Winter Outlook 2008/09

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Ofgem Seminar 10 September 2008

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Agenda

- Lessons learnt
- Gas
  - Demand
  - Supply
  - Cold weather analysis
  - Energy prices & demand response
- Electricity
  - Winter 2007/8
  - Assumptions
  - Winter analysis
- Conclusions

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Lessons learnt from last winter

- Higher energy prices may be changing consumer behaviour but not necessarily ‘peak’ consumption
- As ever, weather is the key element in determining gas demand
- Impact of LCPD, namely increased gas demand and restricted power station operation / flexibility
- Power station availability was lower than expected whilst wind was intermittent as expected
- UK was the marginal supply for Norwegian exports
- Unless contracted, LNG will seek highest priced markets
- Concerns over commissioning of new facilities were realised
- Events can happen!
  - Bacton fire
  - Grangemouth (post winter)
  - Low frequency following loss of Longannet and Sizewell
  - Low wind and nuclear unavailability on Continent caused power flows out of GB at time of peak demand
- Consultation feedback last winter was often ambiguous

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2008/9 Winter Demand

- Gas demand remains highly sensitive to weather
- Lower NDM demand in line with last winter
  - Impact of higher gas prices
  - Increased efficiency measures
- Lower power station demand than 2007/8
  - Coal base load but could revert if prices change
  - Lower impact of LCPD as more plants have FGD
  - Nuclear non availability would increase gas
- Gas / Electricity interactions
  - Highly dependent on assumptions, both upside and downside

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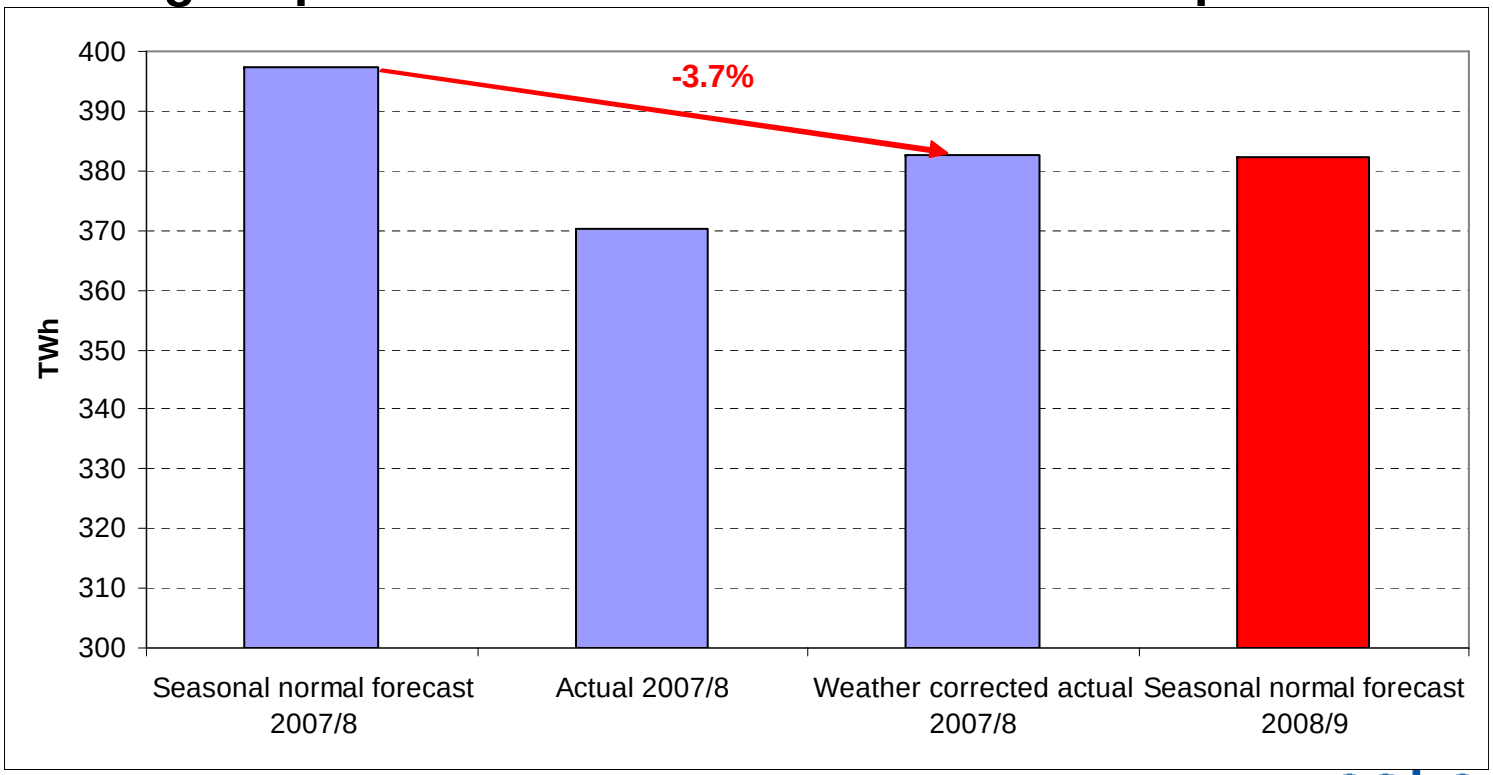
NDM demand forecasts

- **NDM gas demand was lower last winter, weather corrected demand was 3.7% less than forecast, peaks also lower**
- **2008/9 forecast in line with last winter**
- **Will higher prices reduce demand further? will peaks be lower?**



