Winter Operational Outlook

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### Summary Winter Statistics

- Total Maximum Technical Availability is 70.3GW (excluding interconnectors) – at transmission level
- De-rated margin is 4.8GW (inc export to Ireland and Reserve Requirement) or 10.0% on 48.2GW.
- 600MW increase in embedded wind capacity from 17/18

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<td>Peak ACS Demand</td>
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<td>Peak Transmission Demand</td>
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Peak ACS Demand: 49.7GW

Peak Transmission Demand (Normalised): 48.2GW

Minimum Demand: 20.8 GW

Maximum Customer Demand Management: 2.0 GW

Embedded Wind Capacity: 5.9 GW

Embedded Solar Capacity: 12.9 GW
Forecast Demand and Generation winter 18/19

- If we experience low imports from Continental Europe and there are delayed returns of planned outages – margins could tighten further.

- Looking forward through the remainder of winter, margins are healthy – even under ACS conditions
European Markets
Focus on European markets

- Belgium prices are comparatively high – margins particularly tight - 1.6 to 1.7GW shortfall at times – 83% of nuclear fleet is currently unavailable

- On current forecast, Belgium cannot meet LOLE even with imports. Potential “brown-outs” signalled

- French margins are improved as nuclear availability is high and significantly improved on last year.

- However we will monitor French demand as cold spells can result in a significant tightening in margin
Belgian Nuclear Availability – very low

- Significant drop in nuclear availability
- 83% of capacity offline, 4913MW of 5919MW
- Belgian TSO already indicated that may not be able to meet a maximum demand
Electricity Prices Winter 18/19

- GB price has been higher across the year
- Convergence between BE and GB at end of August
- Belgium prices now significantly higher on extended outages
French Nuclear Availability – significantly improved

- French nuclear availability is better than 17/18 in front quarter.
- Q1 2019 only slightly improved from 2018
- Expect exports to BE
Impact of temperature on French Demand

- French demand is very elastic in response to temperature.
- Typically +2.4GW on demand for each ±1°C change in temperature from normal
Coal and Gas prices

- Expect higher output from coal-fired generation than last year – lesser efficient gas pushed to the margin
- Since in September, month-ahead gas cost (including Carbon prices) is increasing faster than Coal
Potential Issues from higher gas price?

- **Voltage control** - potential regional impacts – may require ESO action depending on generation mix
- **Inertia** – less of a problem over winter period. Typically slightly higher inertia contribution from CCGT.
- **Downward margin** – less of an issue with higher demand – lower Christmas demand may necessitate some actions
Summary

- Expect system margins to be sufficient. Slightly tighter in weeks around clock change.
- Interconnector flows are generally expected to be in GB direction although we are monitoring Belgium situation. NEMO expected to be fully commissioned by February.
- Colder than normal weather in France always has potential to impact flows.
- We do not expect any significant impact from the change in fuel prices although we may see slightly higher costs on voltage control depending on regional despatch.
- No significant issues in respect to inertia or downward margin with the exception of high wind days and the Christmas period.