



NORWEGIAN PETROLEUM
DIRECTORATE



The resource potential on the NCS

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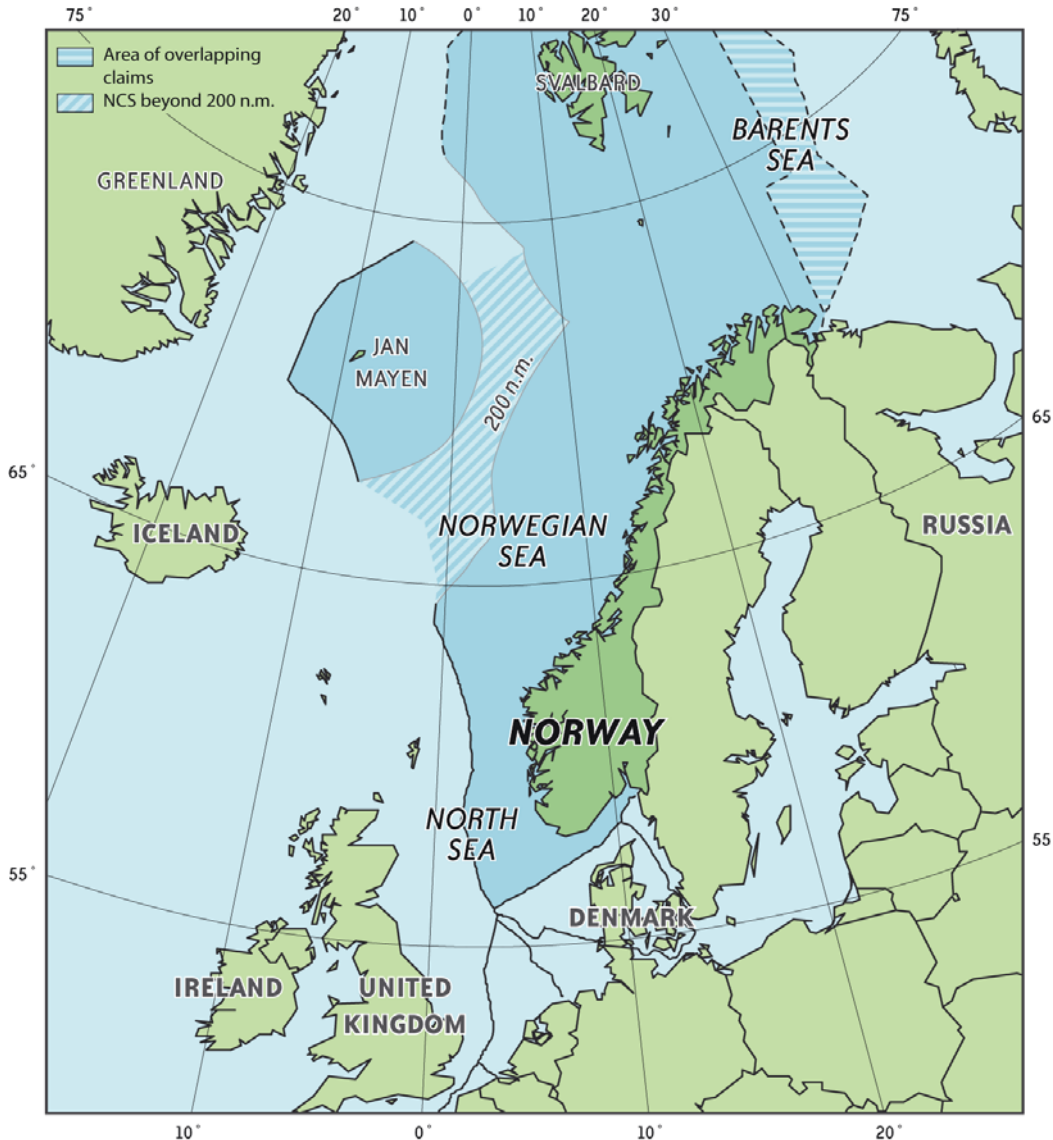
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Outline

- ◆ **Introduction**
- ◆ **Resources, reserves and activity**
 - ◆ The Barents Sea
 - ◆ The Norwegian Sea
 - ◆ The North Sea
- ◆ **Access to acreage**
- ◆ **Access to data**



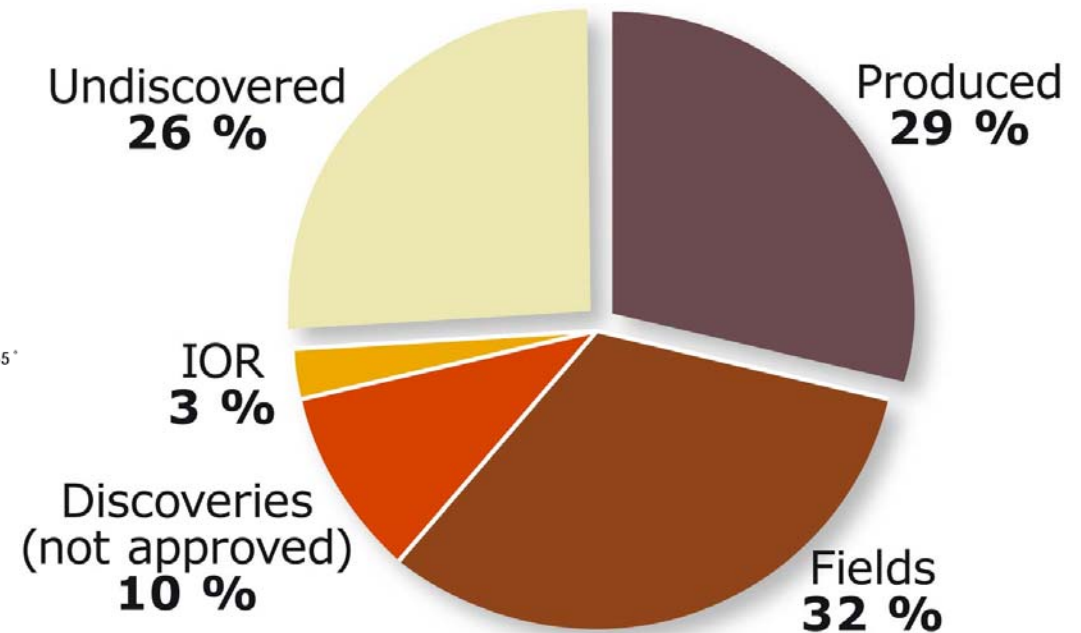
Norwegian continental shelf: Large areas yet to be explored



Norwegian continental shelf: 1.4 mill. km²
(3.5 times the size of California)

One North Sea block: 540 km²

Total recoverable resources (mean):
81.1 BBOE (12,9 bill. Sm³ o.e.)



Norwegian continental shelf: Results



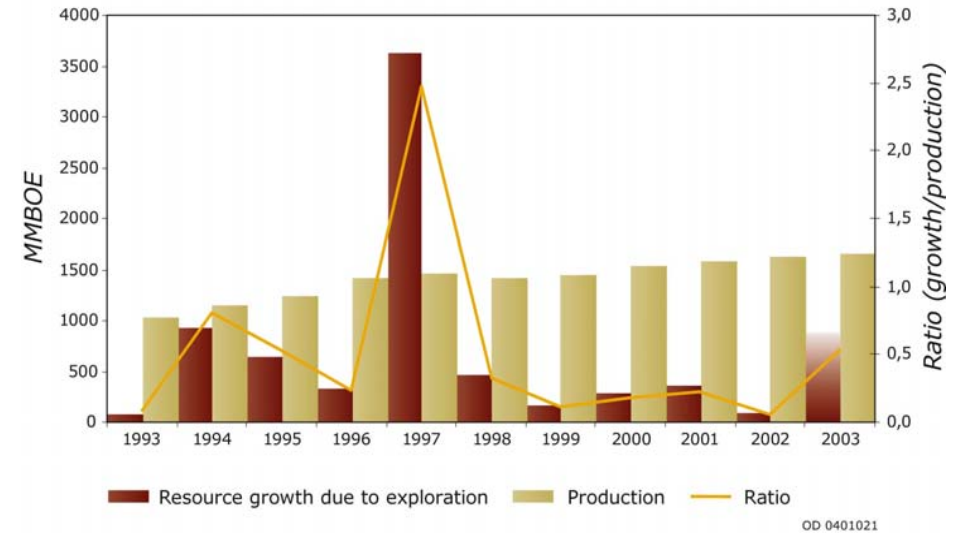
2003:

- ◆ 15 wildcat wells
- ◆ 11 new discoveries
- ◆ 3 new fields in production: Fram, Grane, Mikkel
- ◆ 30 new awards
- ◆ 6 new players awarded acreage
- ◆ 9 new players prequalified