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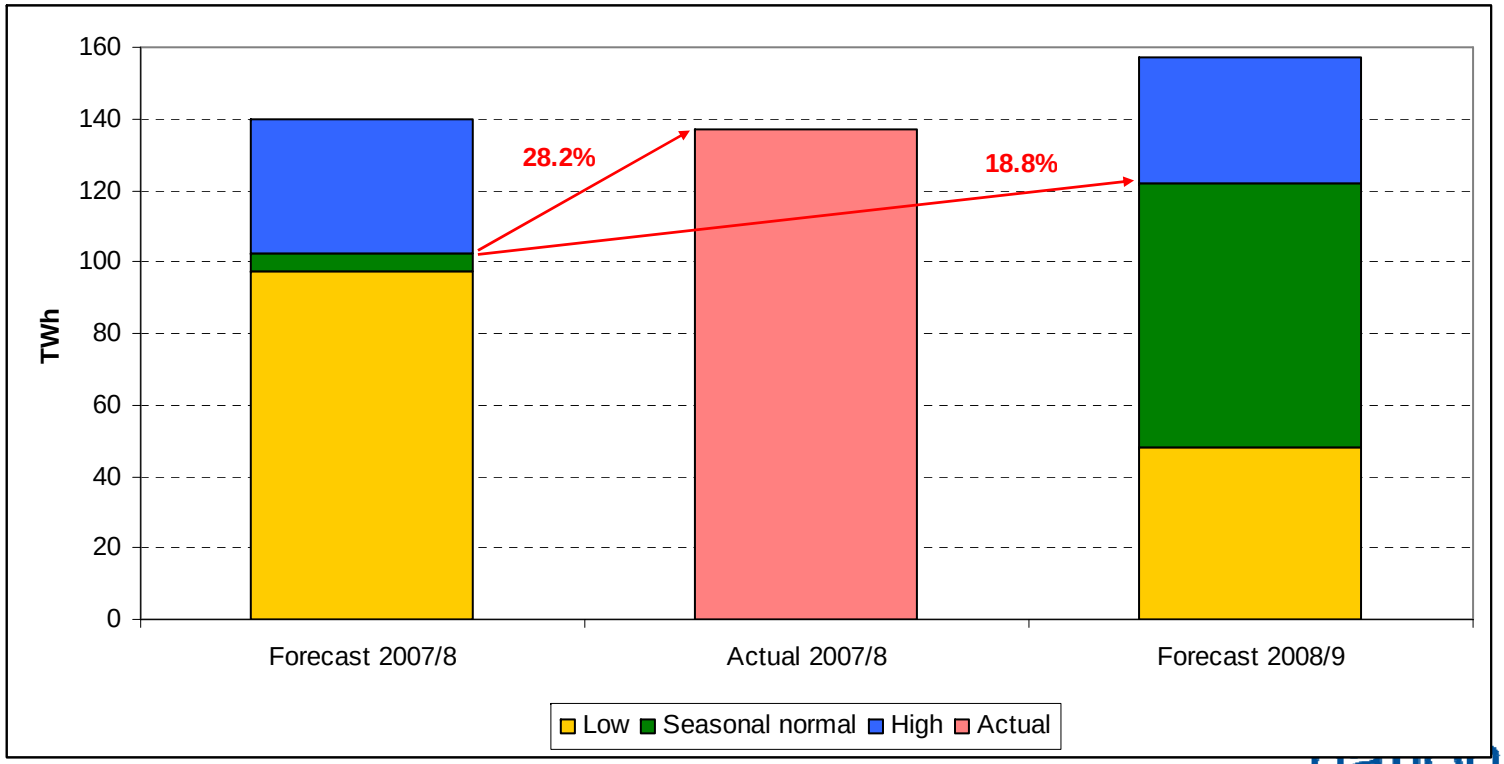
Power generation gas demand forecasts

- **Power generation demand last winter was much higher than forecast due to impact of LCPD**
- **Installation of FGD and anticipated higher nuclear availability may reduce gas take from last winter, but this could change through plant availability and fuel prices**



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2008/9 Winter Supply

- UKCS - continues to decline, but continues to under pin supply
- **Imports – all subject to some uncertainty**
  - Norway – priority to Continental contracts and possible reduction through loss of Kvitebjorn
  - Continent – lower BBL? through possibility of non-physical reverse flows. IUK subject to market differentials and access to gas / storage / transmission capacity
  - LNG – cargoes subject to global LNG market, concerns over commissioning of new plant continue
- Storage – higher space and deliverability if Aldbrough becomes operational

