



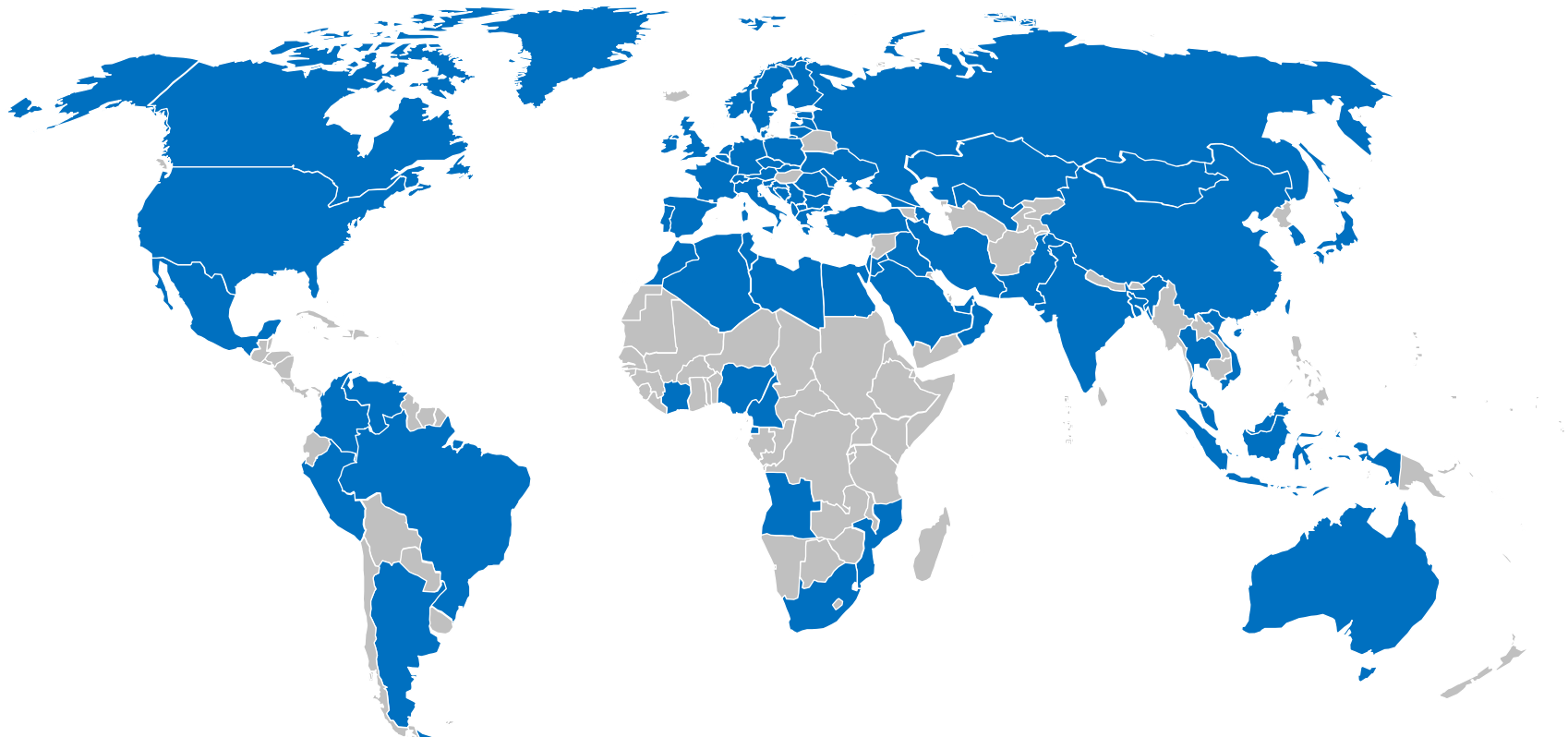
G20 Energy Sustainability Working Group

Gas Market Emergency Workshop

Torstein Indrebø
Secretary General of IGU

February 10-13, 2014 Melbourne, Australia

IGU - all G20 countries represented > 95 % of the global gas market



