

Importance of EU ETS for phase-in of natural gas

IPIECA COP 18 side event: The expanding role of natural gas

Arne Eik, Statoil's corporate climate unit

This is who we are

We are an international technology-based energy company focused on upstream oil and gas operations. We have several decades of experience of operating offshore projects under the toughest conditions on the Norwegian continental shelf. Our culture is founded on strong values and high ethical standards.

We were founded as the Norwegian State Oil company in 1972 and were listed on the Oslo and New York stock exchanges in 2001. In October 2007, we merged with Hydro's oil and gas division. In 2010, we carried out an IPO of Statoil Fuel & Retail (SFR) on Oslo stock exchange. The Norwegian state holds 67% of our shares through the Ministry of Petroleum and Energy.

We have seven business areas

DPN	Development & Production Norway
DPI	Development & Production International
DPNA	Development & Production North America
MPR	Marketing, Processing and Renewable Energy
TPD	Technology, Projects & Drilling
EXP	Exploration
GSB	Global Strategy & Business Development



21,330
(31,715 incl. SFR)
Employees



Business
operations in
41 countries



5.426
billion barrels of oil
equivalents in proved
reserves



Equity production of
1.85 mmbbl
of oil equivalent per day
in 2011

Market capitalisation of about
USD 85 billion

The second-largest exporter of
gas to Europe

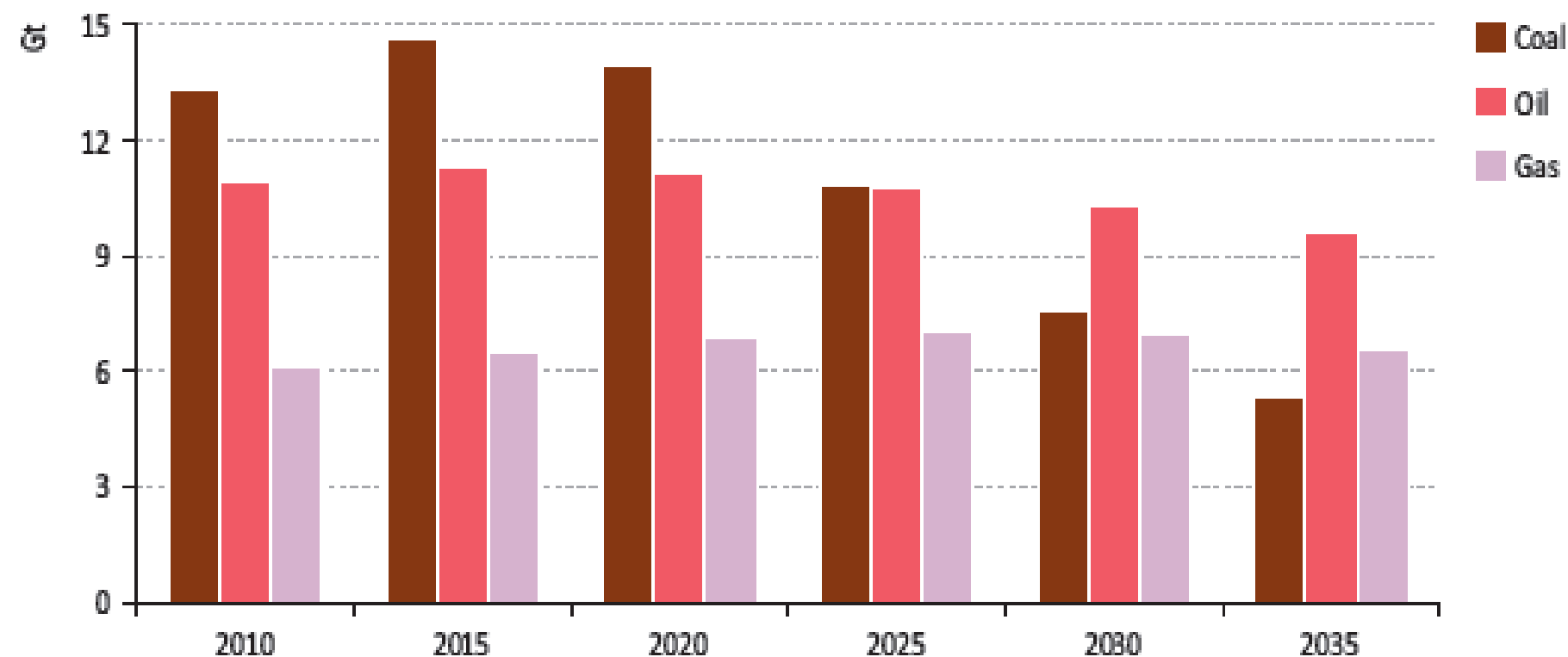
Operator of more than 40
producing oil and gas fields