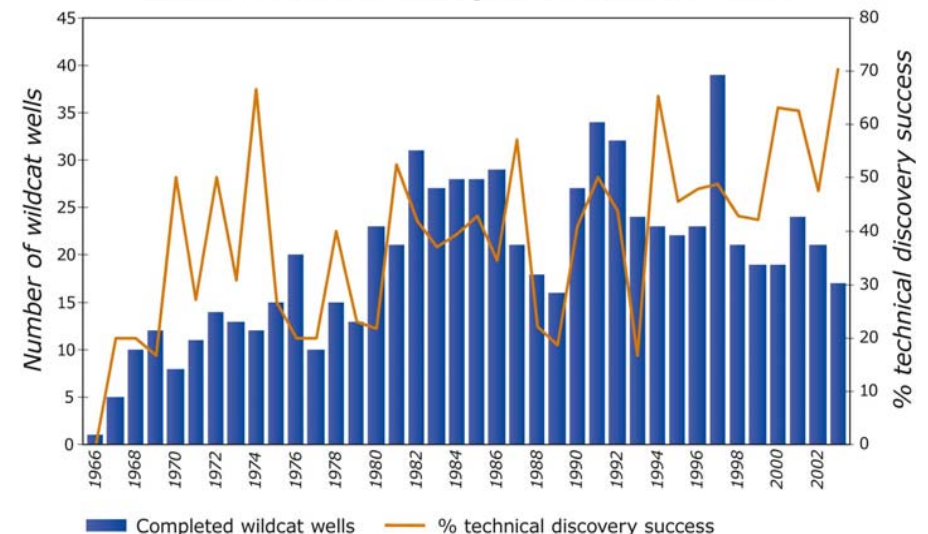
2004:

- ◆ 20 wildcat wells to be drilled
- ◆ Six wildcat wells drilled
- ◆ Three discoveries
- ◆ 16 new awards

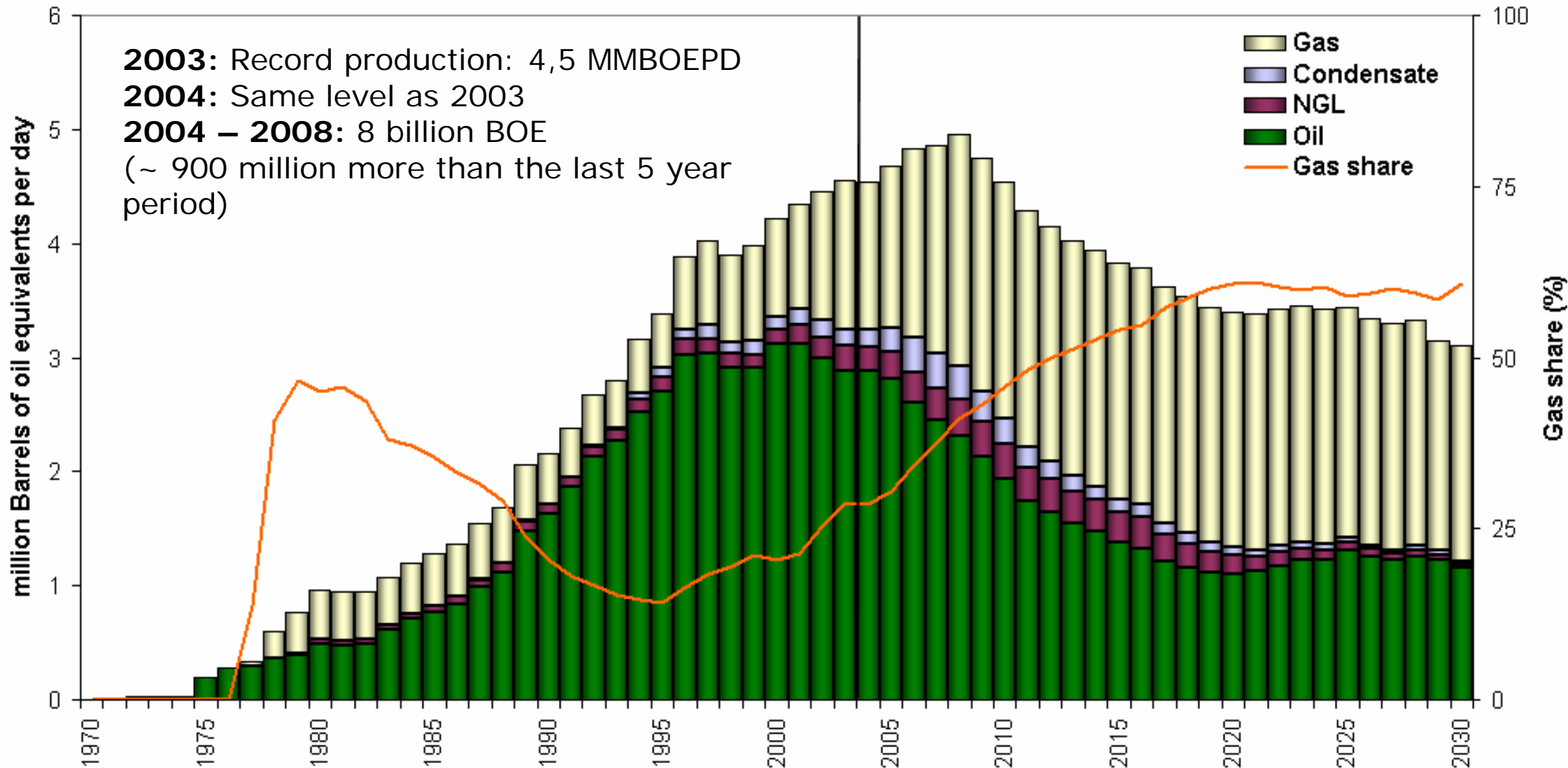
Annual resource growth from exploration and annual production 1993 - 2003



