

Options for Energy Buyers

Radisson Edwardian, Manchester
28 July 2006

Centrica Storage Limited

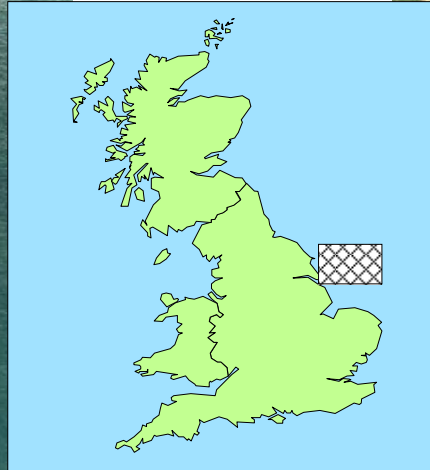
centrica

taking care of the essentials

Rough Storage use for Winter 06 and beyond

- 1. Introductions to CSL – the role of storage in GB**
- 2. CSL investment in the Rough Storage facility – now and in the future**
- 3. Incident at Rough – 16 February 2006**
 - **Latest Update**
- 4. Storage Outlook for Winter 06**
 - **Injection**
 - **Withdrawal**
- 5. Options for Energy Users (1) – Use storage information**
- 6. Options for Energy Users (2) Valuing Rough Storage**
- 7. Operating with Rough Storage in your portfolio**

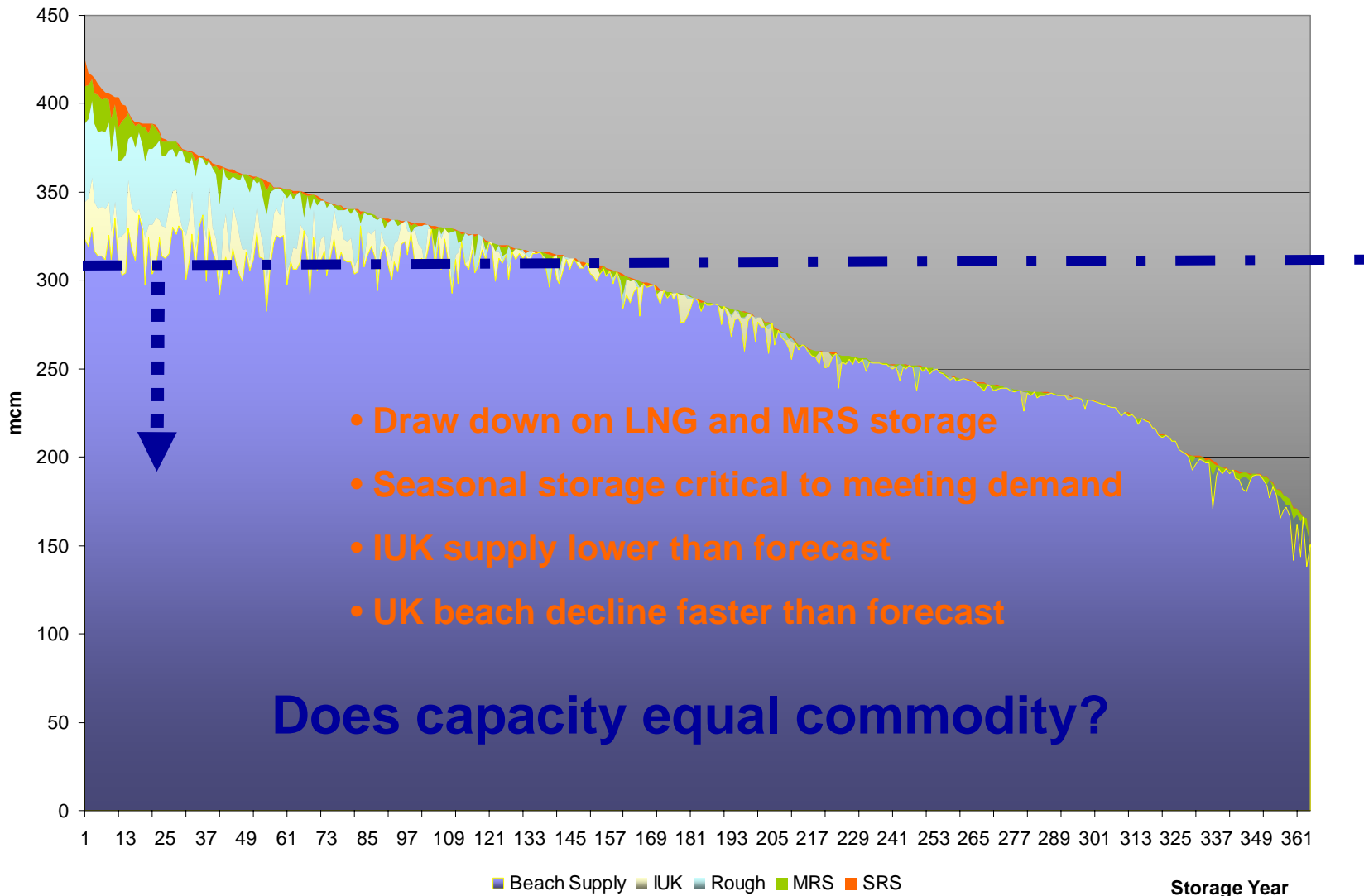
Introduction to Centrica Storage



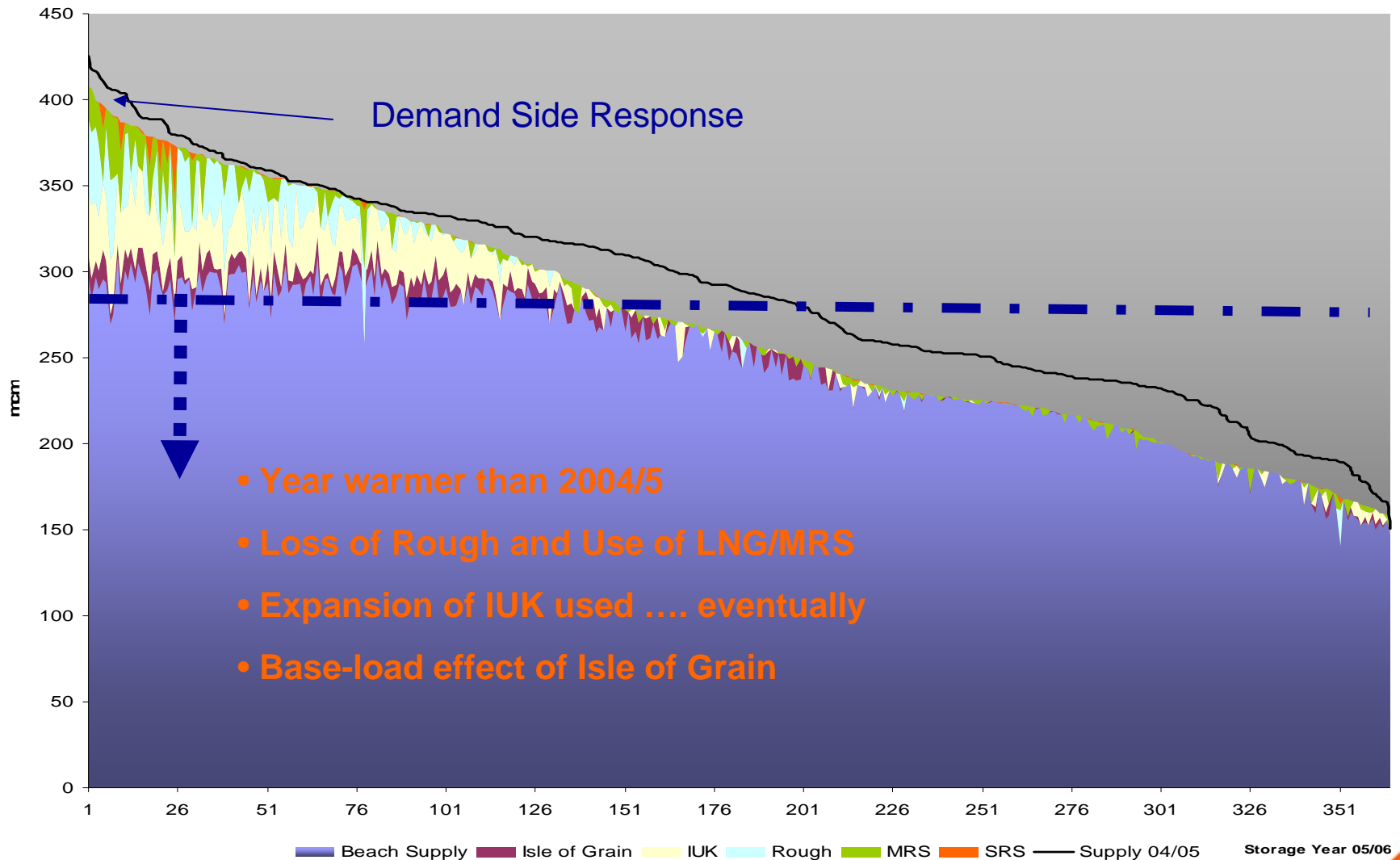
- Rough – part-depleted gas field
- Represents 74% of UK storage by volume
- Supplies 10% of UK demand on a typical ‘cold’ winter day
- 44> mcm/day deliverability, (25 to 0.5) mcm/day injectability
- Storage customer base utilities, traders and producers
 - **Large end users? Diversification**



