Diversification - Revisiting Options for Bulgaria and SEE

Gas Diversification – the pragmatic agenda

Developing flexibility within existing contracts

- Take-or-pay and re-export ban – mutually exclusive – the need for EU guidelines on gas contracts.
- Greater transparency needed – diversification should not be based on worst case and off-balance assumptions
- Diversification vs liberalization - 3 rd liberal package no safeguard in overly dependent economies – the risks and costs of premature liberalization in undeveloped regulatory environment
- Integrating markets gas infrastructure and approaches – UGS, LNG/CNG terminals, interconnectors and developing regional market integrated policy.
- Revisiting exploration and production opportunities – both at home/abroad

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Diversification – the pragmatic agenda

The Impact of LNG market on pipeline gas contracts

- Long term pipeline gas contracts lack in competitiveness – LNG alternative gas supply on the rise against decline on pipeline gas imports
- Pipeline gas price formulae need reflect LNG/oil global market trends.
- LNG terminal > 5 BCM/year on the Aegian/Marmara sea could supply Bulgaria, Romania and Hungary
- Diversification has to be cost effective long-term - IAE's World Energy Outlook 2009 - over-capacity of gas pipelines and liquefied natural gas terminals to rise over 250bn cubic meters by 2015 – 4 times the level of spare capacity in 2007
- Integrating markets, gas infrastructure and approaches – UGS, interconnectors and developing regional market integrated policy.
- The importance of consolidating decision making and fast implementation

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Diversification – the pragmatic agenda

The case for strategic natural gas reserves

Why oil and not natural gas for strategic gas reserves ?

Oil is global commodity and risks stemming from interruption of oil supplies due to non-market reasons have been identified and managed.

EU requirement for 60-day natural gas reserves – sharing costs between public and private sector

Strategic gas reserves will relieve financial burden on gas companies to cover emergencies engaging budget funds and enhance capacity to engage in cross border projects

The need for integrating national solutions to avoid duplicating costs and overkill.

Solutions in diversification to be sustainable – have to be innovative and shared – internally and externally - and cost effective.

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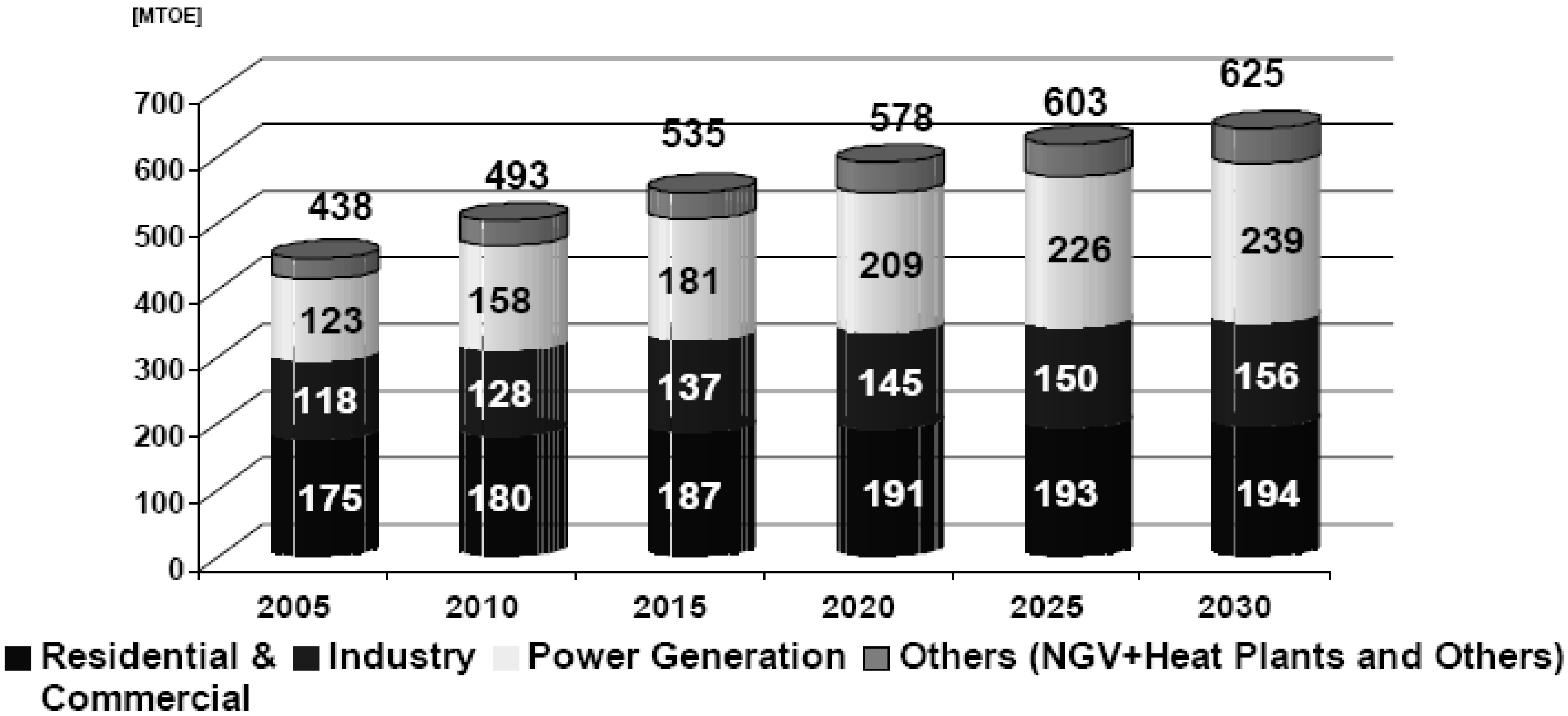
EU27 Natural Gas demand outlook by sector



