

Exploration Activity and Yet-to-find Survey Results

Presentation to EAG 9th June 2003

- **Context**
- **Survey Process & Participation**
- **Survey Results**
 - ✓ Part A:
 - Prospectivity & Risk
 - Funding, Economic & Policy issues
 - Company organisation & staffing
 - ✓ Part B:
 - Yet-to find
- **Report**
- **Next Steps**

- **Increasing concern about lack of exploration in 2002**
 - ✓ 16 well spuds (1998=16) lowest since 1965
- **Oil price has remained buoyant**
 - ✓ Over \$25/bbl vs \$15/bbl in 1998
- **Possible reasons quoted for exploration decline:**
 - ✓ Changes in basin maturity
 - ✓ International competitiveness
 - ✓ New technology allows better well selection
 - ✓ Corporate re-organizations or portfolio re-evaluation
 - ✓ Skills and resource availability

- **Pilot/EAG identified need for survey in September 2002**
- **Work group comprised of policy experts explorers, economists from DTI, UKOOA, NOF**
- **Two-part survey designed to find**
 - ✓ reasons for low exploration activity
 - ✓ yet-to-find oil and gas resources on UKCS
- **Confidential survey of all UKCS licensees conducted by UKOOA in 4th quarter 2002**
- **Results remain anonymous to work group**

- **Part A - Exploration Activity**
 - ✓ 37 participants (operators and non-operators)
 - Prospectivity
 - Economics
 - Organisation
- **Part B - Yet-to-find resources**
 - ✓ 24 participants (only operators) and DTI
 - Bottom-up estimates built up from block analysis
 - Top-down estimates from basin analysis
- **Participants did not all answer every question**

Survey Participants

<u>Large(8)</u>	<u>Medium(12)</u>	<u>Small (17)</u>	
Agip	Amerada Hess	Acorn	Paladin
BP	BHP Billiton	ATP Oil & Gas	Premier Oil
ChevronTexaco	BG Group	Bow Valley Petroleum	Reach
ConocoPhillips	Burlington Resources	Consort Resources	RWE Dea
ExxonMobil	EnCana	DONG (UK)	Tullow
Shell	Gaz de France	EDC(Europe)	Venture
Statoil	Kerr McGee	Edinburgh Oil & Gas	
TotalFinaElf	Marathon	Euroil Exploration	
	Murphy	Intrepid Energy	Bold represents operators with prospects on operated acreage
	OMV	Korea Captain	
	Petro-Canada	Mustang Oil	
	Talisman		

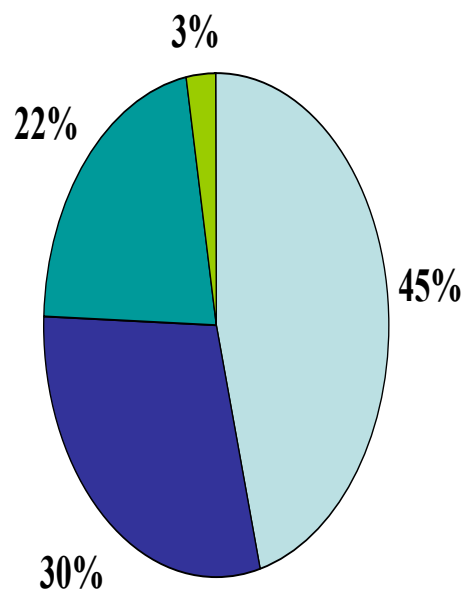
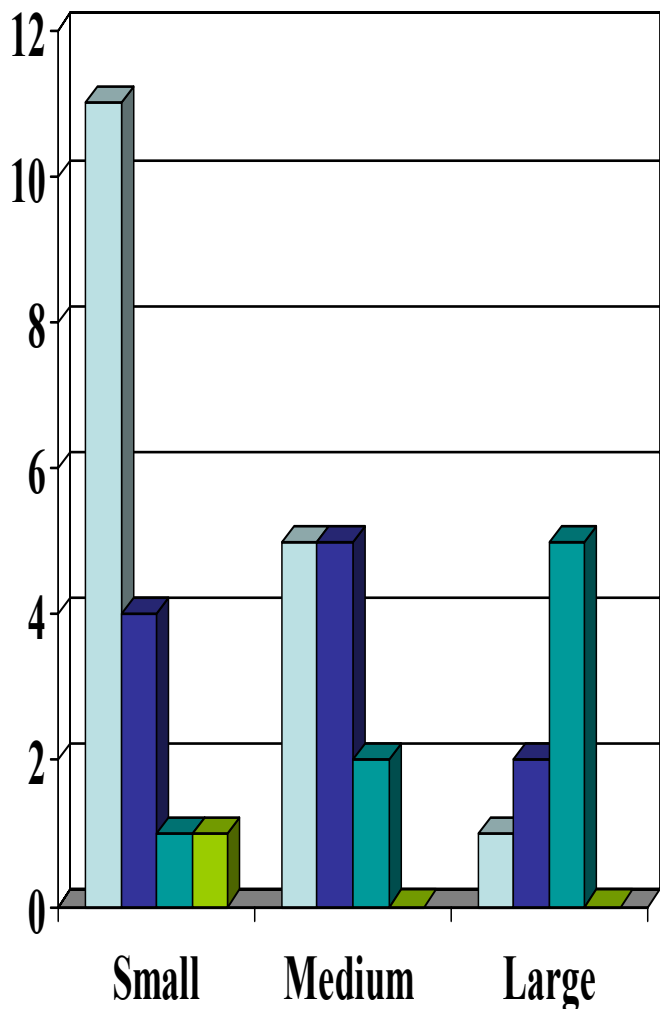
- **37 Participants**
 - ✓ Represent 95% of recent exploration drilling activity*
 - ✓ Includes all 'Top 15' most active companies
- **Categorized as 'large', 'medium', or 'small' to aid interpretation**
 - ✓ Categorization based on International rather than UK size