Number of wildcat wells and technical discovery success 1966 - 2003



Total Norwegian petroleum production 1970 - 2030

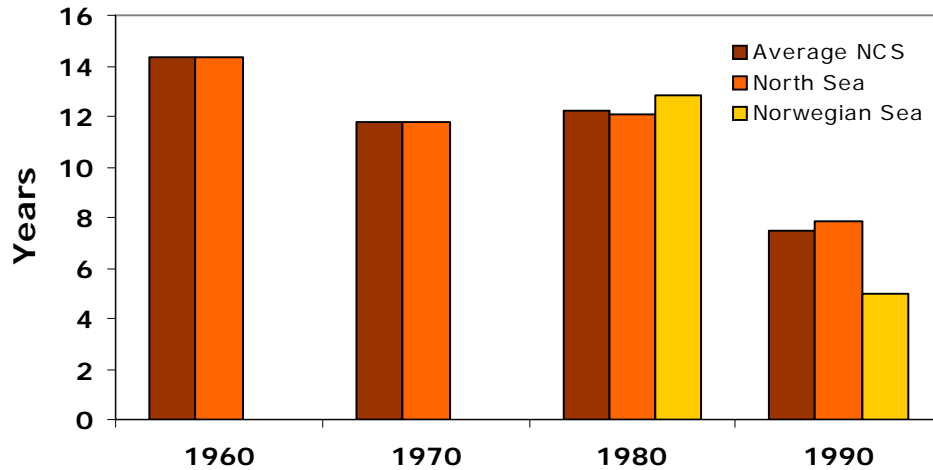


Norwegian continental shelf

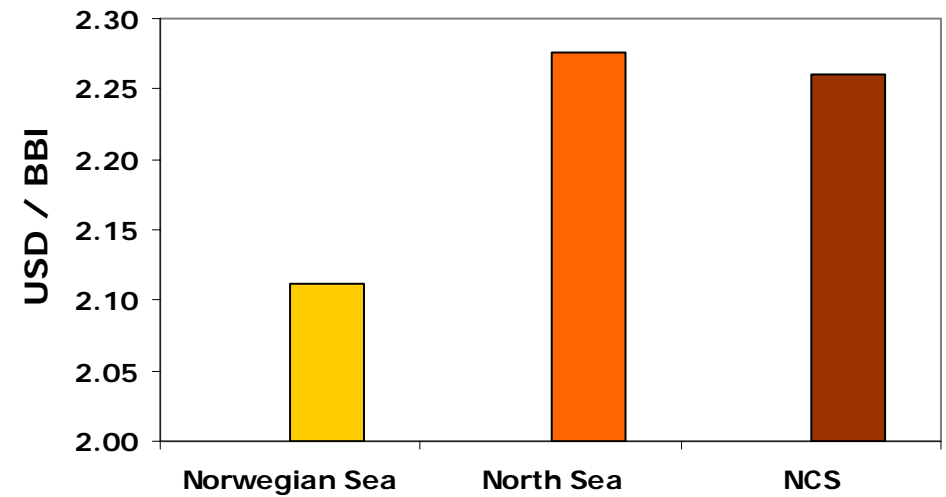
Key numbers



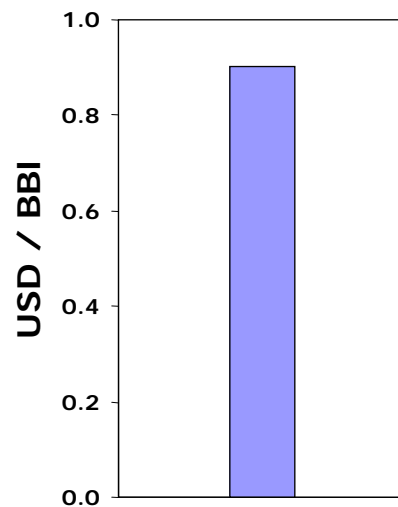
Years from discovery to production



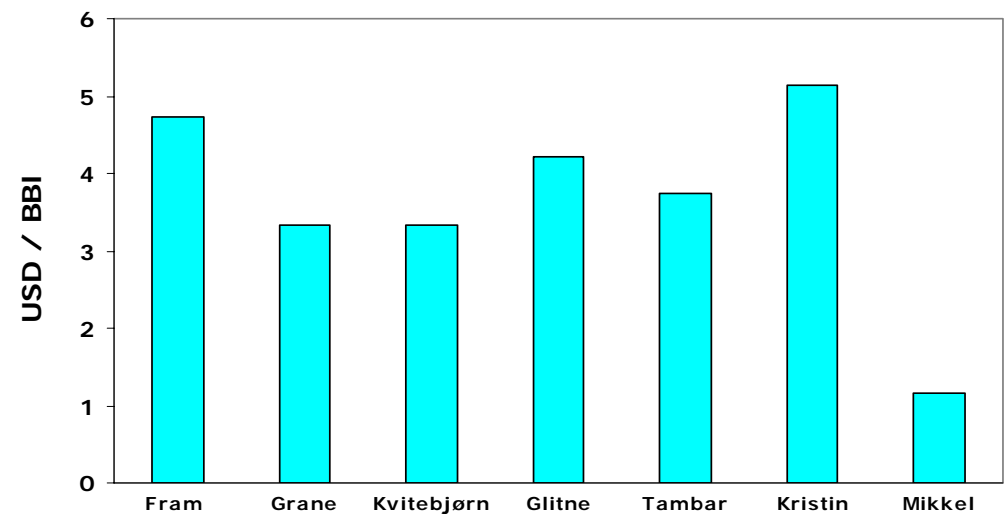
Production costs – 2001 - 2003



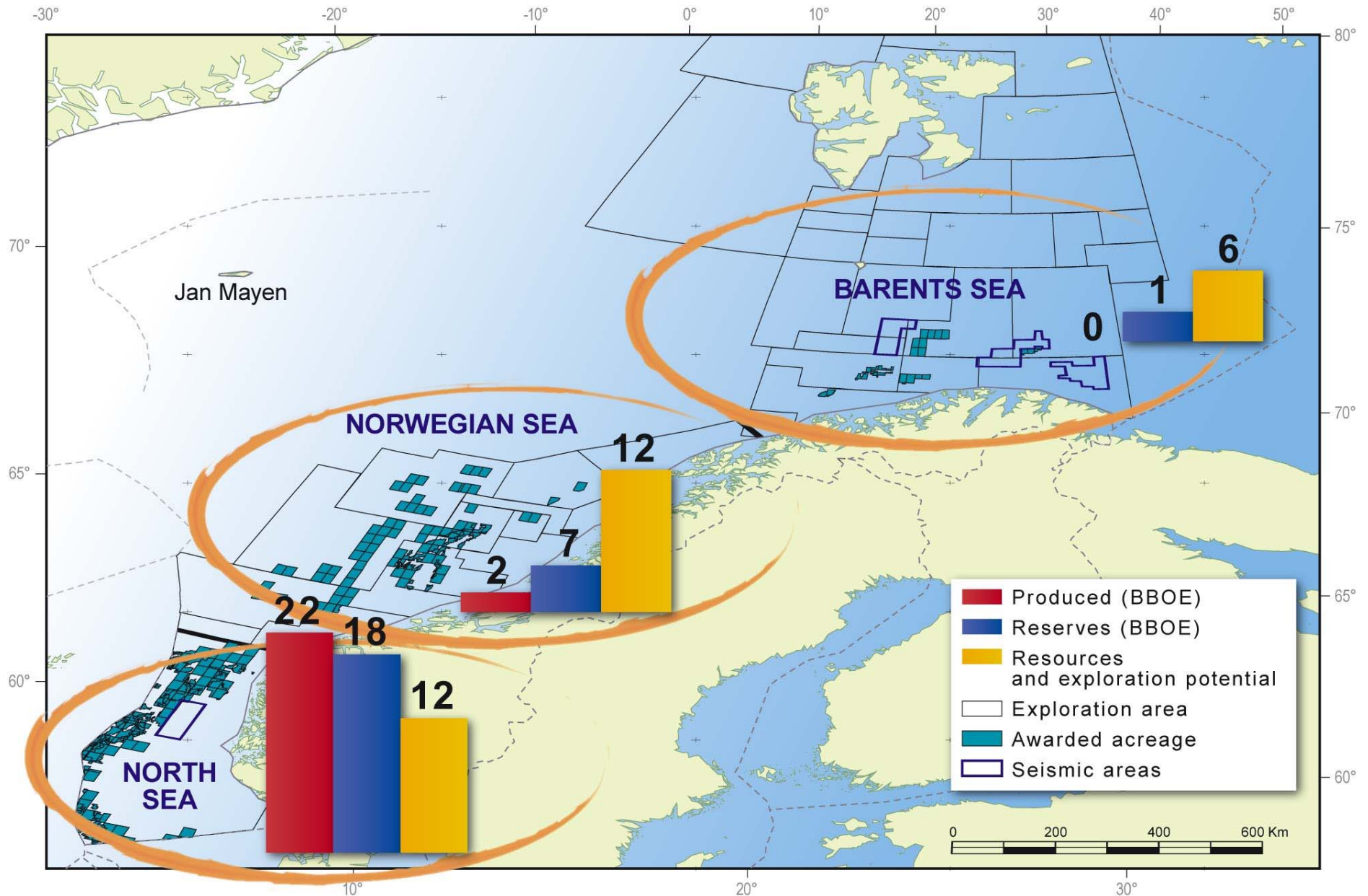
Exploration costs – 2003



Development costs

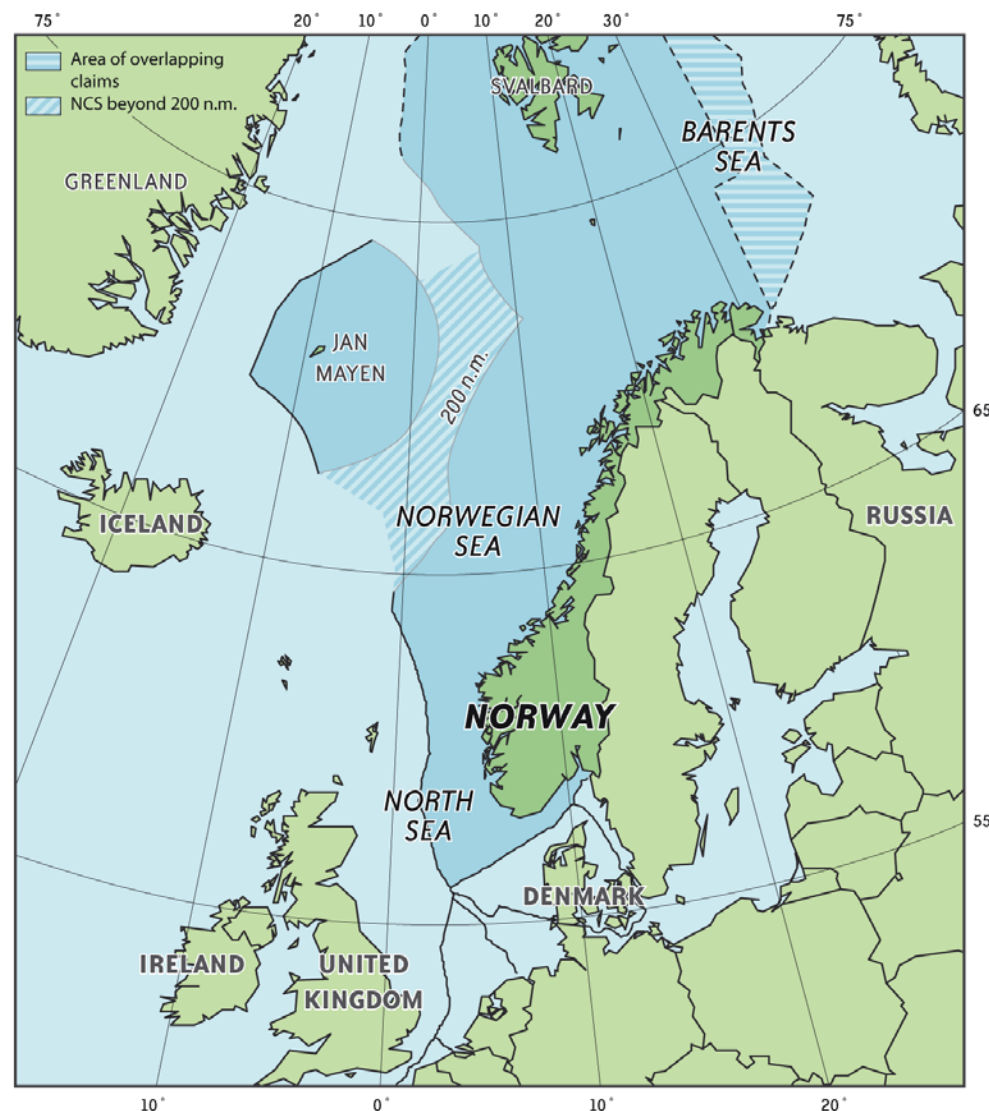
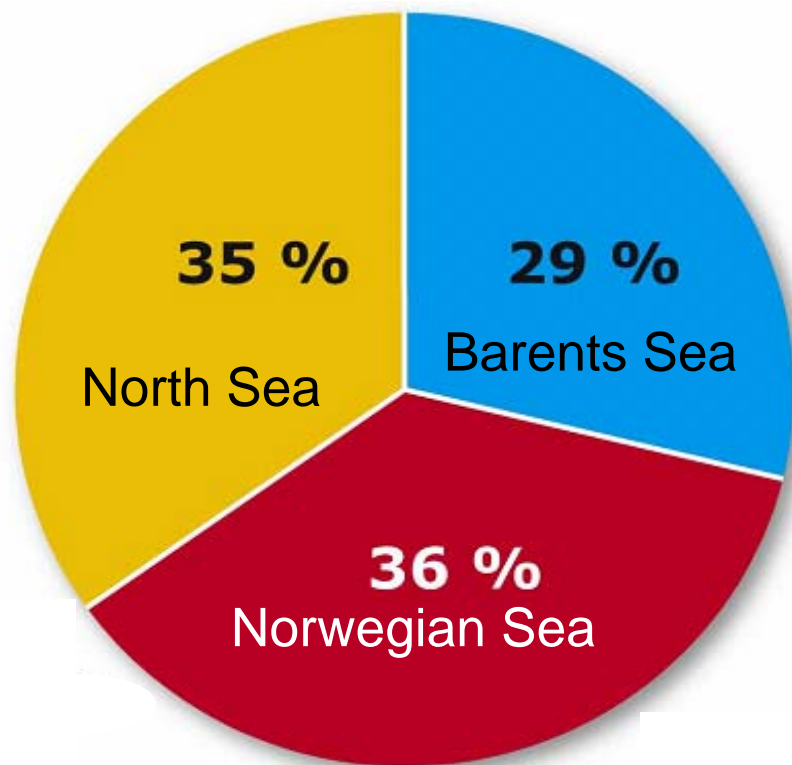