Actual GB Load Duration Curve 04/05 - warmer than average winter!

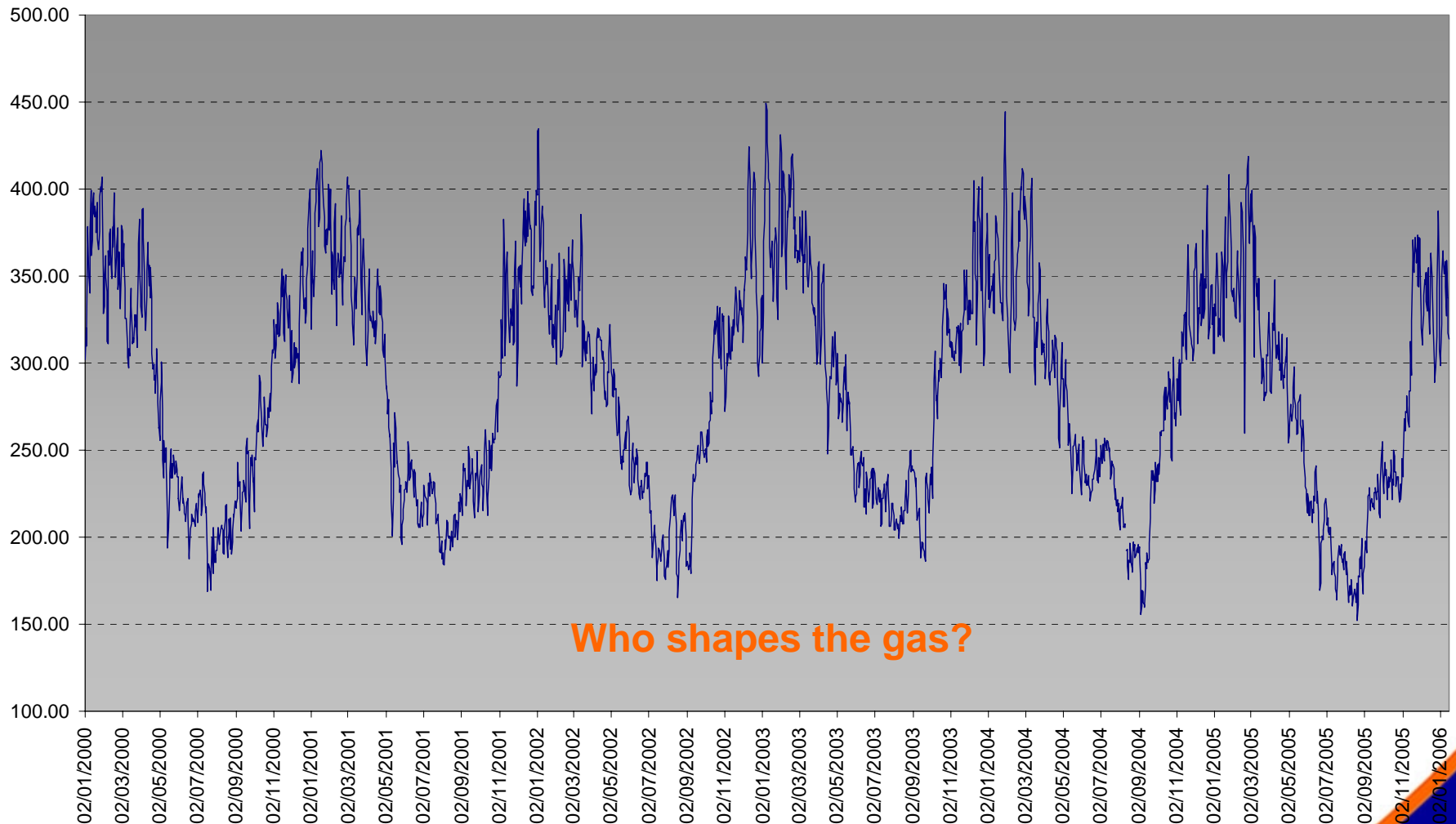


Actual GB Load Duration Curve 05/06 - again a warmer than average winter!



GB Actual Gas Demand – Case for flexibility (storage!)

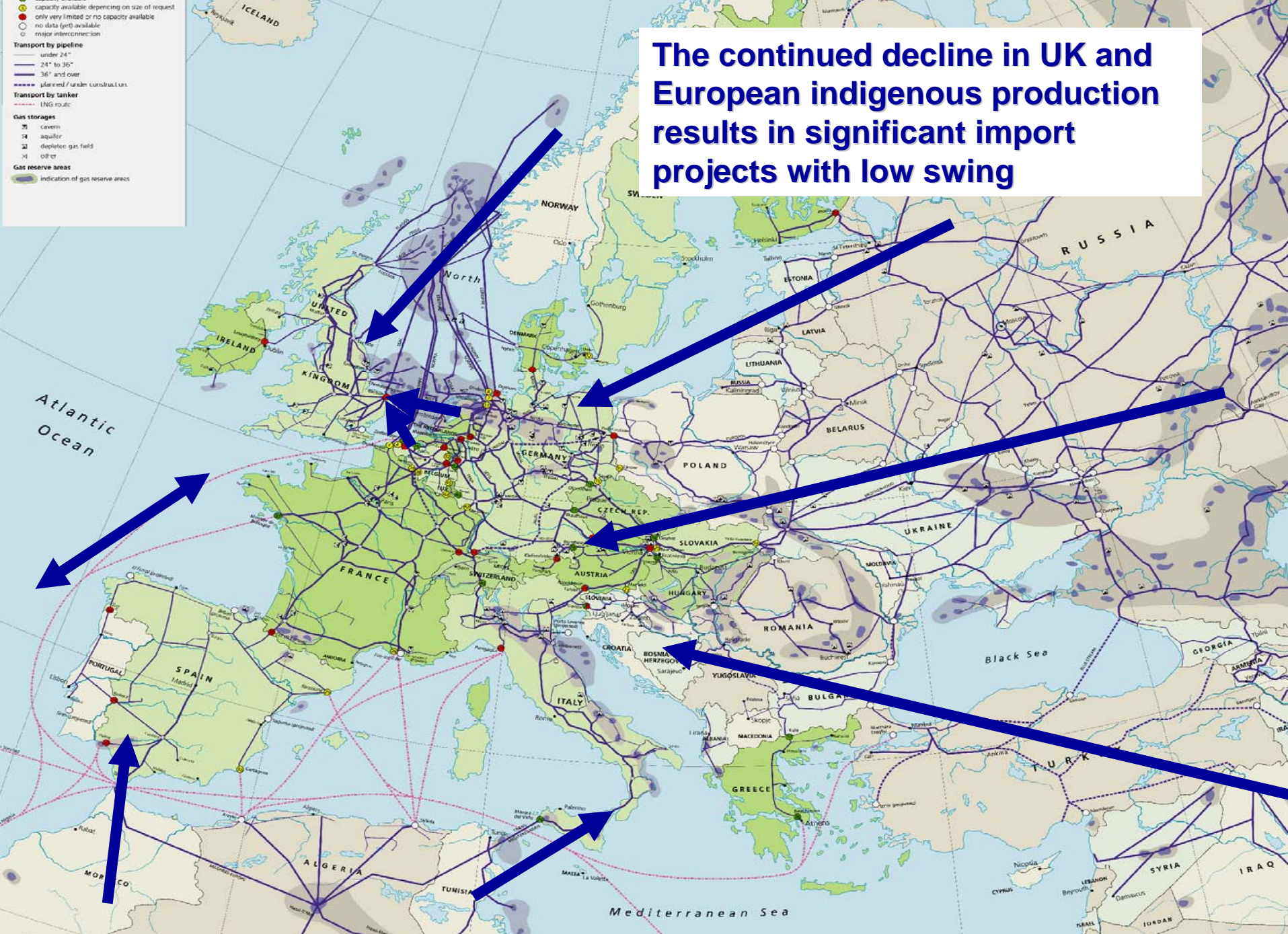
Seasonality of GB Gas Demand (mcm)