	No. of Companies	Net wells drilled*	Net wells /company
Large	8	33.4	4.2
Medium	12	31.5	2.6
Small	17	4.3	0.25
Non-respondents		3.3	
Total Industry		72.5	

* *UKCS Exploration wells drilled 2000-02 per Wood Mackenzie*

UKCS Prospect Inventory :

Change over the last three years –37 companies



Prospectivity and Risk – Observations on acreage quality, acquisition and disposal

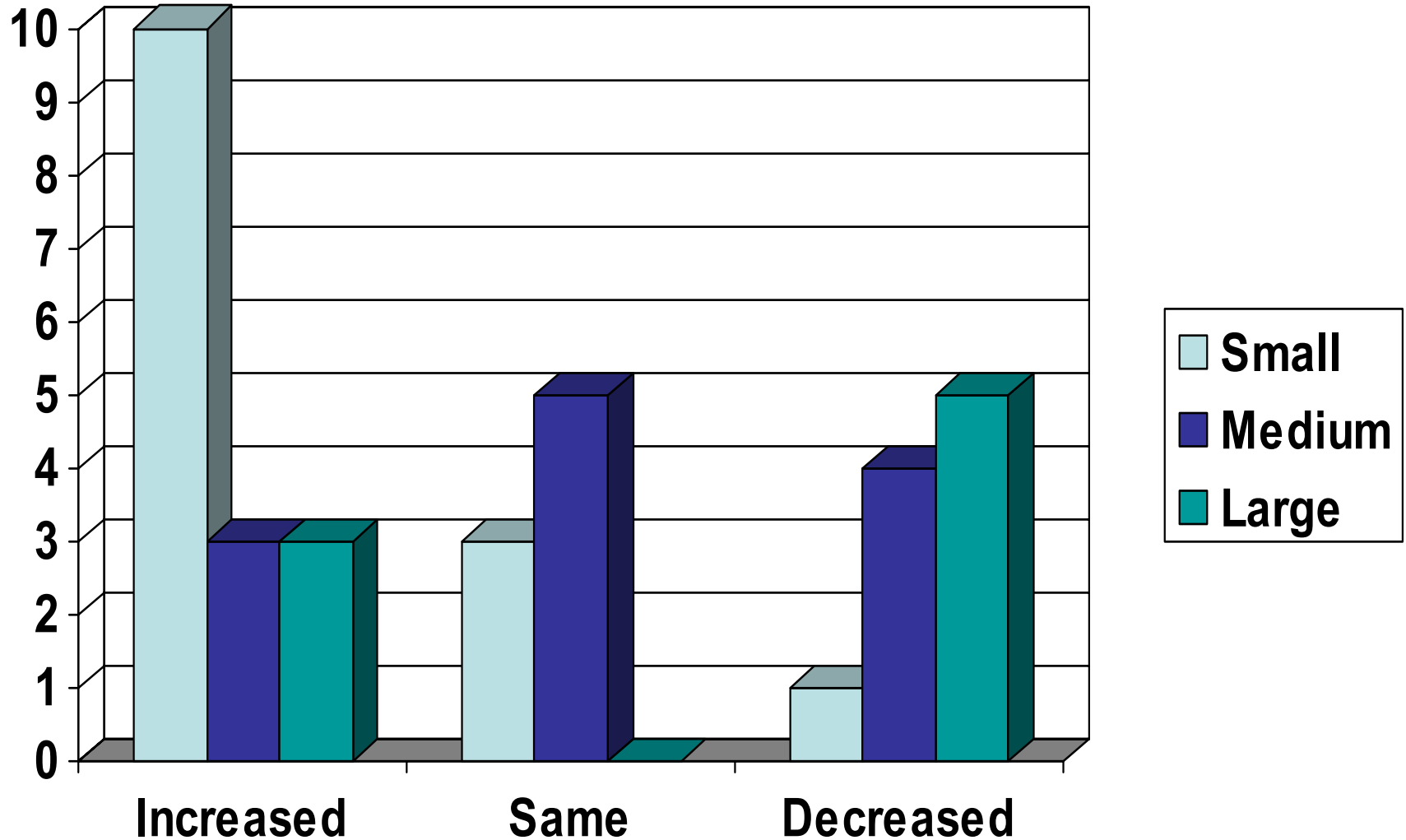
- **Three-quarters of all companies responding to the questionnaire say the quality of their UKCS acreage has improved or remained the same, while 22% , mostly large and medium companies, say it has worsened.**
- **The vast majority (15/17) of small companies responding to the questionnaire plan to acquire more or substantially more UKCS acreage over the next 3 years.**
- **Similarly, most (9/12) middle sized companies plan to acquire more UKCS acreage.**