Norwegian continental shelf: Large areas yet to be explored



Norwegian continental shelf: Distribution of undiscovered resources

- ◆ Total undiscovered resources:
 - ◆ 21.4 BBOE
 - ◆ Liquids: 9.4 BBOE (44 %)
 - ◆ Gas: 67.0 TCF (56 %)



The Barents Sea – emerging frontier area

◆ Snøhvit development:

- ◆ LNG terminal
- ◆ Gas reserves: 5.7 TCF
- ◆ Condensate: 113 MMB

◆ Exploration drilling 2000–2001:

- ◆ Goliat: 51 MMBO
- ◆ Well 7228/7-1: Triassic oil in a new play – large salt basin

◆ 2004–2005: 3–4 wells



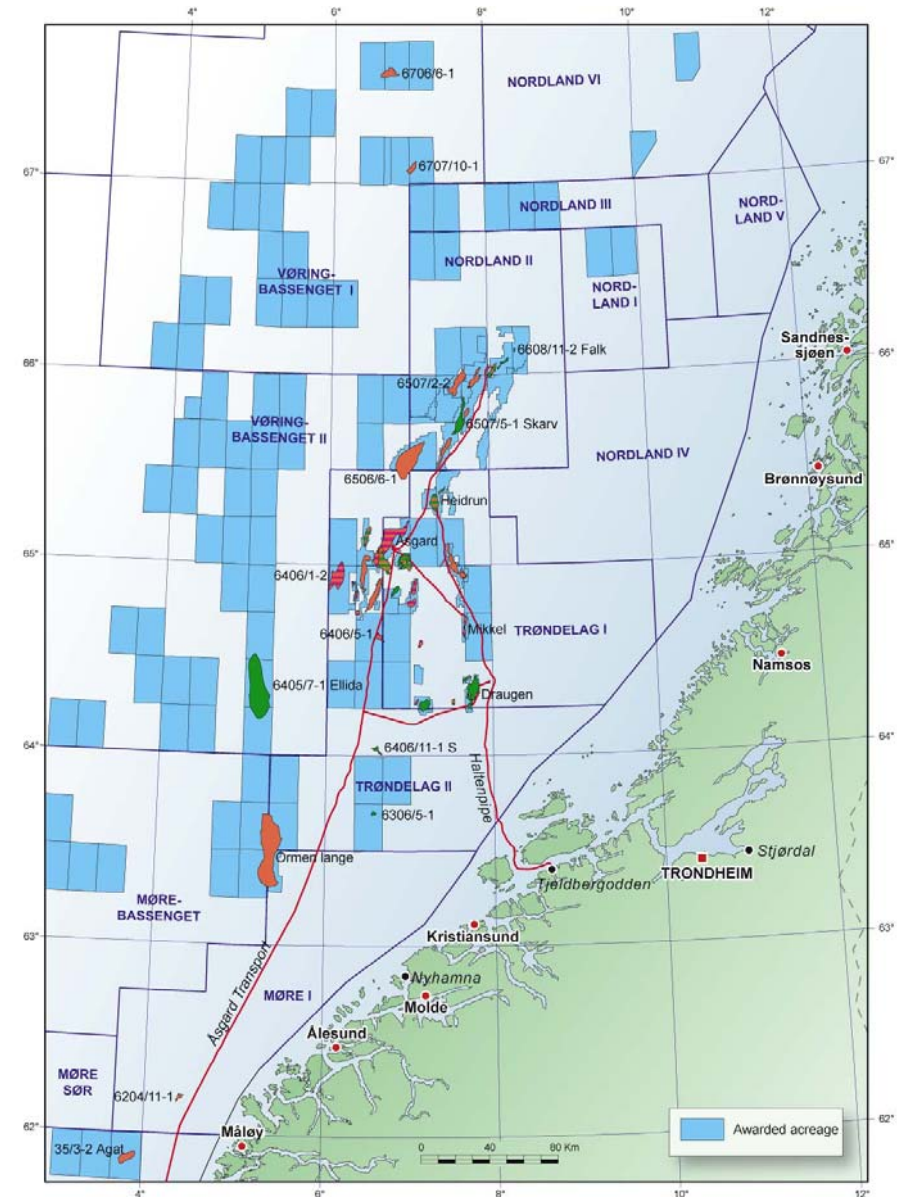
The Barents Sea South Undiscovered resources



The Norwegian Sea – growth area



- ◆ Opened for exploration: 1979
- ◆ First oil production: 1993
- ◆ 2003 - production from 6 fields:
 - ◆ 740 000 BOPD
 - ◆ 0.5 BCF
- ◆ Under development:
 - ◆ Ormen Lange (2007):
Gas: 14 TCF
 - ◆ Kristin (2005):
Condensate and NGL:
320 MMB + Gas: 1.2 TCF