The world's largest operator in
waters deeper than 100 metres

One of the world's largest net
sellers of crude oil



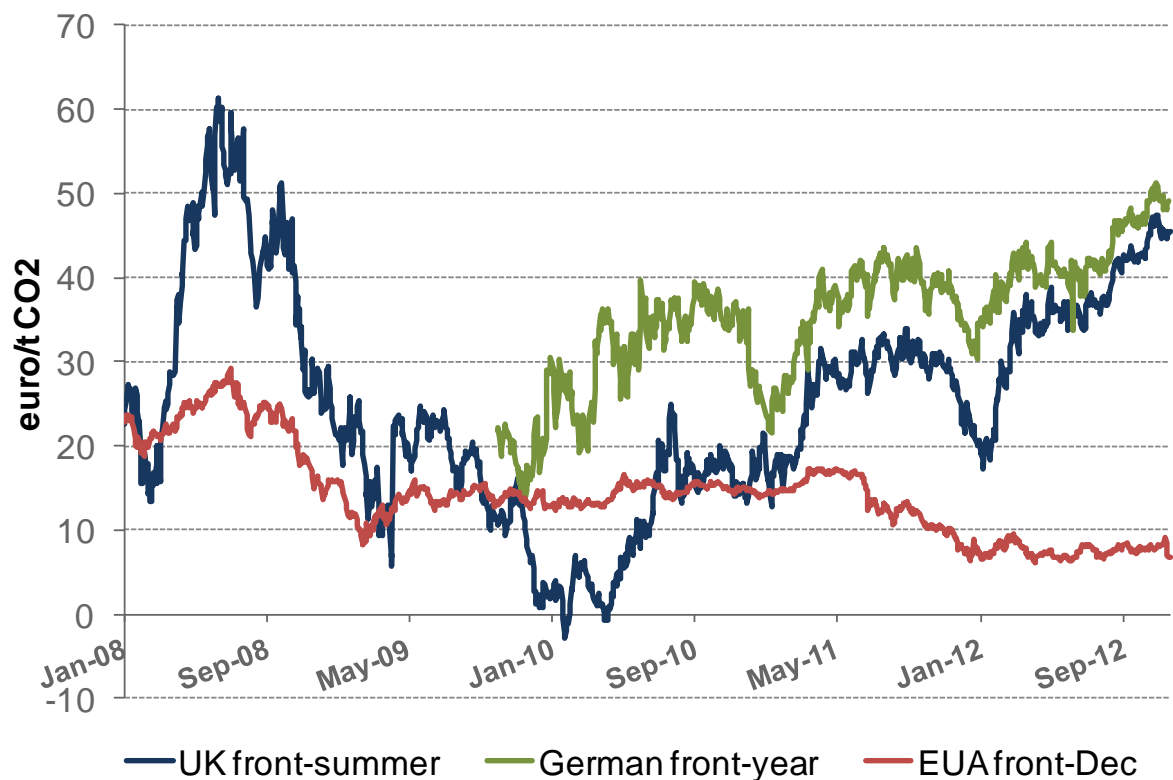
Gas has a key role in the 2 degree scenario



Source: World Energy Outlook

Fuel-switching prices in the UK and Germany

- For Coal plant with 36% efficiency and Gas plant with 49% efficiency
- Higher fuel-switching prices in Germany due to oil-indexed gas prices