Prospectivity and Risk – Observations on acreage quality, acquisition and disposal

- **Three large companies (of 8) plan to acquire moderate amounts of UKCS acreage while five do not.**
- **A quarter of respondents expected to dispose of UKCS acreage in the next 3 years, while 46% did not and 30% did not know. None of the small companies had plans to dispose of acreage, while 5 large and 4 medium companies do have such plans.**

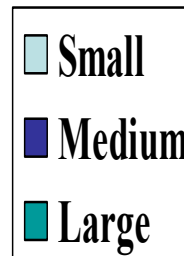
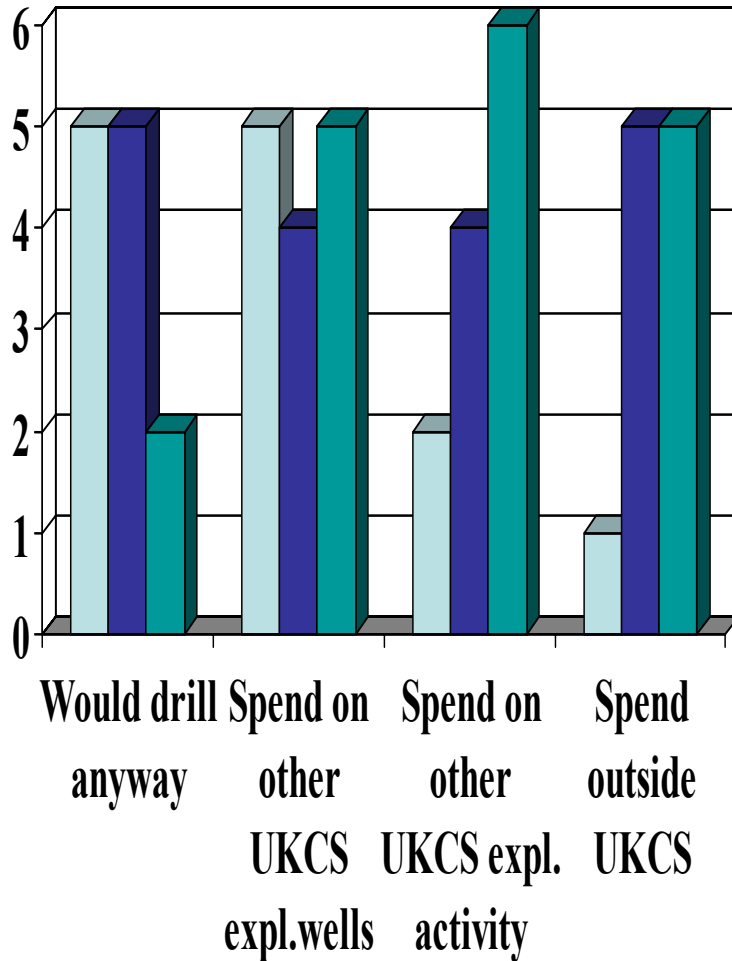
- **Only 14 of 37 companies have technical or commercial risk factors, 3 did not disclose whether or not they used them while the remainder (20) had no consistent hurdle.**
 - ✓ Eight of the 14 reporting had technical and/or commercial hurdles of less than 25%
 - ✓ 2 said their hurdles were between 25% and 40% and one company's technical hurdle was over 40%.
 - ✓ In some cases a company's hurdle for mature and frontier areas differ.
- **Risk hurdles appear to be used by large companies and fewer medium and small companies.**
- **There was some evidence of changing hurdles over the last 3 years and the reasons for this:**
 - ✓ **Higher Hurdles:**
 - Change in strategy and personnel;
 - Change in perception of commercial risk;
 - Funds now directed to new deepwater plays around the world, away from mature areas except where safe.
 - ✓ **Lower Hurdles:**
 - Success over this period and lower risk opportunities elsewhere.

