

European energy policy in the new geopolitical context

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Agenda

1. The European energy and climate narrative - what the leaders believed back in 2005-07
2. The transformation of US and global energy markets
3. The geopolitical implications - for the US, for China, for Russia
4. The alarming implications for Europe - less security, higher carbon consumption and less affordability and competitiveness
5. The options now - what is to be done?

European energy and climate policy - the assumptions

- “Ever-rising fossil fuel prices”
- “Peak oil”
- “The future would be (current) renewables”
- “Energy efficiency measures would cut demand and cut bills”
- “Europe will lead, others will follow”

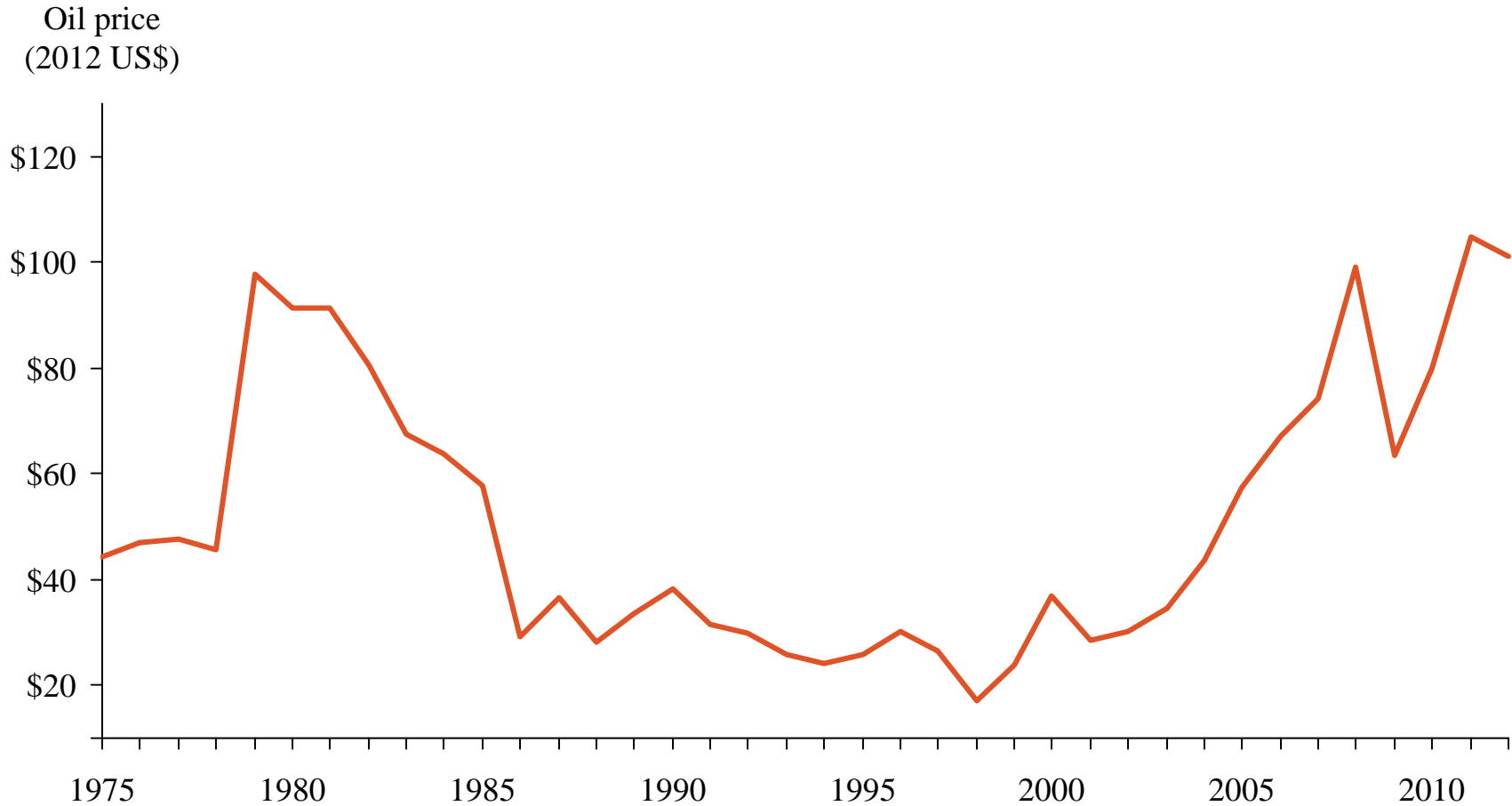
These assumptions implied...

- US would be faced with high, volatile oil and gas prices
- EU would have competitive advantage
- Russian gas could be kept at bay
- Europe would have world-beating renewable businesses

“World leadership on climate change”

