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Winter Outlook 2008/09

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Agenda

Weather Forecast

Gas

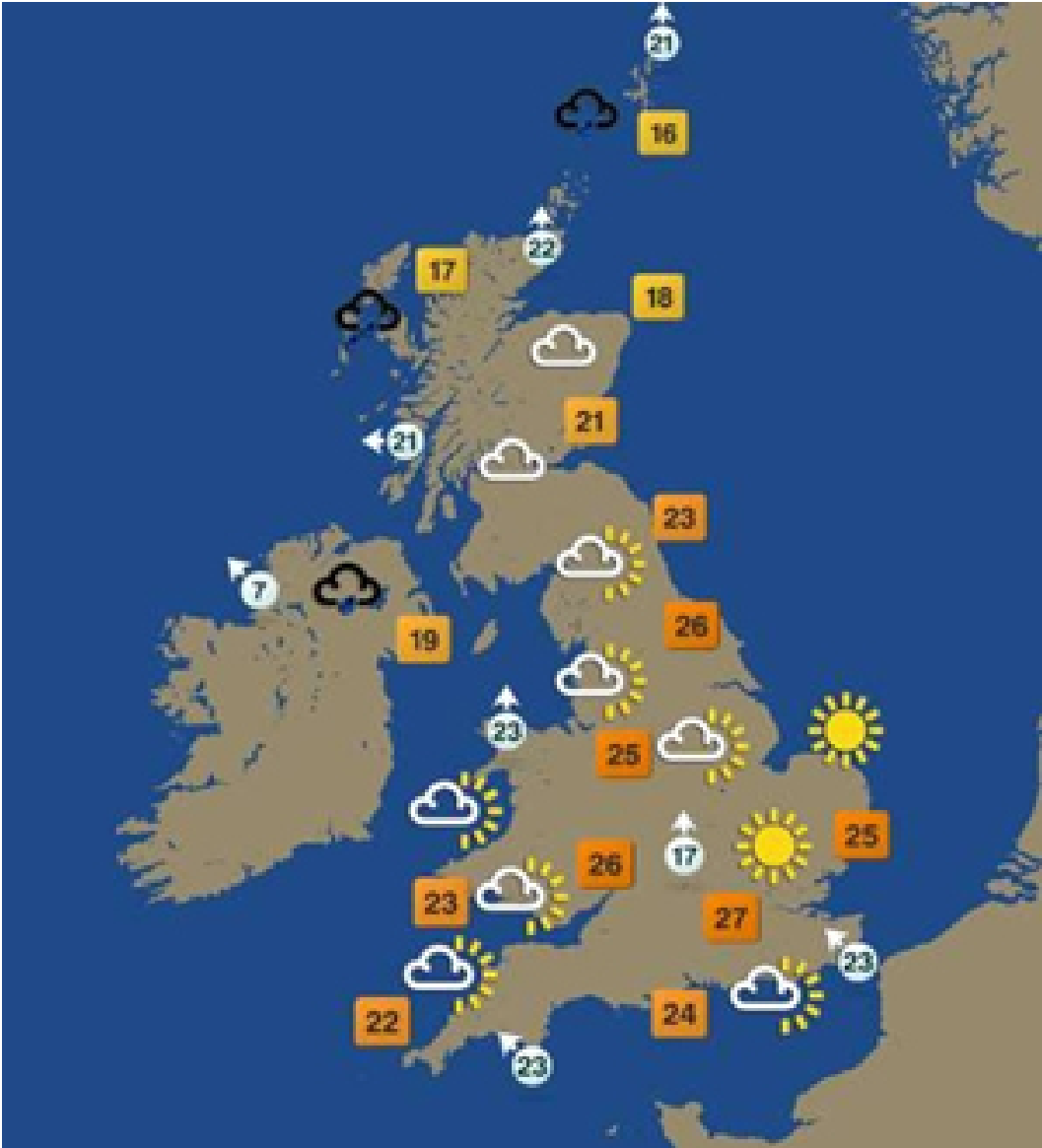
- ◆ Demand Forecast
- ◆ Supply
- ◆ Winter analysis
- ◆ Fuel Prices

Electricity

- ◆ Winter 2007/8
- ◆ Generation Availability
- ◆ Winter analysis

Conclusions

Weather Outlook For Winter 2008/09



Met Office Winter Forecast

Temperature

For the UK as a whole, winter-mean temperatures are more likely to be above normal. Although a winter milder than average is favoured, temperatures are likely to be lower than those experienced last year.

Rainfall

For much of northern Europe, including the UK, rainfall is likely to be lower than observed in last year's relatively wet winter.

Gas Demand And Supply Forecasts



Gas Supplies Forecast

Supply Source (mcm/day)	Low Case	Central Case	High Case
UKCS	195	195	195
Norway	68	81	111
BBL	30	30	30
IUK	30	20	10
LNG	0	10	30
Total	323	336	376

