

nationalgrid  
the local **electric revolution**

**Innovating for  
growth**  
Breakout





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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. 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.

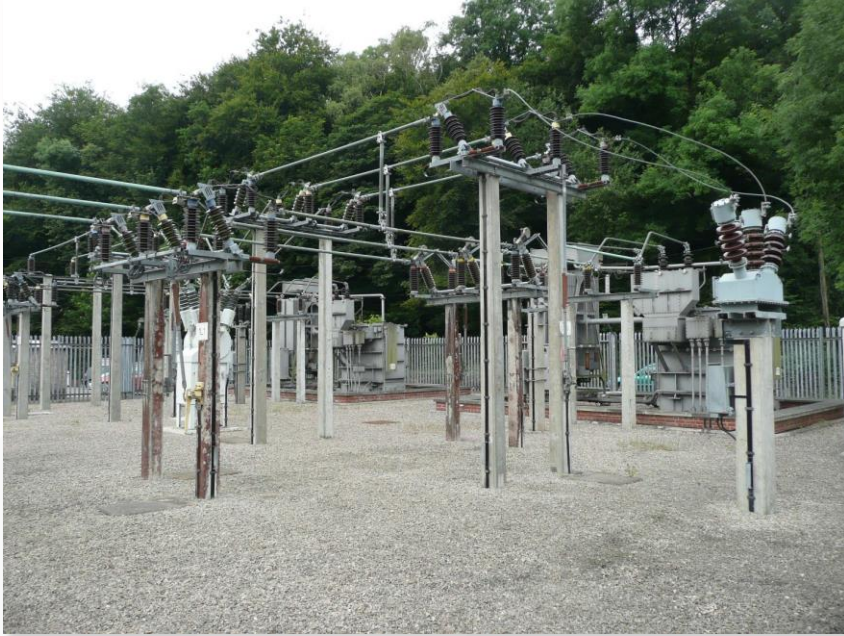
## Innovation plays an essential role underpinning long-term growth

- Huge projected growth across our region
- Disruptor of the Year for the second year running
- Work with stakeholders to drive innovation into the business
  - £34m invested so far in 34 Ofgem Green Recovery Schemes
  - £12m planned to deliver an additional 16 Green Recovery schemes in the next year
  - Secured backing for **five new projects** through Ofgem Strategic Innovation Fund

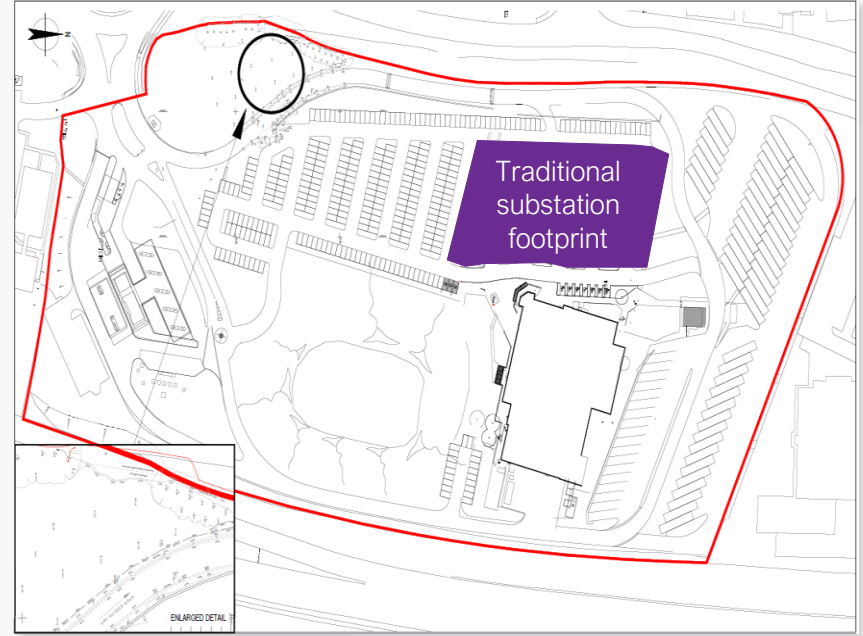
**At National Grid, our groupwide ambition** is to be the most innovative and pioneering energy network company in the world, with innovative mindsets and capabilities part of our DNA

