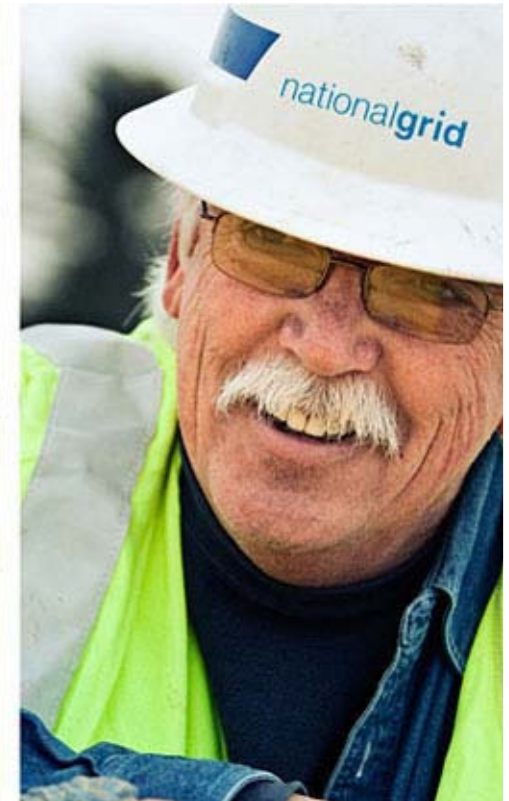


Winter Outlook 2009/10

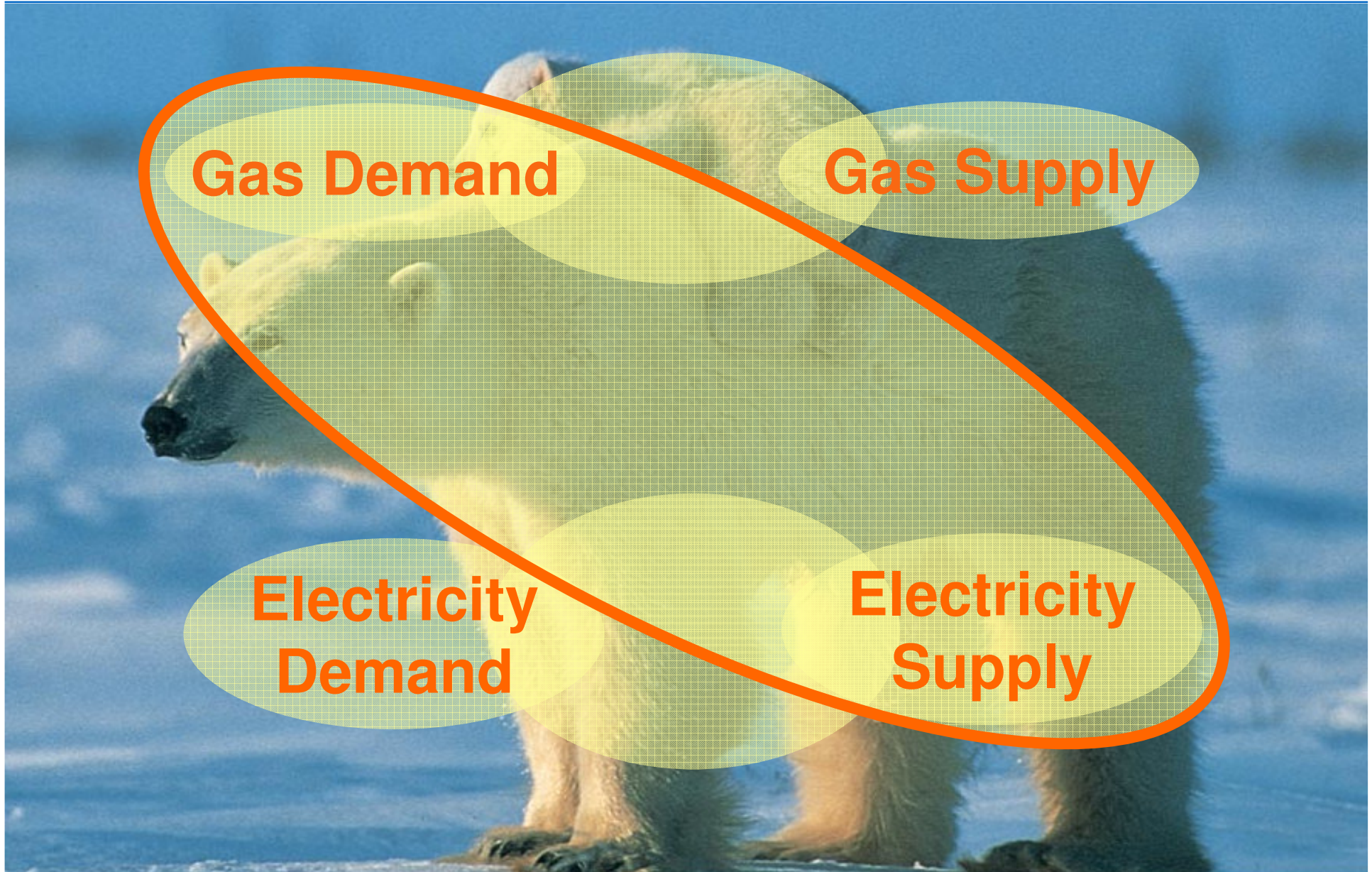
8th October 2009 Peter Parsons



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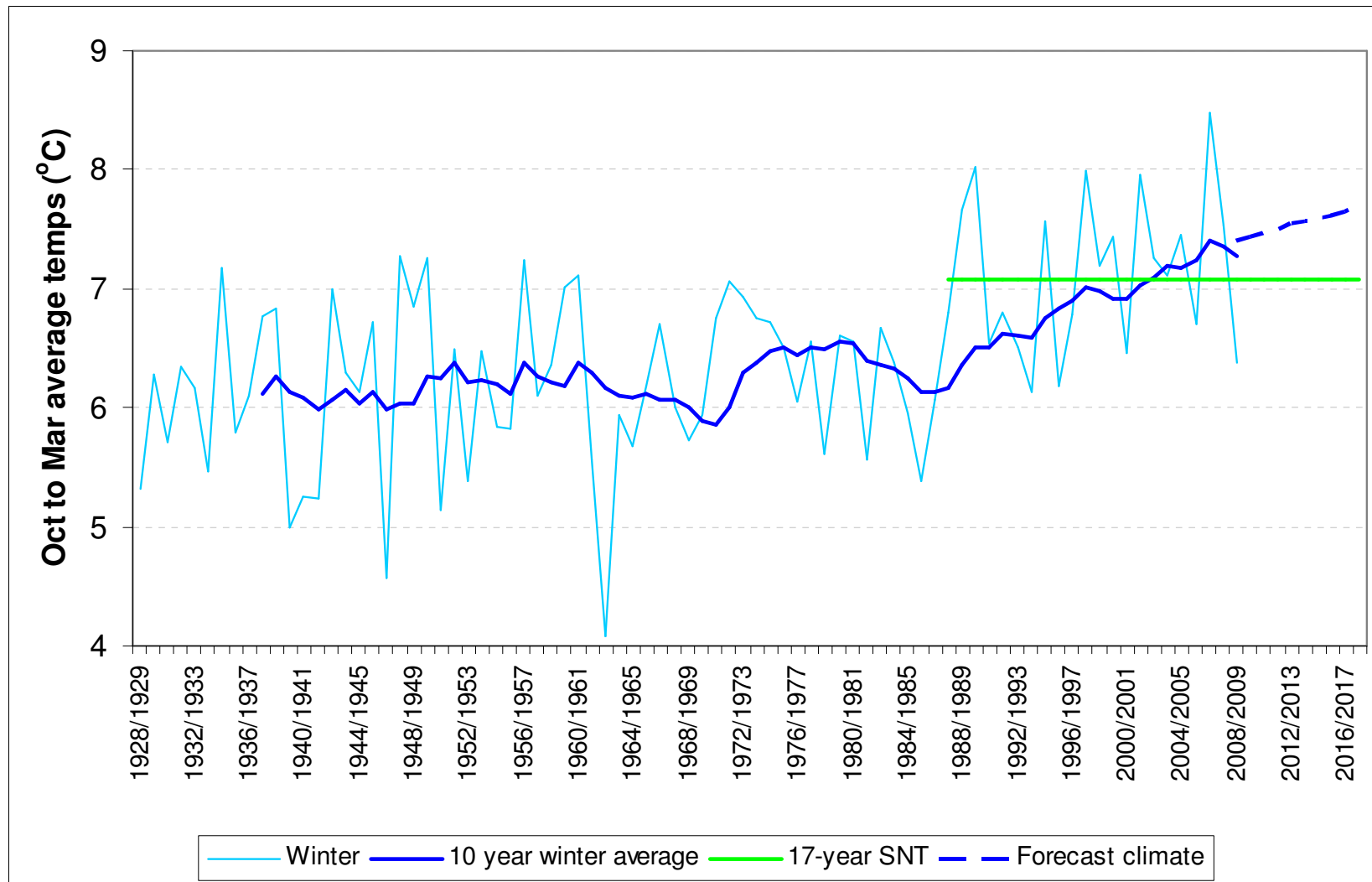
Agenda – Winters 2008/9 & 2009/10



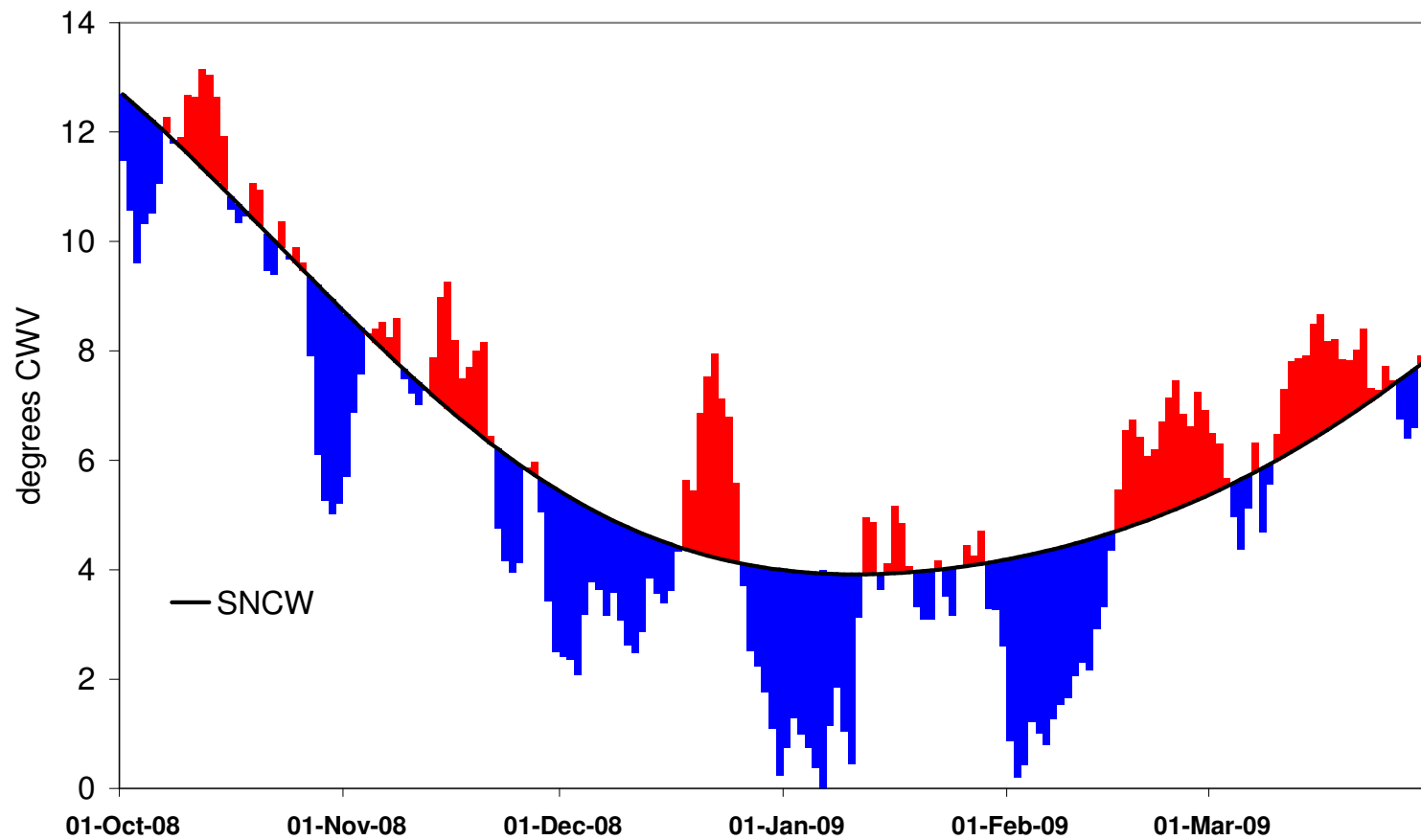
2008/9 Overview

- ◆ Winter 2008/9 characterised by:
 - ◆ Periods of cold weather, snow and ice for ~ 2 weeks. Overall winter was average
 - ◆ January cold snap drove UK gas demand to near record levels not seen since 2003 (446mcm)
 - ◆ Widespread gas supply disruptions across Europe in January as a consequence of Russia/Ukraine dispute over gas prices and compressor fuel
 - ◆ Unprecedented IUK winter export flows
 - ◆ Higher demands met through significant flows from UK Storage facilities at an early stage of the winter period
 - ◆ Concerns raised over the UK's resilience to a late winter supply shock or prolonged period of cold weather
 - ◆ Lower demands due to economic recession