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

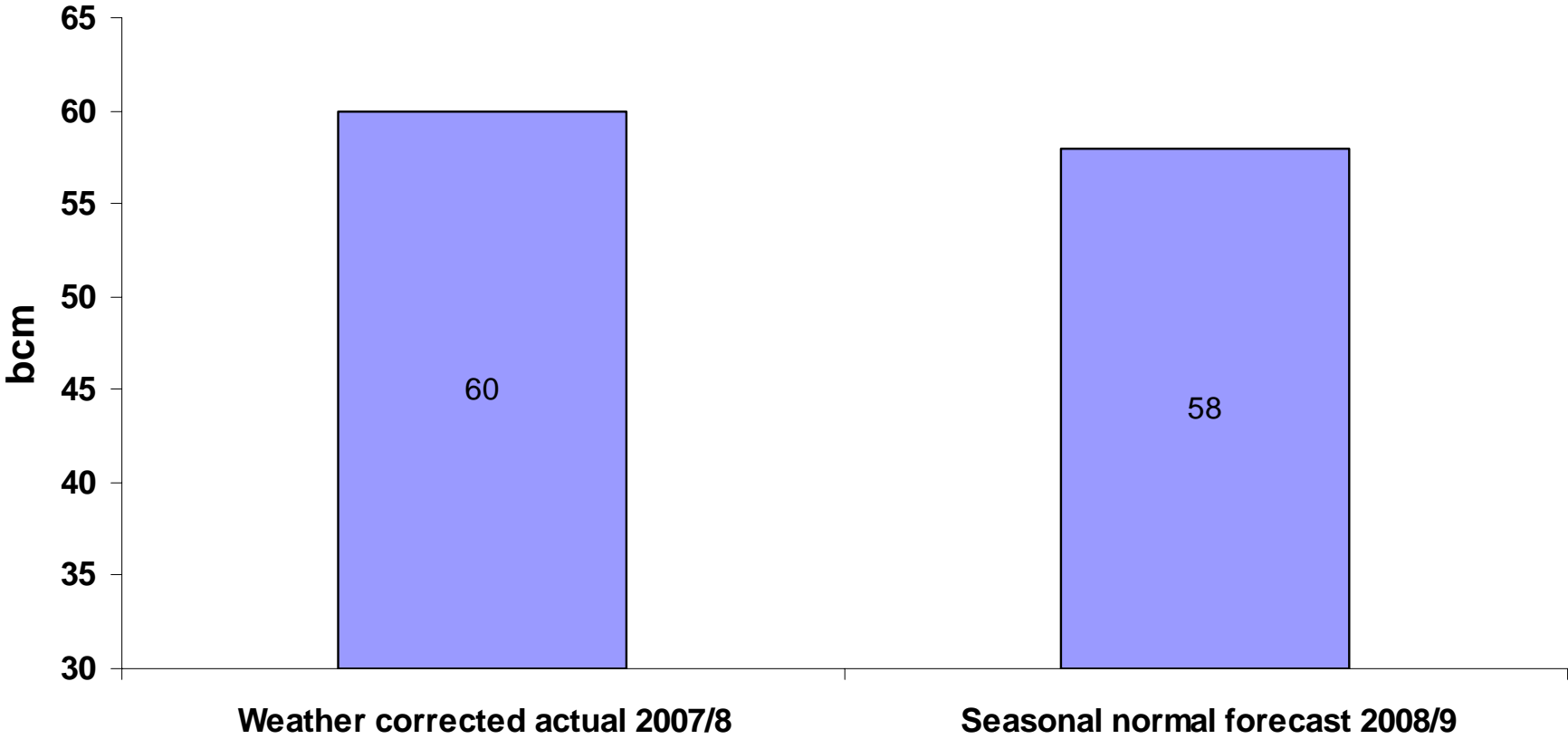
Gas / Electricity interactions

- ◆ Highly dependent on assumptions, both upside and downside

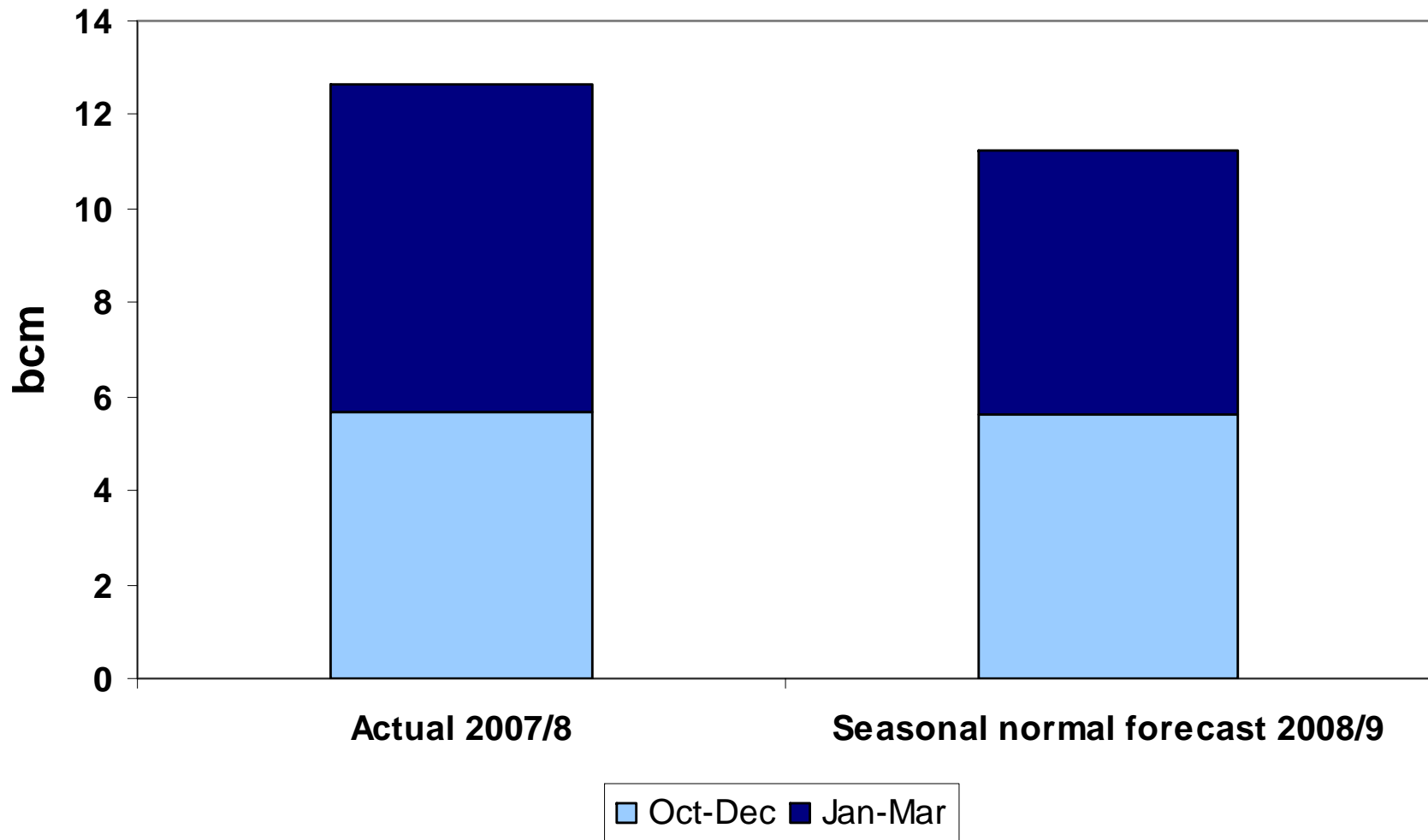
Gas / Electricity interactions

- ◆ 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% availability, hence change to 100% = 5 mcm/d
- ◆ Coal 28 GW, hence change from 85 to 90% availability = 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

