CIEP Gas Day 2010

Managing market uncertainties – what gas managers can rely on

Thomas Geisel
Senior Vice President Gas Supply West
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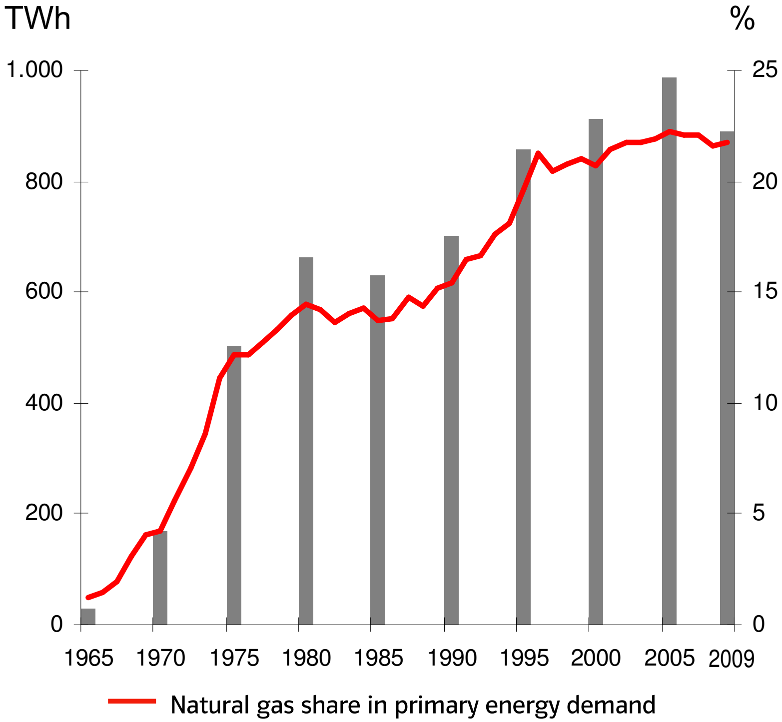
The Hague, September 2nd 2010

The rise of gas in Germany: an unprecedented success story

Gas demand in Germany



Gas sectors and competing energies

Households

Gasoil

Industry

Fuel oil

Gas-to-power: the 'dash for gas' has not (yet) materialised

Highly efficient technology available

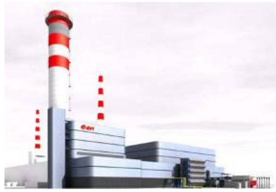

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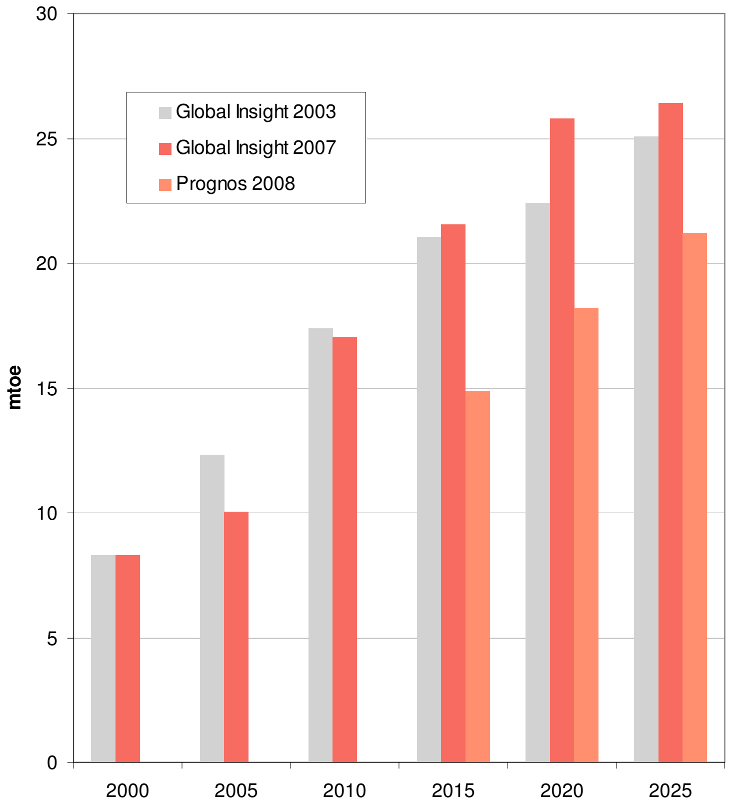
Photo: Siemens

