centrica storage

Overview of Centrica Storage

Analyst site visit
26th October 2006

centrica

Agenda

- Introduction to Centrica Storage
- Achievements since Centrica acquisition
- Rough's place in the storage and wider gas market
- Value of storage
- Financial drivers
- Opportunities
- Wrap up

An introduction to Centrica Storage

- Centrica Storage Limited is a wholly owned subsidiary of Centrica plc
- Centrica Storage is a ring-fenced part of Centrica plc, separated from the supply side legally, physically and financially (Chinese walls). Undertakings agreed with Secretary of State December 2003 governing operation of Rough

A brief history of Rough

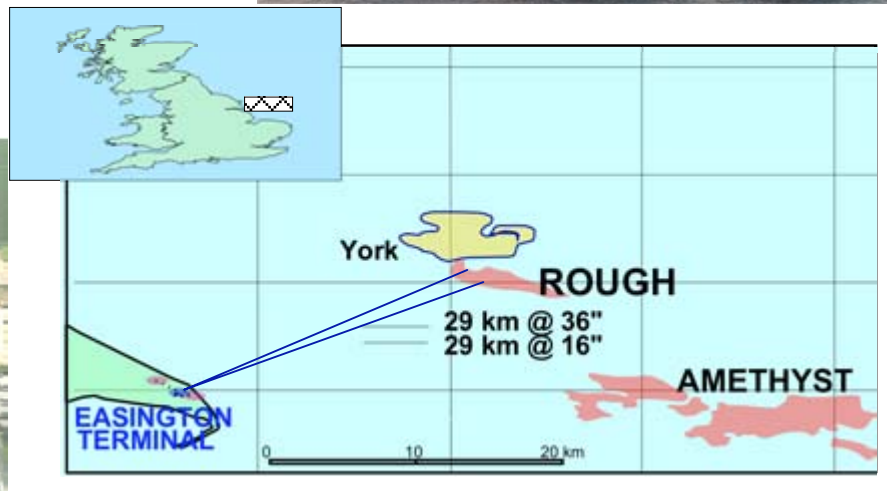
- October 1975 – Rough field, 18 miles off East Yorkshire coast originally developed to produce natural gas
- 1983/1984 – Rough field converted to a storage facility
- 1st October 1997 - BG Storage established as a standalone business (ringfenced for competition reasons) following split of British Gas plc
- 16th July 2001 – BG sell Rough storage to Dynegy
- 14th November 2002 – Centrica acquires Rough gas storage assets from Dynegy for £304m
- 1st December 2003 – Following a Competition Commission inquiry into the acquisition, Centrica provided Ofgem and DTI with a list of Undertakings on the operation of Rough. 'Separated' Centrica Storage business unit established

Facilities overview

Hedon, near Hull
Administration/engineering

47/3B
Installed 1983
24 wells
24/7 Operation

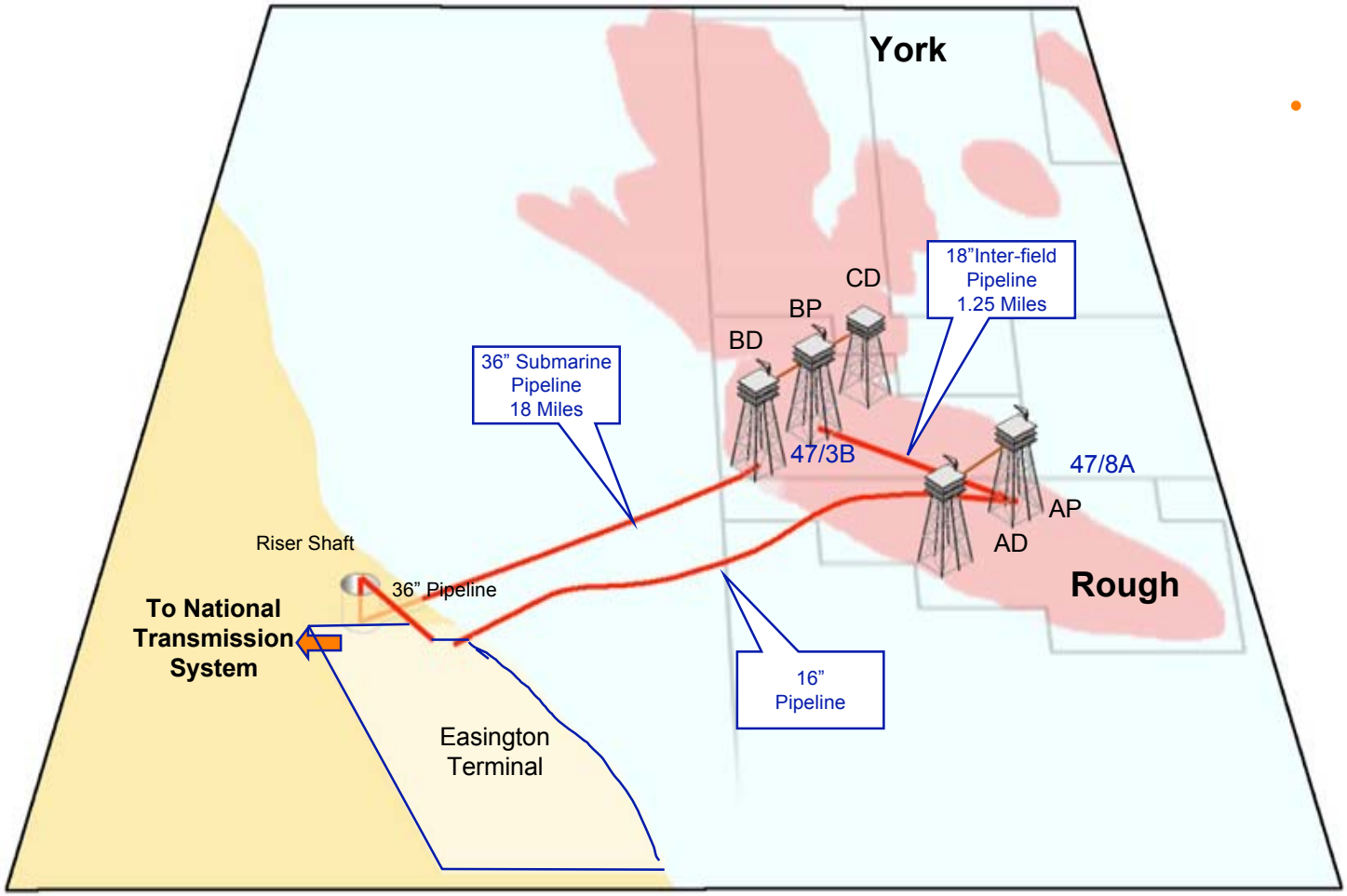
47/8A
Installed 1977
6 wells
24/7 Operation



Easington Terminal
Rough gas processing
Amethyst gas processing
Tie in to National Transmission System
24/7 Operation

Venture House, Staines
Headquarters and
Commercial
office
24/7 Operation

Centrica Storage assets



- Represents over 70% of UK storage and supplies 10% of UK peak winter demand
- Largest offshore gas storage facility in Western Europe (strategically important).
  - 185 billion cubic feet (bcf) cushion gas
  - ~118 bcf storage capacity
  - Deliverability max 44.8mcm/day
  - Average Injection ~15mcm/day
  - Onshore processing terminal at Easington for Rough, Amethyst, Rose and Helvellyn processing (third party gas).

An exceptionally good storage reservoir

Reservoir Characteristics

Size and wells

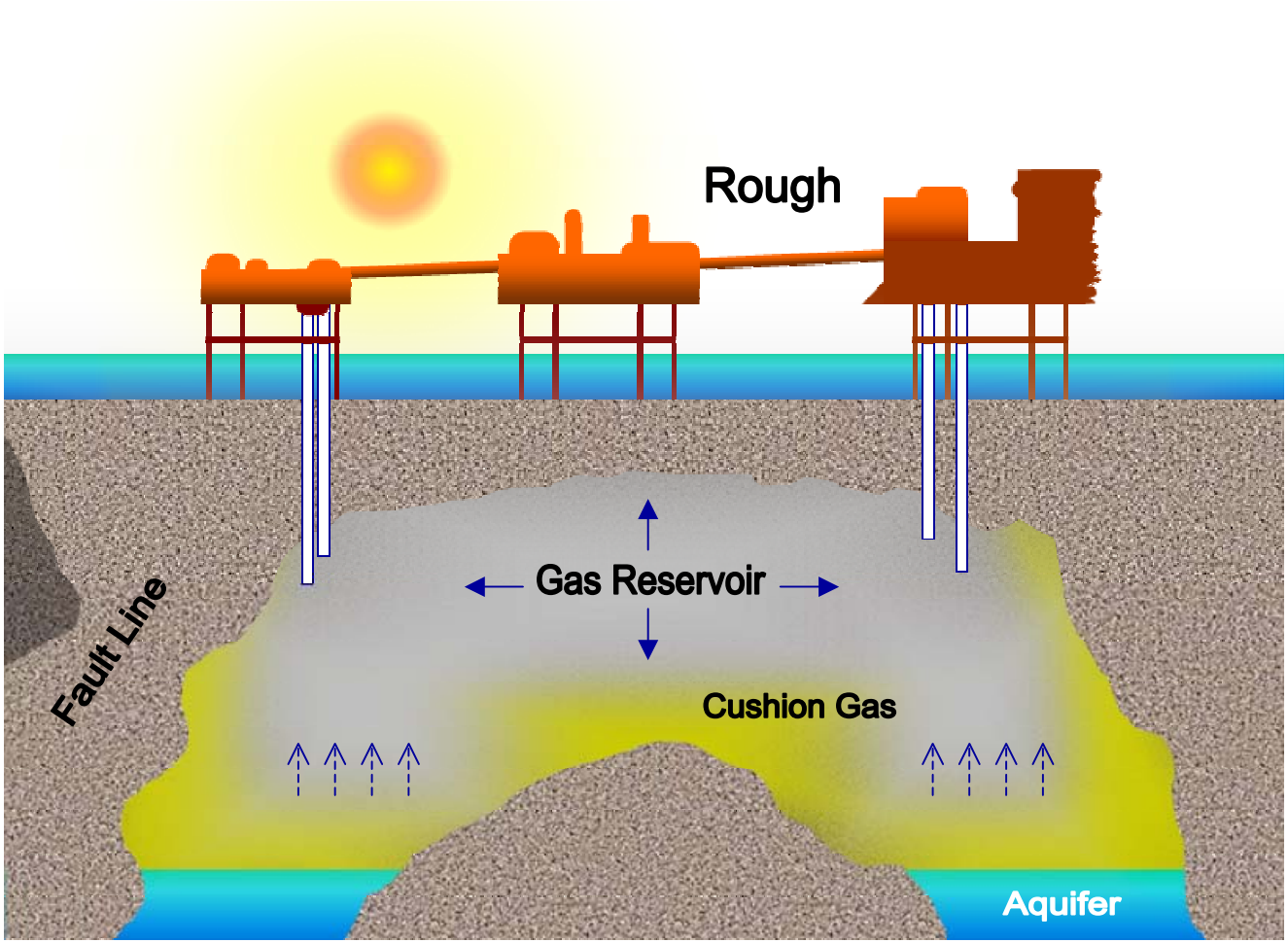
- Approx 10 x 3 km, 9,000 ft deep
- Thickness from 80 to 117 ft
- 30 wells in place