Source: Eurogas - The European Union of the Natural Gas Industry

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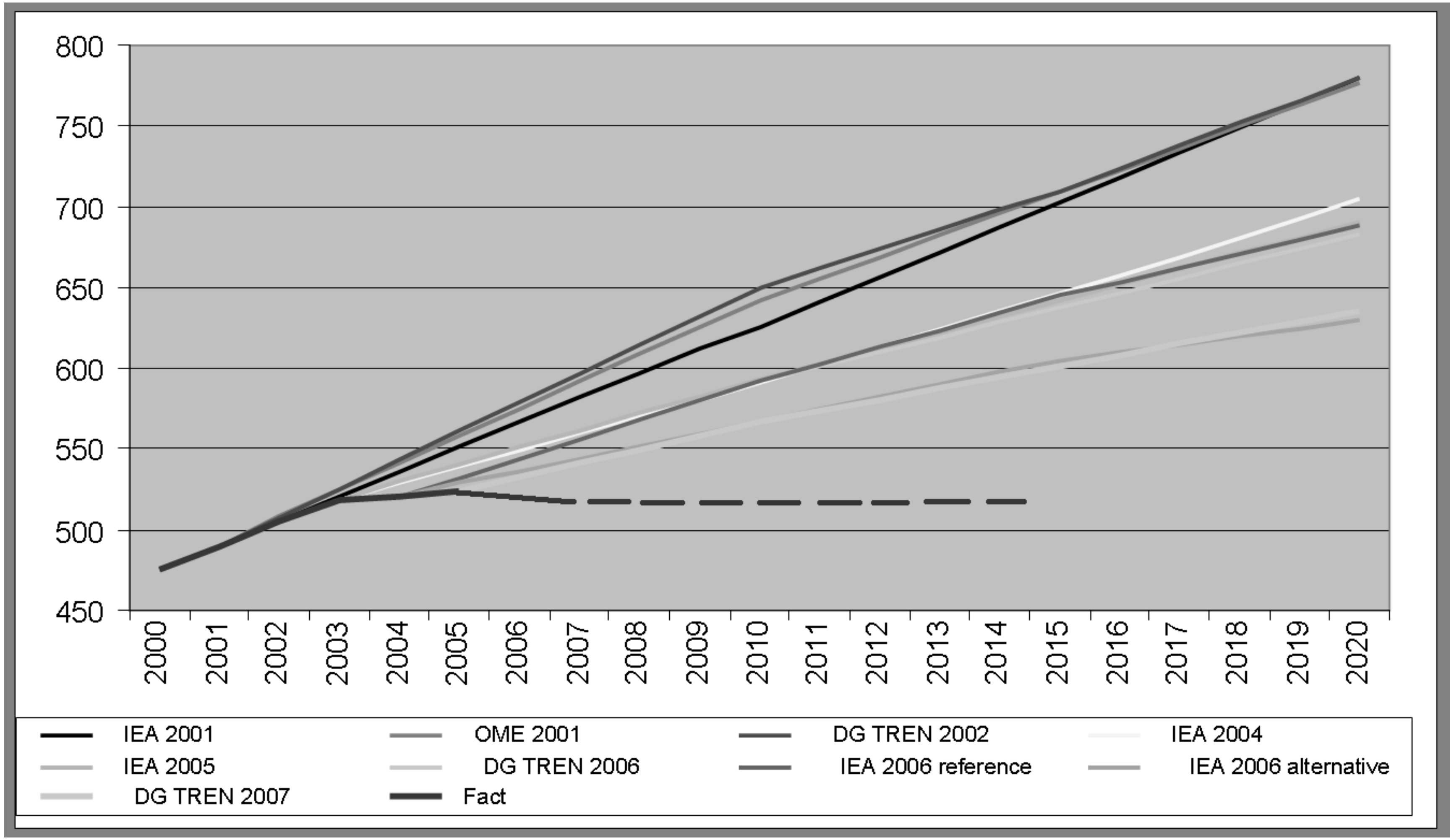
EU Gas Demand Forecast