- Consultation feedback still required for clarification

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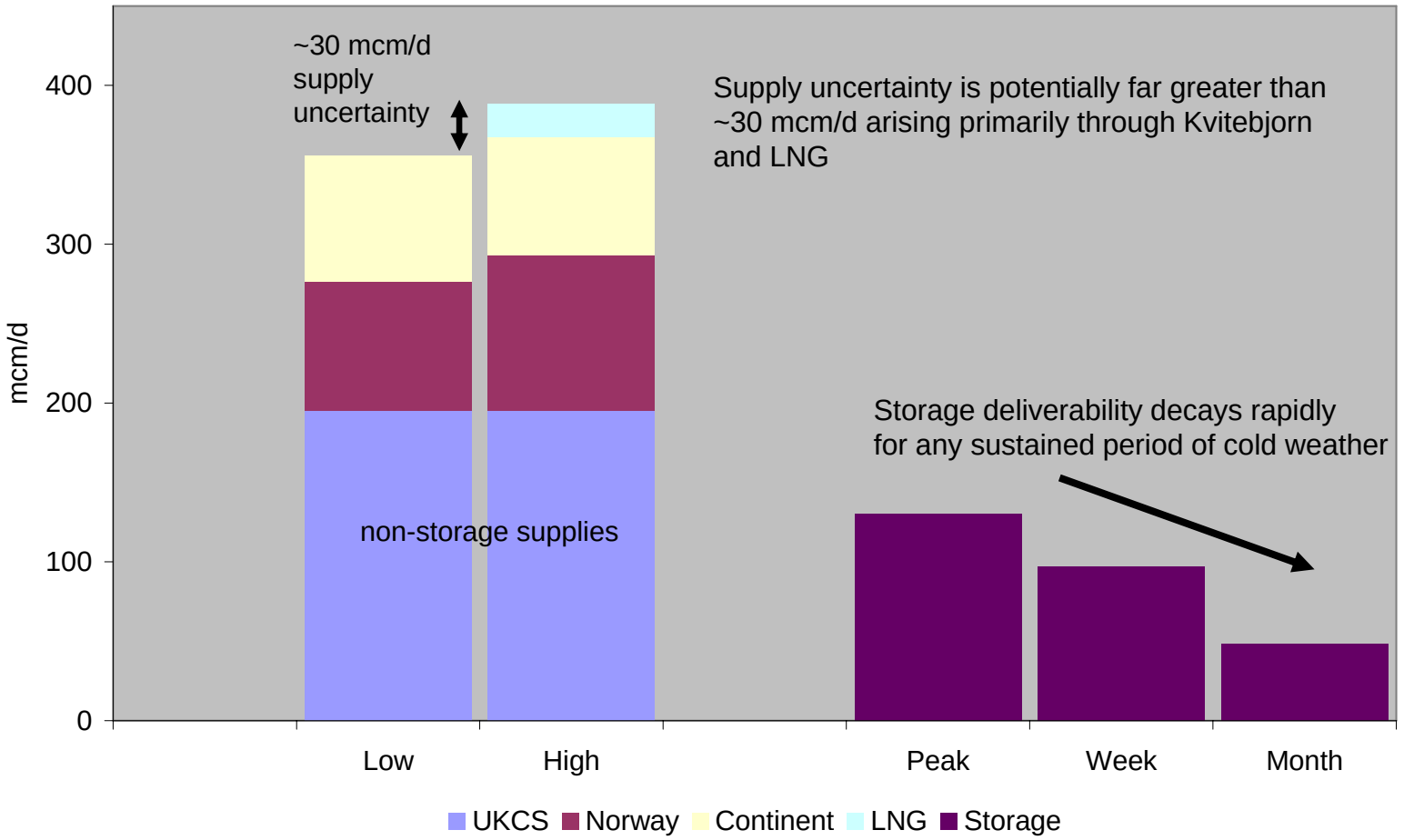
Winter 2008/9 supply availability



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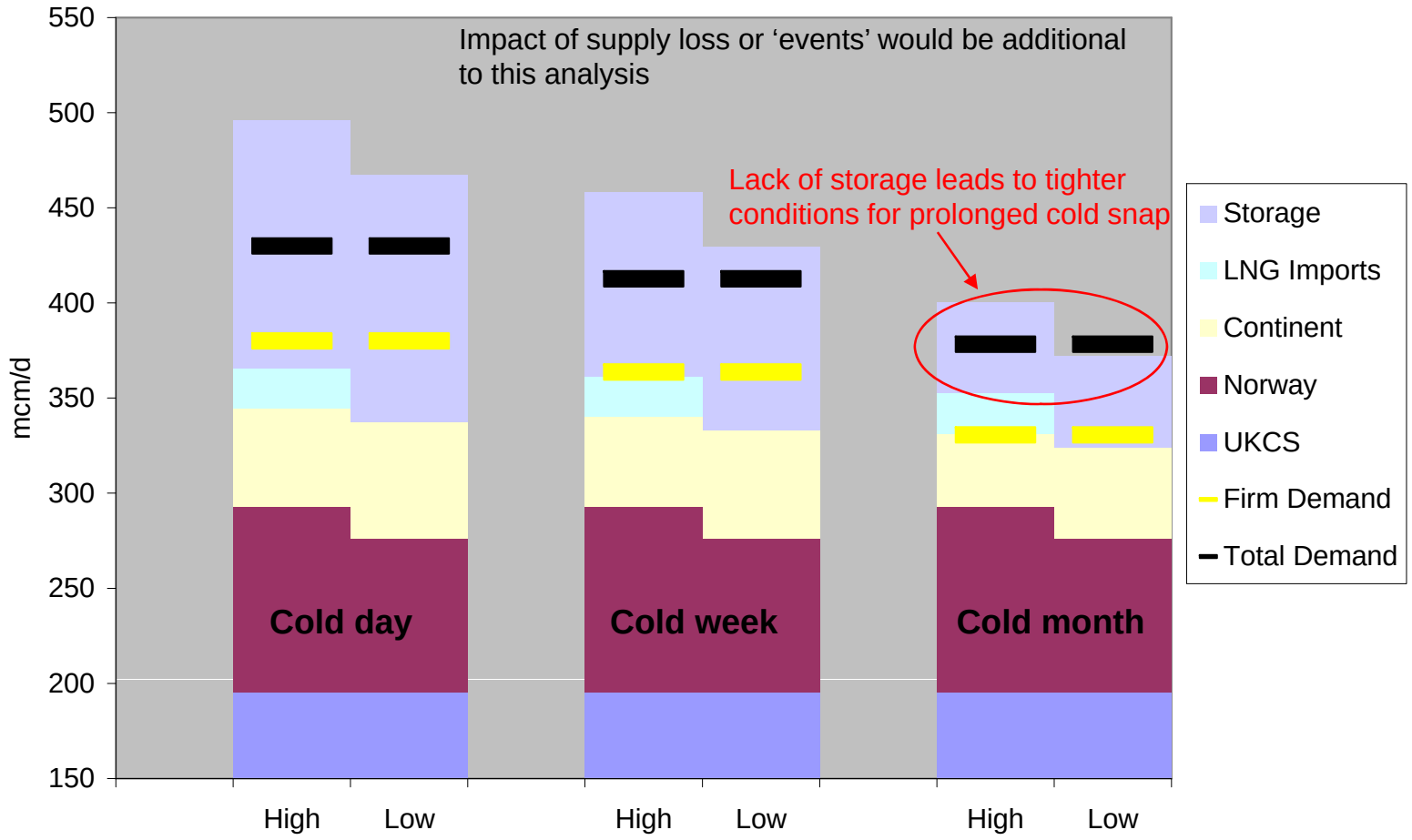
Average Winter – Supply / Demand Balance



