Potential for CO_2 Capture and Storage from Natural Gas Production

Trude Sundset, Vice President Environment and Climate, StatoilHydro

CSLF capacity building workshop, Al Khobar, Saudi-Arabia, Jan 2008

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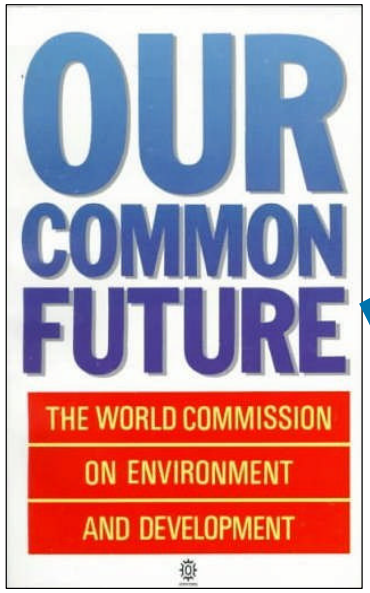
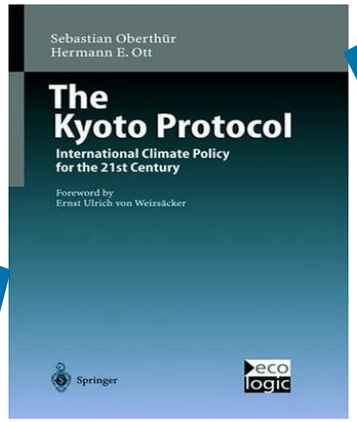
- Present in 40 countries
- 31.000 employees
- Production 1.7 MBBL o.e./day
- Largest offshore operator
- 3rd largest net seller of oil

2007: 20 year Anniversary for Our Common Future



"The Brundtland Report", 1987

Norway's Prime Minister Gro Harlem Brundtland in Rio in 1992*



The Kyoto Protocol, 1997

The Kyoto Protocol ratified, 2005

*** A Brundtland-led government introduced a CO2-tax of about 45 US$/ton in Norway in 1992.**

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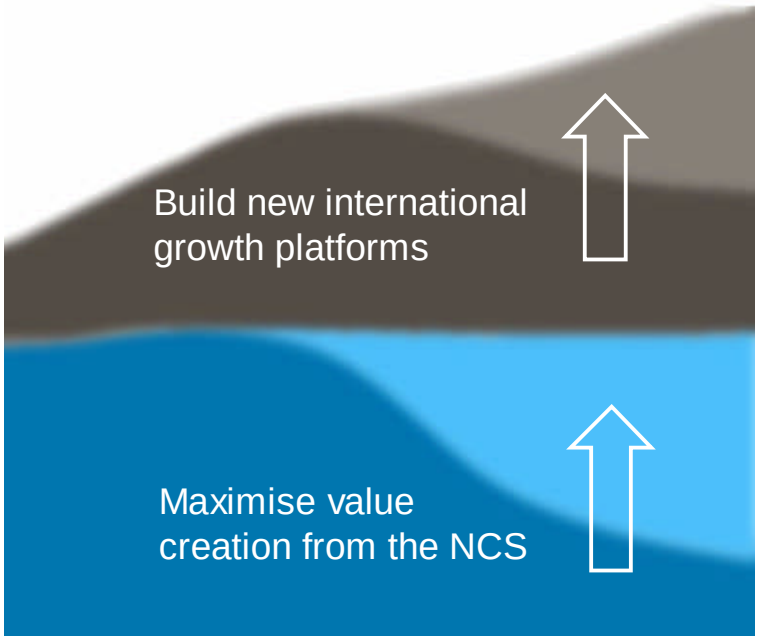
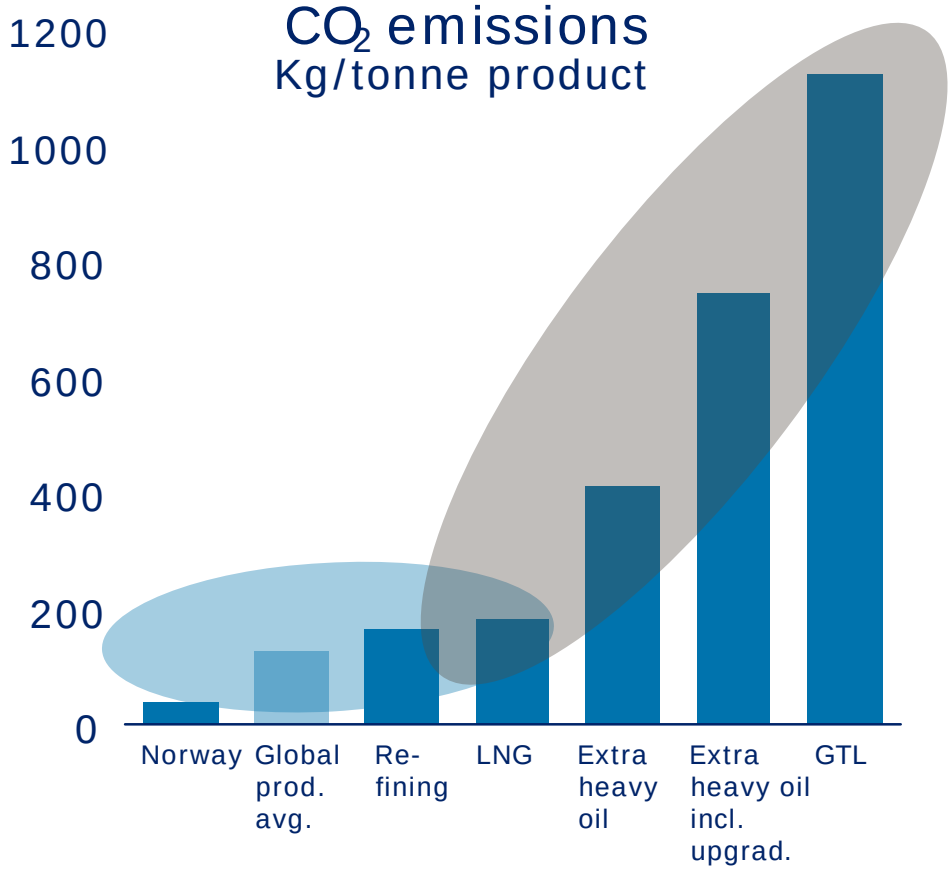
Responding to the growth challenge makes it a climate challenge

