms to the Contracts for Difference scheme will be issued in early 2025.
- The consultation response on the Future Homes and Buildings Standards will be published in due course.

[84] The Crown Estate (TCE) (2024), '*Supply chain for Celtic Sea floating wind farms could power 5,000 new jobs and a £1.4bn boost for the economy*' (viewed in December 2024).
[85] DESNZ (2024), '*Contracts for Difference for Low Carbon Electricity Generation, Government response to the consultation on policy considerations for future rounds of the Contracts for Difference scheme*' (viewed in December 2024).

- Further details on the Warm Homes Plan will be announced after the second phase of the Spending Review.
- A call for evidence on the potential to drive solar canopies on carparks over a certain size will be issued next year.
- The consultation response on proposed transitional support for large-scale biomass will be published in due course.



Case Study: Management of emerging risks for project delivery – wake effects

Wake effects occur when wind turbines disrupt airflow to other turbines and reduce the energy production of those projects.

New projects with larger and/or a greater number of turbines have an even greater propensity to cause wake effects on existing downstream operational projects. Historically, this has been resolved outside the planning system, but a precedent was set with a wake condition in the 2023 Awel y Mor Development Consent Order, which said "No part of any wind turbine generator shall be erected as part of the authorised development until an assessment of any wake effects and subsequent design provisions to mitigate any such identified effects as far as possible has been submitted"[86].

As we radically accelerate the deployment of offshore wind in the UK to meet our 2030 target, we understand the uncertainty that this emerging issue has introduced both on operational windfarms and those in development, including the approximately 10 GW of pre-2030 offshore wind capacity currently in the planning system.

The Clean Power 2030 Unit would look to convene expert opinions from planners, engineers, academics, project delivery, data scientists and policy to understand the levers we can pull in this space, working with stakeholders like The Crown Estate, Crown Estate Scotland, the Planning Inspectorate, ORE Catapult and industry to gather the data and build an evidence base, looking for comparison mitigations with international partners and other industries.

[86] Statutory Instrument (2023), *'Infrastructure Planning: The Awel y Môr Offshore Wind Farm Order 2023'* (viewed in December 2024).