

UKCS Exploration Review

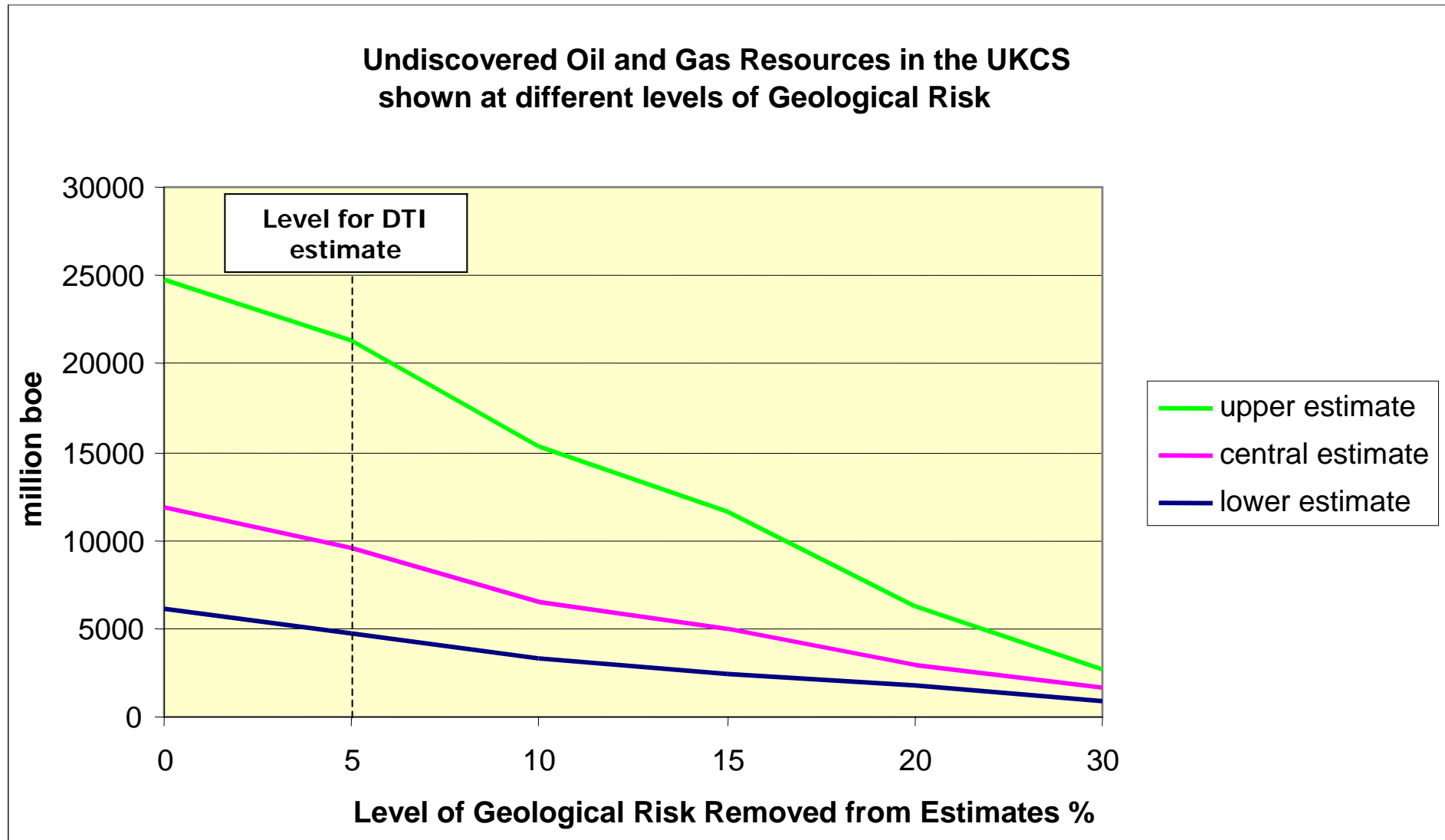
Report from Economic Advisory Group to ILT

- ✓ Context
- ✓ Summary review of yet to find potential
- ✓ Progress since 1999: comparison to Task force predictions
 - Actual drilling activity
 - Contribution to production against predictions
 - Reserve additions from exploration
- ✓ Benchmarking summaries
- ✓ Summary & conclusions Issues for ILT

- ✓ In recent months EAG have discussed
 - Remaining basin potential.
 - Exploration performance since the creation of PILOT
 - Benchmarking data
- ✓ Brief summary presented here for benefit of ILT

Review of yet to find (YTF) potential

Yet to Find dependent on level of risk...



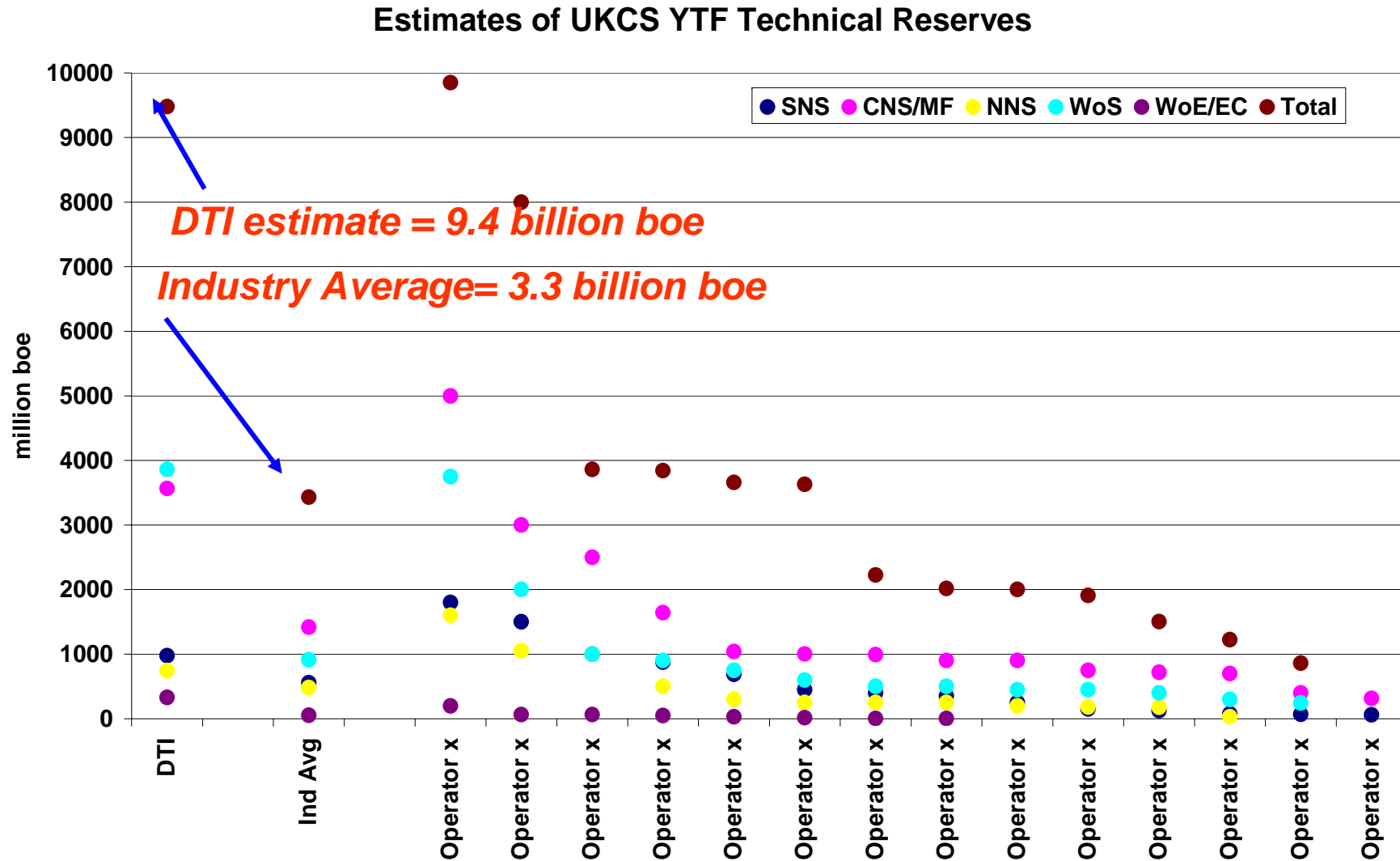
....but large potential within a broad range

