

Energy Security: Markets and Policy

Pierre Noël

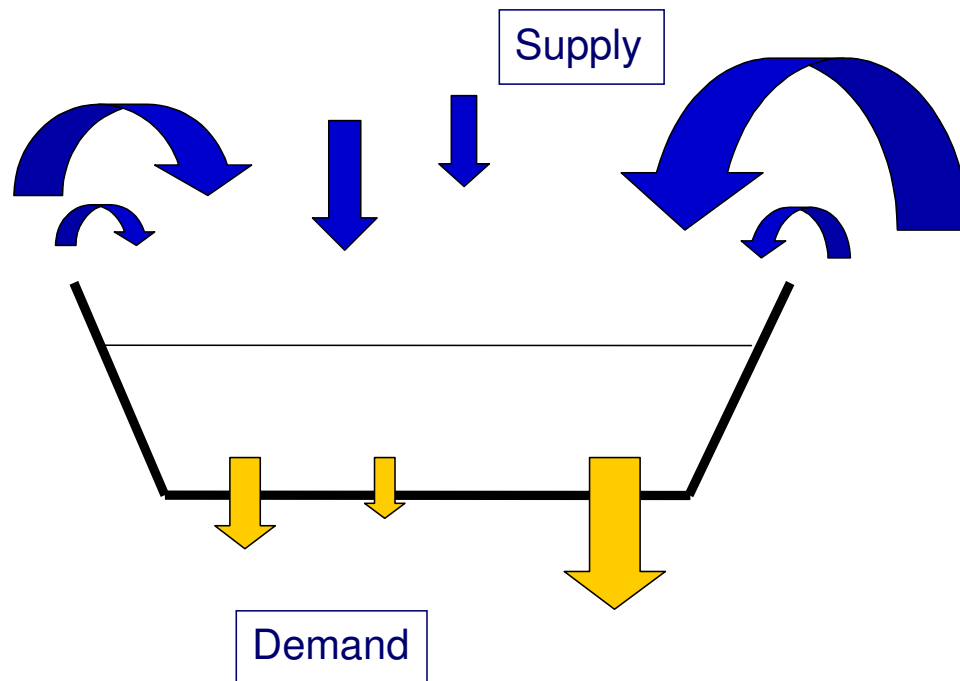
EPRG, University of Cambridge

Critical Infrastructure Conference, London, 20 April 2011

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- Global Oil and the Middle East
- European Gas and Russia
- Japan Disaster: Lessons for Europe