Founded in 1931

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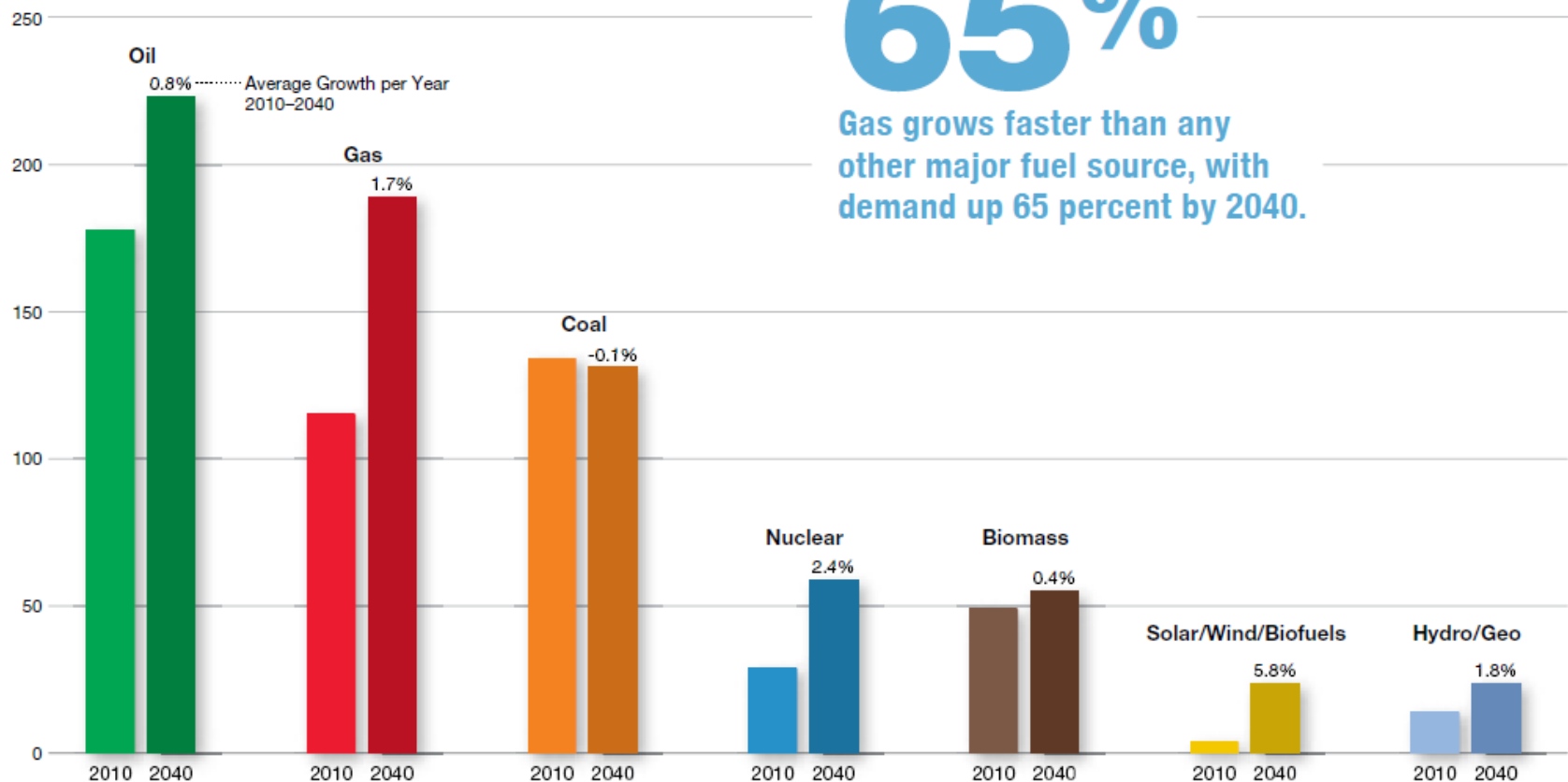
 IGU members

**83 Charter members
43 Associate members**

Gas – fueling more of the world!