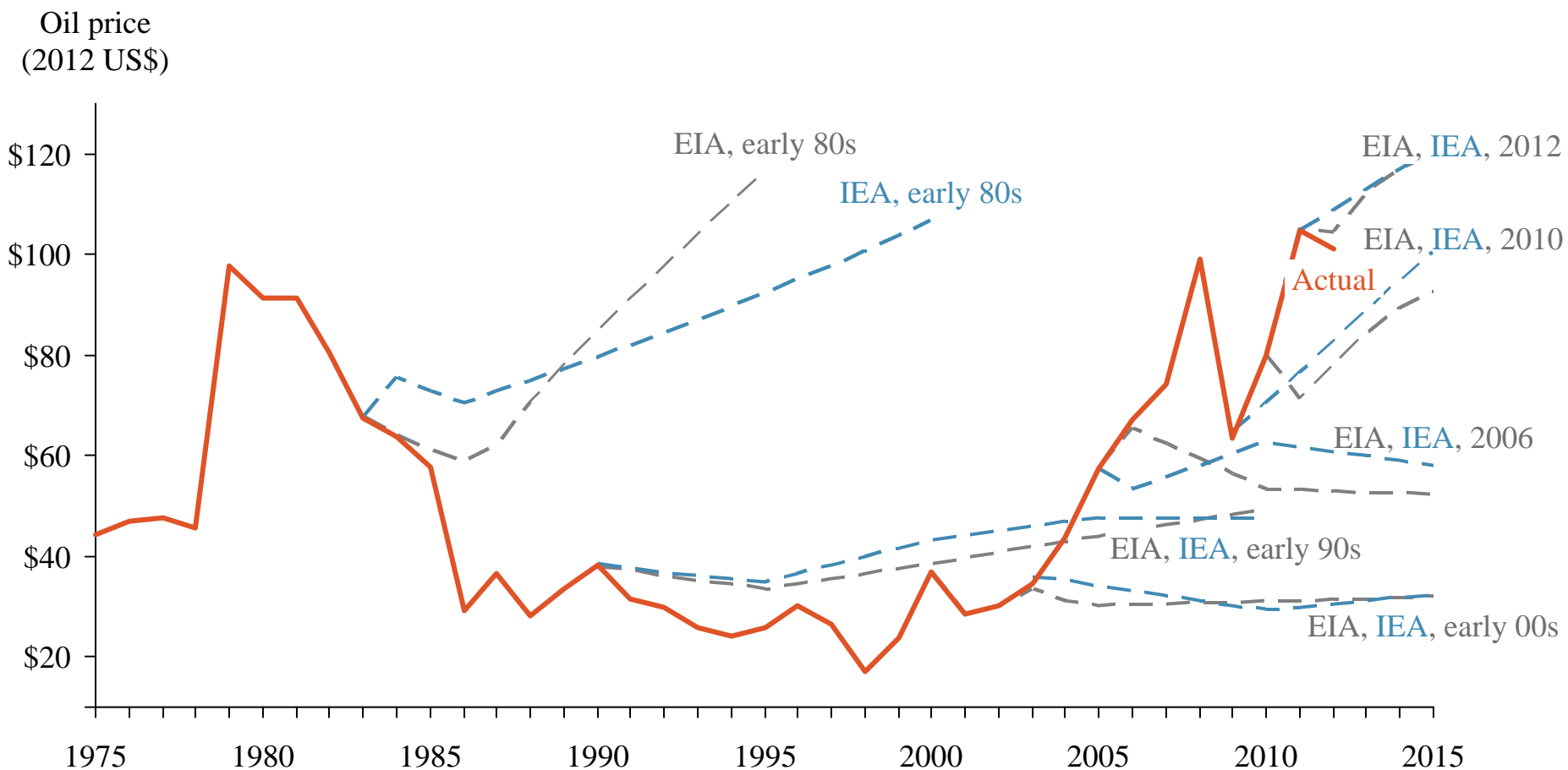
- Connie Hedegaard in 2010: “[Copenhagen] tells me that leadership by example works”
- Jose Manuel Barroso in 2012: “The world needs an EU...that leads the fight against climate change.”

The price of oil 1975 - 2012



Notes: Average imported crude oil prices. All figures are in constant 2012 US\$/bbl.