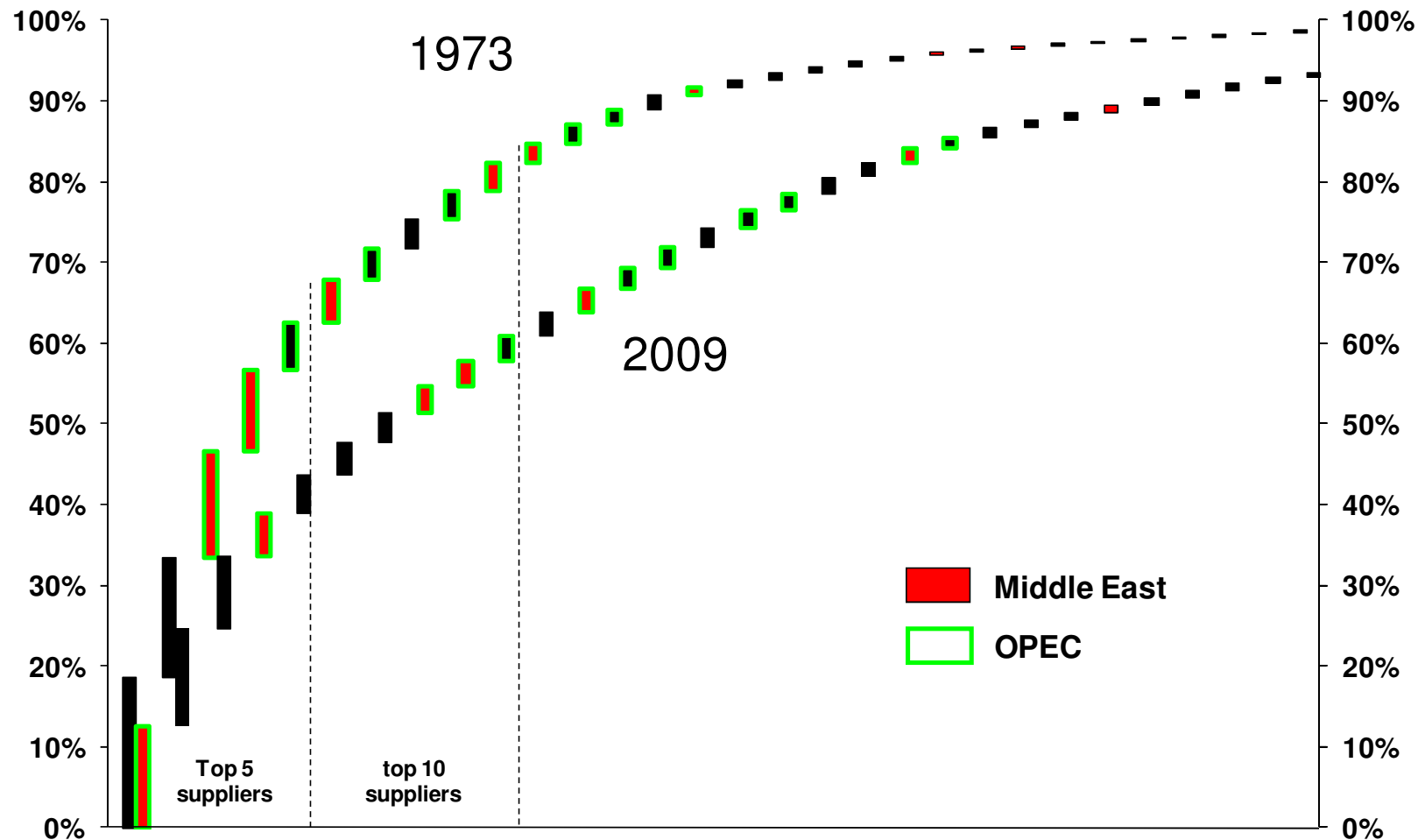
One global oil market



Key implications

1. No need to secure 'access' to resources
2. US does not depend on the Middle East
3. China's upstream investment do not reduce our access to the oil market
4. Embargoes are never credible
5. Supply disruptions are felt by all consumers
6. The market itself provides security – *alternative supply always available*

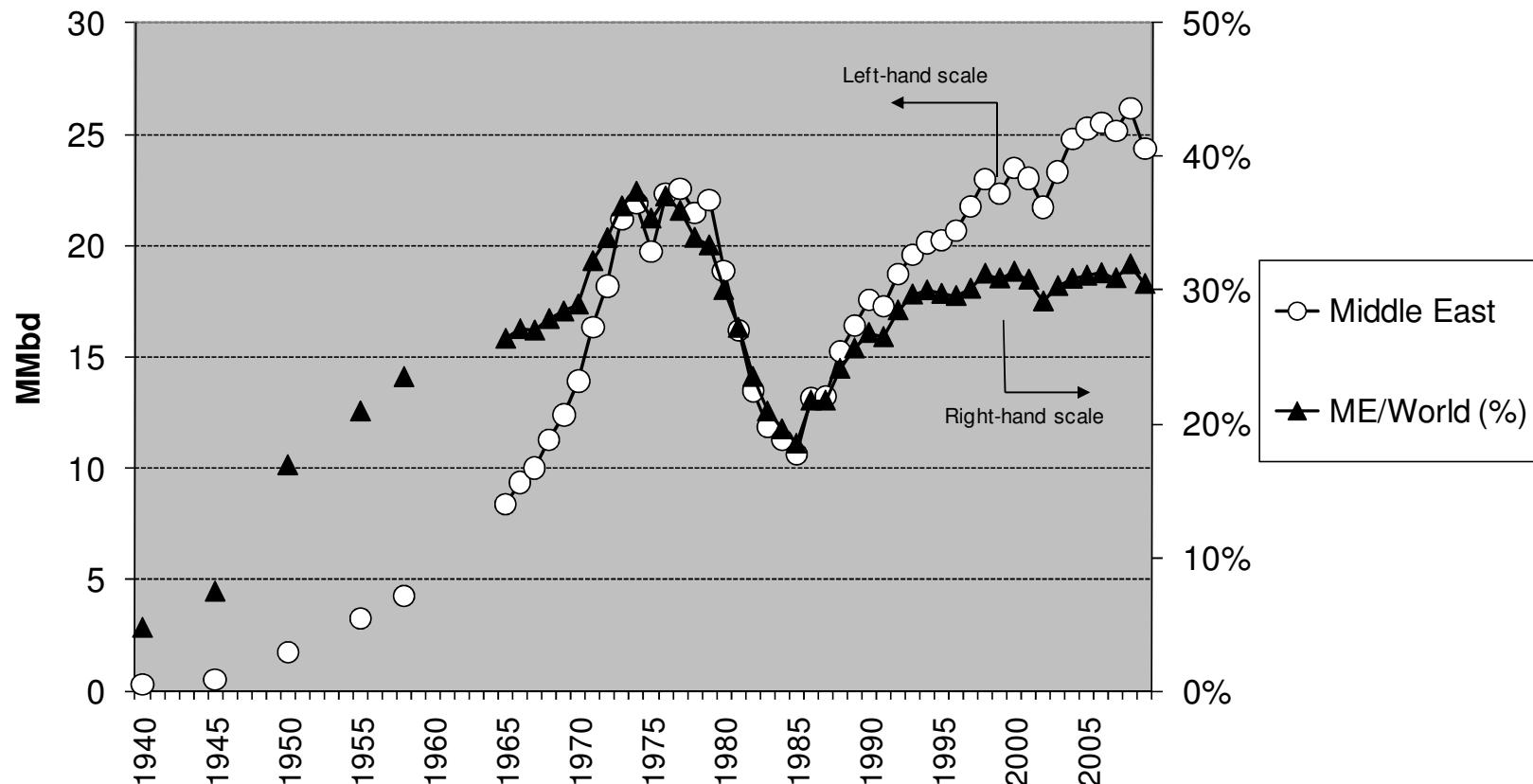
Oil supply has never been so diversified