Homogeneous high quality reservoir rock

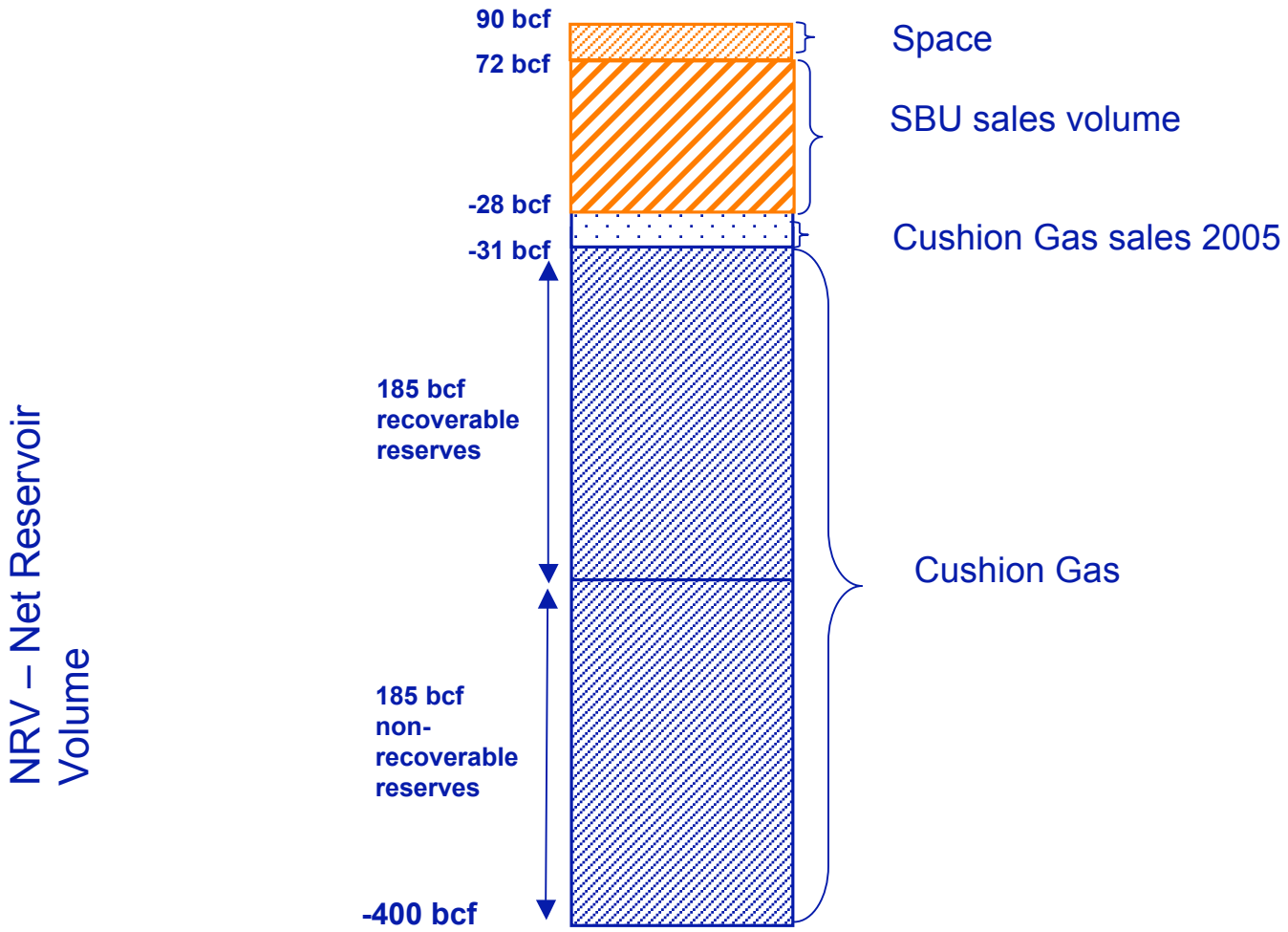
- Uniform properties allow consistent production / injection across the field.

Cushion Gas provides pressure support

- Rough was converted from a partly depleted gas field, with the residual gas inside left as cushion gas to provide pressure support.
- To build another Rough requires right combination of reservoir characteristics and sufficient cushion gas in place.



How the reservoir is made up



Achievements since acquisition

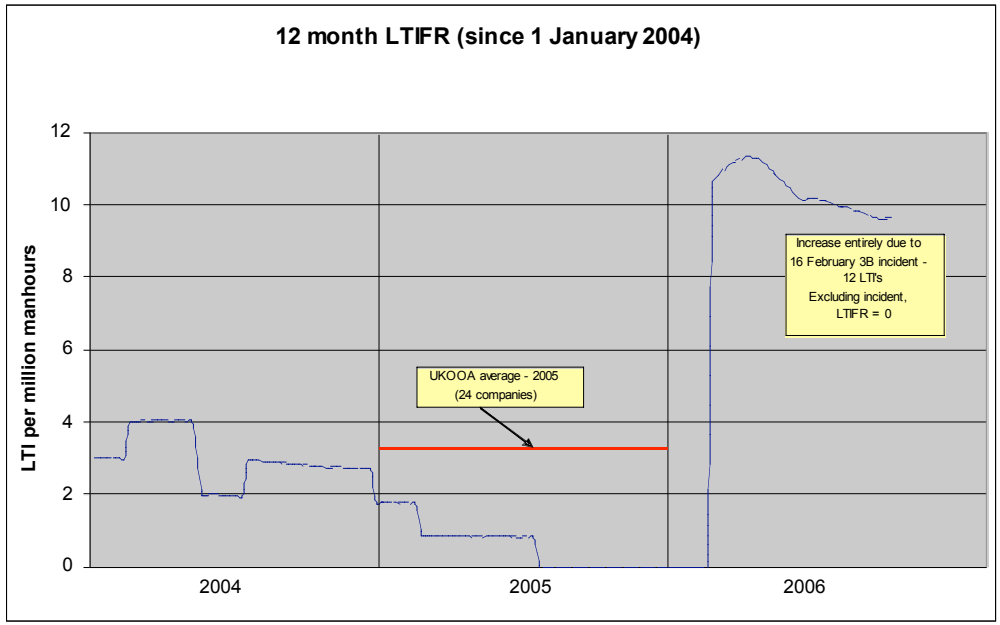
Immediate priorities:

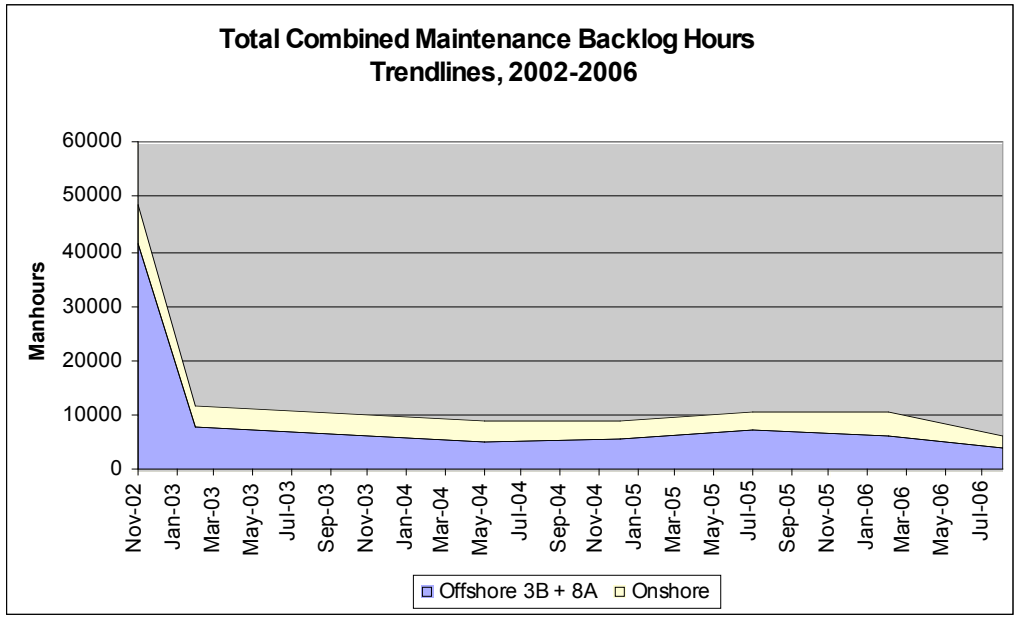
- Cleared backlog (c37,000 man hours) of maintenance work from previous operators
- Lifted HSE deferred prohibition notice
- Restored manning and competence levels
- Undertakings agreed following Competition Commission investigation – physical, legal and financial separation
- Focus on reducing and mitigating operational risk and improved safety performance
- Significant project expenditure to improve reliability, maintain integrity, and enhance performance - approx £50m spent to date (not including £30m recovery cost following Feb 2006 fire)
- Offshore Safety Case and onshore COMAH case
- Marketing strategy to enhance commercial value