The price of oil 1975 - 2012

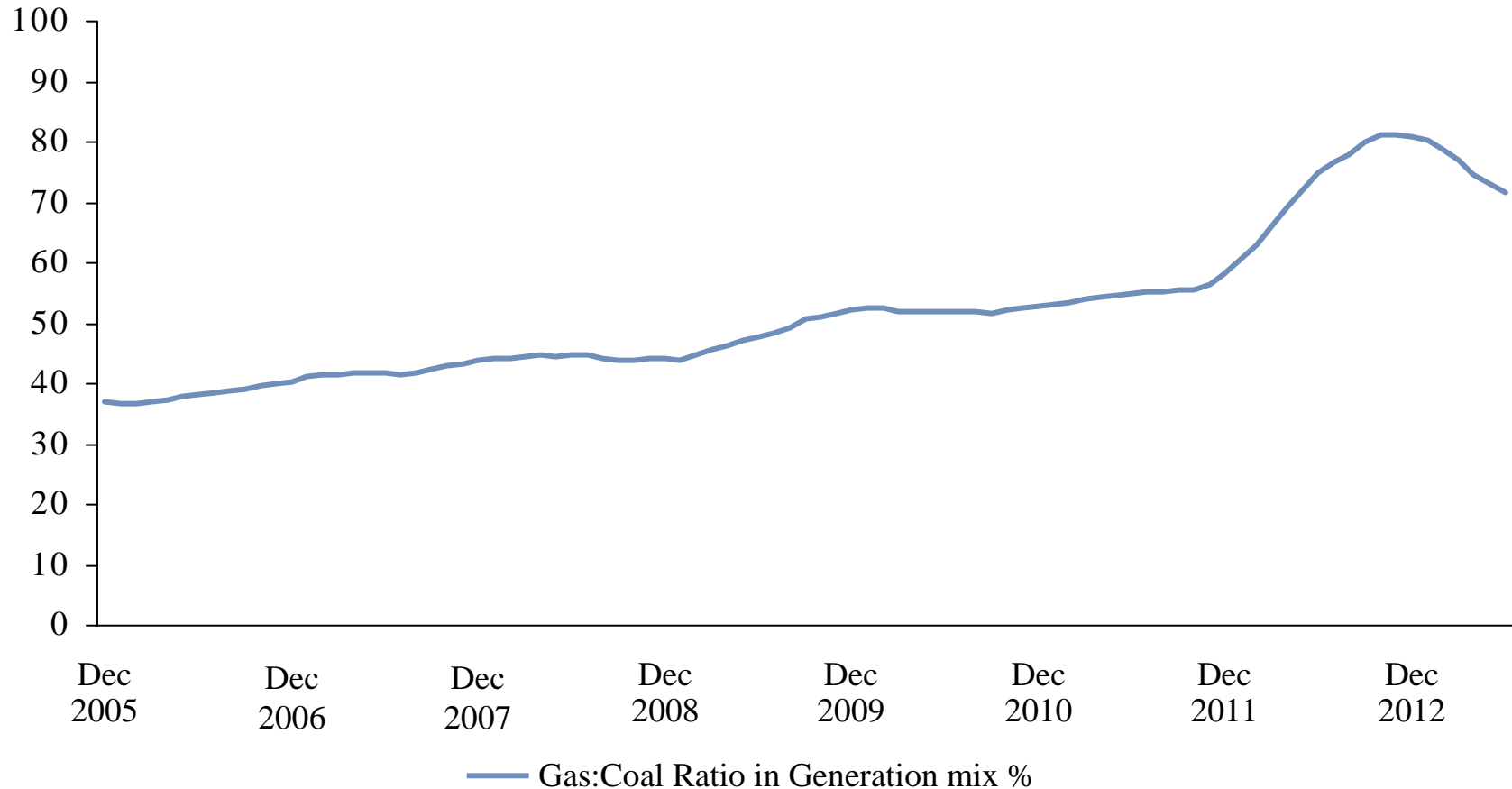


Notes: IEA and EIA imported crude oil price forecasts, selected years, baseline scenarios. All figures are in constant 2012 US\$/bbl.

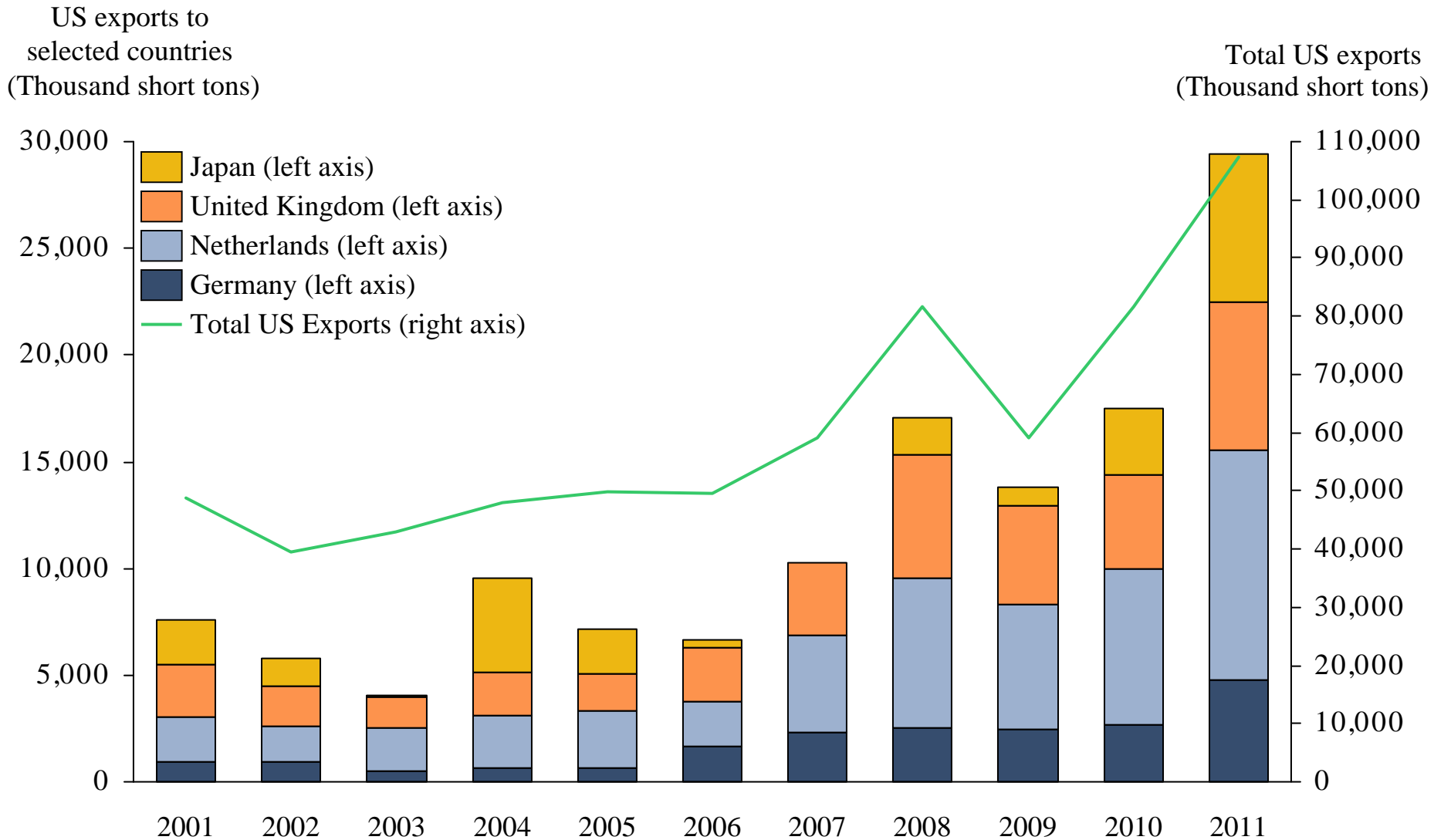
Sources: IEA, *World Energy Outlook*, 1982, 1993, 2000, 2006, 2010, 2012
EIA, *Annual Energy Outlook*, 1983, 1993, 2000, 2006, 2010, 2012