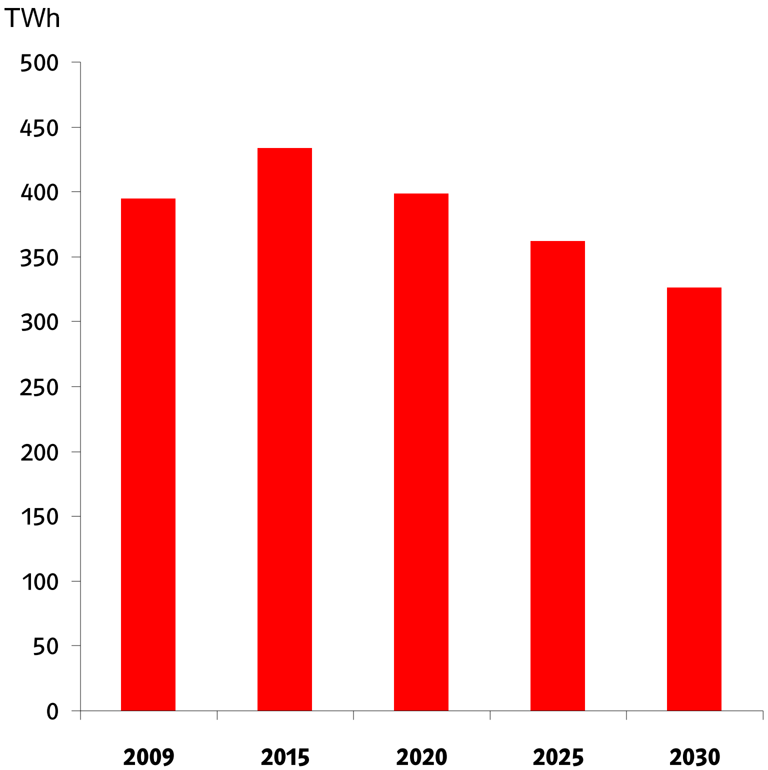
- Combined Cycle Gas Turbine
- Energy efficiency ~60%

Demand projections gas-to-power in Germany



Future demand: decline, uncertainty and 'wild cards'

Declining demand heating sector (GER)



Source: Prognos

Uncertainty and ...

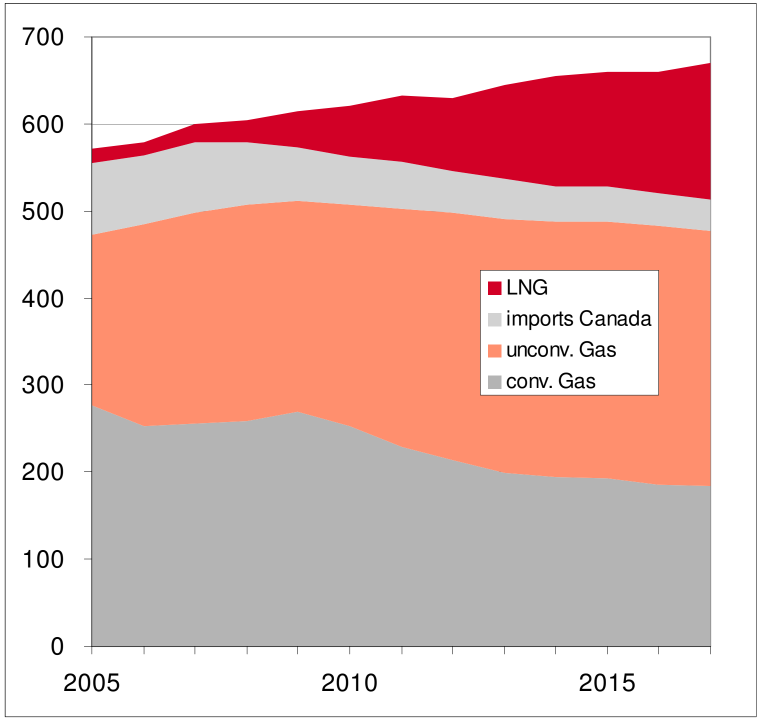
?