Increasing and more CO_2 intensive production





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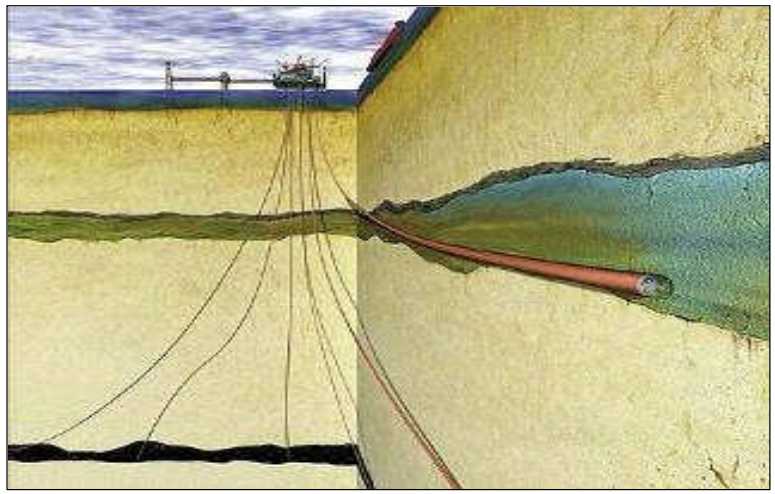
The Sleipner experience – our starting point



- Started in 1996
- CO_2 from natural gas (Approx. 1 mill. tons CO_2 annually)
- Storing in saline aquifer
- **Driver:** CO_2-tax (340 NOK/ton – $50/ton), corporate environmental strategy
- Learning and confidence building through a series of large EU-wide R&D programmes

The Sleipner experience – the Utsira formation

- Safe and high capacity CO_2 storage
- Systematic mapping needed to verify storage capacity
- Experts aligned - probability high that CO_2 will be contained for thousands of years
- CO_2 storage as potential profitable business in a carbon constraint world

Source: Bjørlykke, NGU

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In Salah and Snøhvit LNG – the next CCS steps

- Started in 2004
- CO_2 from natural gas
- Separating and injecting 1,2 mill. tons CO_2 annually
- Injection into reservoir aquifer
- **Driver:** BP internal quota system

- Starting in 2008
- CO_2 from natural gas
- Separating, piping and injecting 0,7 mill. tons CO_2 annually
- Injection below reservoir
- **Driver:** CO_2 tax

StatoilHydro's CCS projects

An industrial approach to climate change

(CO_2 injection capacity in million Tons/yr)

1

Sleipner

1996-

1,2

In Salah

2004-

0,7

Snøhvit LNG

2007-

2011/12-

2,5

Mongstad

2014-

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