…resulting in

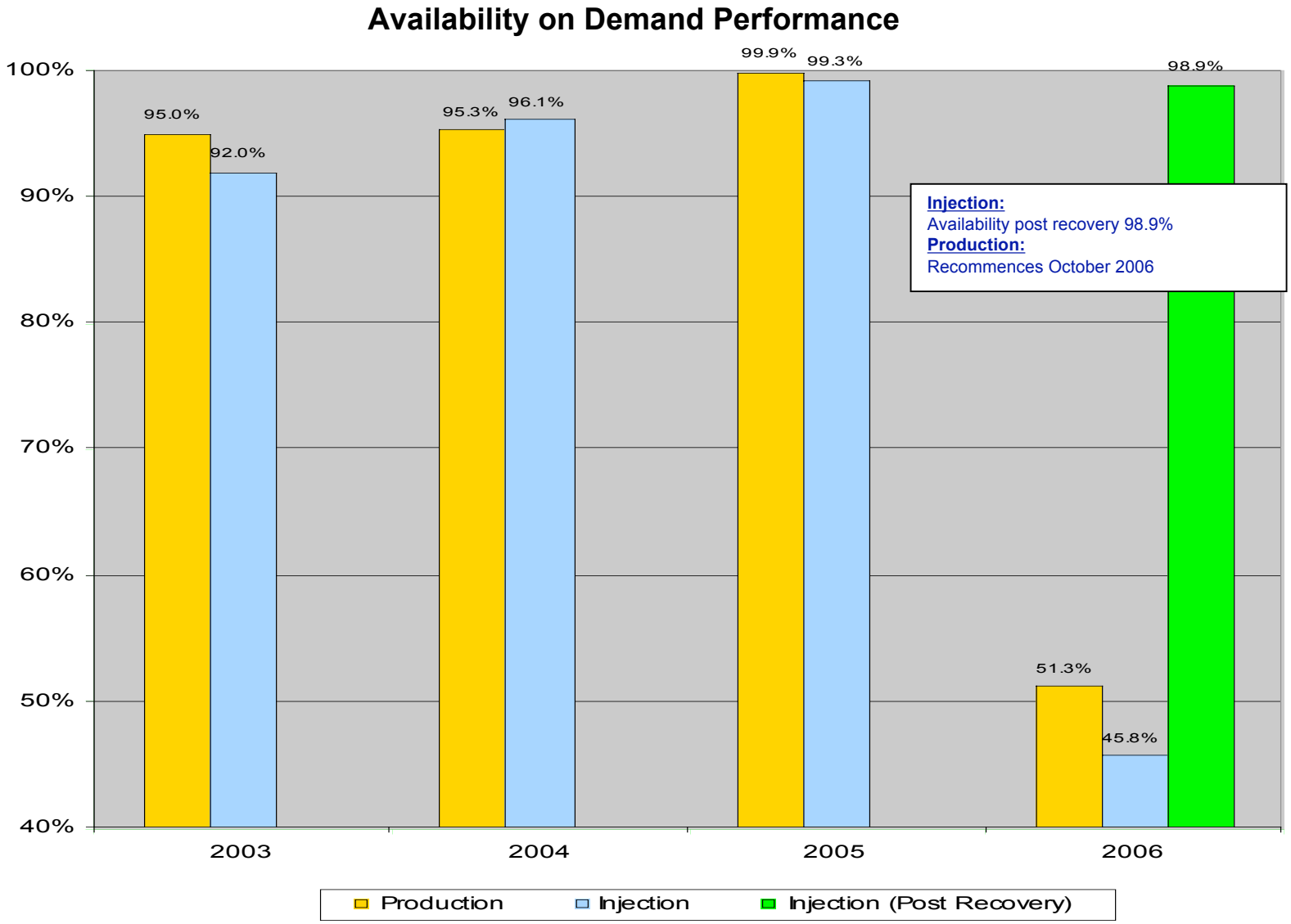
- Operational reliability nearly 100% in 2005 (compared to ~ 90% in 2000/1/2/3)
- Maximum deliverability rate increased by 8% enabling sale of additional peak product last winter
  - 8A – 3B bypass
  - Improved sand monitoring and well control
  - Reperforation
- Excellent injection performance enabled record levels of additional space sales
- Proven reliability and marketing strategy led to approx 10% increase in SBU revenue relative to market between 2004/5 and 2006/7
- Full recovery for this winter from major explosion and fire in February 2006

Focused on reducing risk and management of health, safety and environmental issues…