...'wild cards'

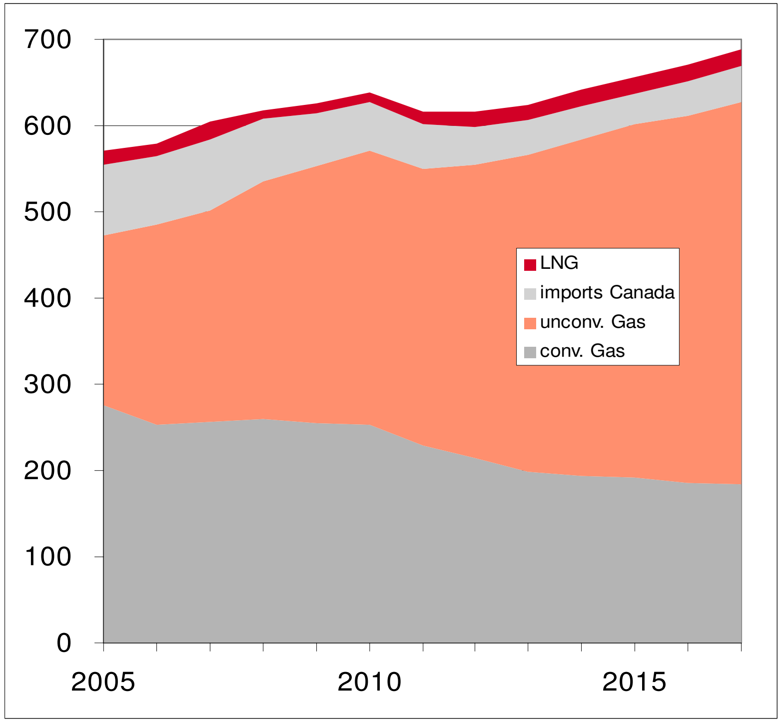
ERDGAS
Natürlich effizient

Changing the supply game: US unconventional gas 'revolution' diverts LNG to Europe

US forecasts February 2008



US forecasts August 2010



Source: EIA

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Shtokman et cetera: will they ever be developed?

Huge supply projects

- Yamal/Bovanenko
- Caspian region/Shah Deniz
- 4th corridor/Nabucco
- Barents Sea/Shtokman

Production regions

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At least one 'certainty': liberalisation moves on unshakeable

Change of market framework

- EU and national legislation (e. g. 3rd energy package)
- Abolition of destination clauses
- Unbundling rules
- TPA for gas infrastructure
- Capacity allocation and congestion management rules
- Commitments of EU gas-importing companies regarding release of entry capacities
- Limitation of long-term sales contracts
- Reduction of TSO market areas in Germany

