



OLJE- OG ENERGIDEPARTEMENTET

# Importance of Technology for Value Creation in the Petroleum Sector

Odd Roger Enoksen

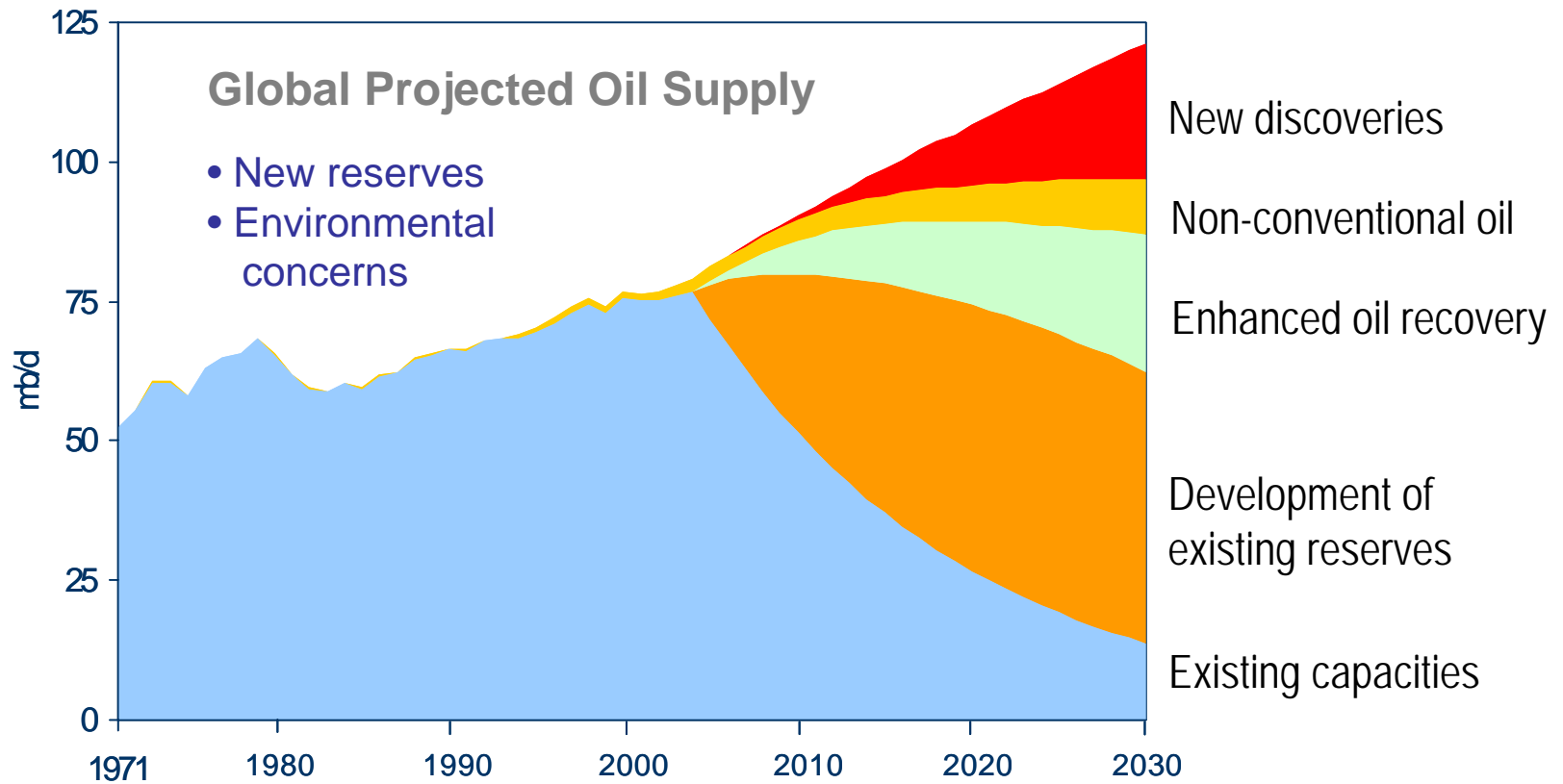
