Winter Operational Outlook

Iain McIntosh

Fundamentals & Insights Manager

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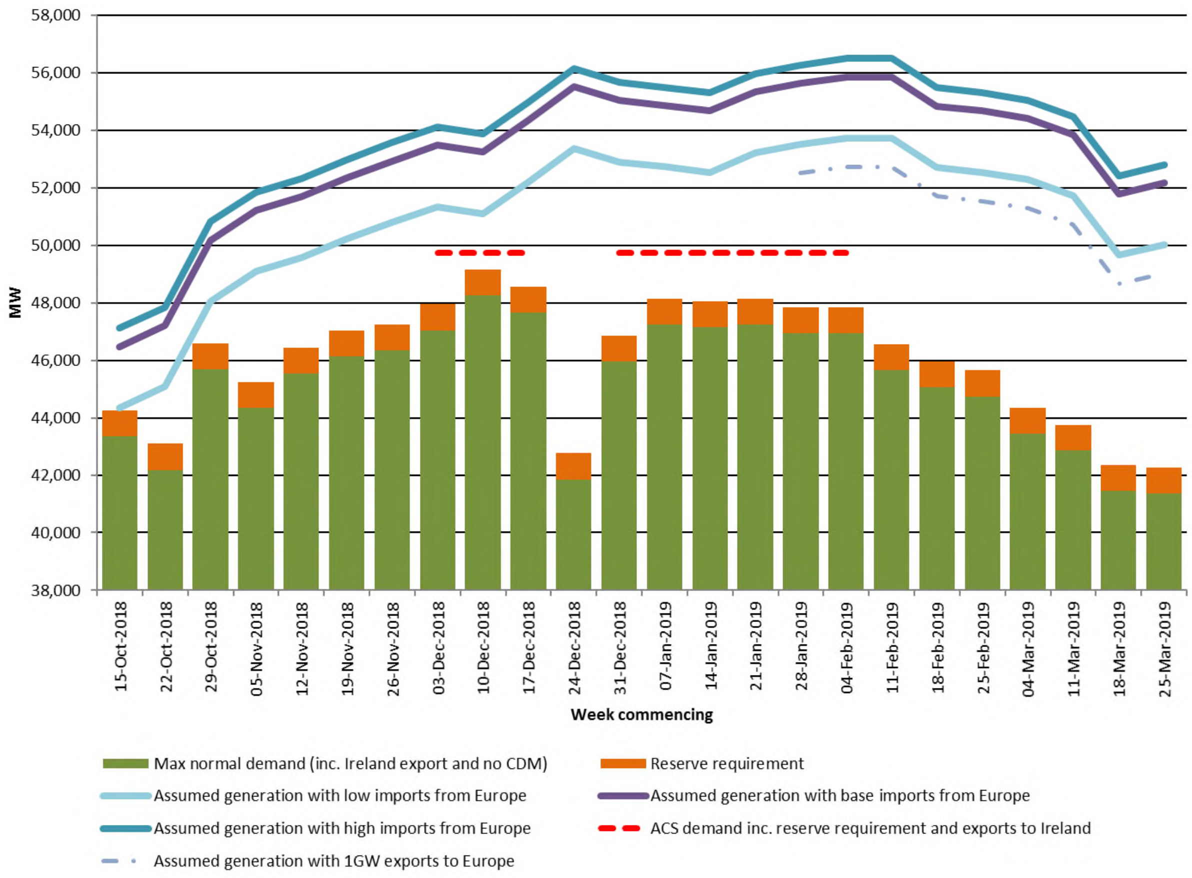
Summary Winter Statistics

- 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

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, the remainder of winter, margins are healthy – even under ACS conditions

