

SECURE – SECURING EUROPEAN GAS SUPPLIES

SECURE POLICY RECOMMENDATIONS STAKEHOLDER MEETING



RAMBOLL

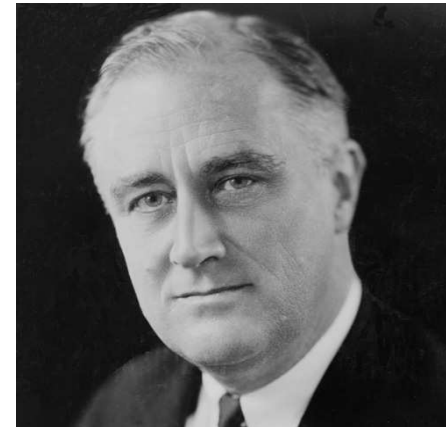
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Security of Energy Considering its Uncertainty, Risks and Economic implications

SEPTEMBER 2010
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SECURE

“Competition has been shown to be useful up to a certain point and no further, but cooperation, which is the thing we must strive for today, begins where competition leaves off”.

- Franklin D. Roosevelt



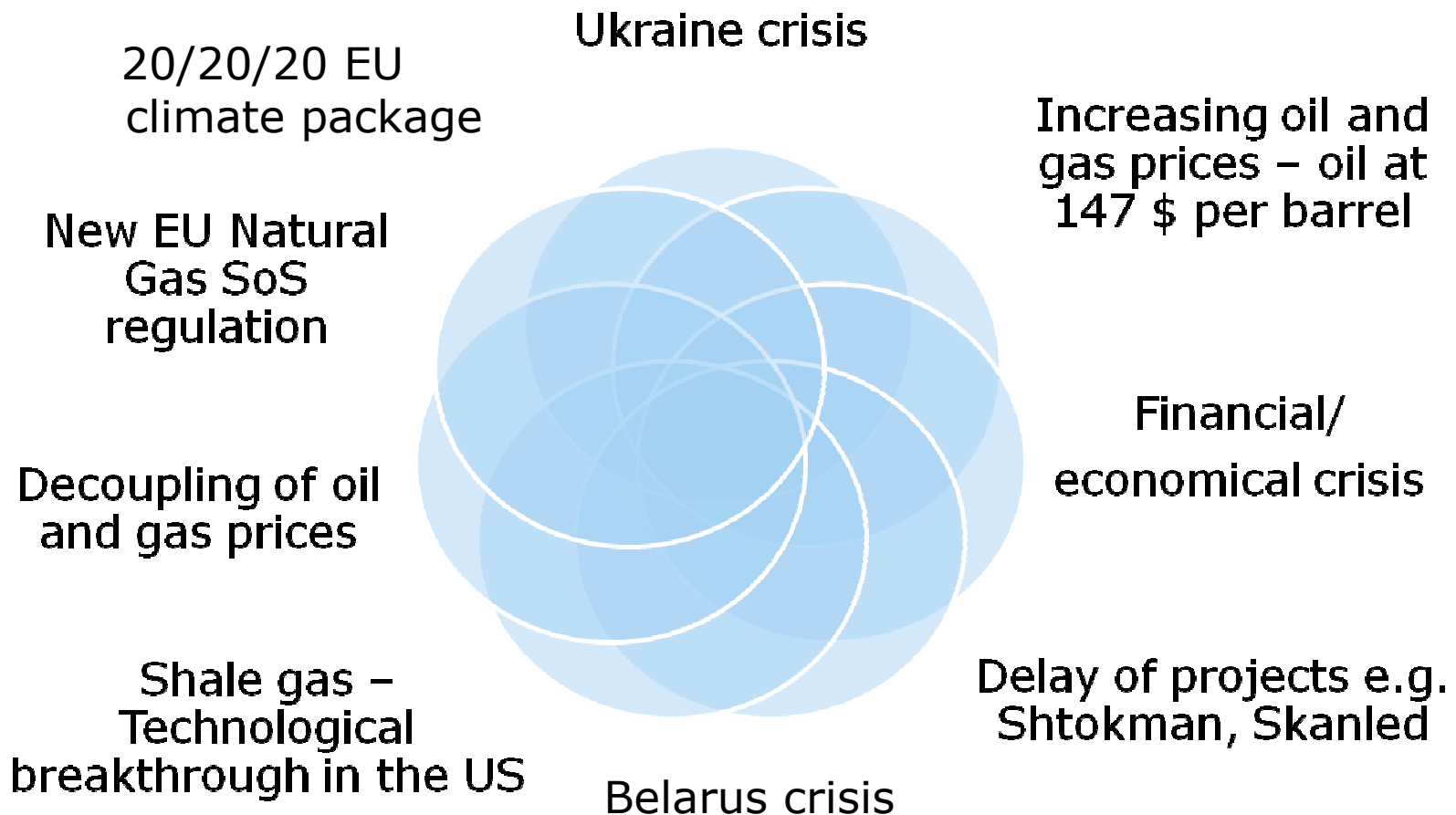
AGENDA

- Scope of SECURE Natural Gas
- Recent dynamic issues in security of supply and gas markets
- Security of Supply Index
- SECURE - main conclusions and recommendations