Change in UKCS Exploration Budget over the last 3 years (33 companies)



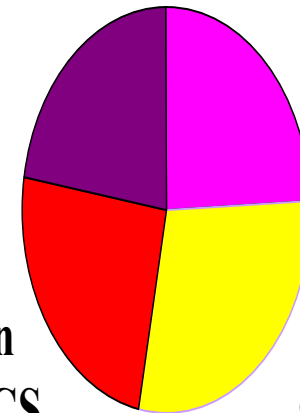
- **Over the last three years the following trends have occurred:**
 - ✓ Most (7) small companies have increased the share of global budget funds allocated to UKCS exploration, or (4) have remained the same, while only one has decreased;
 - ✓ One medium company has increased, some (6) stayed the same and some (4) have decreased their share of funds allocated to UKCS exploration;
 - ✓ Some (3) large companies have increased and some (5) have decreased their share of funds allocated to UKCS exploration.
- **A broadly similar trend is seen in the size of companies' exploration budgets, with ten small, three medium and three large companies reporting increases, outweighing those reporting decreases (1 small, 4 medium and 5 large).**

Preferences Regarding Obligation Wells: - 36 companies



Spend outside UKCS
22%

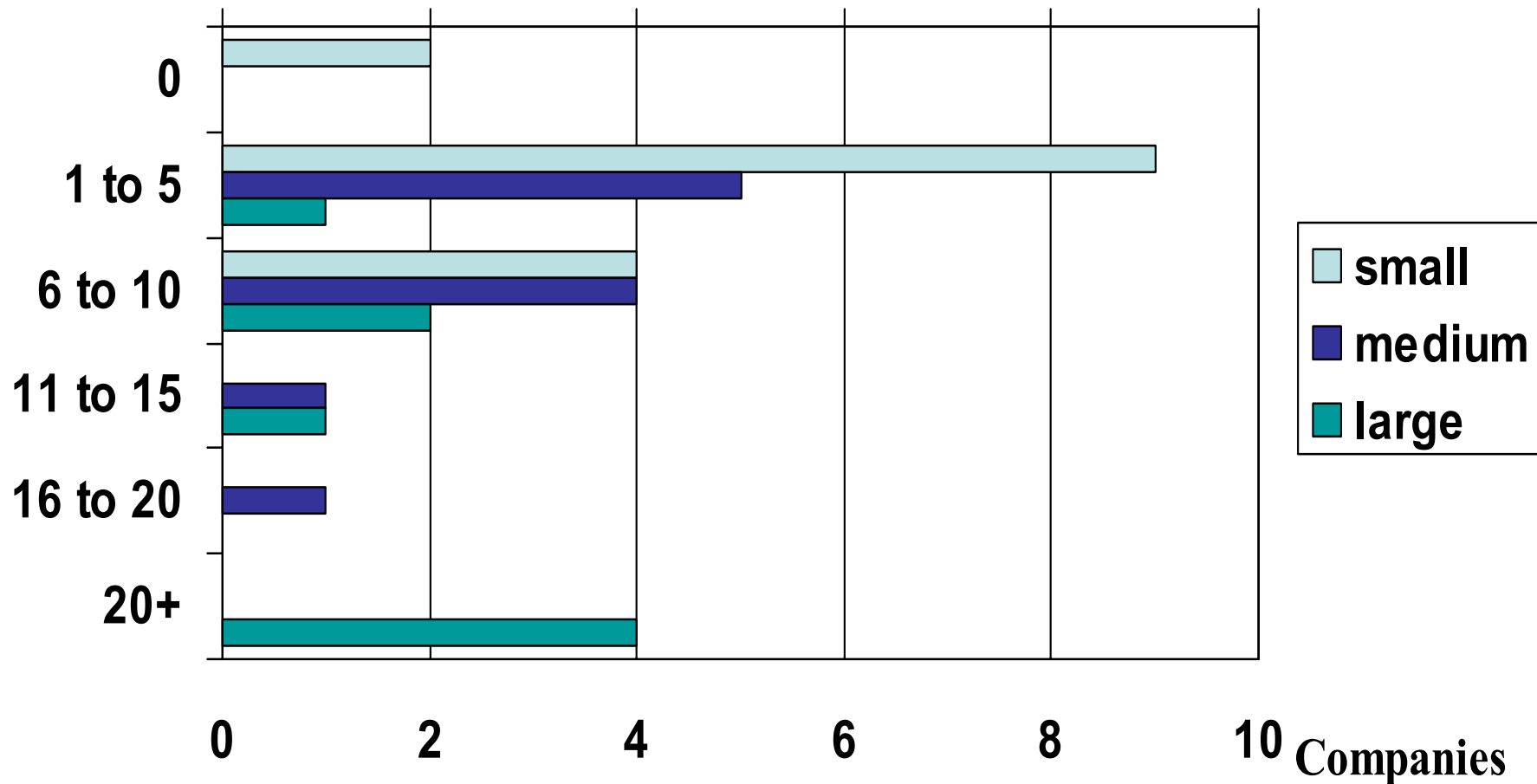
Would drill anyway
24%



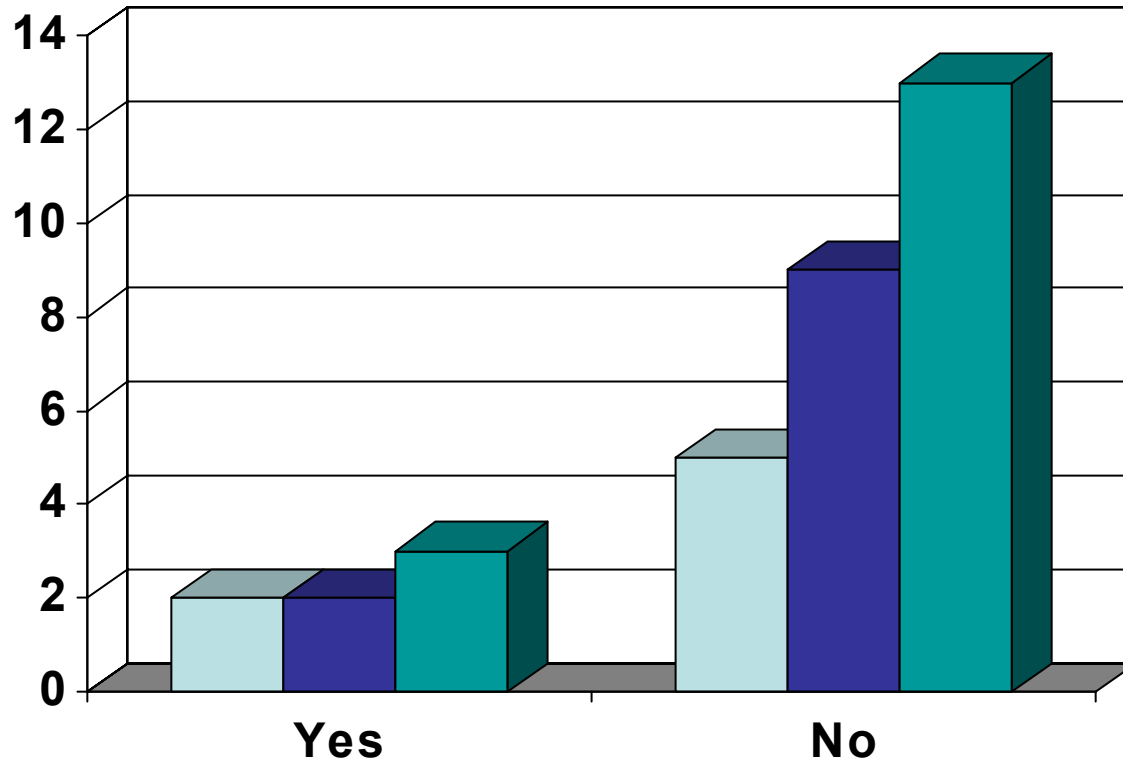
Spend on other UKCS
expl wells
24%

Spend on other UKCS wells
30%

Numbers of Geoscientists working on UKCS (34 companies)



Can companies get more exploration approved if more technical resources are available? - 34 companies



Ranking of Factors Restricting Exploration Activity

- 35 companies

Issue	Small	Medium	Large	Score
1. Global competition for limited funds	1	1	2	313
2. High cost of exploration	3	2	9	228
3. Lack of confidence in fiscal regime	2	6	6	227
4. Size of prospects	8	4	3	214
5. High costs of development and operation	5	10	5	198
6. Materiality	14	3	1	196
7. Exploration Risk too high	7	5	4	192
8. Restricted access to attractive opportunities	4	7	13	161

