

Operability Strategy Report update

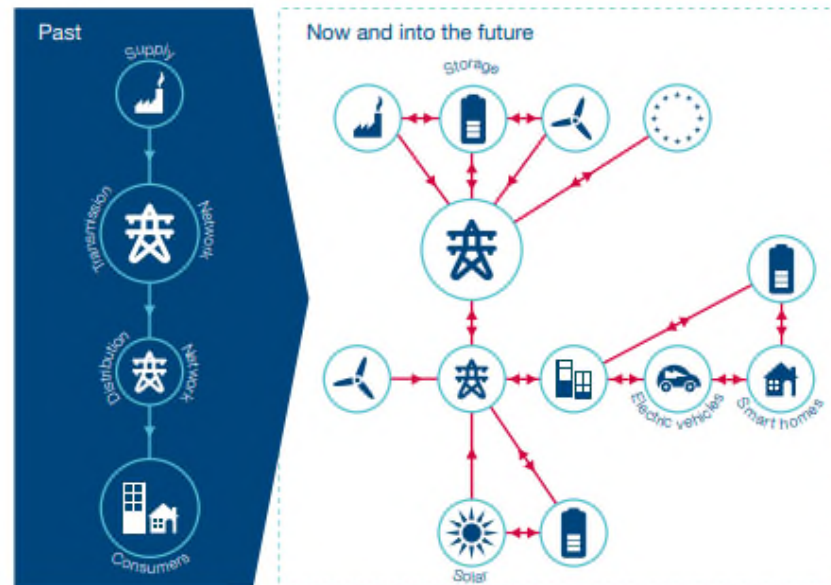
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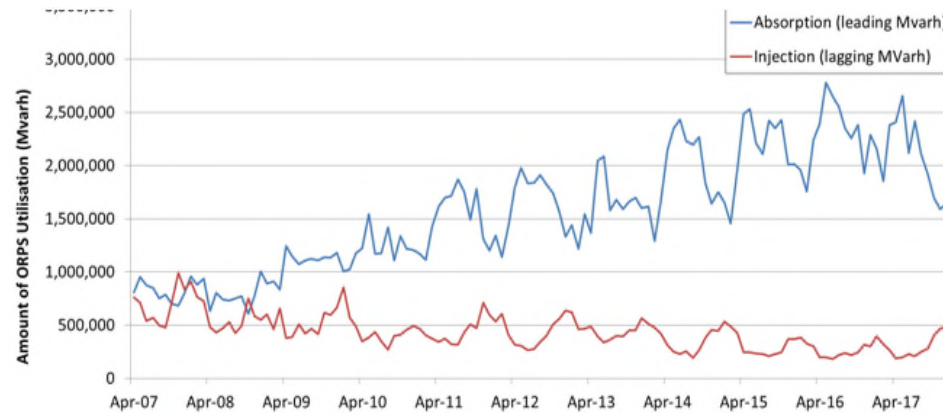
System needs are changing

- The system is increasingly more complex to operate due to the growth in:
 - interconnectors,
 - solar panels,
 - electricity storage,
 - electric vehicles,
 - smart/micro grids etc.
- And within the operability space, it all interacts...



Operability costs are increasing

- Ancillary service needs are increasing as a result. An example is below which shows the growth of voltage/reactive utilisation by year.



- This increases ancillary service costs. For example:
 - Voltage costs are also rising with **£330m** spent over the last three years.
 - Inertia costs are increasing. 17/18 spend of **£60m**. 18/19 spend of **£150m**.

There is lots of working going on to meet these challenges

- We are rising to the challenge and there is lots of work going on, some of which is below.
- To pull it all together we have just published an update to our Operability Strategy Report.



Operability strategy report



We have just published an update to our first **Operability Strategy Report**.

It summarises our work to meet future operability challenges and our zero carbon 2025 ambition.

It sets out:

- what we are doing,
- where to look for more information and
- how to engage.

Operability strategy report



And it splits up the operational issues into

5 key operability challenges:

- Frequency control
- Voltage control
- Restoration
- Stability
- Thermal

We aim for it to become the first place industry looks to understand our operability work and how to get involved.

Frequency update

Zero carbon 2025

- We expect our response and reserve requirements to increase
- We must facilitate markets across wide range of provider types

Key Points

- Auction trial phase 1 is well underway. It is procuring low frequency static response.
- Rationalisation, simplification & reform of reserve services continues
- Expanding the capabilities of 'platform for ancillary services' (PAS) to include STOR this year.