The Norwegian Sea Undiscovered resources

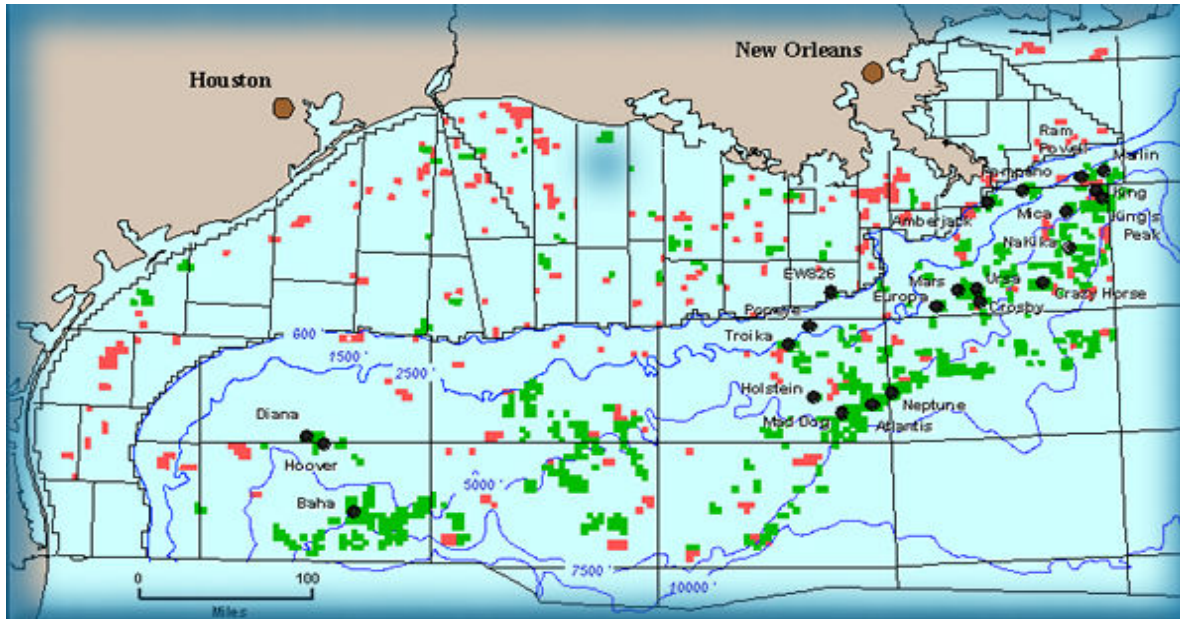


P 10 - non-risked

Mean - non-risked

Mean - risked

The Norwegian Sea versus the Gulf of Mexico



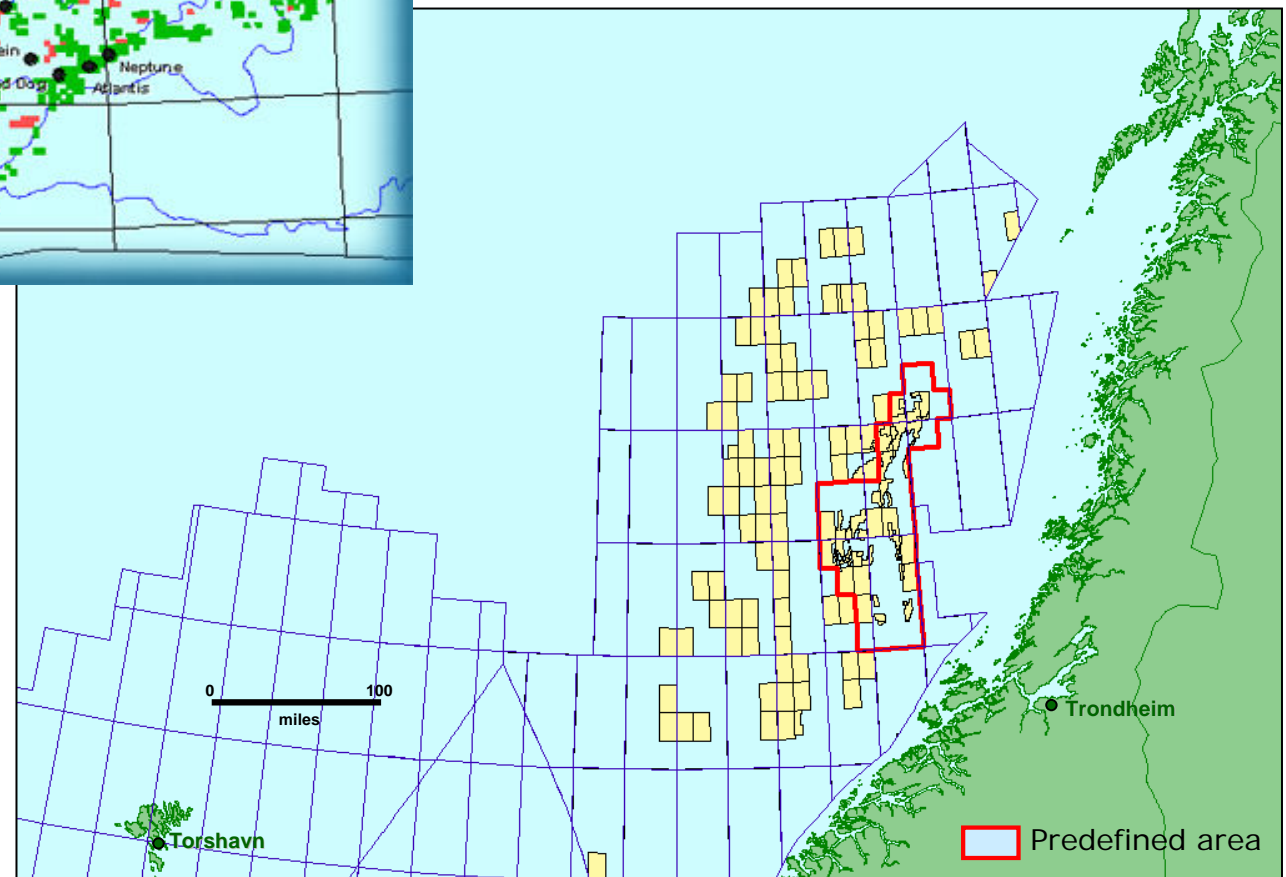
Gulf of Mexico:

- ~ 1000 wells > 200m water depth
- ~ 426 wells > 600m water depth
- ~ 10.7 BBO, 26 TCF

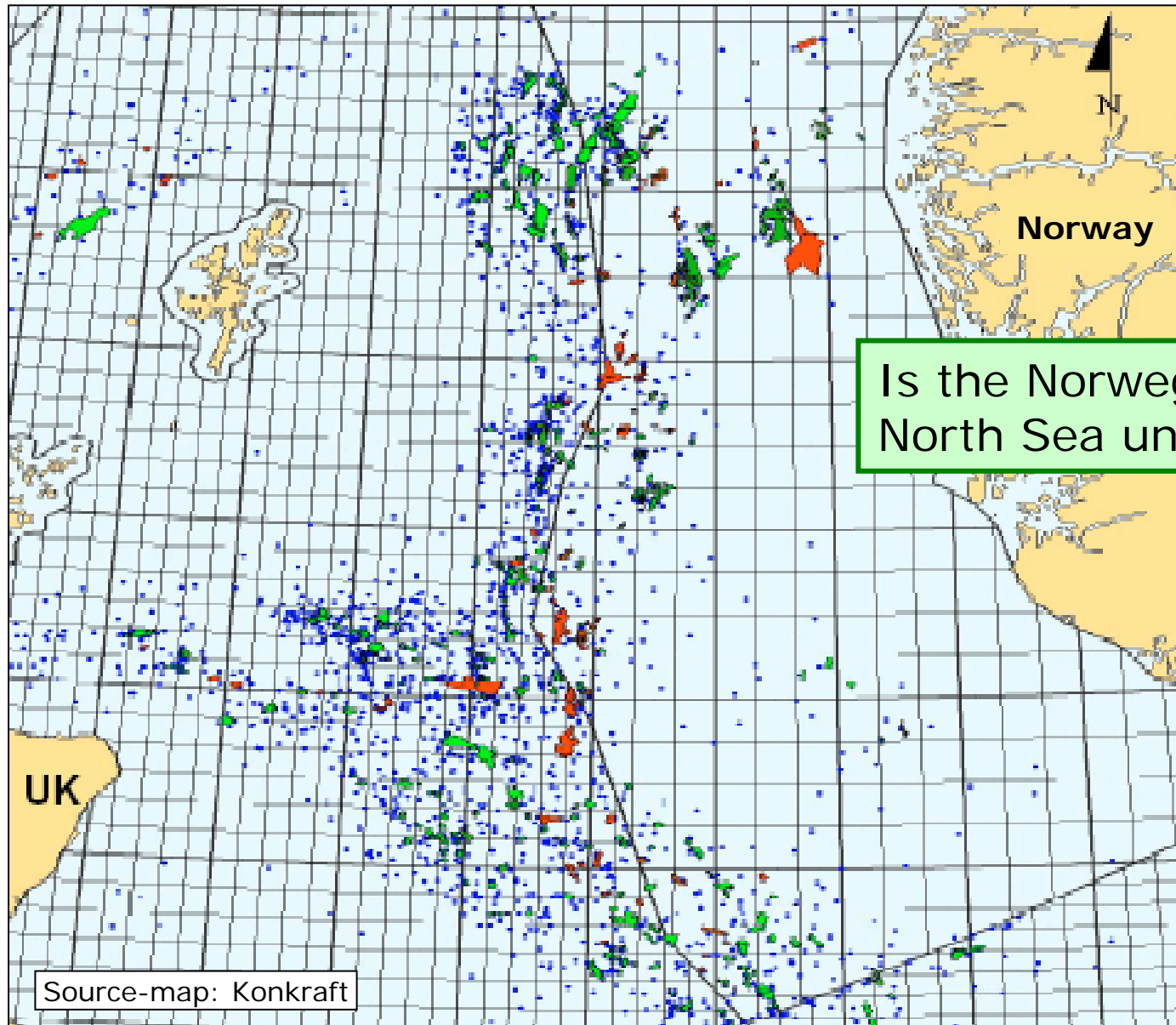
Norwegian Sea:

- ~ 190 wells
- ~ 13 wells > 600 m water depth
- ~ 8.3 BBO, 65 TCF

Source GoM: BP 2003



The North Sea: Many opportunities in mature areas

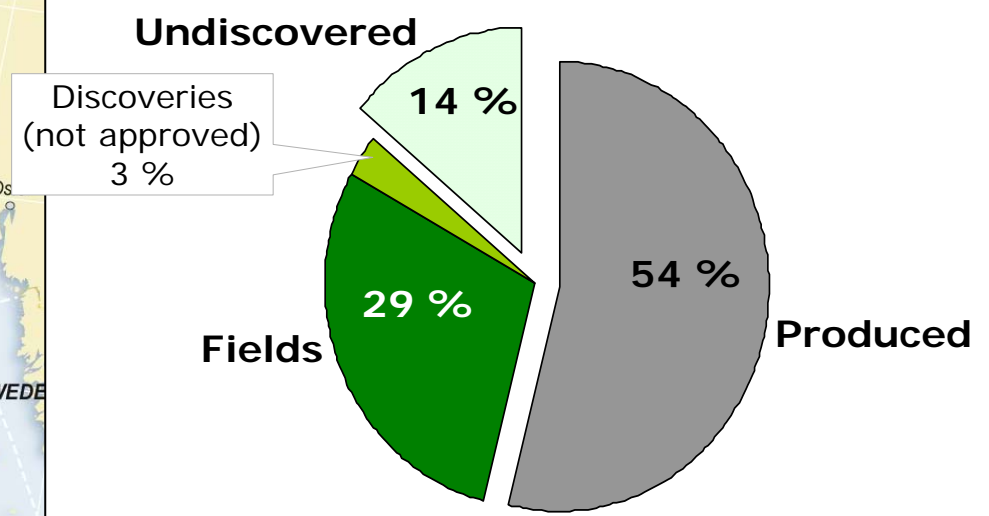


Is the Norwegian part of the North Sea under-explored?