Minister of Petroleum and Energy

**OG 21 Forum**

University of Oslo

24 November 2005

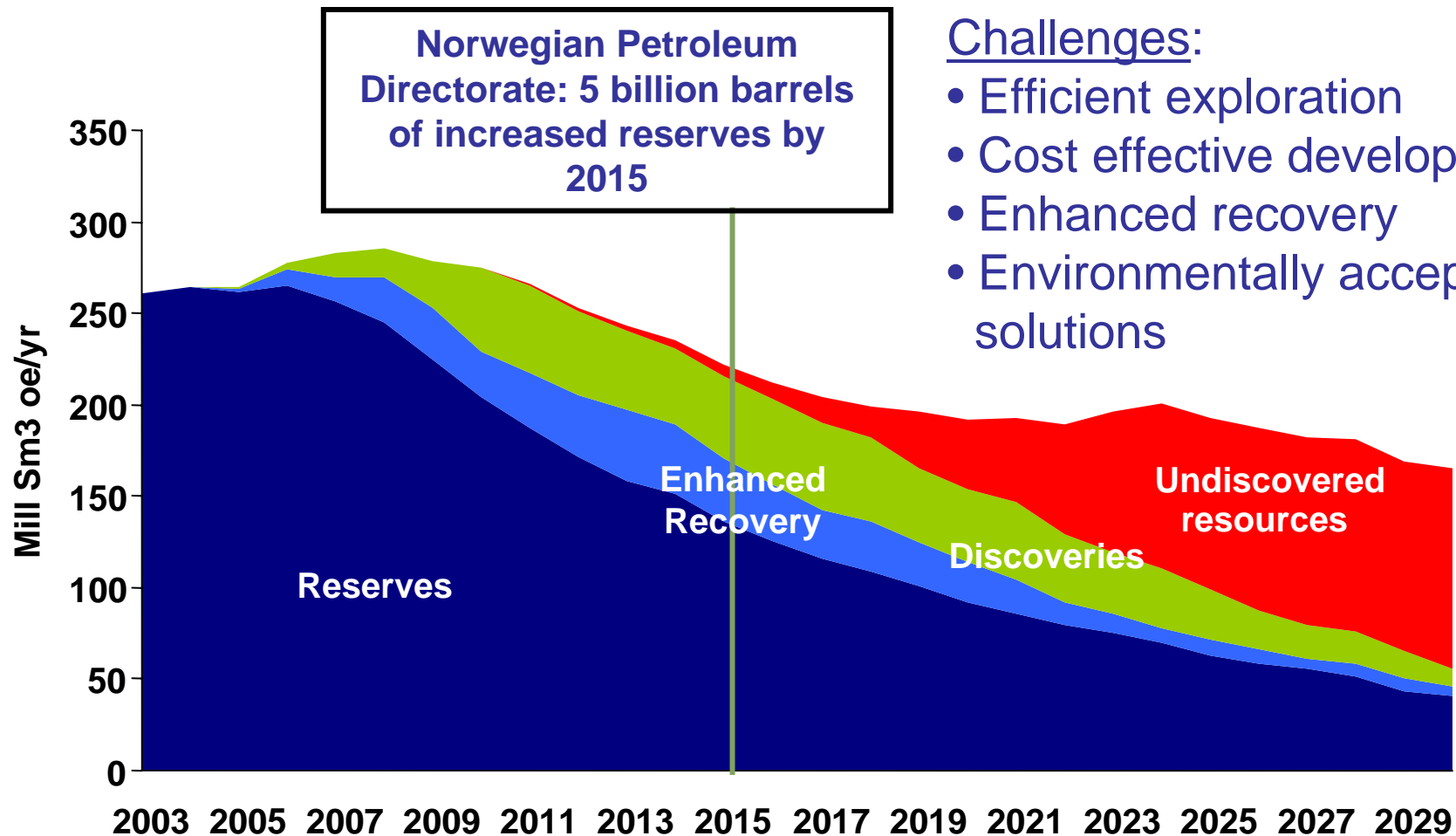
# Long term global challenge.....