BROAD SCOPE OF STUDY

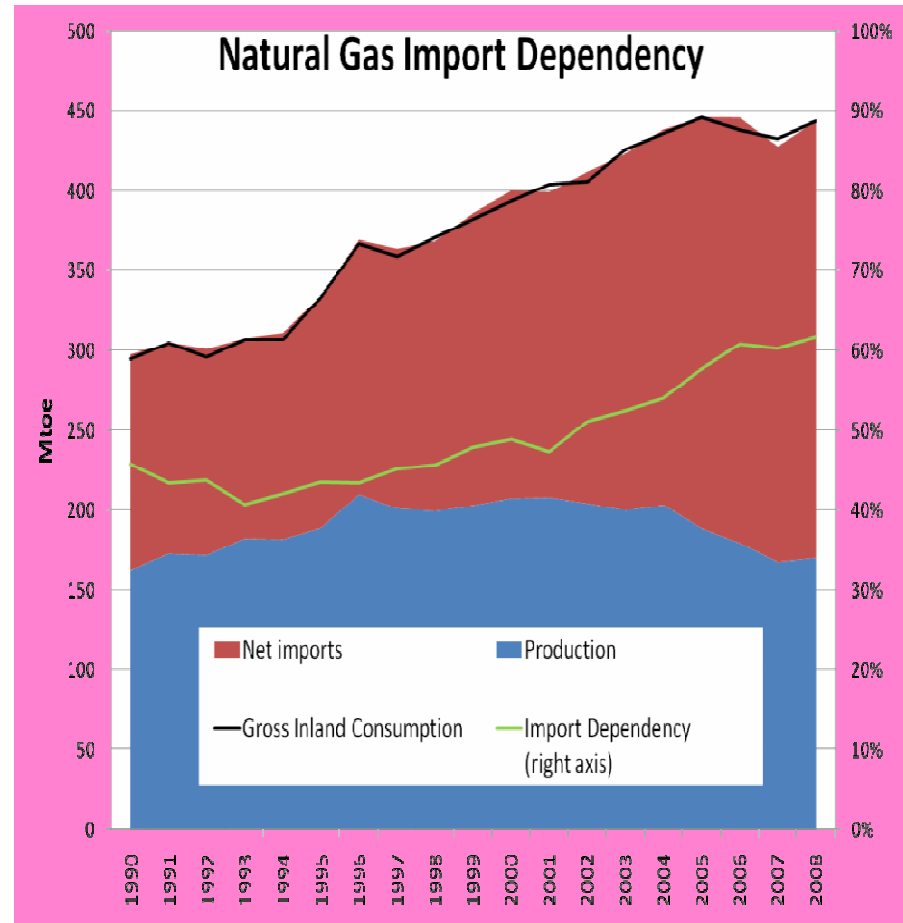


DYNAMIC AND RECENT ISSUES IN SECURITY OF SUPPLY



Long term security of supply - Uncertainties about future gas import needs

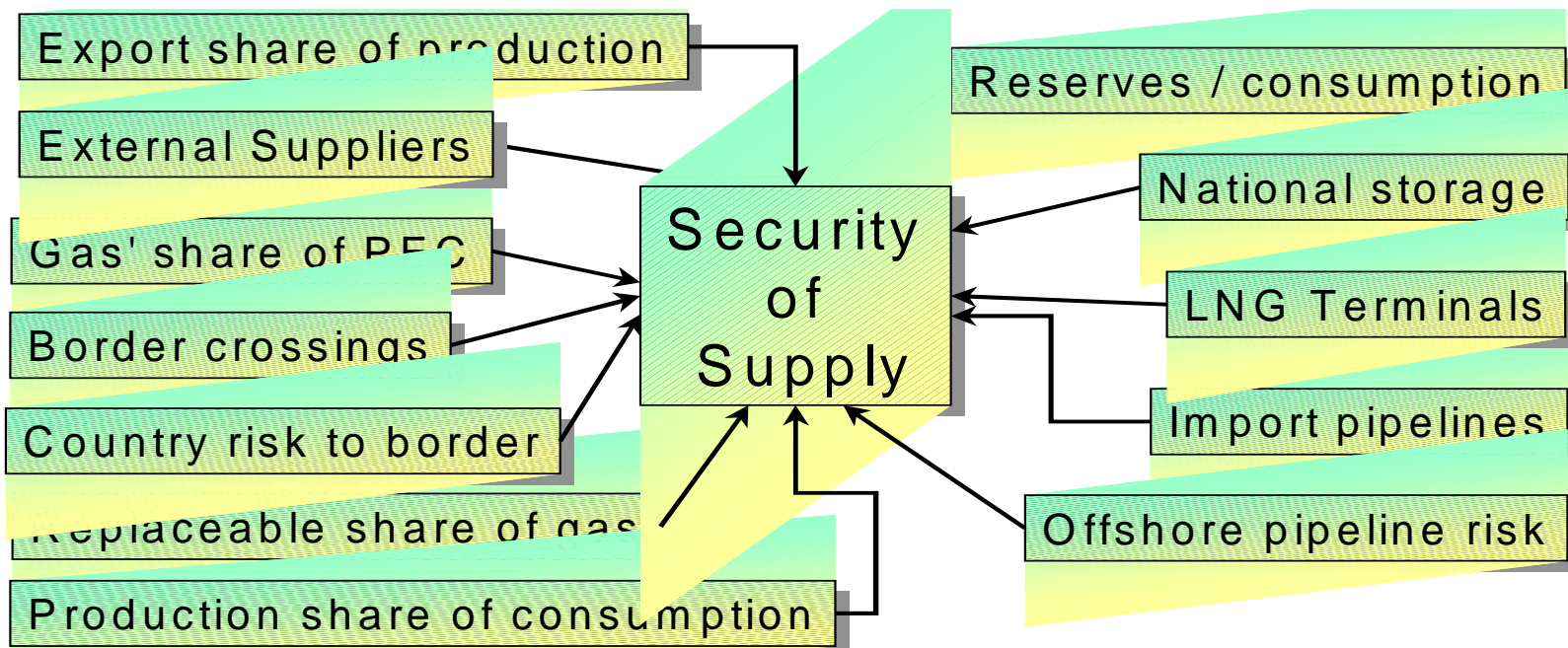
- EU gas production passed its peak in 1996 and since 2004, production has entered a long term decline
- Gas demand forecasts:
 - The EC and IEA forecasts over the past 5 years show downward revisions
- Volatility of energy prices
- Transit issues
- EU's energy policy (e.g. 20/20/20 targets)
- Worldwide financial and economic turmoil
- Role of unconventional gas