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- ✓ DTI's estimates for **technically recoverable undiscovered resources as at the end of 2004** were presented in July 2005 as:
 - A **Low – Mid – High range** for the UKCS as a whole of **4.8 – 9.5 – 21.3 billion boe, of which**
 - 0.6 – 1.9 – 5.8 billion boe were West of Shetland and
 - 0.1 – 1.2 – 4.2 billion boe were West of Scotland, leaving
 - **4.1 – 6.5 – 11.3 billion boe in the North Sea, Irish Sea and onshore**

A. There is sufficient potential YTF to pursue, and, if successful, make a significant change to the future of the UKCS industry

....though many Operators carry much lower estimates

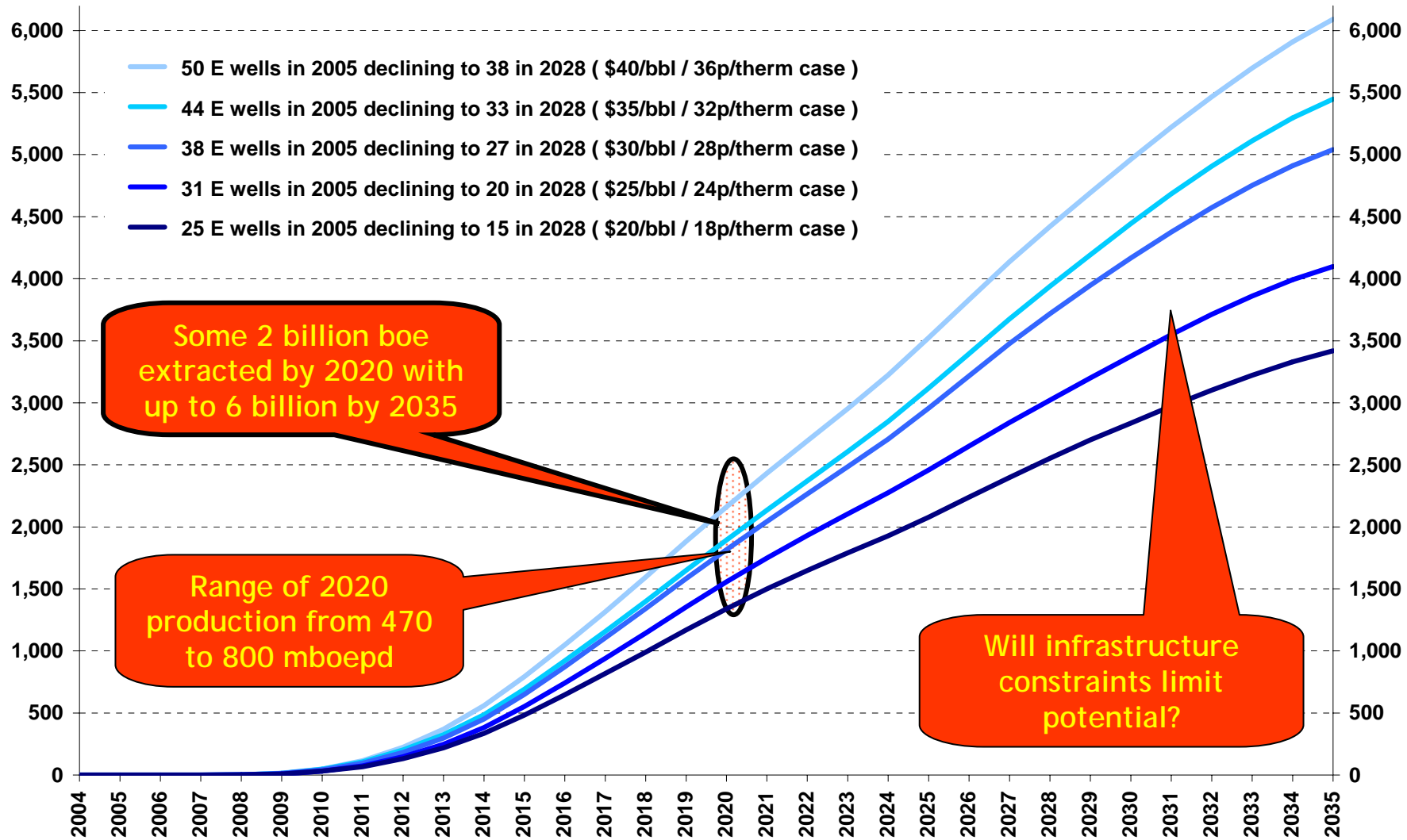


Source : UKOOA 2003

Converting Potential into production

Sustained effort required to convert YTF to Production

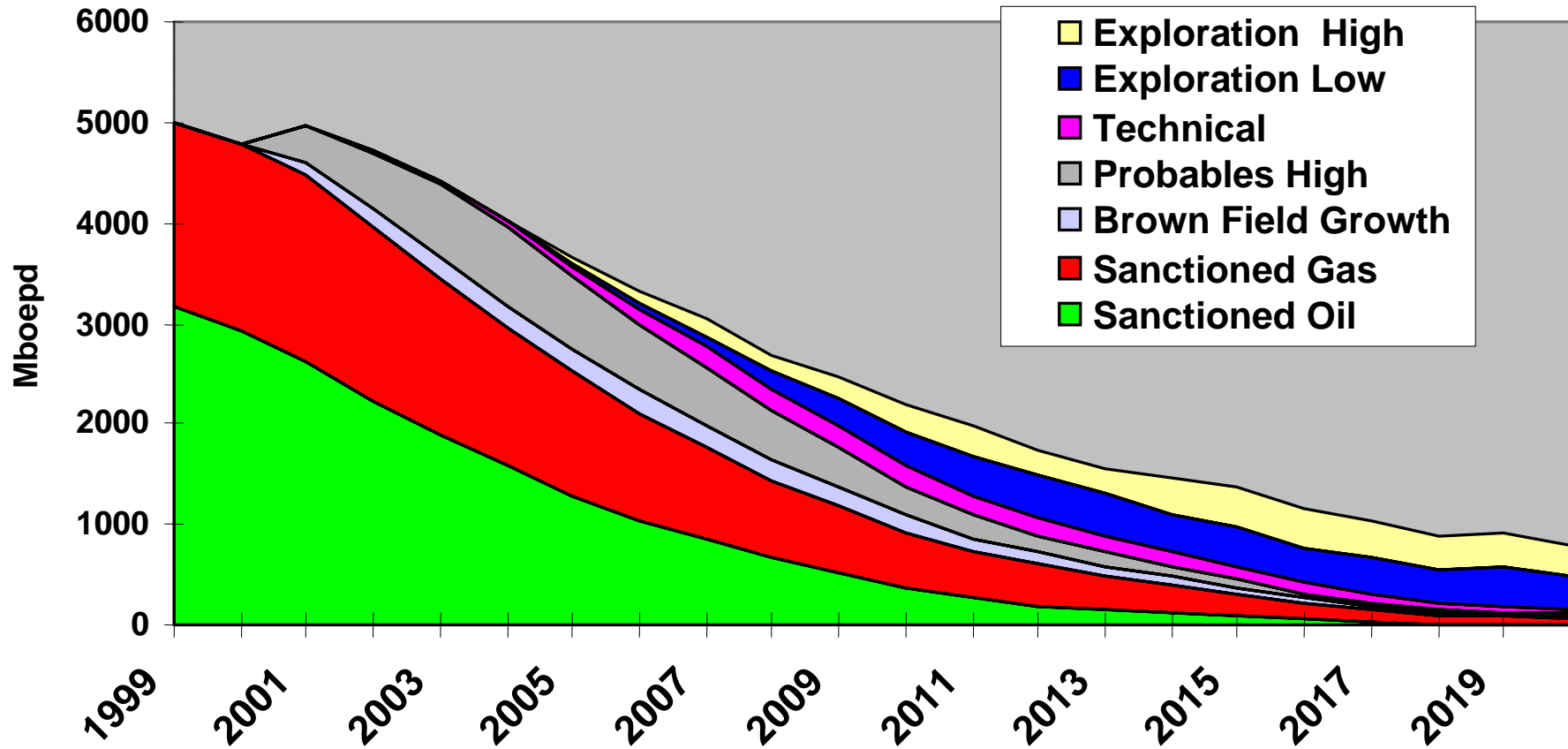
Cumulative UKCS Oil and Gas Production from Exploration
 – excluding future incrementals (million boe)