The amount of gas-fired electricity in the US almost reached the level of coal

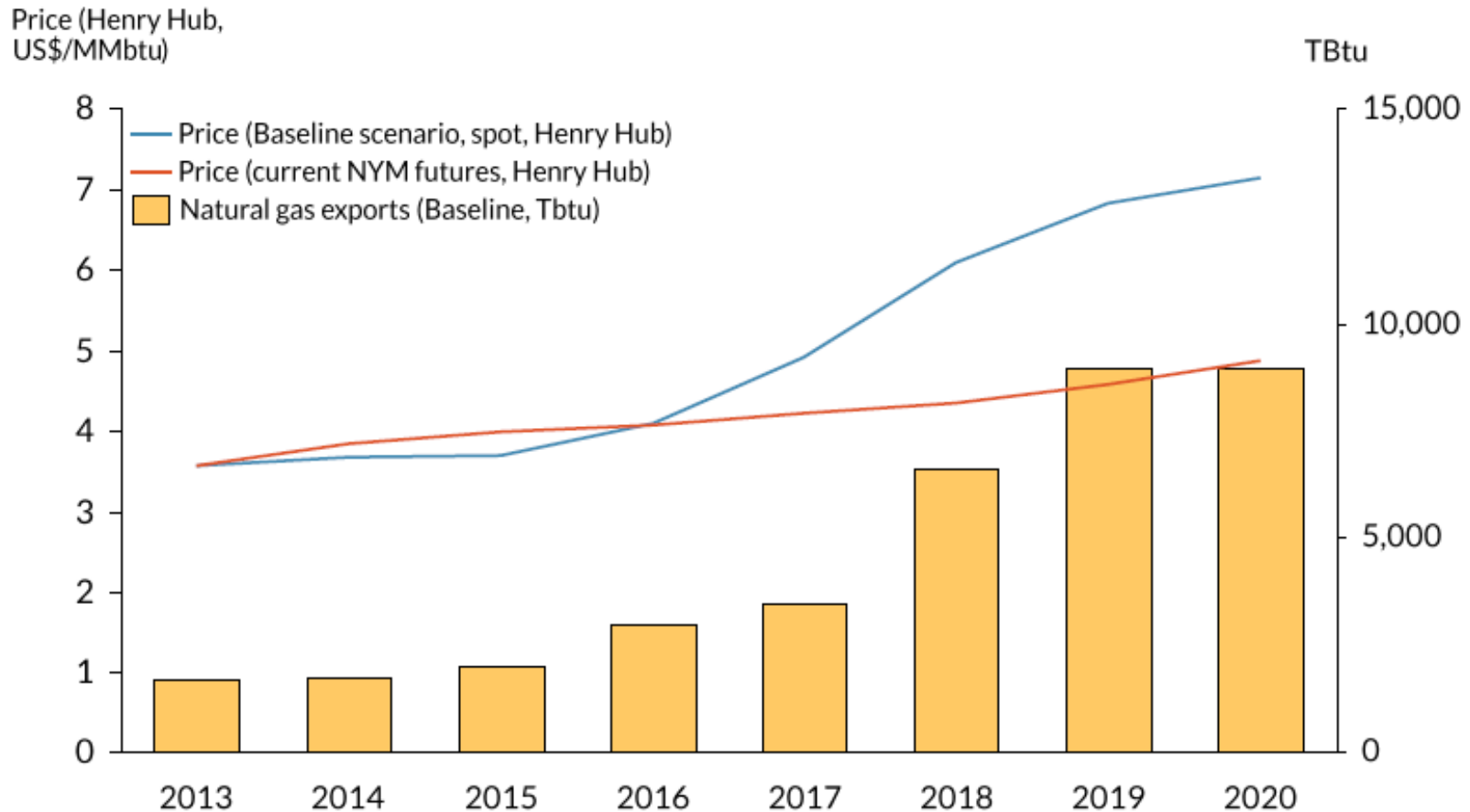
Gas:coal ratio
in generation mix
(%; electricity output)



US coal exports exploded



Main transmission mechanisms for US shale gas exports – it increases the US internal price