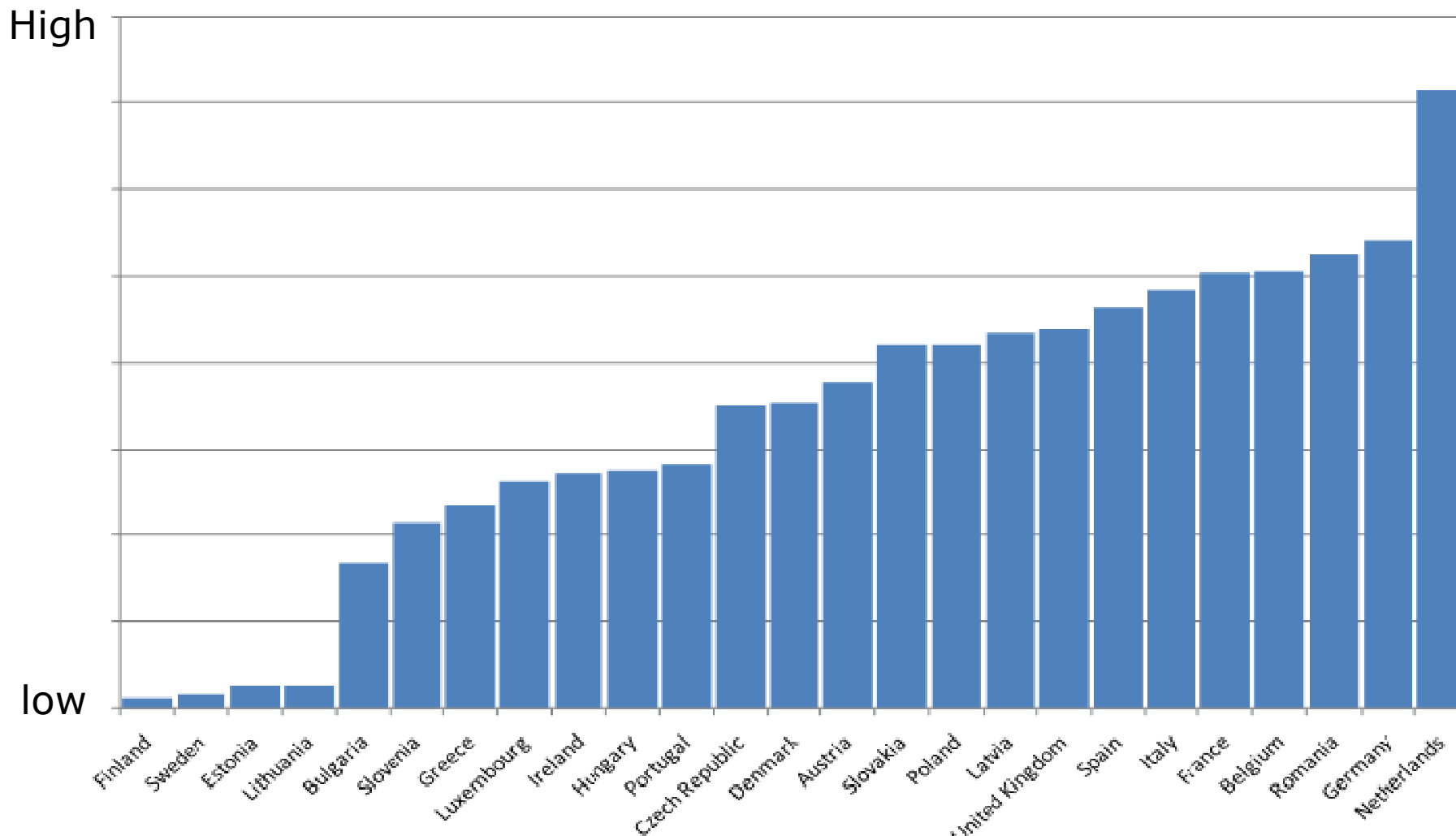
The EU and its suppliers need to reduce this uncertainty together

CREATION OF A SECURITY OF SUPPLY INDEX

- Index allows for country specific characteristics
- Allows for assessment of SoS impact of new investments and policies
- Allows for analysis of scenarios



