

Operating in 2020 Follow Up Report

Operational Forum, February 24th 2010



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Background

- ◆ ‘Operating the Electricity Transmission Networks in 2020’ Consultation Issued in June 2009
 - ◆ Intended to complement ENSG work
 - ◆ Outline of the issues faced by a System Operator
 - ◆ Indication of the services required by the ‘residual balancer’
- ◆ Responses were received from 47 parties, 4 of which were classified as confidential

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Consultation: Operating in 2020

Consultation Background:

Since June 2008, as part of the [Electricity Networks Strategy Group](#) and Ofgem to produce a vision of the network reinforcements requi

Respondents

Grouping	Responses
Generator/Supplier Multi-utility	7
Network Owners/Operators	4
Aggregators	5
Industry Lobby Groups	4
Other Lobby Groups	7
Technology/Equipment Providers	10
Consultants/Academic	7
Other	3
Total	47

Response Themes

- ◆ Analysis was useful - future analysis should be based on a range of scenarios
- ◆ Investment decisions will be more difficult to make
- ◆ Long term Balancing Services statement was either very useful or essential
- ◆ Energy markets/operating the transmission networks will become more complex
- ◆ We should learn from other utilities' experience in Europe
- ◆ Positive role for demand side – but few hard facts available on potential/no consensus over how measures will be delivered

Follow Up Report

- ◆ Drafted in response to points raised
 - ◆ Responses summarised for each individual question
- ◆ Sets out the work that National Grid is leading on
 - ◆ Balancing Services
 - ◆ Management of Wind Generation
 - ◆ European technical frameworks
 - ◆ Control System development
- ◆ Drafted in the context of Ofgem and DECC's work

Balancing Services

- ◆ Future Balancing Services Requirements
 - ◆ Two statements now published
 - ◆ Response
 - ◆ Reserve
 - ◆ Update planned for April then annually afterwards
- ◆ Balancing Services Development
 - ◆ Contract development is ongoing
 - ◆ We would like to engage interested parties in:
 1. Optimisation of existing reserve services
 2. Long term development of Reserve Services
 - ◆ Workstreams planned to commence in Spring



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Future Requirements

The analysis completed for the 2020 Balancing Services. To ensure that existing market participants.

The two reports below describe how spreadsheet below details the requirements.

Constraint management will be a requirement for Balancing Services to manage them. Once this is published.

Where National Grid subsequently publishes.

Further Information

[Future Balancing Services Requirements](#)

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Wind Generation Output

- ◆ Strong link between ability to forecast wind and reserve requirements
 - ◆ National Grid's systems and processes are being developed to
 - ◆ Make use of multiple forecast methods
 - ◆ Artificial Neural Networks
 - ◆ Linear Regression
 - ◆ Physical wind turbine models
 - ◆ Time Series models
 - ◆ Allow multiple ensemble wind forecasts to be accessed
 - ◆ To enable performance measurement by comparing metered outputs with forecasts to help select the most appropriate forecast method
 - ◆ These processes are used to augment to data provided by generators and suppliers (in accordance with the Grid Code)
 - ◆ Data provision is currently being reviewed on behalf of the Grid Code review panel
 - ◆ 'Physical Notifications (PNs) from Intermittent Generation' working group

Europe



Control System Development

- ◆ The consultation described how operation of the networks could be impacted by
 - ◆ Generation variability
 - ◆ The need to accommodate new generation
- ◆ Some respondents saw automation as the solution, whilst others cautioned against
- ◆ Work is underway
 - ◆ Balancing Mechanism systems replacement has been initiated
 - ◆ Network control system requirements are being evaluated against
 - ◆ Variability
 - ◆ New network technology
 - ◆ HVDC
 - ◆ Series Compensation
 - ◆ Fast acting quad-boosters etc
 - ◆ Risk of control system failures needs to be factored into design
- ◆ We expect to provide updates to the Operational Forum
- ◆ Developments will be reflected in the business plans which are reviewed under TPCR5

Next Steps

- ◆ Report outlines National Grid's key work in this area for early 2010
 - ◆ Work already underway
 - ◆ Balancing Services
 - ◆ Wind
 - ◆ Europe
 - ◆ Control Systems Developments
 - ◆ Contribution to Ofgem and DECC's work
 - ◆ Engage with individual respondents on
 - ◆ Flexibility
 - ◆ Demand side services
 - ◆ Operational interface issues

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