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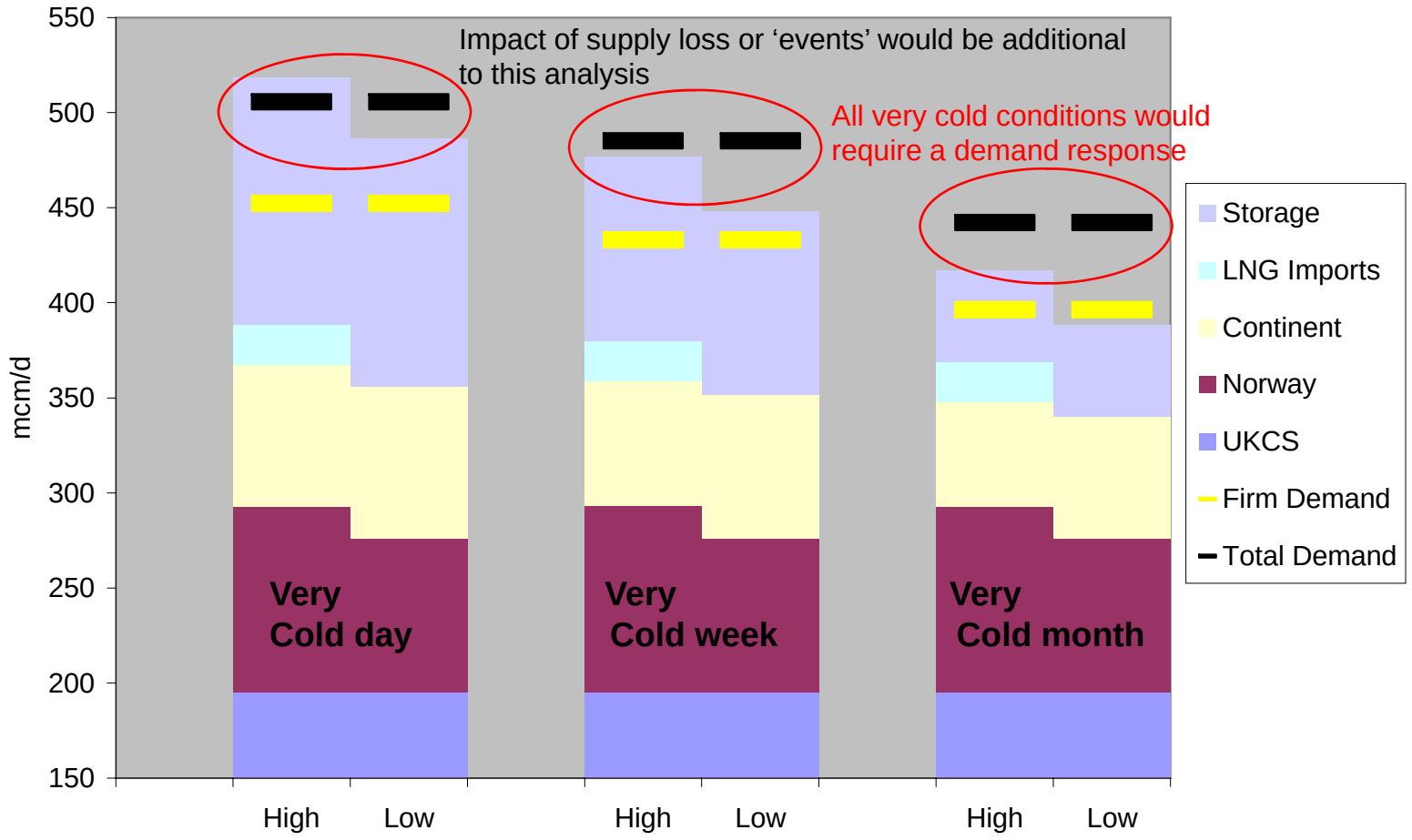
Severe Winter – Supply / Demand Balance