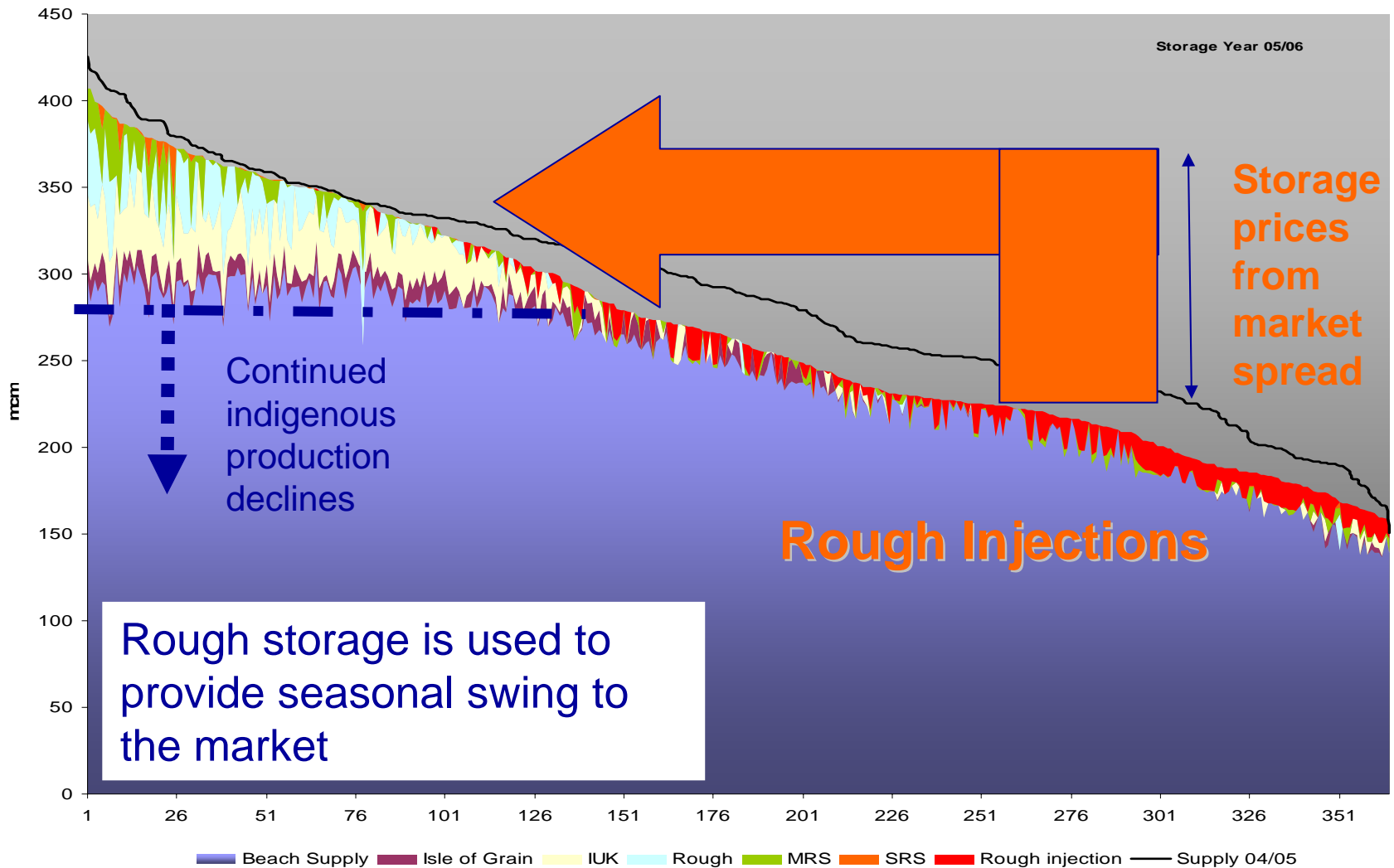
Who shapes the gas?



The continued decline in UK and European indigenous production results in significant import projects with low swing