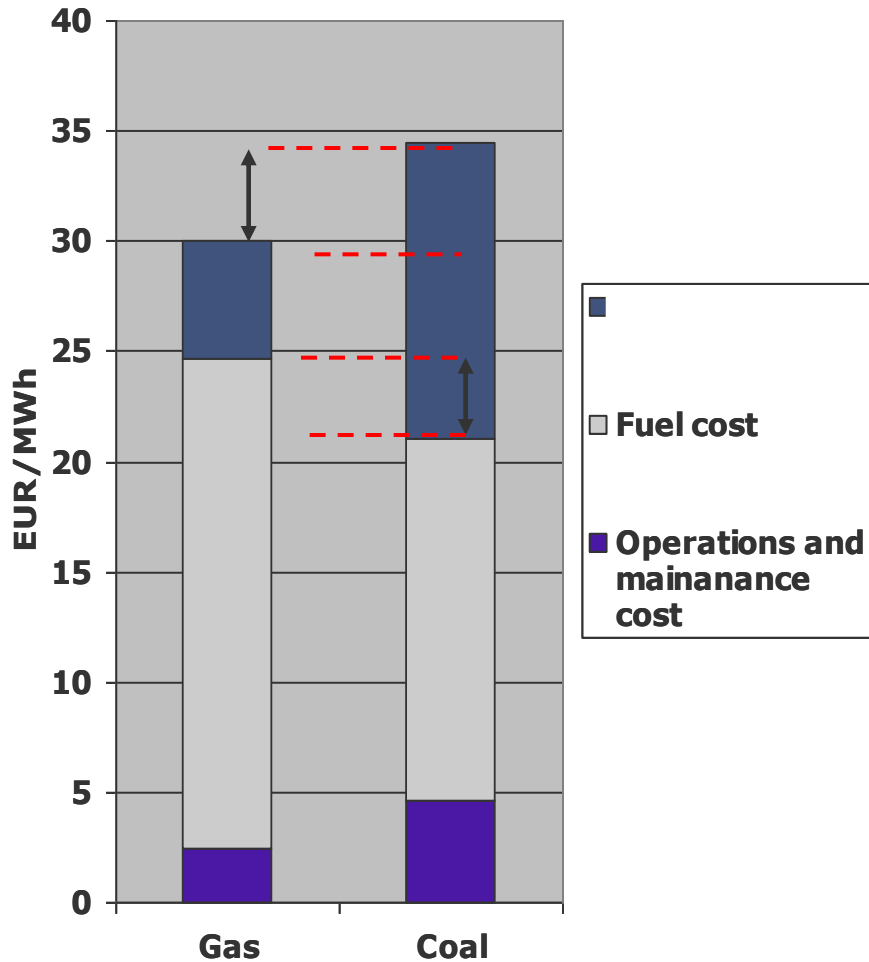
Source: Thomson Reuters Point Carbon

Key messages EU ETS

- Should remain the cornerstone of the EU's policy to combat climate change
 - No climate policy measures that will undermine the EU ETS
- Strengthen EU ETS short term and long term to stimulate fuel switching and investment in cleaner technologies
 - Backloading and retirement of allowance for phase 2
 - Set ambitious 2030 target
 - While allowing for increased use of credits and linking with other trading schemes to ensure global cost efficient emission reductions

Extra slides

Emissions, a decision variable...