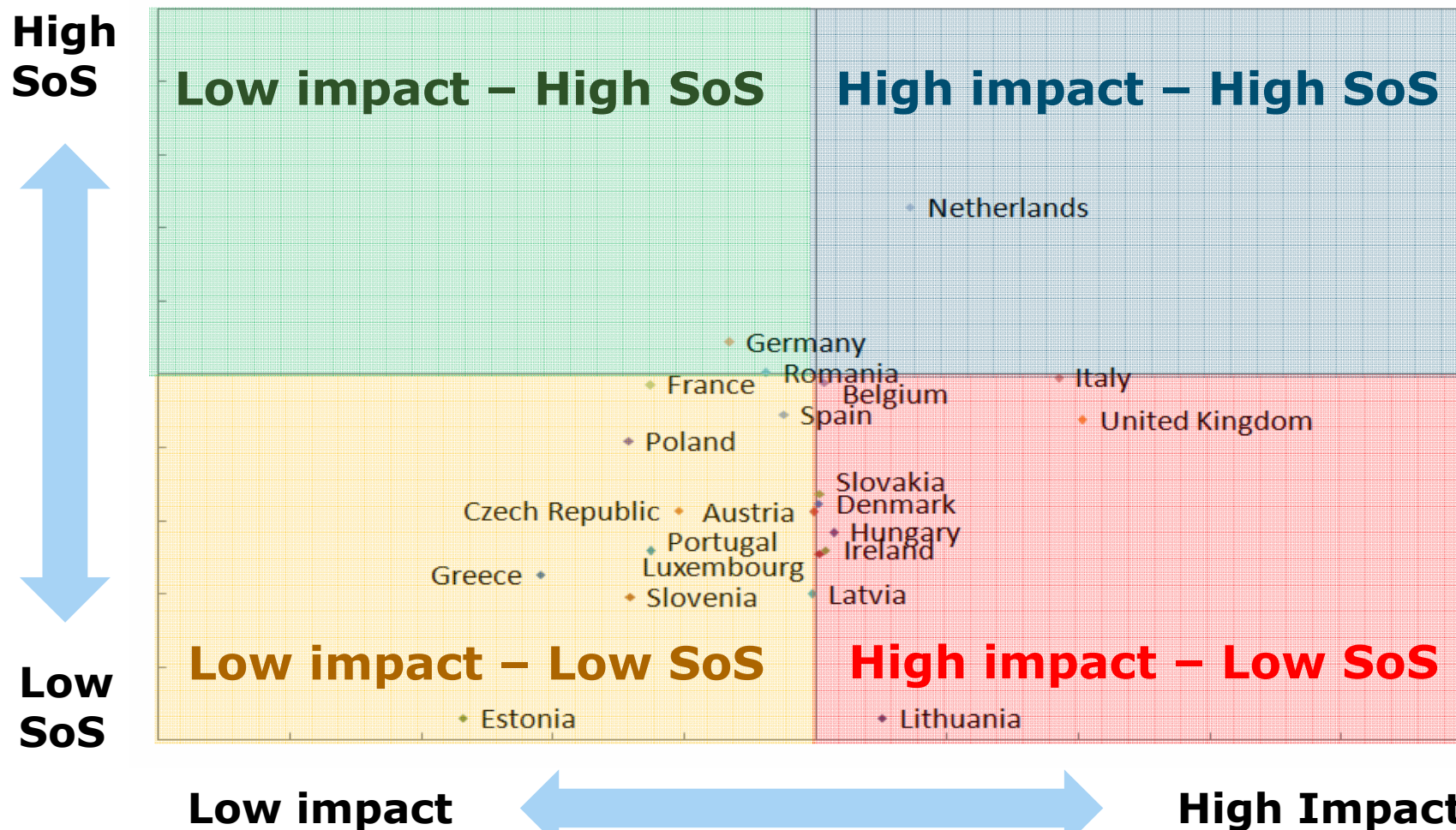
THE PRESENT SITUATION OF SECURITY OF SUPPLY IN EUROPE?