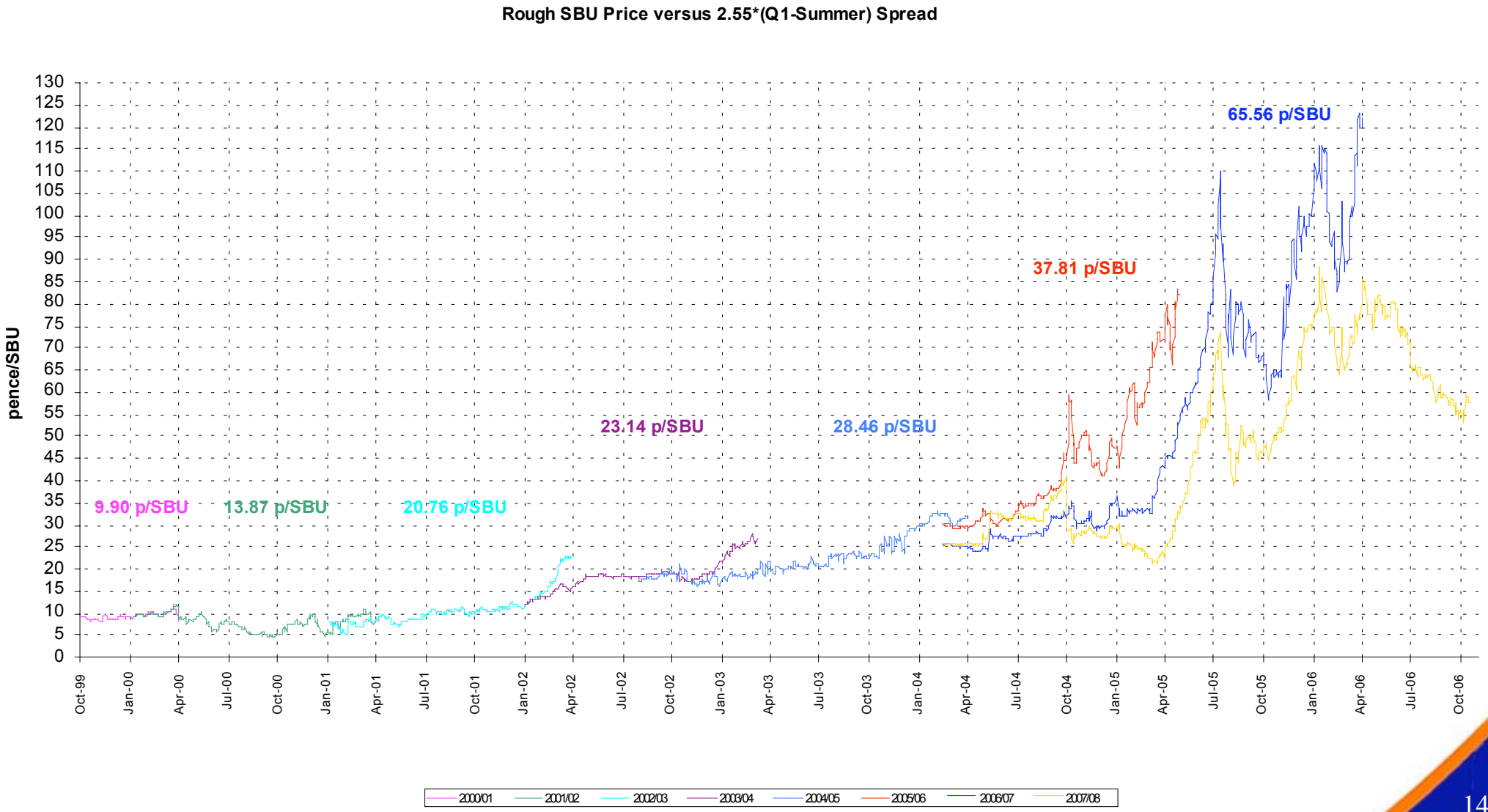
….and operational availability



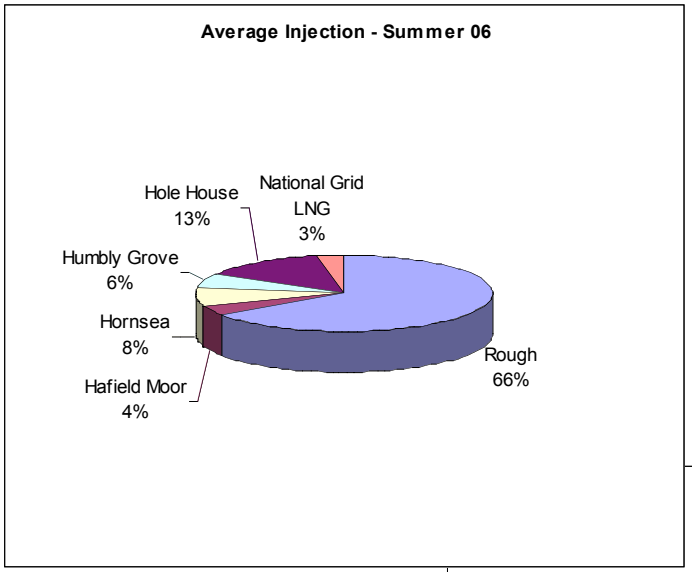
P&L trend since acquisition

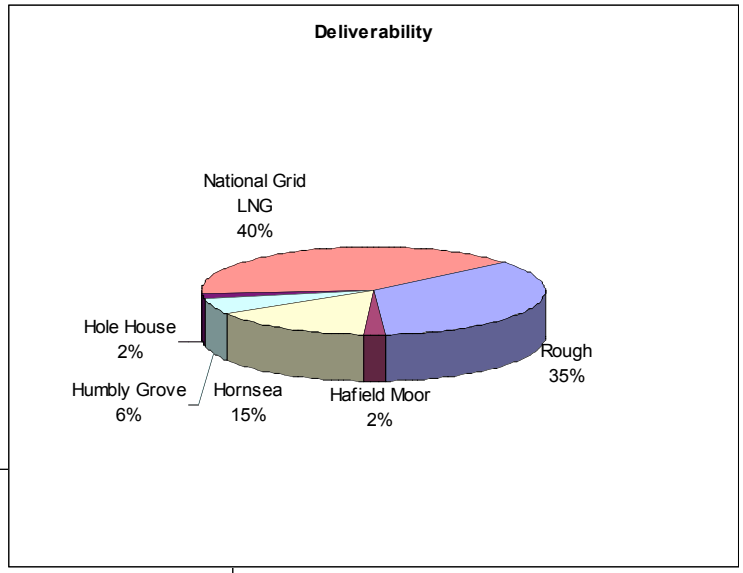
	FY 2003	FY 2004	FY 2005	H1 2006
Average SBU price (calendar year) (pence)	15.6	24.6	34.8	47.1
Turnover (£m)				
Standard SBUs	74	113	159	103
Extra space	3	8	19	13
Native gas sales	0	0	20	
Gas sales	30	21	30	25
Other	22	22	25	12
Total	**129**	**164**	**253**	**154**
External turnover (£m)	83	133	195	126
Cost of gas (£m)	36	33	35	28
Operating profit (£m)*	**40**	**69**	**154**	**96**