Assessment of Exploration success and production contribution since 1999

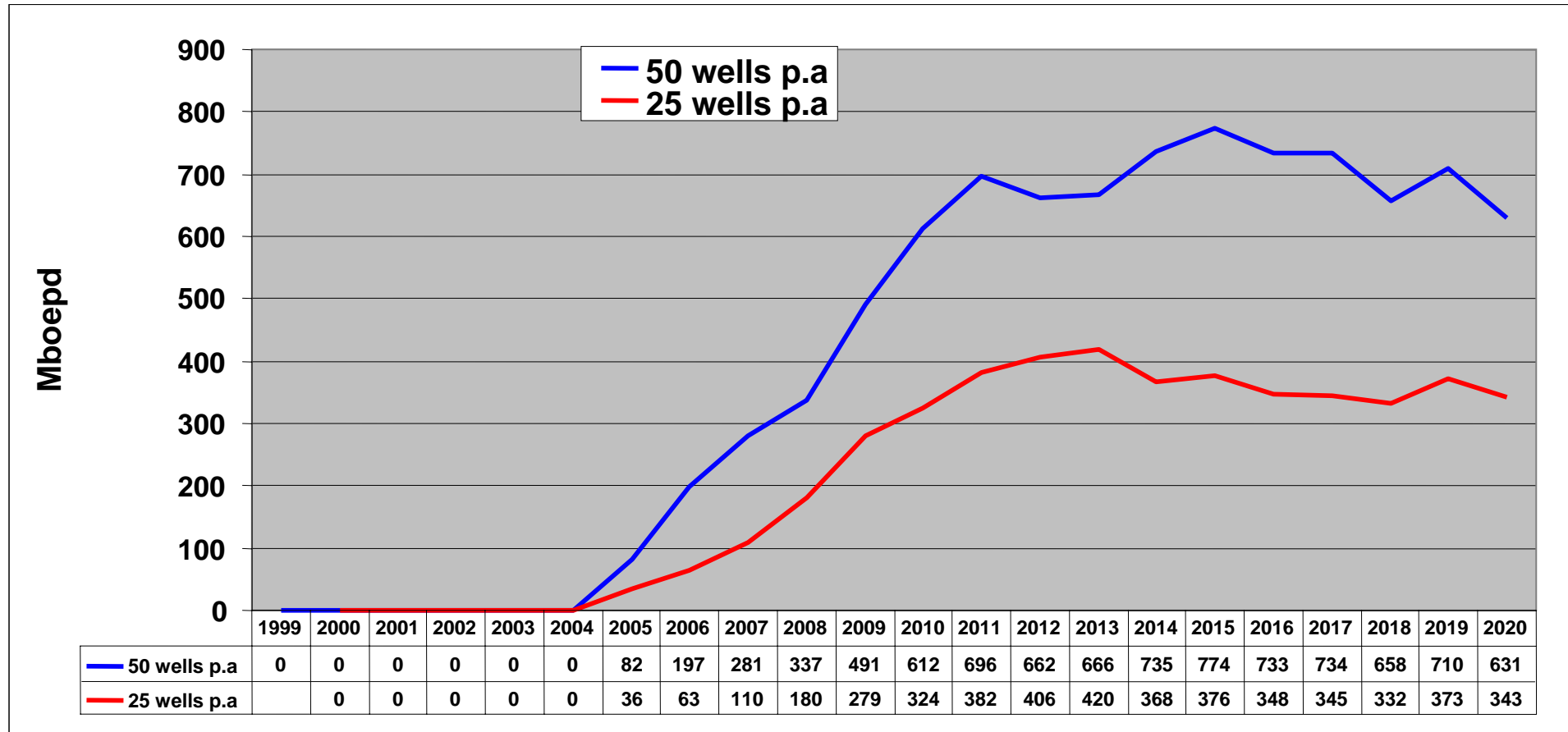


Future Production: \$16 scenario



Source : Task Force analysis Summer 1999

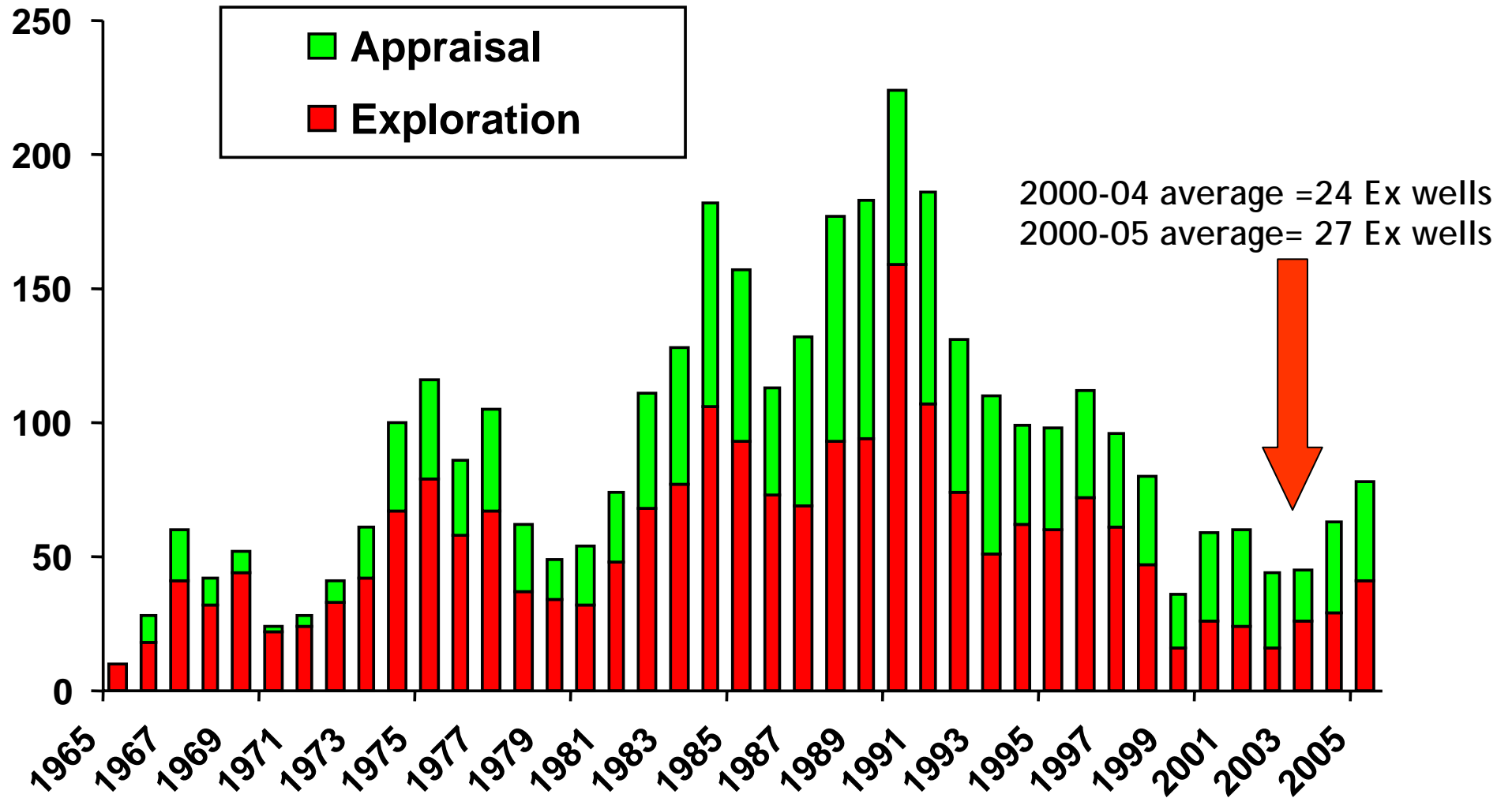
Predicted Production from Exploration programme