Data source: BP Statistical Review 2010

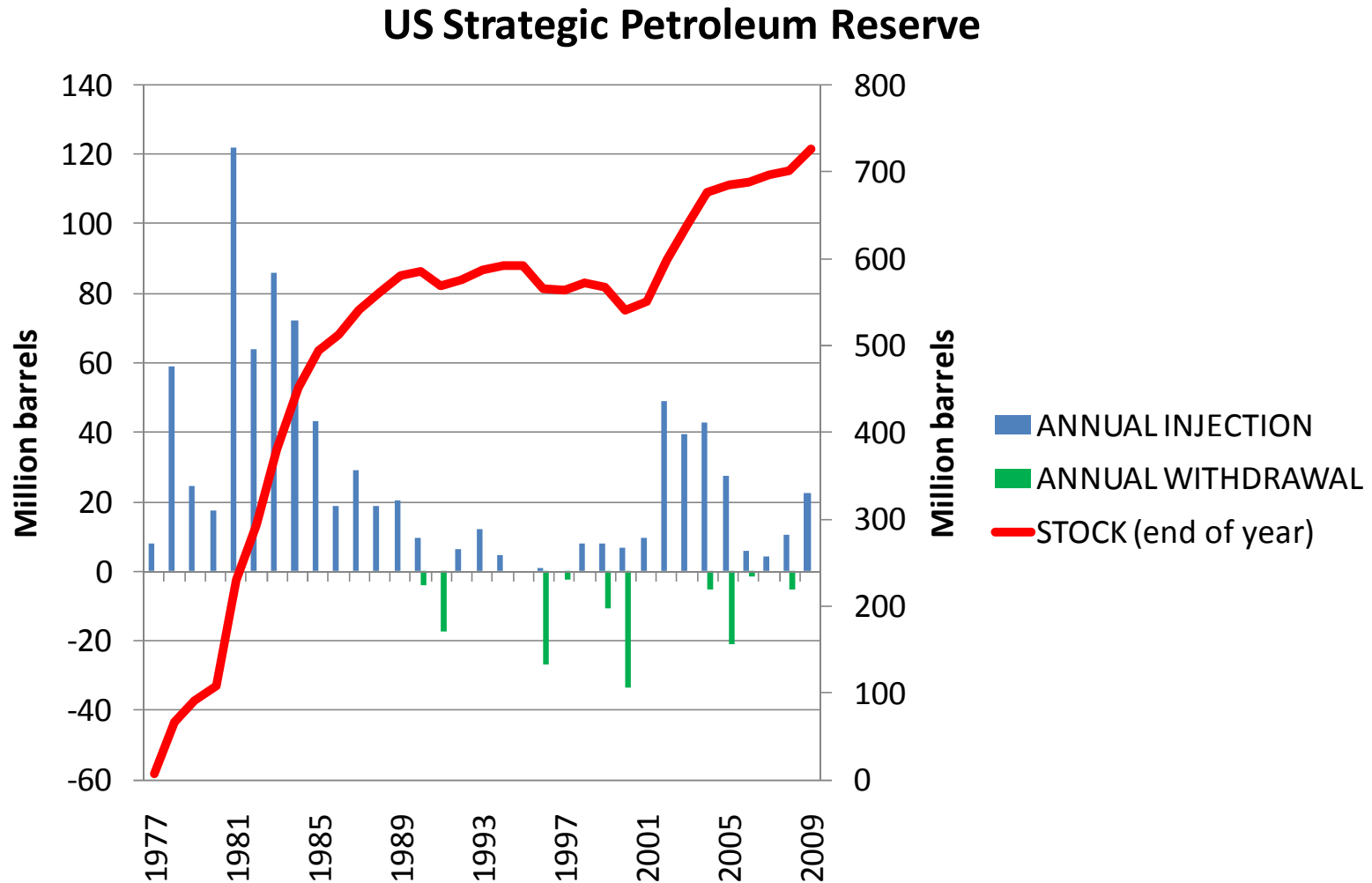
Middle East = 30% of world oil

Middle East Oil Production, 1940-2009



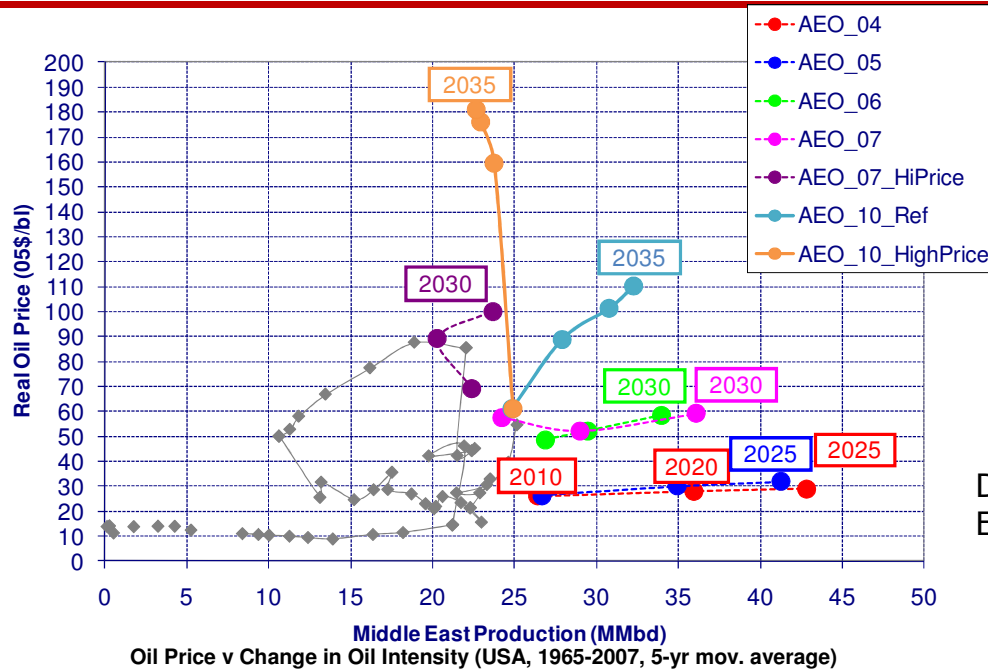
Sources: American Petroleum Institute, "Petroleum Facts & Figures", 1958 ; BP Statistical Review of World Energy, 2010

Massive strategic oil stocks



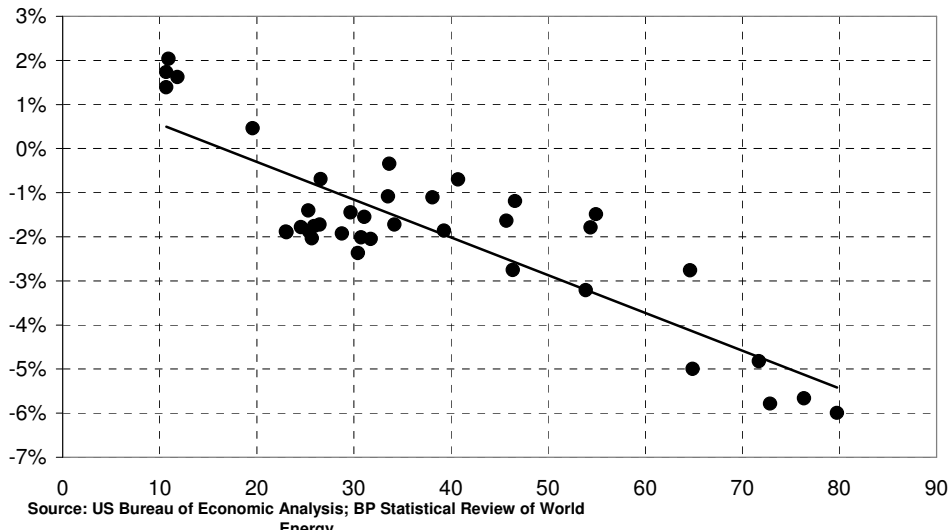
Data source: US DOE/EIA

High prices limit our dependence...