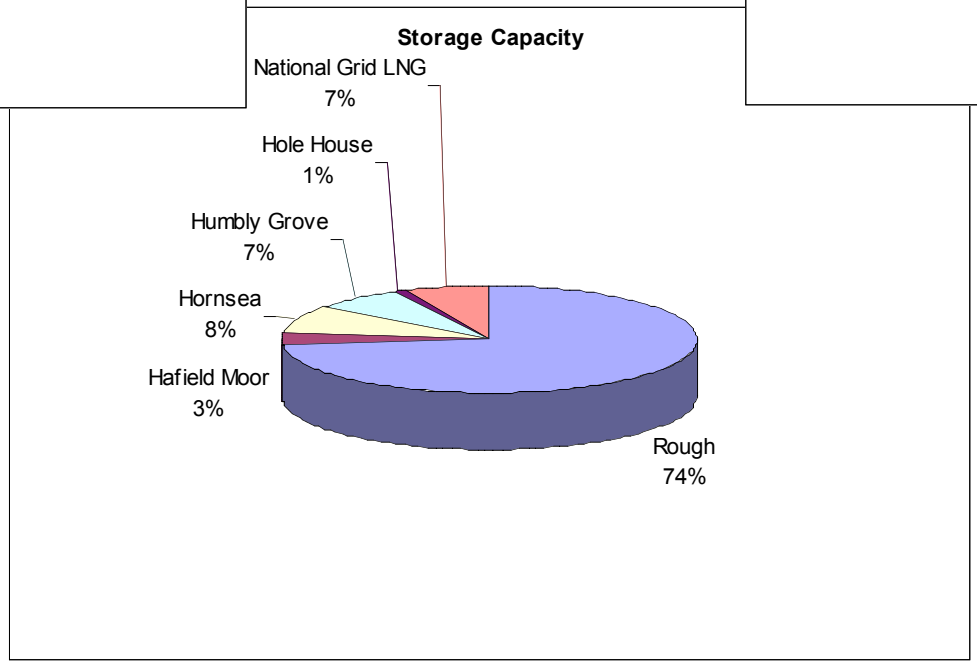
Rough SBU Price History



Rough's place in the storage and wider gas market

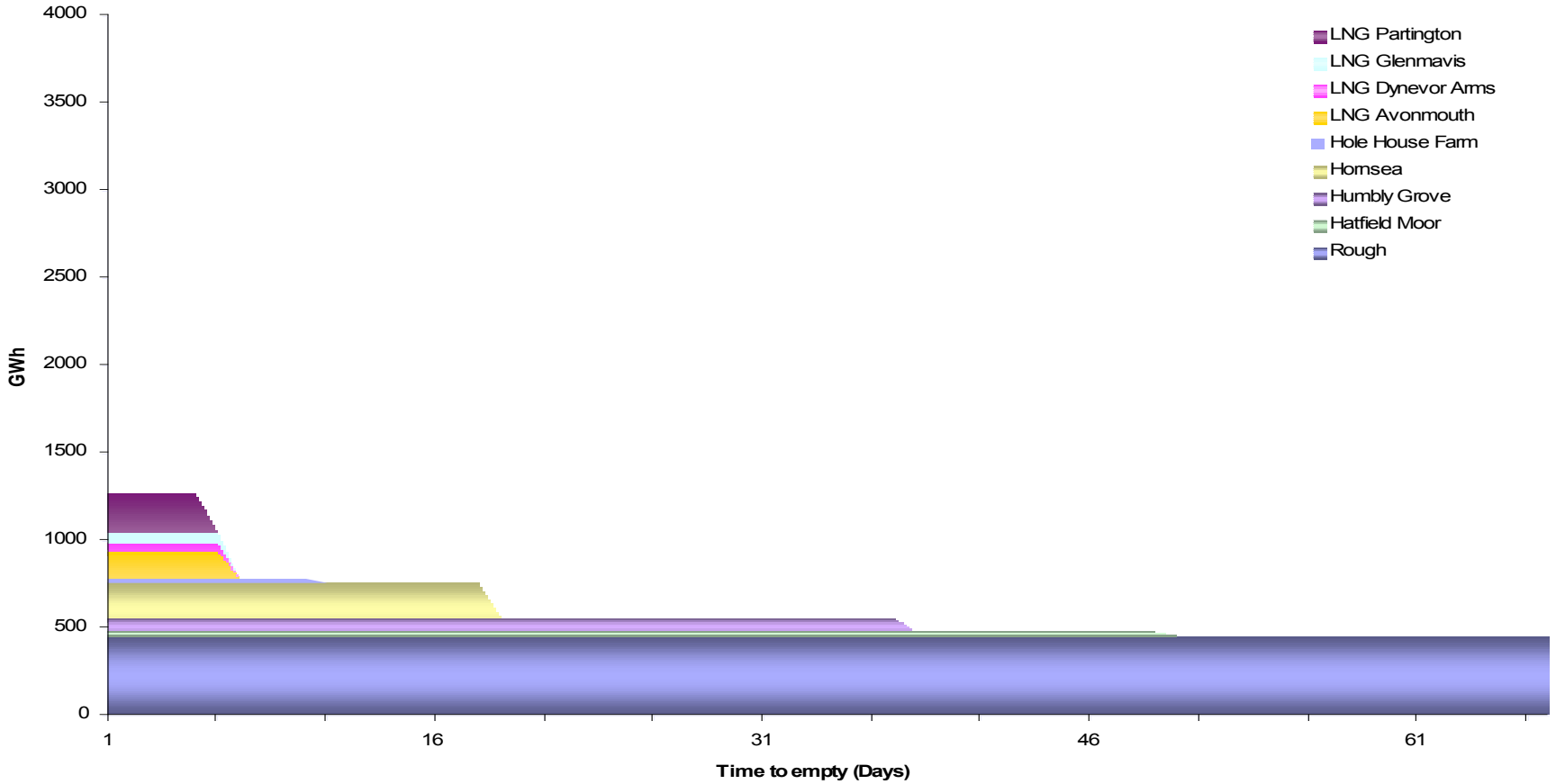






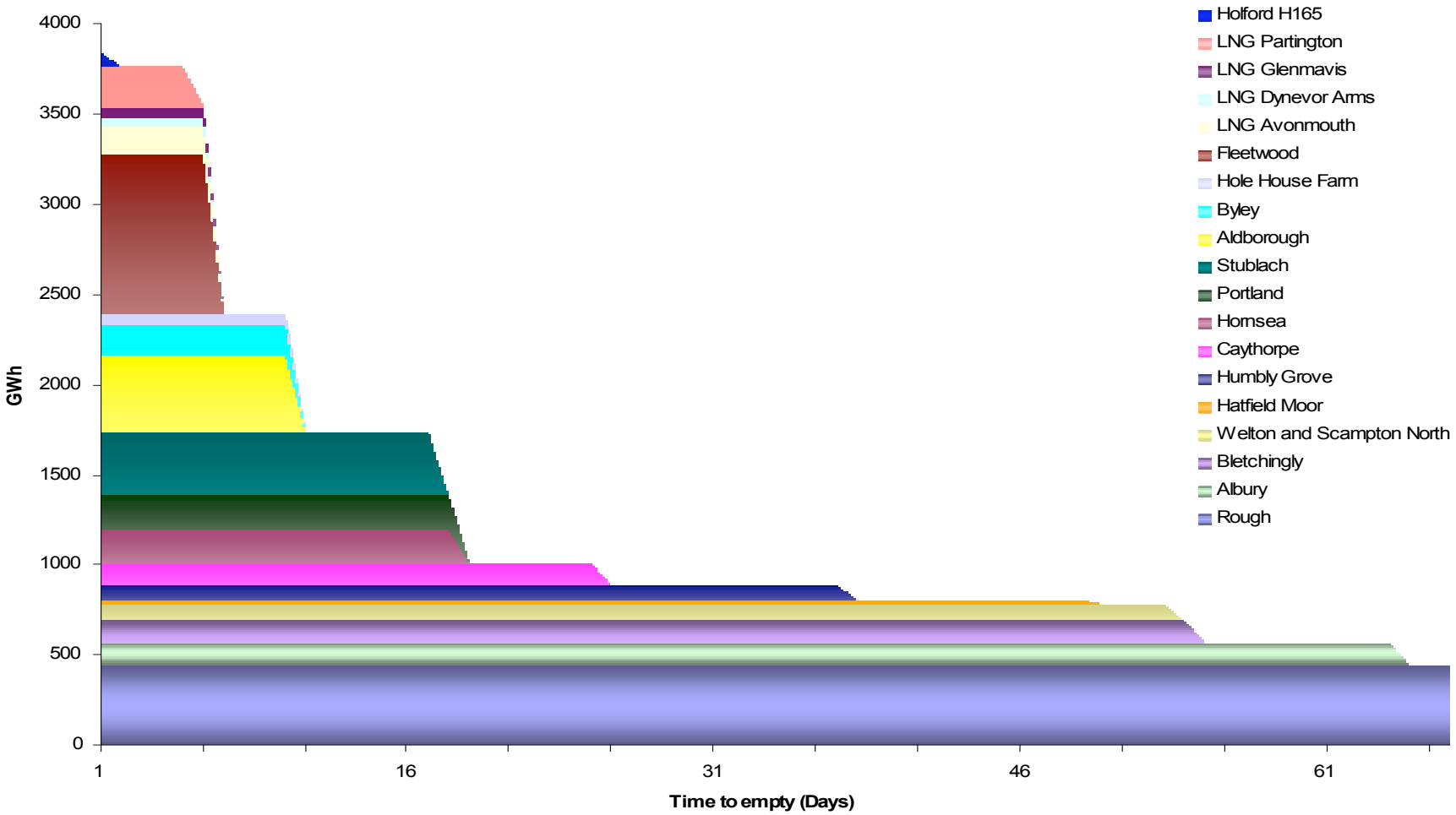
UK gas storage – current picture

- still largely the old “British Gas” facilities
- Rough dominates seasonal storage market

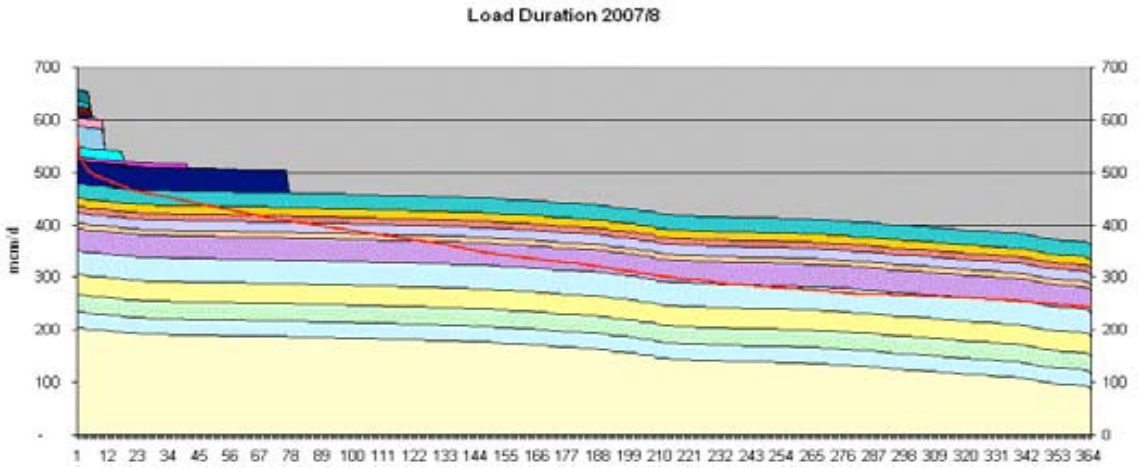


UK gas storage – including all planned projects

- Assumes all current / planned projects built
- Rough remains the major part of seasonal storage



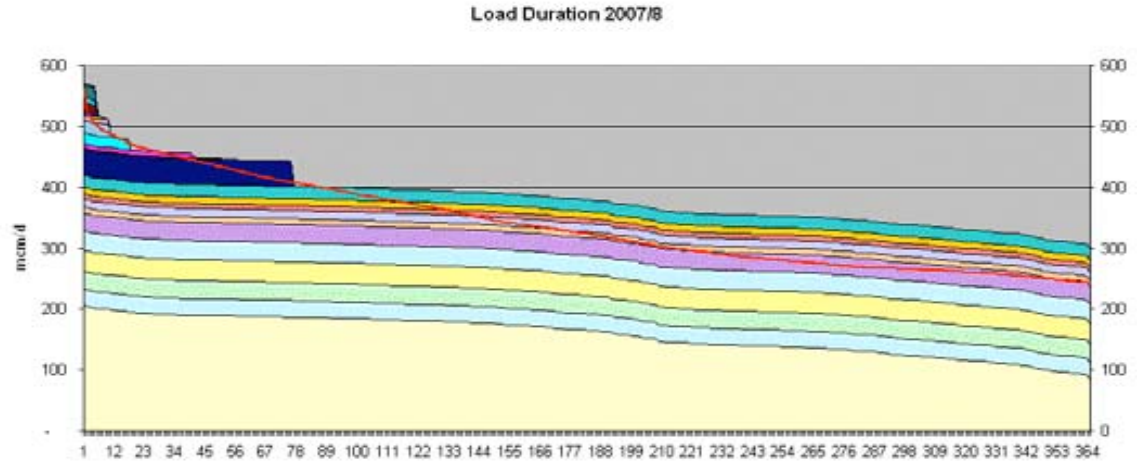
Impact of “gas surpluses” - winter 2007/08



Theoretical Maximum Case

All planned infrastructure built on time and utilised 100%

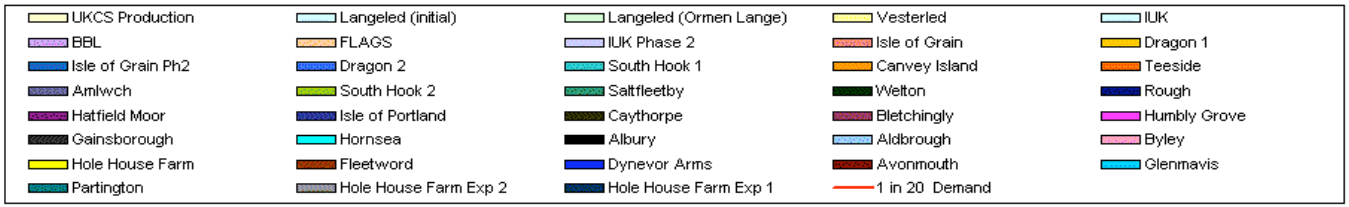
- Additional projects significantly boost supply potential
- Winter appears amply supplied



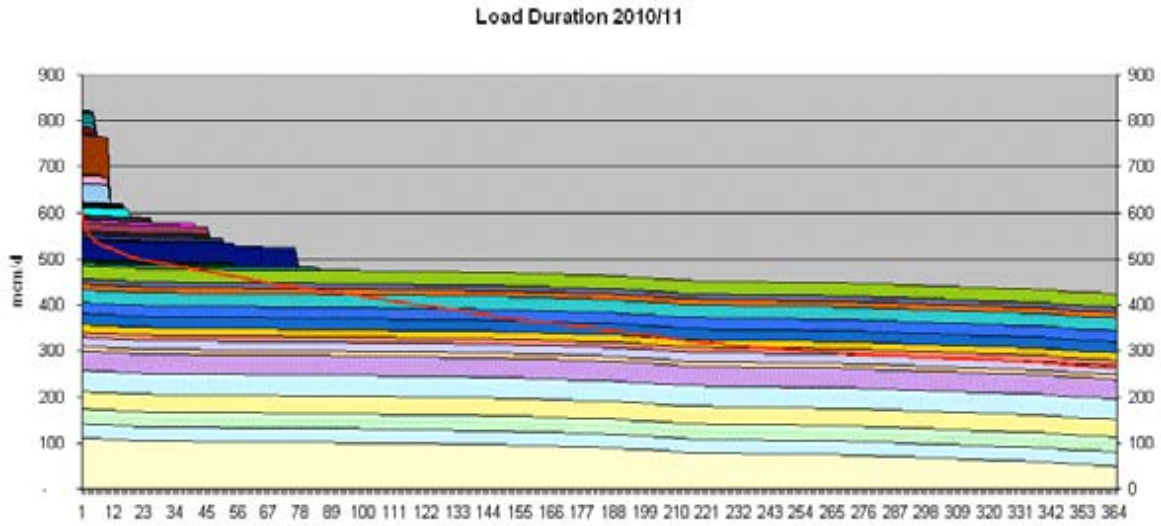
CSL mid case

Interconnectors, LNG terminals at 70% capacity, field gas at 90% of capacity, new storage at 50% capacity