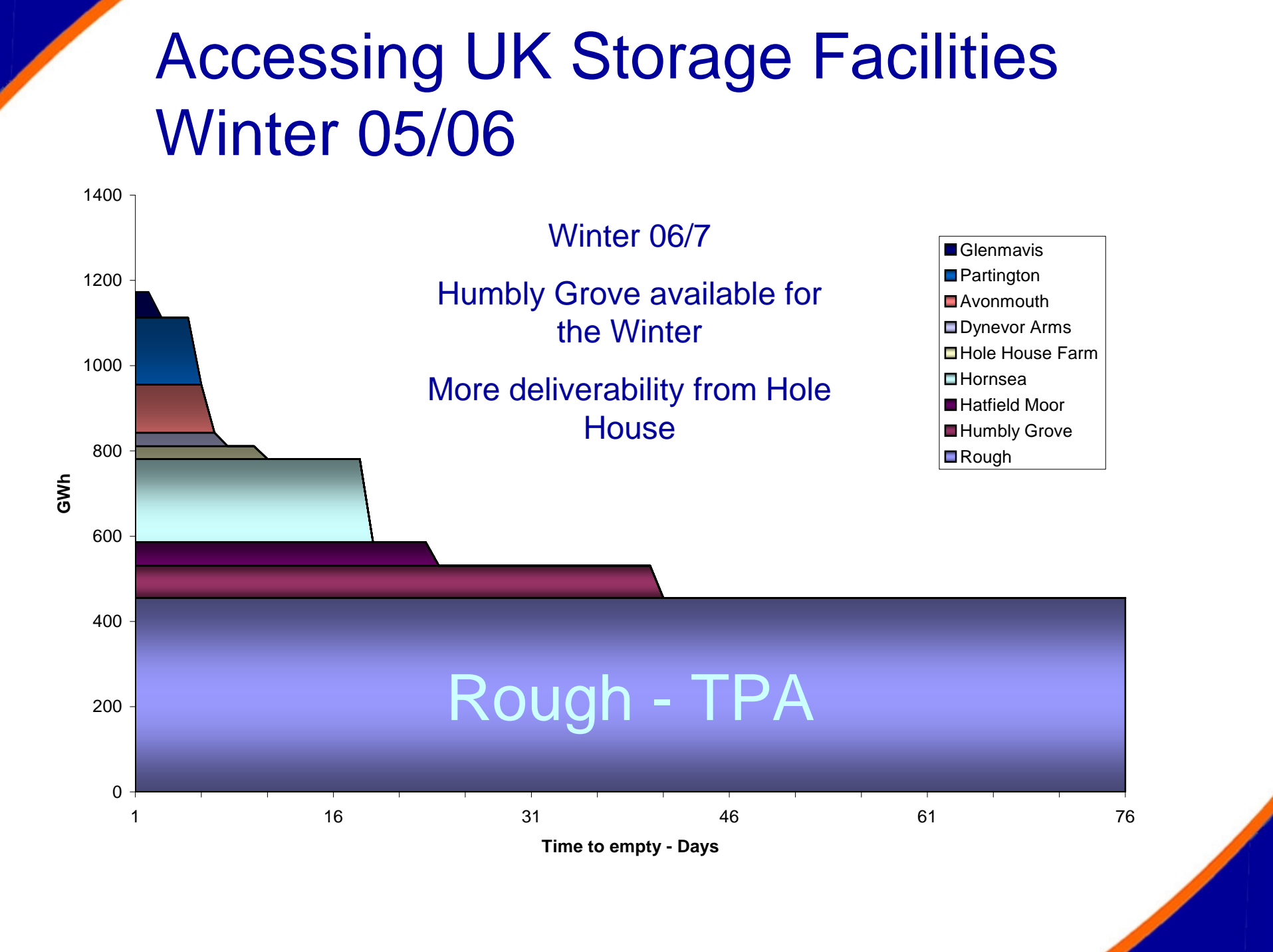
Actual GB Load Duration Curve 05/06



Accessing UK Storage Facilities Winter 05/06

The chart displays the cumulative capacity of various UK storage facilities over time. The Y-axis represents capacity in GWh (0 to 1400), and the X-axis represents 'Time to empty - Days' (1 to 76). The facilities are stacked from bottom to top: Rough - TPA (dark blue), Humbly Grove (maroon), Hatfield Moor (dark purple), Hornsea (light blue), Hole House Farm (olive green), Dynevor Arms (grey), Avonmouth (red), Partington (dark blue), and Glenmavis (dark blue). The total capacity increases significantly over time, with 'Rough - TPA' being the largest facility. The chart also includes text annotations: 'Winter 06/7' at the top, 'Humbly Grove available for the Winter' and 'More deliverability from Hole House' in the middle, and 'Rough - TPA' in the bottom right.

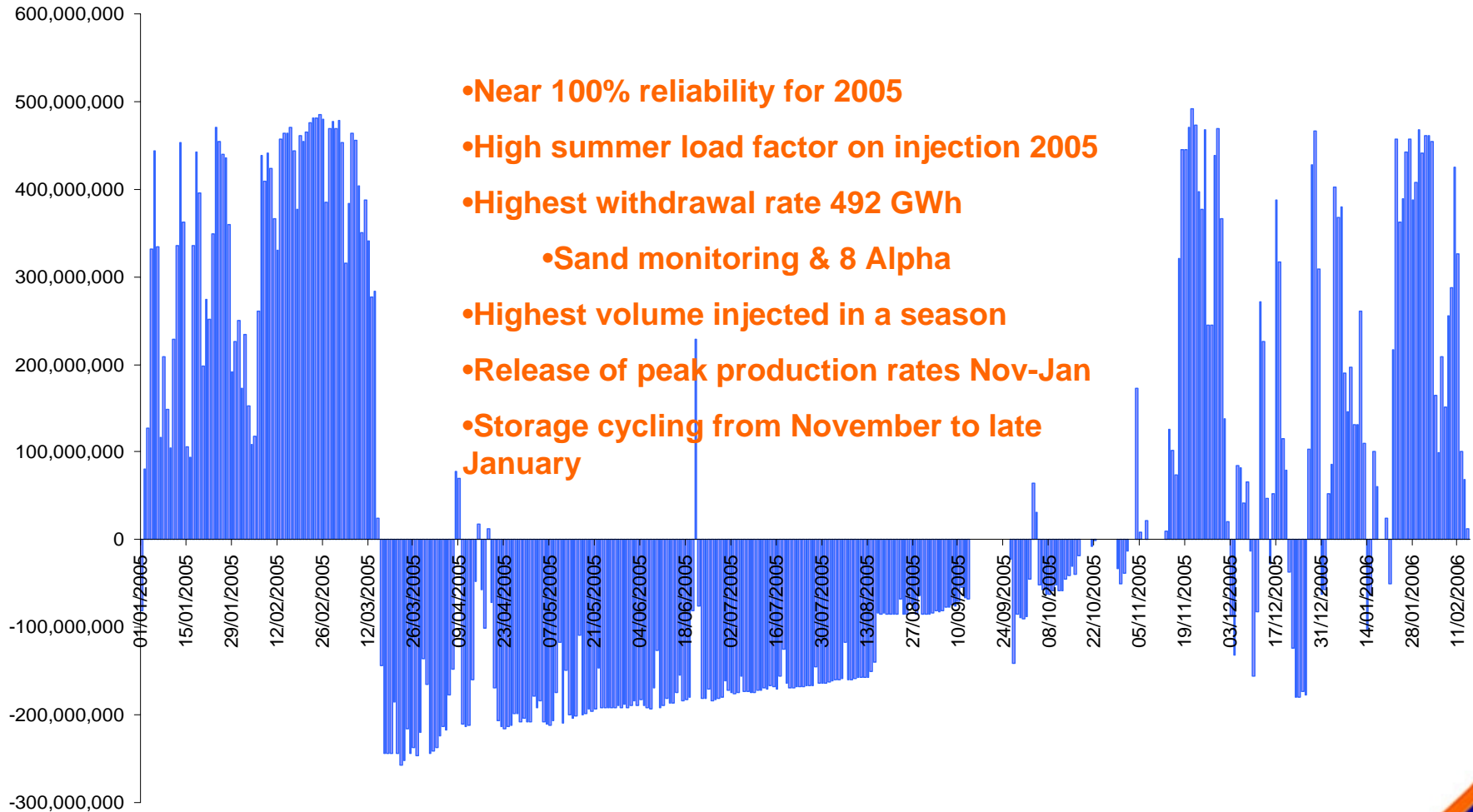
Facility	Capacity (GWh)
Glenmavis	~100
Partington	~150
Avonmouth	~100
Dynevor Arms	~50
Hole House Farm	~100
Hornsea	~150
Hatfield Moor	~100
Humbly Grove	~100
Rough	~450



CSL – Rough Performance to Mid Feb 06

£45> million spent on Rough by CSL to date – and increasing!

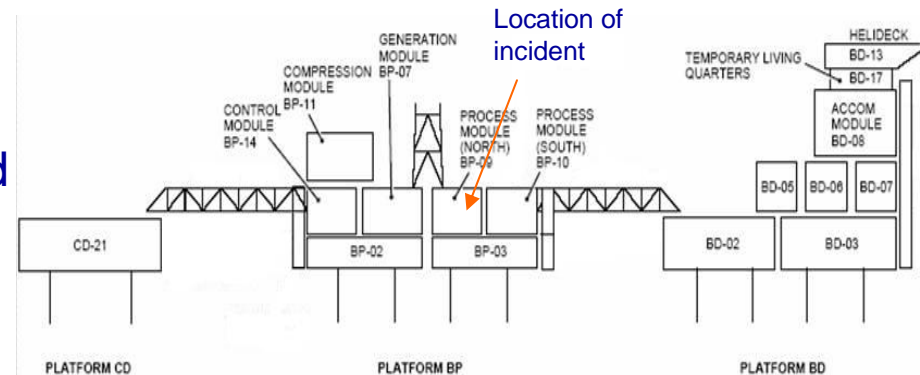
Net Storage Movement



Rough incident – 16th February 2006 (2)

Damage Assessment

- 2 of 4 Production coolers damaged beyond repair
- Loss of power
- Significant damage (inter alia) to connected pipework, HP vent system, control and safety systems & electrical cabling.



