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For further details regarding these and other assumptions, risks and uncertainties that may impact National Grid, please read the Strategic Report section and the ‘Risk factors’ on pages 225 to 228 of National Grid’s most recent Annual Report and Accounts, as updated by National Grid’s unaudited half-year financial information for the six months ended 30 September 2023 published on 9 November 2023. In addition, new factors emerge from time to time and National Grid cannot assess the potential impact of any such factor on its activities or the extent to which any factor, or combination of factors, may cause actual future results to differ materially from those contained in any forward-looking statement. Except as may be required by law or regulation, the Company undertakes no obligation to update any of its forward-looking statements, which speak only as of the date of this presentation.
Overview

John Pettigrew
Chief Executive
UK electricity connections: overview

Electricity industry has changed enormously

- Policy and regulation needs to reflect increased connection requests and changes in the types of projects
- Significant increase from
  - renewable generation wanting to connect at transmission and distribution voltages
  - demand connections including electrifying manufacturing, data centres, EV charge points and heat pumps

We’re focused on enabling change

- Smarter networks providing two-way flows and greater flexibility
- Building new infrastructure faster than ever before
UK electricity connections: overview

Nearly 400GW of projects in the pipeline across our UK networks

Current pipeline

Exponential pipeline growth

The challenge is industry wide and we’re playing our part

• Connecting new generation every day
• Working with Government, Ofgem and industry on near-term tactical and longer-term strategic reforms

1. To meet UK Government’s 2035 decarbonised electricity sector target. Based upon latest NGET and NGED projections, using ESO’s latest FES scenarios and DFES scenarios
UK Electricity Transmission

Alice Delahunty
President, UK Electricity Transmission
UK Electricity Transmission

Own and operate the network across England and Wales
- >300 substations and nearly 22,000 pylons
- 10GW connected over the last 5 years

Rapid growth in the number of connection requests
- Focused on accelerating the connection of viable projects through regulatory and policy reform

RIIO-ET2 Capex³

1. NGET: National Grid Electricity Transmission. Illustrative map. Includes all 17 x ASTI (Accelerated Strategic Transmission Investment) projects
2. Estimated capital investment in line with 5 year framework provided at HY24 results
3. Price control from 1 April 2021 to 31 March 2026
The current connections pipeline

Electricity System Operator (ESO)
- Manages the connections pipeline

UK Electricity Transmission
- Applies modelling assumptions provided by ESO
- Designs and delivers physical connections

The pipeline is growing exponentially
- c.340GW in our transmission pipeline
  - vs c.65GW installed capacity today
- >6x the capacity actually needed to enable UK’s 2035 decarbonisation target

Current NGET² pipeline

1. To meet UK Government’s 2035 decarbonised electricity sector target. Based upon latest NGET projections, using ESO’s latest FES scenarios
2. NGET: National Grid Electricity Transmission

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c.340GW

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Fossil fuels
Nuclear
Other

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c.55GW required by 2035¹
Growth in connections pipeline

1. Low barriers to entry
   - A large volume of highly speculative applications

2. A ‘first come, first served’ approach
   - Stalled projects delay those ready to connect
   - Removing non-viable projects critical to reducing lead times

3. Queue position retained too easily
   - No project milestones
   - Delayed projects can push back connection dates impacting subsequent lead times
Connections reform – progress to date

Our work with ESO accelerated 10GW of battery storage
• 19 projects expedited by an average of 4 years
• Represents c.90% of battery storage projects required by 2035\(^1\)

Amnesty in 2023 had limited success – only 3GW released
• Further action needed to remove non-viable projects

Queue Management proposal approved
• Milestones introduced for projects to retain queue position
• Although will take several years to make a meaningful impact

ESO’s reformed connection process to go-live in 2025
• Will enable a ‘first ready, first connected’ approach

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\(^1\) To meet UK Government’s 2035 decarbonised electricity sector target. Based upon latest NGET projections, using ESO’s latest FES scenarios
Connections reform – further action needed

Connections Action Plan
• Collaboration between Government and Ofgem
• Aims to raise barriers to entry
• Supports a ‘connect or move’ approach
• Prioritisation of strategic demand projects

Support for a Strategic Spatial Energy Plan
• Enable more anticipatory approach to network planning
• Viewed as a key role for the Future System Operator

Sector is moving faster than reforms
• More connections being added to the queue than removed
• Connections Delivery Board to drive further change
Wider reforms also required

Advocating for planning reform and community benefits

Chancellor’s Autumn Statement
- Transmission Acceleration Action Plan
  • Streamline planning to shorten delivery of new infrastructure to 7 years
  • Strategic Spatial Energy Plan commitment
  • Updated National Policy Statements
  • ‘Minded to’ position on community benefits for new transmission projects
Delivering connections

>3GW connected to our ET network across 2023

Record breaking connections

- World’s largest offshore wind farm – Dogger Bank
- World’s longest subsea interconnector – Viking Link
- UK’s first transmission level solar farm – Larks Green

Enough to power c.8.5 million homes, once assets at full capacity
Delivering connections

Innovative technology connected
• Clean system-stability solution at Lister Drive substation

Delivery ahead of need to facilitate net-zero
• Hinkley Connection Project will be ready ahead of plant commissioning