- Tightness in cold winters, not necessarily at peak but after long duration of cold weather.
- Shows importance of Rough’s position and advantageous shape
- Summer surpluses



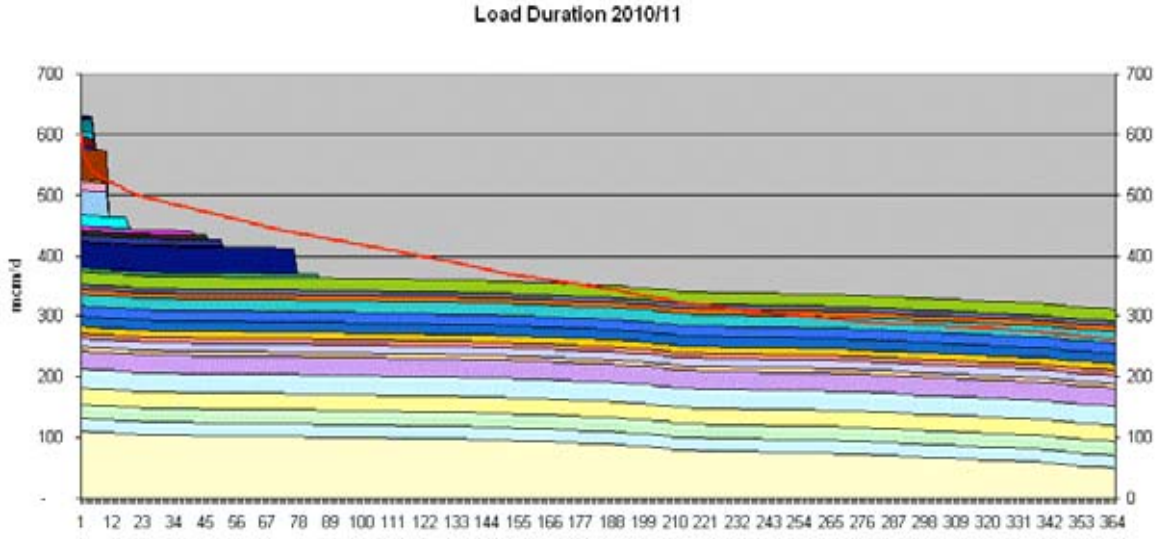
….further ahead – winter 2010/11



Theoretical Maximum Case

All projects are implemented on time and utilised 100%

- Potential supply surpluses
- This is reflected in the forward curve with 2010/11 being the “dip” in the curve
- Too many short duration storage facilities
- Unlikely all projects will be completed due to planning consents, development challenges and incorrect mix of infrastructure

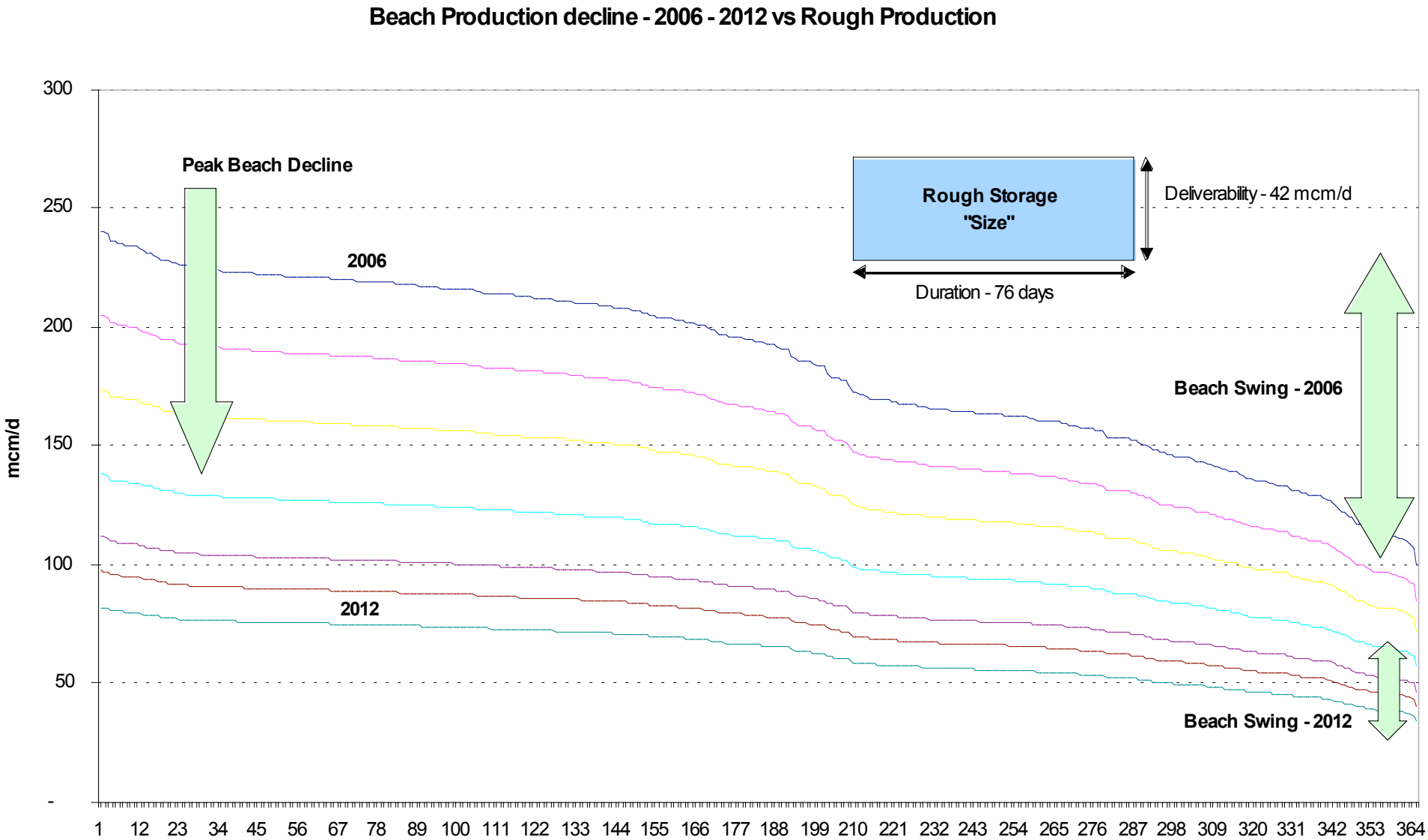


CSL Mid Case

LNG imports and interconnectors at 70% capacity, field gas at 90%, “conceptual” storage facilities excluded

- Supply gaps beginning to appear, again not necessarily at peak
- Summer surpluses
- Implies storage is a likely candidate for bundling of shapes

Expected UKCS decline



Substitutes for long range storage (LRS)

Competition to storage may come from a variety of sources

Can European Storage compete against Rough?
- European public supply Obligations (PSO's) limit market access
- Access to transportation capacity problematic
- Major European markets need more storage by c 2010

Can CCGT switching compete against Rough?
- Requires spare capacity to exist on the power system
- Requires a favourable spark spread versus storage costs
- Last winter CCGTs did provide significant flexibility – up to 40 mcm/day … at a price

Can holding LNG capacity compete against Rough?
- Requires spare/idle capacity in LNG supply chain
- Limited storage at LNG sites so limited flexibility - price takers
- Surplus regas capacity in US and Europe may allow LNG to compete in seasonal supply in short to medium term

Competitive advantages of long duration storage
- Physical proximity to market
- Large summer put optionality
- Short notice (2 hour) flexibility
- Cycling capability

