Agenda

- GB Overview
  - Gas
  - Electricity

- European Overview
  - Electricity

- Summary
GB Overview

- Annual publication since 2009
- Sets out National Grid’s view and analysis for incoming summer
- Published in April

https://www.nationalgrid.com/uk/Electricity/SYS/outlook/
GB - Gas
GB - Gas

- Demand Overview
- Lower than 2011
- Driven by lower gas burn for CCGT
- Uncertainty over IUK Exports

Table G2 - Total Volume of Summer Demand for 2011 and Forecast for 2012 (bcm)

<table>
<thead>
<tr>
<th>Bcm</th>
<th>Summer total</th>
<th>2011 actual</th>
<th>2011 weather corrected</th>
<th>2012 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDM</td>
<td>9.9</td>
<td>10.7</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>DM + Industrial</td>
<td>4.9</td>
<td>4.9</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>2.9</td>
<td>3.0</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Total Power</td>
<td>12.6</td>
<td>12.6</td>
<td>9.3</td>
<td></td>
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<tr>
<td>GB Total</td>
<td>30.7</td>
<td>31.5</td>
<td>28.4</td>
<td></td>
</tr>
<tr>
<td>IUK Export</td>
<td>6.3</td>
<td>6.3</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Storage Injection</td>
<td>3.8</td>
<td>3.8</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>40.8</td>
<td>41.6</td>
<td>36.4</td>
<td></td>
</tr>
</tbody>
</table>
GB - Gas

- Supply base continuing to changing

Figure G8 - Historic and Forecast Summer Gas Supplies by Source
GB - Gas

- Global LNG

Figure G9 – Global LNG Supply / Demand

Source: Lloyd’s List, LNG Journal, NATS Pan EurAsian
GB -Electricity
GB - Electricity

“comfortable surplus for every week”

Figure E 12 - Declared Generation Availability
GB - Electricity

- Minimum demand conditions are a key focus area

Figure E 6 - Weather corrected minimum demands
GB - Electricity

Why are minimum demand conditions a key focus area for NGET this Summer?

- Levels of inflexible plant / “must run” generation
- Interconnector imports (driven by market price)
- Variable renewable output
- Require voltage support in certain areas
- Need “downward regulating reserve”

Result is a requirement to “2-shift” generation, Interconnector trading or in certain scenarios to curtail renewable generation
GB - Electricity

Figure E 8 - Detailed Summer Minimum Analysis with maximum Interconnector Import capability
GB Summary

■ Gas
  ■ Demands forecast to be lower across summer 2012 than summer 2011
  ■ Supply is still changing as UKCS declines

■ Electricity
  ■ Surpluses are “comfortable”
  ■ Focus on management of system under minimum overnight demand conditions
Europe - Electricity
European Electricity Focus

- ENTSO-E

- Data provided by all ENTSO-E Transmission System Operators (TSOs)

- Analysis reviewed by ENTSO-E team composed of members from various TSOs

An Overview of System Adequacy:


https://www.entsoe.eu/index.php?id=50
European Electricity Focus

- Supply / Demand under normal demands are comfortable
- Ample interconnector capability to cover for “severe demands”
- Analysis looks at interconnector capability to determine a “stress” level for each week
European Electricity Focus

- High Demand week example
- Low renewable infeed
- Certain regions require imports
European Electricity Focus

First year for analysing “downward regulation” issues across Europe (“overnight downward adequacy”)
European Electricity Focus

- Minimum overnight demands analysis
  - Wind output at 65% of capacity chosen

- Various regions required to export
  - Very dependent on renewable output across regions
European Electricity Focus

- Week 30 (25th July)
- Certain regions unable to export all renewable gen due to interconnection limits
- Note: Ireland is solved with commissioning of new interconnector
“Ample interconnector capacity” to provide energy to regions that may require it across Europe

- sufficient generation for both normal and severe demand conditions.

New analysis on “downward regulation” across Europe when overnight demands are at their minimum levels

- Highlights regions that are required to export excess generation

- Analysis shows that in certain weeks there may be a requirement to curtail renewable generation due to limited interconnector capability