

# Improving and Accelerating Customer Connections Our immediate action plan

# Rebooting how customers connect to the grid

Since the UK's first commercial wind farm began exporting renewable electricity to the grid in 1992, **nearly 50GW of renewable electricity projects have been connected<sup>1</sup> to the electricity networks in Great Britain. Our country stands on the cusp of being one of the world's superpowers of renewable energy** and we must ensure our networks are continuing to enable Net Zero.

**Far more progress needs to be made to ensure we reach our target to decarbonise Britain's electricity grid by 2035. A key challenge being faced across Britain, is the length of time it is taking to connect into the transmission and distribution systems. This is a shared challenge across most electricity network operators in Britain.** 164GW of new connection requests were received in the year to October 2022 alone<sup>2</sup>. That's an entire grid's worth of capacity.

Whilst the current framework and connections model have delivered record levels of renewable electricity, they are not adequately equipped to deal with the current reality that many project developers must submit applications as they await final planning and investment decisions, with only 30-40% of projects at a transmission level being completed.

Because the existing connections model is designed to deal with a smaller number of projects where there is a higher degree of certainty that planning permission will be granted, this creates the impression of connection demand which may not exist and non-progressing projects early in the queue create 'traffic jams'.

Through our Strategic Connections Group, **we are making rapid changes to improve how customers connect to the grid at distribution level.** With the oversight of the CEOs of all of Britain's electricity network companies, we've brought together senior representatives of electricity transmission and distribution network companies, the Electricity System Operator (ESO), the Department for Energy Security & Net Zero and Ofgem to ensure cooperation amongst network companies and implement connections reform at Distribution level.

To begin with, **Strategic Connections Group are implementing 'quick win' changes** to the connection process for customers seeking connection to the distribution networks in three priority areas, which mirror those being carried out by the ESO and Transmission Owners at the transmission level of the power system:

- Reforming the distribution network connections queue
- Changing how Transmission & Distribution coordinate connections
- Greater flexibility for storage customers connecting into the distribution network

This work builds on a range of wider and existing initiatives seeking to improve the process and outcomes for connections customers, including harmonising connections best practice and the recent reform of how access to the network is charged to connections customers. We're also working closely with the ESO's Connections Reform and 5 Point Plan to ensure the industry remains coordinated in response to these challenges. The ESO is implementing a 5-Point Plan to speed up connecting into the transmission system and more efficiently manage the transmission connections queue. Alongside these tactical initiatives, the ESO is bringing together industry to discuss fundamental long-term reforms to the connections process. Finally, the Strategic Connections Group recognise that delivering these actions will not be the end of the journey and we will continue to work with

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<sup>1</sup> Table 6.2, DUKES, Department for Business, Energy & Industrial Strategy, July 2022.

<sup>2</sup> Transmission Generation applications received for the period 01/09/2021 - 30/09/2022. Note, excludes Embedded Generation but includes lapsed or withdrawn offers.

Government, the regulator, and our customers to identify any other actions that better support connections for customers and the Net Zero transition.

# The immediate action we're taking now

## Action 1. Reforming the distribution network connection queue

### The challenge

Demand and generation connection requests to distribution networks have significantly increased in recent years. Many projects looking to connect are still working towards a green light for investment or build but these projects still take up places in the connections queue.

Because of this, the 'first-come, first-served' model means there's a significant traffic jam forming, with more than 50GW of capacity being accepted for connection but are still queuing connect<sup>3</sup>. Grids across the globe are seeing similar challenges in the race to decarbonisation.

### How we're speeding it up

**First ready, first connected.** Connections which reach agreed milestones will be prioritised for connection where there is no detrimental impact to others ahead of them in the queue. 'Shovel ready'<sup>4</sup> projects that are progressing and are ready to connect to the network will be invited to connect ahead of those with earlier application dates, without detrimental impact on those ahead of them. Bringing forward customers who are ready to connect sooner will enable networks to connect more projects to the network at greater pace and utilise any available capacity. The benefits are clear, all DNOs must actively manage the queue with a view of capacity optimisation.

**Spring clean.** Today, connection agreements made between network companies and customers include progression milestones that help networks order and manage connections. However, projects established before 2017 did not follow this approach. Starting this spring, we'll identify accepted connection offers made prior to 2017, but that are still in the connection queue and will follow a three step approach to migrate those projects to milestones or remove them from the queue.

### When?

- Implementation date: Phased implementation from May / June 2023

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<sup>3</sup> ENA Strategic Connections Group numbers, February 2023. Note, customer and capacity figures have been taken from network's contracted connections queues data and were correct at the time of collation, but will continue to change.

<sup>4</sup> Shovel ready projects must meet and evidence minimum requirements such as having secured land, obtained planning consent, secured sufficient funding, design and engineering readiness is advanced, and overall development of the project is in a stage that can enable construction to start within a short space of time.