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Source: Ramboll SoS index

SECURITY OF SUPPLY IN THE EU – RISK AND IMPACT 2010 2050

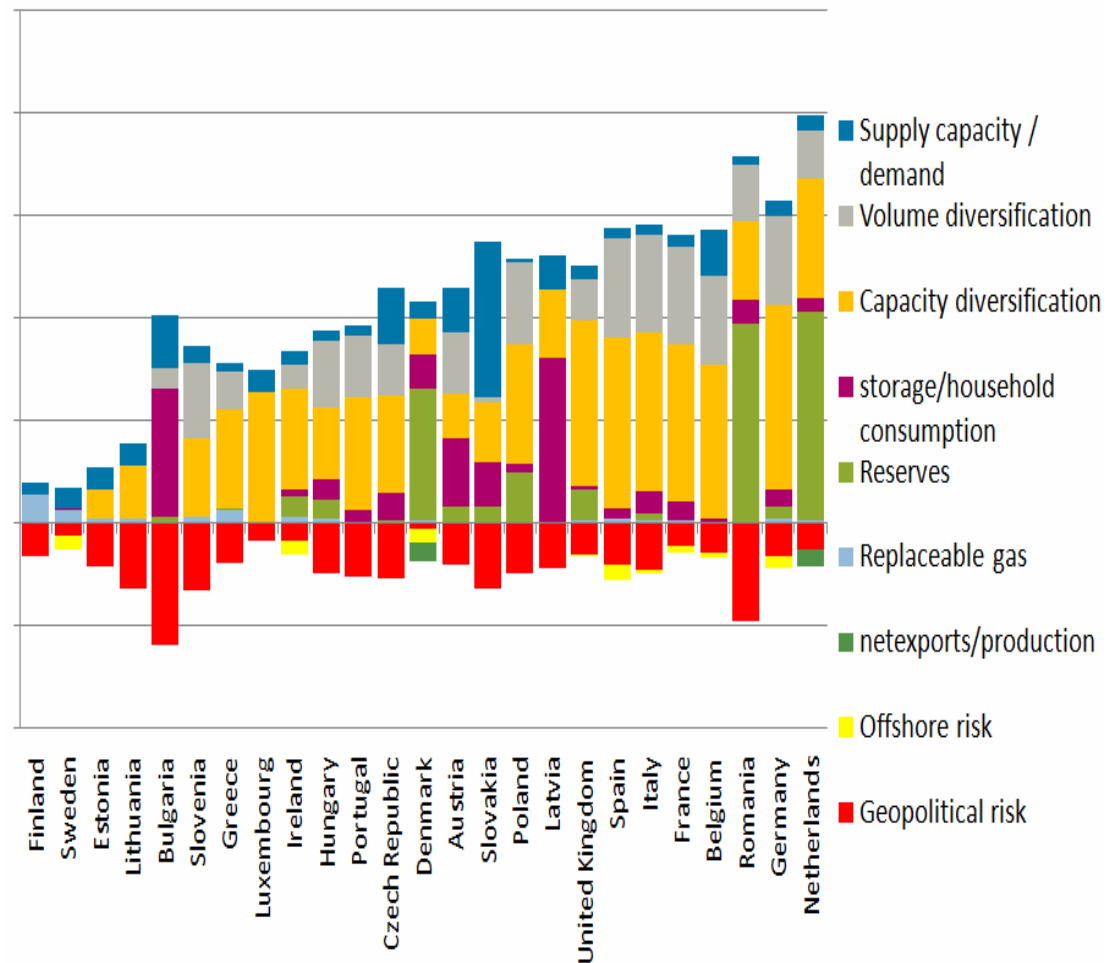


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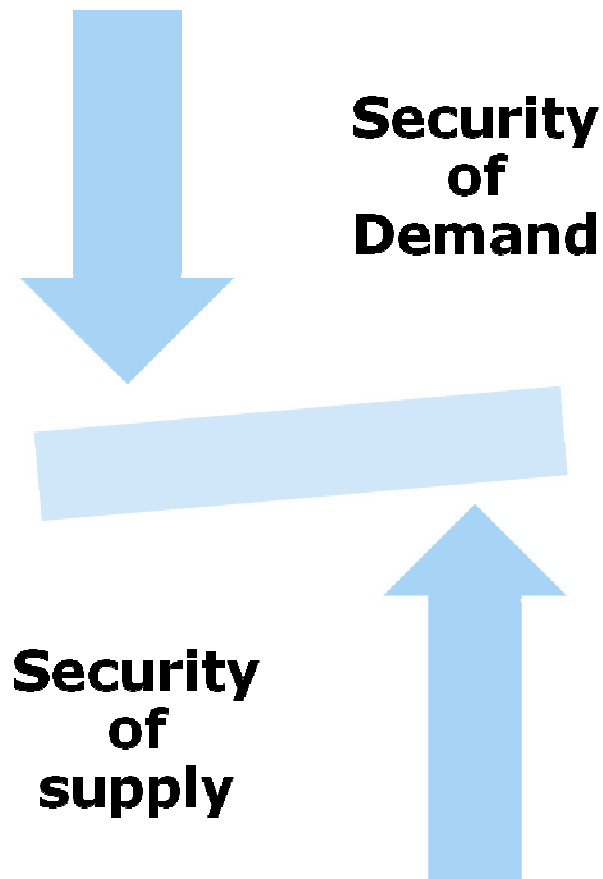
Source: Ramboll SoS index

THERE IS NO SIMPLE RECIPE FOR SOS NOR RESPONSE TO SUPPLY DISRUPTION.

- Natural gas security is both a question external and internal issues e.g. diversification but also demand side and internal factors such as fuel switching and storage.
- All SoS parameters may vary due changes in demand and supply or because they are subject to change of circumstances such as policy.
- Thus securing supply is a mix of measures and forward looking policies.



SECURITY OF SUPPLY/SECURITY OF DEMAND – TWO SIDES OF THE SAME COIN



- Security of Demand
 - Long term contracts
 - Clear EU signals and policy on natural gas