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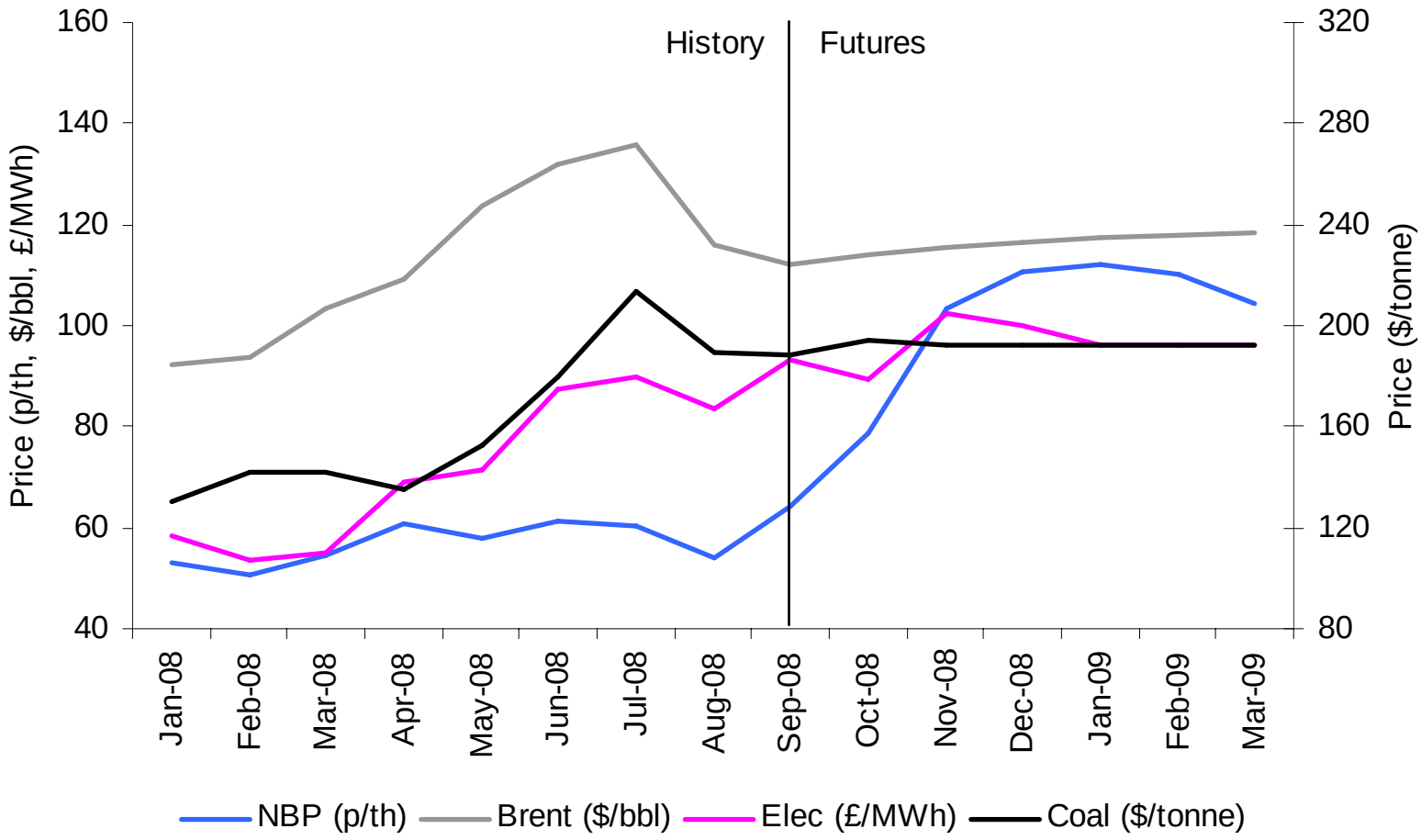
Fuel Prices



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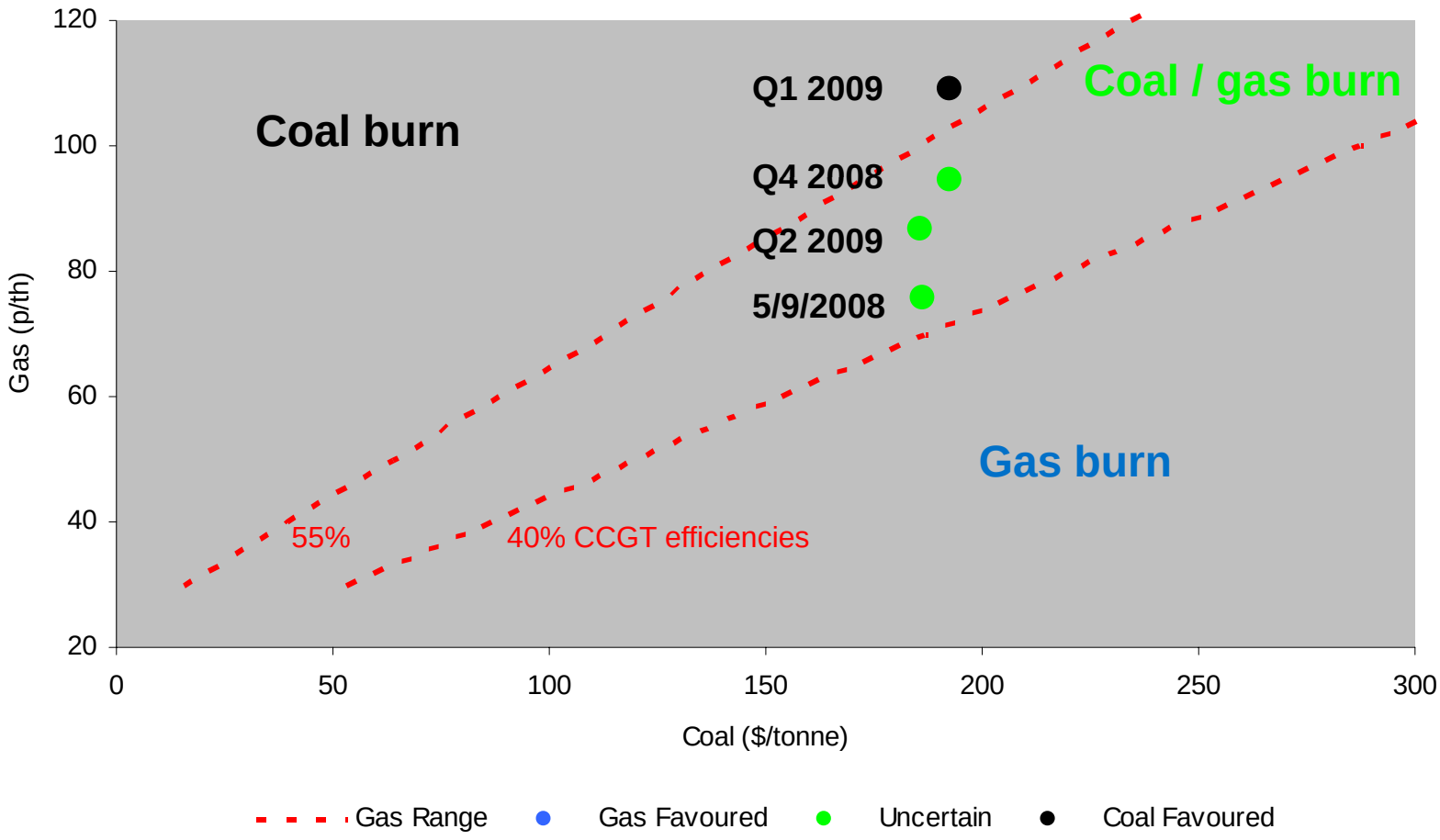
Gas / Coal Generation