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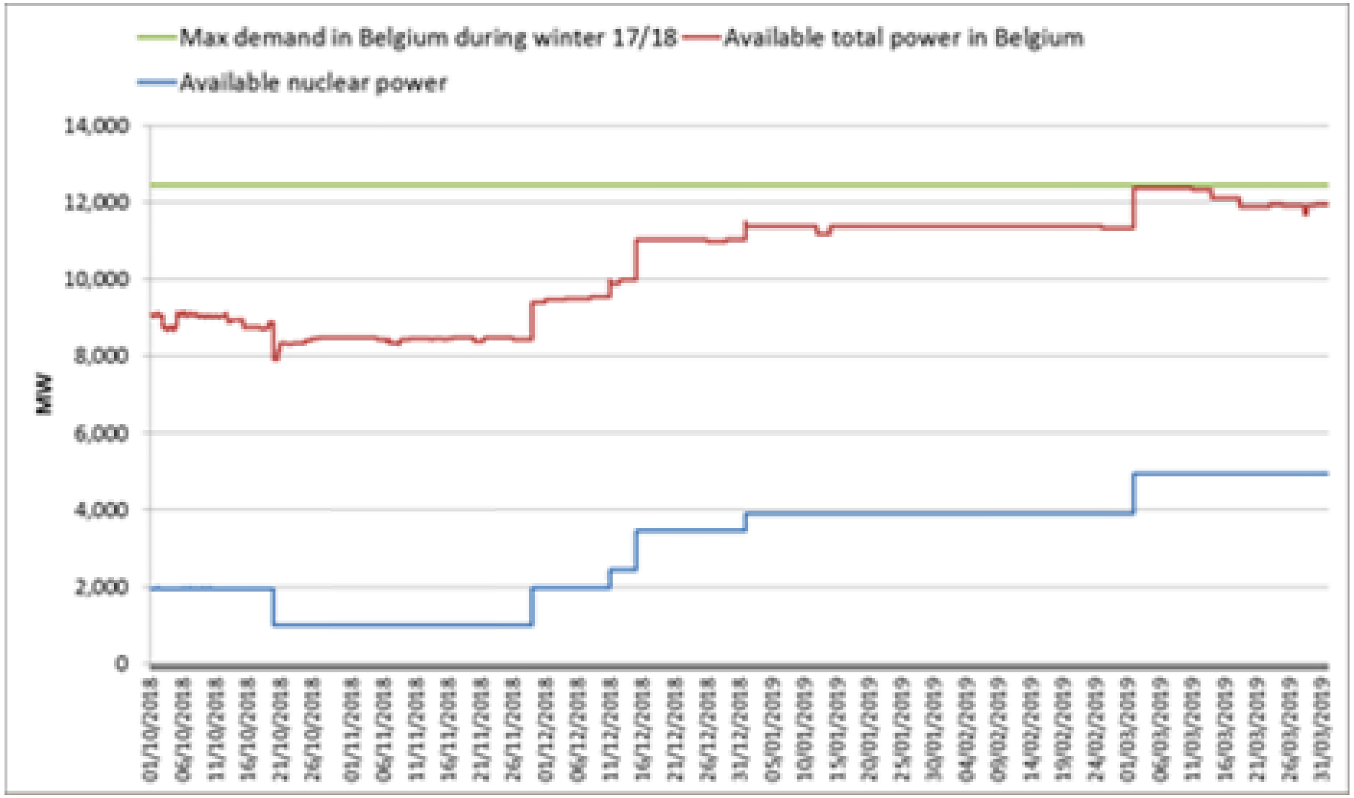
European Markets