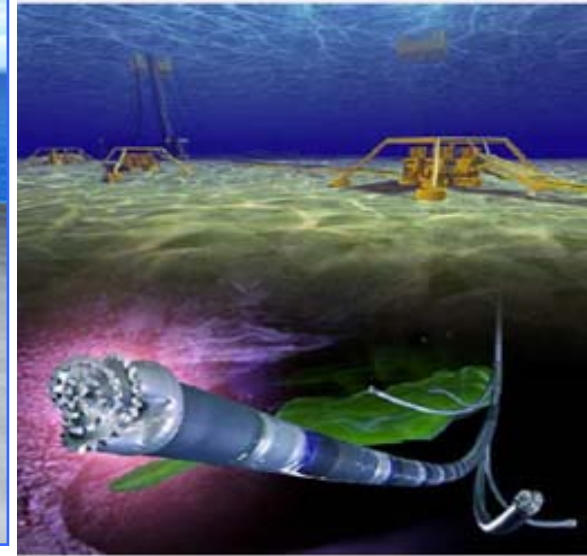
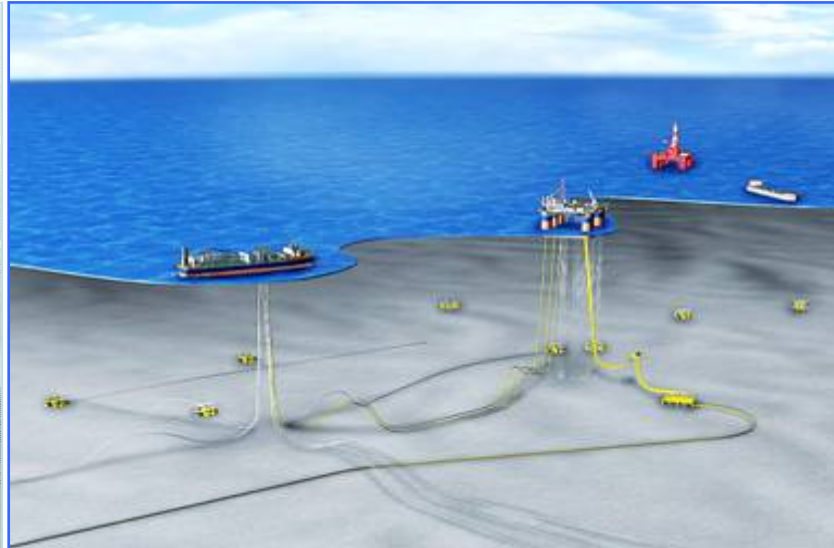
Source: IEA 2004

**100 million new barrels needed by 2030 (150 mill. by 2050)**

# ....and large potential and possibilities on the NCS



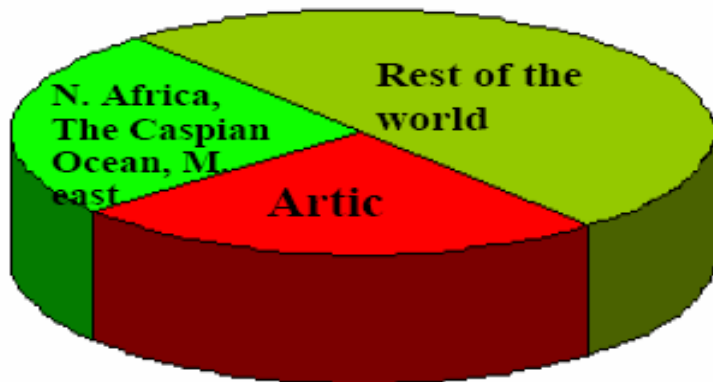
# Technology pays off



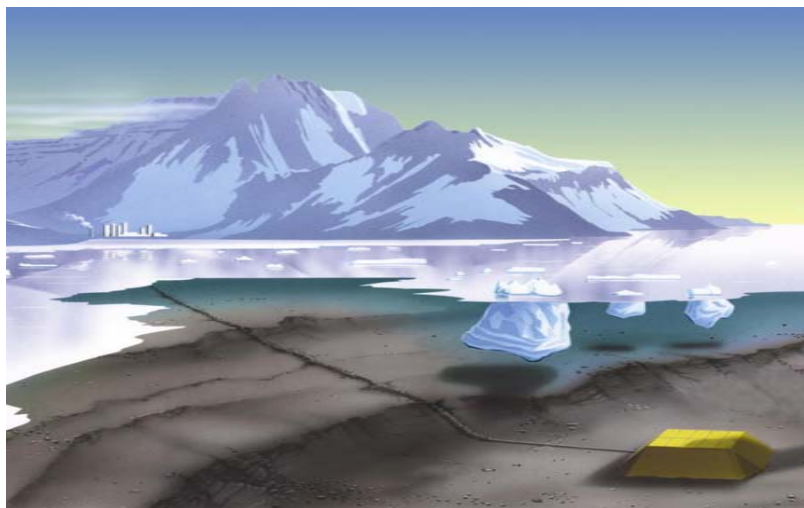
Technology has contributed to:

- Higher oil and gas production
- Enhanced recovery
- Reduced costs
- Increased income from activities

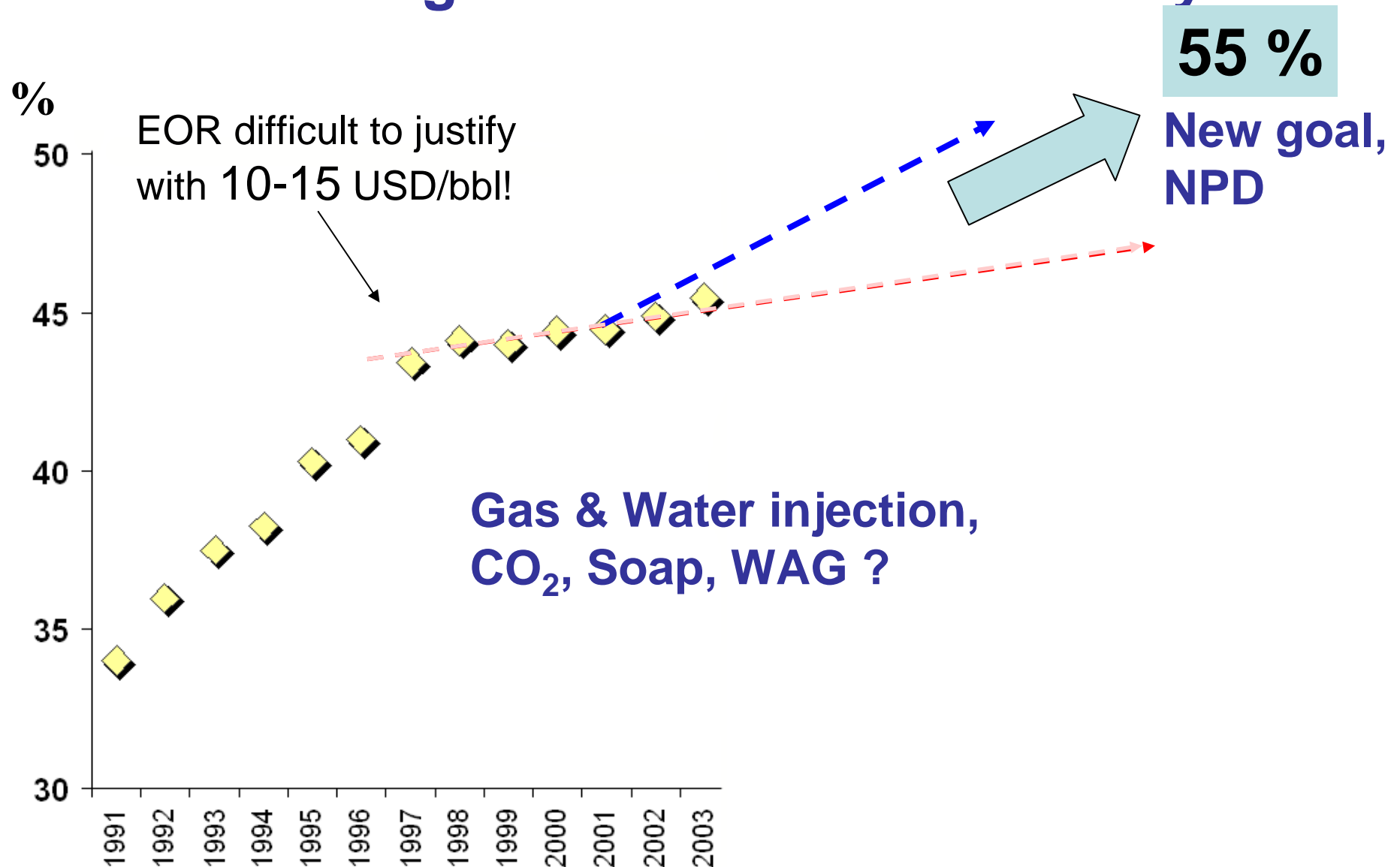
# Long Term Future in the Arctic



Source: USGS, Statoil

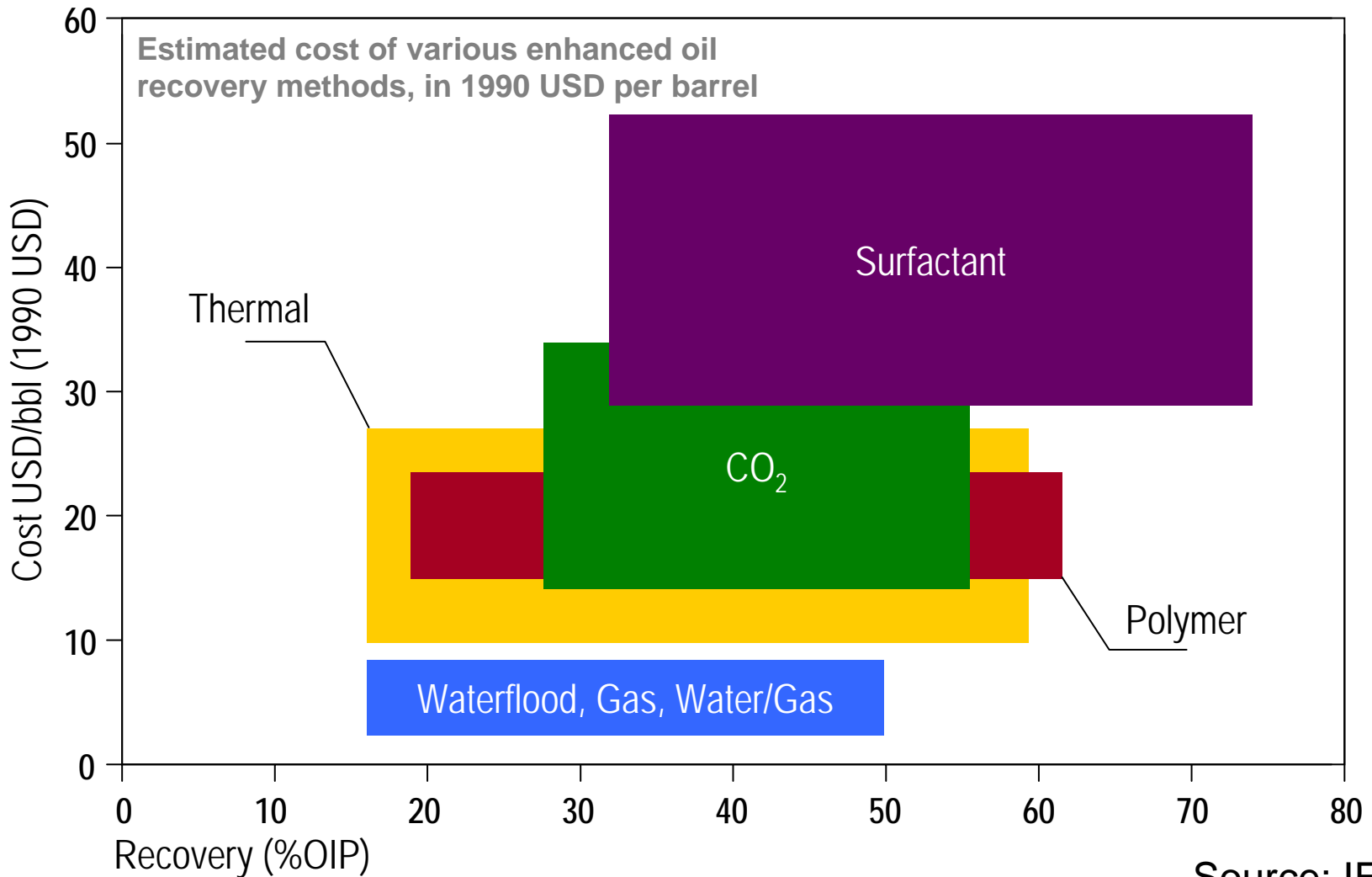