Overall ranking 1-8, with large medium and small company rankings

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Ranking of Factors Restricting Exploration Activity

- 35 companies

Issue	Small	Medium	Large	Score
9. Partners unsupportive	6	12	8	152
10. Commercial process/deal making too slow	8	8	10	123
11. Uncertainty over infrastructure access and tariffs	10	8	14	112
12. Company's recent UKCS success rate too low	12	13	7	106
13. Strategic focus not in UK	16	11	13	101
14. Industry's recent UKCS track record too low	15	13	11	75
15. Operator unsupportive	11	16	-	57
16. Lack of or distance to infrastructure	-	15	-	36

Overall ranking 9-16, with large medium and small company rankings

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What Policy changes would result in your company drilling more exploration wells?

- **Regulations**
 - ✓ More flexibility to commitments and license rounds
 - ✓ Allow transfer of obligations as prospects are re-ranked

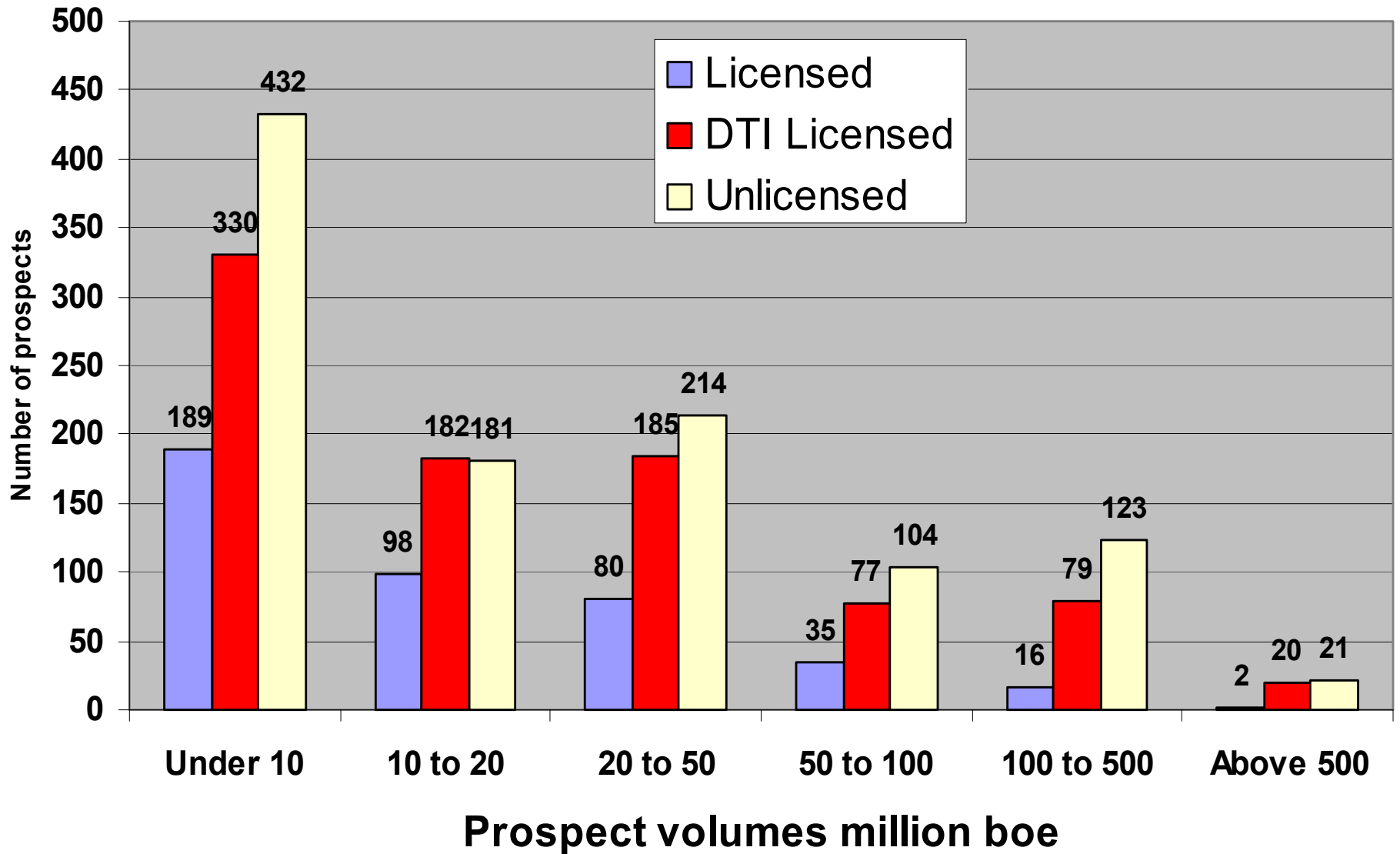
- **Fiscal**
 - ✓ More fiscal incentives (2)
 - ✓ Repeal SCT (2)
 - ✓ Tax relief (against PRT) for exploration (3)
 - ✓ More tax-efficient exploration
 - ✓ Commitment to stability
 - ✓ Pre-April 2002 Fiscal Stability
 - ✓ Finder's incentive: low CT for newly discovered fields
 - ✓ Progressive tax regime
 - ✓ R&D allowance for exploration
 - ✓ Reduced tax take from new developments