Focus on European markets

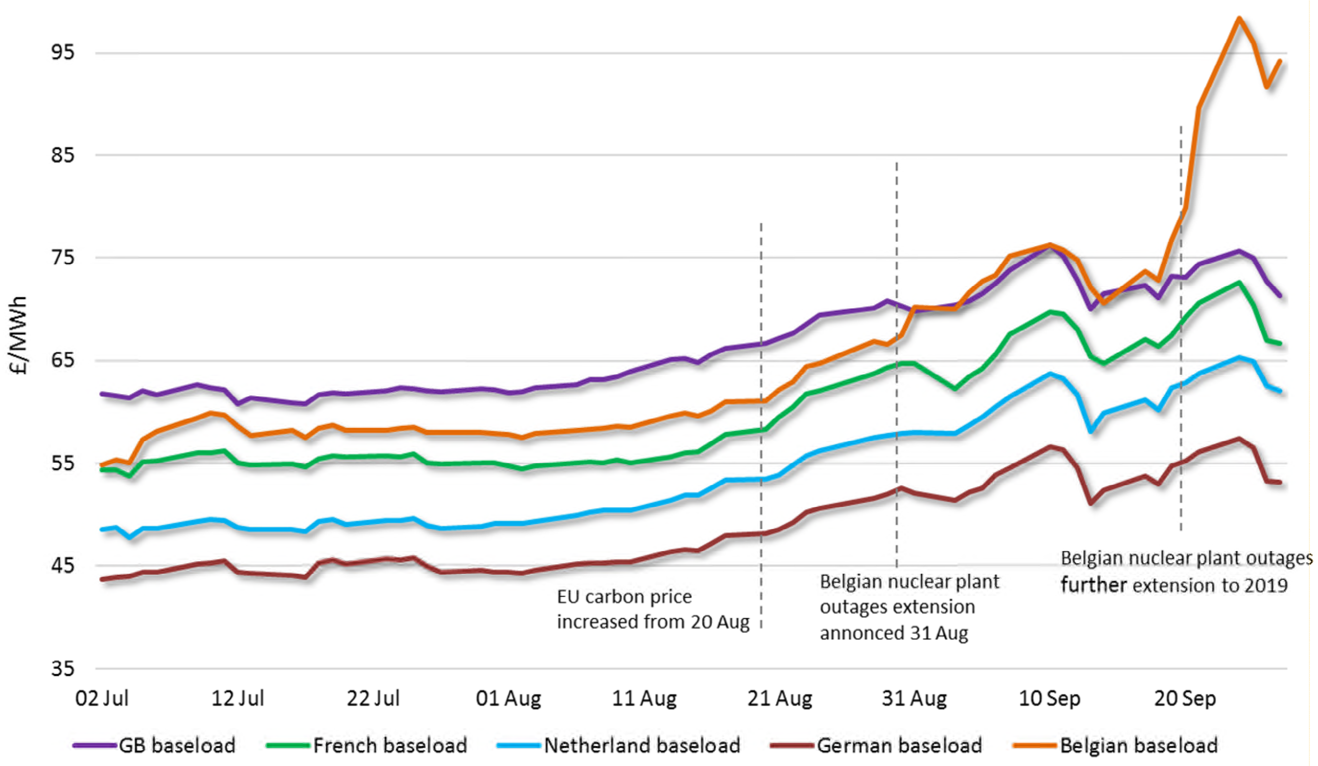
- Belgium prices are comparatively high – margins particularly tight - 1.6 to 1.7GW shortfall at times – 83% of nuclear fleet is currently unavailable
- On current forecast, Belgium cannot meet LOLE even with imports. Potential “brown-outs” signalled
- French margins are improved as nuclear availability 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