on the Middle East

Data sources: DOE/EIA, Annual Energy Outlook, various years

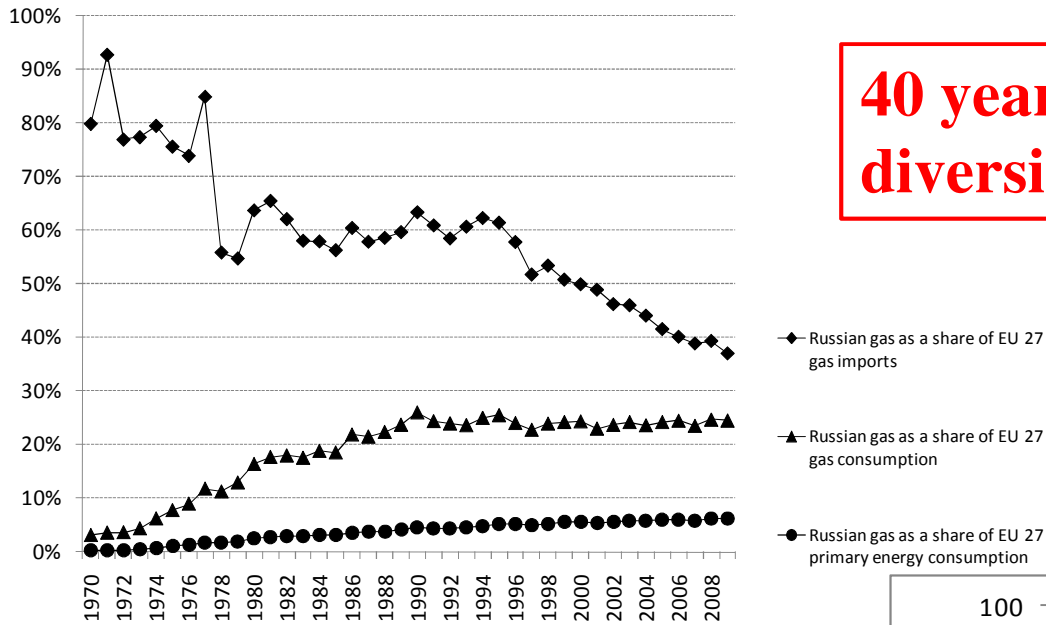


on oil itself

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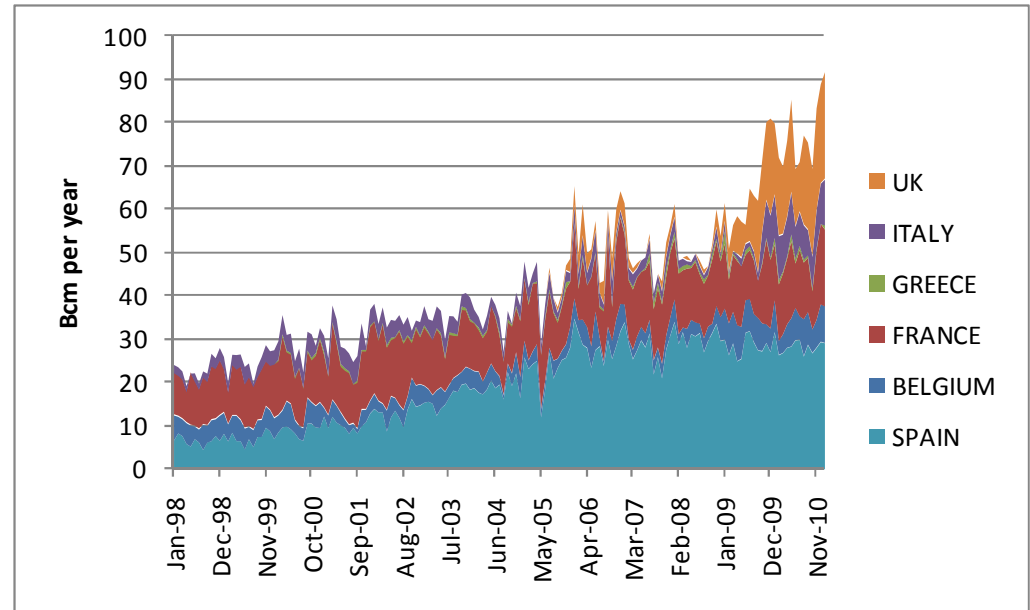