Gas prices should reflect supply and demand in the long run

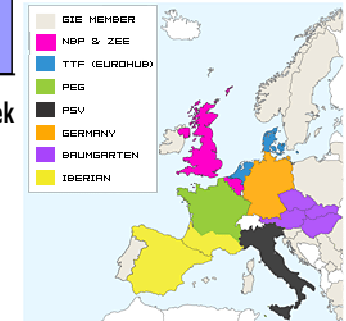
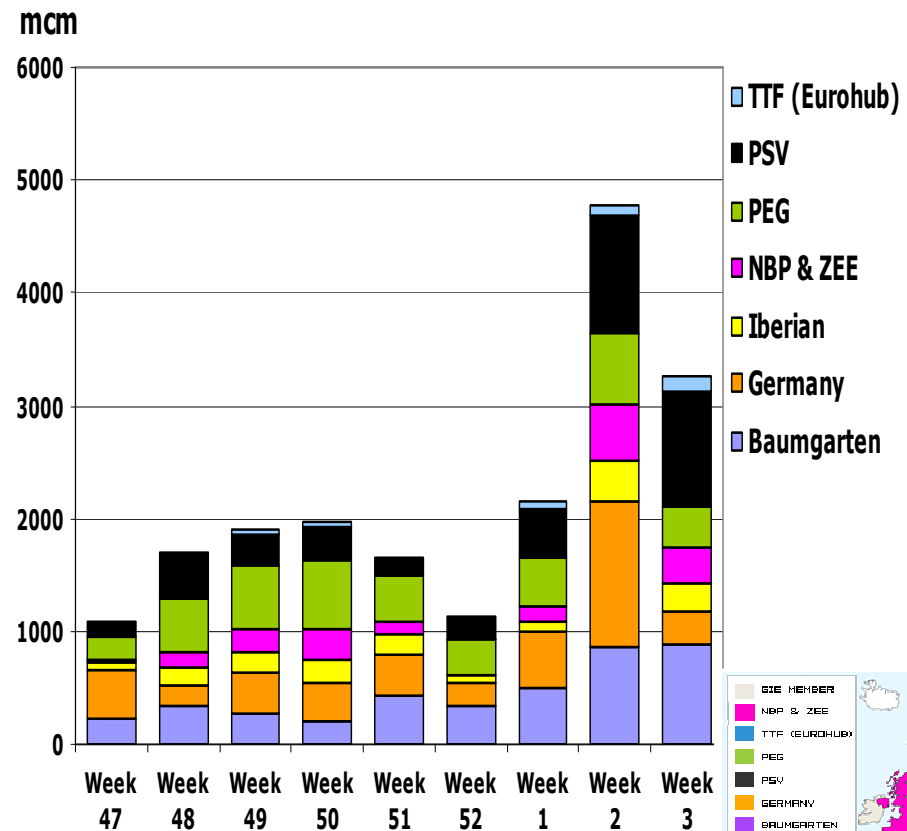
- Security of supply
 - Flexibility
 - Diversification – routes and sources
 - Interconnection
- Security of transit
- Security of regulation

MARKET DEVELOPMENT AND SECURITY OF SUPPLY

- Increase interconnection to allow markets to function
 - Storage
 - Fuel switching
 - Increased production
 - Alternative imports
- Improving markets improves SoS and vice versa
 - Allowing gas to flow where it is needed, when it is needed

Increased market cooperation internally increases SoS

Gas storage withdrawal during Ukraine crisis



MARKETS ARE HOWEVER NOT THERE YET AS UKRAINE CRISIS SHOWED

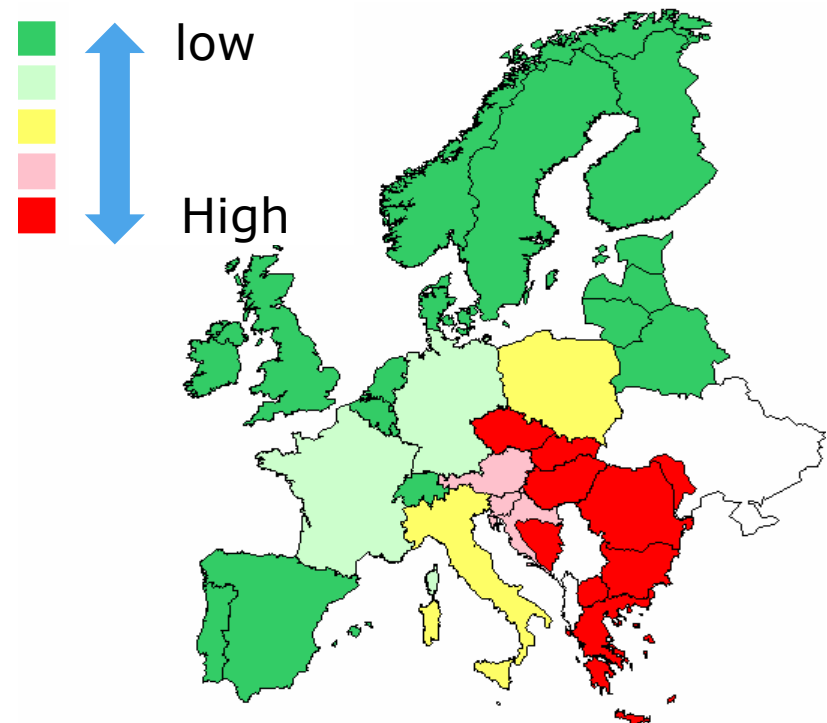
- Internal bottlenecks and lack of reverse flow
- Markets value future events lower than governments
 - > Quicker depletion rates
 - > No socio-economic perspective
 - > Lower value of SoS measures
- Markets require unbundling – SoS prefers vertical integration
- SoS can impede market development e.g. strategic storage
- Success of unconventional gas in the US may not necessarily be repeated in Europe
- Financing SoS

Thus we need regulation as well as continued market development

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Impact of 2009 Ukraine gas crisis



REGULATION AND COOPERATION BETWEEN CONSUMERS, PRODUCERS AND TRANSPORTER

- Industry focus shifting from oil to natural gas
- Solidarity and cooperation between consumers and producers
- Strengthening of external cooperation
- Ukraine -Independent Transmission Operator
 - Tripartite setup - Ukraine, EU and Russia
 - Metering
 - Ensure investment
- Legislation regarding unconventional gas to be streamlined and reviewed



Map source: Eurogas Annual report 2008/09

THANK YOU

“It is not the brains that matter most, but that which guides them -- the character, the heart, generous qualities, progressive ideas.”