Taken from Task Force analysis summer 1999

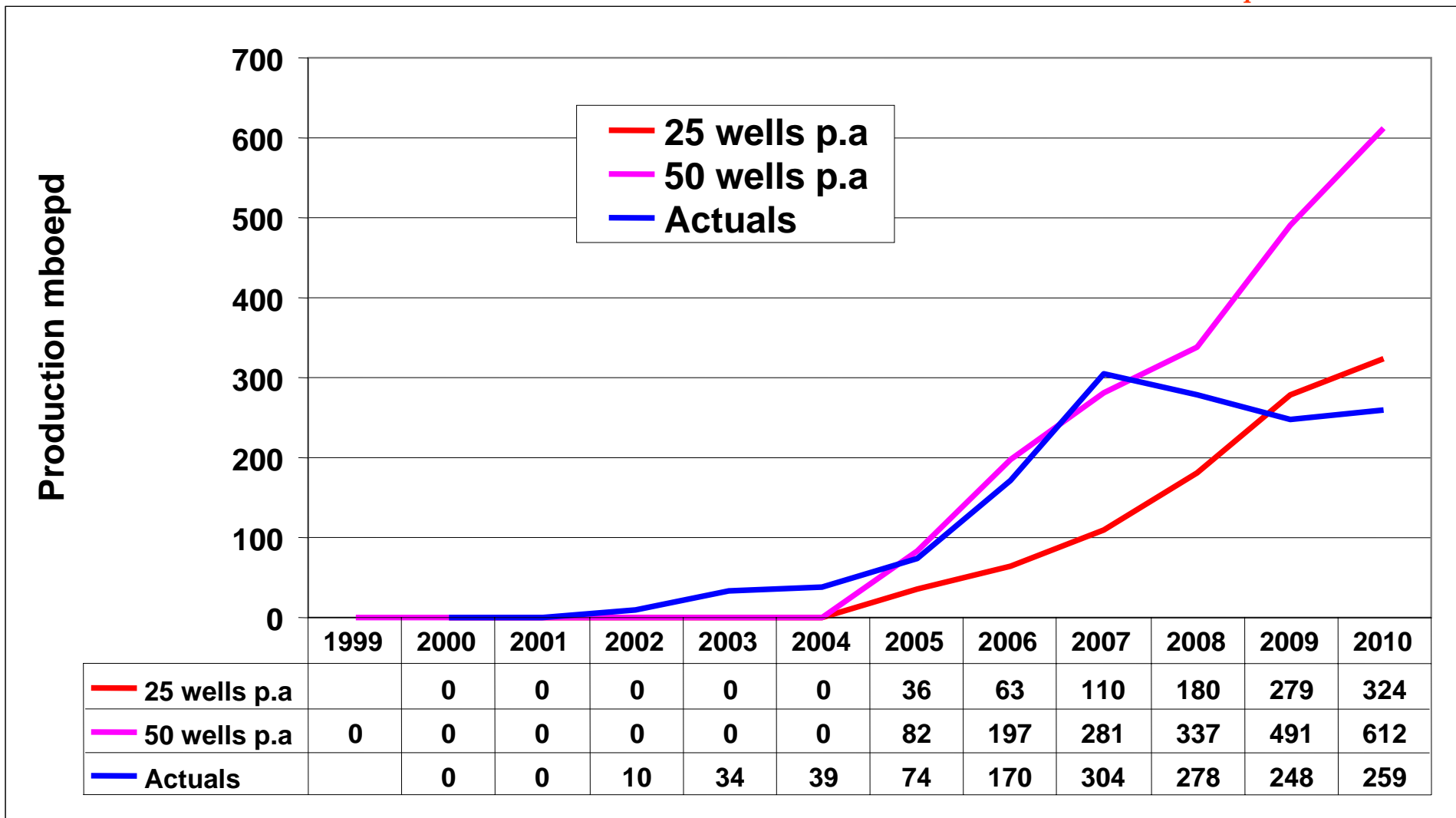
Source : Ditch Group 1999

UKCS: E & A Drilling



Current estimates :Production contribution from discoveries (2000-04) EAG

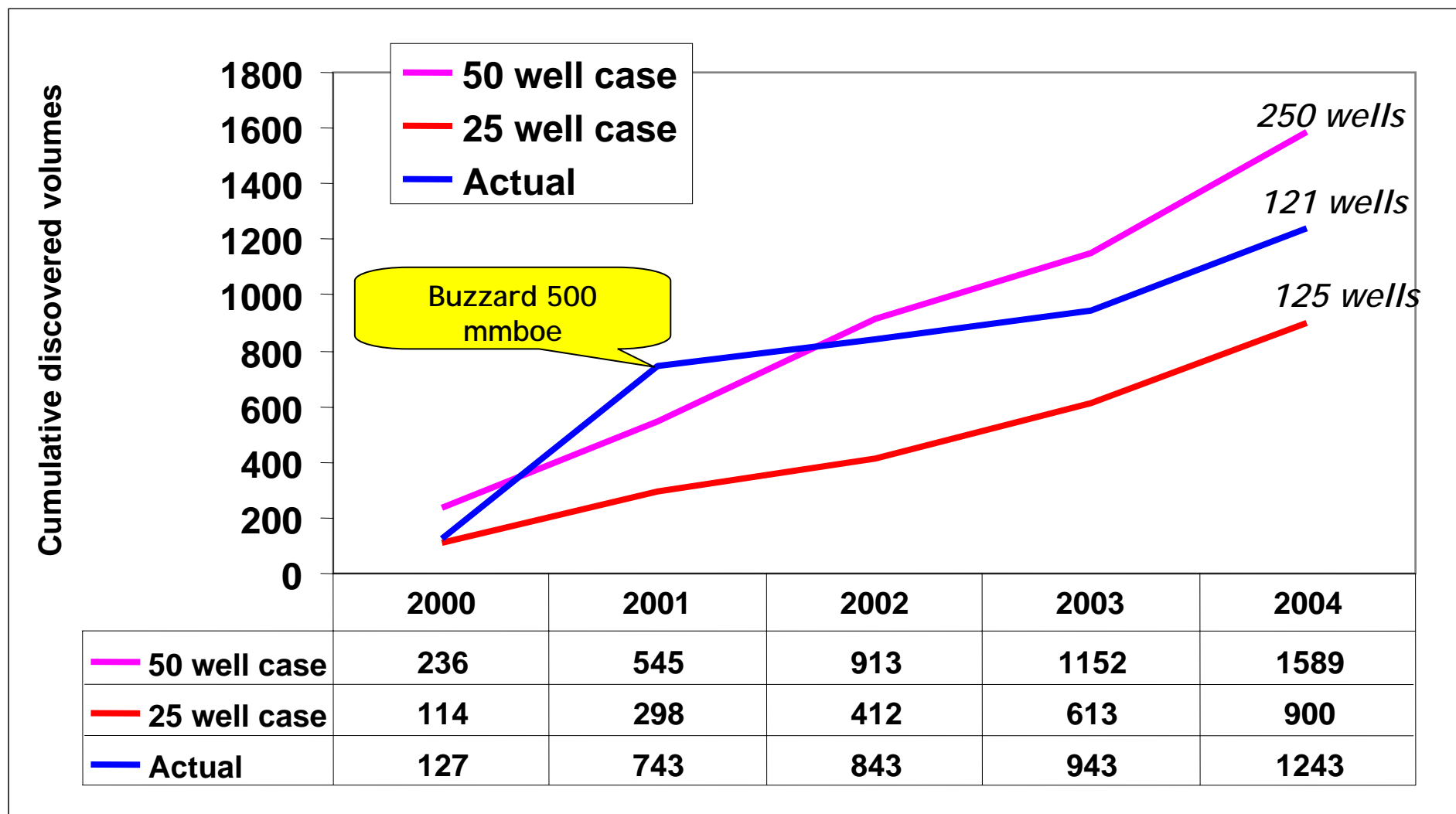
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Actuals based on Commercial discoveries (Source :Wood Mac)
 Compares to 'Ditch 25 and 50 well per annum scenarios June 1999'