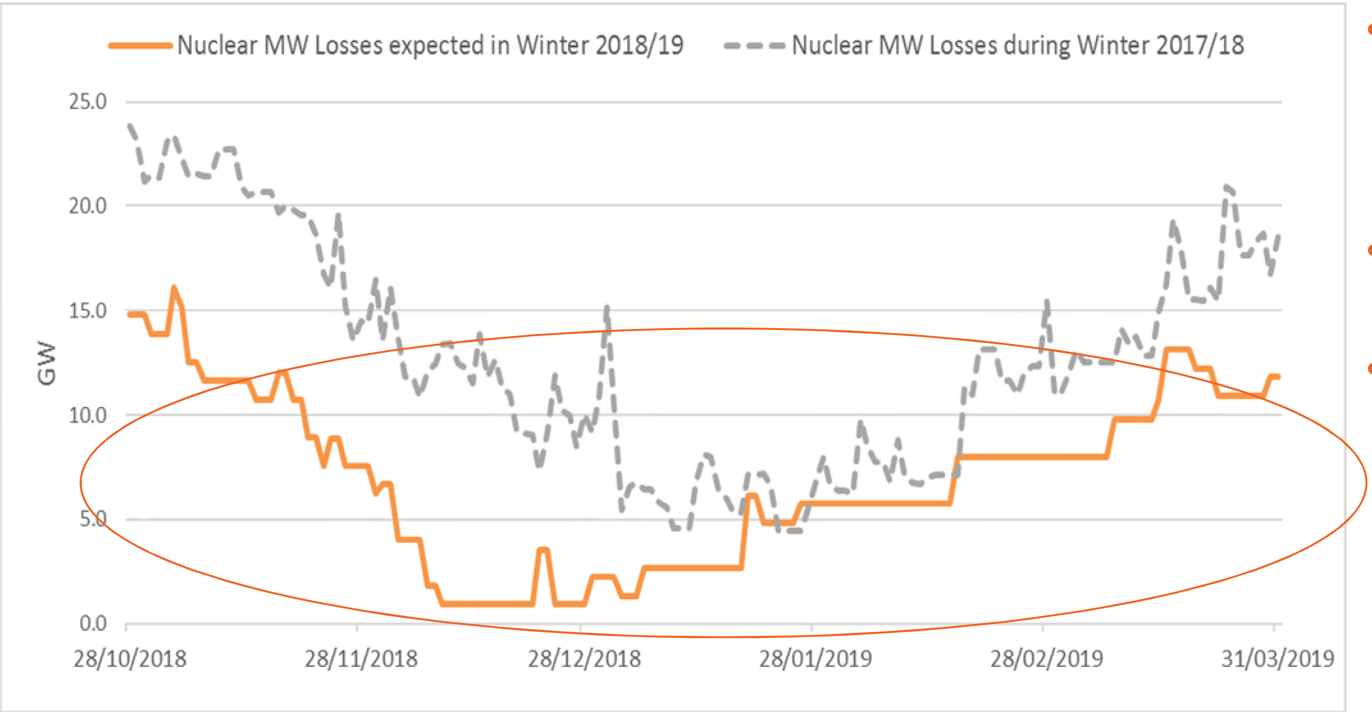
- Significant drop in nuclear availability
- 83% of capacity off-line, 4913MW of 5919MW
- Belgian TSO already indicated that may not be able to meet a maximum demand