- **Commercial**
 - ✓ Tariff policy that is not a banner relief for exploration
 - ✓ Access to 3-D at fair cost
 - ✓ Access to acreage - majors to release

- **The study confirms that the most significant economic and policy issue affecting companies' exploration activity is the global competition for limited funds.**
- **The majority of companies (29 of 37) believe that the April 2002 fiscal changes will depress exploration activity;**
- **Lack of confidence in the future attractiveness of the fiscal regime was cited as the second most significant factor restricting exploration.**
- **17 companies felt that activity correctly reflects prospectivity**

- **16 companies felt that the UKCS could be attractive if policy changes were made**
- **The most frequently cited policy proposals that would result in more exploratory drilling relate to fiscal incentives for exploration.**
- **The strongest preference for a relaxation of rules for obligation wells is to allow committed expenditures to be redirected to other UKCS exploration wells or activity.**

UKCS: remaining exploration prospects



Gross Recoverable Volumes and number of prospects in licensed acreage

Million boe	Total GRV Billion boe	0-10 No	10-20 No.	20-50 No.	50-100 No.	100-500 No.	500+ No.	Total No.
SNS	1.2	102	34	8	0	0	0	144 <i>(319)</i>
CNS&MF	6.0	53	40	44	24	10	0	171 <i>(300)</i>
NNS	2.2	25	21	16	5	0	1	68 <i>(118)</i>
WoS	2.9	6	3	7	4	6	1	27 <i>(87)</i>
WoE&EC	0.4	3	0	5	2	0	0	10 <i>(49)</i>
Total (DTI)	12.7 <i>(57.8)</i>	189 <i>(330)</i>	98 <i>(182)</i>	80 <i>(185)</i>	35 <i>(77)</i>	16 <i>(79)</i>	2 <i>(20)</i>	420 <i>(873)</i>

Gross Recoverable Volumes and number of prospects in unlicensed acreage

Million boe	Total GRV Billion boe	0-10 No	10-20 No.	20-50 No.	50-100 No.	100-500 No.	500+ No.	Total No.
SNS	6.3	178	61	49	19	9	1	317
CNS&MF	20.6	102	68	76	34	30	4	314
NNS	2.5	66	20	20	10	6	0	122
WoS	28.8	7	7	30	24	65	15	148
WoE&EC	7.4	79	25	39	17	13	1	174
Total	65.6	432	181	214	104	123	21	1075

Undrilled commercial reserves in licensed and unlicensed acreage (Bottom-up estimates)

Billion Boe	DTI Licensed	DTI Unlicensed	DTI Total	Operators Licensed	Operators Unlicensed*	Operators Total*
SNS	0.3	0.1	0.4	0.2	0.2	0.4
CNS&MF	1.3	0.9	2.2	1.0	1.2	2.2
NNS	0.3	0.2	0.5	0.2	0.2	0.4
WoS	1.6	1.1	2.7	0.3	0.3	0.6
WoE&EC	0.0	0.1	0.1	0.1	0.4	0.5
Total	3.5	2.4	5.9	1.8	2.3	4.1

