



Energy research Centre of the Netherlands

Supply security: some observations

SECURE Workshop organised by CEPS, Brussels, 29 January, 2009



Contents

- ECN on Supply Security
- What is 'Energy Security'
- Proposed scope
- Key dimensions

Recent ECN Policy Studies research

- Design of supply security indicators
 - Diversity-based indicators
 - S/D Index and Crisis Capability Index (*with CIEP*)
- Portfolio analysis applied to the electricity sector
- Integrating supply security in CBA (*with CEPS*)
- Co-ordinator in several European natural gas infra projects
- Fossil fuels resource potential and price studies

What is 'energy security'? (1)

- After the oil crises in the 1970s: threat of oil supply
 - Rent seeking monopolistic price manipulation
 - Outright supply cuts as a political weapon

- European/Western responses include:
 - IEA established
 - Strategic stocking
 - Phase-out of oil in electricity sector; shift to nuc, gas and coal
 - Germany seeks dialogue and constructive interdependence with USSR (Russia) → Decision to invest Drushba gas pipeline by end 1970s
 - Fast expansion of natural gas for power generation and heating in Europe

- In 2001 and 2003 the Commission pictured a situation of increasing EU dependence with regard to oil and natural gas on a few producing countries with potentially unstable/unreliable political regimes

- In 2004 the coal price shot up (Chinese demand for coal and freight services)

What is 'energy security'? (2)

- 'Energy security' as conceived by leading agencies such as USDOE/EIA, OECD/IEA and World Bank has evolved from an oil supply problem to a fossil fuels supply problem
 - Emphasis on improved functioning of fossil fuel markets by counteracting OPEC, "GasPec" monopolies (strategic stocking, stimulating supply elsewhere, demand management, etc.)

- Change in US administration may lead to a further evolution in mainstream 'energy security' conceptualisation

- Assumed evolution: key is the sustained delivery of energy **services**
 - Demand focussed
 - Flexibilisation of supply through increasing share of electrical services
 - Increasingly renewables-based
 - Management of the electricity sector is key issue (DER; RES-E)
 - Geopolitical scramble for fossil fuel resources remains a top issue
 - Can (How can) this scramble be resolved peacefully?

Proposed scope

- Sectoral: whole energy sector, properly disaggregated
- Spatial: economy-wide:
 - EU
 - MS
- Temporal: very different approach warranted for
 - MT/LT
 - How to raise resilience to rising and highly volatile fossil fuel prices?
 - How to cope with market failures?
 - ST
 - Events, event risks and impacts, quick emergency response options
 - Focus on management of physical supply/demand
 - Ad hoc ST focus may distract attention from looming strategic sustainability problems

SS: some key aspects

- Physical security: adverse events – risks, impacts and mitigation
- Economy: vulnerabilities and their mitigation (LT vs ST!!!)
- Demand-side management for use of exhaustible resources
- Geopolitics
- Interactions with CC, competitiveness, social equity, Lisbon Agenda
- Institutional: standardisation of prioritising SS-raising measures
- Impact on technological choice and transformation → How to account for SS externalities in SCBA?

Thank you

j.jansen@ecn.nl