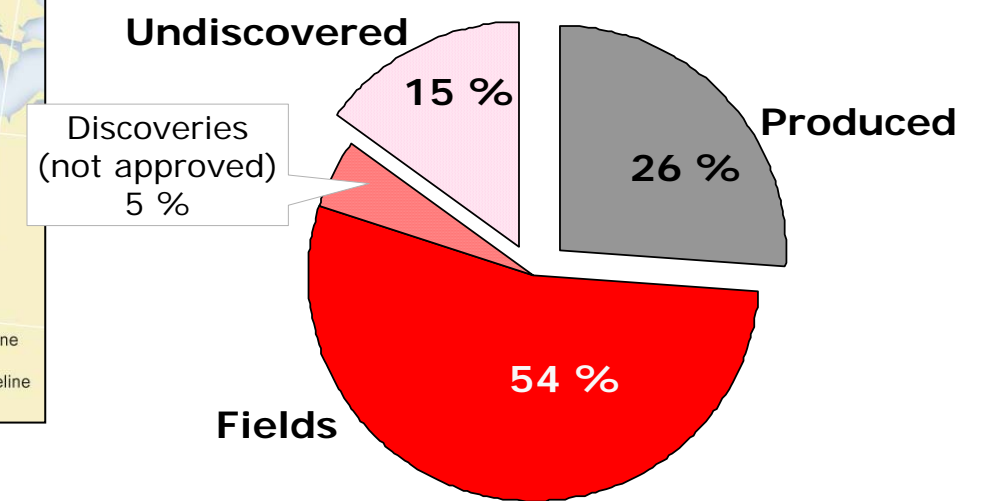
The North Sea – a mature area



Liquids: 31 BBOE (4.9 bill. Sm³)



Gas: 116 TCF (3262 bill. Sm³)

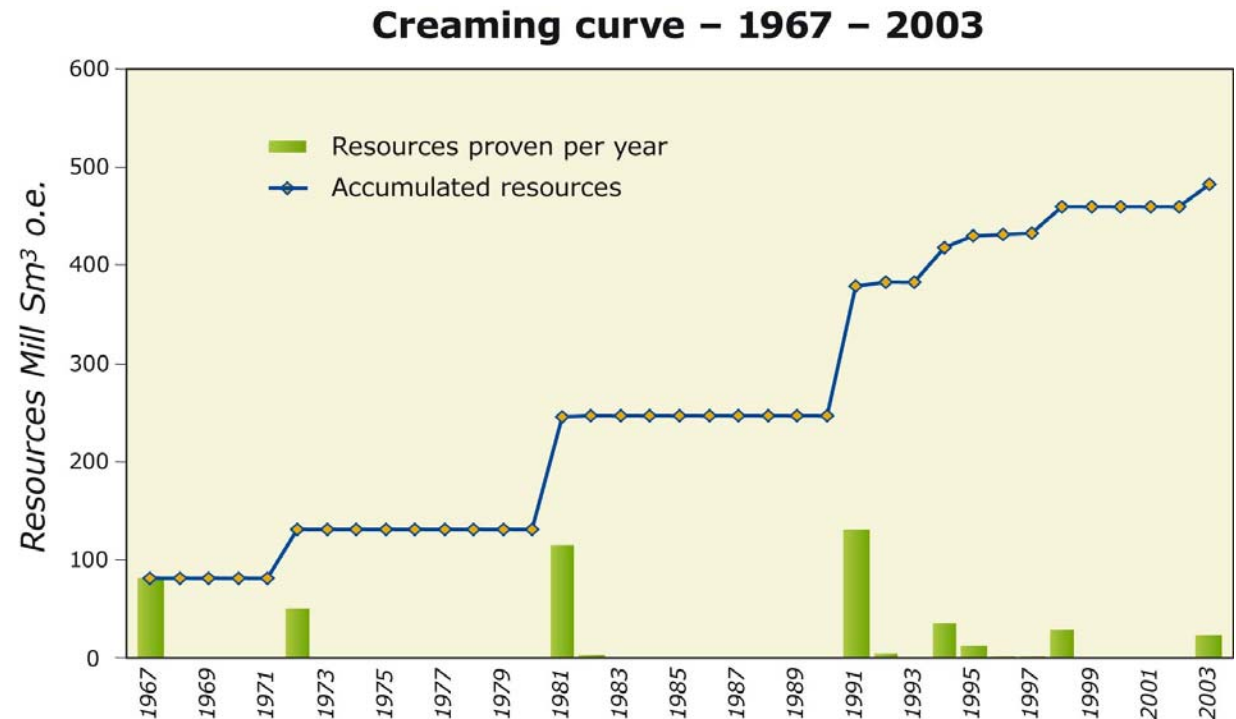
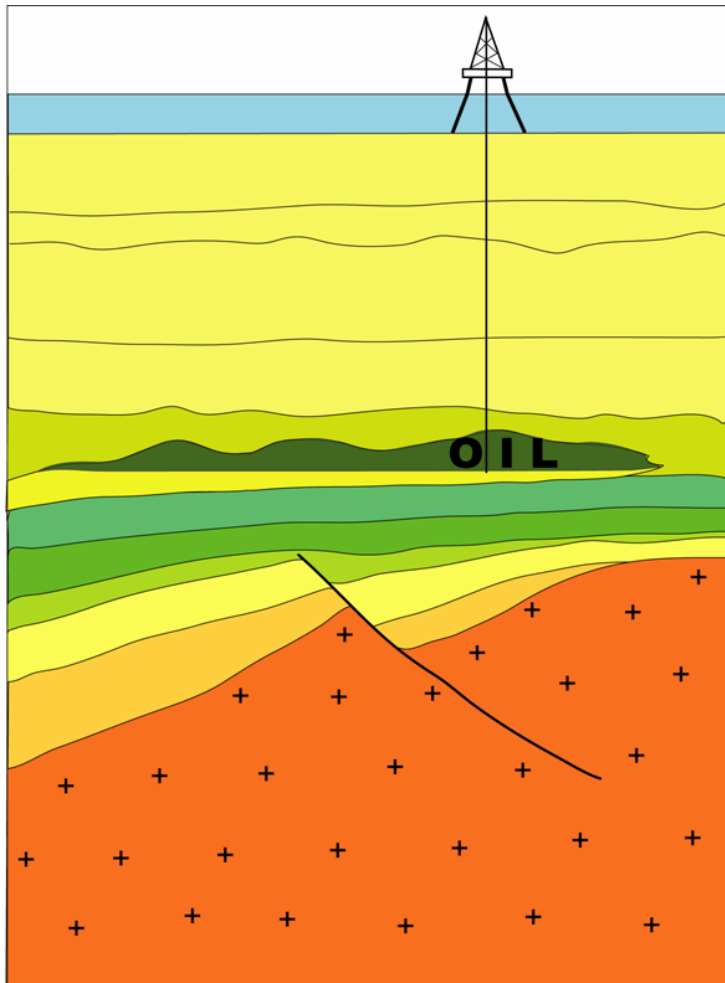