## Action 2. Changing how Transmission and Distribution coordinate connections

### The challenge

It is currently standard practice for some generation and energy storage projects seeking distribution network connections to be dependent on transmission reinforcement. However, this creates multiple dependencies for many generation or energy storage projects to connect to the network. These projects total more than 28GW of capacity<sup>5</sup>. All network companies are facing similar challenges leading to long lead times to connect into different grids, but if we can minimise these dependencies, some of these customer projects could theoretically be connected in months.

Distribution network operators already have a number of these projects 'shovel ready' and waiting to connect. Distribution customers have unanimously expressed a desire to connect early even if subjected to curtailment over time.

### How we're speeding it up

**Clear & consistent boundaries.** We're creating clearer, more consistent technical boundaries between Transmission & Distribution. This will better manage the connection queue and accelerate customers with smaller, more agile projects that are ready to connect. Distribution network operators working in coordination with ESO will be able to manage connections within agreed technical limits at each boundary point (known as a Grid Supply Point or 'GSP'). This will be rolled out in a phased approach across Britain, depending on site complexity, and variation offers will be made to qualifying customers.

These technical limits will be set through a transparent and consistent methodology, giving network operators and the ESO the necessary visibility and control to better manage the utilisation of network capacity.

**Co-ordinating the queue.** A coordinated approach to how the queue is managed between transmission and distribution networks will be implemented for generation/exporting distributed energy resources (small scale generation and battery storage) that are still dependent on both transmission and distribution network capacity. This will improve clarity of queue management and the ability of distribution network operators to manage connections within boundary limits agreed by the ESO.

### When?

- Implementation date: Phased implementation from July 2023<sup>6</sup>

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<sup>5</sup> ENA Strategic Connections Group numbers, February 2023.

<sup>6</sup> Note that these implementation and acceleration timelines are dependent upon confirmation of key derogation and other industry decisions as well as customer uptake and readiness.

## Action 3. Greater flexibility for storage distribution customers

### The challenge

The volume of battery connection applications is exceeding future energy scenario expectations. More than 56GW of battery storage is now contracted and queued to connect to the networks. That's more than 14 Drax power stations and 200%-500% more than the ESO forecast will be needed in 2030.

Battery storage has significant capability to support customers and provide energy security. However, fully allocating network capacity to these schemes limits other demand and generation customers access to networks across the country. As these schemes primarily provide system energy services bi-directionally, the capacity held by battery electricity storage schemes will not always be used, unlike capacity held for more conventional demand.

Batteries request firm access yet tend to have low capacity utilisation, which results in a large volume of under-utilised network capacity allocated for batteries. Firm access for batteries also means that networks can't reallocate capacity when it's not being used, for example to connect other customers and for better accommodating other low carbon technologies. This challenge poses significant risk that other types of connections will be materially delayed, resulting in inefficient outcomes for consumers, acting as a barrier to economic growth and delaying transition to Net Zero.

### How we're speeding it up

**Flex capacity.** Battery storage operators will be offered standardised 'non-firm' connections that allow the networks to connect them more quickly, whilst at the same time improving network's ability to manage that capacity and provide greater network access to other customers. So, if a 10MW battery is connected to the grid this non-firm 'connect and manage' approach will enable more of that capacity to be offered to other customers.