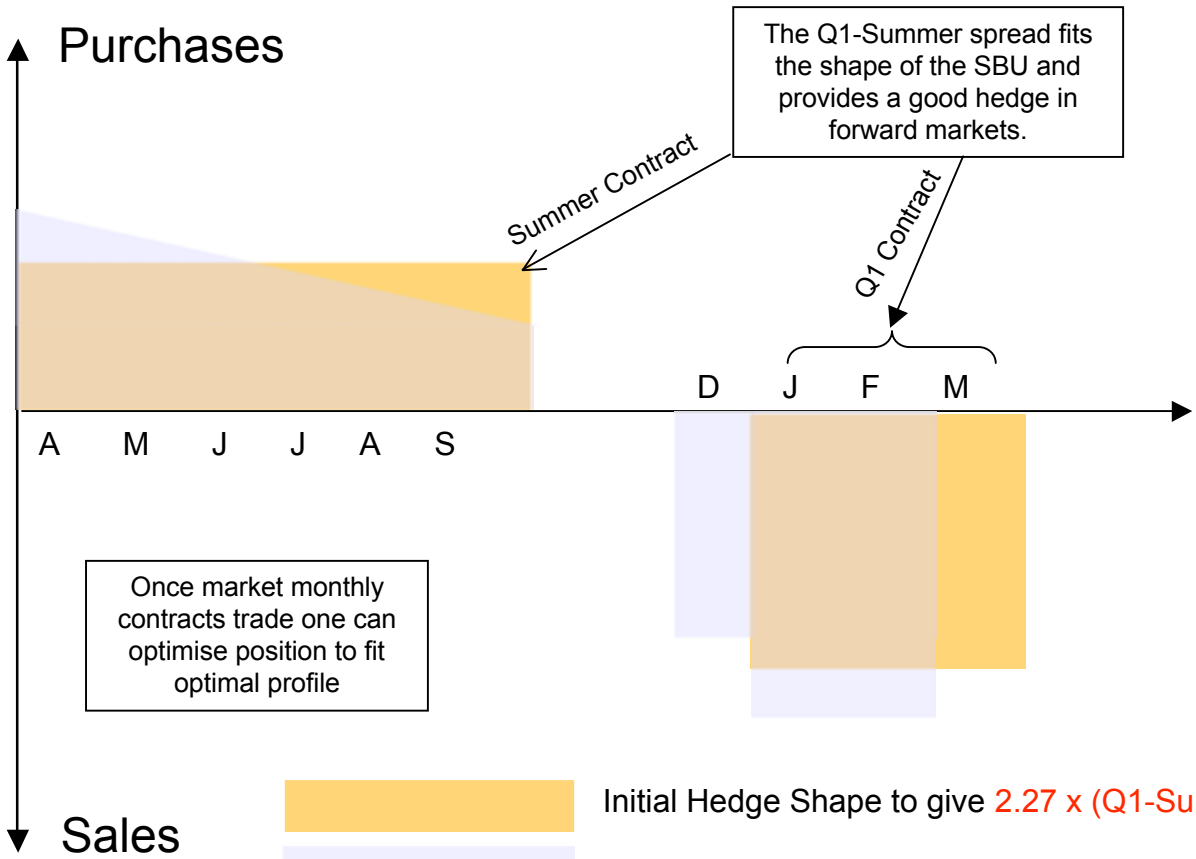
Competitive Environment - Summary

- UKCS indigenous gas remains today the major competitor to Rough in supplying seasonal swing but is in steep decline
- Most new storage is relatively low volume and short duration and is not designed to compete directly with Rough
- Most (all?) new import infrastructure is designed to operate at high load factor
- Rough has strong competitive advantages over actual and potential competitors
  - physical proximity to market
  - large scale short notice rate flexibility
  - large scale put-optionality
  - low unit cost per stored volume

Value of storage

- Storage sold as “Standard Bundled Units” of injectability, space and deliverability
- Rough *intrinsic* value driven by price spreads in the *forward* market
- Volatility in spot and forward markets adds significant *extrinsic* value to holdings in Rough services
- Trend in recent years to greater use of Rough services by traders and trading affiliates of banks
- Also increasing interest from producers with “flat” supply sources which add value by shaping
- Some interest from major gas consumers and consumer groups to manage price risks

Rough – SBU pricing and intrinsic value



Standard Bundled Unit (SBU)

Withdrawal	1 kWh/day
Space	67 kWh
Injection	0.35 kWh/day

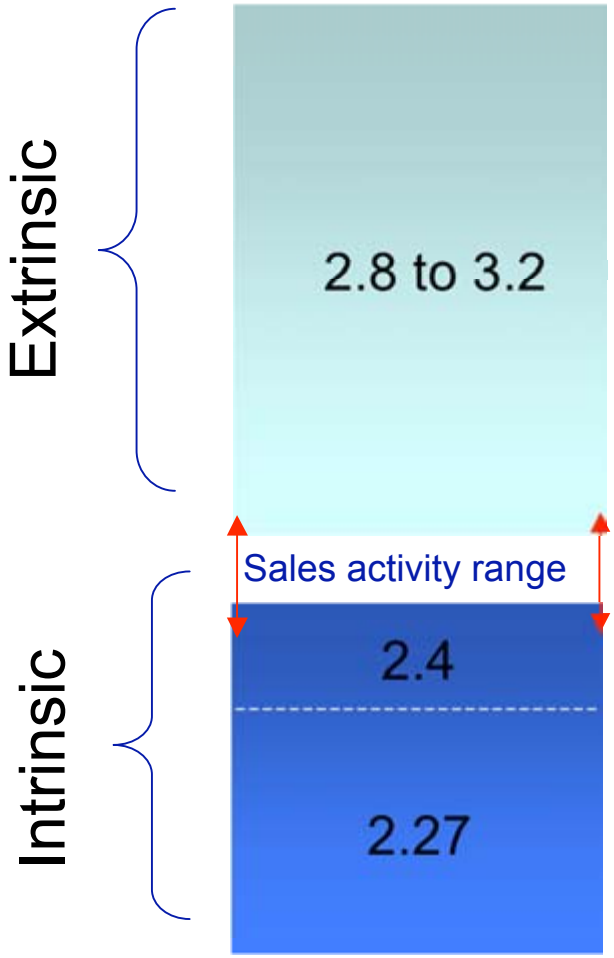
455m SBU's sold

1 SBU provides space equivalent to 2.27 therms

Initial Hedge Shape to give 2.27 x (Q1-Summer) p/SBU

Optimal hedge Shape to give 2.4 x (Q1-Summer) p/SBU

Unlocking the extrinsic value



Good Rough Reliability from high availability of the asset to CSL and customers

Customers able to reshape the CSL product or sell/buy unused capacity as firm or interruptible

Customers able to buy/sell gas in store

Ability to re-nominate withdrawal/injection with short lead times

Customers nominated quantities equal their allocated quantities – irrespective of asset availability

Market volatility provides cycling ability to leverage greater value from a Rough SBU

Extrinsic value from use of Rough on 100+ days beyond intrinsic valuation

Potential upside to 2.4 intrinsic as Dec – Mar spread increases on Fundamental change to winter contract

Re-optimise hedge in more liquid market – further intrinsic value

Initial Intrinsic Hedge in product-limited market fits shape of Rough

Poor Rough Reliability

Injection Cancellation

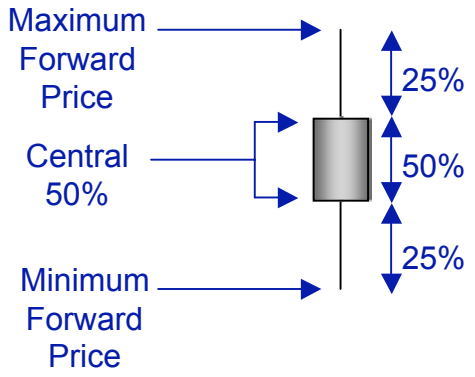
Long Injection Period

Force Majeure

Note: Each SBU contains 2.27 therms, therefore to convert from pence/SBU into pence/Therm divide by 2.27

Forward Curve Price Spread 2005/6

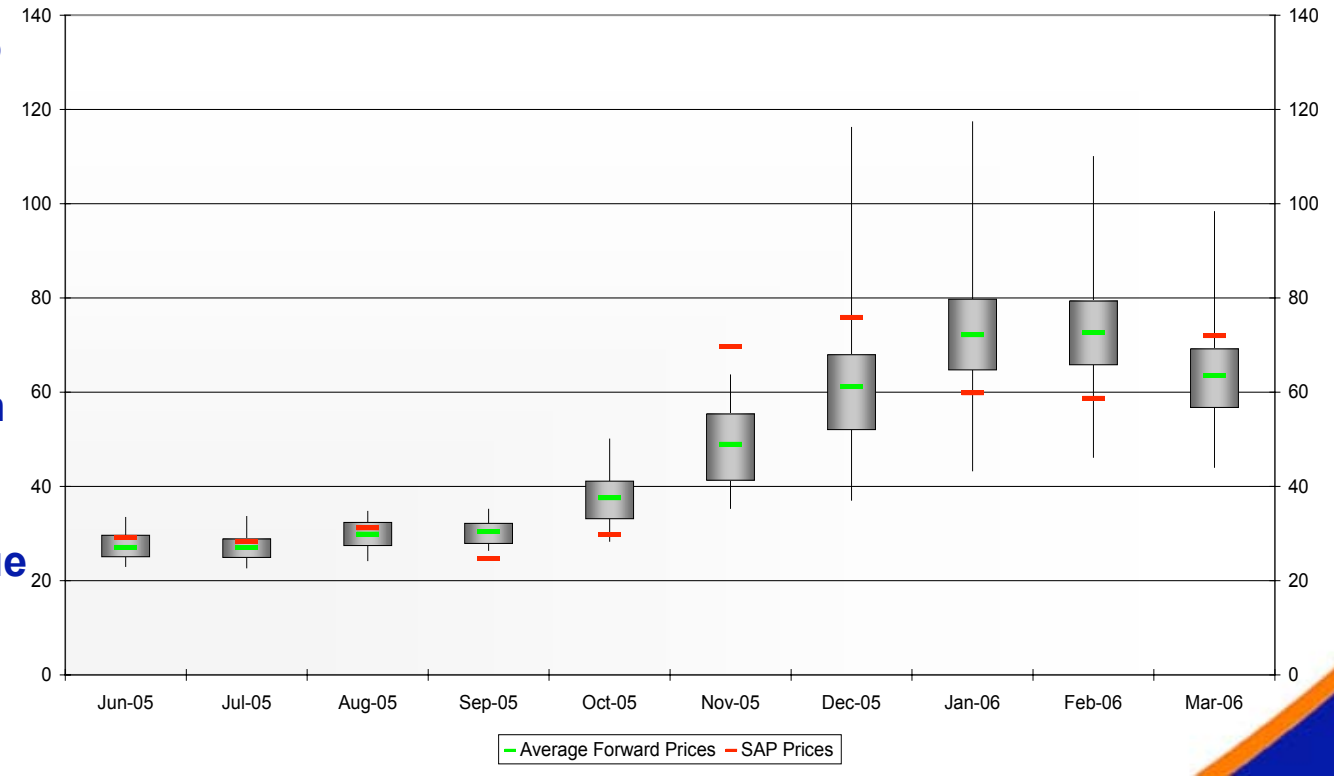
- Different from and not a good predictor of spot/out-turn
- Rough valued using forward price spreads and volatility not absolute level of prices
- For Rough, low (or negative) prices in summer are as good as high winter prices



(over 12 months preceding contract expiry)