Before 2013, and possibly up to 2015, European gas demand will not increase significantly as generally believed because of greater energy efficiency, slow power generation growth and greater price volatility in gas markets, rising costs for discovery/developing new deposits and transit project.

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Why Gas Demand will not grow until 2015?

- Most Gas Growth Demand Assumptions are too linear– based on static and rigid scenarios for key demand and supply factors – More complex modeling needed – In IEA – WEO–2009 revised approach
- Crisis driven Armagedon-type scenarios mostly form part of geopolitical maneuvering - large scale energy risk related investments or explaining/sustaining dominant market moves
- Higher oil and gas prices lead to drastic curbs in consumption or seeking alternative supplies/sources flattening out demand trends
- Crowding out effect on oil/gas demand by the rise of non-energy strategic commodity prices – Ultimately National Security and Food are equally/more important.

  Water, ecological, energy, financial, climate, etc non-military aspects of national security

  Diversification will precede return to upward trends in gas demand.

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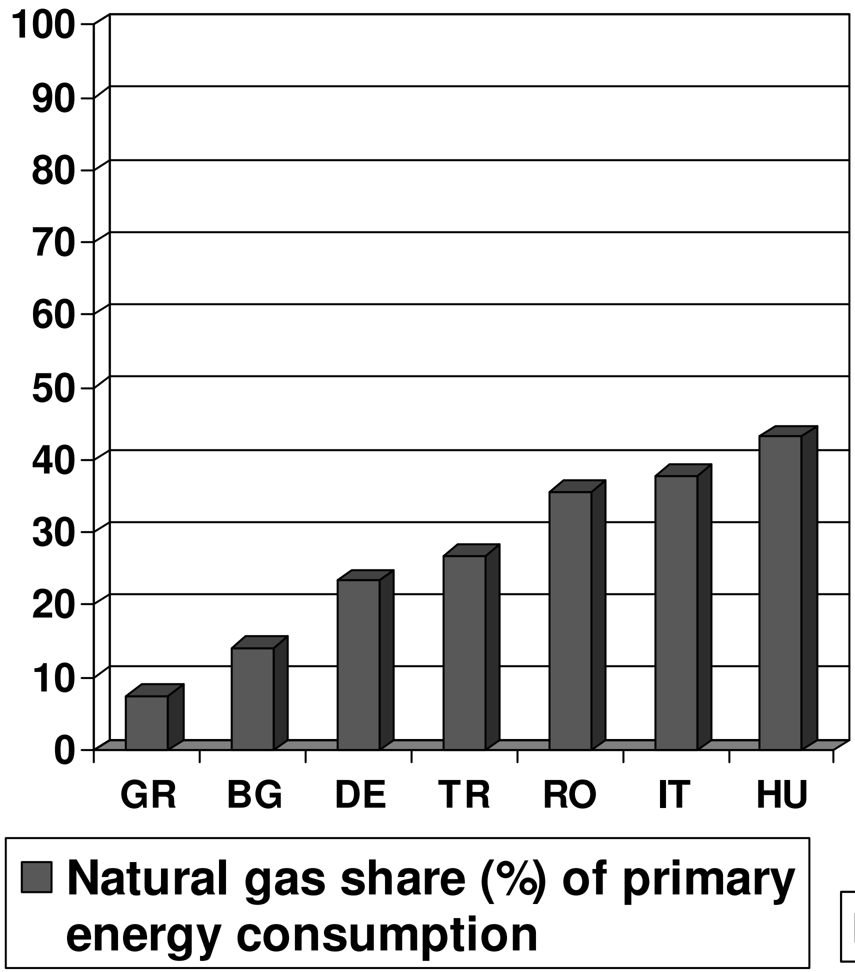