The North Sea Undiscovered resources

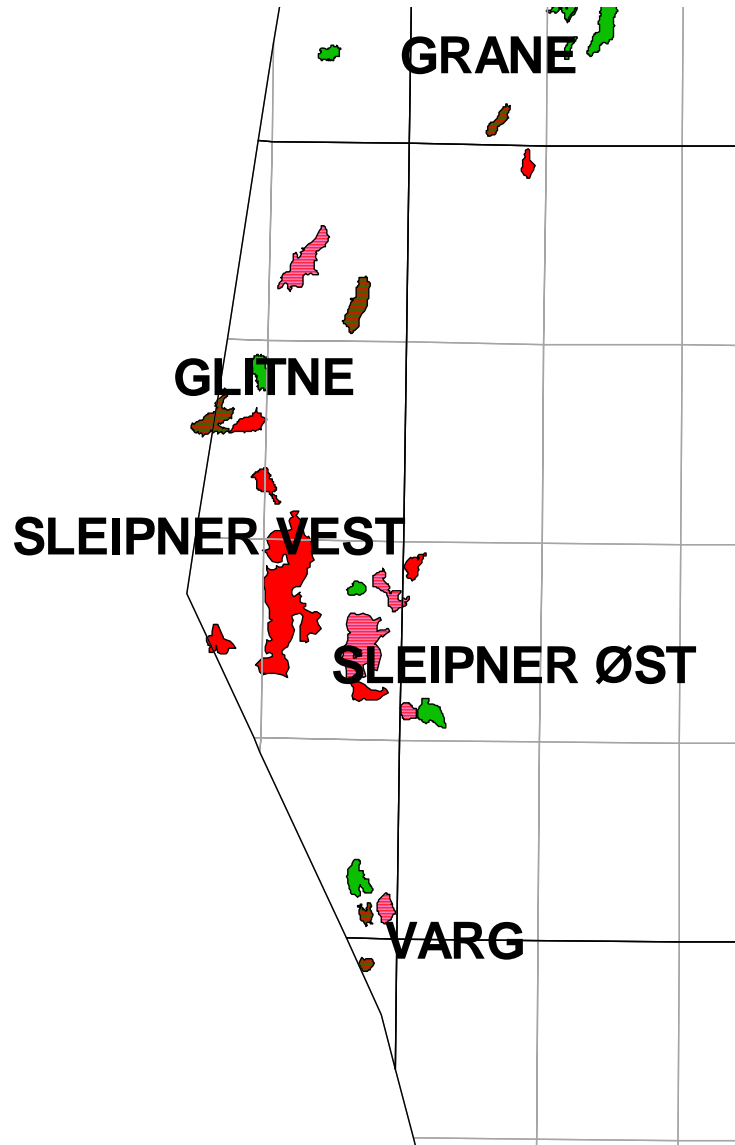


The North Sea

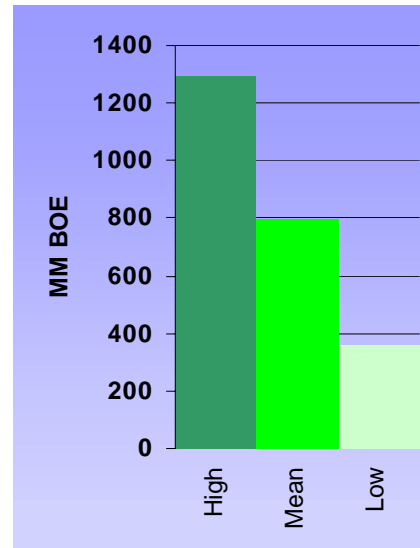
Paleocene play in the Sleipner – Balder area