Voltage update

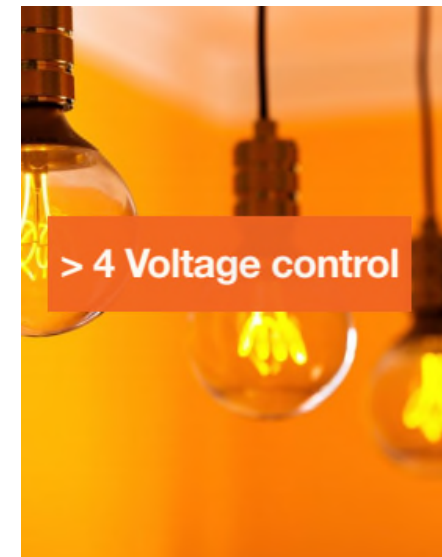
Zero carbon 2025

- We need to find new technologies to provide reactive power services
- We must facilitate new market options to encourage investment

Key Points

- Sought industry views on long term (10yr) contracts in the Mersey region for reactive power provision from April 2021.
- Just published (Friday) a decision to tender from April 2020.
- Further develop and adopt an approach to incorporate Voltage within the NOA.
- Engaging with Distribution and Transmission owners on efficient reactive power transfers.

8



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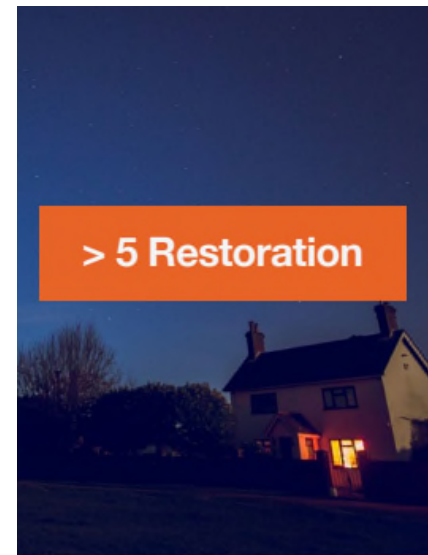
Restoration update

Zero carbon 2025

- We need to reduce our reliance on fossil fuel for restoration
- We have innovation projects underway to help us understand and develop alternative approaches

Key Points

- Currently tendering in the South West and Midlands area. 31 different bidders of which 20 were chosen across 11 different tech types!
- Black Start Capabilities from Non-traditional Technologies. Project started, due to be completed in Aug 2019
- Distributed Restoration project. Project started, to be completed 2022



Stability update

Zero carbon 2025

- Without intervention, the reduction in synchronous generation running will reduce system stability
- We need to be clear on our stability requirements to enable the development of network and market solutions

Key Points

- Stability pathfinder – About to publish a request for information about developing stability services. First embryonic step to create an inertia market (and other services such as fault current infeed and dynamic voltage support).
- Loss of Mains protection changes – ENA website is about to open for applications. Currently waiting for Ofgem approval.
- New innovation project (NIA) – Demonstration looking at Virtual Synchronous Machine control of a battery system ([hyperlink](#))

10



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Thermal update

Zero carbon 2025

- Require new services to manage an increasingly complex system.
- Facilitate new providers access to these services.

Key Points

- Seeking industry views on a new methodology for assessing network requirements.
- Publishing Q3 2019 a request for information on a constraint management service. Recently ran workshop.



Opportunities to get involved

Topic	Opportunities to get involved
Frequency control	<ul style="list-style-type: none"> Visit our Future of Balancing Services² website to participate in the development of new services.
Voltage control	<ul style="list-style-type: none"> If appropriate, we will tender for long-term reactive power provision in the Mersey region during summer 2019. The tender will be published here³. We expect to run tenders for short-term reactive power provision and these will be published here⁴. A request for information will be published in June for the Pennine region on our website⁵. We invite all views on long-term reactive power provision.
Restoration	<ul style="list-style-type: none"> The distributed restoration innovation project⁶ project – This project will enable us to understand how DER can contribute to our restoration strategy. You can subscribe for updates using this link⁷. A tender is currently underway for restoration services in the Southwest and Midlands zones. This process will inform how we procure black start services in other areas. If you think you could offer a service, please let us know at commercial.operations@nationalgrideso.com.
Stability	<ul style="list-style-type: none"> Relevant generators will be able to apply for payment to change their loss of mains protection. Applications will be invited via the Electricity Networks Association Website⁸. Later this summer we will publish a request for information on our approach for developing stability services as part of the stability pathfinder project under the network development roadmap⁹. This will be an opportunity to share your views on the development of stability services.
Thermal	<ul style="list-style-type: none"> We invite your views¹⁰ on the probabilistic approach we are intending to adopt for the 2019/20 NOA process. We will be publishing a request for information on constraint management in Q3 2019/20; we invite your views on service provision and commercial aspects.

We are keen to hear your comments and feedback on our approach to these operability challenges. You can get in touch with us at **SOF@nationalgridESO.com**.

Feedback

The report has just been published and is available on our website under the Insights/System Operability Framework (SOF) tab.

<https://www.nationalgrideso.com/insights/system-operability-framework-sof>

We welcome feedback about how the report can be improved. Any comments or suggestions to our drop box sof@nationalgrideso.com.