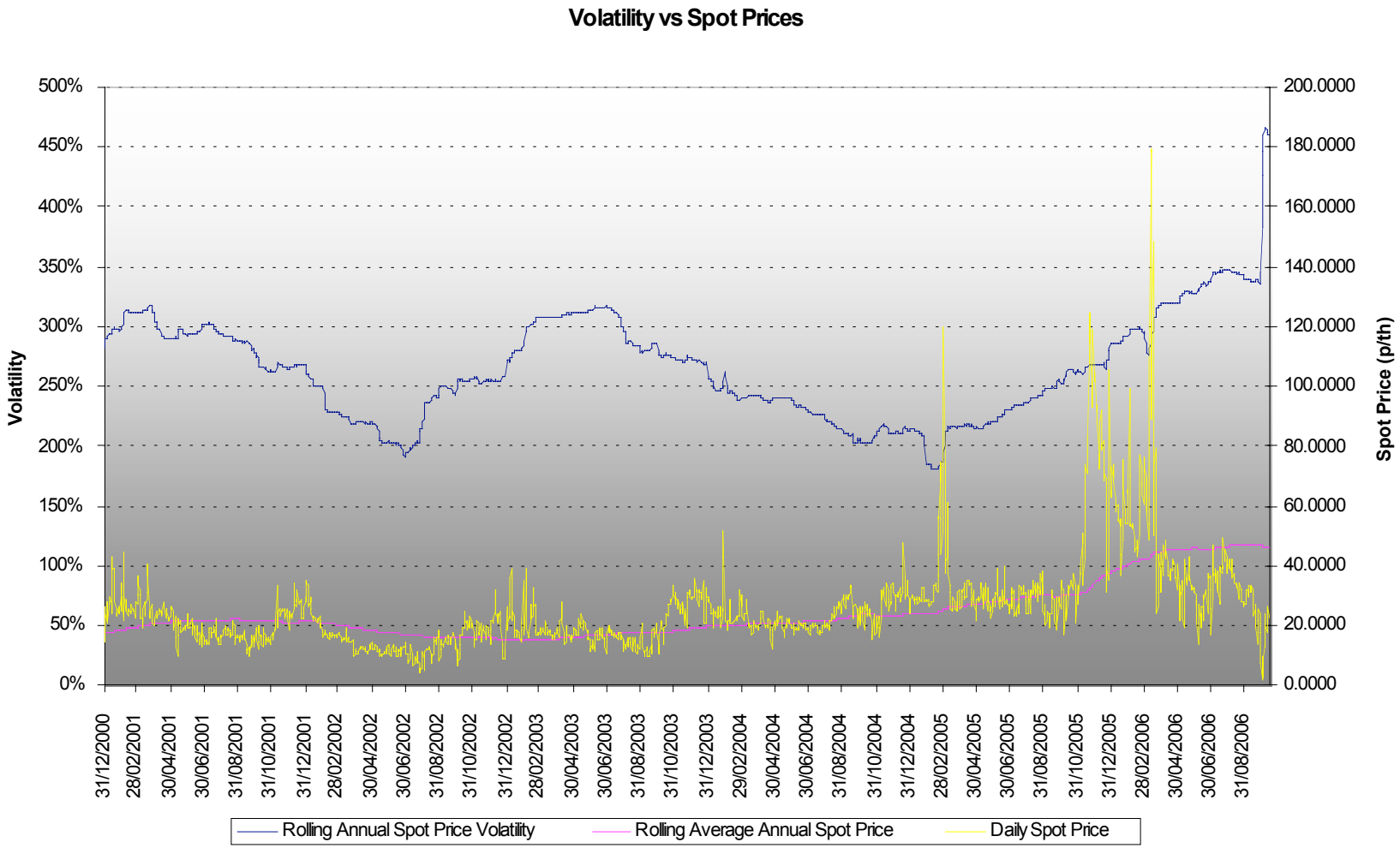
- Rough storage is able to exploit arbitrage opportunities in differences between spot and forward markets

- During volatile and high priced periods, Rough can be used to minimise exposure or used as a trading tool to extract value



Volatility drives extrinsic storage value

- Low prices do not necessarily imply lower volatilities
- Already evidence of high-volatility with low prices
- Future risk of negative prices



Market Value

- No direct market comparator for Rough : Other storage facilities are less transparent
- Byley reportedly sold to Eon for £96m with a further £100m development cost required
  - Ongoing contractual terms are unknown
- Byley space is 6 bcf compare to Rough's 116 bcf
- Simplistically, this would place Rough's market value in excess of £3bn
  - However, with higher injectability and deliverability parameters than Rough, Byley is worth more on a pence/therm space basis

Financial drivers for Centrica Storage

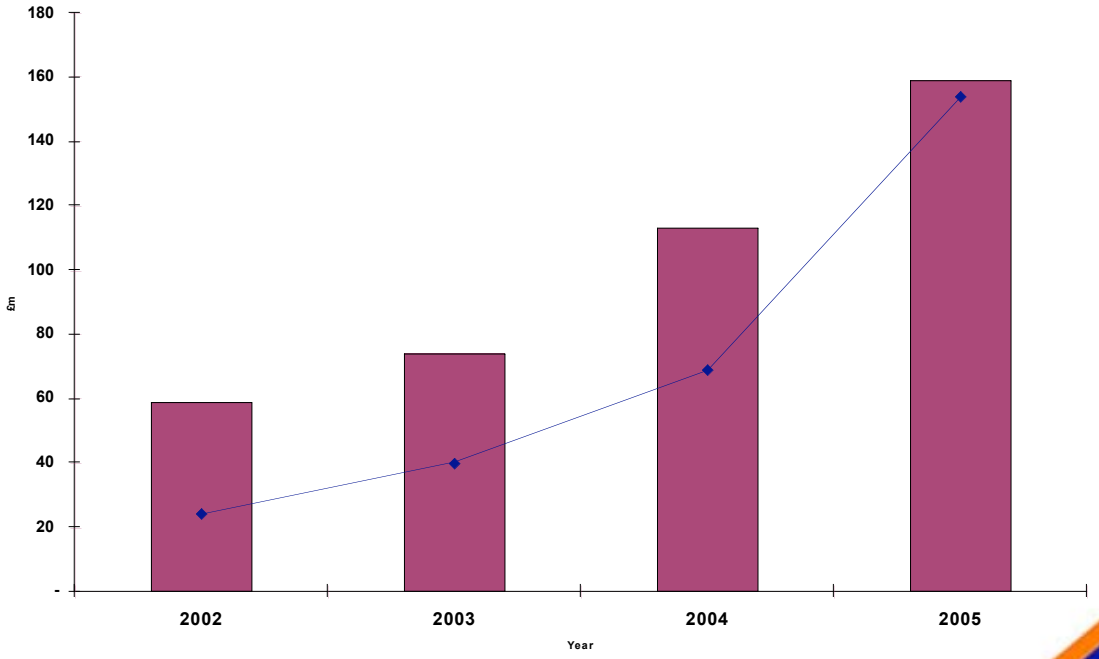
- Revenue and profit trends
- Detailed financials
- Drivers of future SBU revenue

Revenue profit trends since acquisition

- SBU remains the main driver of profit, but other revenue and costs impact

- **2004**
  - higher revenue project expenditure on restoring facility
  - higher gas costs and insurance costs
- **2005**
  - "One off" peak product sale using native gas in 2005 generating £20m
  - Improved injection performance enabling larger volumes of additional space sales, which also benefited from high market prices

£m	2002	2003	2004	2005
SBU revenue	59	74	113	159
Operating profit	24	40	69	154
Delta	35	34	44	5



Detailed financials

£m	2002	2003	2004	2005	2006 H1
SBU revenue	59	74	113	159	107
Processing Income Mainly Amethyst field limited remaining life		11	10	10	6
Incremental Bundled Units				20	1
Gas Sales & fuel gas		30	23	30	25
Commodity, Space "one off" income		11 3	11 7	13 19 2	2 13
Total Revenue	89	129	164	253	154
Cost of Sales		36	35	35	28
Gross Margin		93	128	218	126
Project Spend		2	5	7	3
Op costs		34	37	38	18
Depreciation		17	17	19	9
Op Profit	**24**	**40**	**69**	**154**	**93**

Drivers of future SBU revenue

- Summer/Q1 forward price spreads and volatility
  - current forward curve
  - risk premium in forward curve and forward price spread behaviour
  - impact of summer surpluses and put option value
- Multiplier of spread in SBU price increased from 2.3 to 2.5 between 2003/4 and 2005/06 – scope to increase further to at least 2.7
- Enhancement plans to increase deliverability, injectability and space could increase numbers of SBUs sold from 2009/10 by 5% plus
  - Enhancements to offshore compressors
  - Well A5 reinstatement
  - Further cushion gas sales to create space

Opportunities

- Now - restore and enhance Rough's reliability and reputation and recover to 2005 levels
- 2008/09 – 2009/10 - increase injection rates and further increase deliverability
- 2008/09 – 2010/11 Use increased injection and deliverability to make additional cushion gas sales, creating more space to sell
- 2009/10 – 2010/11 Increase number of SBUs (5+%)
- Diversify product offerings including more "virtual" products
- Diversify asset base through acquisition or development

Wrap Up

- Centrica Storage has demonstrated its operational and commercial skills in storage through significant challenges
- Rough is in a strong competitive position to meet growing market need for long duration seasonal storage
- Uncertainties remain about the gas supply/demand position, particularly in periods of prolonged high demand
- Rough's capacity sales are advantaged through risk-premia present in forward seasonal markets during uncertain periods of supply/demand
- The value of Rough's large put-optionality in periods of over-supply not fully recognised
- There remain opportunities to enhance capacity and to increase price relative to market
- Acquisition or development of other storage assets will enhance the value of Centrica Storage's portfolio through risk diversification and improved product offering to market