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Gas / Electricity interactions

- 2008/9 generation capacity = 75 GW, assumed availability = 65 GW, ACS demand = 60 GW
- 1 GW base load power generation = ~5 mcm/d

- +ve Response
  - Max gas response for peak day ~20 mcm/d
  - Nuclear = 10 GW, hence change from 80 to 90% availability = 1 GW = 5 mcm/d
  - Power stations with distillate = 5 GW, but operation assumed to be only 12 hours per day = 12 mcm/d
  - Wind 1.4 GW at 35%, hence change to 100% = 5 mcm/d
  - Coal 28 GW, hence change from 85 to 90% = 7 mcm/d
  - 1°C change in **all** house thermostats ~25 mcm/d
  - Low wattage light bulb savings of 80 watts for 5 hours in **all** houses ~2 mcm/d
- -ve Response
  - French Interconnector = 2 GW import for 17 hours per day, switch to 2 GW export = -17 mcm/d
  - Nuclear = 10 GW, hence change from 80 to 70% availability = 1 GW = -5 mcm/d
  - Wind 1.4 GW at 35%, hence no wind = -2 mcm/d
  - Coal 28 GW, hence change from 85 to 80% = -7 mcm/d

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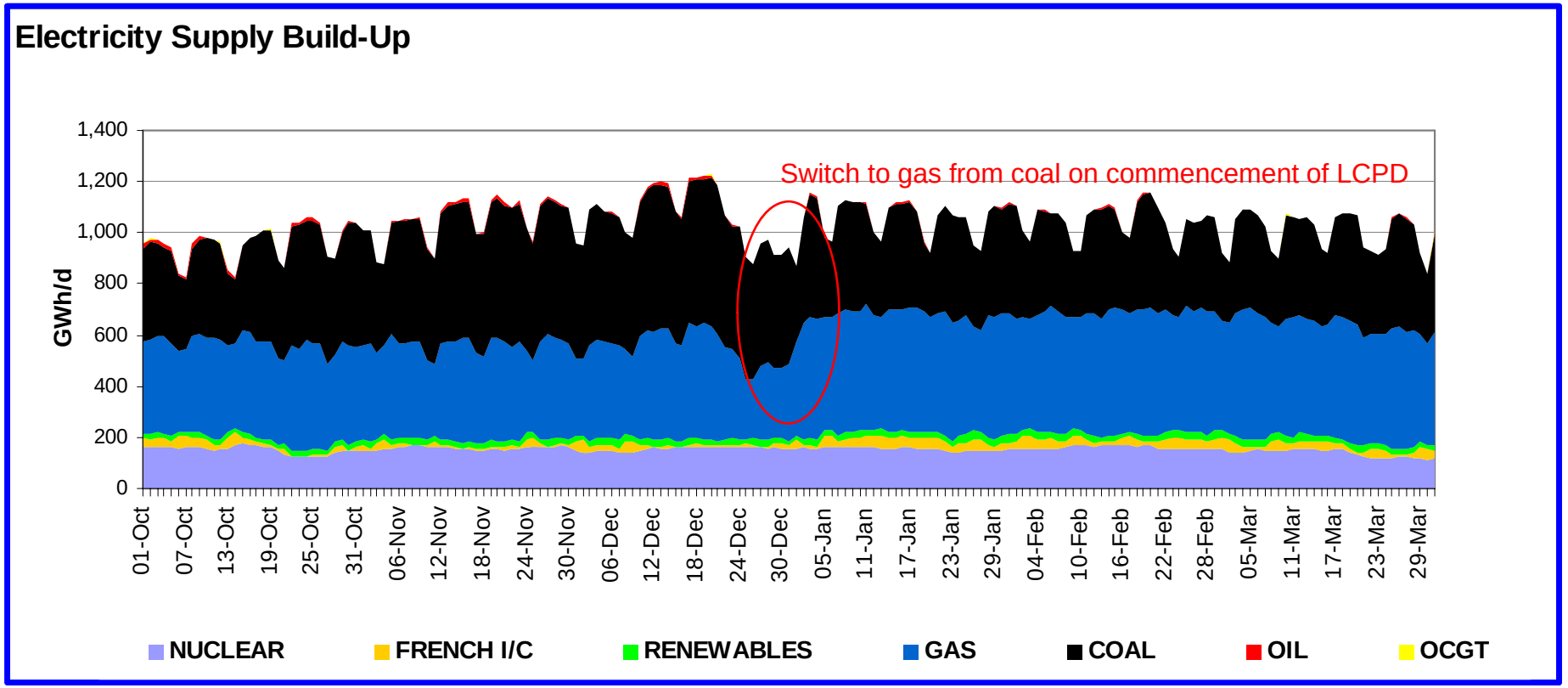
Winter 2007/08 Electricity Generation