Energy mix continues to evolve

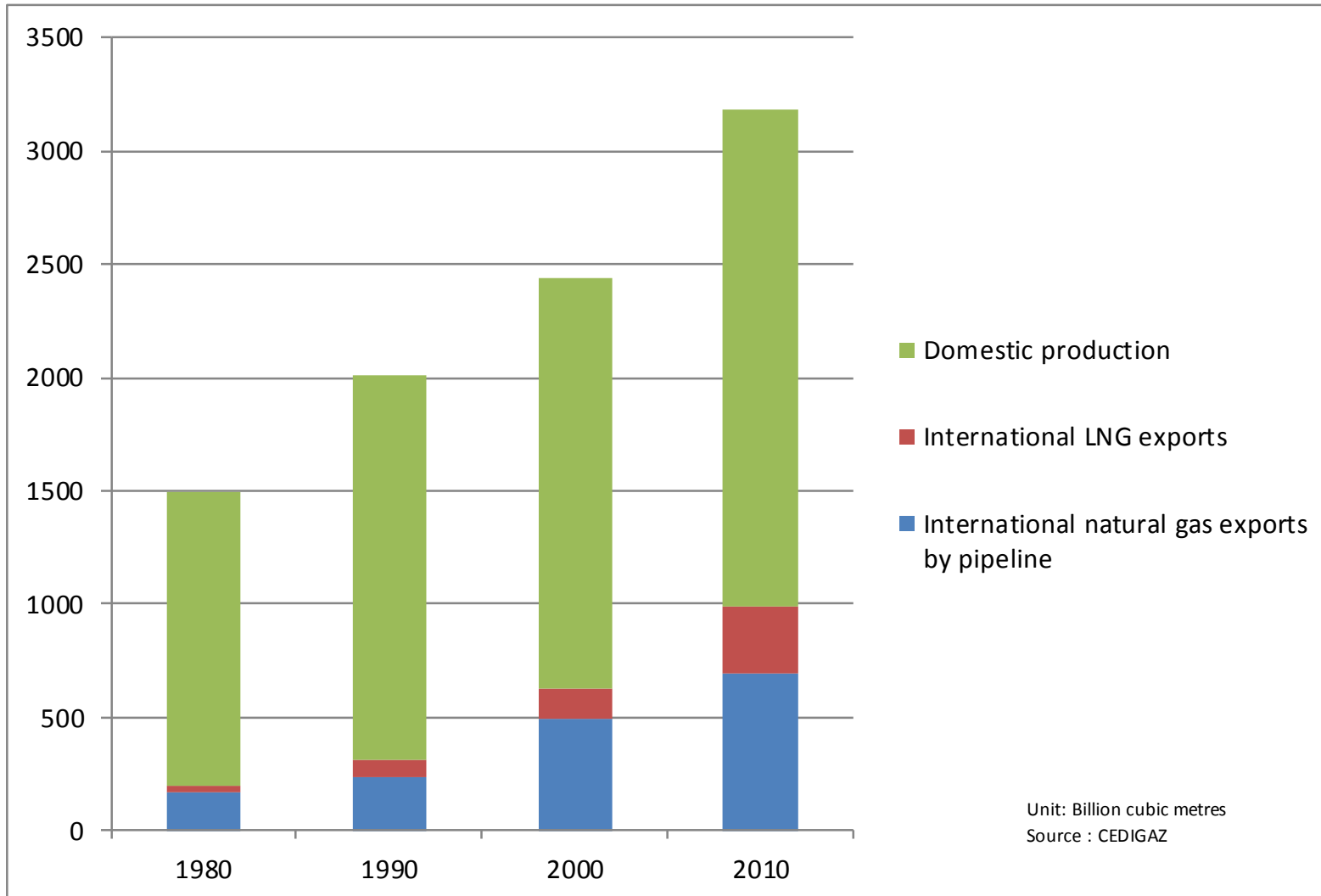
Quadrillion BTUs



65%

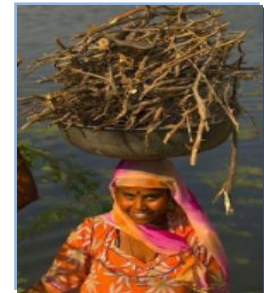
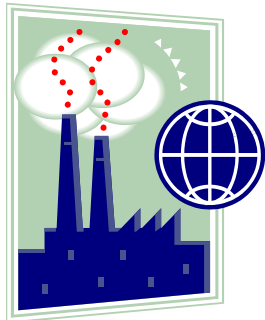
Gas grows faster than any other major fuel source, with demand up 65 percent by 2040.