- Fyodor Dostoyevsky

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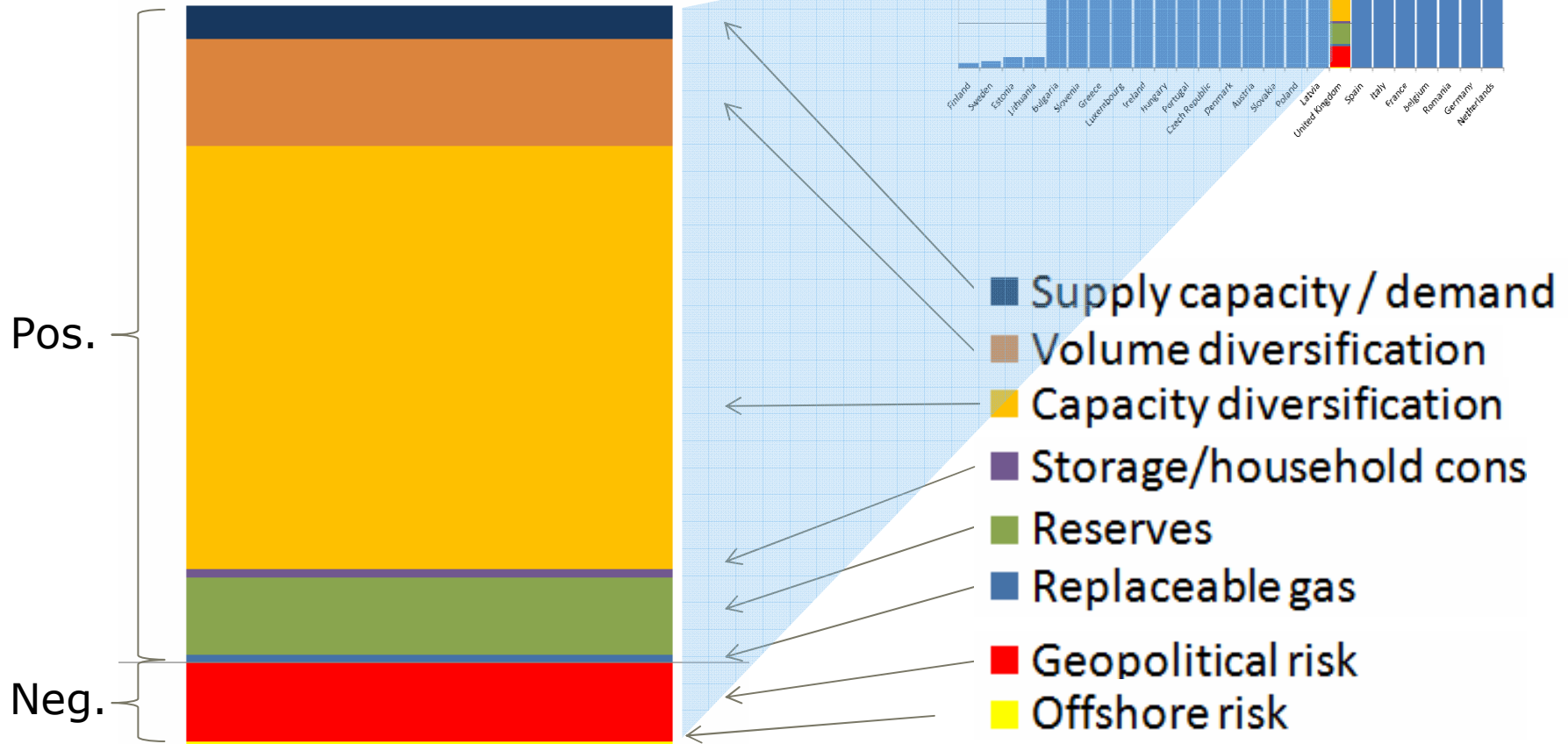
EXTRA

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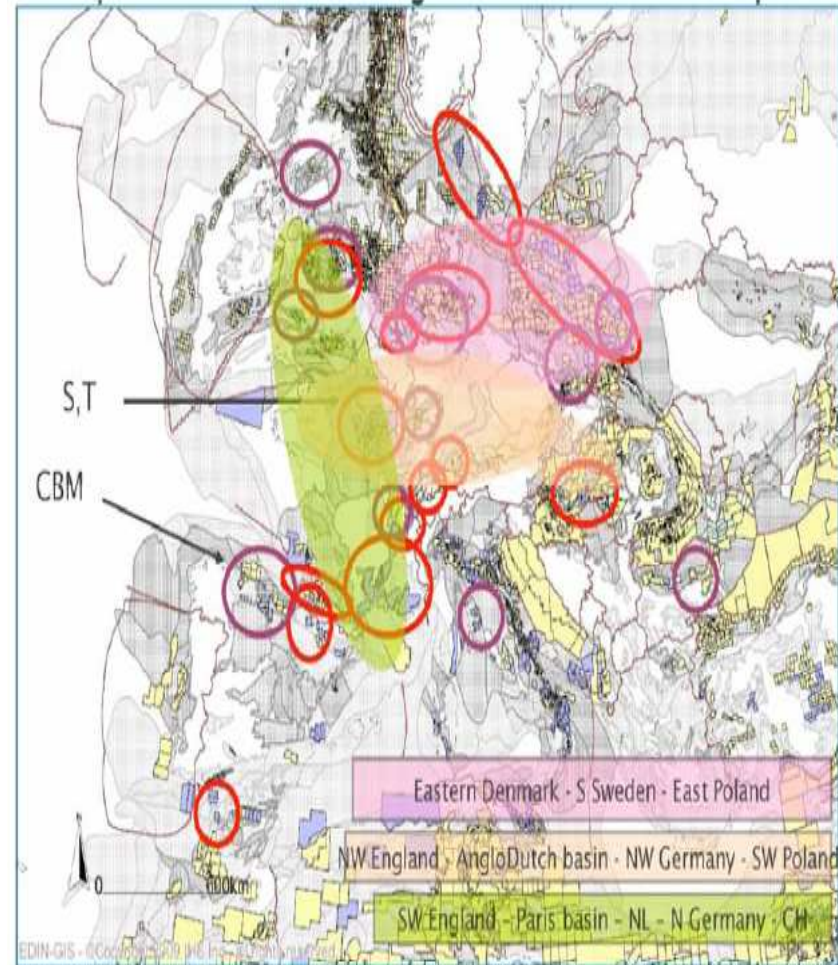
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RAMBOLL SOS MODEL EXPLAINED - UK