February 2006

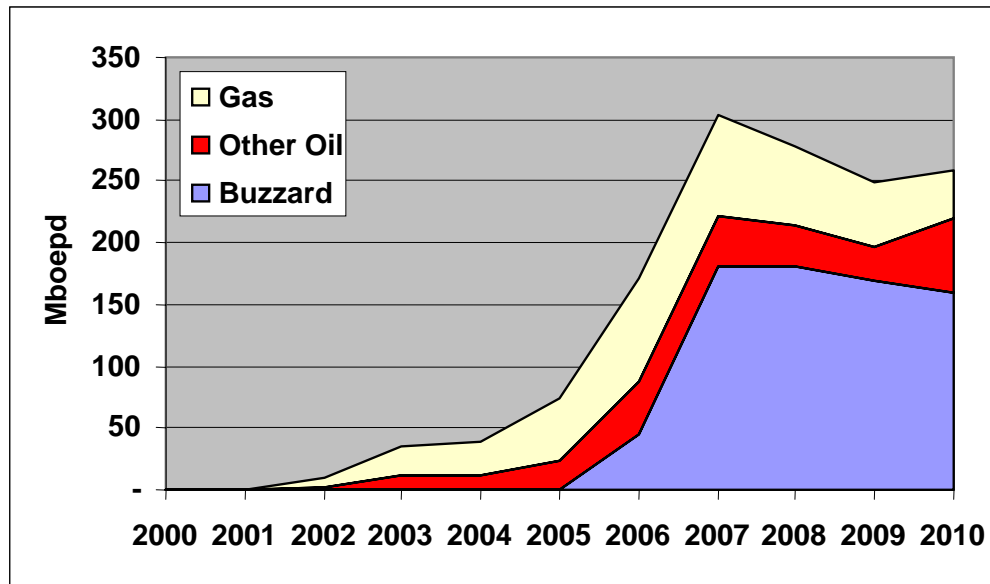
UKCS: Cumulative discovered reserves 2000-04



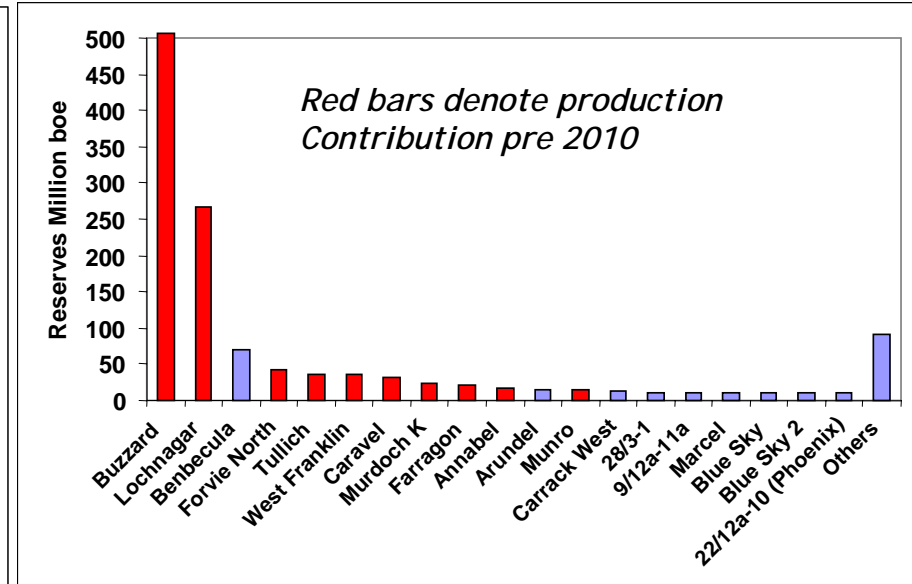
Based on Technical discovered volumes (Source: Wood Mac)
 Compares to 'Ditch 25 and 50 well per annum scenarios'