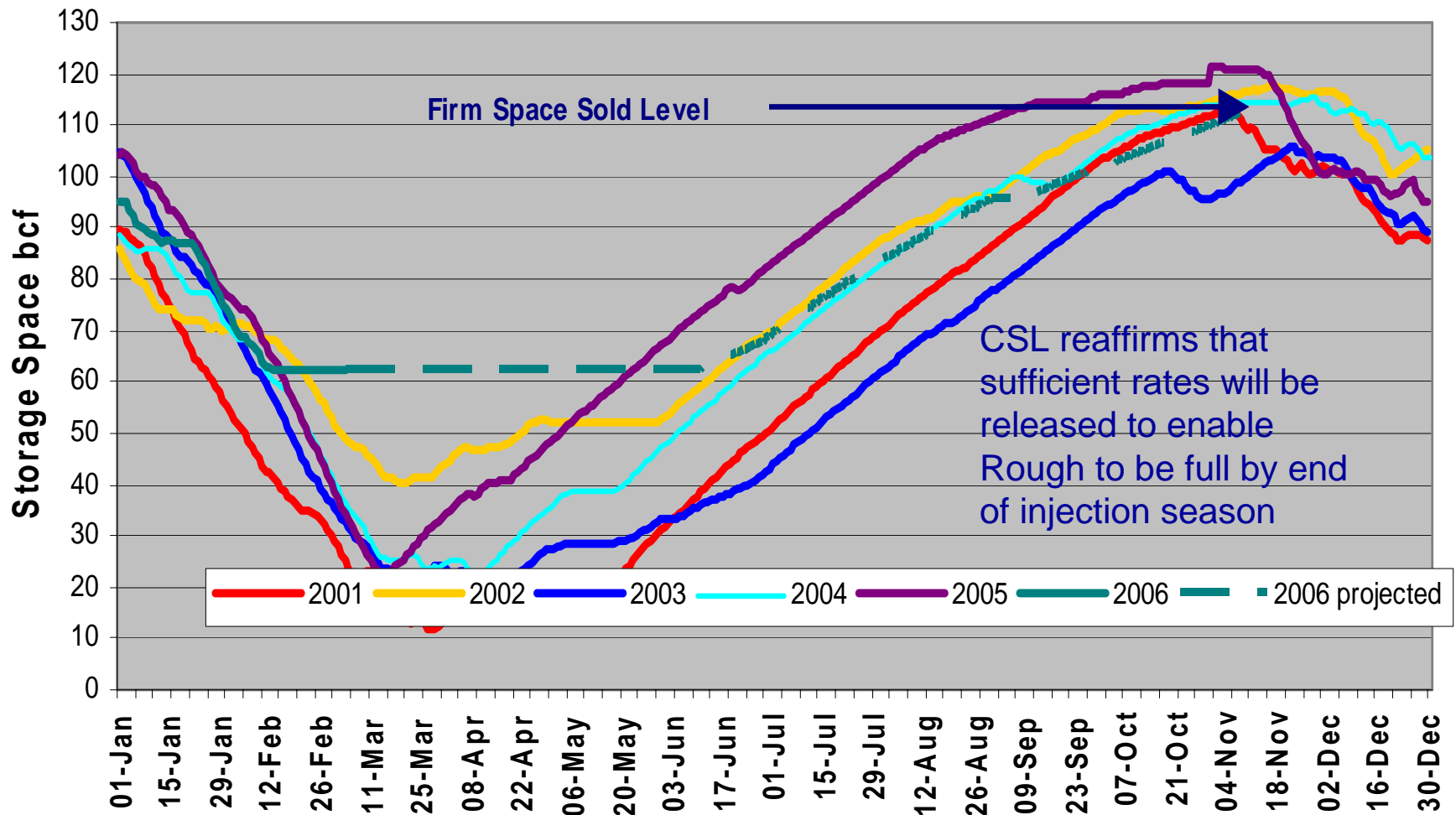
- Selected Milestones achieved
 - Restored stable power supplies
 - All 57 PSV removed for repair/overhaul
 - Injection Compressor control packages repaired and re-powered
 - All damaged structural beams replaced
 - Emergency Shutdown/Fire and Gas detection/protection systems
 - Detailed commissioning plan delivered by early June.

Rough currently 75% full against all space (33,220 GWh)

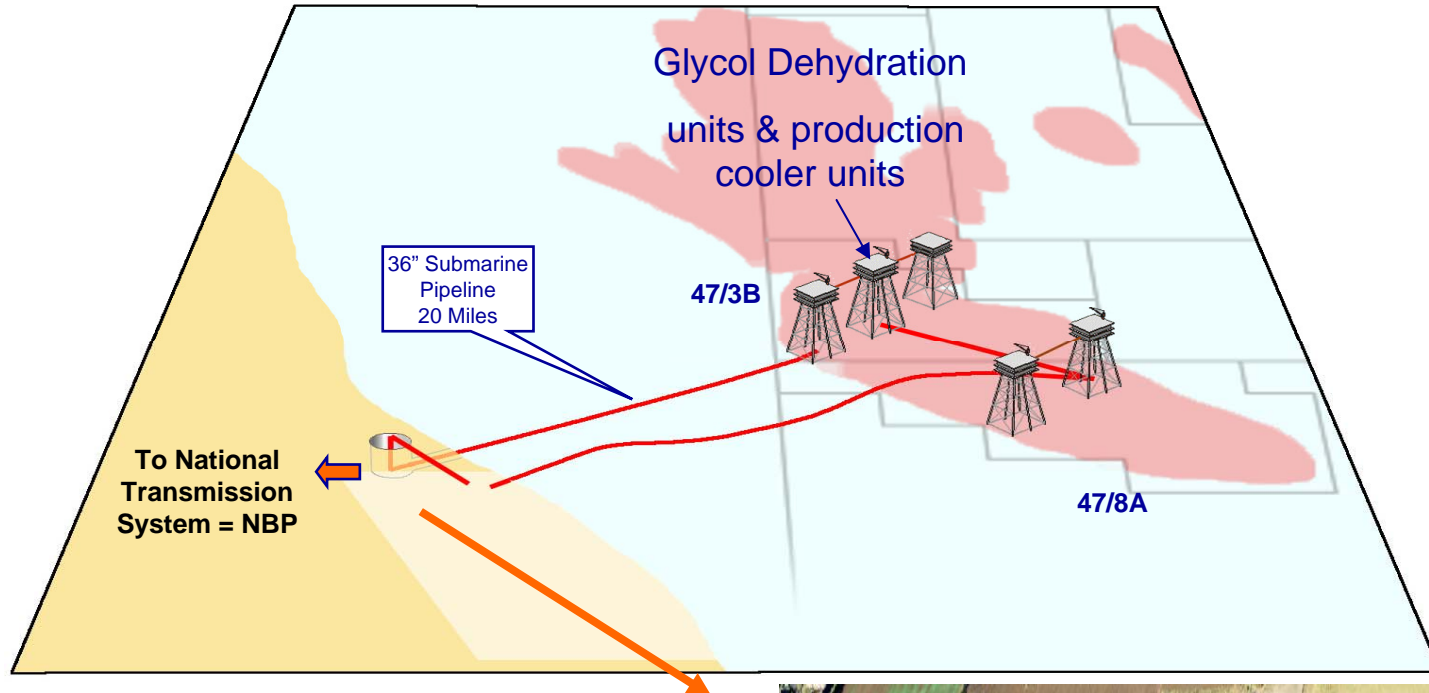
- FM on Injection lifted from Gas Day 18th July 2006
- Since gas day 26 June (Monday) the Rough storage facility has been operating with twin compressor operations offshore – achieving initial injection rates around 18 mcm/d for each day
- Our customers are able to nominate all of their normal injection rights
- These injection rates are above the minimum contractual injection rates required by the storage contract.
- Since the return to physical injection operations in June CSL has filled around 20% of Rough space
- At this stage our analysis suggests that there is no Further Additional Space available. This is being kept under constant review.
- Full production rates expected to be available following the return from maintenance in late September.