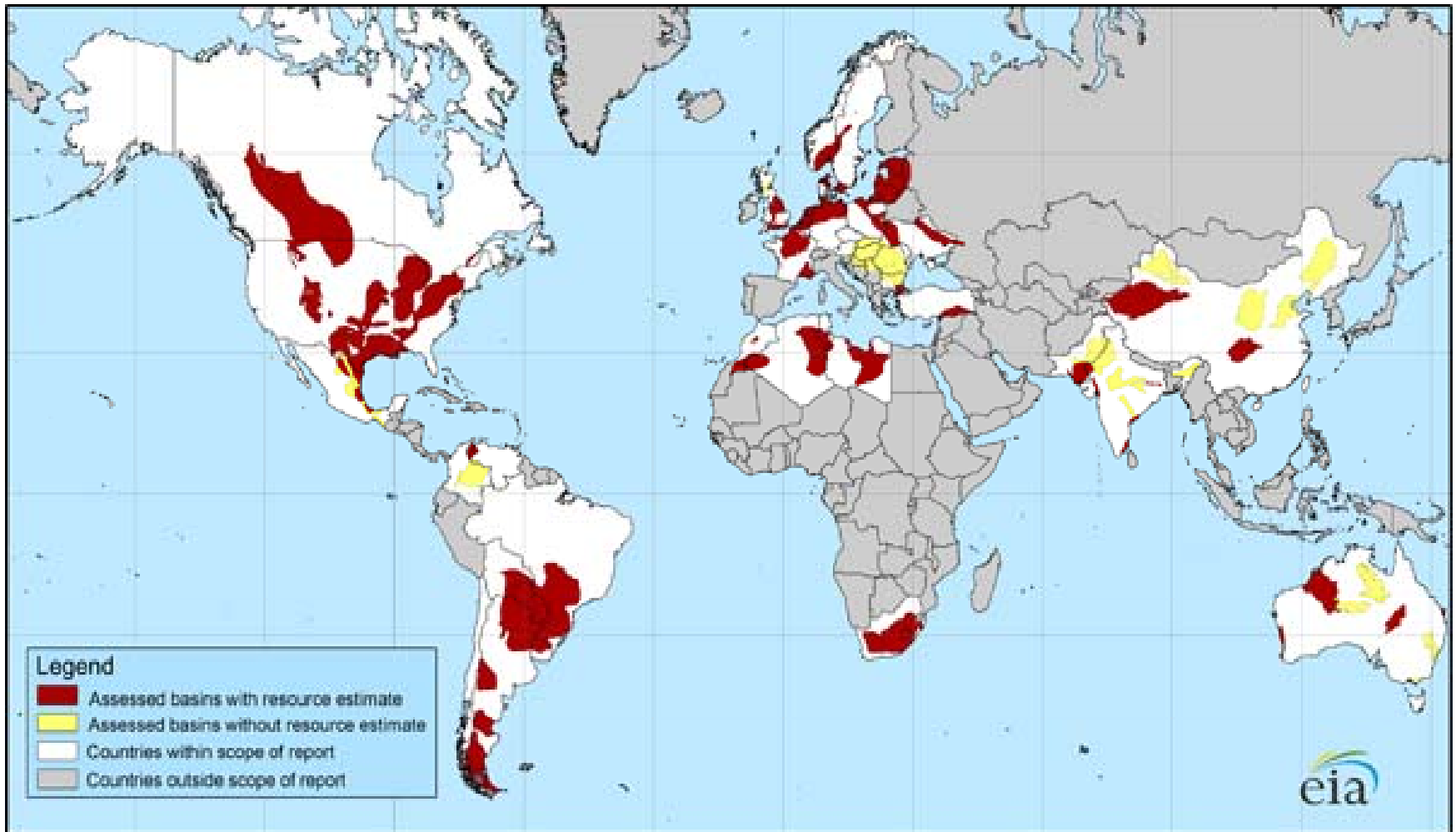


Notes: EIA, IHSGI, EVA, and ICF all predict nominal 2020 Henry Hub prices in the range of \$4.80 to \$6.50