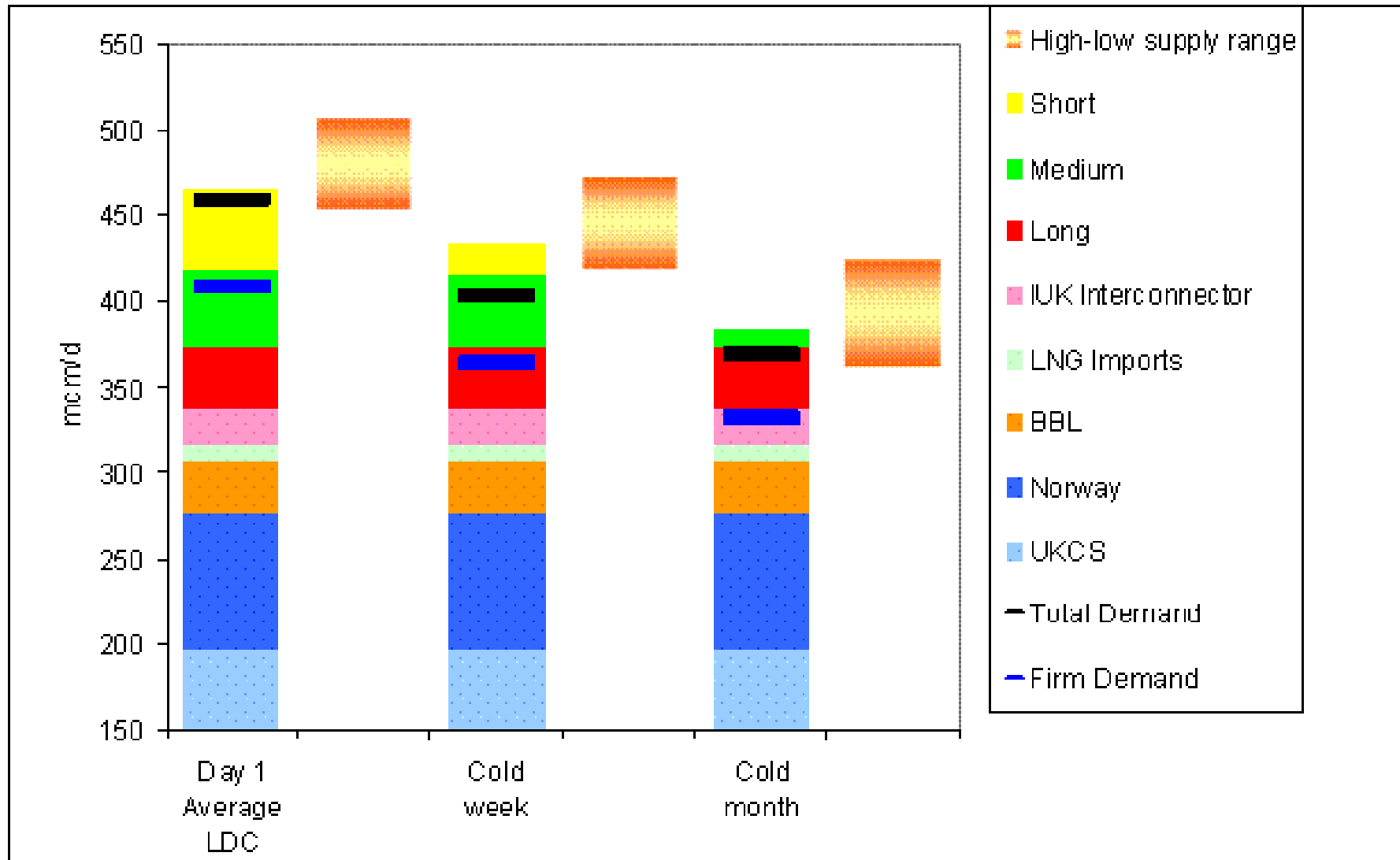
Total Winter Gas Demand Forecast



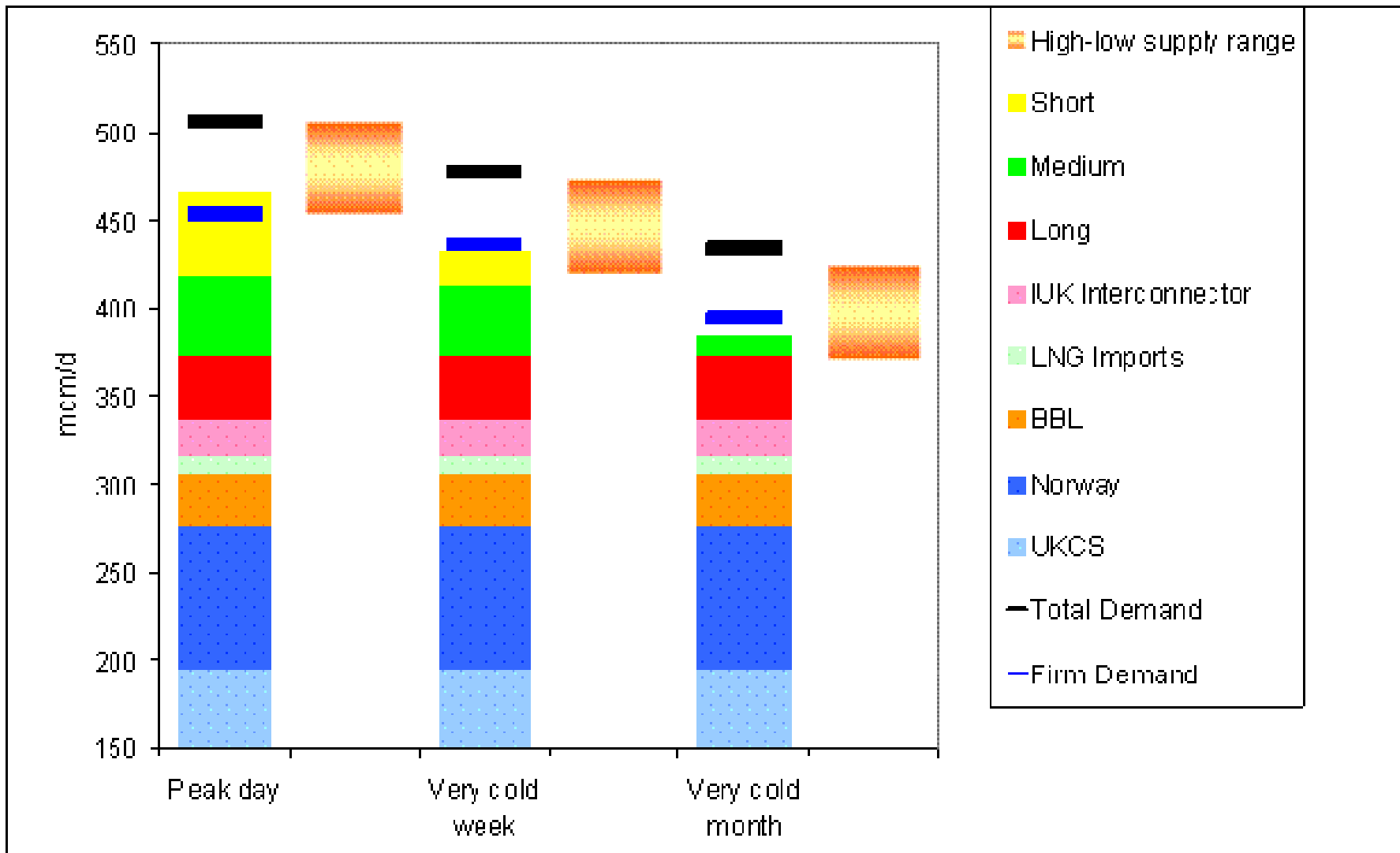
Power Generation Winter Gas Demand