Stock Movements over Previous Winters

Outlook for Winter 06 - Injection



Gas Production Process



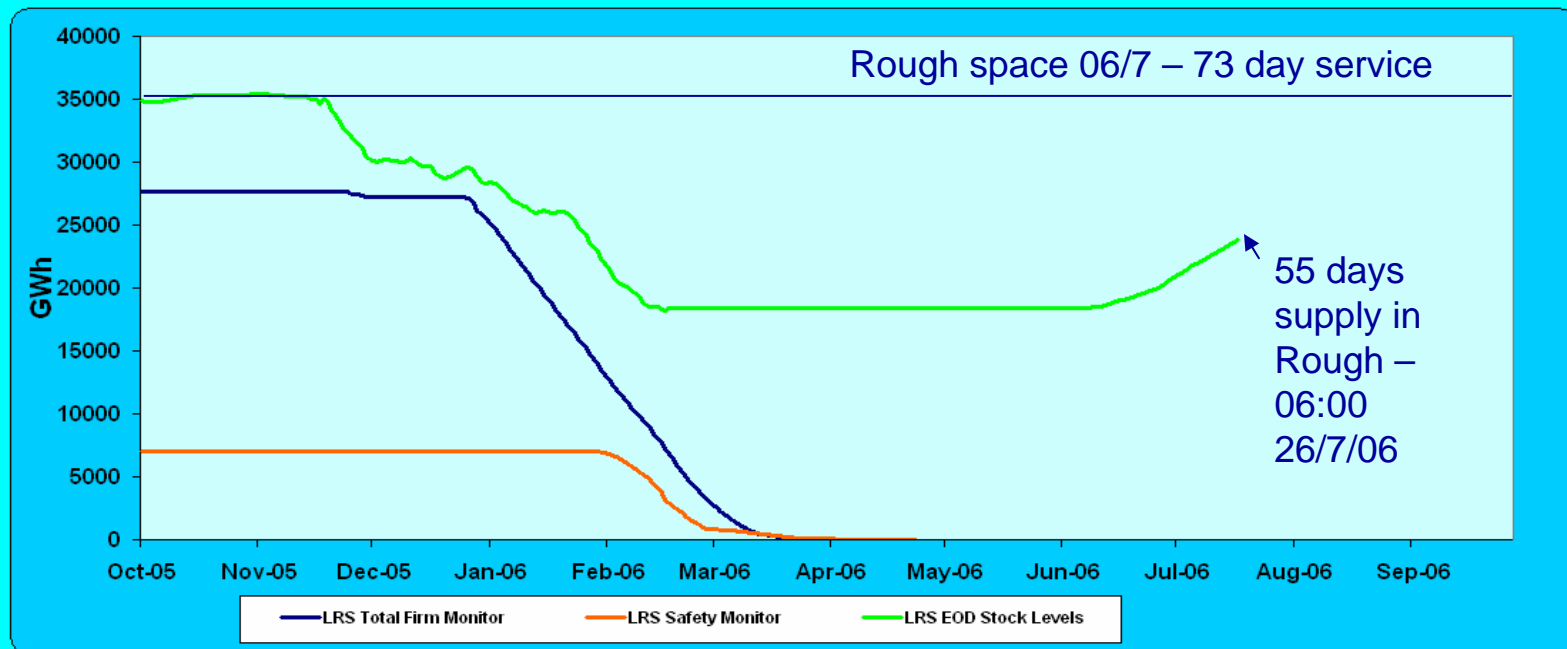
- Bypass dehydration and cooler units offshore and run 36" line to Easington Processing facility wet
- Processing onshore (remove duplication)
- Simplification of process
- Annual maintenance 7-19 September to complete restoration of withdrawal capability and install 2 re-designed & remodelled inj cooler units



OPTIONS FOR ENERGY BUYERS (1)

Storage Information

LRS Storage Monitors



At 0600 hrs on :	17-July-2006	Stock Level =	23,663.3	GWh	(71.2%)
At 0600 hrs on :	18-July-2006	Stock Level =	23,849.6	GWh	(71.8%)
		Safety Monitor Level =	0.0	GWh	(0.0%)

Max Withdrawal Rate	455	GWh/day	Days before breach at Max. withdrawal =	N/A	days
7 Day Average Withdrawal Rate	0.00	GWh/day	Days before breach at Avg. withdrawal =	>100	days

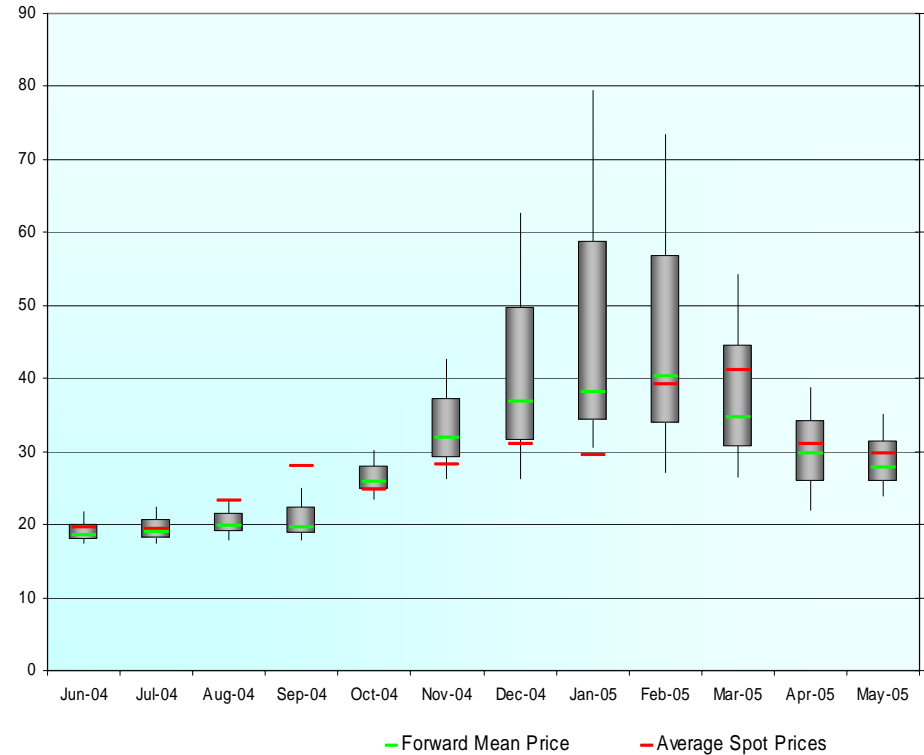
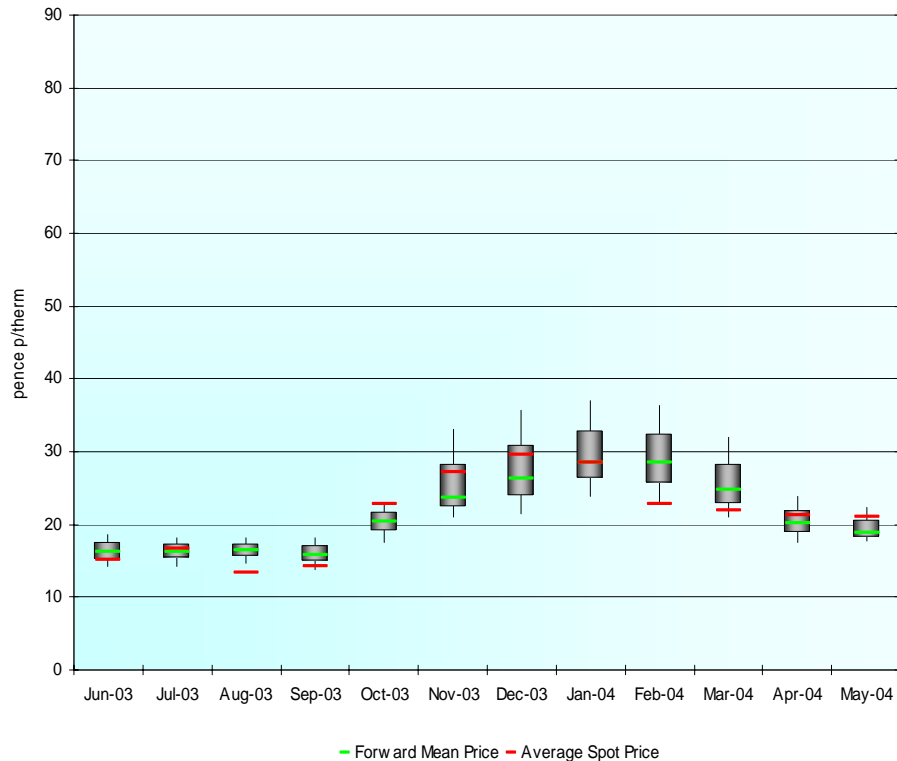
• <http://www.nationalgrid.com/uk/Gas/Data/misc/>