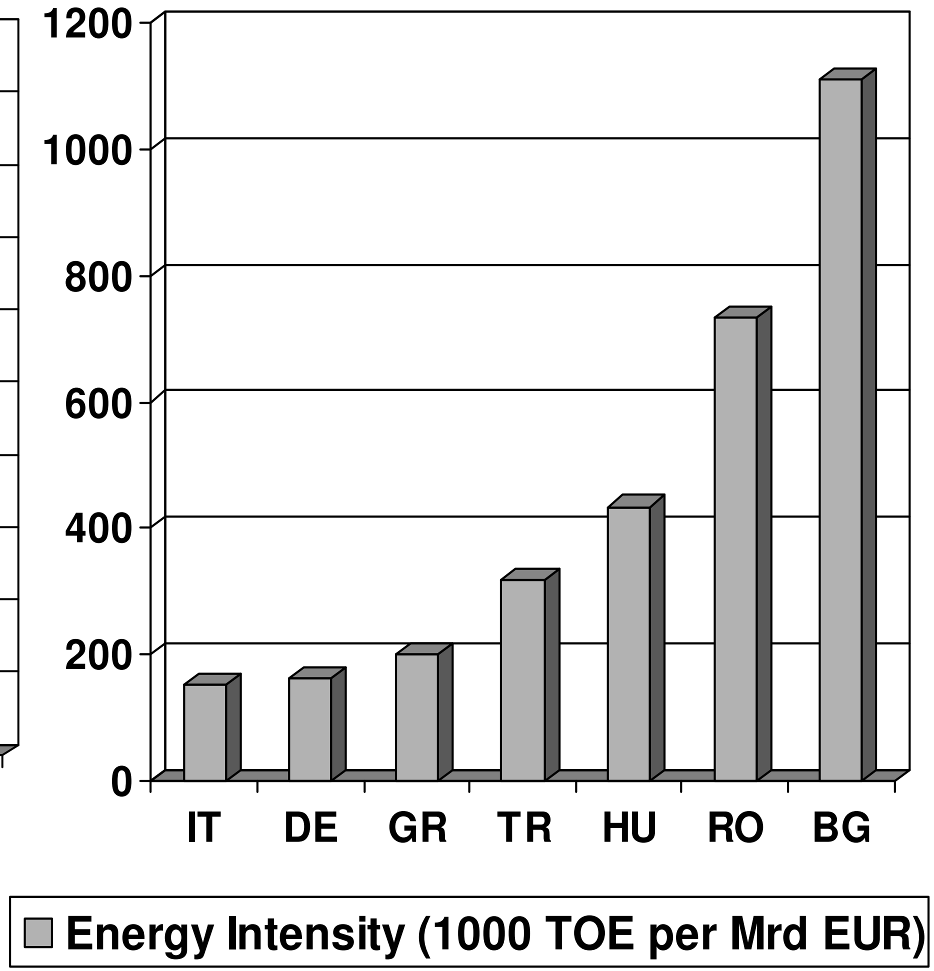

Source:EEA, Eurostat

Bulgaria and Romania are more dependent on improving EI than new imports of gas to meet primary energy demand.