Upgrading infrastructure to accelerate connections
• Bramley to Melksham scheme
  – Will remove bottleneck in connecting low carbon projects
  – To expedite 175 clean energy projects

Enabling high-tech demand connections
• Partnering with industry to deliver connections for gigafactories, data centres and green steel production
Summary

Connections are critical in ensuring a secure, affordable energy future

1. Further reforms are required, and must be delivered at pace
2. The grid is changing. We’re building new transmission infrastructure at a rate and scale never seen before

We have line of sight to net-zero

- We are connecting at record levels
  - 3GW in HY24¹
- Early reforms are working
  - but we must go faster and further

¹. 1 April 2023 to 30 September 2023
National Grid Electricity Distribution: overview
The UK’s largest distribution network operator

RIIO-ED2\(^1\) capital investment

- IT, digital & cyber: £0.8bn
- Network reinforcement: £1.0bn
- Asset health & maintenance: £3.6bn
- New connections: £2.1bn
- Forecast capex: £7.5bn\(^2\)

\(1.\) Price control from 1 April 2023 to 31 March 2028
\(2.\) Nominal capital expenditure, including capex funded by contributions and uncertainty mechanisms

~25m customers
~8m meter connections

East Midlands
South Wales
West Midlands
South West
Distribution connections: overview

Exponential increase in larger connection requests

- Enacting reform to connect ‘shovel ready’ projects

Steady rise in domestic demand connections

- Understanding consumer adoption of new technologies

The distribution grid is not full

- We’re connecting everyday
Exponential increase in generation & industry-scale demand

>156GW of distribution projects in GB pipeline

- c.46GW in NGED¹ pipeline
- c.12GW installed capacity connected

Growth in connections pipeline

1. A legacy ‘first come, first served’ approach
   - New connections wait in line for their turn

2. Low barriers to enter the pipeline
   - No need to evidence land ownership, planning or project finance

3. An absence of project milestones
   - ‘Zombie’ projects hold up the queue

Current NGED¹ pipeline

- 40GW Hybrid c.10%
- 30GW Battery Storage
- 20GW Solar c.40%
- 10GW Wind c.30%, Demand c.10%

156GW in GB pipeline
- c.46GW in NGED¹ pipeline
- c.12GW installed capacity connected

1. NGED: National Grid Electricity Distribution
2. To meet UK Government’s 2035 decarbonised electricity sector target. Based upon latest NGED projections using on DFES scenarios
Connections reform – progress to date

Collaborating with industry, Ofgem and Government

ENA’s 3-point plan

1. Reform the distribution pipeline
   Promote mature projects close to delivery
   - 60% of all projects fail to materialise
   - Removed 45 schemes totalling 1.2GW from our pipeline

2. Streamline coordination between transmission & distribution
   Enhance customer connection experience
   - 10GW of additional capacity released via non-firm contract offers

3. Greater flexibility for storage connections
   Refine how storage is modelled
   - Complementary technology to manage peak demand and network constraints
   - Now offering new or accelerated storage connections

1. ENA: Energy Networks Association
Connections reform – progress to date

Collaborating with customers to improve decisions and streamline applications

**clearviewconnect**

- Consolidates connections data for customers and developers
- A single, accessible format
- Provides technical capacity data and information for Grid Supply Points
  - Customers can determine the most realistic, quickest and cheapest connection
  - And view potential timelines and connection terms
Steady rise in domestic demand connections

Energising an increasing volume of connections
- 900% increase in requests over the last 5 years
- More EV charge points connected in the last 2 years than all previous years combined
- 3x more heat pumps on network than 2019

New self-serve digital connection products
- 60% of EV charge point applications approved in 2 seconds

Flexibility solutions
- Equinox heat pump trial
- Exploring vehicle-to-grid opportunities
## Delivering connections

<table>
<thead>
<tr>
<th>HY24¹ connections</th>
<th>Delivering against ENA’s² 3-point plan</th>
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<tbody>
<tr>
<td>51 renewable generators</td>
<td>• Removed 45 projects or 1.2GW from pipeline</td>
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<tr>
<td>750 energy storage solutions</td>
<td>• 10GW of capacity released for clean generation</td>
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<tr>
<td>7.7k EV chargers</td>
<td>– 200 potential ‘shovel ready’ projects to move forward</td>
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<tr>
<td>3.5k heat pumps</td>
<td>• ‘First ready, first connected’ model adopted in October</td>
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<tr>
<td>15.4k solar installs</td>
<td>– Average improvement in connection date of 5yrs</td>
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<tr>
<td><strong>Totalling over 700MW</strong></td>
<td>• Growing distribution system operator capability</td>
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<td></td>
<td>– Largest procurer of flexibility last year</td>
</tr>
</tbody>
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1. 1 April 2023 to 30 September 2023
2. ENA: Energy Networks Association
Summary

Focus on accelerating reforms

Delivering action needed

Further collaboration with key stakeholders

Building the network of the future, today.
Summary

John Pettigrew
Chief Executive
In the event we do not have time for all questions, we will respond by email as soon as possible.

By phone
Call the conference lines:

UK-Wide: +44 (0) 33 0551 0200
UK Toll Free: 0808 109 0700

Quote “National Grid” when prompted by the operator (press *1 to ask a question)

Via webcast
use the ‘Ask a question’ tab below