

**Exploration Study for PILOT  
Presentation to EAG  
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# Remit from ILT

- On behalf of PILOT, ILT has commissioned a study from EAG:
  - to reconcile [or "reality check"] (Yet-to-Find) reserves - as represented by the "Unified Reserves Model" - and planned (exploration) activity levels
  - to identify incompatibilities between them
  - to assess blockers and enablers to any incompatibilities

# Analysis so far

- DTI has produced a short note which is intended to stimulate debate on these issues, focusing on how existing estimates of Yet-to-Find (YTF) reserves fit with current or potential activity levels
- The note makes a number of suggestions for additional analyses that DTI believe would be helpful

# Background

- The starting point for the DTI note is the UKOOA paper "The Window of Opportunity for the UKCS" (February 2005)
- This describes the reserves "model" developed in 2004 as part of the PILOT "Brownfields Studies" by, and with data from, UKOOA, Wood Mackenzie and DTI

# Table 2 from "The Window of Opportunity for the UKCS"

Recovered Reserves (bn boe)		Screened Reserves	Current Activity (% of screened reserves)		High Activity (% of screened reserves)	
			Total	Pre-2015	Pre-2035	Pre-2015
Onstream, Under Dev. and Probable		11.0	10.1 (92%)	11.0 (100%)	10.1 (92%)	11.0 (100%)
Possibles		1.0	0.7 (71%)	1.0 (100%)	0.7 (71%)	1.0 (100%)
Potential Additional Reserves (PARs)		2.0	0.6 (30%)	2.0 (100%)	0.7 (36%)	2.0 (100%)
Yet-to-Find Reserves	North Sea	5.7	0.4 (8%)	3.5 (60%)	0.6 (11%)	4.4 (76%)
	W of Shetl.	1.6	0.2 (11%)	1.6 (100%)	-	-
Brownfield Incremental		4.0	0.5 (12%)	0.7 (18%)	0.7 (18%)	1.1 (29%)

# Suggested Further Analysis (1)

- It would be helpful if UKOOA could document
  - the time profile of reserves discovery (as distinct from production) implicit in the modelling, perhaps at 5 yearly intervals
  - the number of exploration wells they have assumed each year and where these are assumed to be (e.g. West of Shetland, Irish Sea, Southern Basin, Central North Sea or Northern North Sea)

# Sense Check of YTF Estimate (1)

- It should be possible to use recent experience on exploration success to gauge the plausibility of the reserve discovery implied by the UKOOA model

# The “Global Oil and Gas Risks and Rewards 2004” Study

- Late last year, Wood Mackenzie produced a Multi-Client Study which summarised 10 years' worth of data on exploration and appraisal activity worldwide
- The table below draws on data on the UKCS from this study (by combining data for the Southern Basin and "Shelf")

	Exploration	Dry	Commercial Discoveries	Commercial Success	Average Commercial Discovery	Technical Discoveries	Technical Success	Average Technical Discovery
Total/Average	Wells	Holes	Total	Rate Total	(mmboe)	Total	Rate Total	(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

# Sense Check of YTF Estimate (2)

- With 25 exploration wells a year, the GOGRR data summarised here suggest it would take between 5 and 6 years to discover 1 billion boe of commercial reserves
- Similarly, 3.5 billion boe would be discovered in 20 years, though it is unlikely that that pace of exploration activity would continue for so long, especially if by then much of the existing infrastructure in the North Sea had been decommissioned

# Suggested Further Analysis (2)

- In order to facilitate comparisons with the UKOOA model, it would be helpful if Wood Mackenzie were able to provide a similar analysis for the UKCS excluding the West of Shetland/Scotland

# Sense Check of YTF Estimate (3)

- During the consultation on low levels of exploration activity in the North Sea in 2003, an attempt was made to compare DTI and industry estimates of the YTF potential of the UKCS
- For the "rest of the UKCS" (i.e. excluding West of Shetland/Scotland), on a broadly comparable basis both DTI and industry estimated technically risked YTF reserves at close to 6 billion boe with an average 60% of these reserves passing industry's commercial risk thresholds

# Sense Check of YTF Estimate (4)

- Against that background, the UKOOA YTF numbers - and in particular the projected production of 3.5 billion boe from screened North Sea YTF reserves of 5.7 billion boe by 2035 - seem to be reasonable
- The total projected production of 5–6 billion boe from the UKCS is also in line with (or more optimistic than) the projections in “Prospects for Activity Levels in the UKCS to 2030: the 2005 Perspective” (North Sea Study Occasional Paper 98) ...

## Cumulative Potential Production from 2004 to 2030 (bn boe)

Sanctioned		Current Incremental	Future Incremental (all fields)	Probable (excluding incremental)	Possible (excluding incremental)	Technical Reserves (excluding incremental)	New Exploration (excluding incremental)	Aggregate
\$20	9.7	2.10	2.48	0.70	0.5	3.6	2.9	21.8
\$30	9.9	2.11	2.51	0.70	0.5	4.1	4.2	24.0
\$40	10	2.13	2.52	0.71	0.5	4.2	5.0	25.0

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