UKCS Exploration Success 2000-04

Production Contribution



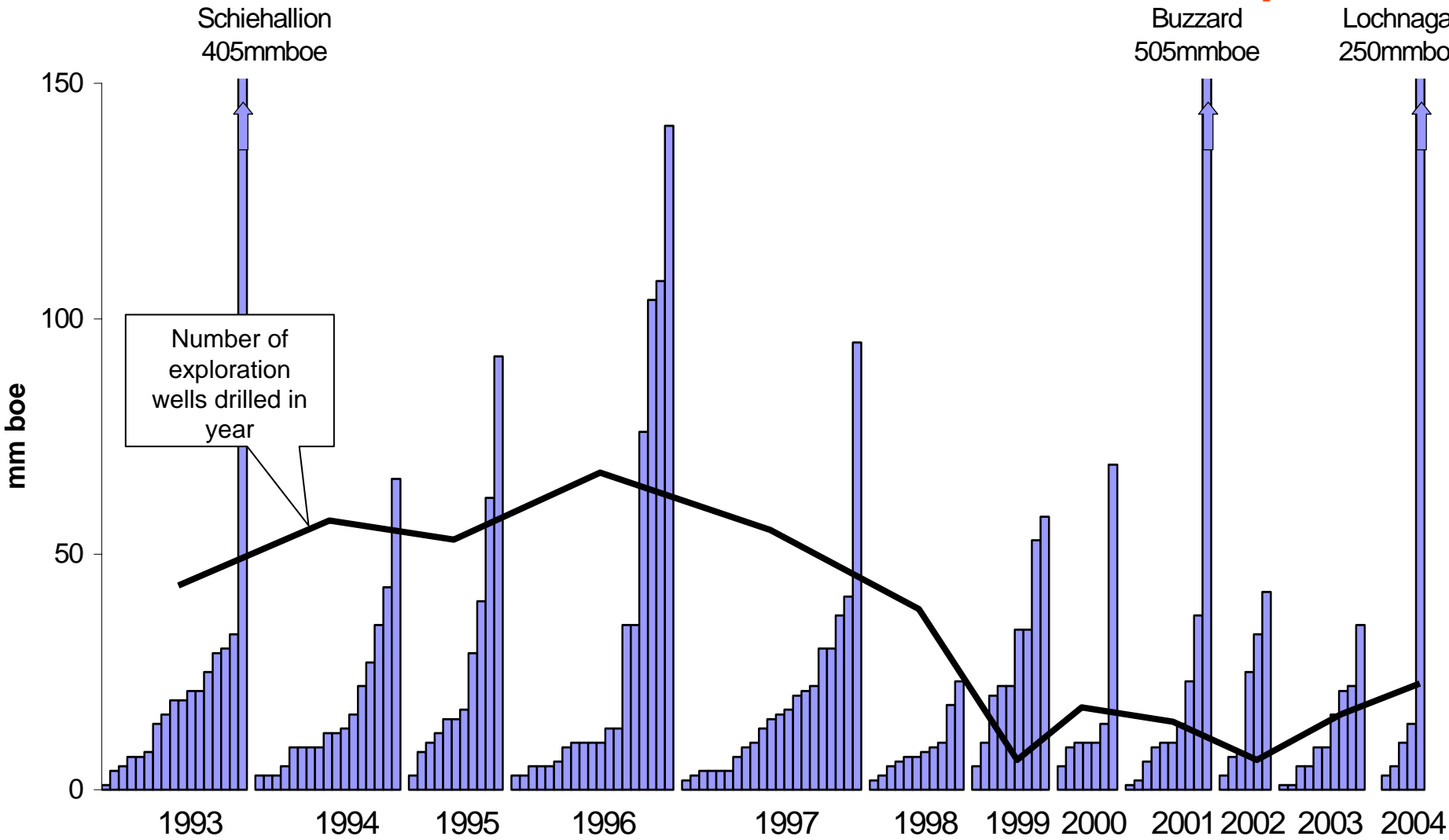
Field Reserve additions



Source : Wood Mackenzie

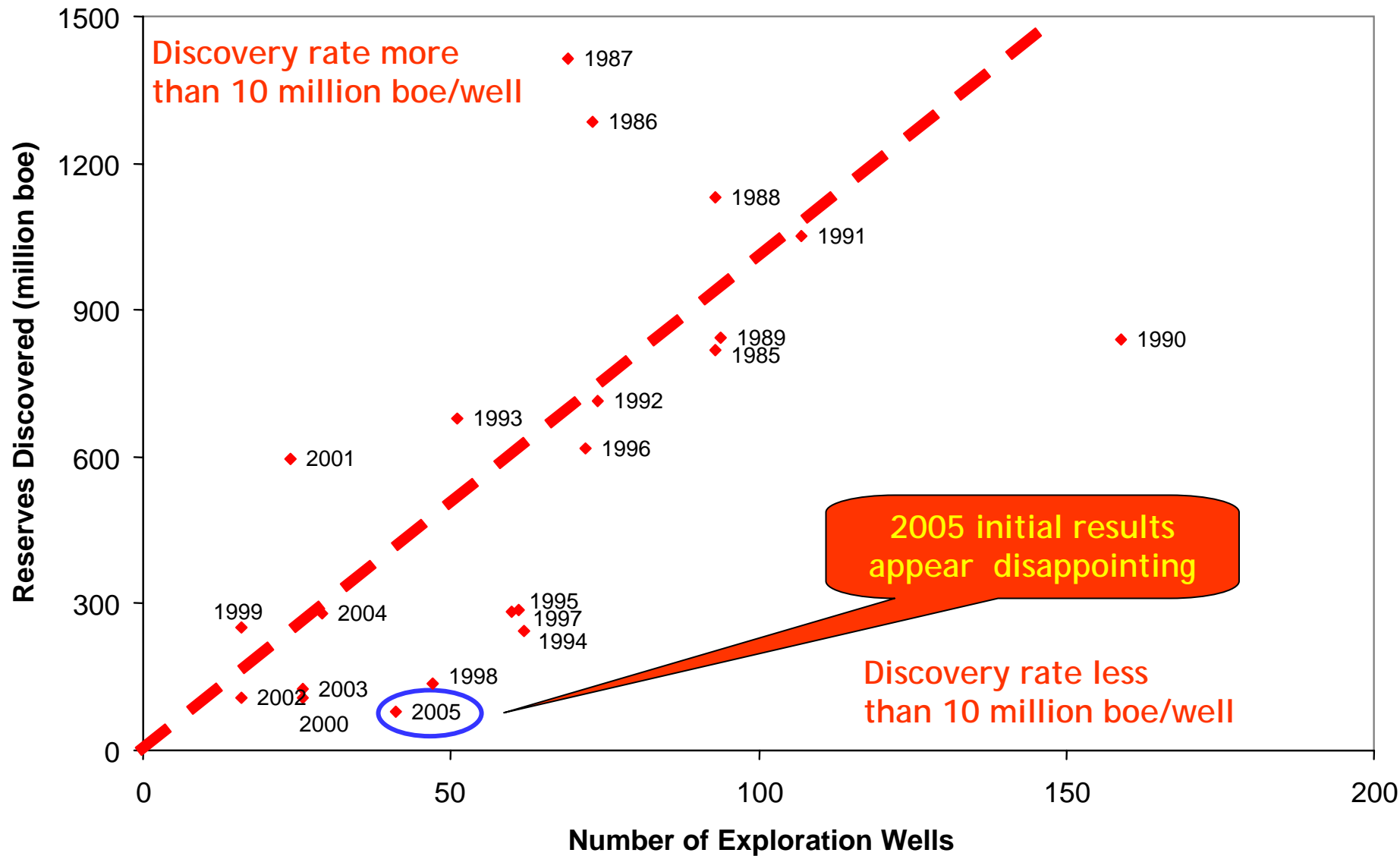
UKCS Discoveries 1993–2004

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Source: UKOOA analysis of Wood Mackenzie data, discoveries ranked by size within year; includes both commercial and technical reserves; there is no public estimate of Lochnagar (Rosebank) reserves by the operator (Chevron)

UKCS exploration performance

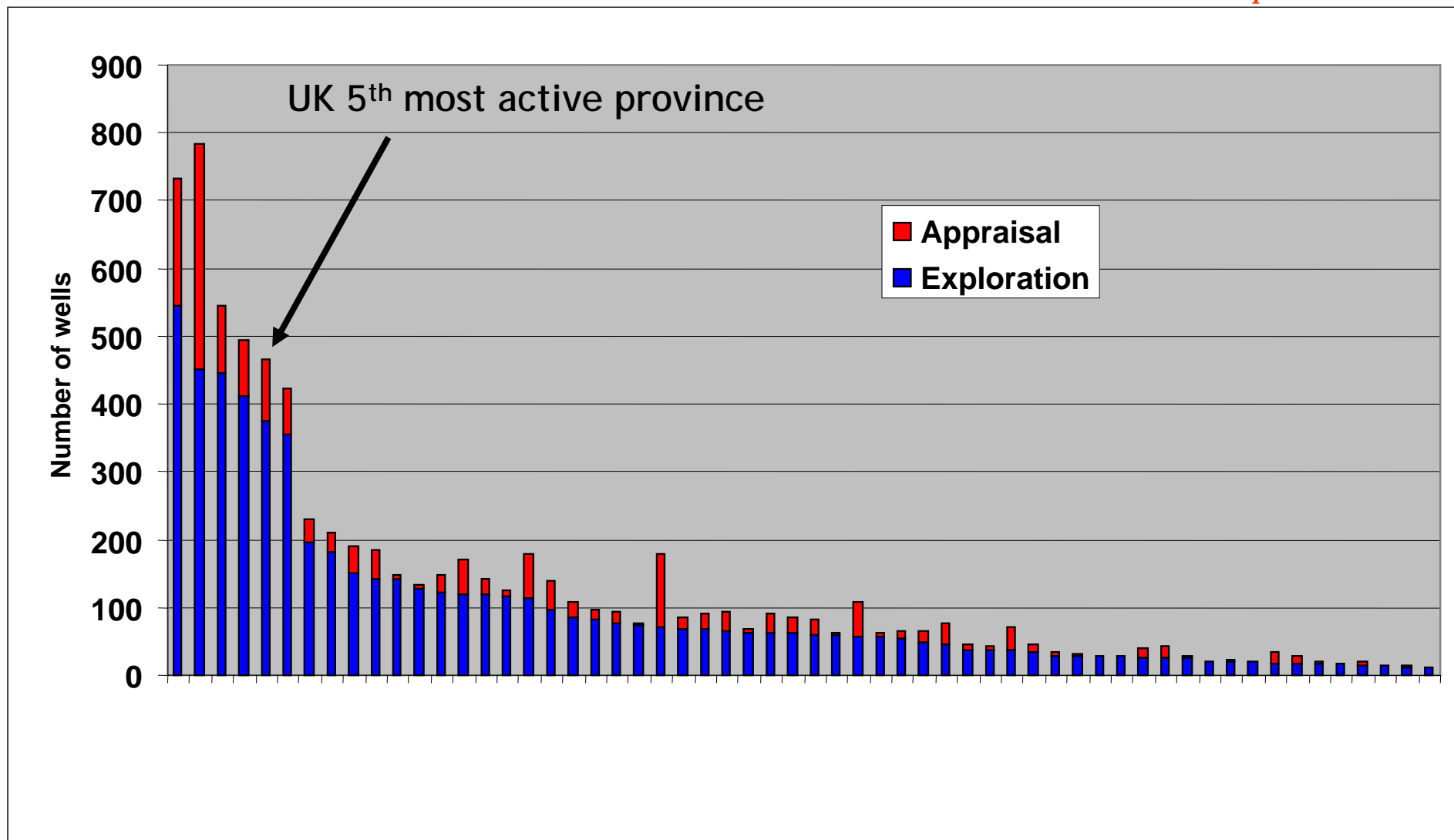


- ✓ Exploration activity averaging circa 25 wells p.a. since 2000
- ✓ Discovered volumes ahead of predictions based on above
- ✓ Production contribution matching the 50 well p.a. prediction
 - Success in tying backing discoveries more quickly than expected
 - Particularly for gas
 - Success highly dependent on Buzzard & Lochnagar (?)
- ✓ Analysis excludes 2005 data
 - Early assessment indicates a poor year for discovered reserves
 - Under 100 million boe (lowest since 1960's)
 - However likely that estimates may be revised upwards
 - Some tight wells and potential reserves conversion from Technical to Commercial