Evolution of gas markets



Global drivers in energy politics - observations

- Job creation and competitiveness
- Health and air quality
- Households - increased energy costs
- Climate change agenda
- Energy poverty - a global challenge



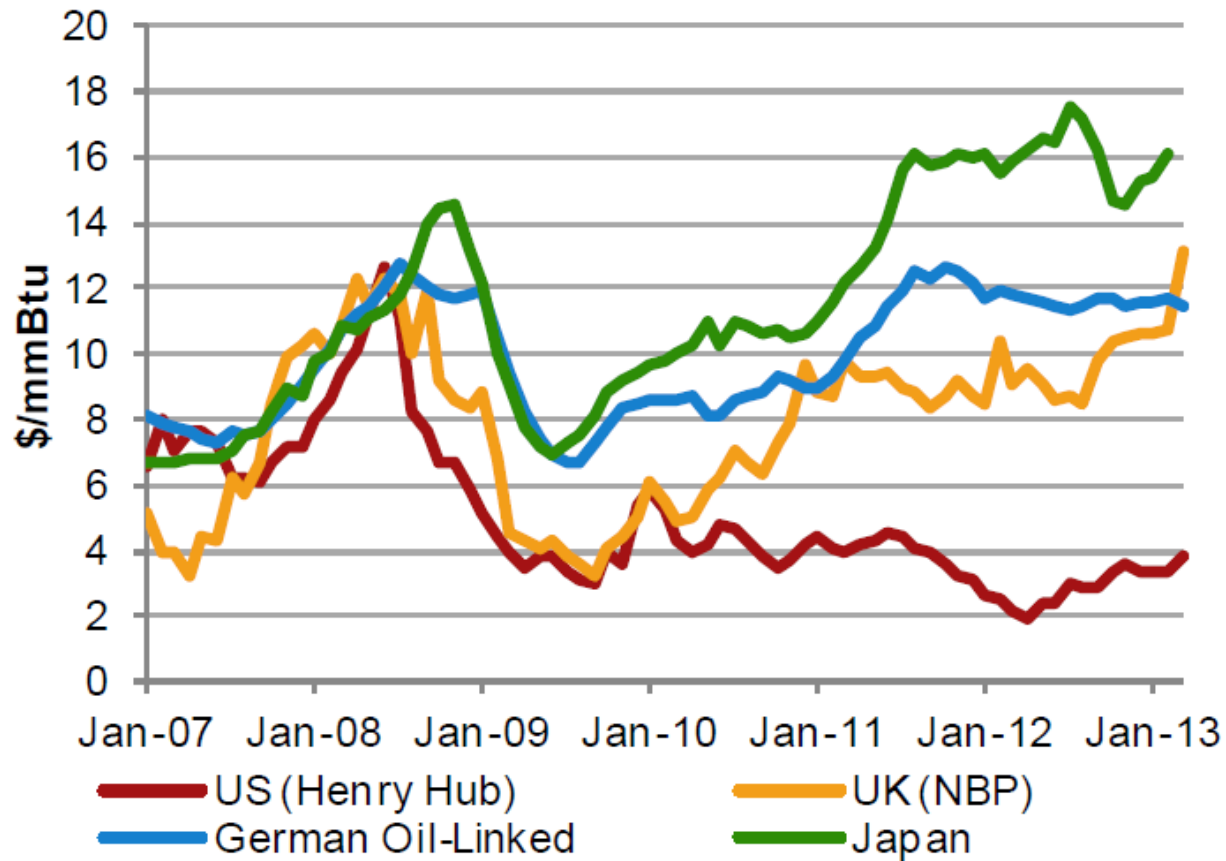
Policies increasingly impacting energy markets