# Ambitious goal for enhanced recovery...



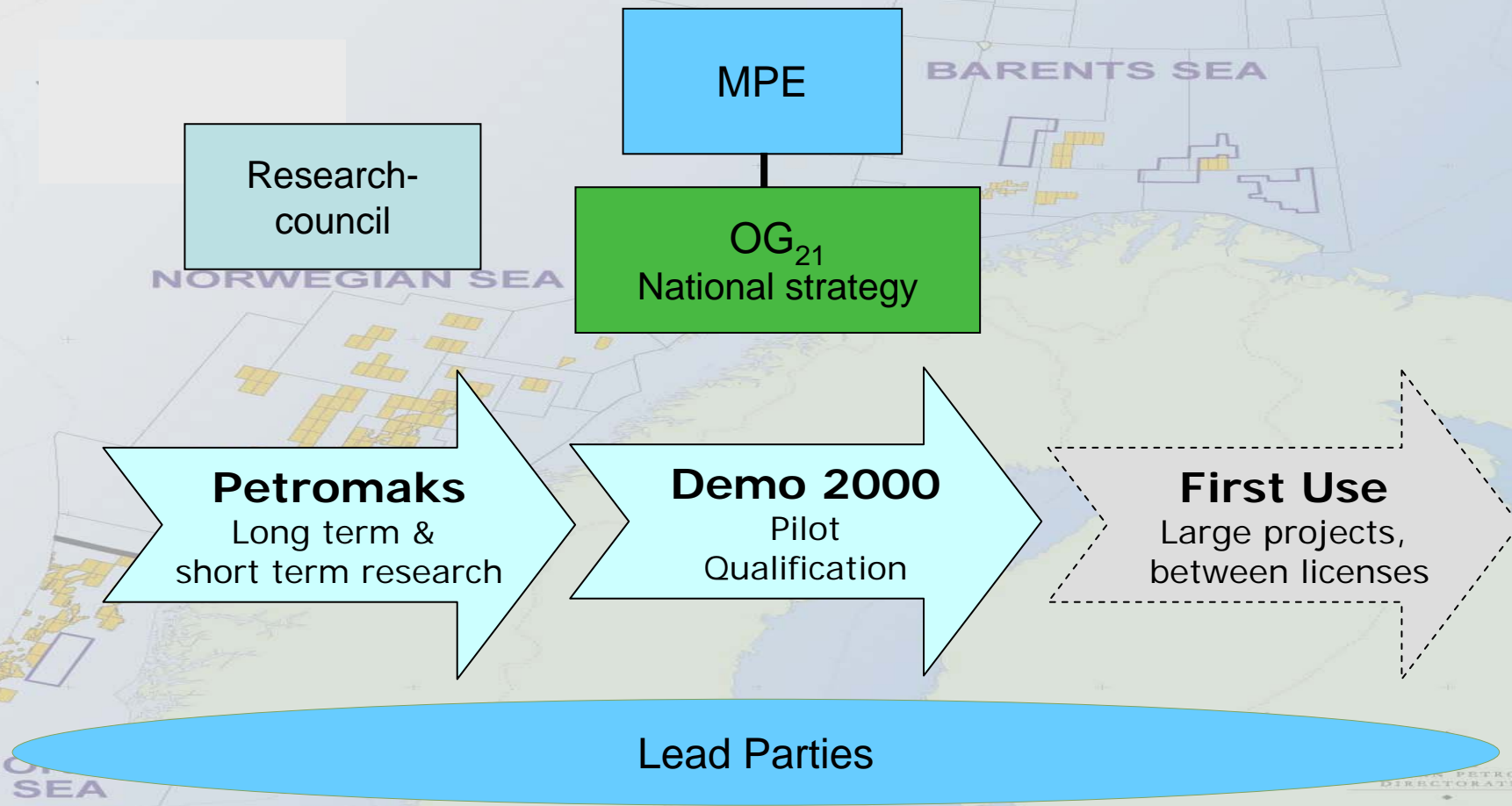


# .....supported by different possibilities

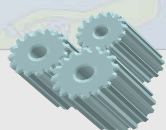


# OG 21 – An unique collaboration for value creation

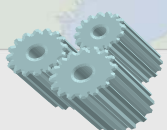