# CASE STUDY ONE

## Take Charge



**A typical 2 transformer 33/11kV AIS solution requires too much space and would be cost prohibitive**



**Little space for expansion with a traditional solution requiring over 100 parking spaces**



## Size and scale

- Compact design no larger than two shipping containers
- Factory built and assembled by Brush Transformers in Loughborough
- Modular solution, which can be added to over time



## Installation

- Plug and play solution
- Installed in just two days

Delivered over 10x increase in EV charging capacity,  
with more to come

“National Grid’s Take Charge project could be a **game changer for Moto** if it’s rolled out across the UK. This innovative solution will allow us to deploy the biggest EV charging network on the UK’s motorways through access to sufficient electricity supplies.

At Moto we are transforming the EV charging experience with more than **1,650 ultra rapid EV chargers** currently being rolled out at our service areas over the coming 6-7 years, with more than 350 chargers already in place.

This partnership with National Grid will support Moto in that mission and help us to deliver **way above and beyond the Government’s target** of six rapid chargers at each motorway service site by the end of 2023.”

**Ken McMeikan** Chief Executive Officer, Moto

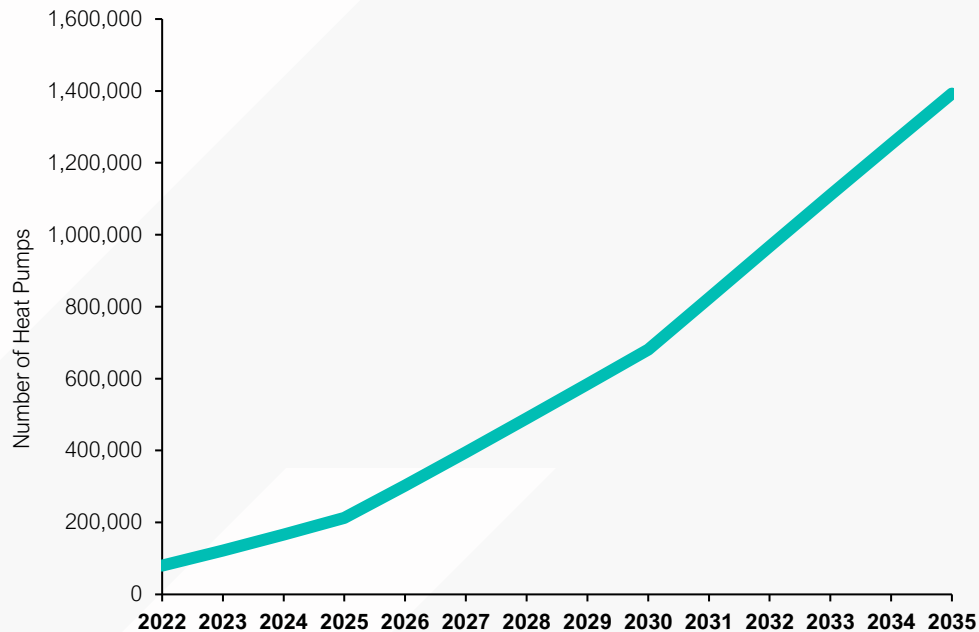
Proposed fast charging UK network map



- Scalable solution with wide range of use cases
  - HGVs, seaports, airports and other locations with high future electricity demand
- Strengthening our relationship with strategic supply chain partners
- Further reducing the footprint, cost and time for installation

Supporting the delivery of a clean, fair and affordable energy future

### Projected Heat Pumps in NGED License Areas by 2035



- **600,000** additional heat pumps installed by 2028
- Heat pumps commonplace in commercial settings today (climate control) but few and far between in domestic properties
- **~50%** of the UK's energy demand is for heating
- The electricity distribution network was originally sized to meet **~20%** of overall energy demand
- Heat pumps require around **2.5x** the electricity required by an EV charger

Preparing for heat pumps will require significant reinforcement, and new ways of managing energy flows



## CASE STUDY TWO

# EQUINOX



- **What is EQUINOX?** A system solution that will test new commercial and technical arrangements for households with heat pumps who temporarily reduce electricity usage.