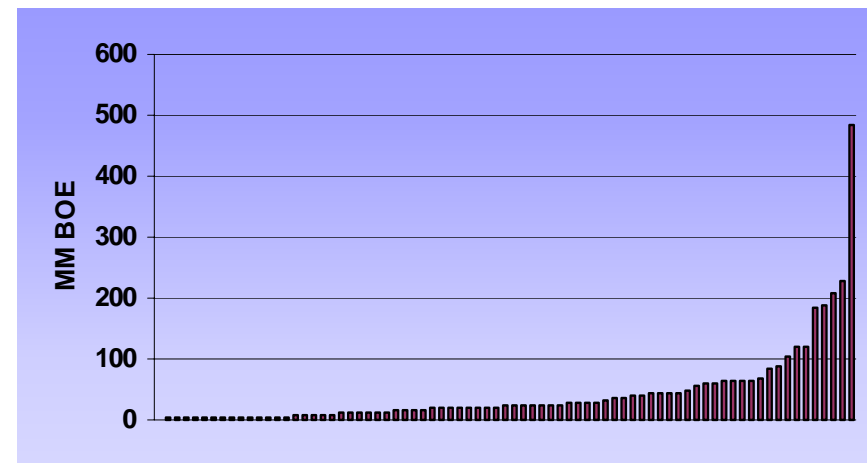
Prospects in the Sleipner area



Prospects - resources

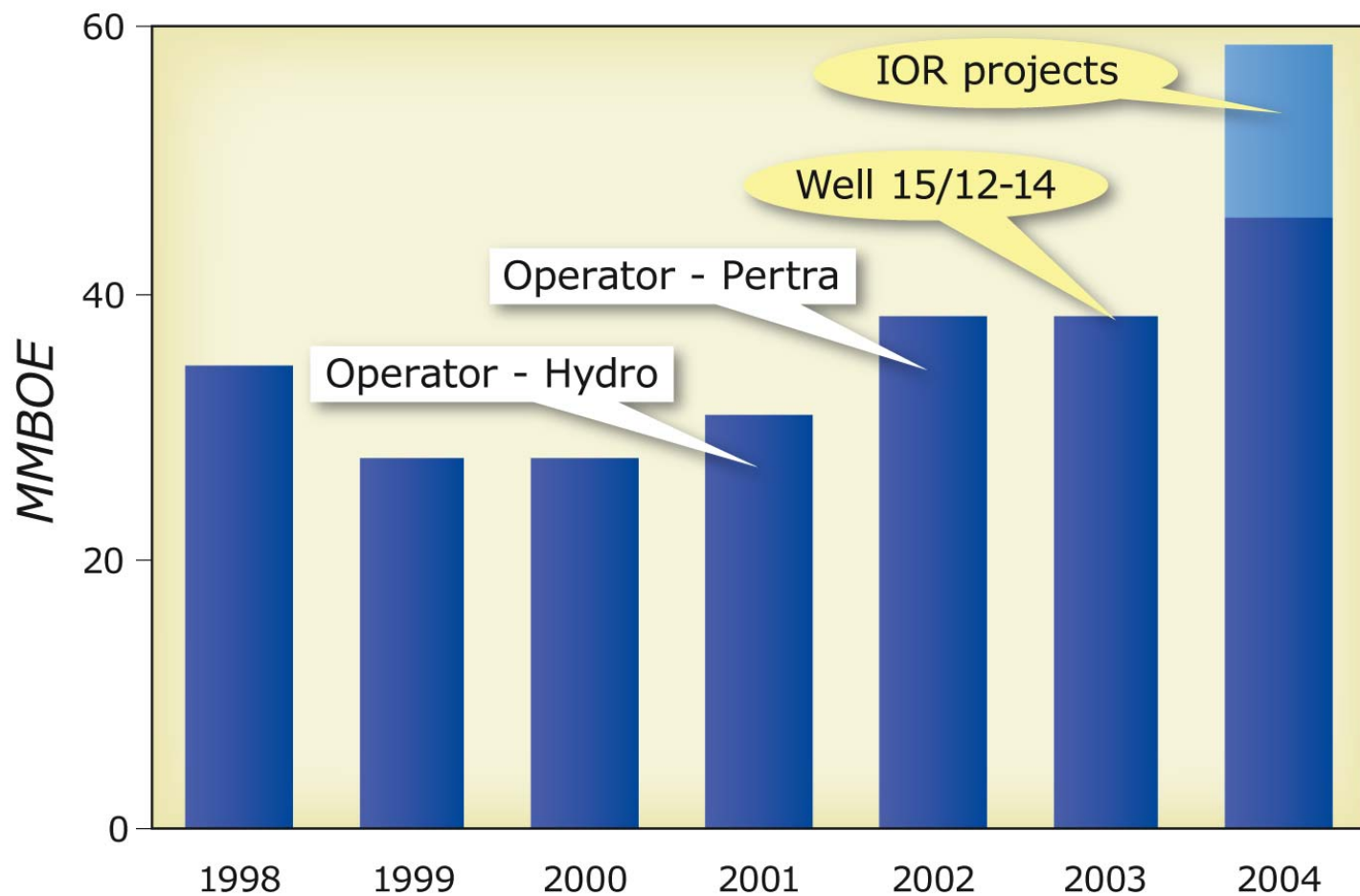


Size of prospects

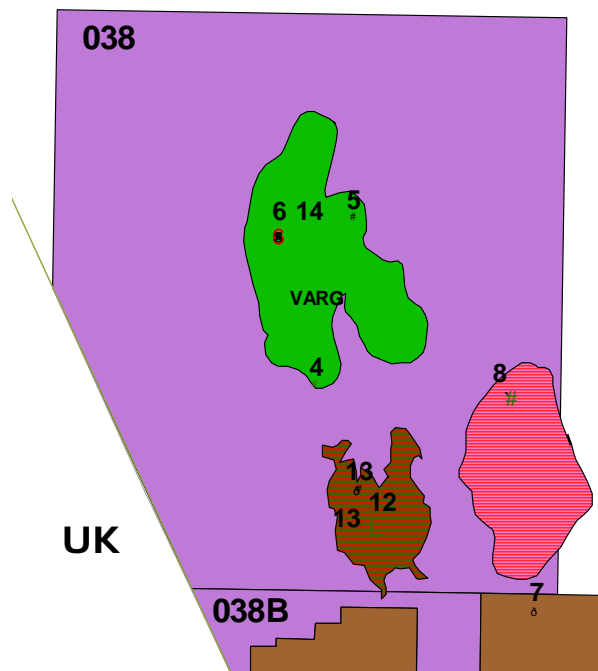


The North Sea

The Varg Field – Reserves 1998 - 2004



Discovered:
1984 – Statoil operator
In production:
December 1998 – Saga operator



OD 0402004

How to get access to acreage in Norway



◆ Awards, purchase or swaps

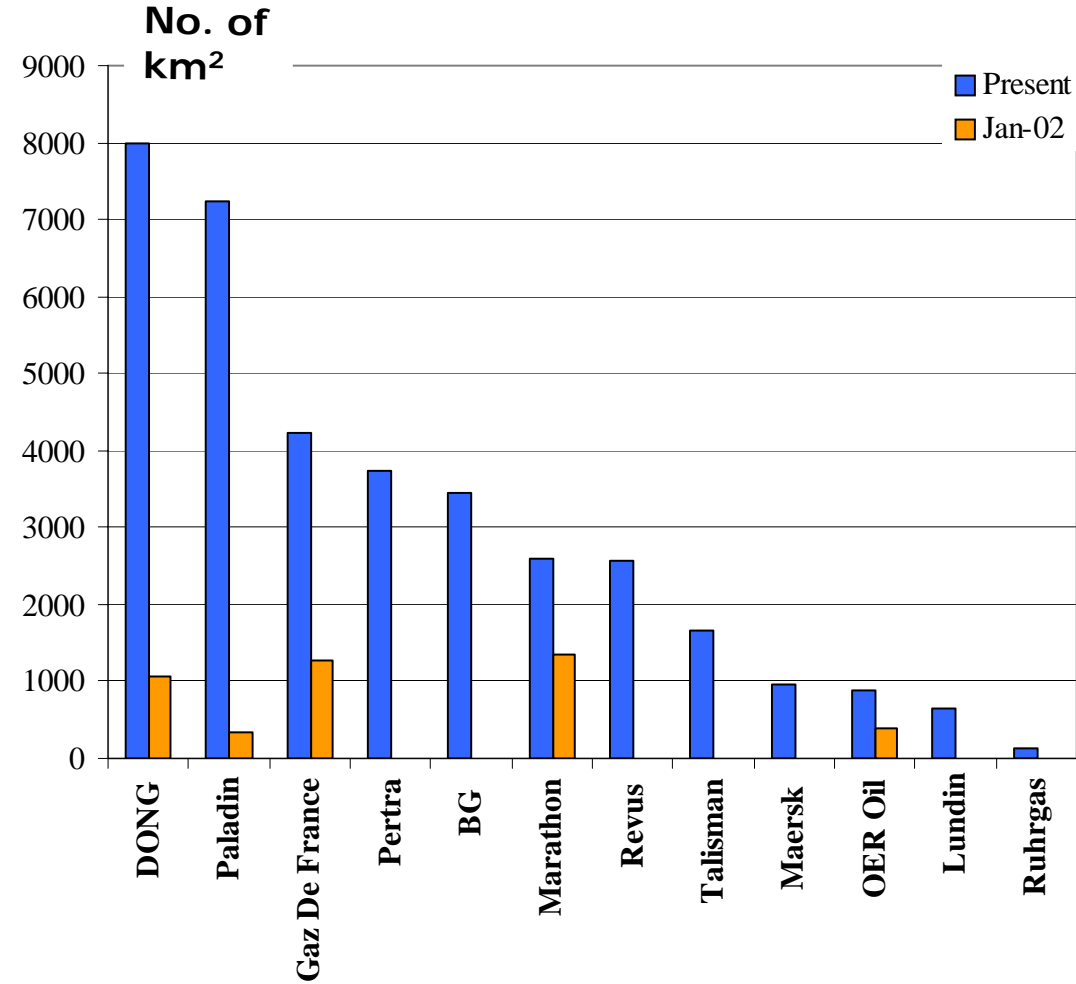
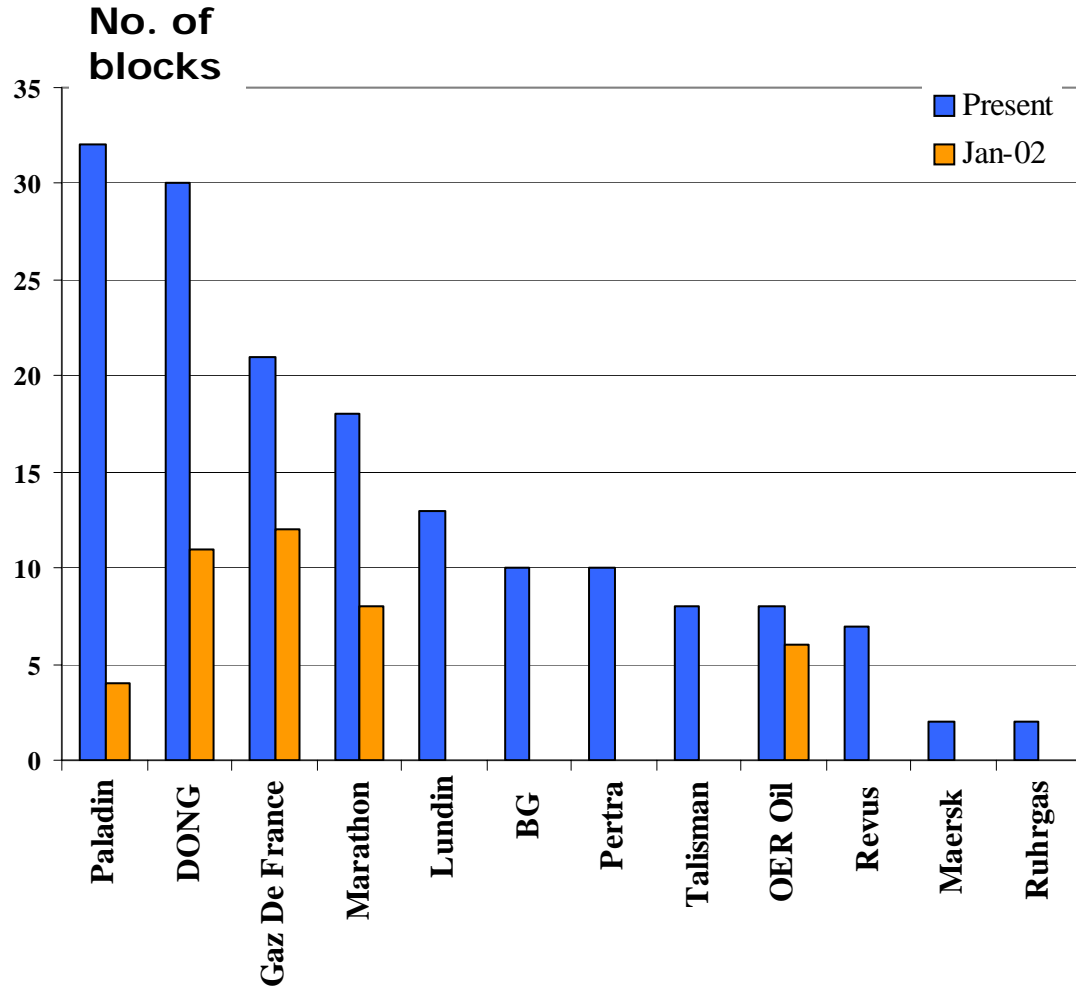
2003 - 2004:

- ◆ 46 new awards to 16 companies
- ◆ 115 purchases / swaps

◆ Future exploration

- ◆ Mature provinces - predefined areas
- ◆ Frontier areas - traditional rounds every 2nd year

New entrants acquiring acreage



Release of seismic and well data



- ◆ Diskos database
 - ◆ Joint database for quality controlled G & G data
- ◆ All seismic navigation data is public
- ◆ A list of seismic surveys is published on the NPD and Diskos websites showing when these become public
- ◆ Seismic data available from Diskos
- ◆ Well data is published on the NPD website (Fact pages)
 - ◆ Logs available from Diskos

Conclusions: **Opportunities on the Norwegian continental shelf**



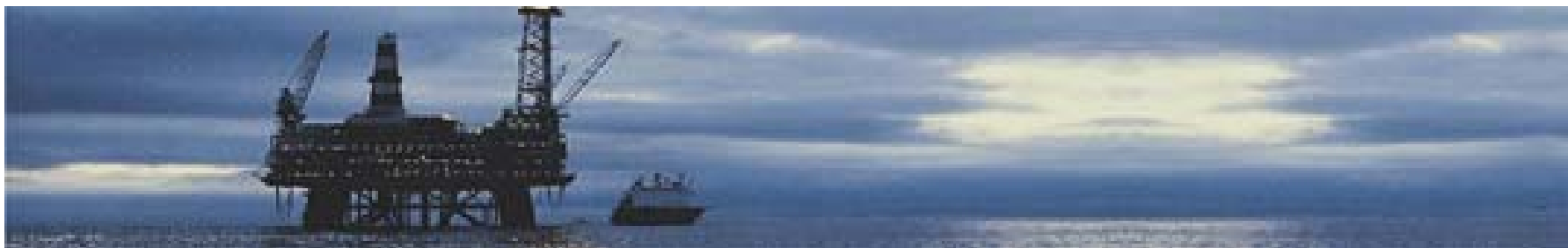
- ◆ The Norwegian continental shelf comprises both mature and frontier areas
- ◆ World class petroleum system
- ◆ One third (21.4 BBOE) of total resources yet to find
- ◆ Still making discoveries in both mature and frontier areas
- ◆ New plays still being developed and confirmed
- ◆ Easy access to G & G data



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Thank you for your attention!



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