• <http://storit.centrica-sl.co.uk> (agg site noms within day)

OPTIONS FOR ENERGY BUYERS (2)

Use storage within your energy procurement portfolio

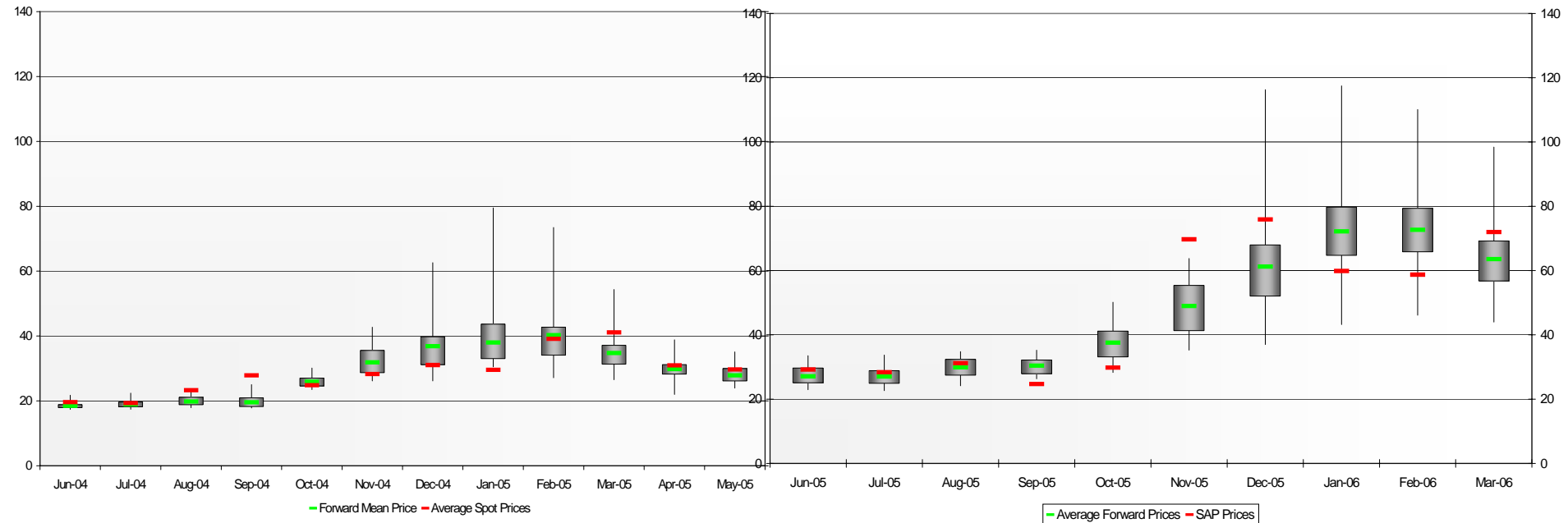
Forward Curve Price Spread



Forward Curve Price Spread (2)

2004/5 Prices

2005/6 Prices



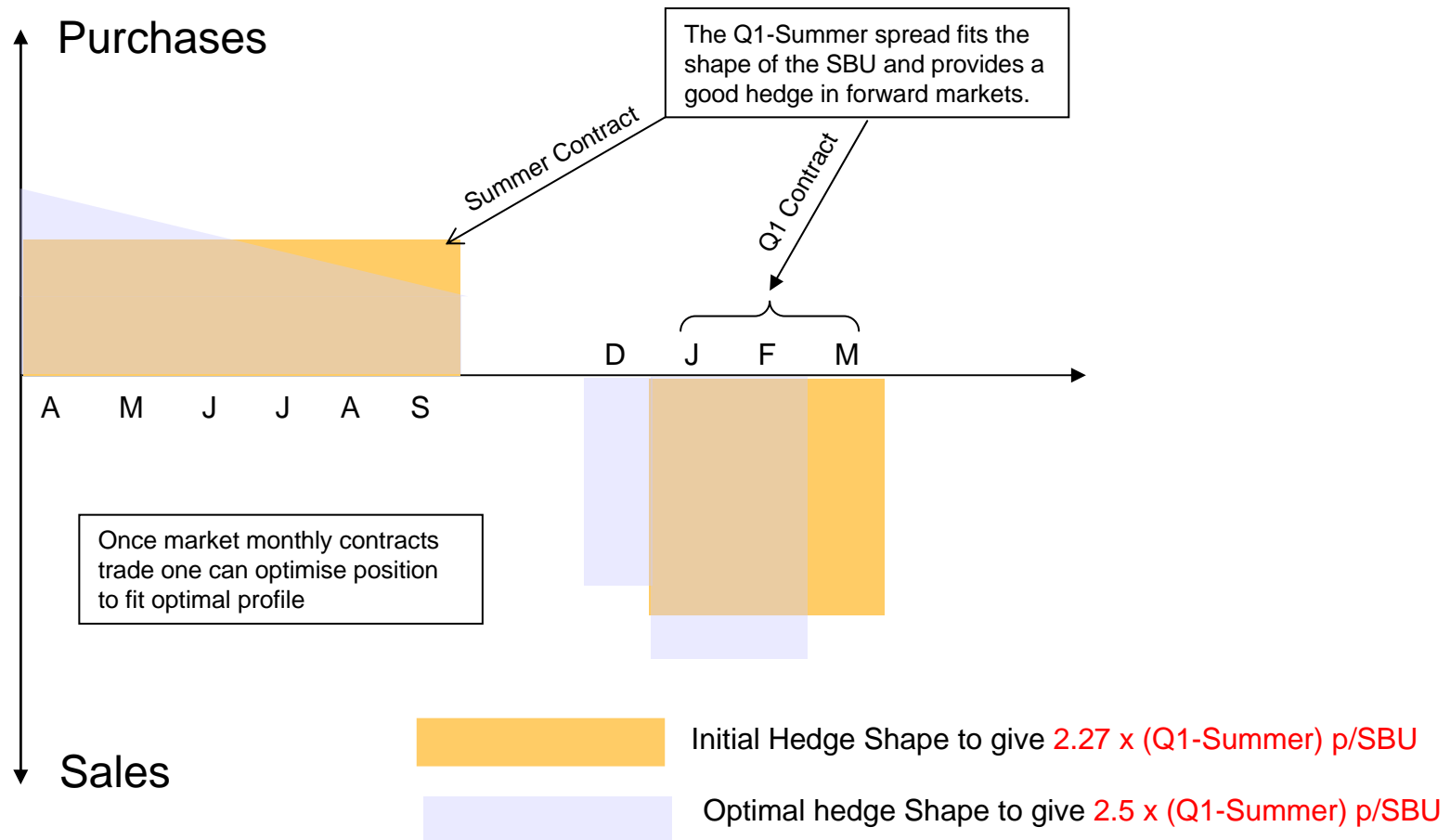
Standard Bundled Unit (SBU)

	<u>GWh</u>	<u>MTherms</u>	<u>SBU</u> (kWh)
<u>Withdrawal</u>	455/day	15.5/day	1/day
<u>Space</u>	30,300	1,033	66.593406
<u>Injection</u>	160/day	5.45/day	0.351648/day

Fixed Commodity Charges:

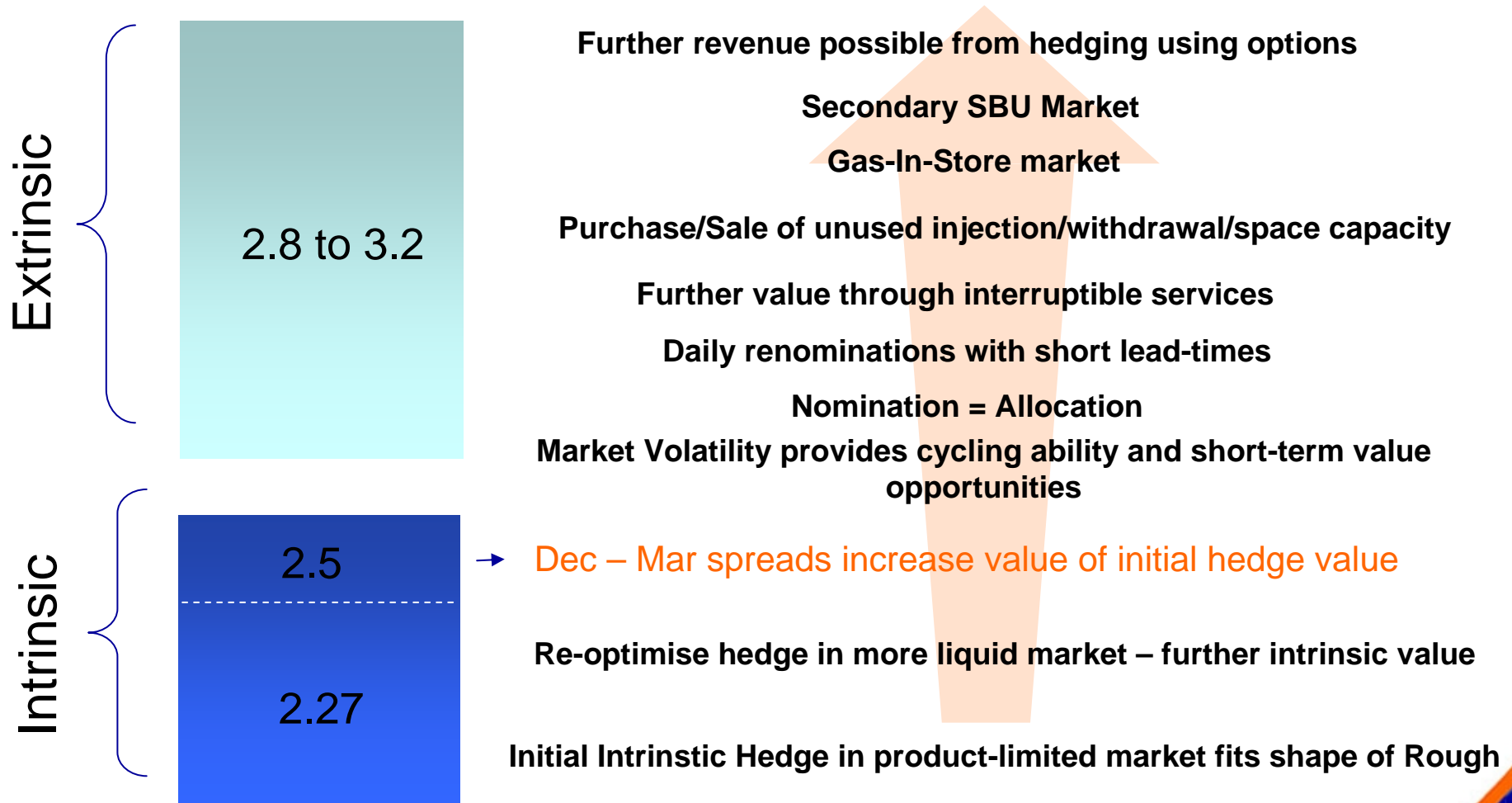
Injection	0.615p/therm
Withdrawal	0.205p/therm

Rough Intrinsic Value



Note: To convert from pence/SBU into pence/Therm divide by 2.27

Rough SBU Value Breakdown expressed as Q1-Summer Spread

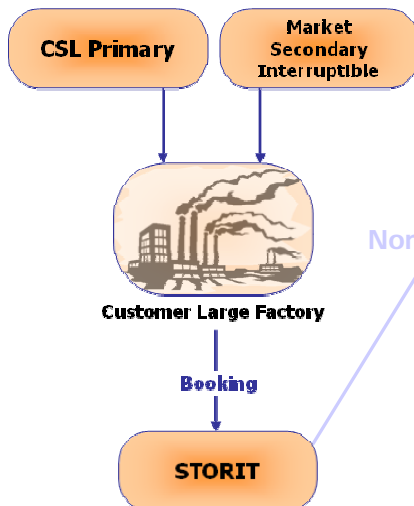


Note: To convert from pence/SBU into pence/Therm divide by 2.27

Operating with Rough Storage

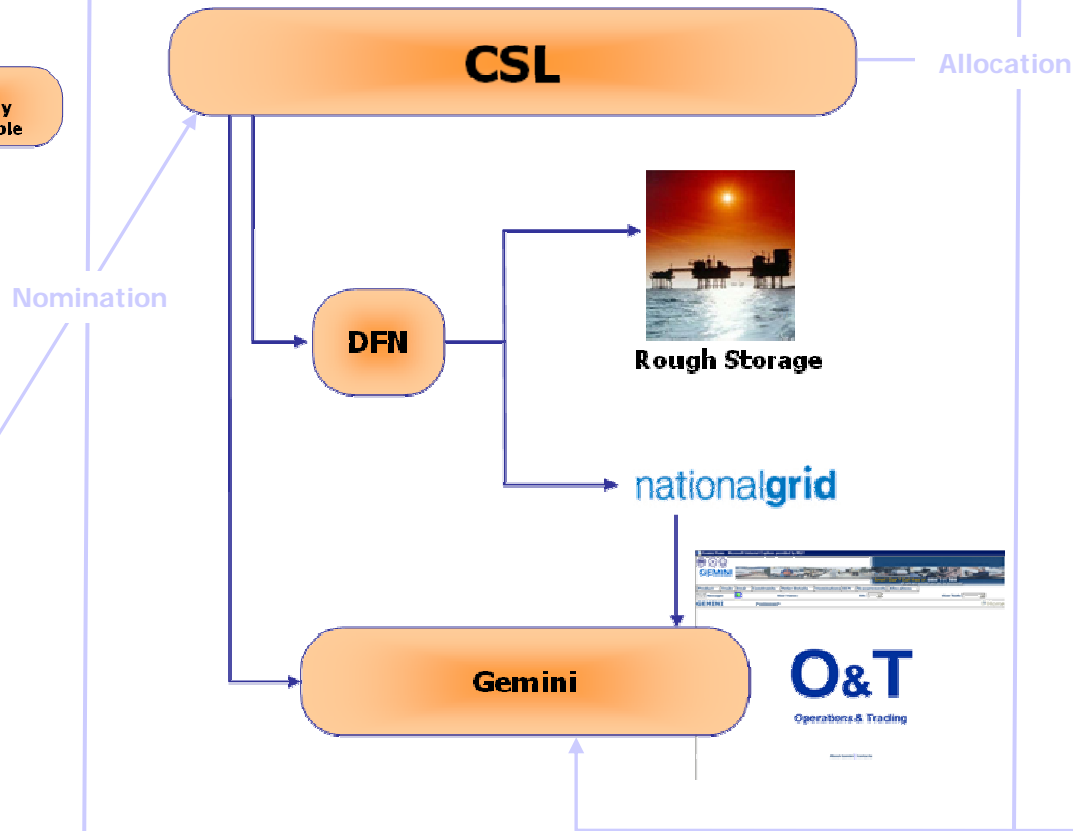
Step 1:

Before the gas day



Step 2:

Within the Gas Day



Step 3:

After the gas day

Allocation



Centrica Storage Customer Access System

- Nominations
- Capacity Management
- Inventory & Allocation
- Billing
- Centrica Storage Bulletins
- Bulletin Board
- Administration



Centrica Storage is the leading supplier of physical gas storage services in the UK.

The Rough facility is a partially depleted gas field supplied from Easington terminal offering flexible deliverability from a large storage volume.

The STORIT system provides the connection between Centrica Storage and its customers for operational communications. Customers should call the Duty Commercial Officer on +44 (0) 1784 415 301 for advice on any aspect of Centrica Storage services.

Applies the SSC in a user friendly way!

Centrica Storage Limited

WHY SHOULDN'T LARGE GAS USERS BUY STORAGE CAPACITY..?

QUESTIONS...?

www.centrica-sl.co.uk

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