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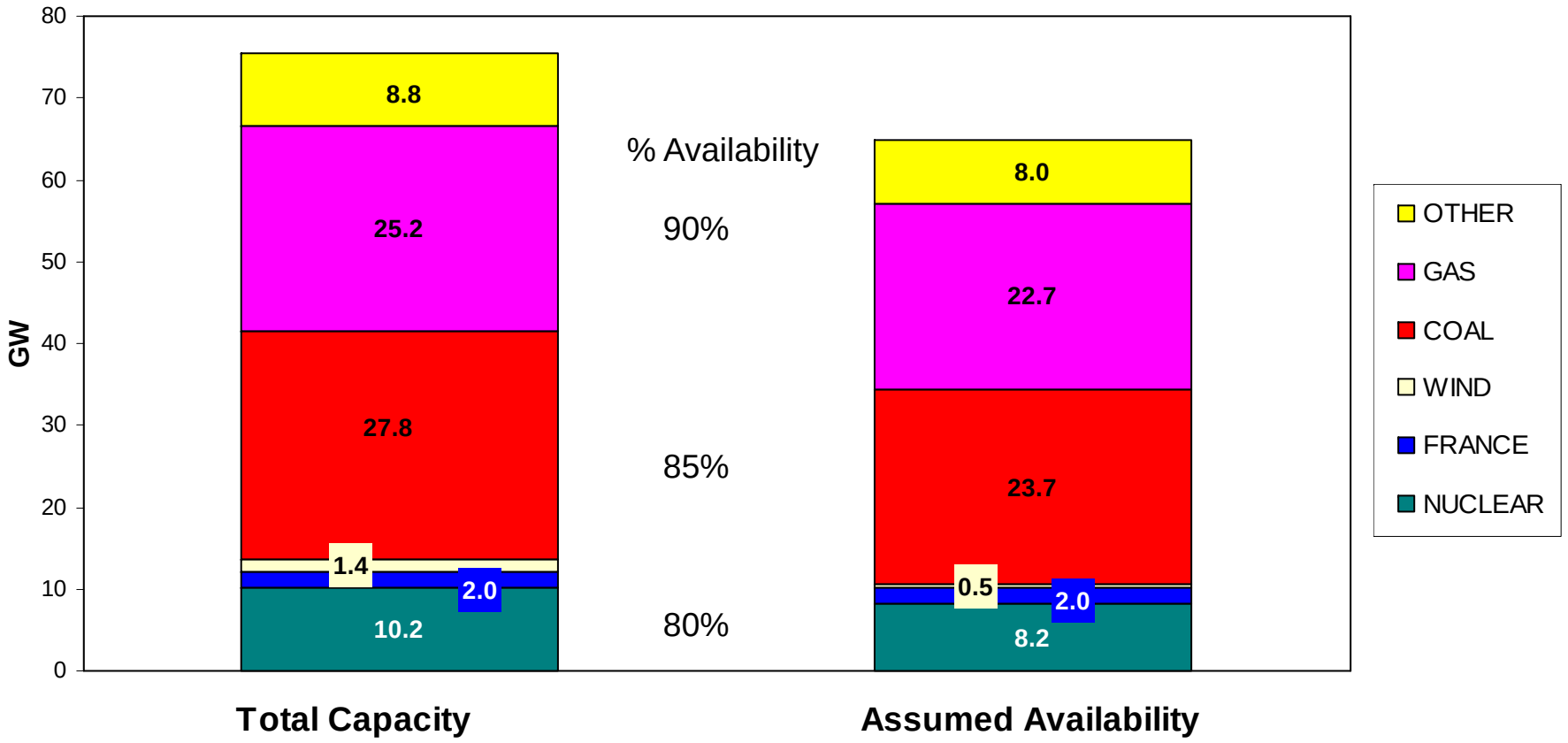
Generation Capacity & Assumed Availability



Wind availability 35%, French interconnector assumed to import when required to meet demand
Markets react to meet demand
LCPD restrictions do not limit availability at peak
Availability of gas is not constrained, periodic use of distillate available

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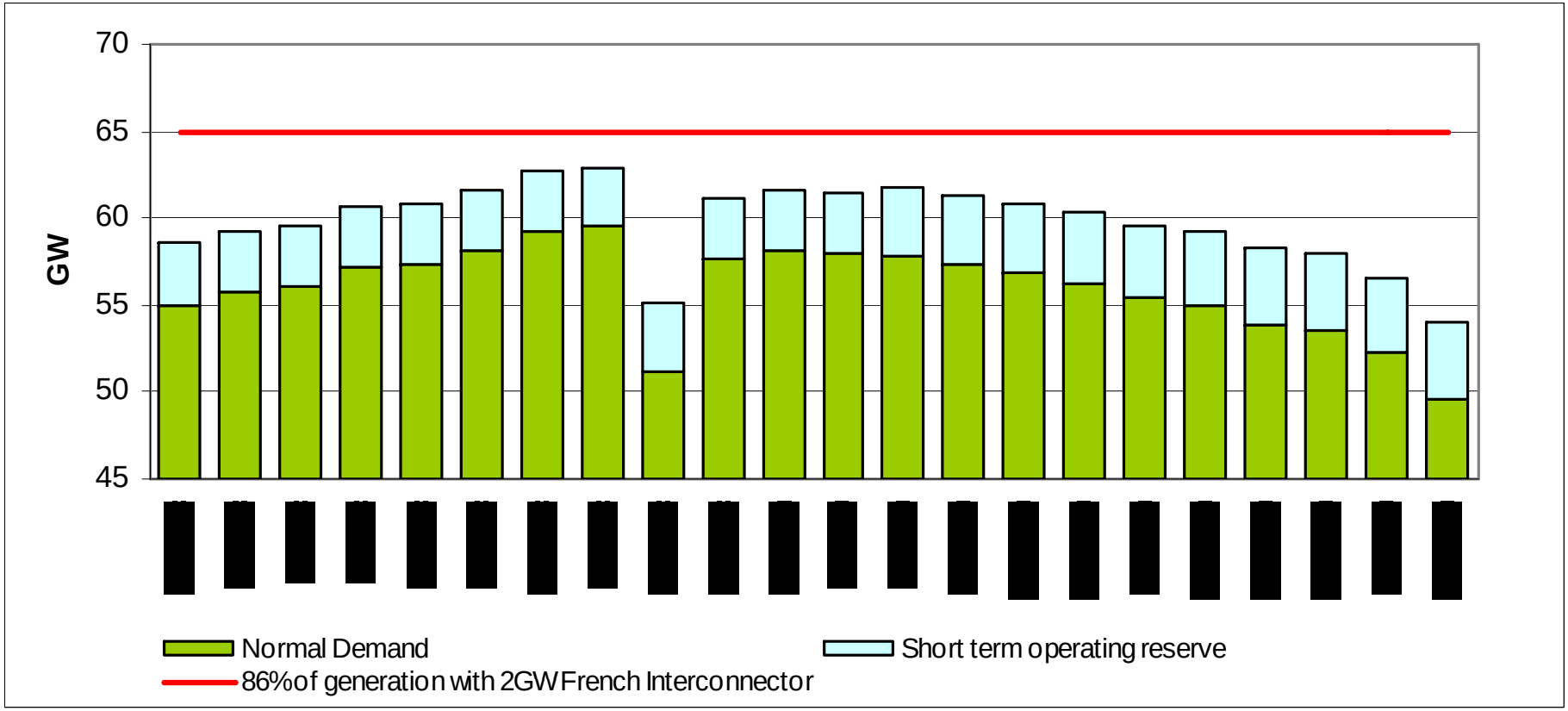
Winter 2008/09 – Electricity (Normal)