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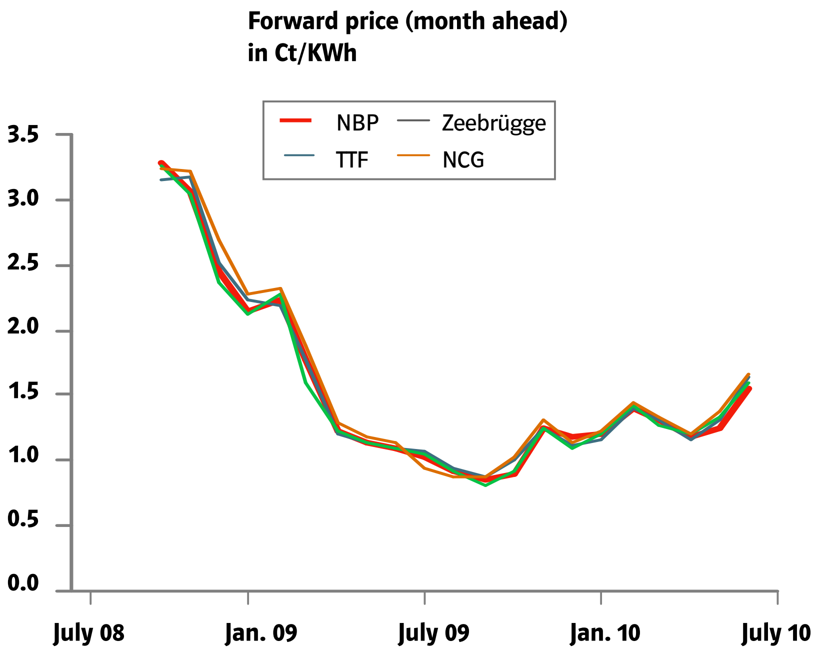
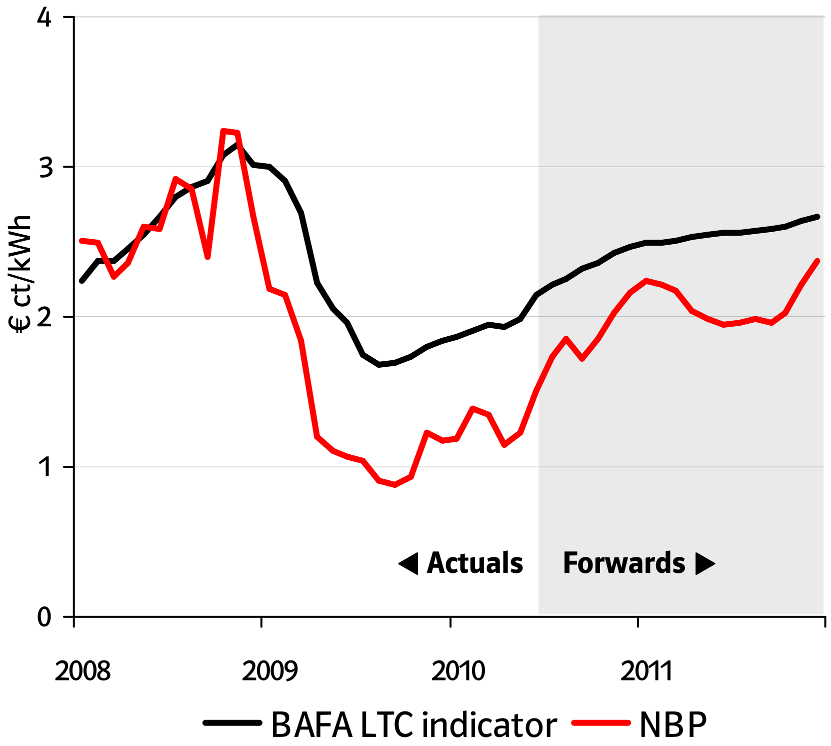
Liberalisation takes its toll: hub prices converge and put long-term contracts (LTCs) ’out of the money’

Recent hub price development



Gas prices in NW Europe



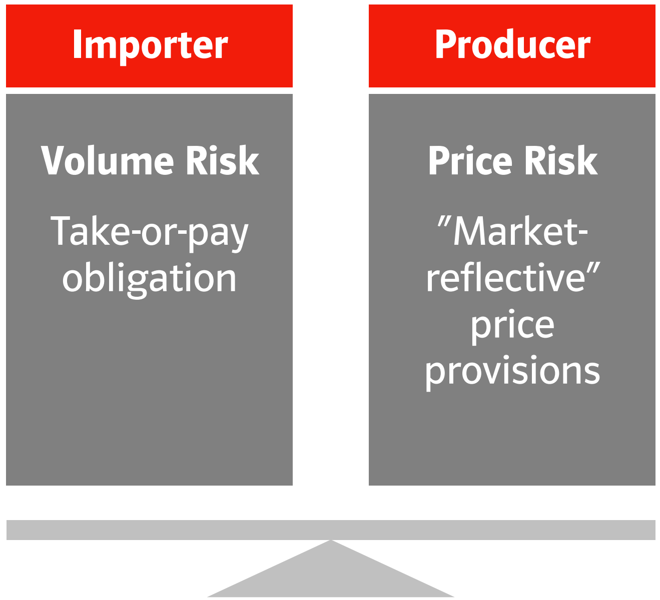
Source: E.ON Ruhrgas

The 're-engineering'-challenge: making traditional LTCs fit for the future

Main LTC characteristics

- Support of long-term investments in supply chain (upstream, transportation)
- Duration is typically around 25-30 years
- Volume flexibility defined by corridor with maximum and minimum take limitations
- Price indexation based on competing fuels (e.g. oil products, coal)
- Entitlement to periodic renegotiation to adapt pricing and overall contract situation to market developments (price review)

Traditional LTC (risk-sharing) business model



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Still a case for LTCs: traditional division of labour remains mutually beneficial