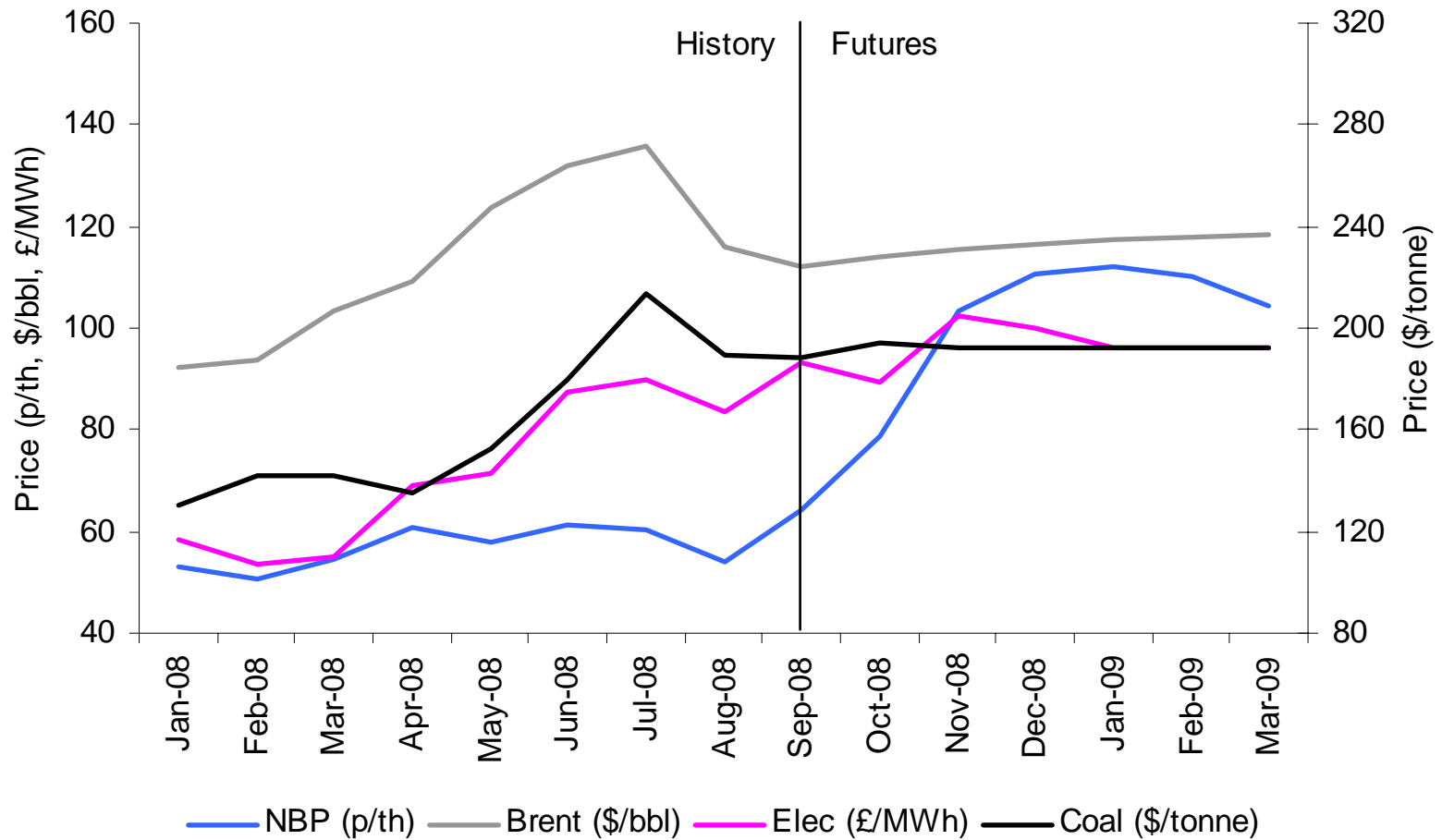
Cold spell analysis for 2008/9, average conditions



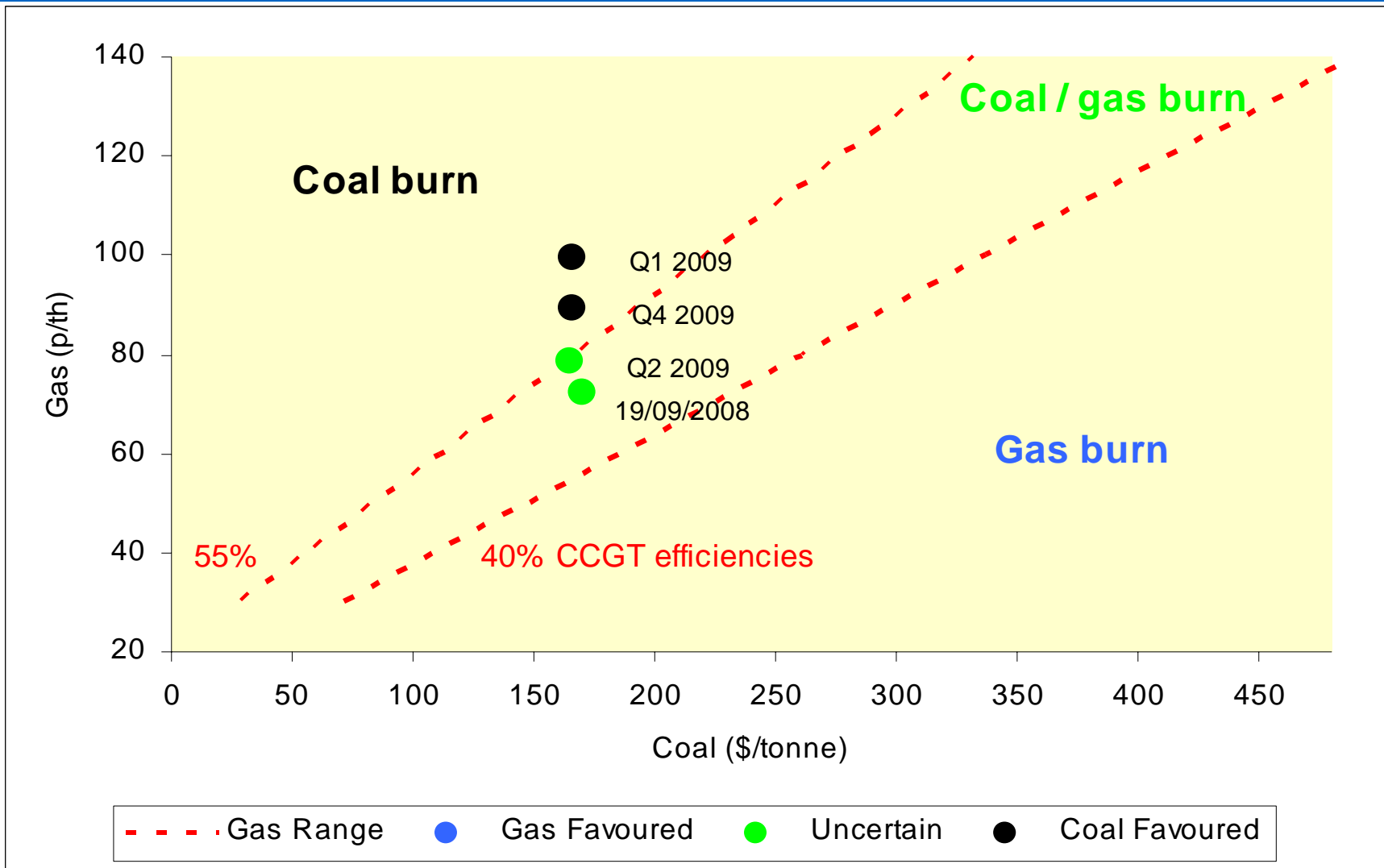
Cold spell analysis for 2008/9, severe conditions