Russian gas: important, not dominant



40 years of diversification...

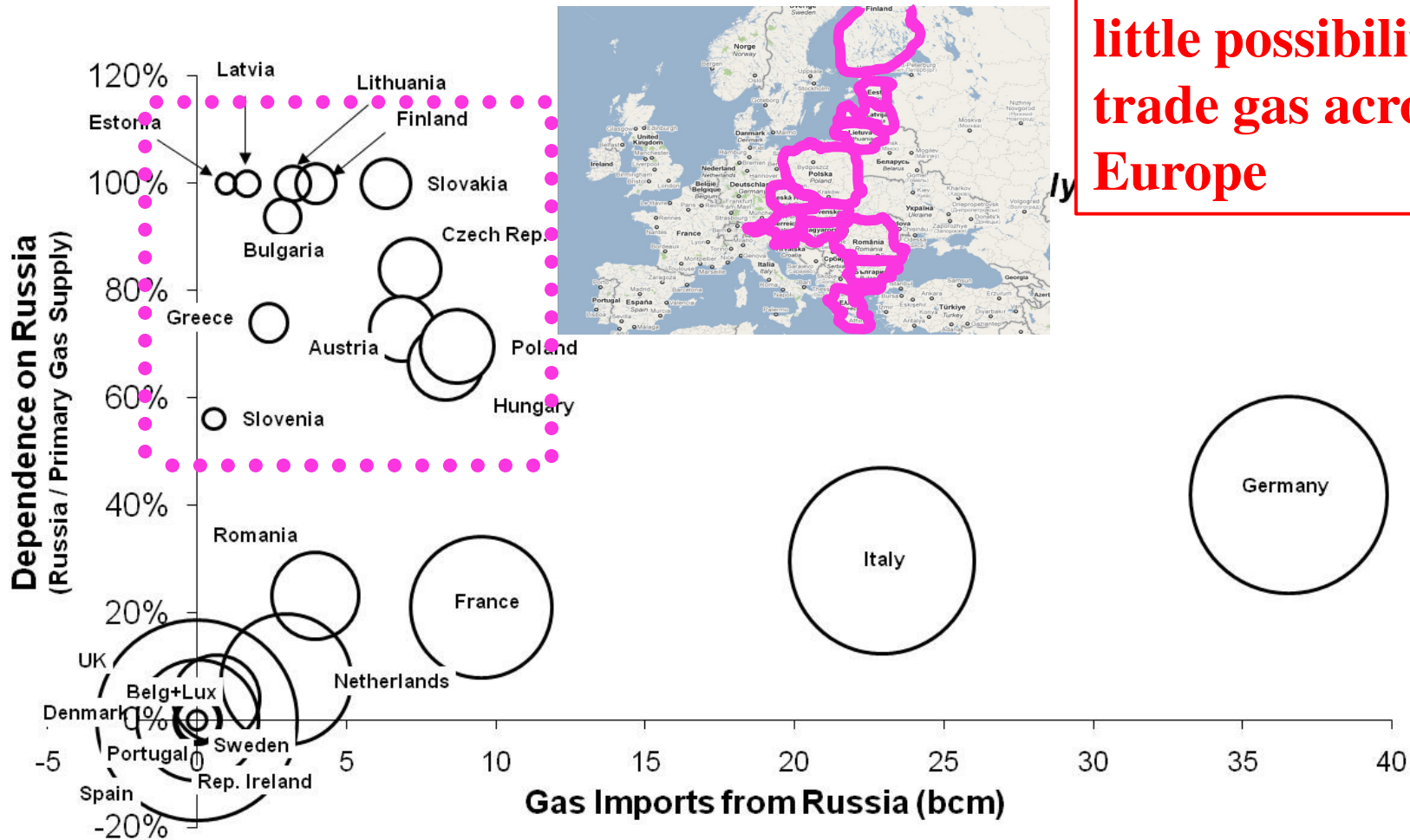
Source: BP Statistical Review of World Energy; International Energy Agency; Eurostat