Security of Supply

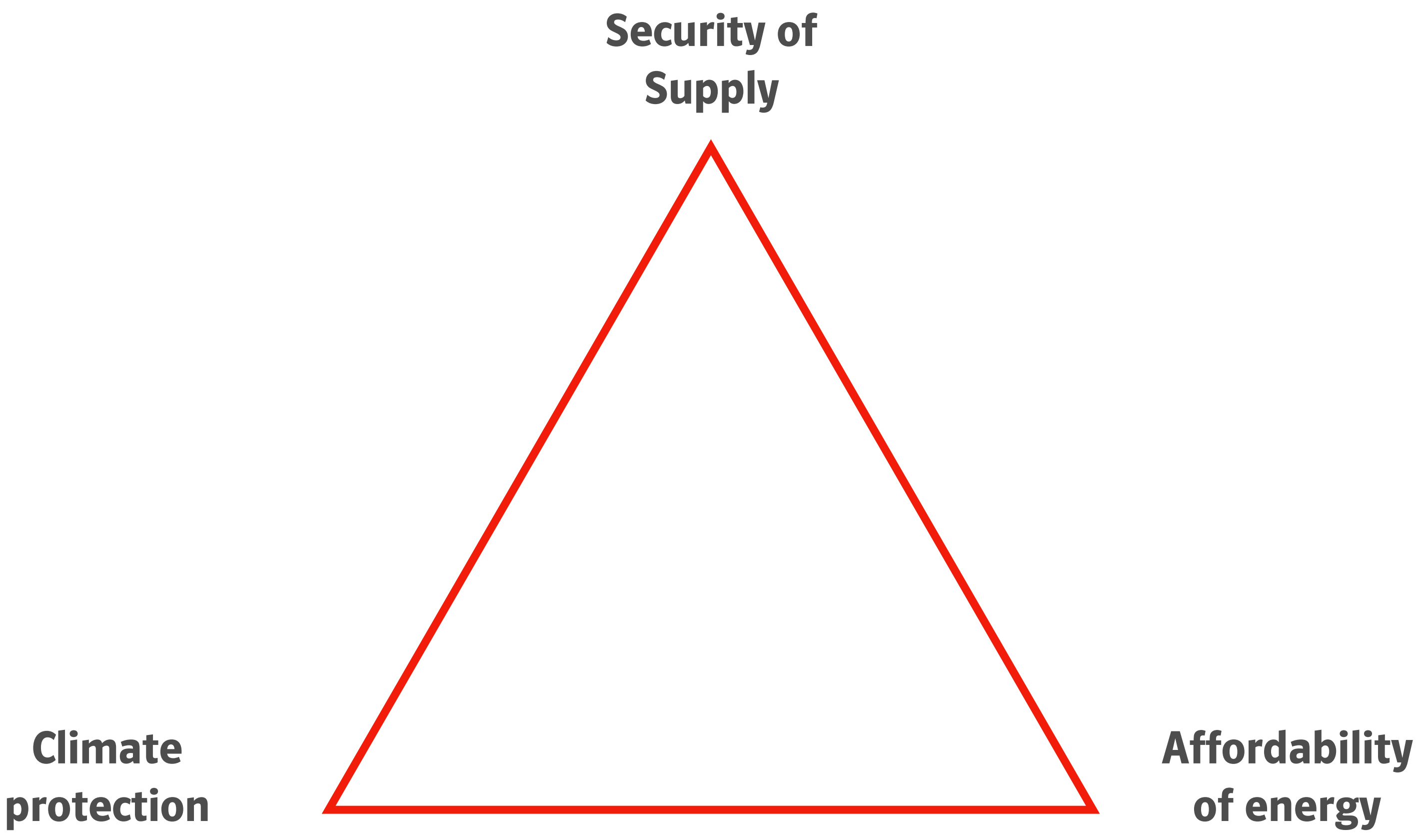


- Constant exploration undertakings
- Flexible production activities
- International pipeline and LNG transports

Security of Demand


- Active midstream and downstream marketing
- E.ON is one of the largest operators of gas-fired power plants in Europe, bringing on stream 5,200 MW in 2010/11
- Development of new markets for natural gas (micro CHP, gas mobility)

Mastering the Energy Trilemma – will the market do the job?



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An uncertain future: natural gas deserves better

- **Cleanest fossil fuel**
- **Long strategic reach**
- **'Crowding out potential' still significant**
- **However, the challenges remain:**
  Import dependence, huge investments, long lead times
- **Regulatory framework must address these challenges**

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