- Exploration area
- Awarded acreage
- Sesmic areas



Operators



Contractors



Universities and  
Research Institutes



The Government



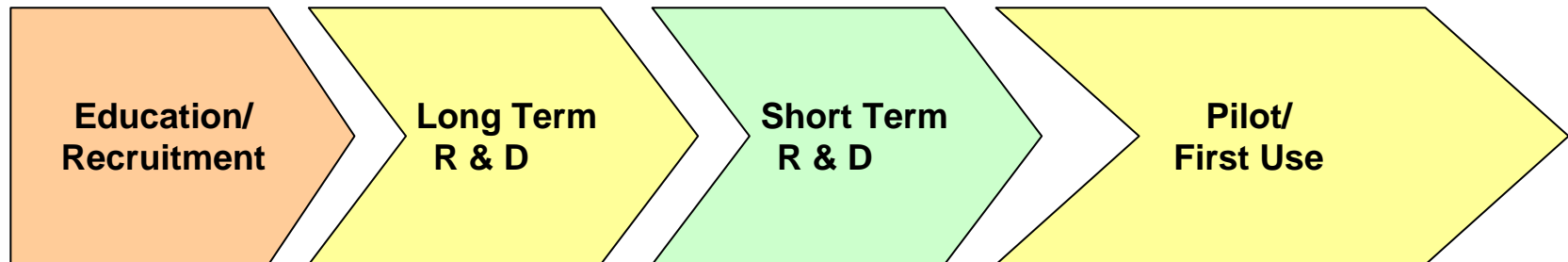
# OG 21 Implementation in 2006...

