GB Ancillary Services Market: Taking Stock and Looking Forward

Dr Cathy McClay, Head of Commercial, Electricity System Operator, National Grid
Changing Energy Landscape

**Wind**
Installed Onshore & Offshore Capacity (MW)

**Solar**
Installed Capacity (MW)

**Fossil**
Reduction in Generation Capacity (GW)

**Demand**
Weather Corrected Annual Electricity (TWh)
### Impact on the transmission system

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<th>Impact</th>
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<td>More generation connected to distribution system</td>
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<tr>
<td>Move from small number of large generators to smaller sources</td>
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<tr>
<td>Uncertainty on system increased</td>
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<tr>
<td>Dynamics of system changed</td>
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<td>Requirement for more flexibility on the system</td>
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<tr>
<td>Sources of flexibility have changed</td>
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Our range of ancillary services are no longer fit for purpose in this changing world
Overview of Ancillary services

- Voltage
  - Mandatory services
  - Traded Services

- Frequency & ROCOF
  - Response
  - Reserve
  - Demand turn up
  - Super SEL
  - Traded services

- Thermal Constraints
  - Thermal Constraint Management
  - Commercial Intertrip
  - Operational Intertrip

- Blackstart
  - Black Start
  - Trip to houseload

- Services originally designed for large thermal plant with more options added to allow for new types of market participants
- Approach has created complexity and a lack of transparency
- Currently 22 services (rationalised from 30 last year)
  - Large number of potential variations within services makes it difficult to understand
- In June 2017 we launched our Systems Needs and Product Strategy
  - Explained our needs for each group of services
  - Consulted on the approach to take
As a result of consultation with the industry the System Operator has adopted a standardisation approach:

- Clear view that price transparency is important to drive liquidity
- Recognise that it will likely result in a suboptimal solution

## Standardisation
- Simple, clear products with fixed parameters
- Parameters set to meet needs of National Grid and product providers
- Transparent price for product
- Multiple products could be cleared in a single auction

## Single product
- Single product for a service e.g. reserve
- Multiple parameters to represent different capabilities of assets
- Algorithm chooses ‘best’ combination of products to meet needs
- No single price
Example – frequency response

Rationalisation (complete)

• Remove 3 products including those designed specifically for certain technologies
• Reduce clip size to 1MW and allow users to merger contracts – reduces barriers to entry and allows virtual power plant to grow

Simplification (in progress)

• Improve price transparency by standardising daily windows and contract length
• Publishing more information on tender results plus webinars to explain decisions
• Simplify terms and conditions
• Review exclusivity clauses to improve product stacking

Improvements (Q3 18/19)

• Introduce trial of a weekly auction with intention to move to day ahead
• Aim to clear different frequency response products together
• Allows technologies such as wind to take part
• Test assumptions and behaviours before adopting final solution
## Impact of changes

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<th></th>
<th>Jan17</th>
<th>Mar 18</th>
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<tbody>
<tr>
<td>Tenders received</td>
<td>56</td>
<td>336</td>
</tr>
<tr>
<td>Units tendering in</td>
<td>15</td>
<td>53</td>
</tr>
<tr>
<td>Providers</td>
<td>6</td>
<td>28</td>
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### Average Submitted FFR Tender Price

![Average Submitted FFR Tender Price Chart](chart.png)
Final thoughts

- Changes to response and reserve markets have increased liquidity and reduced prices
- Focus is on removing barriers to entry and transparency
- Moving markets closer to real time will allow more technologies to participate
  - May still need some longer-term contracts to support investment
- Important to provide access to Balancing Mechanism for small participants
  - Work currently underway to allow this to happen