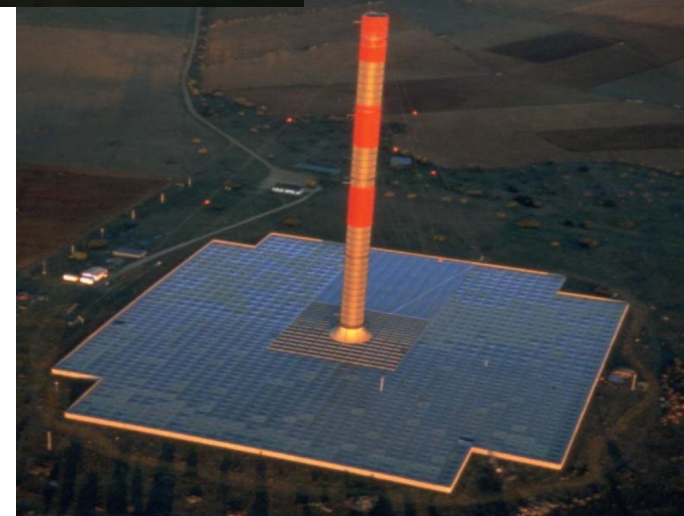
Fuel Prices



Gas / Coal Generation



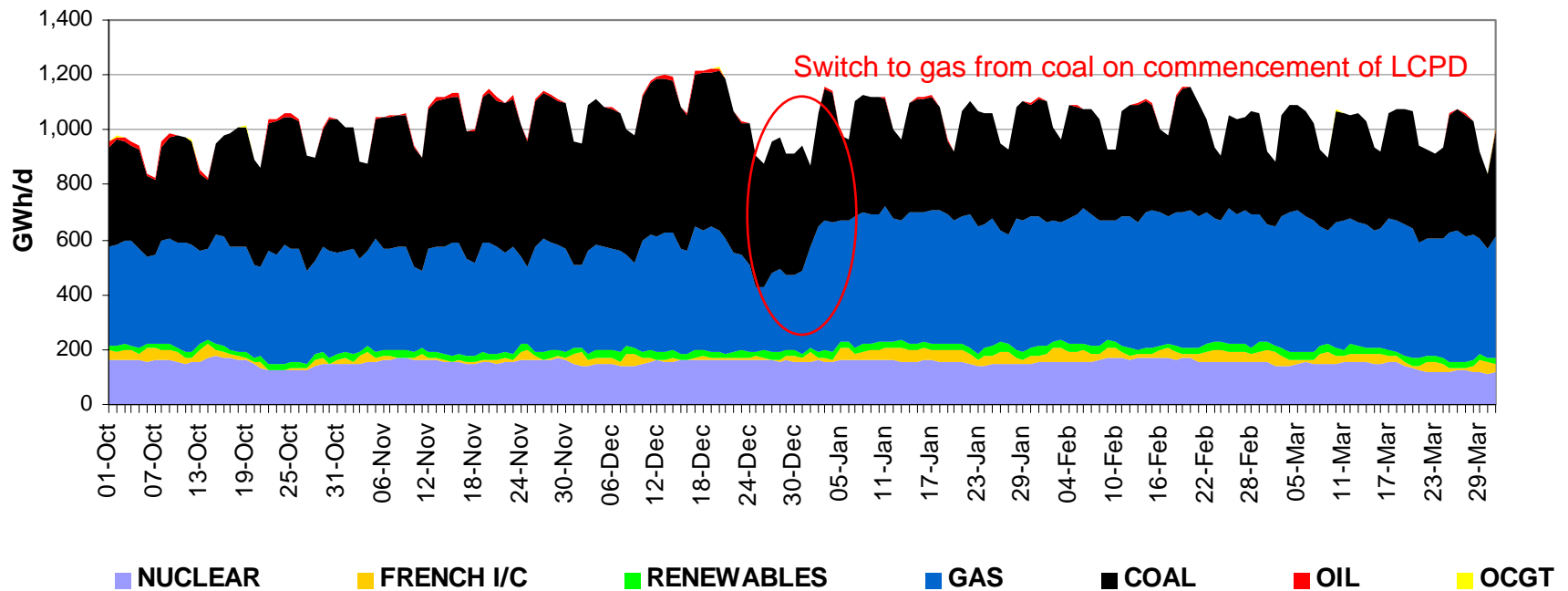
Electricity Supply & Demand Forecast



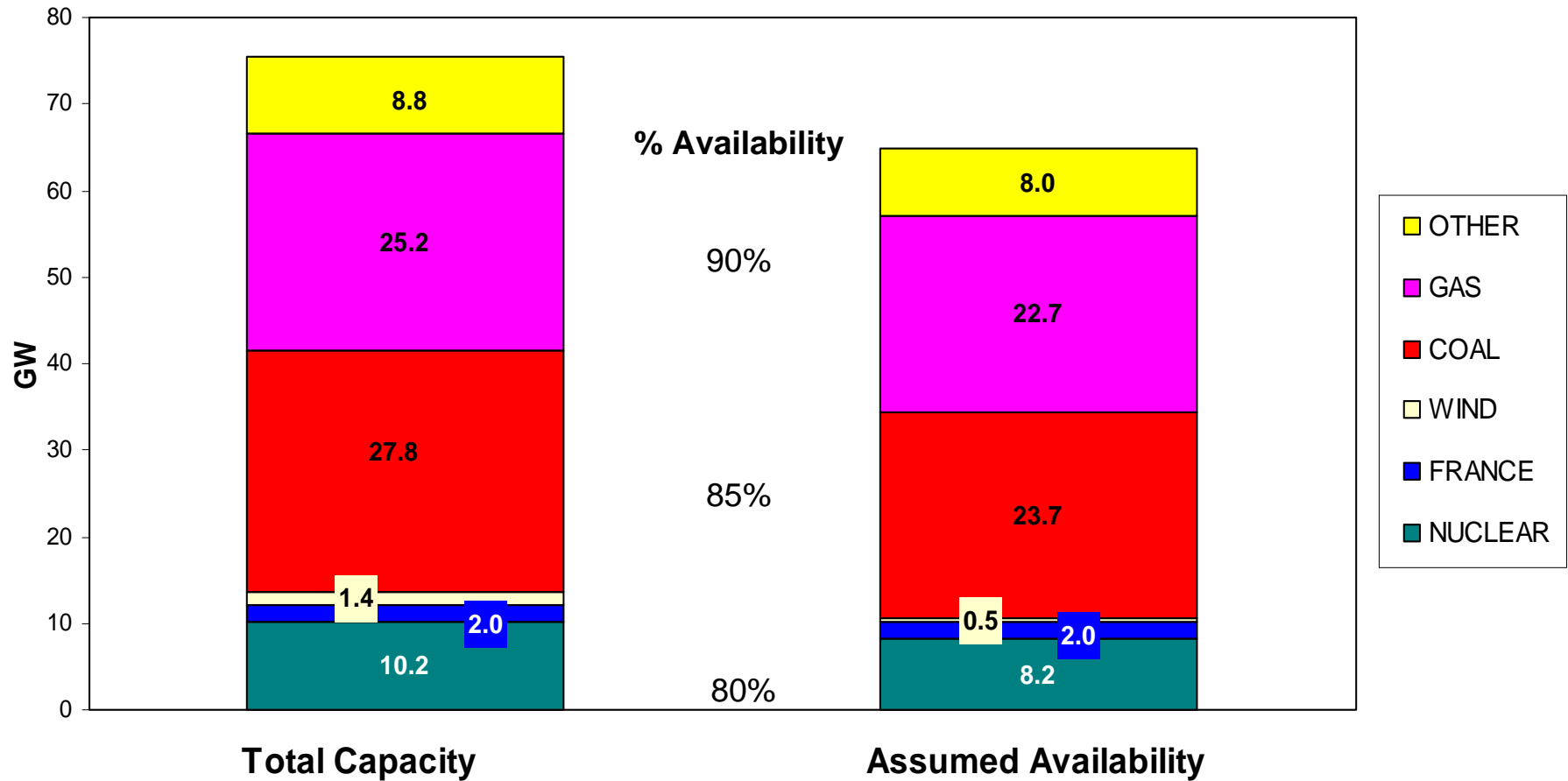
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Winter 2007/08 Electricity Generation