## Government:

Increase Expenditure  
by 100 million NOKs

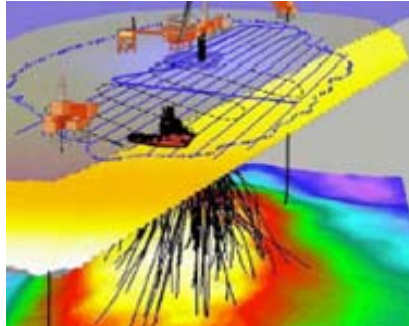
## Industry:

Enhanced  
Collaboration



**Industry Commitment Needed**

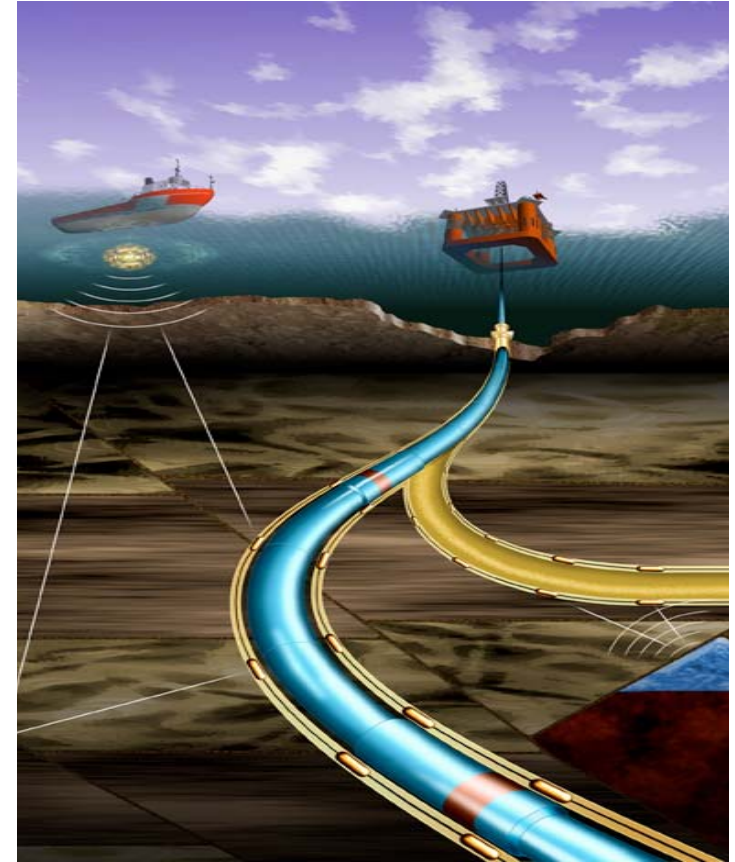
## ...with the Petromaks program



- Focus on long term and short term research critical for the maximum value creation of the resources on the NCS
- More than 100 projects with a total portfolio > 1,2 billion NOKs
- Generates approx. 2 times the public investement in private efforts

## ... and the Demo 2000 programme

- Generates 3 times investments from contractors and oil companies
- Portfolio > 100 Projects representing a value of 1200 mill. NOKs
- 20 pilots already implemented on field sites (Clients: Statoil, Hydro, Shell, Total, ENI, PDVSA, Petrobras, CNR)



# A strong Government Commitment to Research...

## Main Priorities:

- Increase the Public Expenditure to 3 % of GNP
- Strengthen national capabilities within areas with:
  - a high value creation potential
  - comparative advantages
- Environment and Basic science