...accelerated by the LNG boom



Supply diversity is in Western Europe

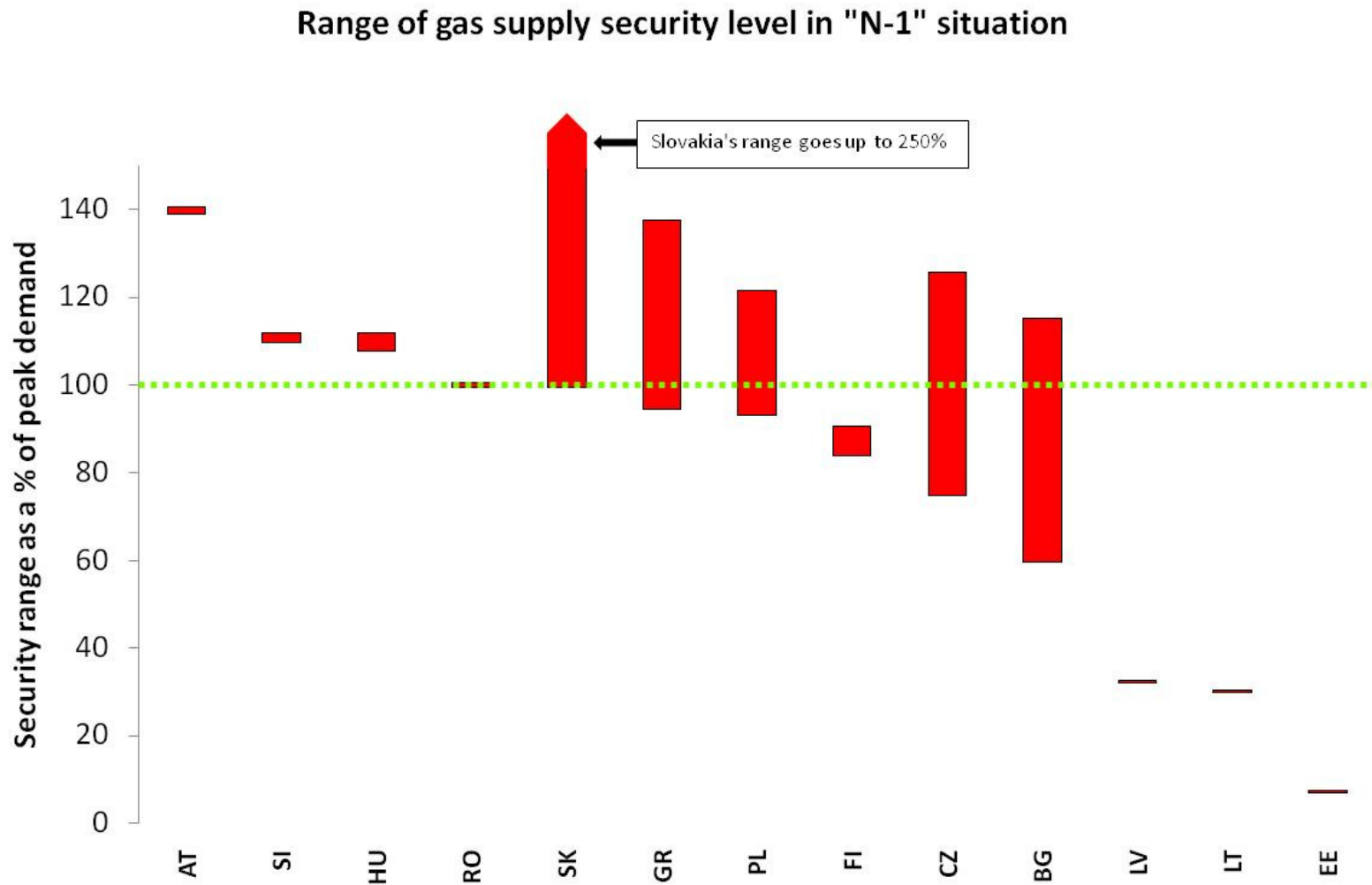
...and there is little possibility to trade gas across Europe



