

power responsive

Grid services for battery storage

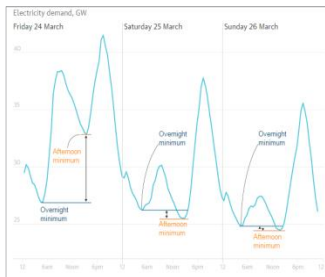
Michael Ashcroft
National Grid ESO

The Energyst
30th October 2018



Increased need for flexibility

Mar '17



May '17



Mar '18



British power generation achieves first ever coal-free day

National Grid hails milestone as other sources like gas, nuclear, wind and solar allow UK to keep lights on with all coal-fired powerplants offline



Apr '17

Renewables provide more than half UK electricity for first time

by Roger Handberg
BBC environmental analysis
19 June 2017 Business



Jun '17

Britain powers on without coal for three days

24 April 2018



Apr '18

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Greater access to balancing revenue streams



Reserve &
Response
Roadmap

Dec 2018

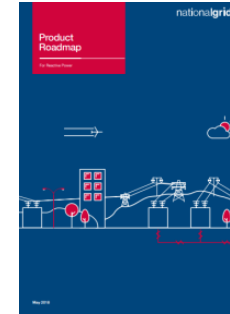


Reactive
Power
Roadmap

May 2018



Restoration
Roadmap



Wider access to
the Balancing
Mechanism

August 2018



Reform of balancing services

Provider on-boarding

New units entering services:

- first battery unit in Fast Reserve
- Domestic DSR into Firm Frequency Response



Frequency Reserve and Response

Exclusivity Clauses

Consultation on Exclusivity Clauses to improve service stacking

FFR Auction Platform

- Weekly pay as clear auction
- Small volume of frequency response trialled over 24 months
- Closer to real-time procurement helps facilitate more wind and solar generation



Reactive Power

Simplification

Working to make historic services more access to all providers

Power Potential project

With UK Power Networks to procure from DER

Transparency

Improving information on costs and requirements

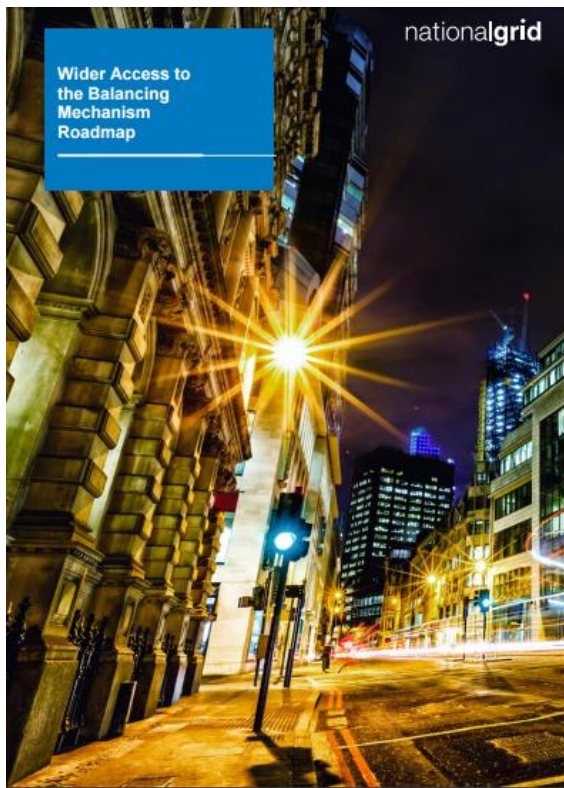


Restoration (Black Start)

Removing barriers

Developing combined services approach to meet service requirements

Wider access to the Balancing Mechanism (BM)



- 1. Improving existing routes:** to market to ensure their suitability for the participation of supplier aggregators in the BM.
- 2. Developing new routes to market:** through framework changes to create a new way of entering the BM for parties wishing to provide near real-time flexibility.
- 3. Enhancing IT systems:** to improve data flows between the ESO and market participants so they are more efficient and cost-effective for smaller and aggregated units.

Stay involved

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**Future of Balancing
Services Newsletter**



Reform of Balancing Services

The publication of the System Needs & Product Strategy (SN&PS) in June last year was the start of our journey to reform balancing services and markets. We followed that consultation up with the first of our Product Roadmaps in December, focusing on frequency response and reserves. The next set of documents have now been published, which set out our programme of work for reactive power and ancillary (black start). This will be followed up in the next few weeks with a report on thermal constraints. These documents will set out our plans and ambitions in these service areas.

Market Standardisation

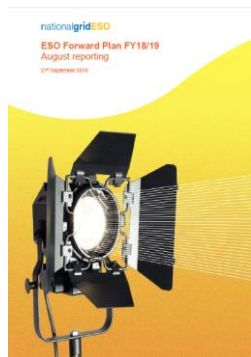
We have rolled out the use of 4 hourly blocks and seasonal services in FFR from the May tender. These will increase transparency of market price and our measurement, and enhance competition. The first findings under for seasons closed on 1st June and we are now assessing the received tenders.

FR&C are available in the 'Specification Update' on the FFR website, along with a recent report outlining our analysis of market state of charge management approaches to storage assets.

<https://www.nationalgrid.com/uk/ngr>

**Monthly Product
Roadmap
newsletter**

www.futureofbalancingservices.com



**Monthly & Quarterly
ESO Forward Plan
progress updates**

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Thank you