Benchmarking summary

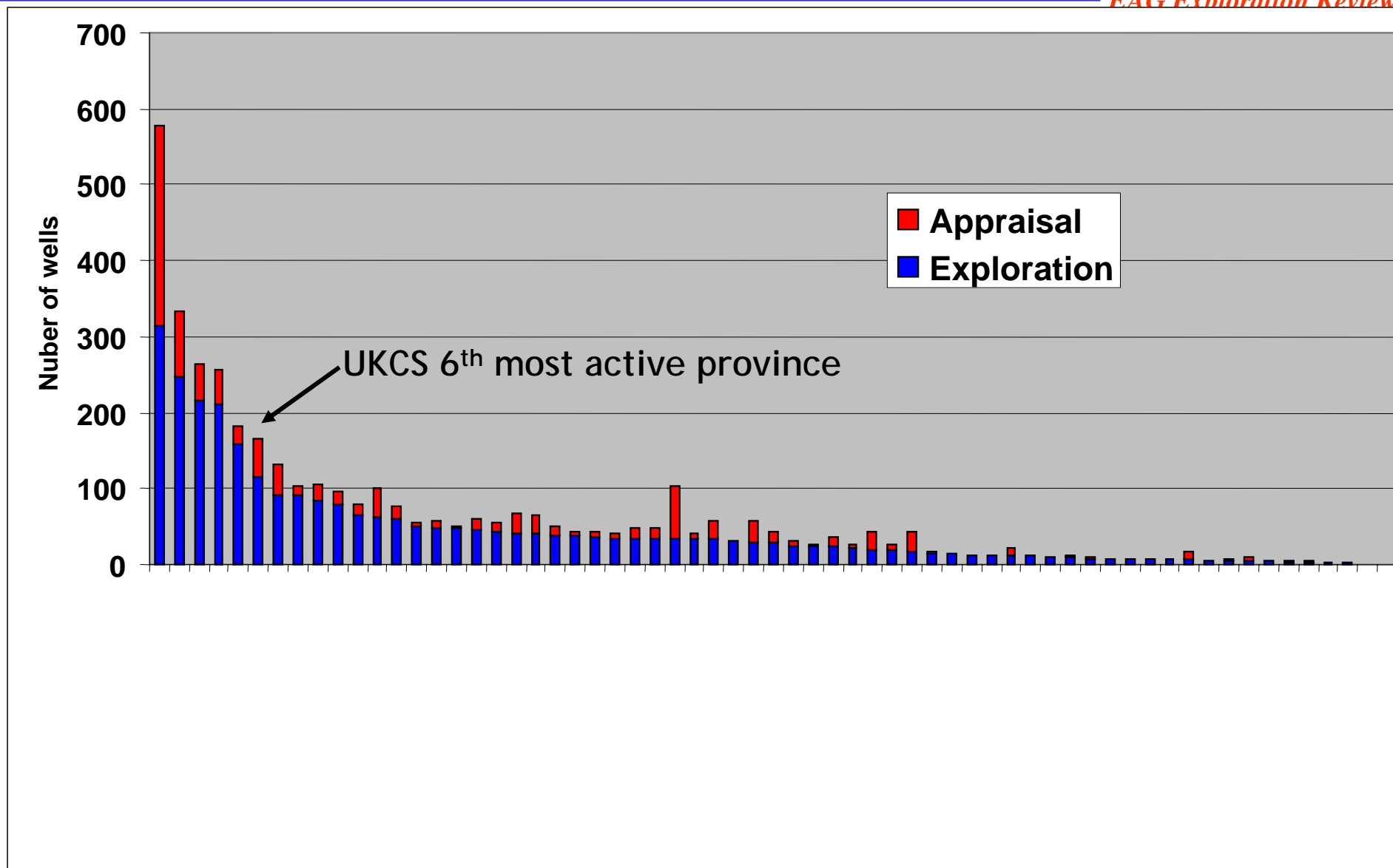
(Wood Mackenzie Global Risk and Rewards Study)

Exploration and appraisal wells : 1994-2003

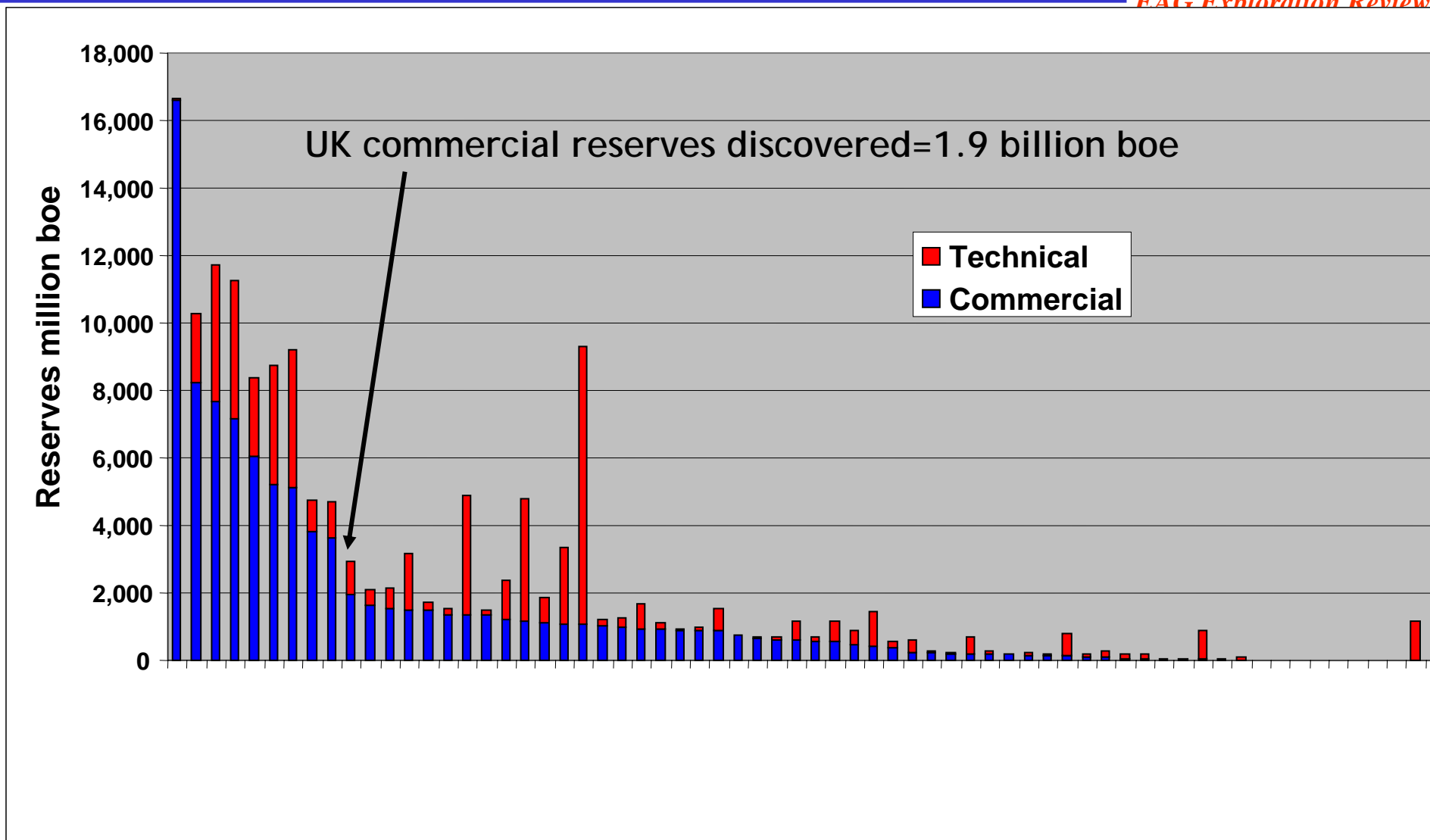


UKCS second most active (after GOM) for expenditure (\$5.5 billion)