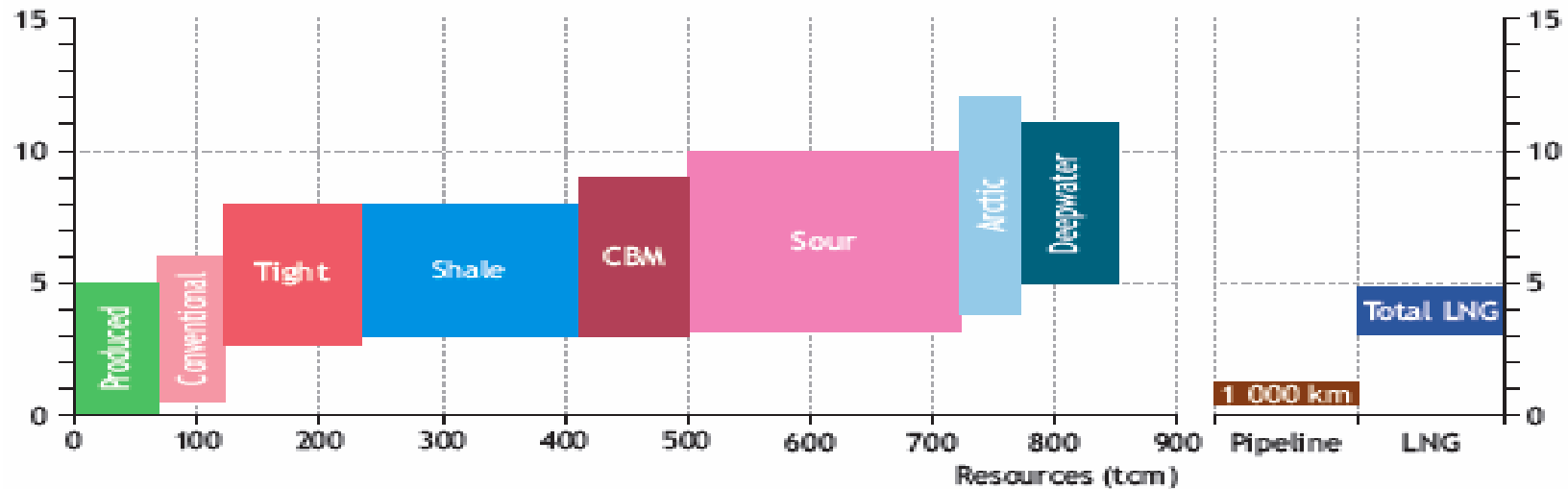


THE UNCONVENTIONAL REVOLUTION STILL HAS A LONG WAY TO GO IN EUROPE

- No lack of potential resources in Europe but unproven
- Lack of knowledge and technology
- Complex resource
- Wells cheap in US but expensive in Europe
- Not the same 'wide open plains'
- Stringent legislation
- And also fundamentally we have the gas and reliable partners



GAS PRODUCTION COSTS



Source: WEO 2009

- Conventional gas may be cheaper than unconventional – but large uncertainty
- Uncertainties of potential for unconventional in Europe
- Security of supply – what is the potential – short and long term
- Costs for gas production should be studied to evaluate the potential of resources in and around the EU

CONCLUSIONS - SUMMARY

- Security of demand and SoS are two sides of the same coin.
- Security of demand requires the EU to provide clearer signals regarding future gas demand.
- National and regional differences imply that security of supply levels and mitigation tools will necessarily differ between countries and regions.
- The process of gas market development and the continued liberalisation of the EU's markets is not yet fully realised and there is a pressing concern go ahead with these measures.
- EU gas markets have been shown to invest in markets and not necessarily in security of supply.
- The potential of unconventional gas in Europe to significantly impact upon security of supply is presently unclear.
- The increasing focus on natural gas by oil majors should be used to increase cooperation between producers and consumers – dialogue as well as clear policy signals and a stable regulatory environment are key issues.

RECOMMENDATIONS - SUMMARY

- Increased cooperation between legislators and oil and gas industry.
- Legislative coherency – energy markets sustainability, market development and security of supply.
- Regional differences in SoS call for policy measures and instruments that allow for regional initiatives.
- Further diversification for areas with a current low level of suppliers and routes.
- Commissioning of an independent transmissions operator in the Ukraine composed of the Ukraine, the EU, and Russia.
- Demand flexibility study in order to assess its ability to mitigate security of supply issues.
- Proactive and decisive policy development toward regions that are expected to play a more important role in gas supply in the future.
- Development of a gas demand forecast.
- Legislation regarding unconventional gas production should be streamlined and reviewed