Data source: BP Statistical Review; Eurostat; National Statistics -- 2008 data

Electricity Policy
Research Group

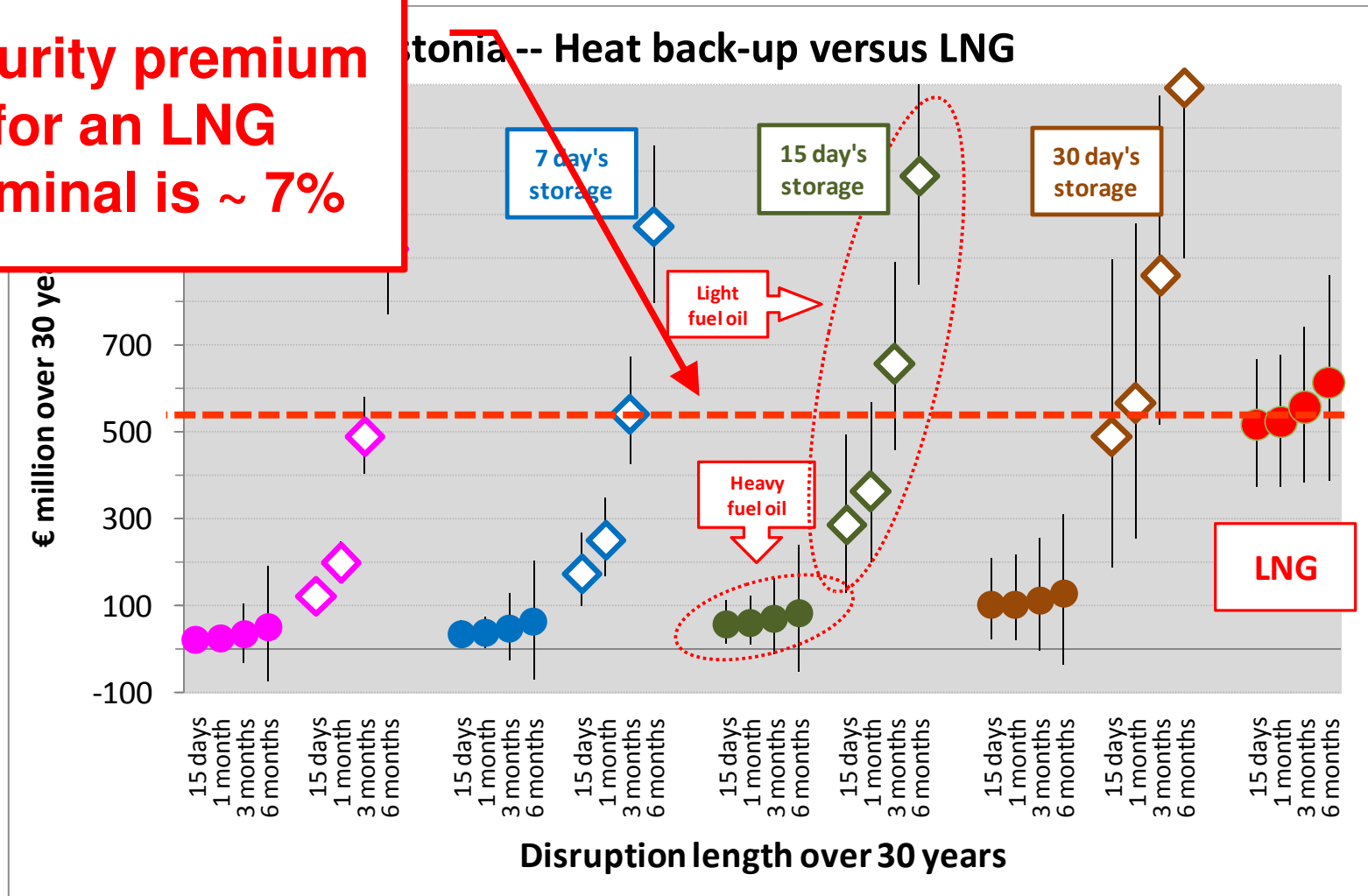
Gas security in Russia-dependent EU



Source: Noel & Findlater, 2010

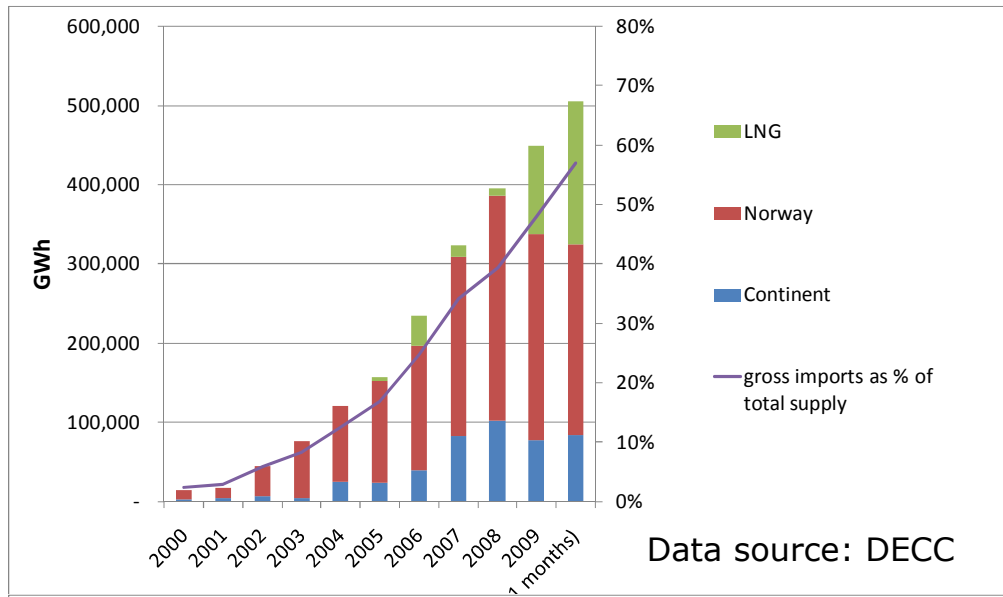
Cost of improving security: Estonia

Security premium for an LNG terminal is ~ 7%

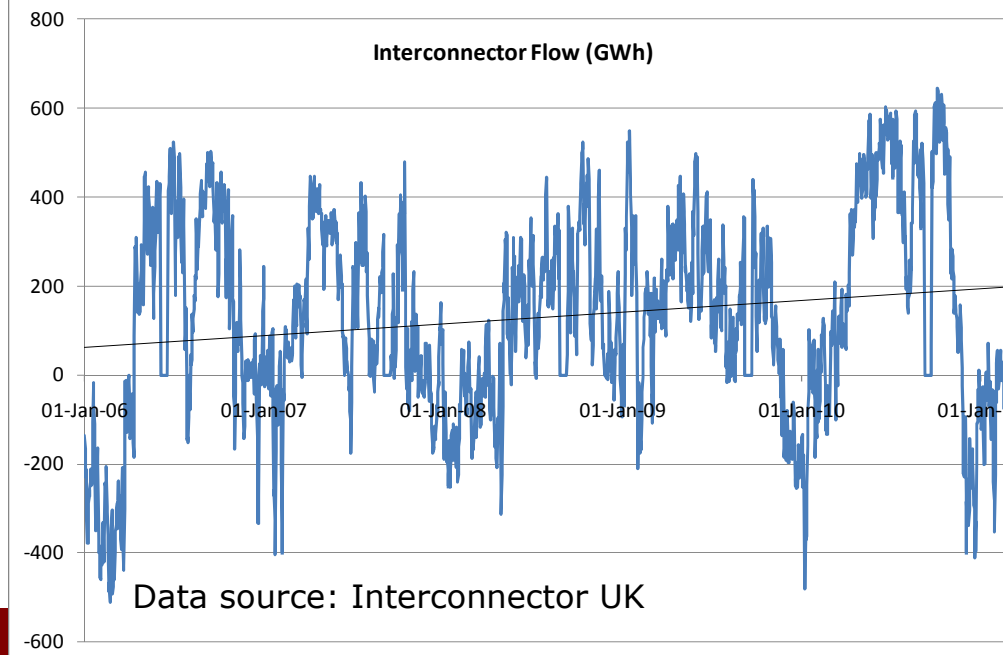


Source: Noel & Findlater, forthcoming

UK as EU Western gas corridor



- UK imports are booming – *GB markets attracts gas*
- Interconnector exports are growing – despite fall in UK production
- When EU oil-indexed contracts out of the money, direct challenge from UK gas



- GB emerges as Europe's 'Western gas corridor'
- UK has a very high level of gas supply security

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Japan: some lessons for Europe

- Energy markets create ‘solidarity’ between consumers – *speeches and treaties don’t*
 - UK pays more for gas to help Japan deal with the crisis – because there is a global LNG market
 - But would not pay more for gas if Poland was cut-off – *because there is no European gas market*
- International hydrocarbon markets are a source of energy security
- Electricity market integration improves security
 - Japan lost 10-15 GW out of 200+ and Tokyo experiences severe shortages of electricity
 - Japan is poorly integrated, with regional monopoly suppliers