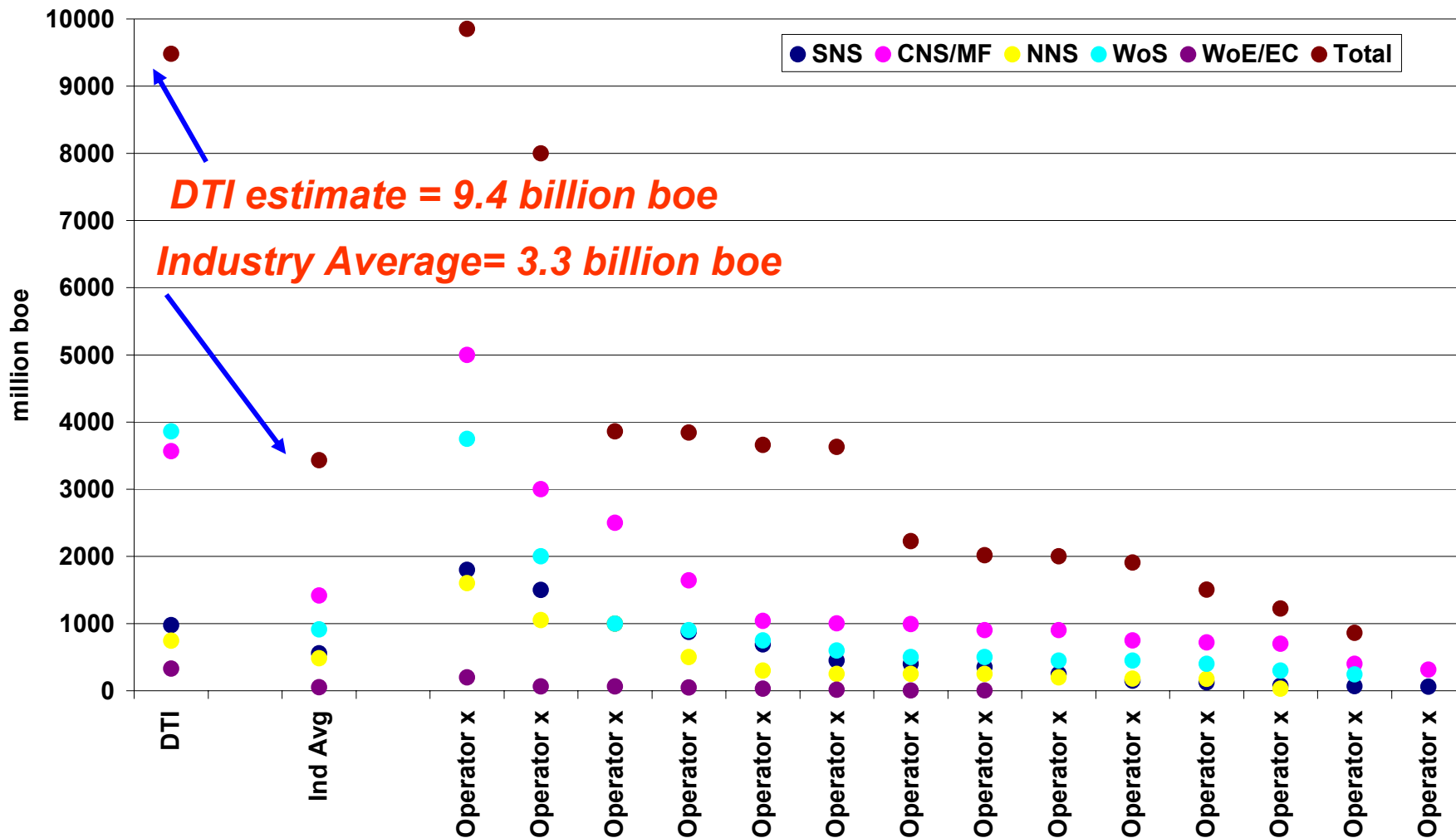
** Derived estimates*

Undrilled Gross Recoverable Volumes and Technical Reserves in licensed and unlicensed acreage (Top-down estimates)

Billion Boe	Minimum GRV	Average GRV	Maximum GRV	Minimum Technical Reserves	Average Technical Reserves	Maximum Technical Reserves
SNS	0.2	1.4	3.6	0.1	0.6	1.8
CNS&MF	1.3	3.7	10.0	0.3	1.1	3.0
NNS	0.3	1.5	4.0	0.2	0.4	1.6
WoS	1.5	4.2	25.0	0.3	1.0	3.8
WoE&EC	0.1	0.3	1.0	0	0.1	0.2
Total	3.4	11.1	43.6	0.9	3.2	10.4

Top down estimates of UKCS YTF-Scatter

Estimates of UKCS YTF Technical Reserves



- **Significant difference in risk assessment criteria between DTI and operators.**
 - ✓ Lower risk cut-off leads to DTI identifying more prospects than operators might see.
 - ✓ Under current and foreseeable economic conditions DTI's yet-to-find volumes in unlicensed acreage should probably be significantly reduced
 - ✓ A scenario with less stringent Operators' risk hurdles would result in higher yet-to-find volumes in licenced acreage.
- **Huge gross recoverable volumes estimates in unlicensed WoS and elsewhere raise questions for further analysis and possible policy issues.**