## The Soria Moria Declaration



# .... and stronger basic knowledge in science, mathematics and physics



**Stronger recruitment to regional research activities**

# A global leader

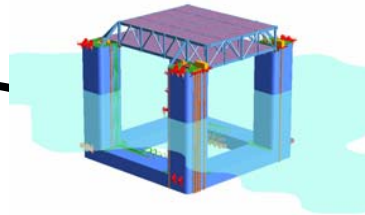
**Kristin**



**Ormen Lange**



**Blind Faith**



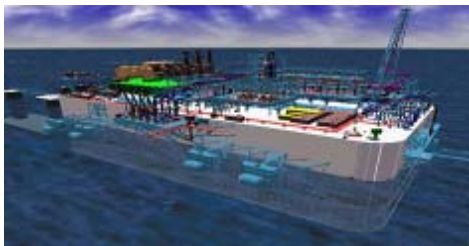
**White Rose FPSO**



**Sempra LNG terminal**



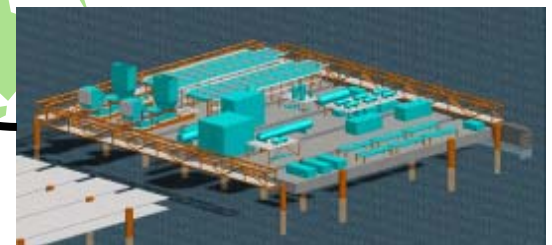
**Sakhalin II concrete**



**Offshore LNG terminals**



**Dalia subsea**



**Kashagan process modules**



Source: Aker Kværner

[www.mpe.dep.no](http://www.mpe.dep.no)

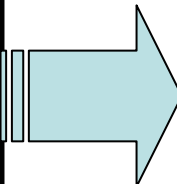


# OG 21 Global Technology

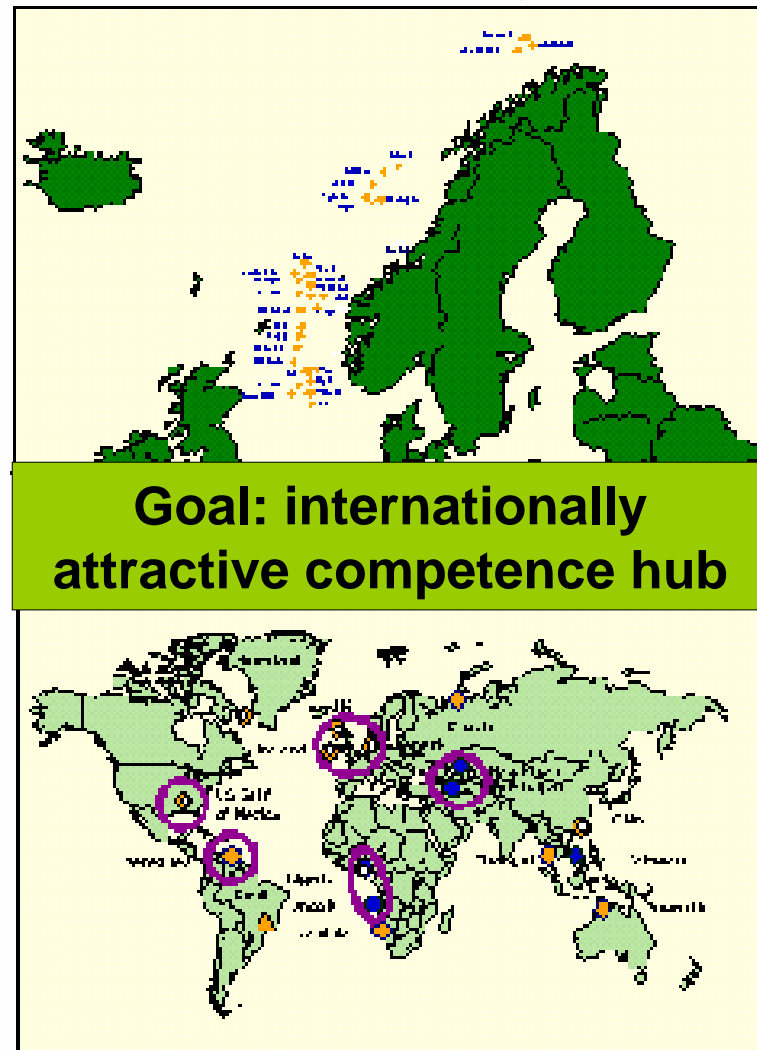
## Revised Strategy, 2005

### Technology Target Areas (TTA)

Environmental technologies
Exploration and reservoir characterization
Enhanced Recovery
Cost Efficient Drilling and Intervention
Integrated Operations and Real Time Reservoir Management
Subsea Processing and Transport
Deep Water Technology
Gas Technologies



## OG 21 TTA Plan, 2006



# Internet address



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