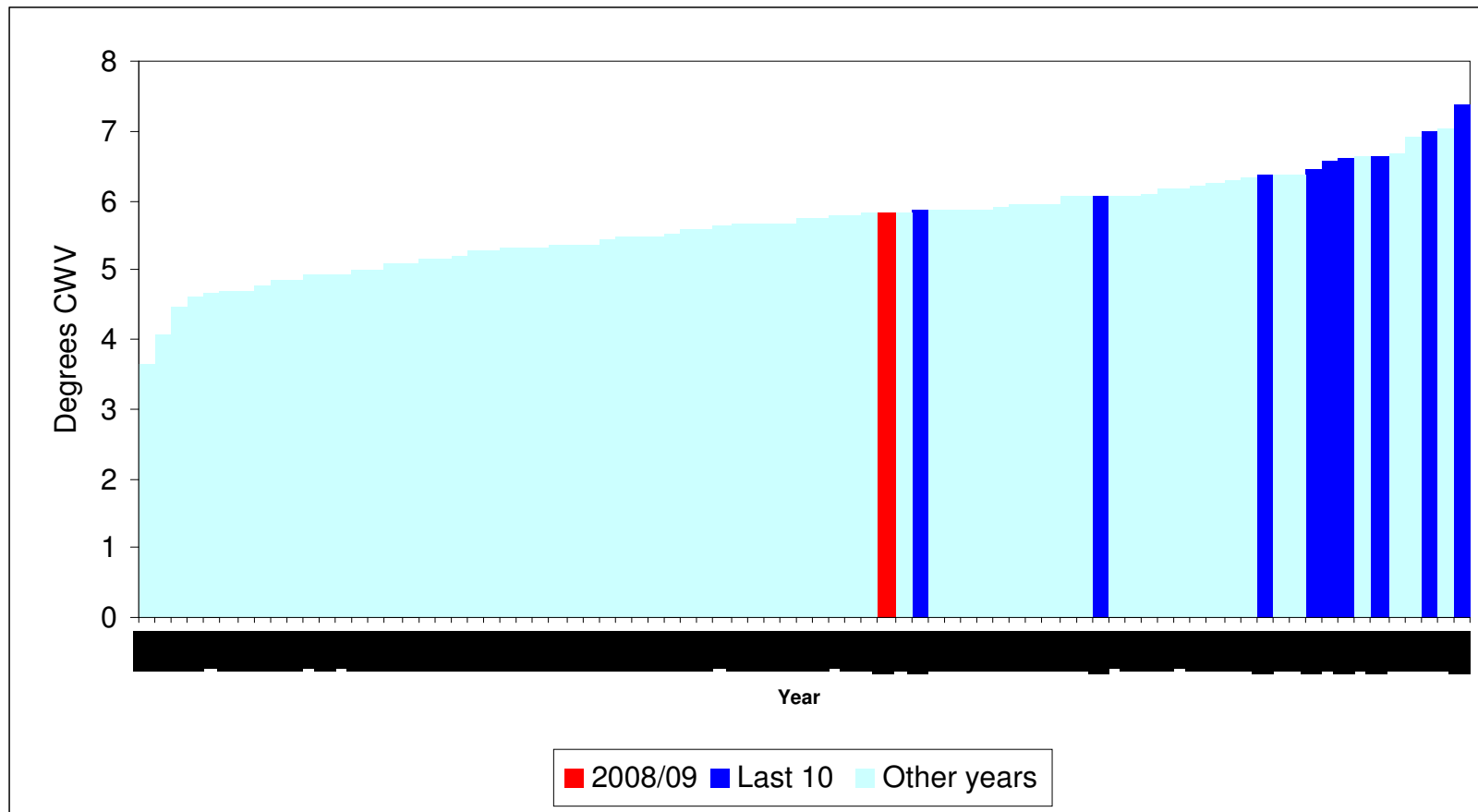
Average winter temps – 1928/9 to 2008/9



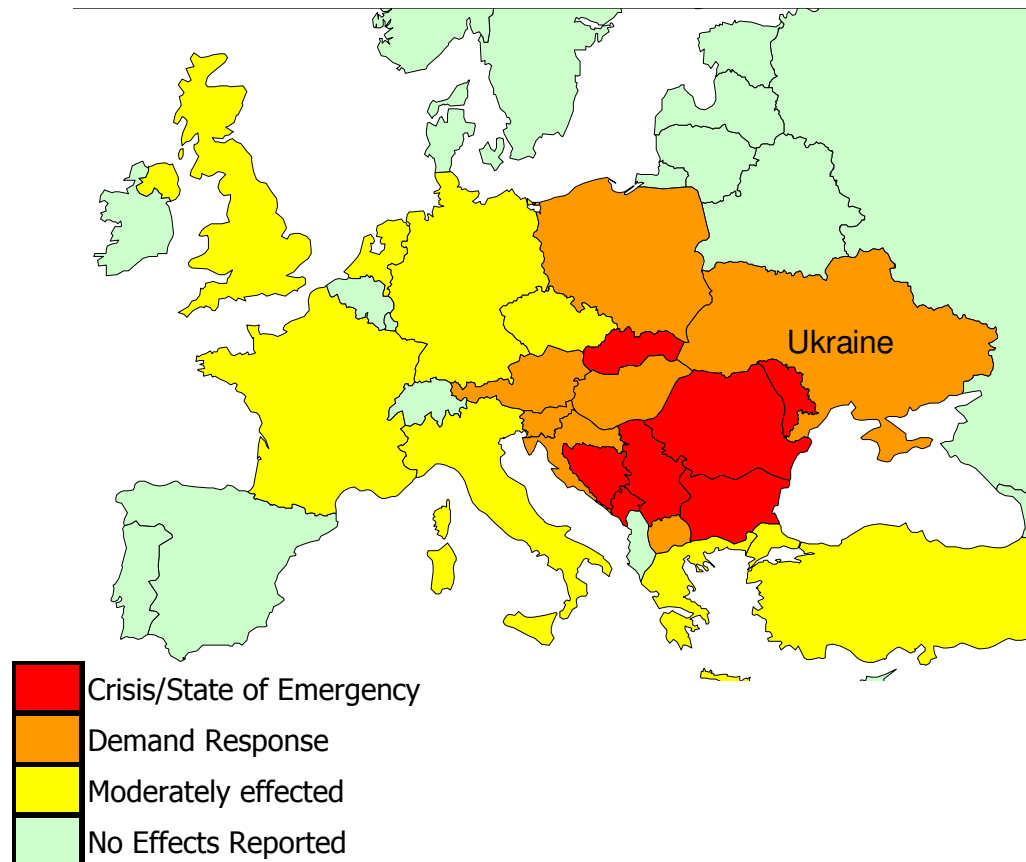
National Composite Weather Variable (CWV) and 17 year Seasonal Normal CW (Oct 2008 – Mar 2009)



Mean National CWV: October – March



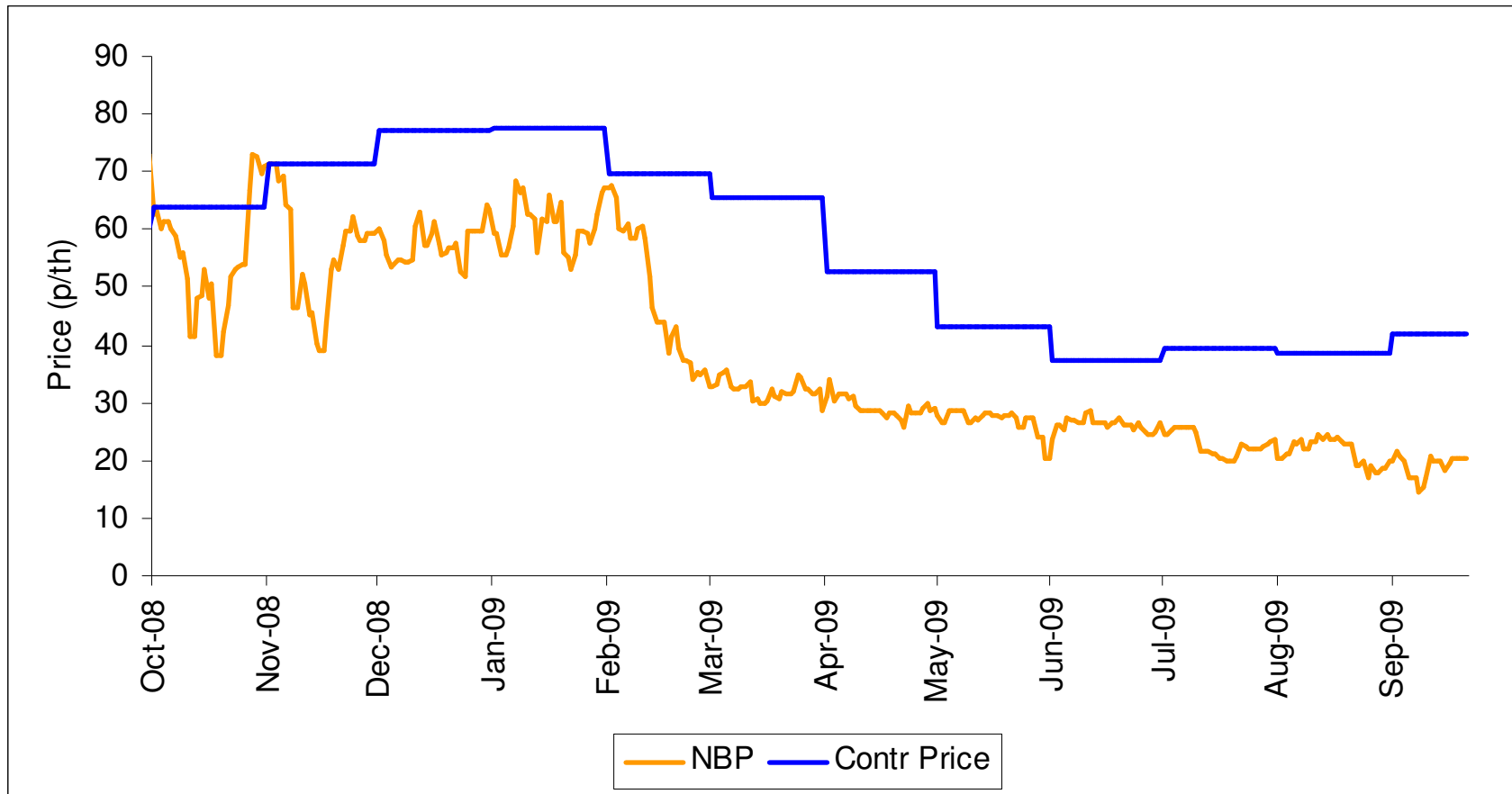
Russia – Ukraine: Why is it important?



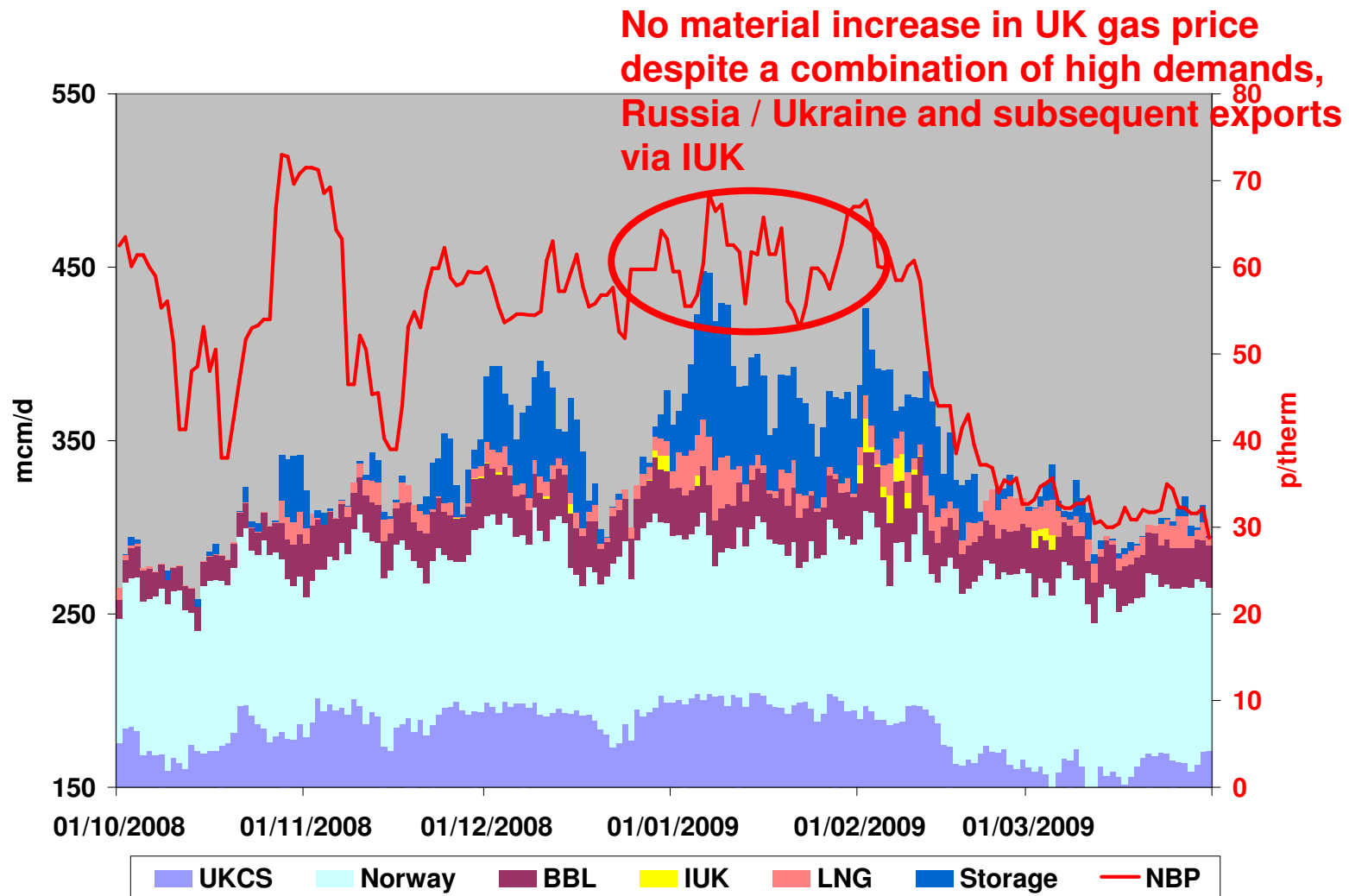
- ◆ 120 bcm Russian Gas transits through Ukraine, ~20% European supplies
- ◆ Jan 2009 Payment dispute leads to 13 day cut off
- ◆ 8 countries severely effected (55 million people), many households without heating
- ◆ Western Europe less severely impacted but increased storage use & exports