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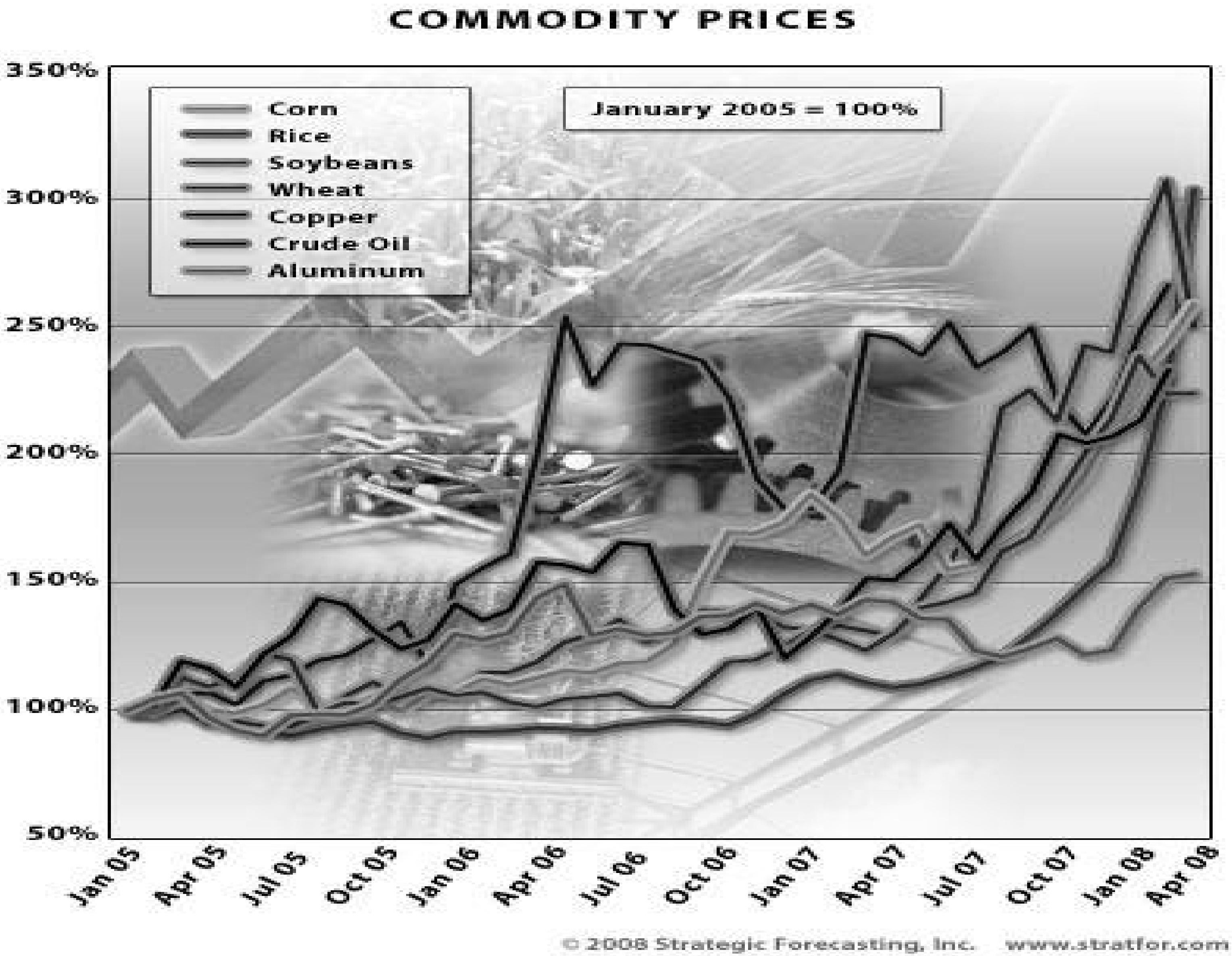
The Crowding Out Effect