- **What is the problem we're solving?** Enable DNOs to unlock flexibility from residential electric heat pumps reliably and cost-effectively - **EQUINOX will be the first to achieve this**



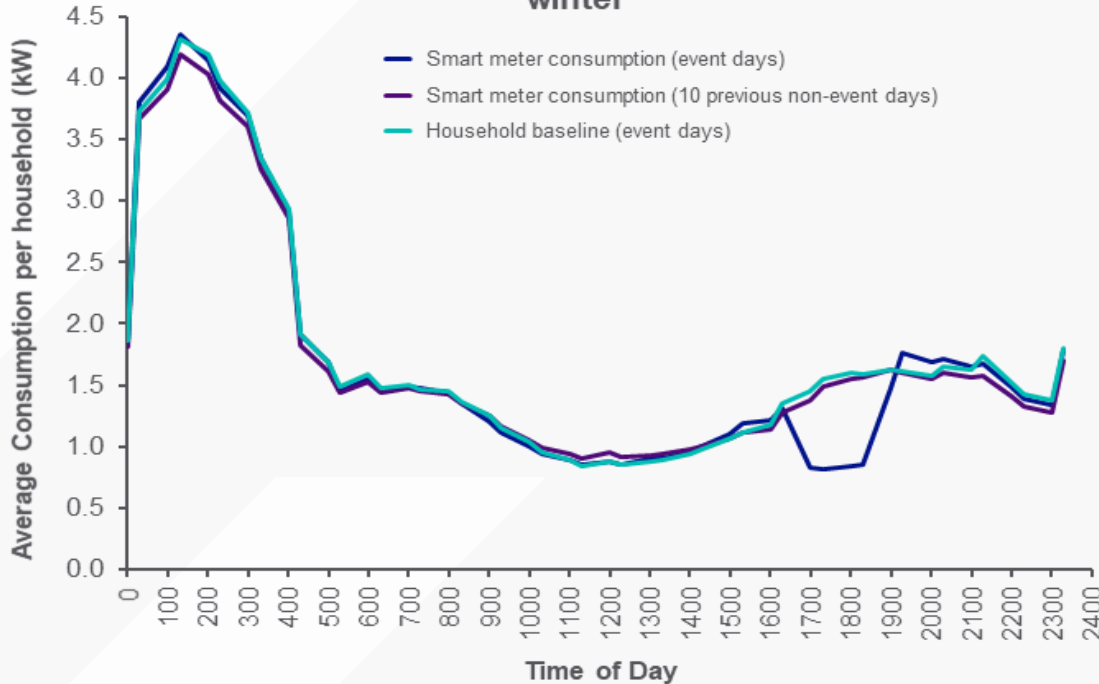
- **Who is it funded by?** EQUINOX is funded through Ofgem's Network Innovation Competition (NIC).



- **Who is involved?** EQUINOX is led by National Grid, with support from Octopus Energy, Passiv UK, Sero, SP Energy Networks, Welsh Government, West Midlands Combined Authority, National Energy Action, Scottish Power Energy Retail, and Guidehouse.



### Half hourly household kW consumption averaged across whole winter



- Strong engagement and take-up in first trial
- 99% customer satisfaction from those who took part
- Achieved average of 420kWh turndown per event
- Individual customers achieved ~1.5 kWh turndown per event

Preparing for winter 2023/24 trials to further increase participation and reduce post event demand peak