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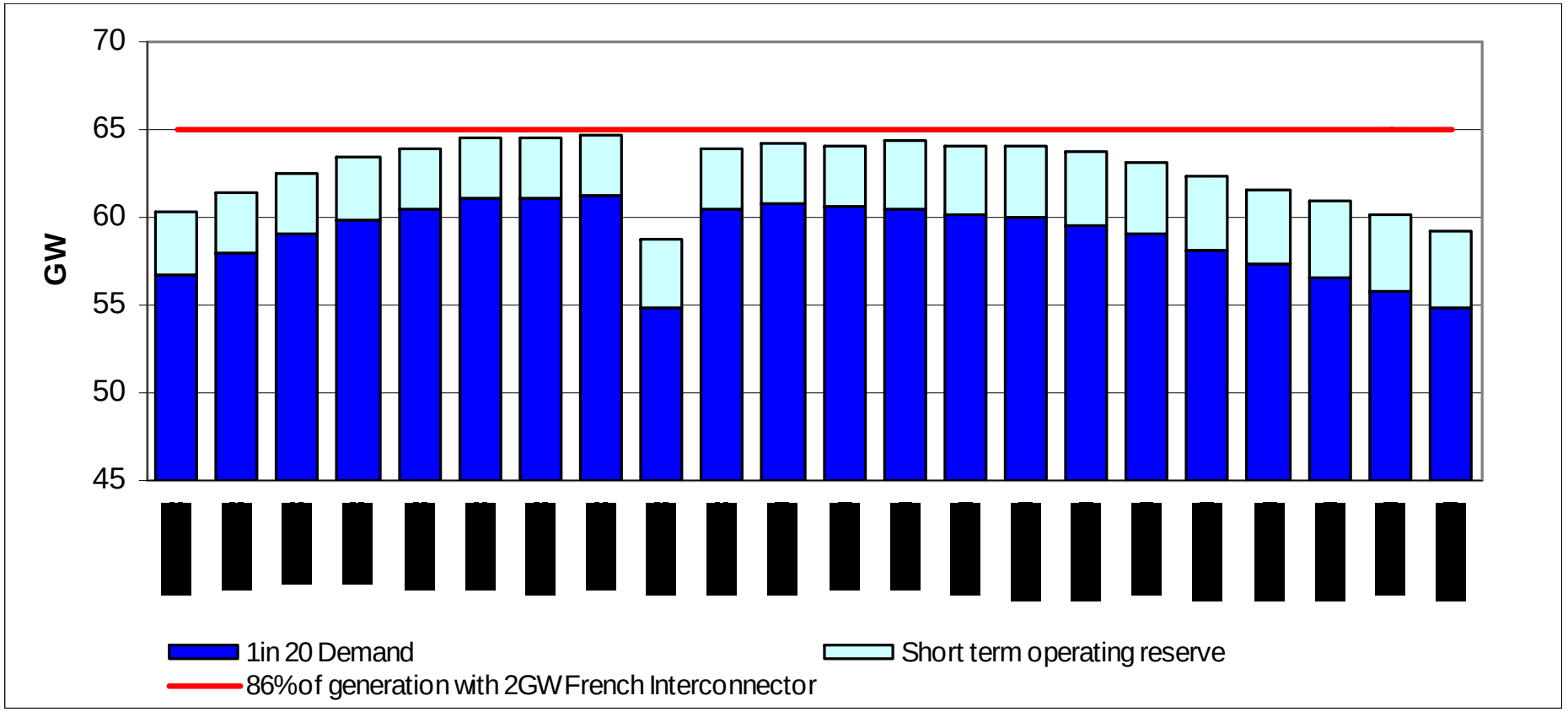
Winter 2008/09 – Electricity (1 in 20 high)



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Conclusions

- Basis for gas and electricity demand similar to that experienced last winter. High dependency on weather for gas
- Gas demand uncertainties continue, notably impact of gas prices, efficiency measures, LCPD, availability of generating plant
- Gas supply position provides biggest uncertainty, notably all imports. Norway – Kvitebjorn, LNG – global market competition and commissioning of new plant
- Severe or prolonged period of cold weather could necessitate a demand response. Numerous gas / electricity interactions possible
- Power generation subject to plant availability and LCPD
- Coal assumed to be base load but could switch on fuel prices
- Should be adequate generation to meet demand but subject to credible risks
- 'Events' for both gas and electricity happen!!

- Final Consultation report due out w/c 29th Sept;
- Consultation feedback still welcome. Closing date 12th Sept. Send to energy.operations@uk.ngrid.com or GB.markets@ofgem.gov.uk

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