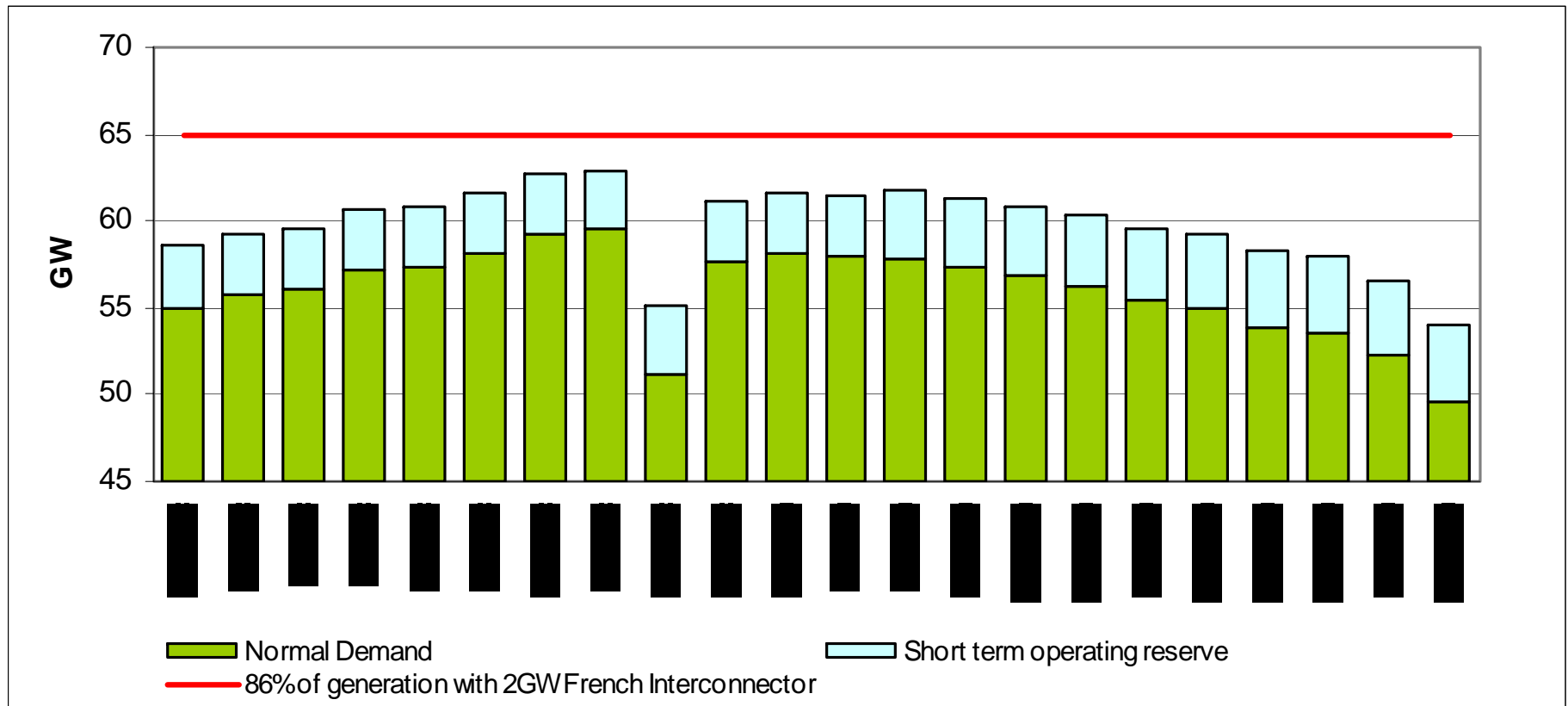
Electricity Supply Build-Up



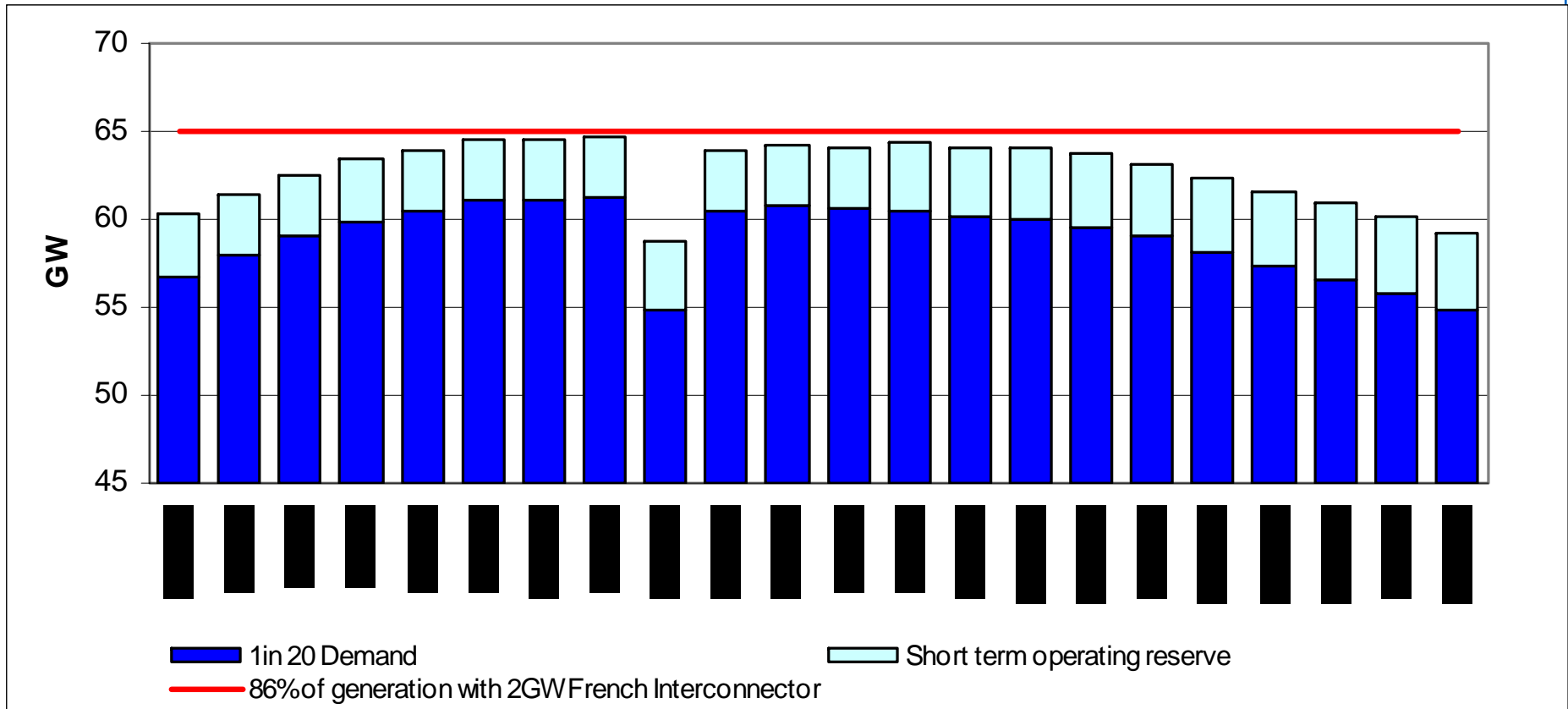