- **North America – the shale gas revolution**
 - Boosting economy and reducing CO2 emissions
- **Europe – gas squeezed**
 - Renewables subsidies and low coal prices
- **Asia and South America**
 - Gas pricing a key issue
- **Middle East/Africa – domestic use and export**



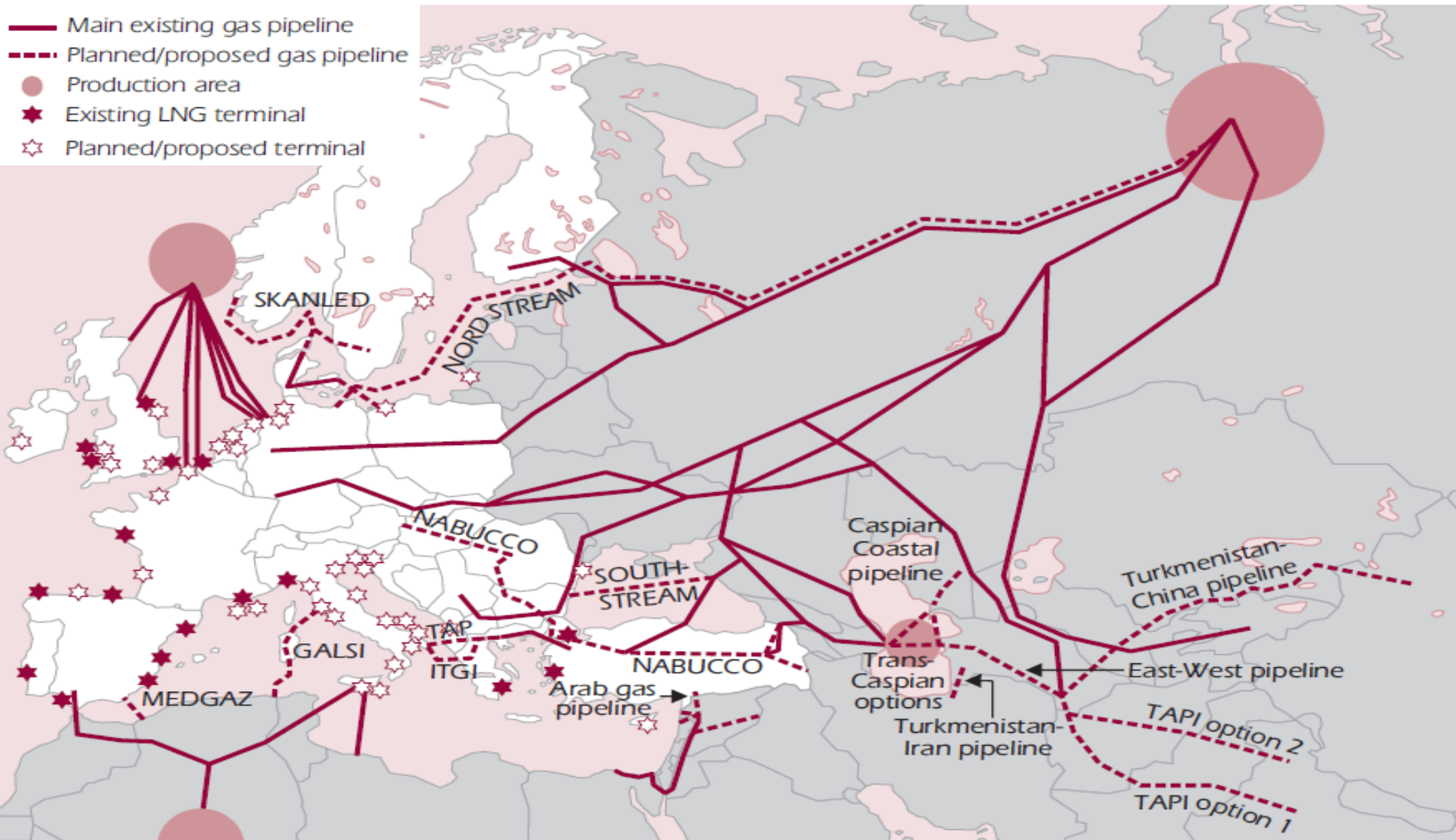
Huge regional variations!