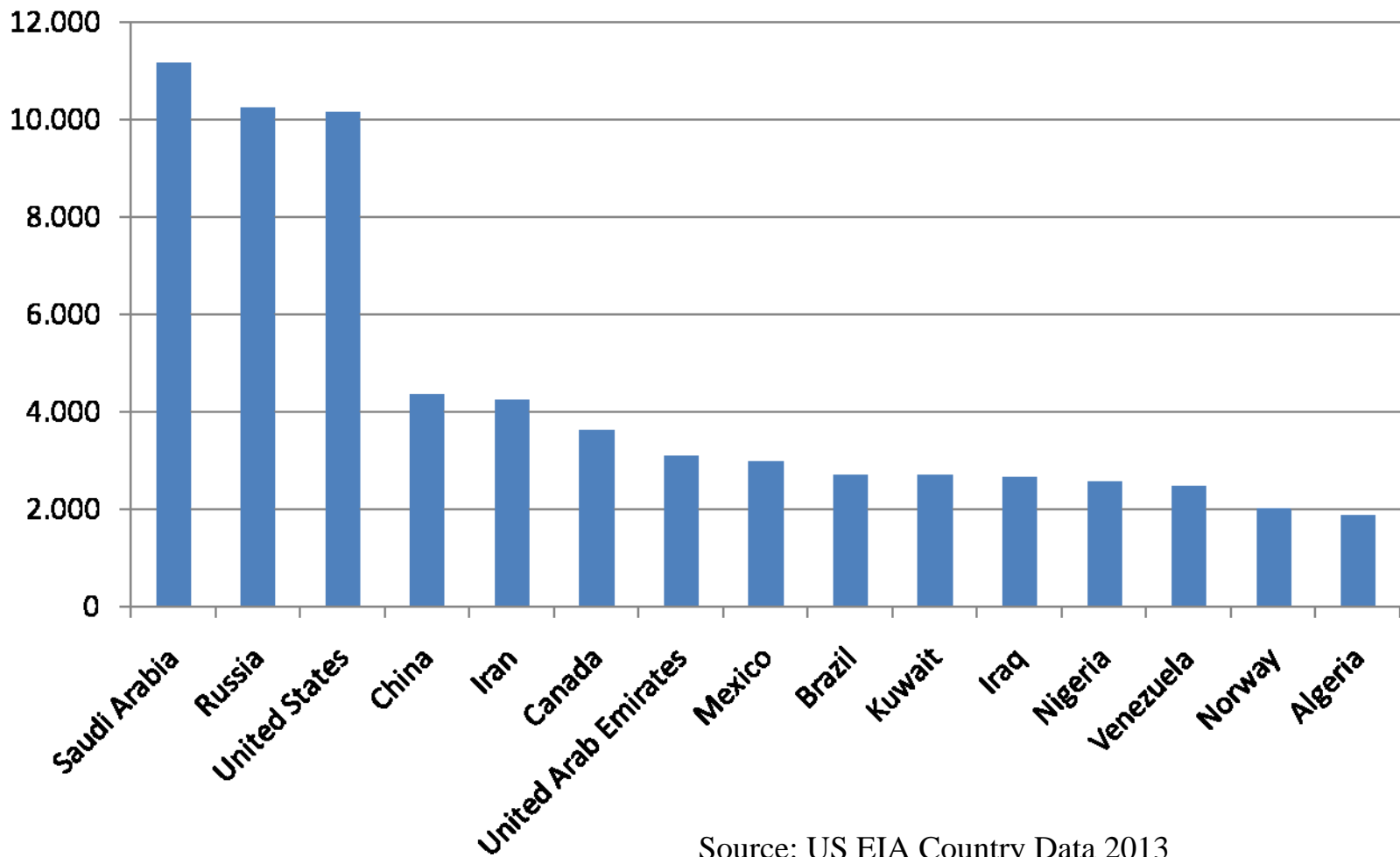
Source: Aurora Energy Research AER-GLO model; EIA

Scenario: Baseline

World shale gas & oil reserves



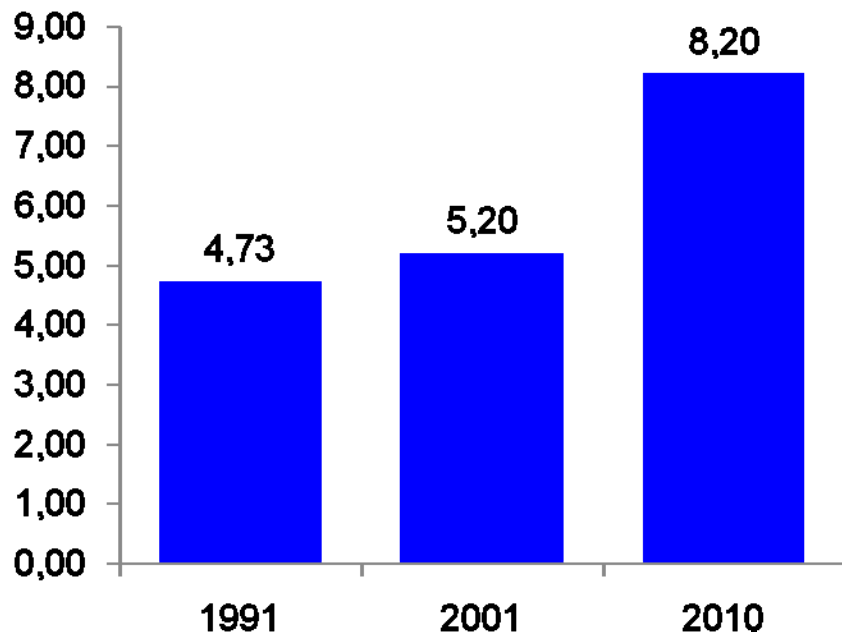
Top world oil producers 2011 (thousand barrels per day)