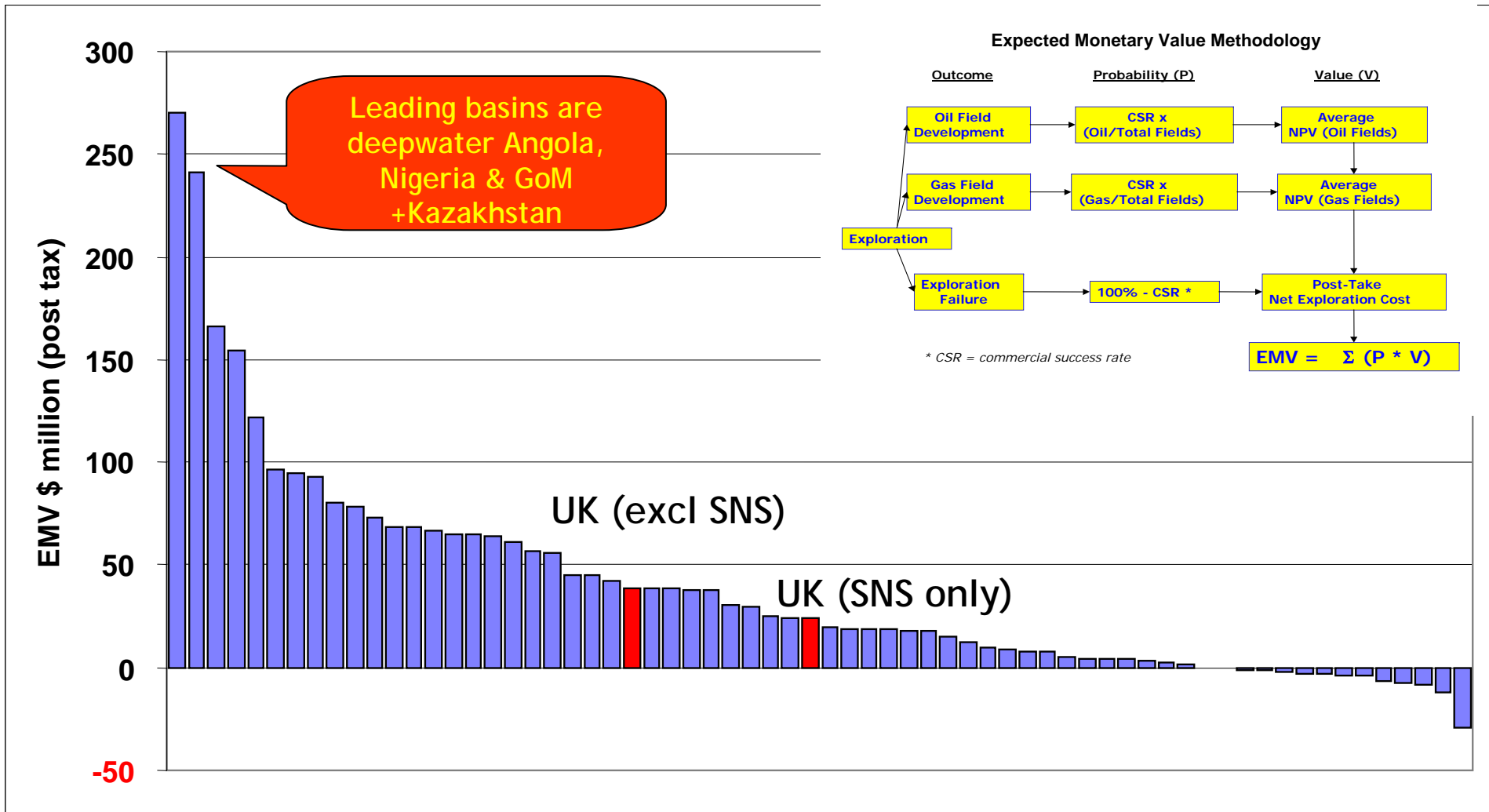
Exploration and appraisal wells 1999-2003



Reserves discovered 1994-2003



Expected Monetary Value (post tax)



Source : Wood MacKenzie (analysis predates December PBR SCT tax increase)

- ✓ Recent exploration drilling activity has been at the lower end of the range considered by the Economic Advisory Group in 1999 (i.e. 25 E wells/year) but – thanks at least partly to Buzzard – production from new discoveries has been more in line with expectations for the higher case (i.e. 50 E wells/year)
- ✓ Recent experience can be summarised thus:

	Exploration	Dry	Commercial	Commercial	Average	Technical	Technical	Average
	Wells	Holes	Discoveries	Success	Commercial	Discoveries	Success	Technical
Total/Average			Total	Rate Total	Discovery	Total	Rate Total	Discovery
					(mmboe)			(mmboe)
1994-98	262	185	35	13%	30.8	42	16%	14.5
1999-03	114	73	17	15%	51.5	24	21%	14.6
1994–2003	376	258	52	14%	37.6	66	18%	14.5

Source: Wood Mackenzie Multi-Client Study "Global Oil and Gas Risks and Rewards 2004"

Summary since PILOT targets established

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✓ Exploration performance since 2000.

- Number of wells at low end of expectations (From 1999 Task Force)
 - Loss of momentum with 2002 fiscal change
 - Strong recovery under way through 2005
- Performance from the wells above average
 - Discovered above average volumes
- Production contribution ahead of target
 - Near field discoveries swiftly on-stream
- Poor prospectivity
 - Commercial success of 14%

✓ Benchmarking

- UKCS 'punches above its weight'
 - Well activity above trend based on prospectivity & geological risk
 - UKCS continues to attract high level of exploration spend
 - In global context of flat spend from Industry and declining spend from majors.
 - UKCS competes on value not volume

February 2006

- ✓ Exploration activity averaged 27 wells p.a. (2000-05)
 - 2005 witnessed step up to 41 wells but this likely to prove unsustainable
 - Poor discovery record
 - High rig rates and limited availability
 - SCT tax increase
- ✓ Average annual discovered volumes 2000-05
 - Running at circa 200 million boe p.a. (Commercial + Technical)
 - Will take 20 years to prove up another 4 billion from the YTF
- ✓ To access more of the 10 billion YTF potential will require a step change in:-
 - New technology
 - Improved prospect de-risking
 - Higher success rates more critical than the annual well count
 - Sustained infrastructure longevity
 - Competitive fiscal regime
 - **UK cannot compete on volume the attraction has to be value**

Key success factors for Exploration

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- ✓ Sustained confidence
 - Competitive and stable fiscal regime
 - Track record/ visibility of success (need more Buzzards)
 - Global competitiveness
- ✓ Access to opportunities
 - New licenses, fallow processes
 - Promote licenses
- ✓ Access to infrastructure
 - Physical & commercial access
- ✓ Access to capital
 - Need equity, banks will not lend to fund exploration
- ✓ Diversity of participants
 - More players= more activity
- ✓ Access to exploration skill set
 - Prospect generation essential part of process
- ✓ New Technologies
 - Deep water, HPHT, subsea tie-back, seismic,