- ◆ Ukraine has been heavily impacted by the global recession and credit crunch
- ◆ Continued fears over payments leading to future cut offs

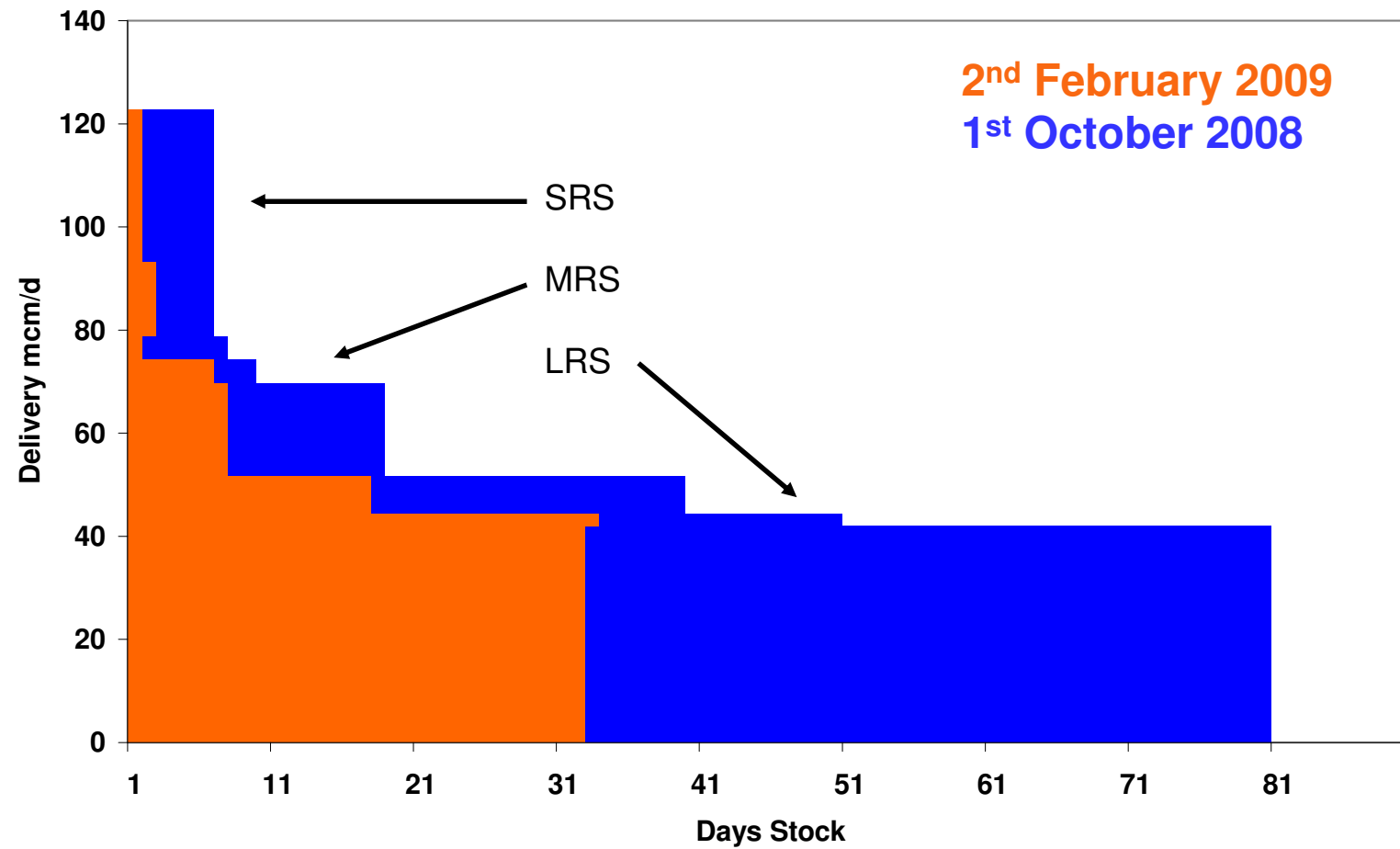
NBP vs Continental Contract Price



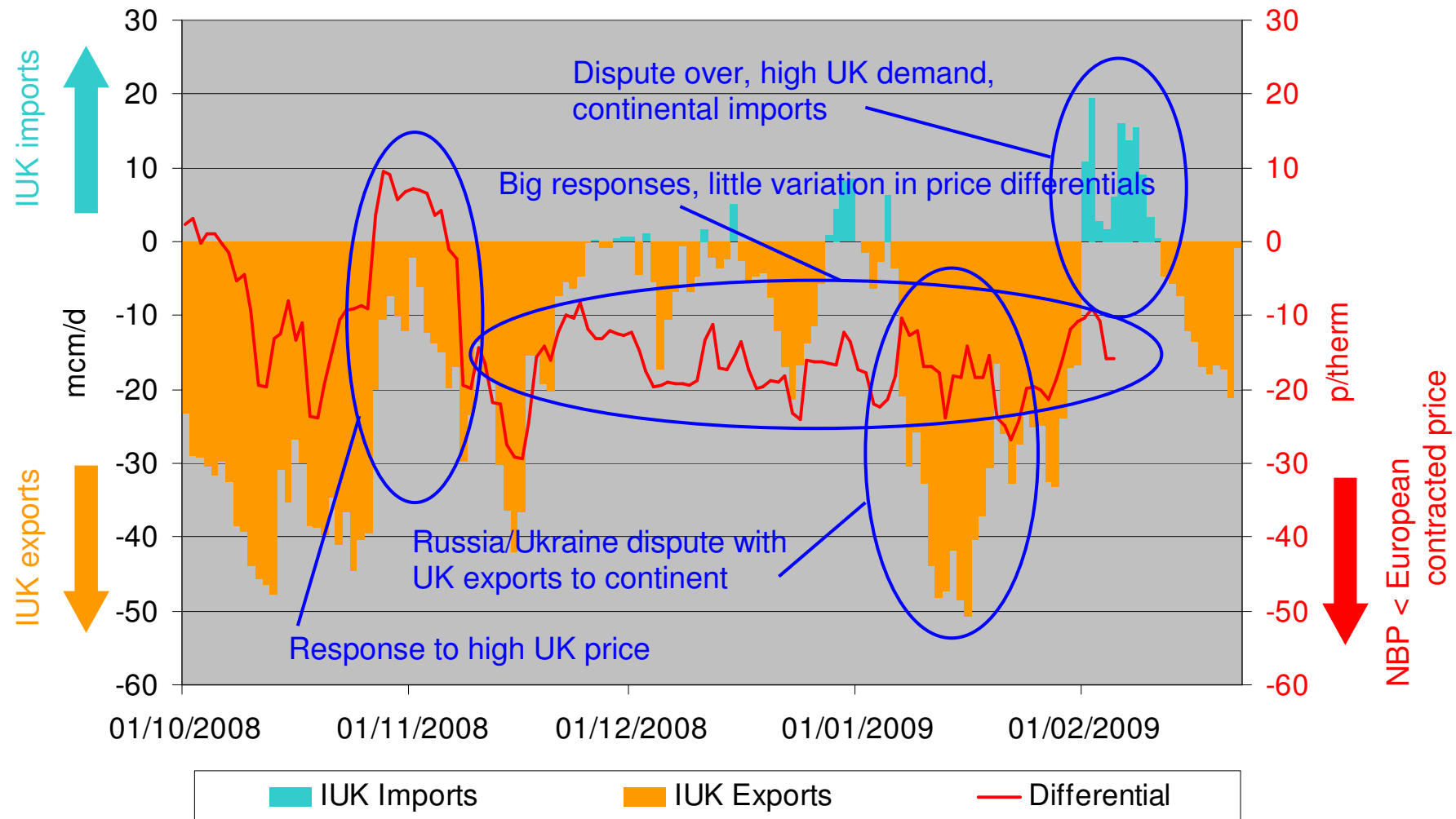
2008/9 Supplies



Remaining Storage

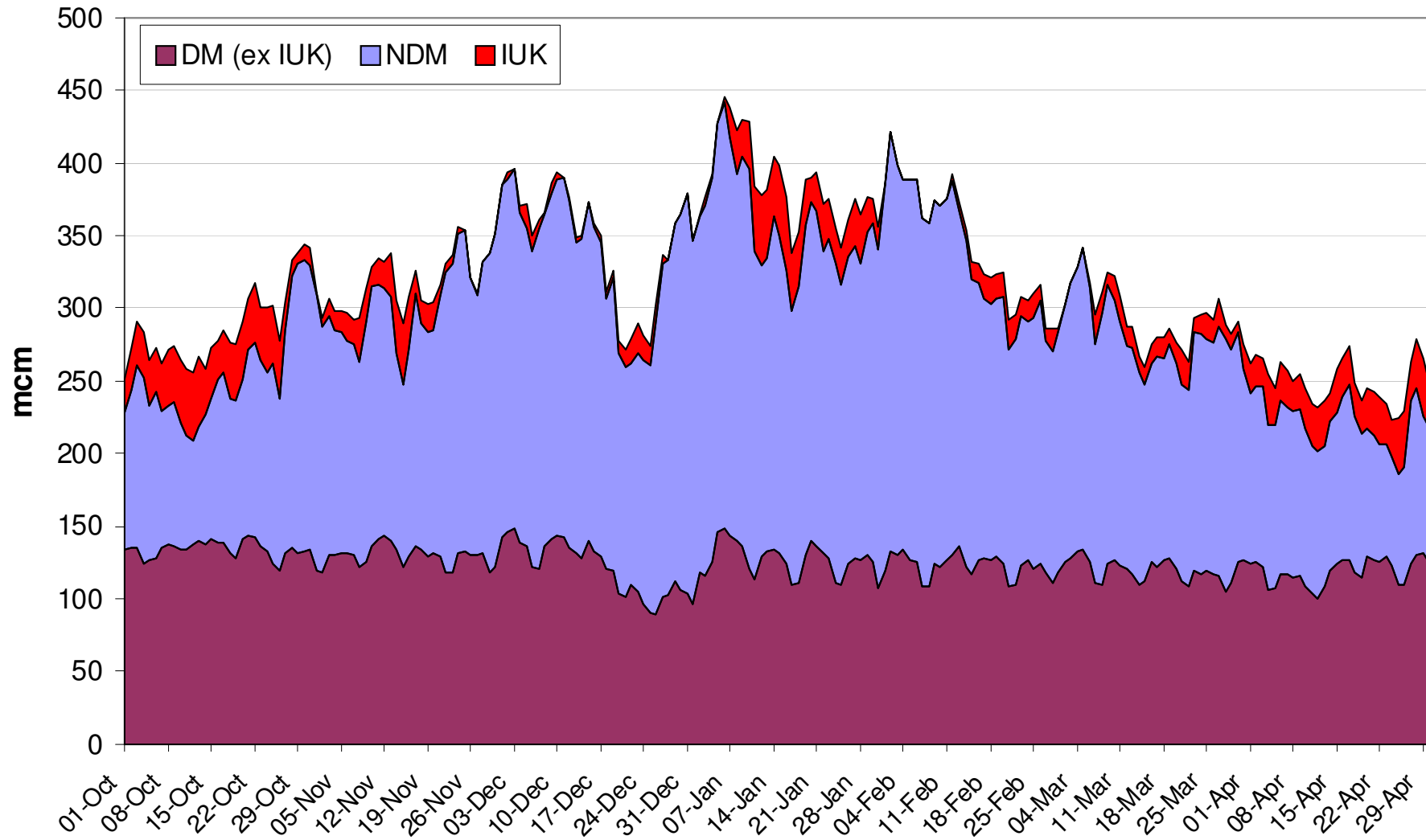


IUK flows v differential between NBP & European contracted price



Note: European contracted price based on National Grid analysis

2008/9 Demands (inc IUK)