Generation Capacity & Assumed Availability



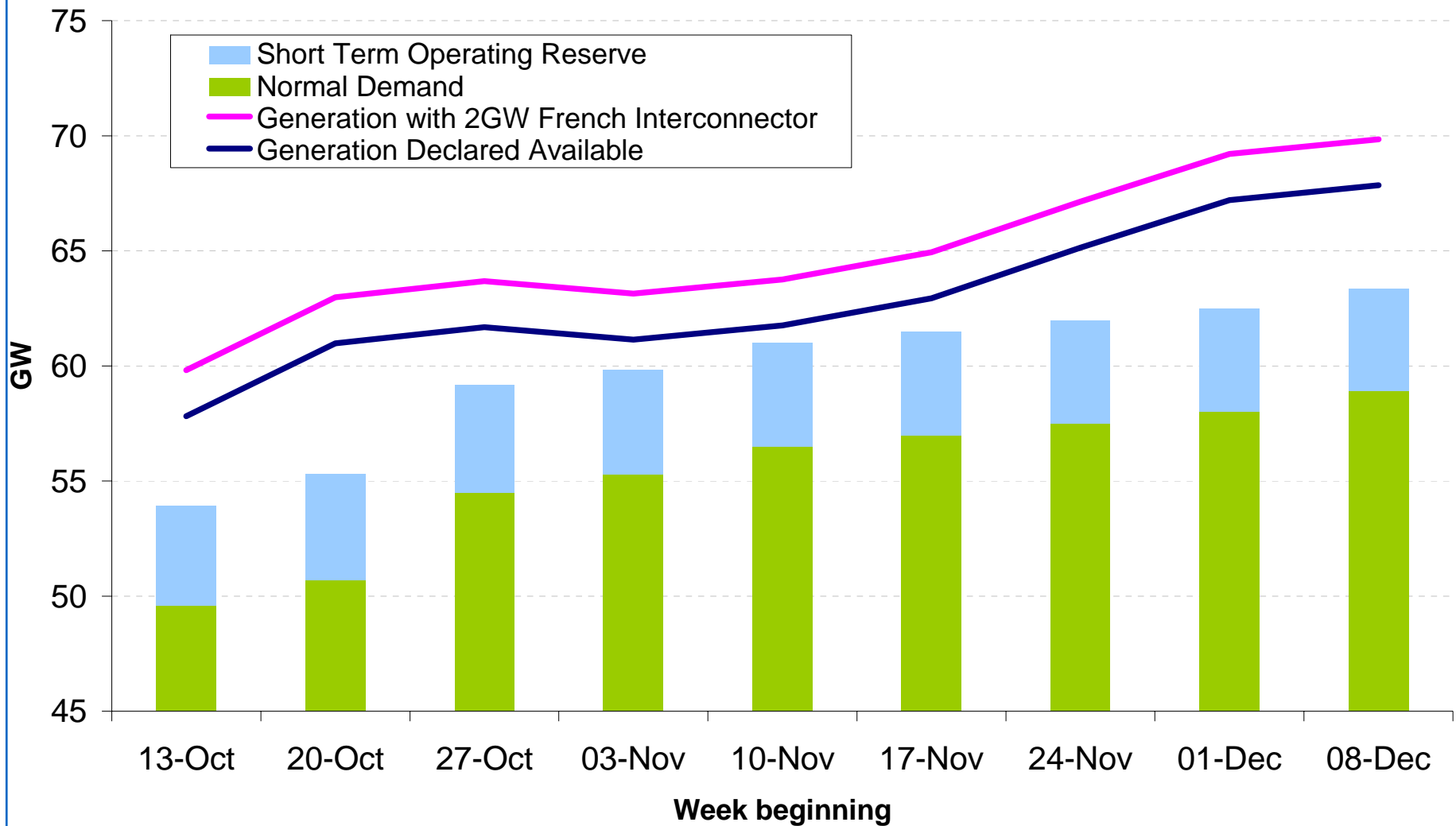
Winter 2008/09 – Electricity (Normal)