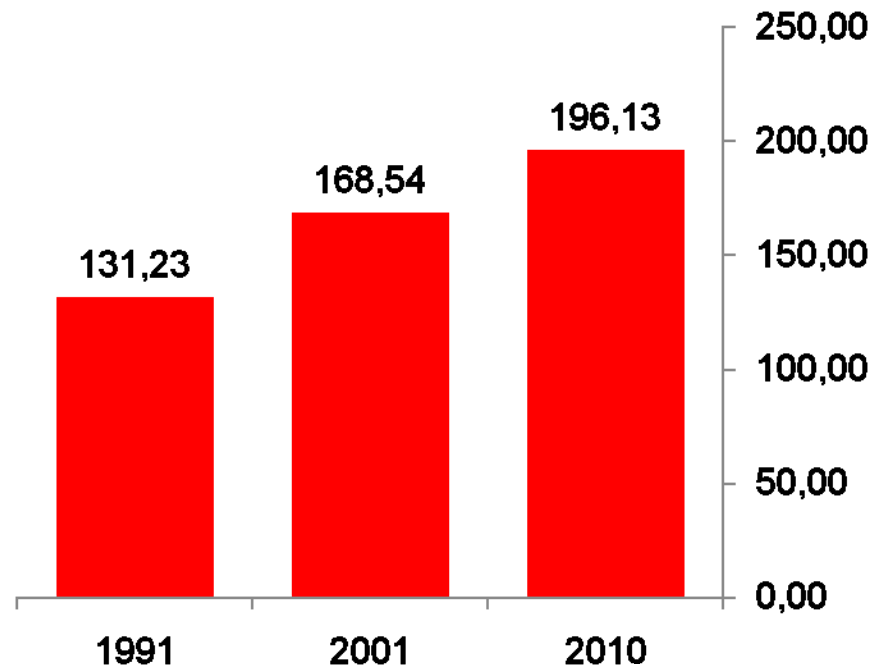
Source: US EIA Country Data 2013

And for reserves...

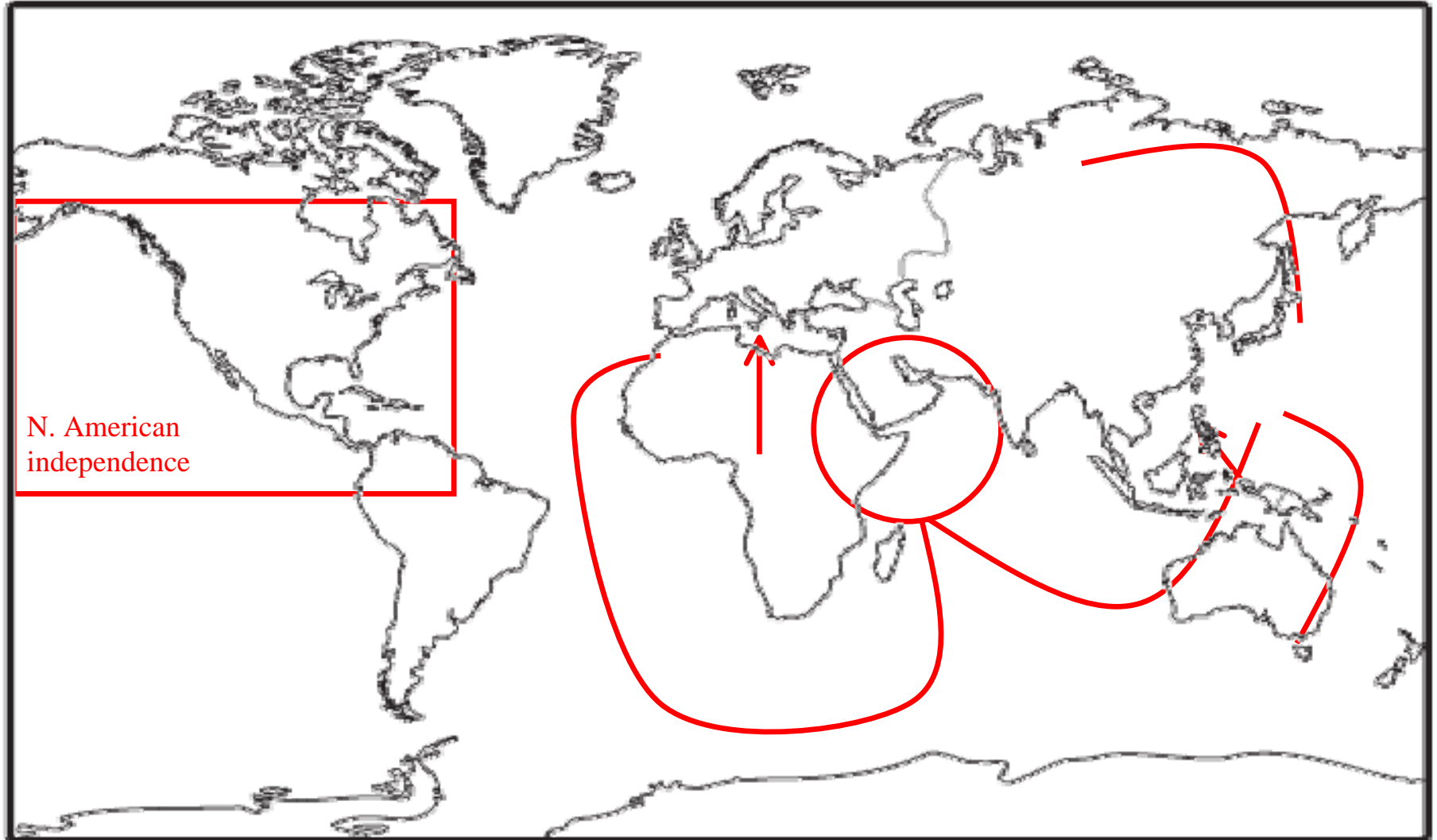
US gas reserves 1991-2010
(trillion cubic metres)



World gas reserves 1991-2010
(trillion cubic metres)