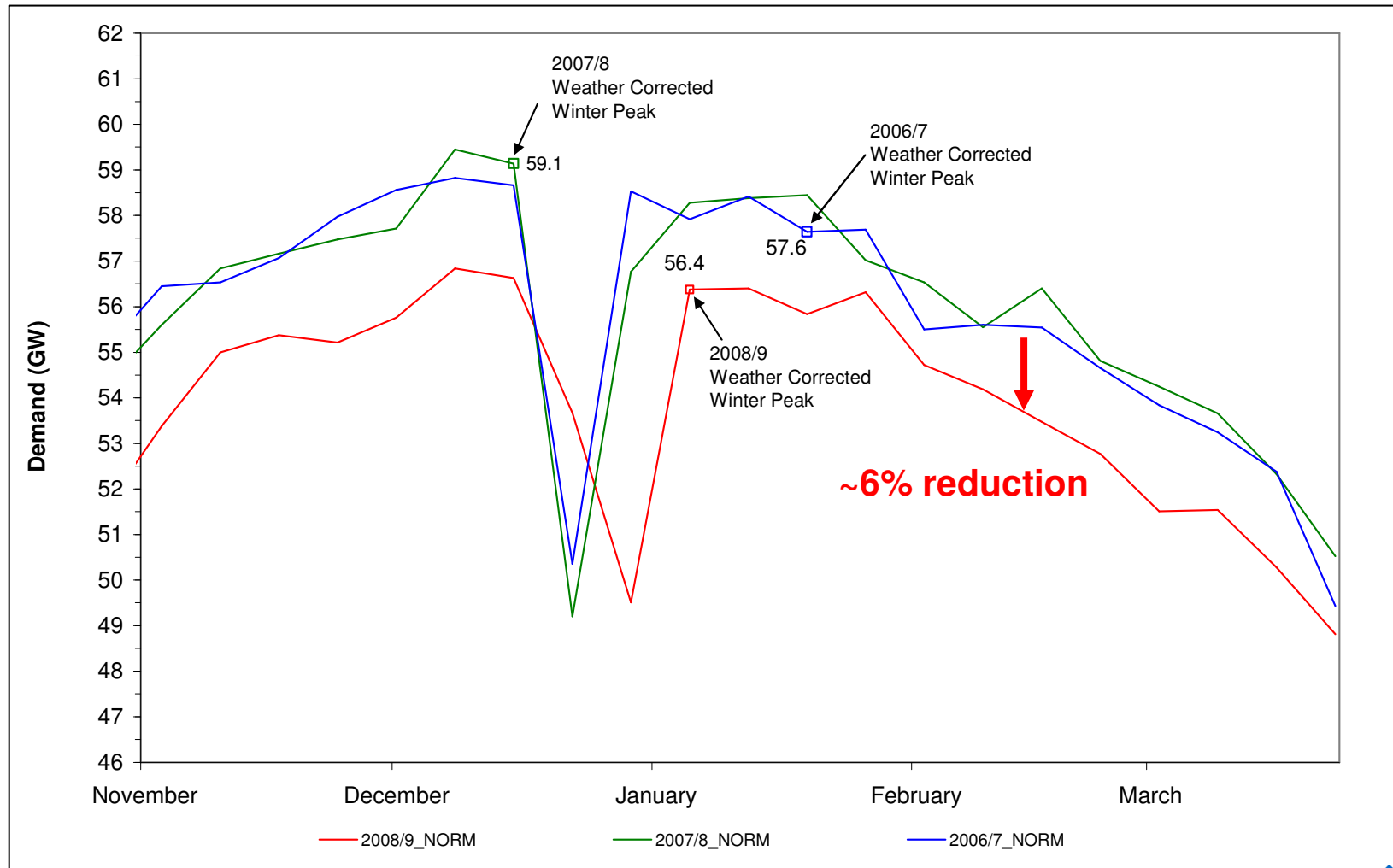


Winter 2008/09 gas demand

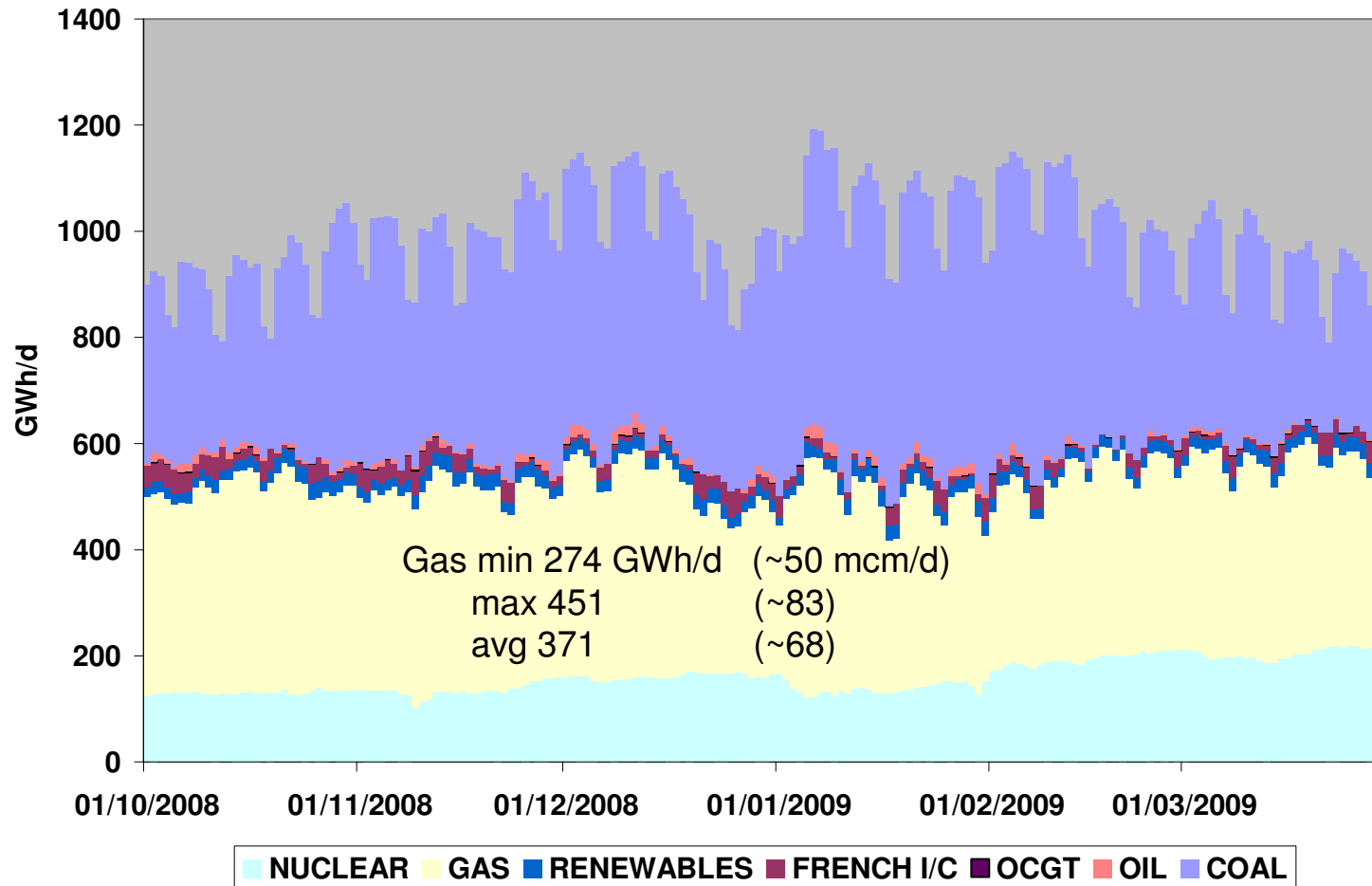
- ◆ On a weather corrected basis all market sectors were lower than last year
- ◆ NDM actual demand was slightly higher than last year due to the colder weather, but lower when weather corrected
- ◆ NTS industrial demand reduction based on temporary reduction at 2 large sites, these have returned to operation recently

	% of actual winter demand	Weather corrected change from 2007/8
Domestic	46%	-5.3%
NDM (includes domestic)	60%	-5.8%
DM excluding power	9%	-11.9%
NTS Industrials	1%	-34.7%
Ireland	6%	-0.5%
Power	23%	-4.1%
GB	100%	-6.0%

2008/9 Weather corrected weekly peak electricity demands



2008/9 Generation Mix



2009/10 Winter Outlook



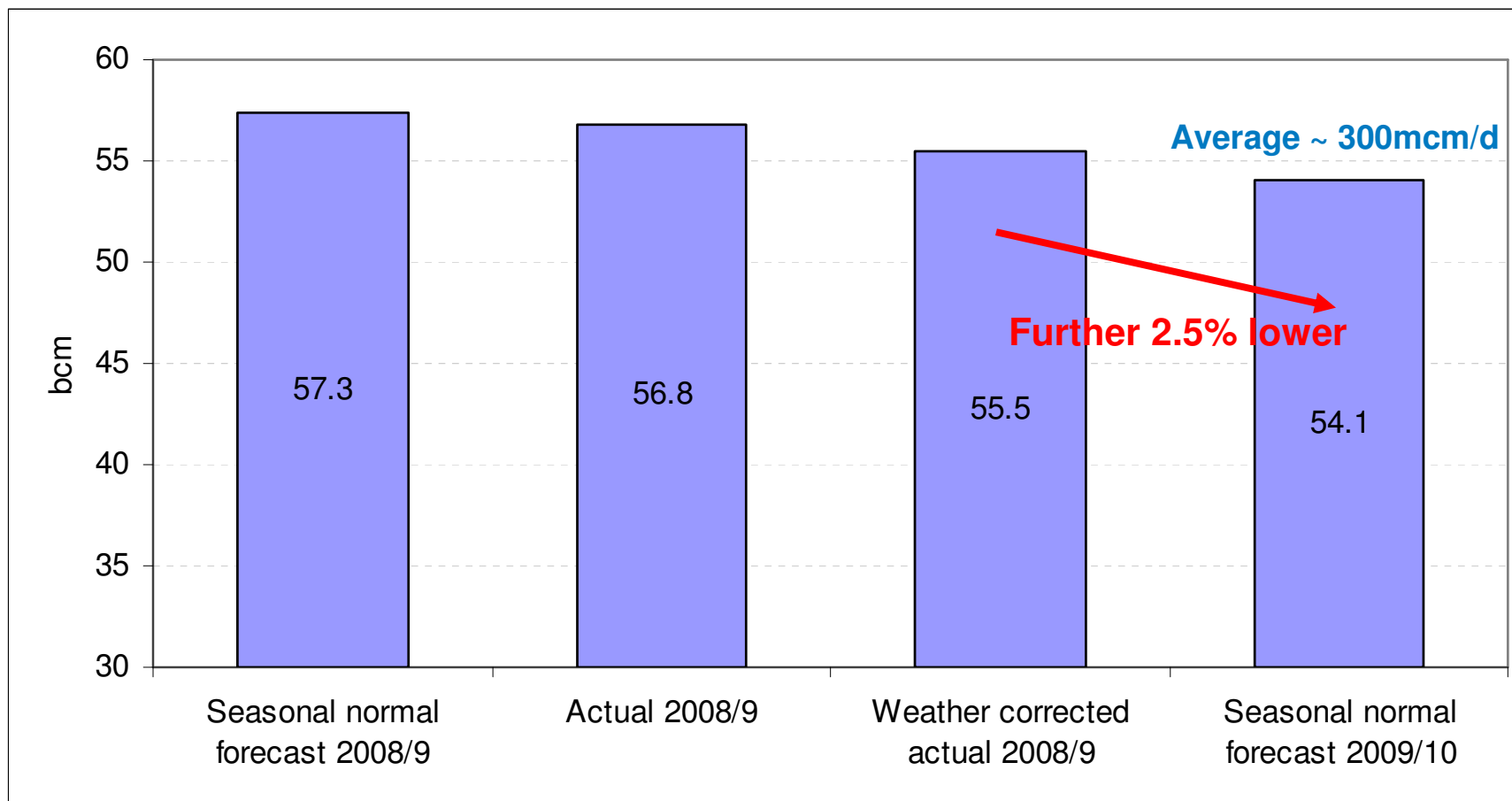
**Mum. He showed
all of these charts
last year!**