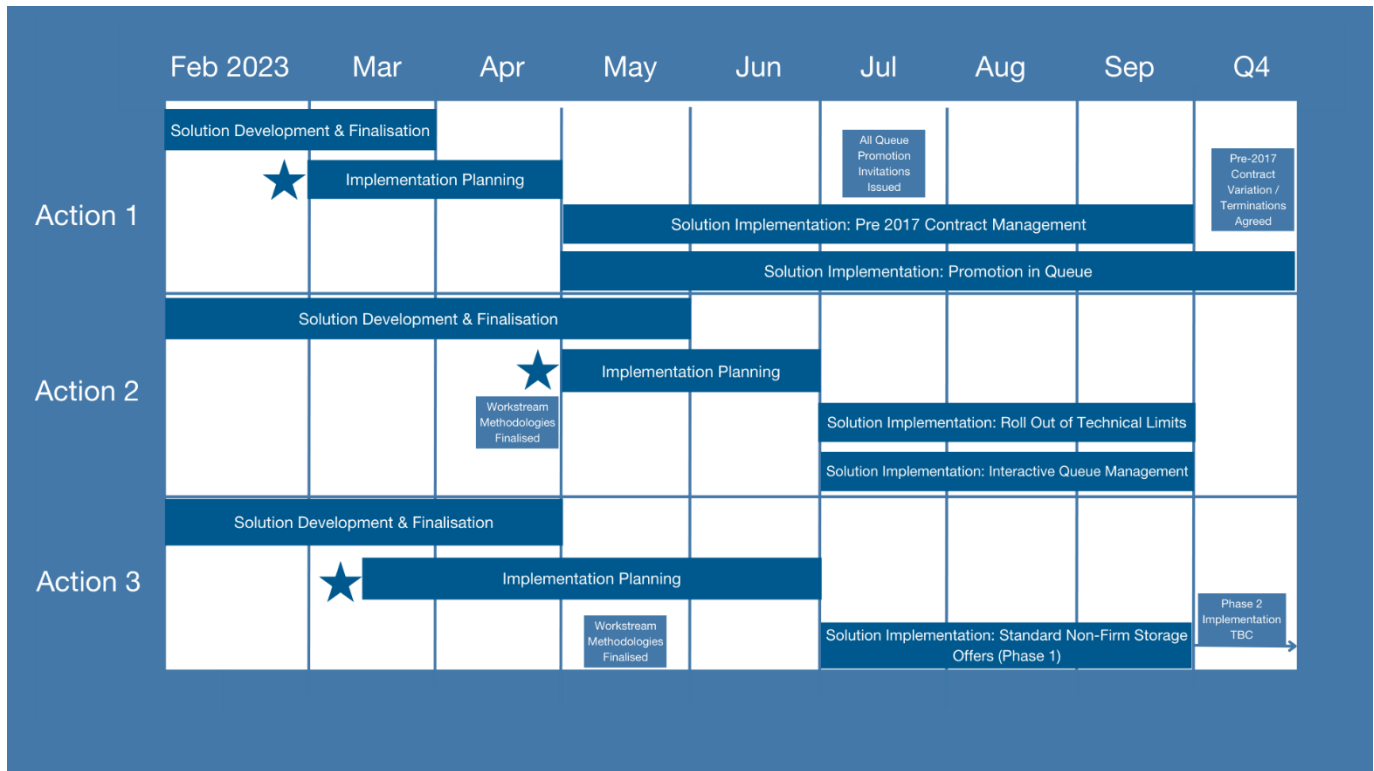
The current regulatory and industry technical standards requirements are also limiting the extent to which networks can effectively manage the capacity allocated to storage customers, resulting in outcomes that will present a major barrier to low-carbon technology uptake and economic growth unless resolved. Strategic updates to those standards and codes are required to better leverage the benefits of battery electricity storage systems for consumers without resulting in unintended costs and/or perverse incentives.

In parallel with the immediate action to offer non-firm connections, we will also be working on those longer term changes to technical and planning frameworks to better take into account storage in coordination with the ESO Strategic Connections Reform and with industry and our regulator. The solution will be rolled out in a phased approach, with the initial focus from July being on new connection offers and existing contracted connection. The group will also be considering opportunities to accelerate existing connections going forward.

### When?

Implementation date: Phased implementation from July 2023 (initial phase)

## Implementation Timeline



## Next steps

We are taking action now. Our next steps are:

**Deliver solutions in a clear and consistent way across Britain.** Progressing solutions to the right level of detail with an agreed approach across all network companies. Ensuring that the design and delivery of the proposed solutions is implemented in a consistent way across the country.

**Engage With Stakeholders.** Engage with the energy regulator Ofgem, and relevant Government and industry stakeholders, in particular to drive through any required regulatory and policy changes. Their support will be a key enabler of the solutions.

**Engage with Customers.** Each network will be engaging with their customers on these solution designs and rollouts through existing forums and channels. Customers can speak to their connecting network company to understand more about the solution details and opportunity, and provide any feedback on what's being proposed.

**Track Solution Implementation.** Consolidate, coordinate, and oversee activity with the relevant expert working groups within ENA, with National Grid ESO's 5 Point Plan and Connections Reform, and with the industry to progress solution development and implementation. This will include tracking and monitoring implementation progress against clear metrics, to demonstrate success.

**Keep you informed.** Updates on the Strategic Connections Group activities and further solution and implementation details will continue to be published throughout the year. See [energynetworks.org/accelerating-connections](https://energynetworks.org/accelerating-connections).

**Continue identify improvement opportunities.** We will continue to work with Government, the regulator, and our customers, to identify any other actions that better support connections for customers and the Net Zero transition.

## About ENA

Energy Networks Association (ENA) is the industry body representing the electricity wires, gas pipes and energy system in the UK and Ireland.

ENA helps its members meet the challenge of delivering electricity and gas to communities across the UK and Ireland safely, sustainably and reliably.

Its members include every major electricity and gas network operator in the UK and Ireland, independent operators, National Grid ESO which operates the electricity system in Great Britain and National Gas which operates the gas system in Great Britain. Its affiliate membership also includes companies with an interest in energy, including Heathrow Airport and Network Rail.