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

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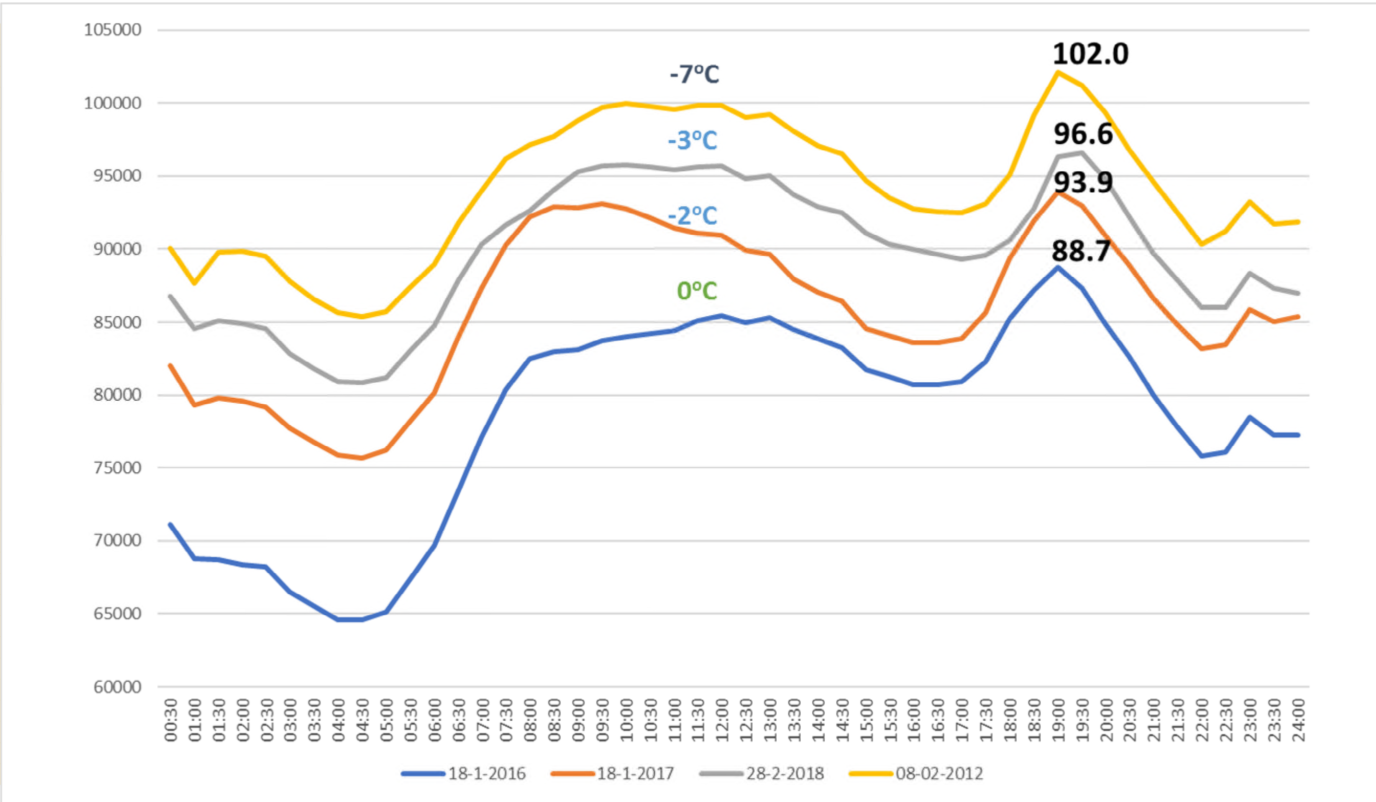
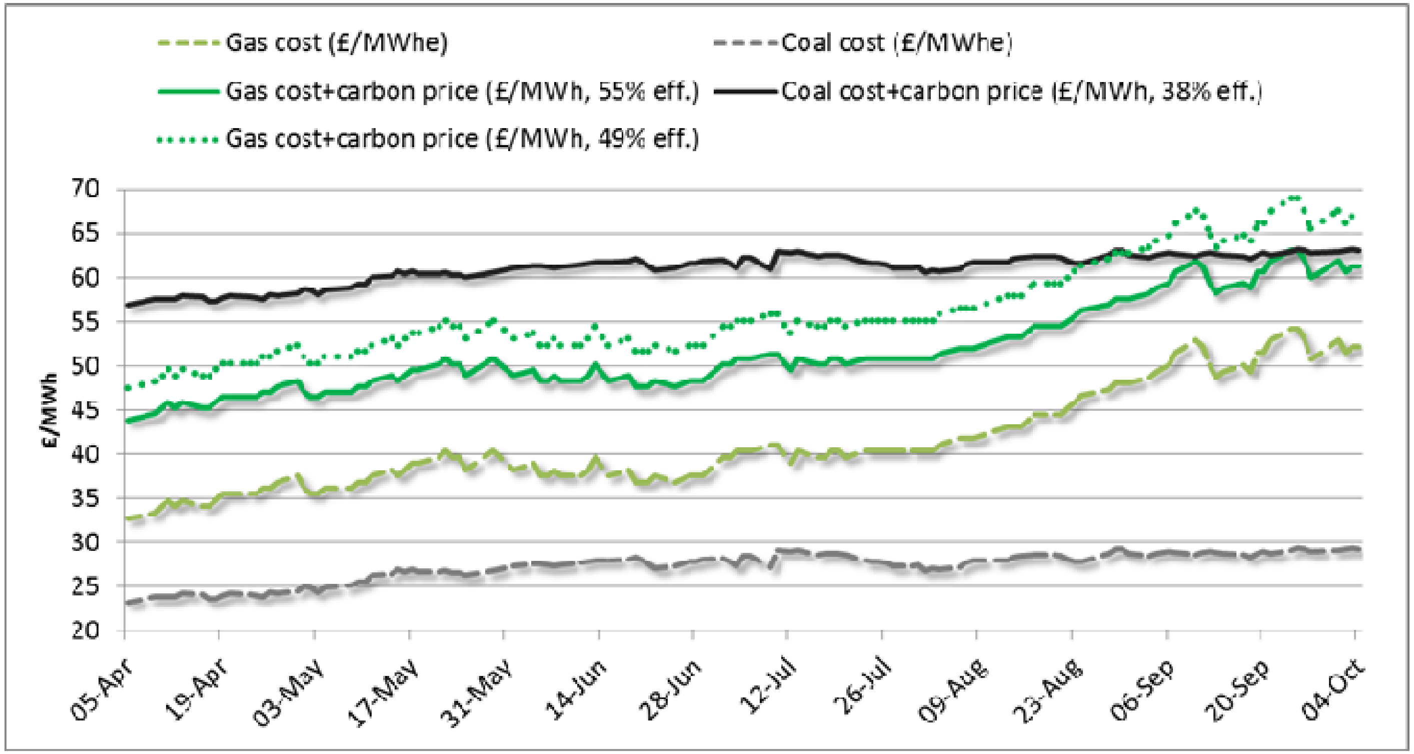
Impact of temperature on French Demand