**I know dear,
he needs some
new material**

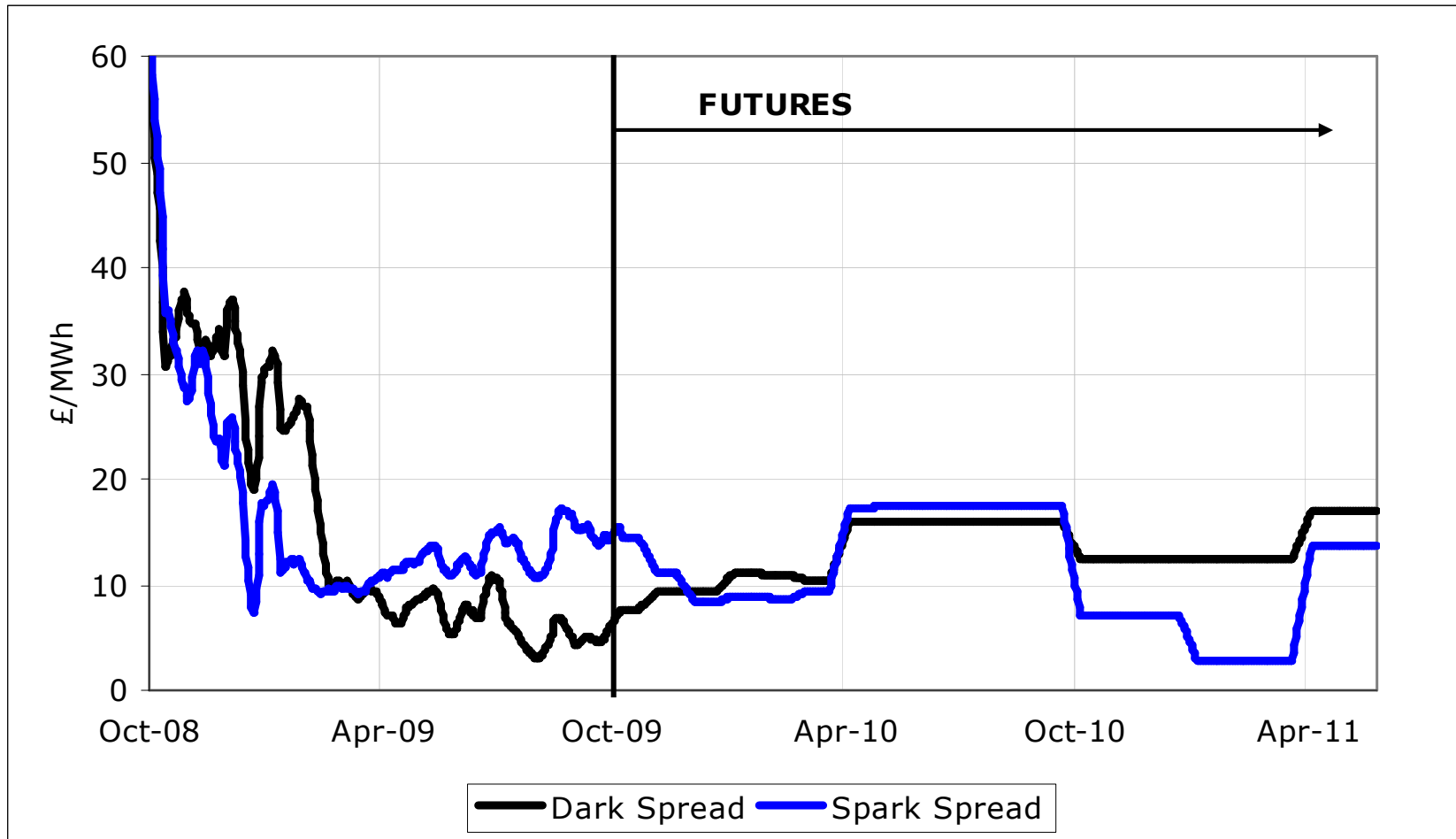
Met Office Sept 09 – Early indications for winter 2009/10

- ◆ Rainfall: Signals slightly favour near or above average rainfall over much of Northern Europe, including the UK
- ◆ Temperature: Preliminary indications of near or above average temperatures over much of Europe including the UK
- ◆ Winter 2009/10 likely to be milder than last year for the UK, with a 1 in 7 chance of a cold winter
 - ◆ Weather series: 1971-2000
- ◆ Main forecast for Winter 2009/10 will be issued in November by Met office

