

# Operability Strategy Report 2023

## Reliable Network

**102GVAs**

The level that system inertia must remain above for secure zero carbon operation in 2025

**2200MVA<sub>r</sub>**

The volume of new reactive capability needed to economically maintain a compliant network in 2025

**2030**

When we expect GB to be a net annual exporter of electricity by

**100%**

Of national demand restored, within 5 days, under the new restoration standard in the event of a power outage

## Balancing the System

**2500MW**

The maximum requirement for Balancing Reserve by 2025

**46GW**

Volume of expected Within-day flexibility from storage and demand by 2030 in Leading the Way

**>50%**

By 2035 in leading the way, there will be surplus generation in more than half of the year.

### Stability

Operationally, this level of inertia can be maintained via existing system behaviour and our stability pathfinders. Future procurement of stability services will be to ensure economic system operation.

We are working to ensure our policy on managing low fault infeed levels is fit for purpose for the future system.

### Voltage

Our need to absorb reactive power continues to increase, driven by decarbonisation of the electricity system and continual decline in reactive power demand.

We are exploring options to access new sources of reactive power, reduce voltage costs in the short term and define long term future reactive needs.

### Thermal

Significant growth in renewable generation and interconnection continues to drive a need for more network capacity.

We are enabling the transition to Net Zero by mitigating rising constraint costs, contributing to network planning reviews and enabling the connection of renewable generation and new technologies.

### Restoration

The new Electricity System Restoration Standard also requires 60% of regional demand to be restored within 24 hours (in all regions).

We are beginning to use learnings from Distributed Restart to enable DER such as solar, wind and hydro to provide restoration services and reduce our reliance on fossil fuel generators.

### Frequency

More variable sources of generation, increasing volumes of demand flexibility and price driven coordinated behaviour of assets, such as EV's and interconnectors, create more challenging balancing conditions for the ESO.

New services such as Balancing Reserve and Static Recovery will help us manage these new challenges.

### Within-day Flexibility

Changing the timing of demand, mainly with smart appliances and storage, will become the main source of within-day flexibility in the 2030s.

Understanding the contribution of this to system needs, starting with peak demand, will be critical for efficient zero carbon operation.

### Adequacy

There is no trade-off between adequacy and net zero. We can deliver adequacy in a fully decarbonised power system.

Investment in at least one new reliable low carbon technology such as nuclear, carbon capture storage (CCS), hydrogen or long-duration storage will be needed.