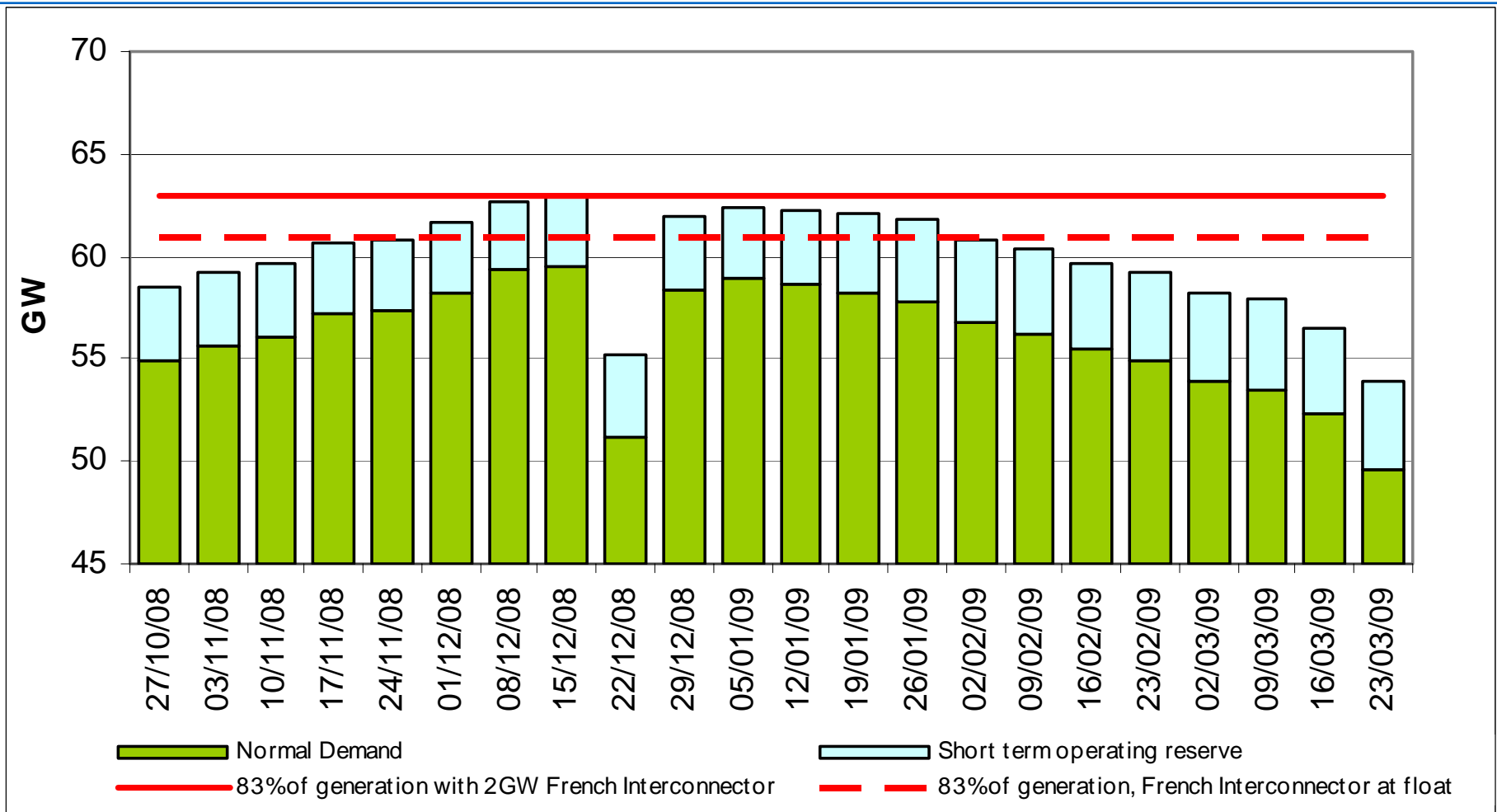
Winter 2008/09 – Electricity (1 in 20 high)



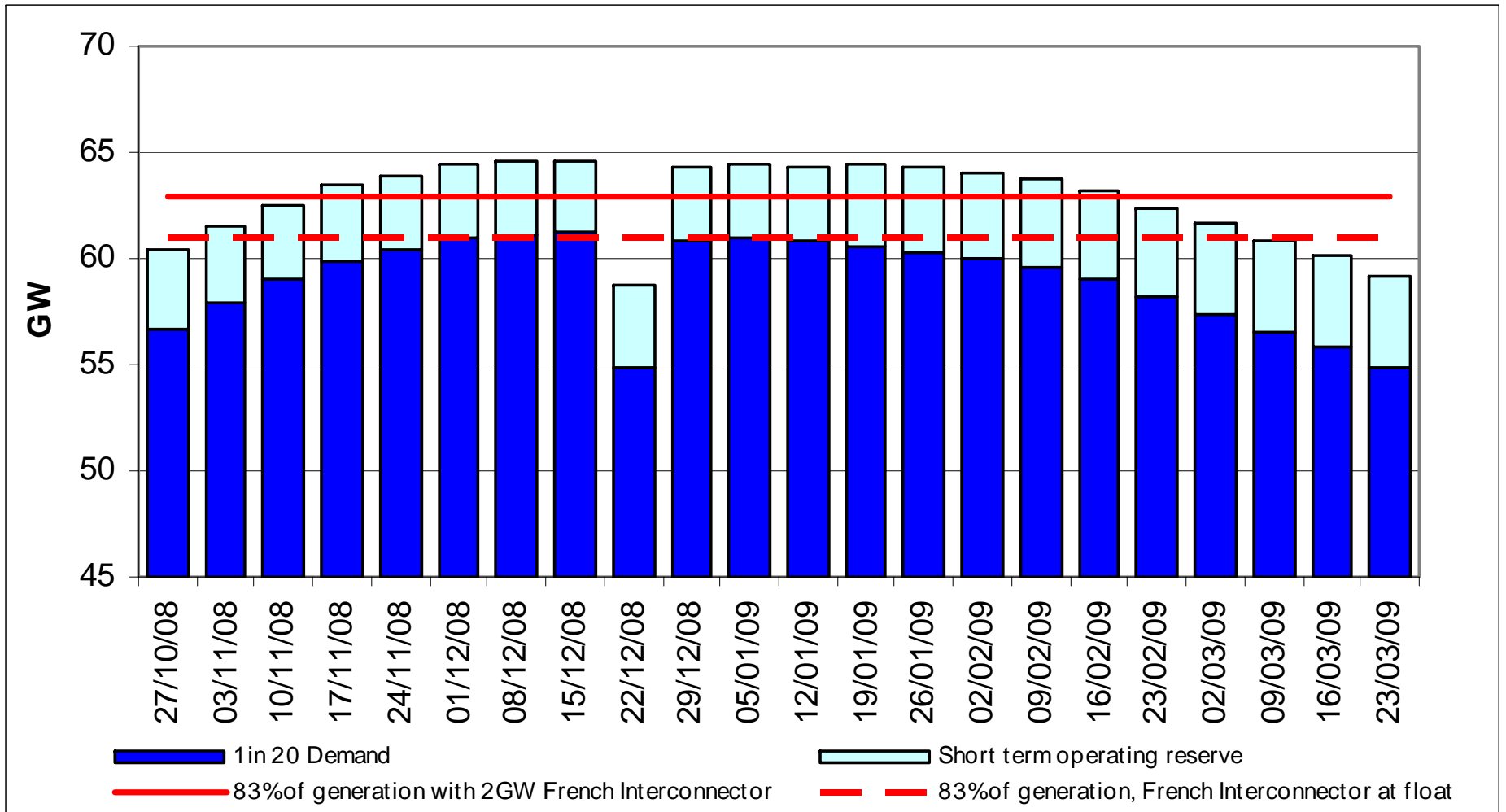
Normal Demand and Notified Generation Availability



“Low” Generation Availability Scenario – normal demand



“Low” Generation Availability Scenario – 1 in 20 demand



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 generation availability assumptions and credible risks**
- ◆ **'Events' for both gas and electricity happen!!**