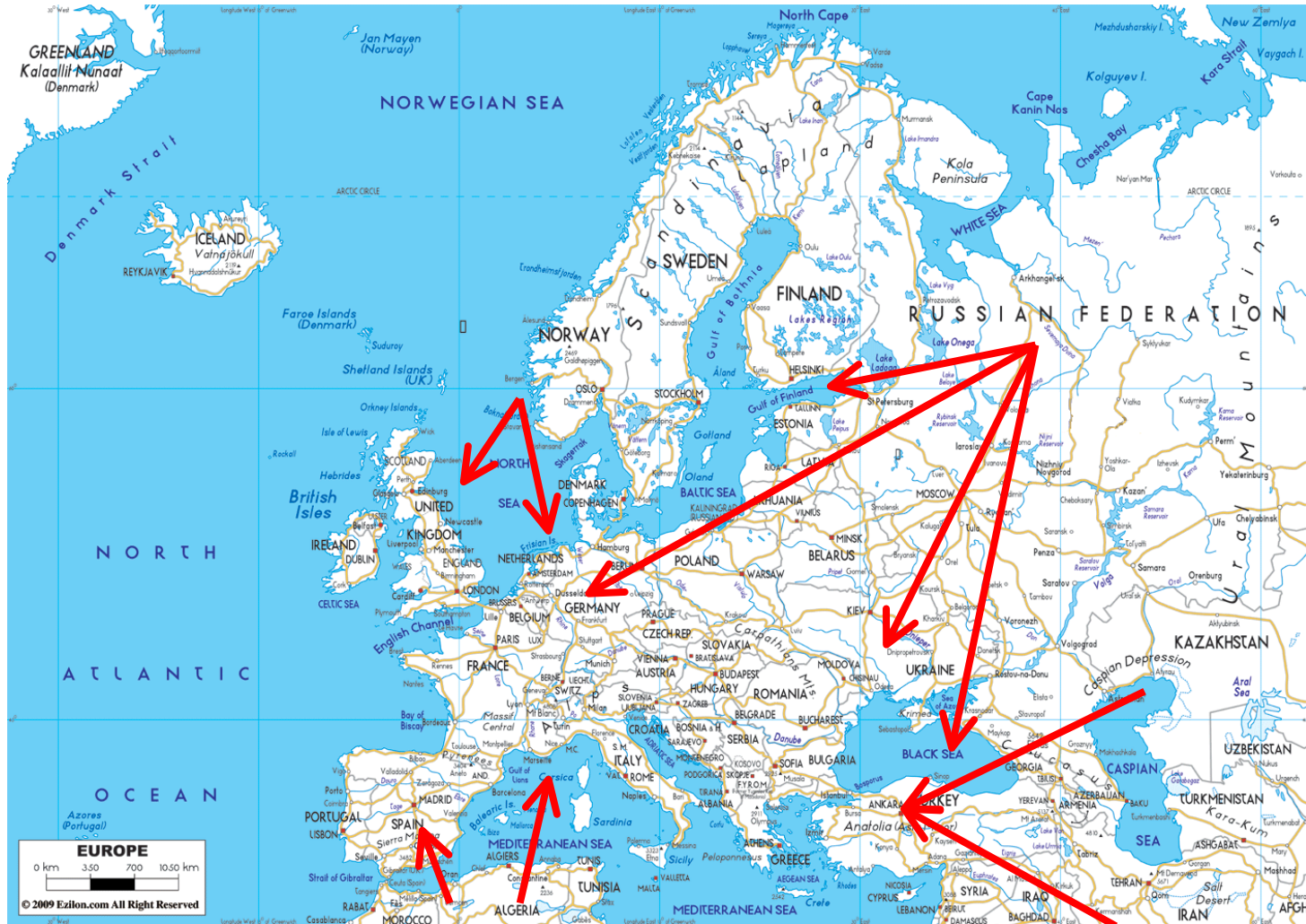
A new energy landscape



Alarming implications for Europe

- No fracking
- Concentration on intermittent, high-cost renewables
- No Nabucco
- German ↔ Russian Nord Stream
- Fragmentation of markets
- Re-nationalisation of energy policies
- Reliance on US military umbrella

European Security of supply



Europe's high carbon consumption

- The UK example:
 - 1990-2005 ↓ 15% carbon production
 - 1990-2005 ↑ 19% carbon consumption
- Europe is deindustrialising, but not reducing consumption of energy-dependent goods and services.

And then....

- Dash-for-coal
- gas → coal + nuclear → coal in Germany
- 7-8 GW new coal in Germany
- ↑ carbon production in Germany

European affordability

- Eurozone crises + economic recession \Rightarrow \downarrow household income
- Energy bills now reflect renewables costs
- Voters revolt

\Rightarrow Political action on prices in UK, Germany, Spain

European competitiveness

- US gas prices 2 – 4
- Europe gas prices 10 – 14
- Petrochemical feedstocks (especially ethane in US)

⇒ Some energy intensive European exits

⇒ New investment in US not Europe

In summary

US

Moving towards energy independence

Reducing carbon emissions

Less dependency on the Middle East

Energy intensive industrial renaissance and reshoring

Europe

Increased import dependencies

Increasing carbon emissions

More dependence on the Middle East

Energy intensive industrial decline & exits

Affordability crisis

The options now – what is to be done?

SHORT TERM

- Bring back gas stations
- Create capacity markets
- Avoid 2030 renewables targets

MEDIUM TERM

- Collective energy security measures
- Infrastructure interconnections
- Focus on Turkey
- Role of nuclear

LONGER TERM

- The new technologies
- Fracking and EU-own reserves
- Complete internal market integration

DIETER HELM



THE CARBON CRUNCH

**How We're Getting Climate Change
Wrong – and How to Fix It**

www.dieterhelm.co.uk

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Econ and pols climate change