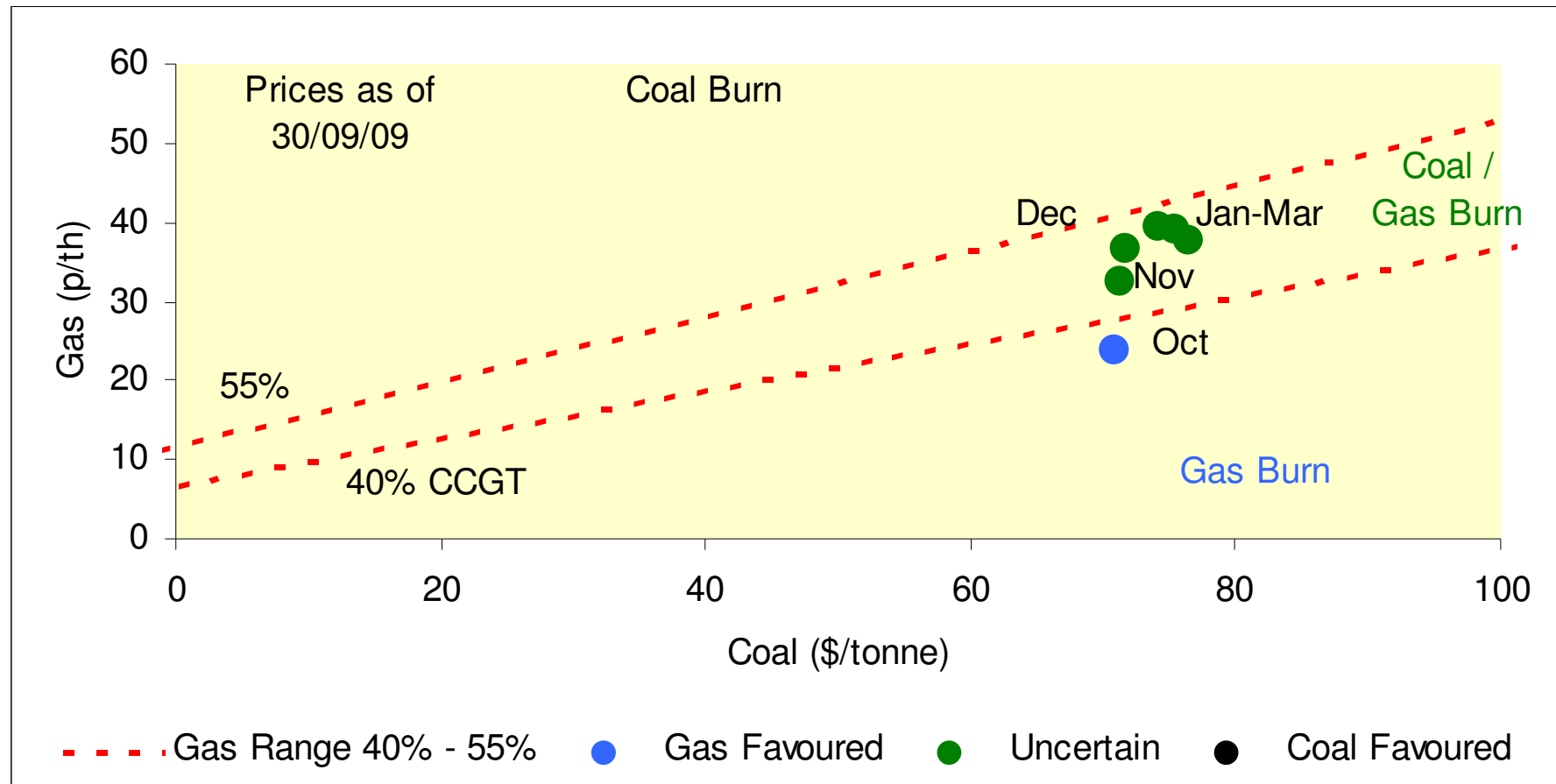
Total UK Winter Demand



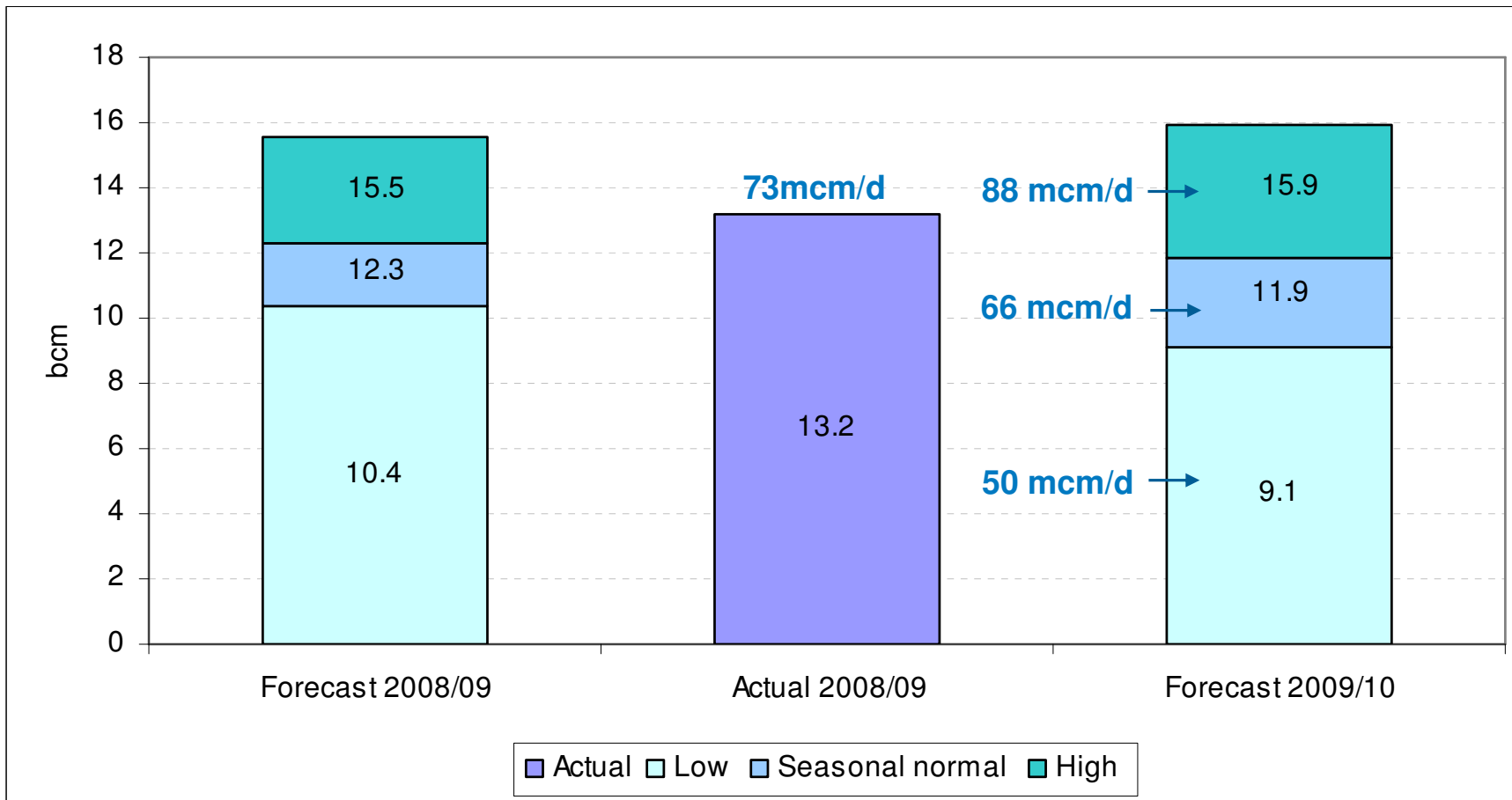
Marginal dark / spark spreads in winter



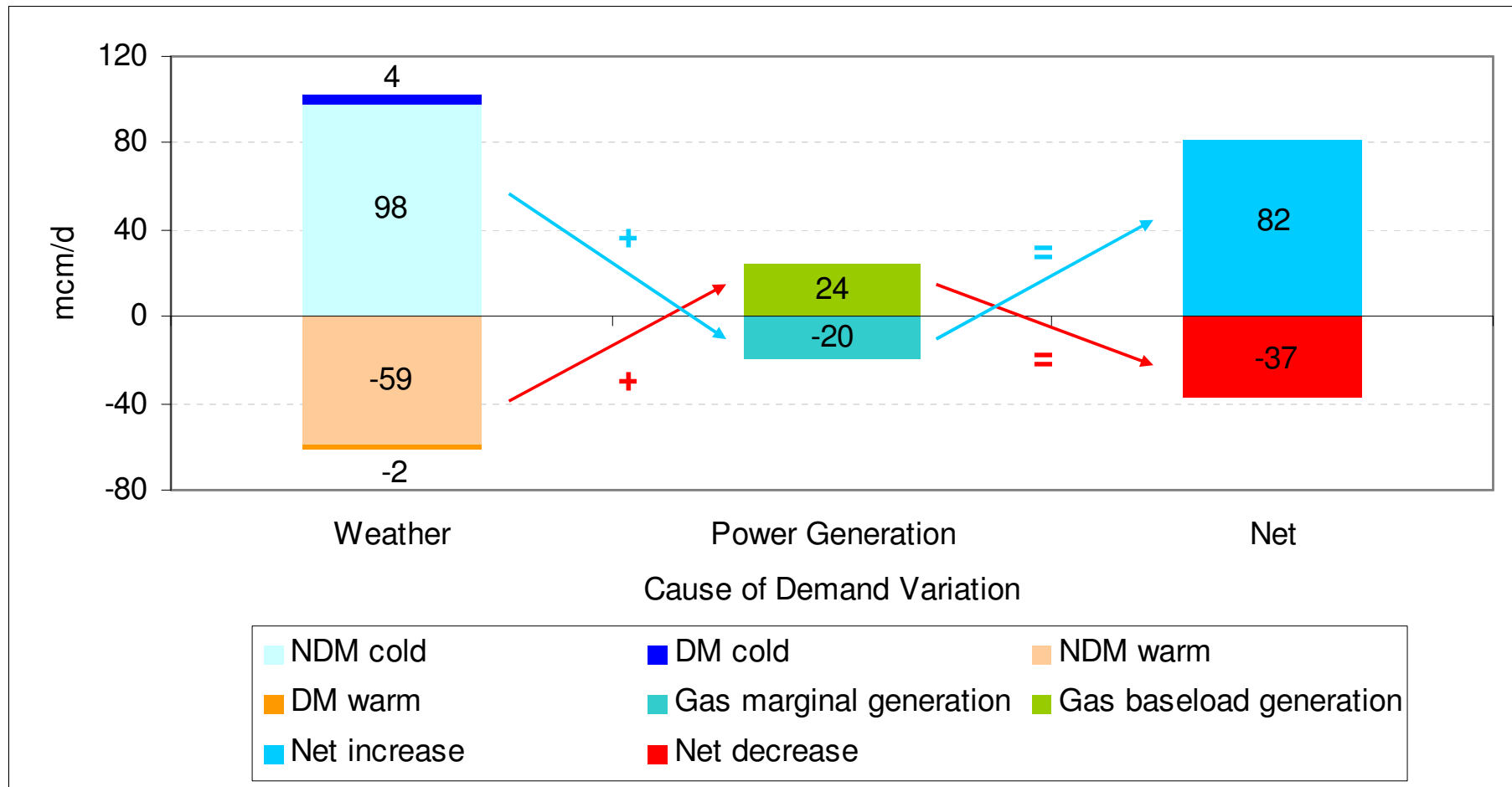
Coal / gas generation winter 2009/10



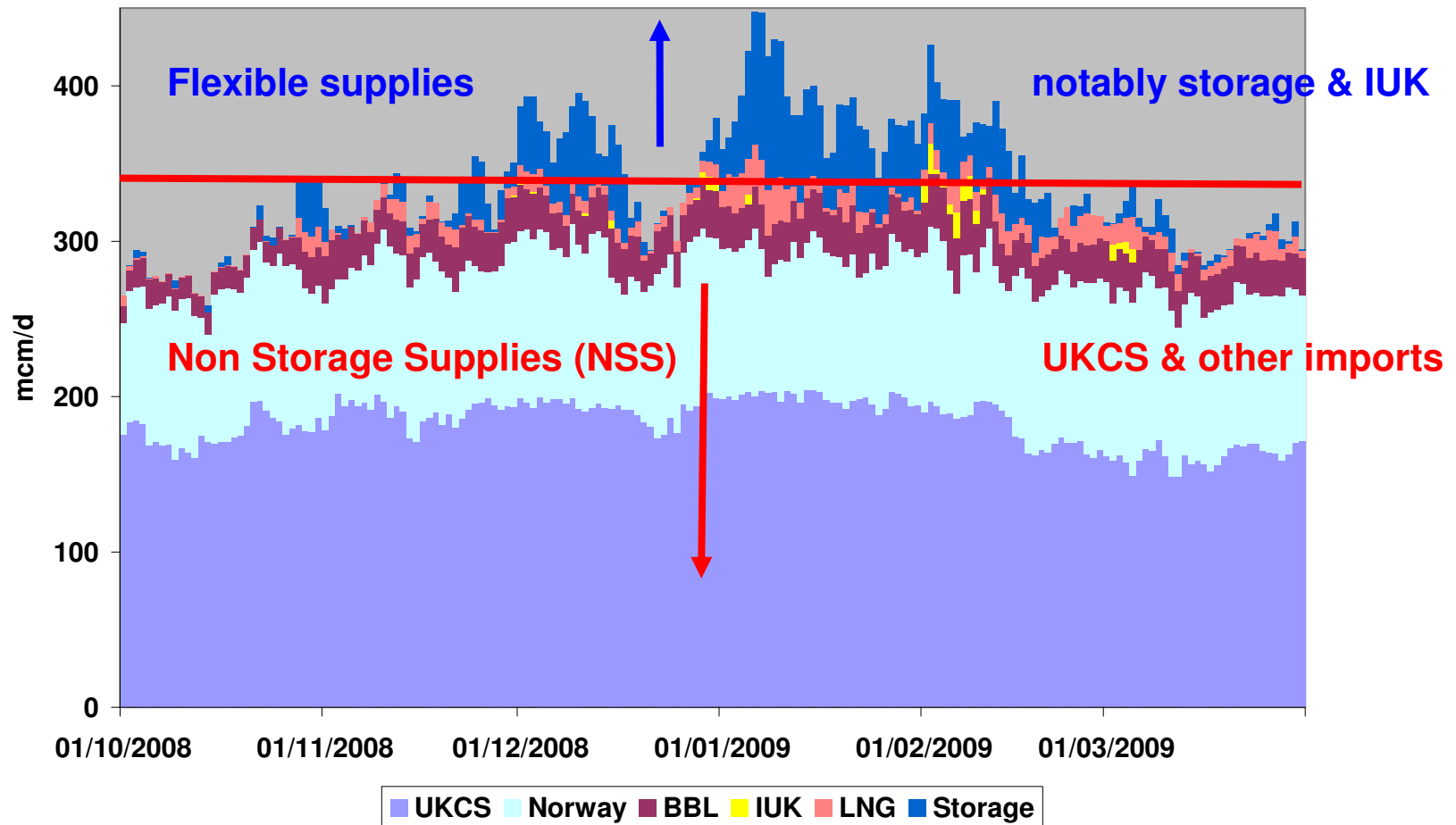
2009/10 forecast power generation



Possible variation in daily gas demand

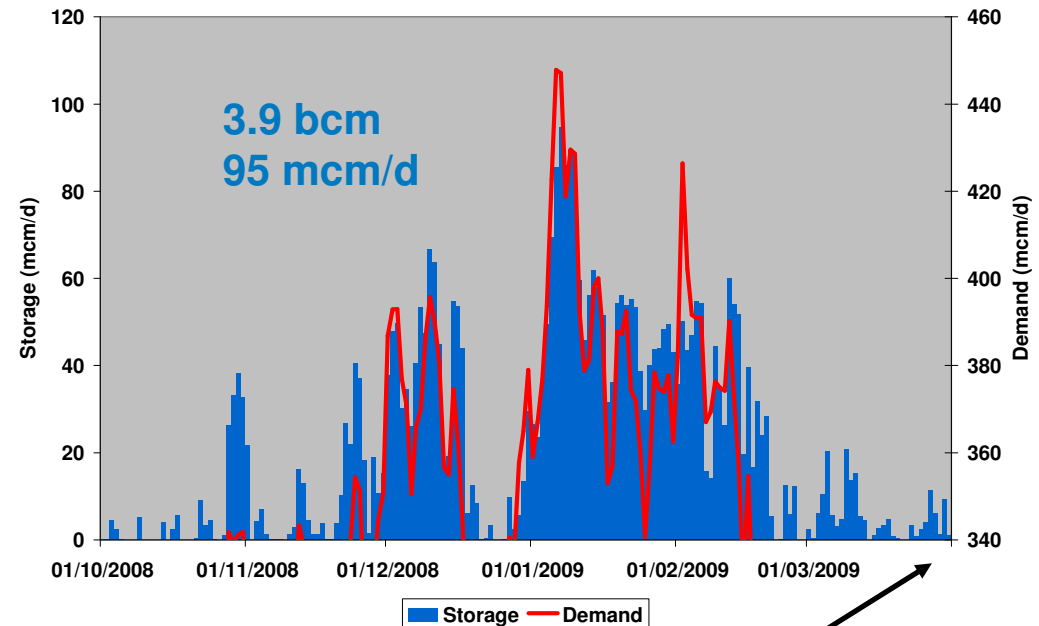


Winter 2008/9



Storage

- ◆ Comparable storage levels to last winter (4.6 bcm, 124 mcm/d)
- ◆ Aldbrough offsets loss of some LNG storage
- ◆ Lower demands may influence storage use as may forward prices



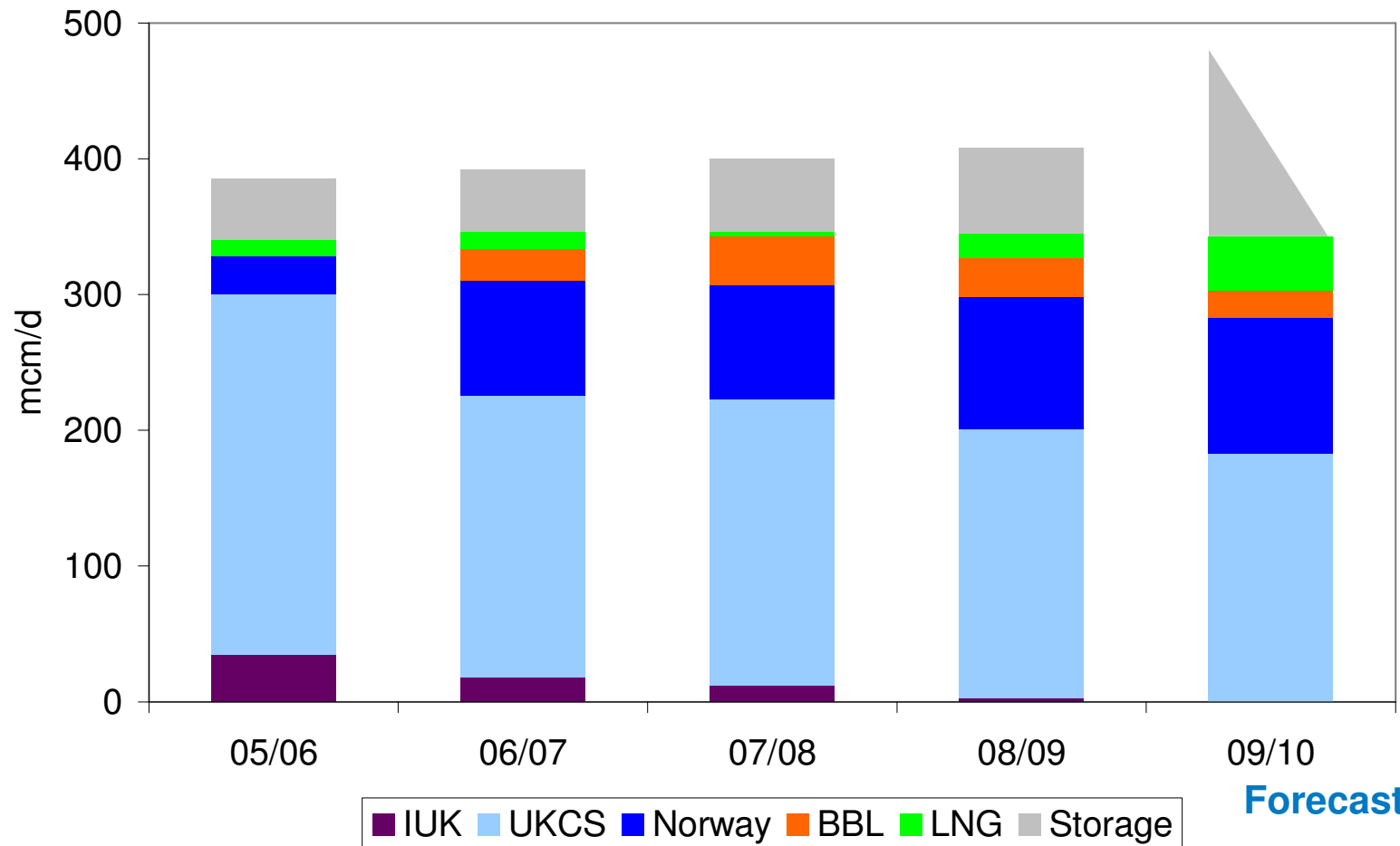
340 mcm/d is typical
level of non storage
supplies

Historic & forecast supplies (highest 20 demand days)

(mcm/d)	2005/6	2006/7	2007/8	2008/9	2009/10
UKCS	265	208	211	198	183
Norway	29	84	84	97	100
BBL		24	36	29	20
LNG	12	12	3	18	40
Total NSS^[1] (ex IUK)	305	329	335	341	343
IUK	35	18	12	3	0-30
Total NSS	341	347	347	344	331 - 386
Storage	45	46	54	63	124
Supply = Demand	386	392	401	407	