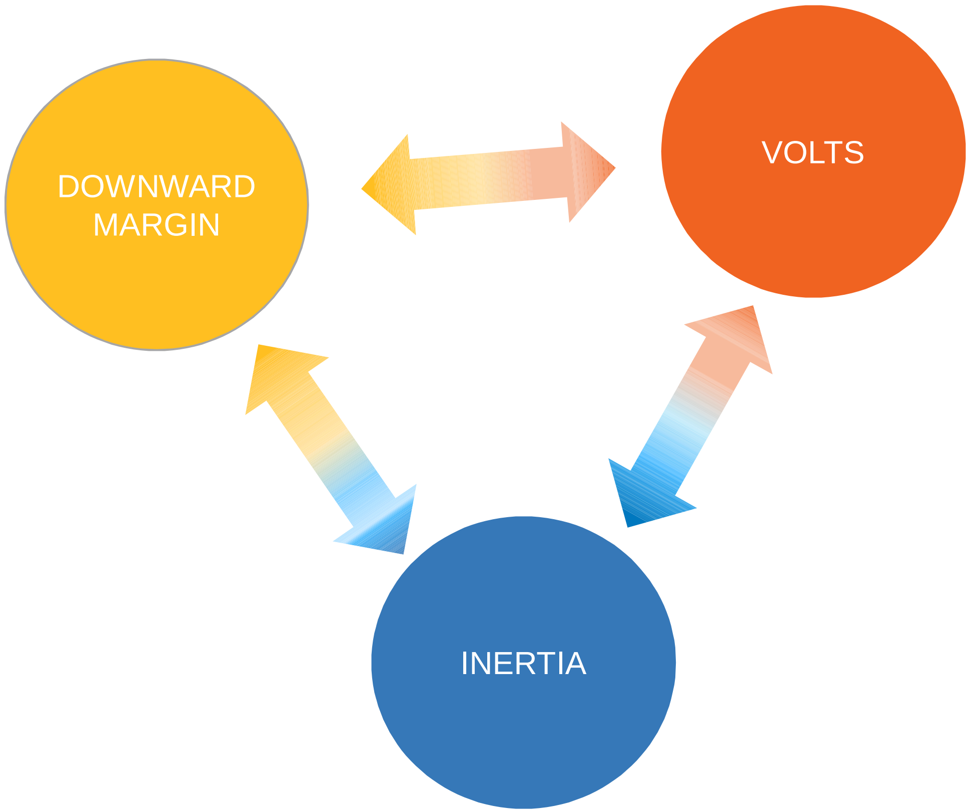
- French demand is very elastic in response to temperature.
- Typically +2.4GW on demand for each ±1ºC change in temperature from normal

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

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