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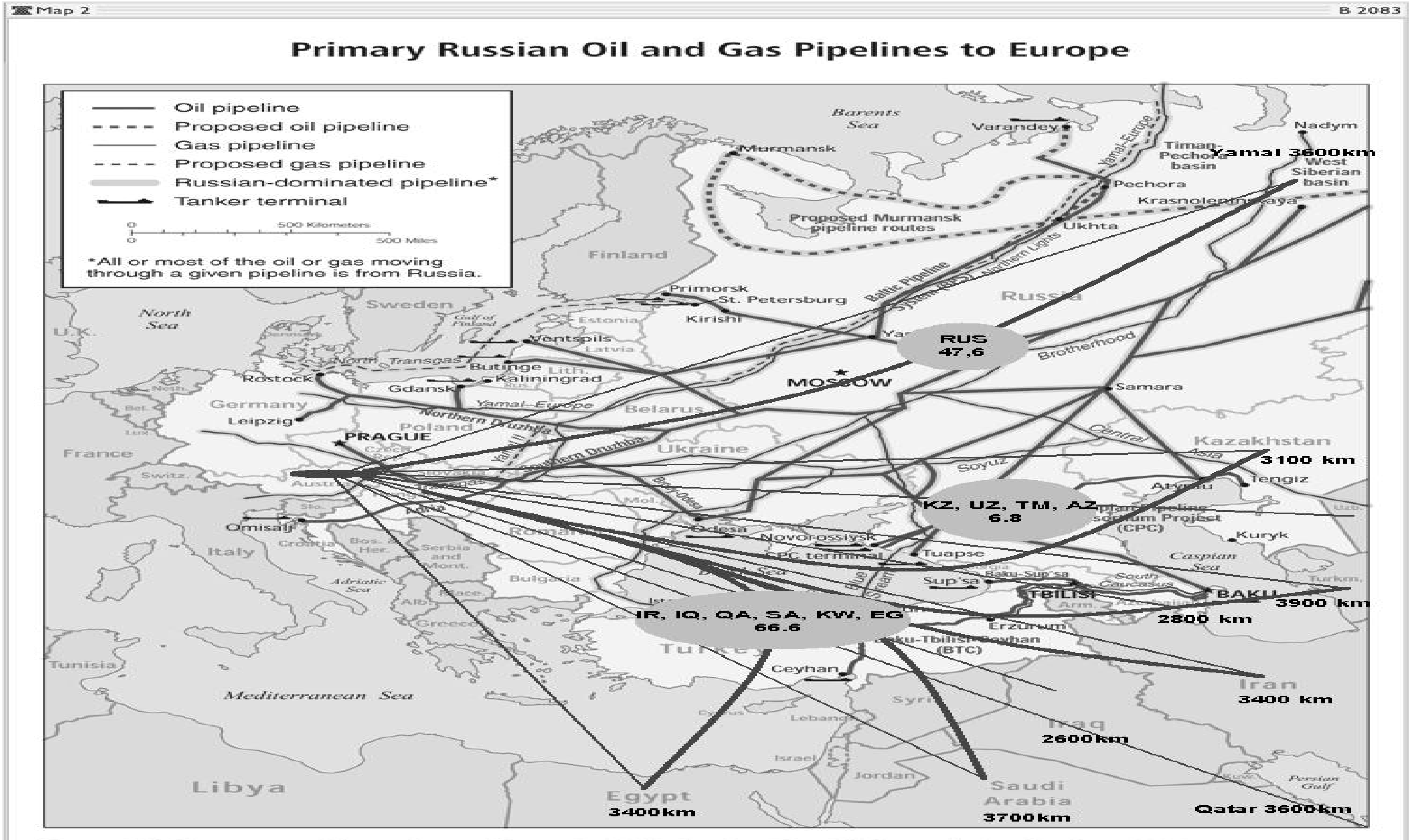
SouthEast Europe The Key to Energy Security
North and Southeast Europe Theatre



Source: U.S. Department of Energy, Energy Information Administration, "Russia," *Country Analysis Brief*, April 2007, p. 11, at *www.eia.doe.gov/emeu/cabs/Russia/pdf.pdf* (August 20, 2007).