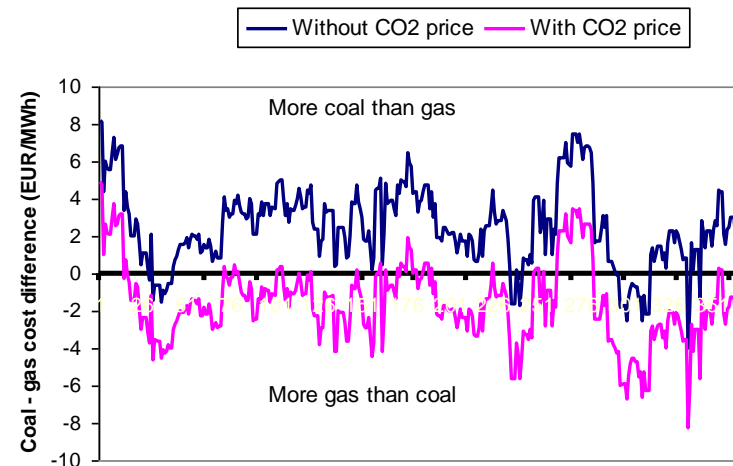


- An operator will dispatch power plants according to lowest cost (SRMC). At certain fuelprices gas will be favoured to coal and vis versa. This is known as fuel switching
 - Coal is the favoured generating fuel
- Coal fired are more exposed to CO2 costs
 - Gas emits ~ 350 g CO2/MWh produced
 - Coal emits ~900 g CO2/MWh produced
- Introduce CO2 cost of EUR 15/t
 - **Gas is favoured!!**

Gas vs coal competition – role of CO2 price

- Coal power plants and gas power plants are direct competitors
- Competition is driven by fuel cost
 - When cost of coal is lower, more coal power is generated
 - When cost of gas is lower, more gas power is generated
- Role of CO2 price
 - Gas power emits less CO2
 - The CO2 price makes it relatively more costly to generate coal power
 - Gas power becomes more competitive
 - The CO2 price helps to reduce CO2 emissions

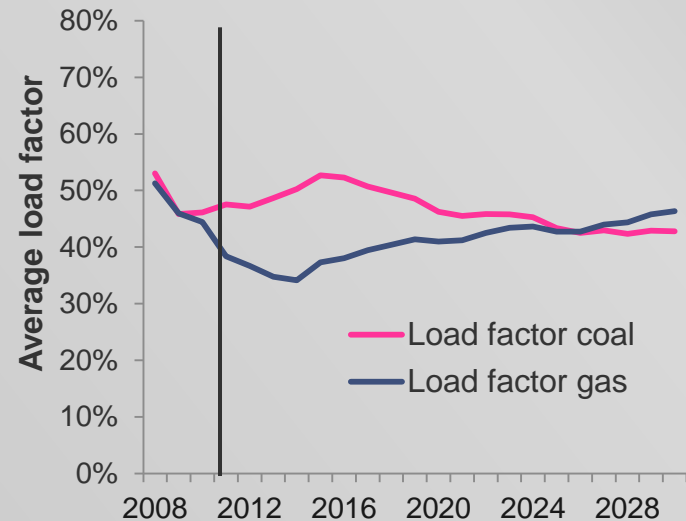
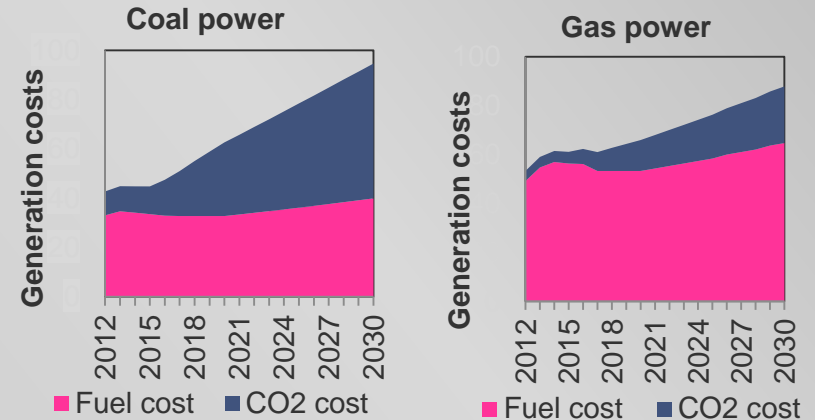
Daily cost of generating gas power vs coal power, 2010-2011



Gas/coal competition

Role of CO2 price

- **CO2 price is a main driver for coal to gas fuel switching**
 - A high CO2 price makes gas more profitable (higher costs for coal)
- **Short/medium term**
 - Marginal costs are higher for gas
 - The current CO2 price does not incentivize fuel switching
 - Average load factors higher for coal
 - UK: Price floor from 2013
- **Long term**
 - Gas becomes more profitable
 - Higher load factors for gas
 - Incentive for gas investments



There's never been a better
time for **good ideas**

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