^[1] NSS = Non Storage Supply

Supply make-up, top 20 days

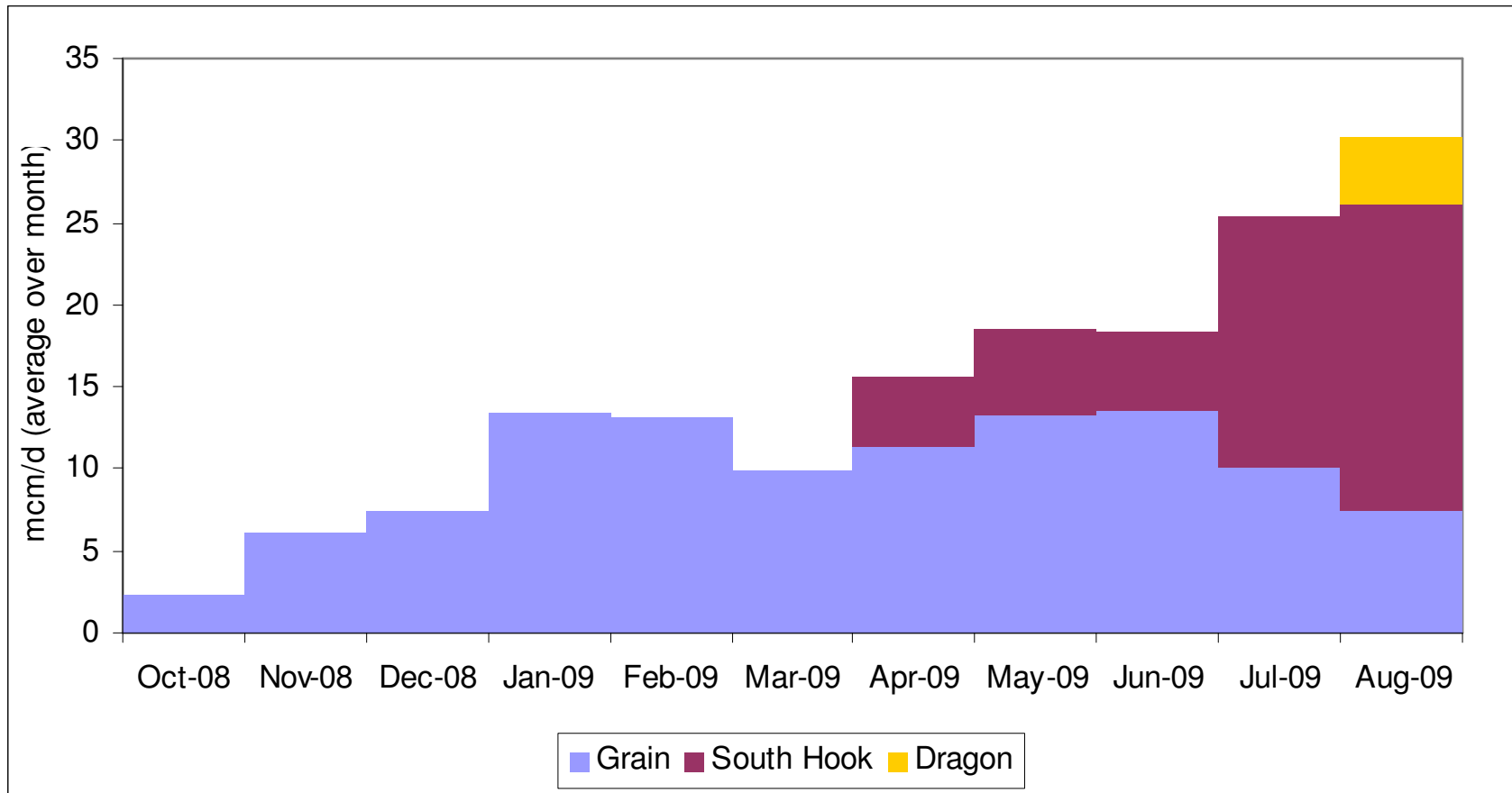


Forecast

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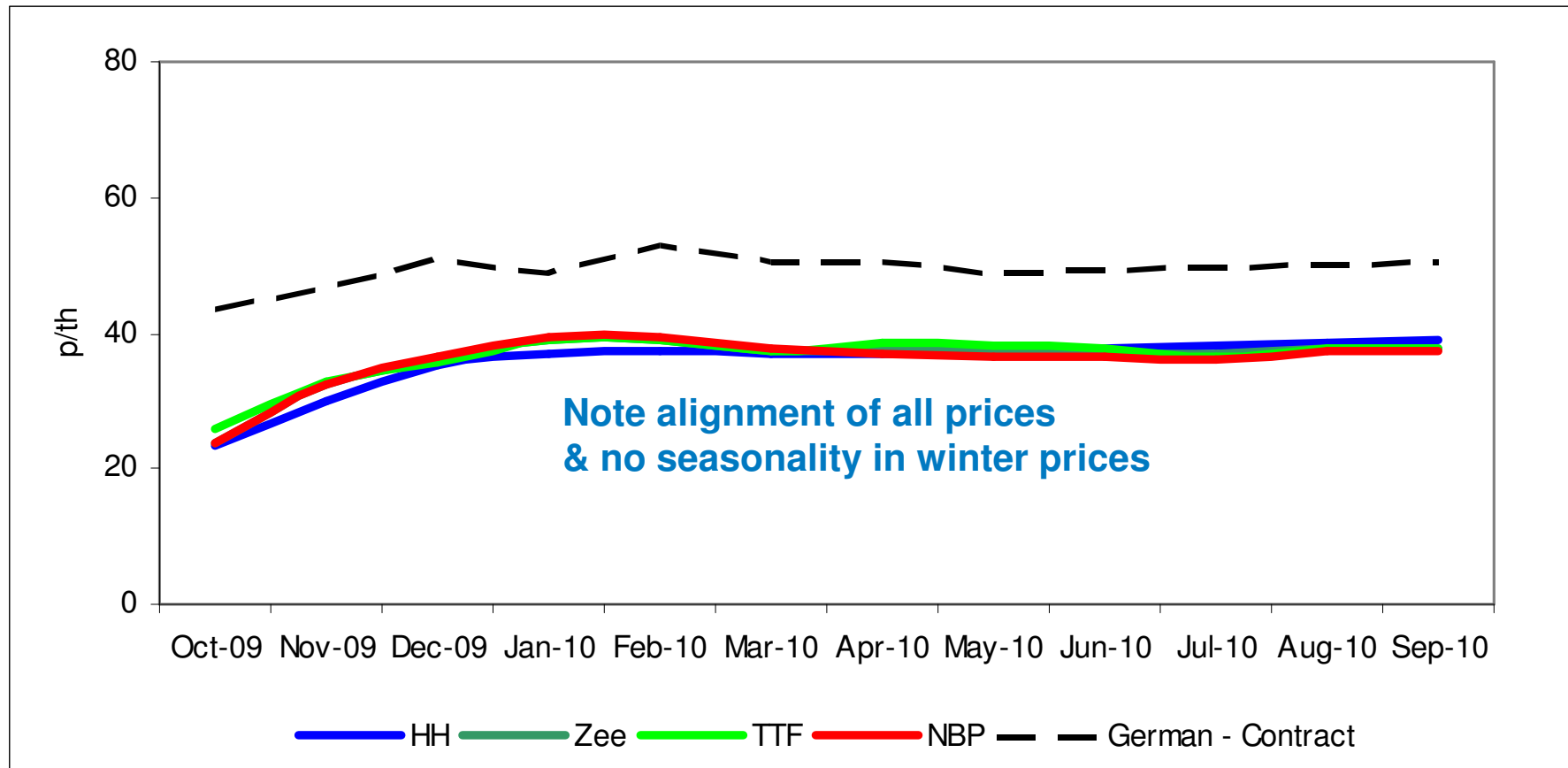
LNG import flows



Drivers that may influence supply & demand in 2009/10

- ◆ Repeat of Russia / Ukraine or other Continental / global driver
 - ◆ IUK exports?, lower Norway?, lower LNG
- ◆ Lower Continental and global demand increases UK supply
- ◆ Change in gas prices

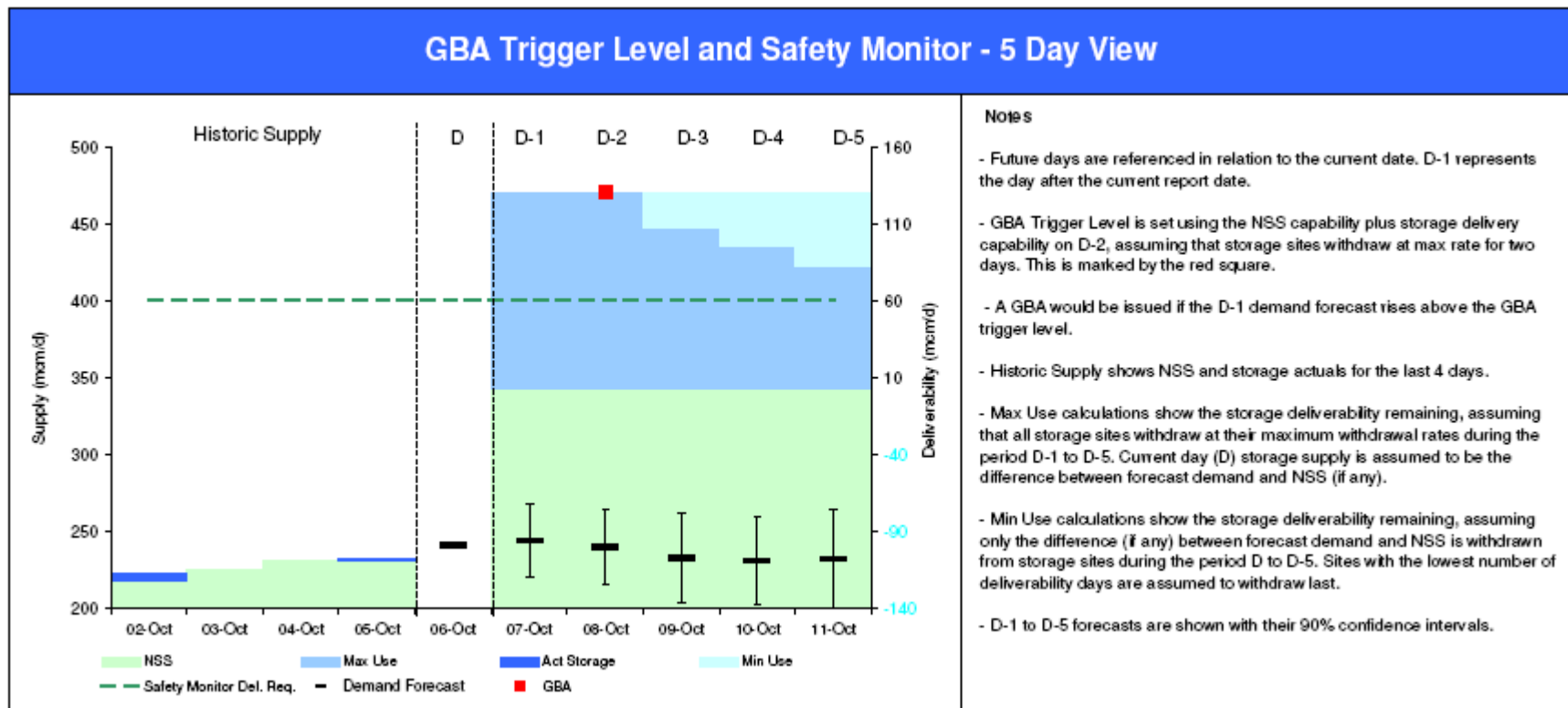
Forward Prices (September)



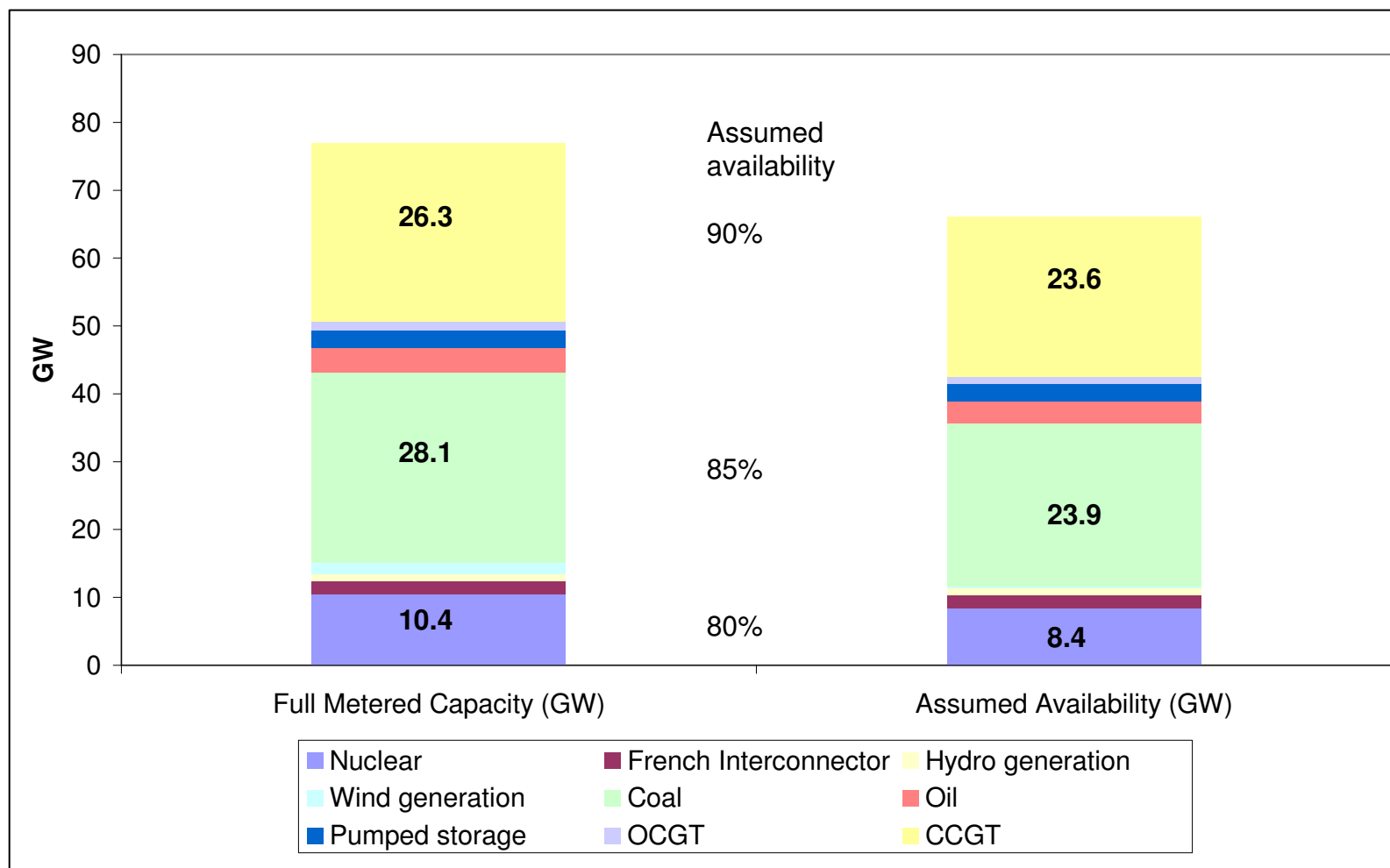
Drivers that may influence supply & demand in 2009/10