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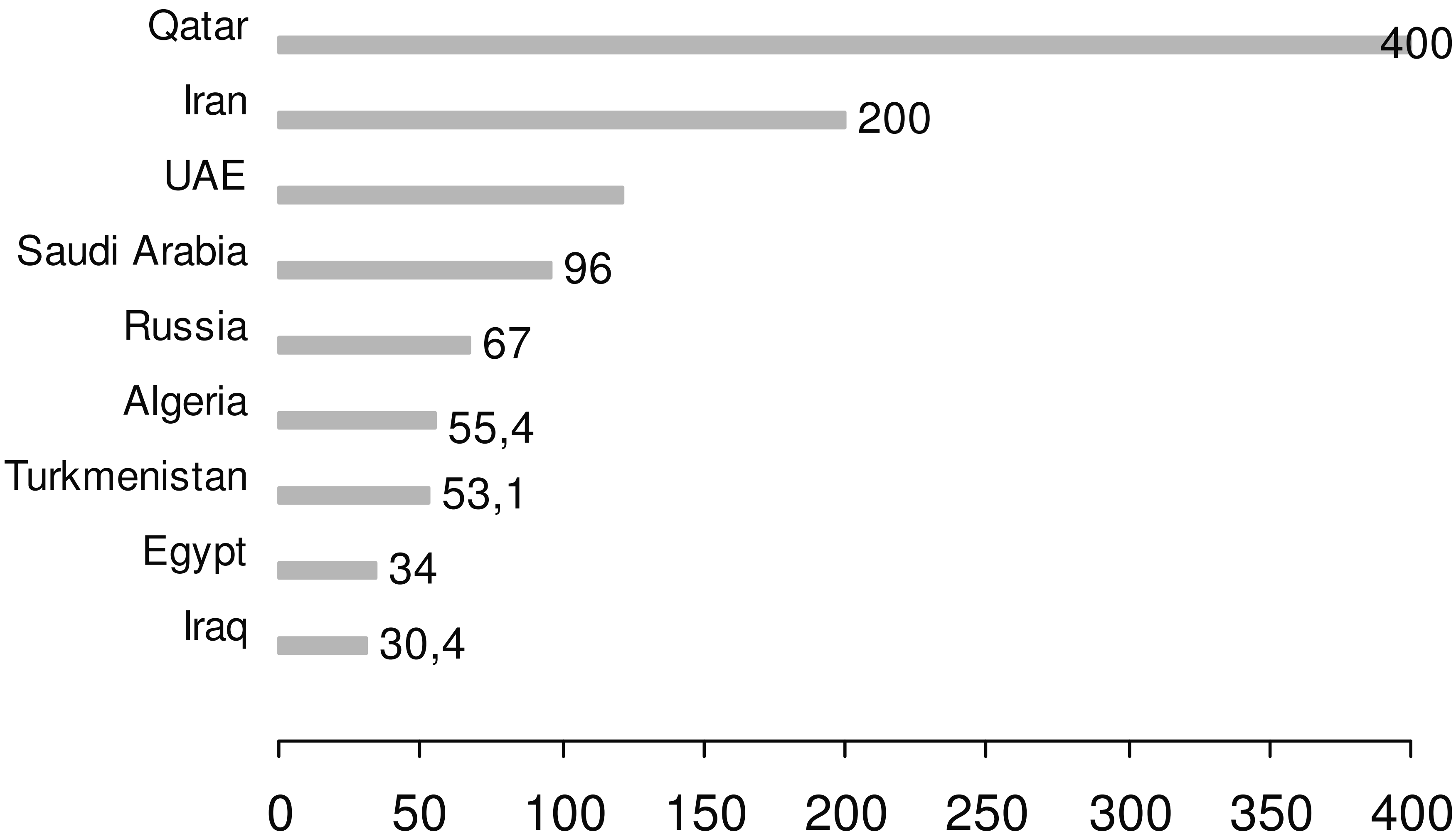
Reserve to production ratio in years for major gas producers



Source: World Factbook 2008-2009

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Basic Facts on the new transit routes

- Europe is the most competitive destination for Energy resources – able to pay highest prices and leading in energy efficiency and competitiveness

Conclusion: EU is the natural center of gravity – The new Rome for energy transit – Efforts to divert gas supplies away from EU doomed.

- Transit routes – Nabucco, South Stream and Poseidon compete and complement – hard diversification

Conclusion - Transit Countries need to Harmonize Individual Country's Agendas unless they want to see excess capacity in transit routes relate in lower transit fees – erode rewards from transit projects.

Cross-border merger of gas transit infrastructure is not an immediate option but a necessity mid and long term. The Virtual Nabucco – integrating spare transit capacities in transit countries.

Supply elasticity depends not only on new transit capacity but integrated gas networks – incorporating/managing gas storage and interconnecting national systems.

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Basic Facts on the new transit routes

Need to Coordinate gas transit tariffs, regulatory policies and investment plans as an immediate step.

Transit Projects may for a time seem to defy common economic sense driven by perceptions of Strategic “premium”. At the end of the day they will not happen unless economically viable – the cumulative costs of the three South Stream,Nabucco and Poseidon exceed 50 billion dollars – high a bill to foot in a crisis environment payable by consumers and taxpayers. On top of climate change associated extra cost – too heavy a burden.

•EU has signed or negotiating agreements with Azerbaijan, Ukraine, Kazakhstan, Turkmenistan, Algeria, Egypt, Morocco, Jordan, Iraq, countries in the Gulf Cooperation Council. Qatar, Saudi Arabia – next targets.

Conclusion: EU needs to focus on shaping and implementing its own pragmatic, cost effective and sustainable agenda of diversification and energy security

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Basic Fact

•Deloitte's Network expertise across EU (CEE), the Middle East, Russia and the Caspian region enables us to offer integrated, innovative solutions in very dynamic markets to complex challenges to our clients in the energy security, project management and development field.

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