- ◆ Repeat of Russia / Ukraine or other Continental / global driver
 - ◆ IUK exports?, lower Norway?, lower LNG
- ◆ Lower Continental and global demand increases UK supply
- ◆ Change in gas prices
 - ◆ Current winter UK price is below Continental contract
 - ◆ More Norwegian?, IUK exports?
 - ◆ UK & US prices are closely aligned
 - ◆ Limited incentives for LNG to cross Atlantic for trades
 - ◆ Future UK summer prices = winter prices
 - ◆ Less of an incentive to flow storage?
 - ◆ Higher NSS?
- ◆ Higher demand due to lower wholesale prices, notably for power generation
- ◆ **Weather & events!!**

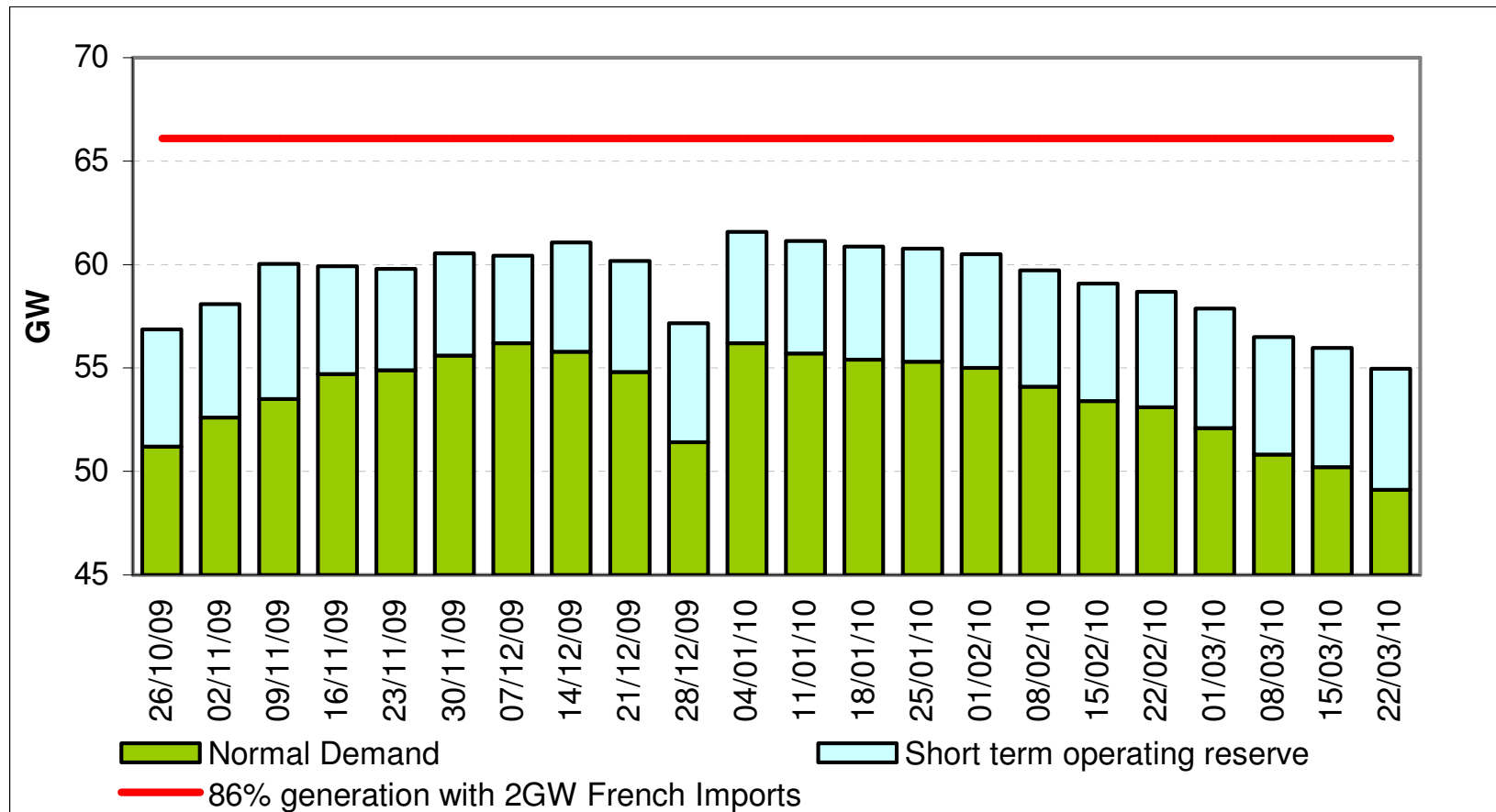
Information Provision



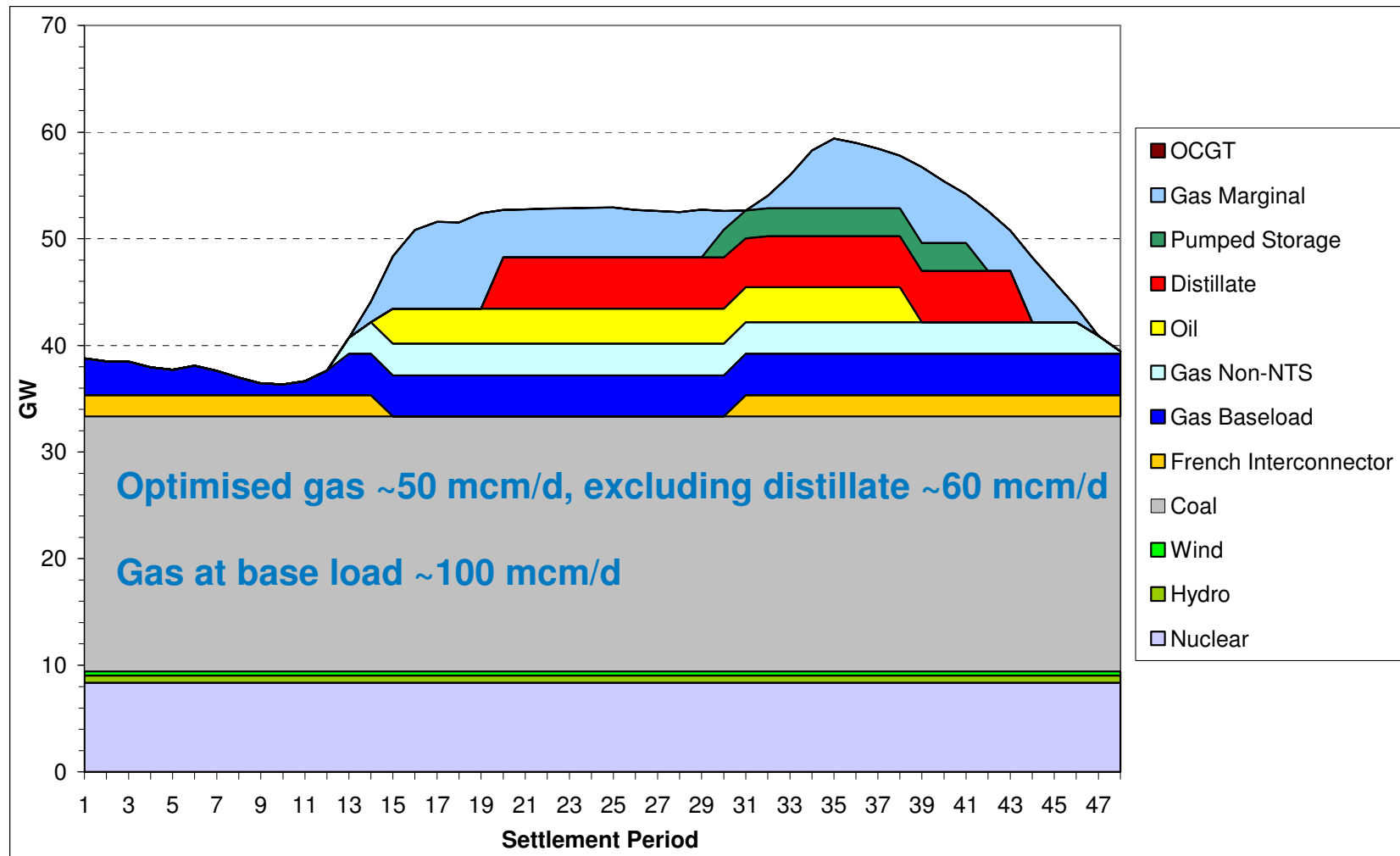
2009/10 generation availability assumptions



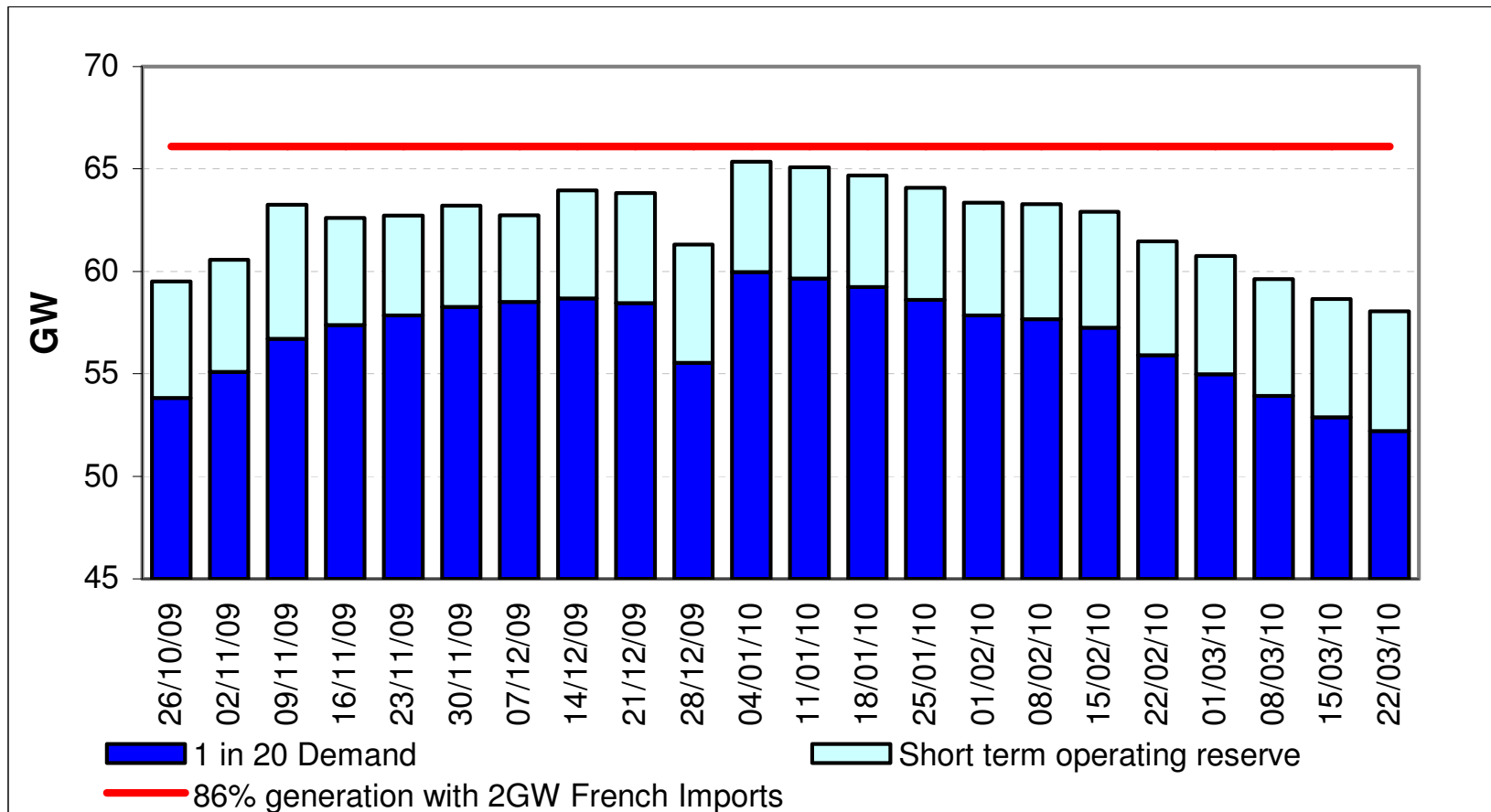
Normal demand and assumed generation availability



Gas – power interaction, 1 in 20 weekday



1 in 20 demand and assumed generation availability



Summary

- ◆ Winter 2009/10 likely to be milder than last year for the UK, with a 1 in 7 chance of a cold winter
- ◆ Forecast gas demand (weather corrected) 2.5% lower, on top of 6% reduction last winter
- ◆ Forecast non storage supply similar to last winter with more upside, notably through LNG
- ◆ Generation availability exceeds forecast peak. Capacity margin 34%, operational margin 15%
- ◆ Economics of coal vs gas for base load generation are marginal but coal expected to be used at higher demand (prices)
- ◆ Gas for CCGTs continues to provide flex for electricity market and potentially a market response for gas
- ◆ **Events happen!**