Evolution of global gas prices



Diversification of supply routes and suppliers

- Main existing gas pipeline
- - - Planned/proposed gas pipeline
- Production area
- ★ Existing LNG terminal
- ☆ Planned/proposed terminal



Europe – LNG & pipeline grid interconnected



Emergency situations can be managed

China's diversified gas supply sources



China 2012:
Production 107 bcm
Consumption 144 bcm

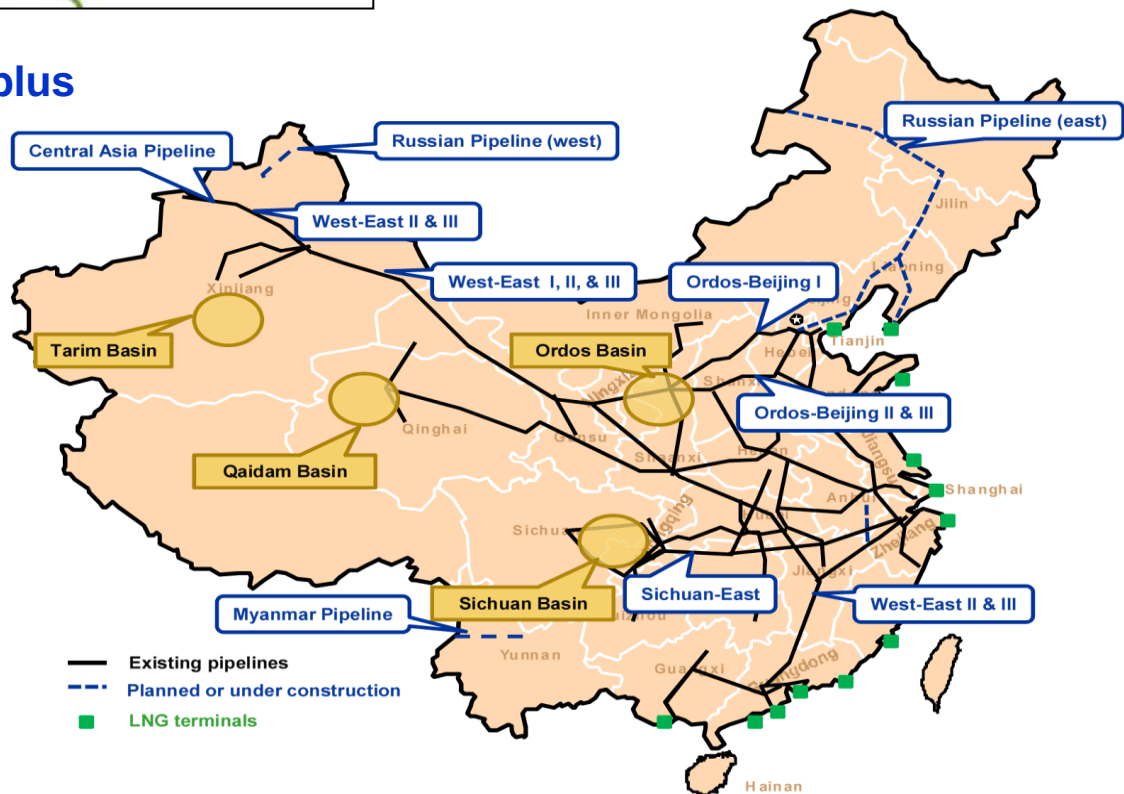
Source: BP Statistics 2013

Turkmenistan supplies 30 bcm/yr plus



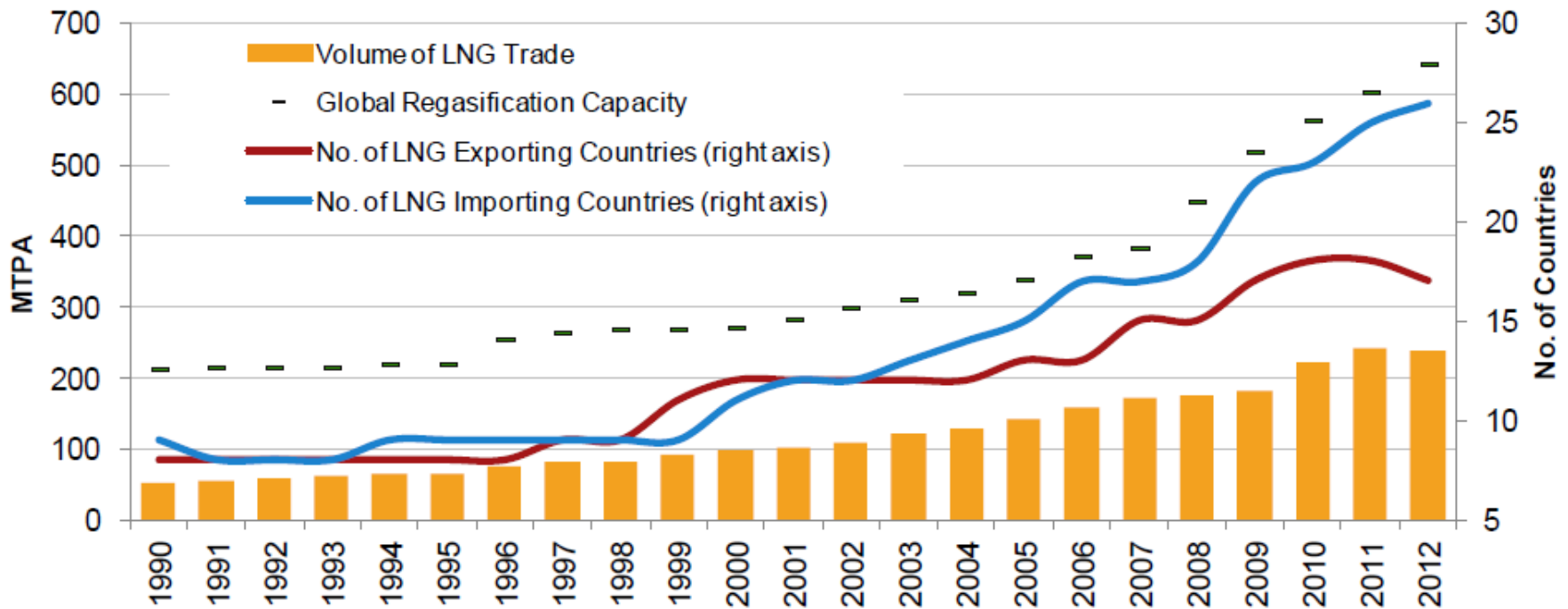
Myanmar supplies 10 bcm/yr plus

Source: SHWE Gas Movement



Source: IHS CERA, various sources.

LNG offers enhanced energy security



Supply disruptions and responses

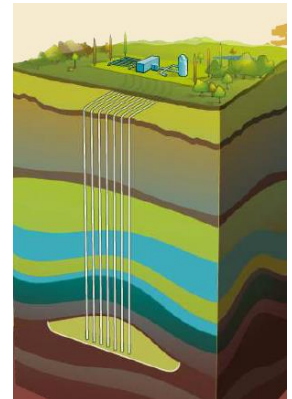
- **High pressure pipes extremely reliable**
 - Underground pipes not exposed to weather
- **Gas industry used to variable demand**
 - Annual, seasonal, daily
- **Portfolio of supply sources**
- **Market response: use of flexibility and trade routes**
 - Information sharing and business relationship



Keep supply and trade routes open!

Prevention planning for supply disruptions

- Gas storage and grid interconnections
- Gas based power – smart grids
- Cross border pipelines and reverse flow
- LNG swap and loan arrangements



National & regional analysis needed

Trading arenas offers options for mitigation of interruptions

- Trading hubs for spot volumes, short and medium
- Price exchange, forward market
- Need liquidity and support
- Flexible delivery points - destination clauses
- US: Henry Hub, other regional
Europe: NBP, Zeebrugge, TTF



Risk management instrument

Policy and regulation to encourage investments

- **Investments in gas infrastructure**
 - International partnership, risk sharing, long term contacts
- **Market-oriented prices and tariffs**
- **Facilitate transfer of technology**
- **Financing and tax regime**

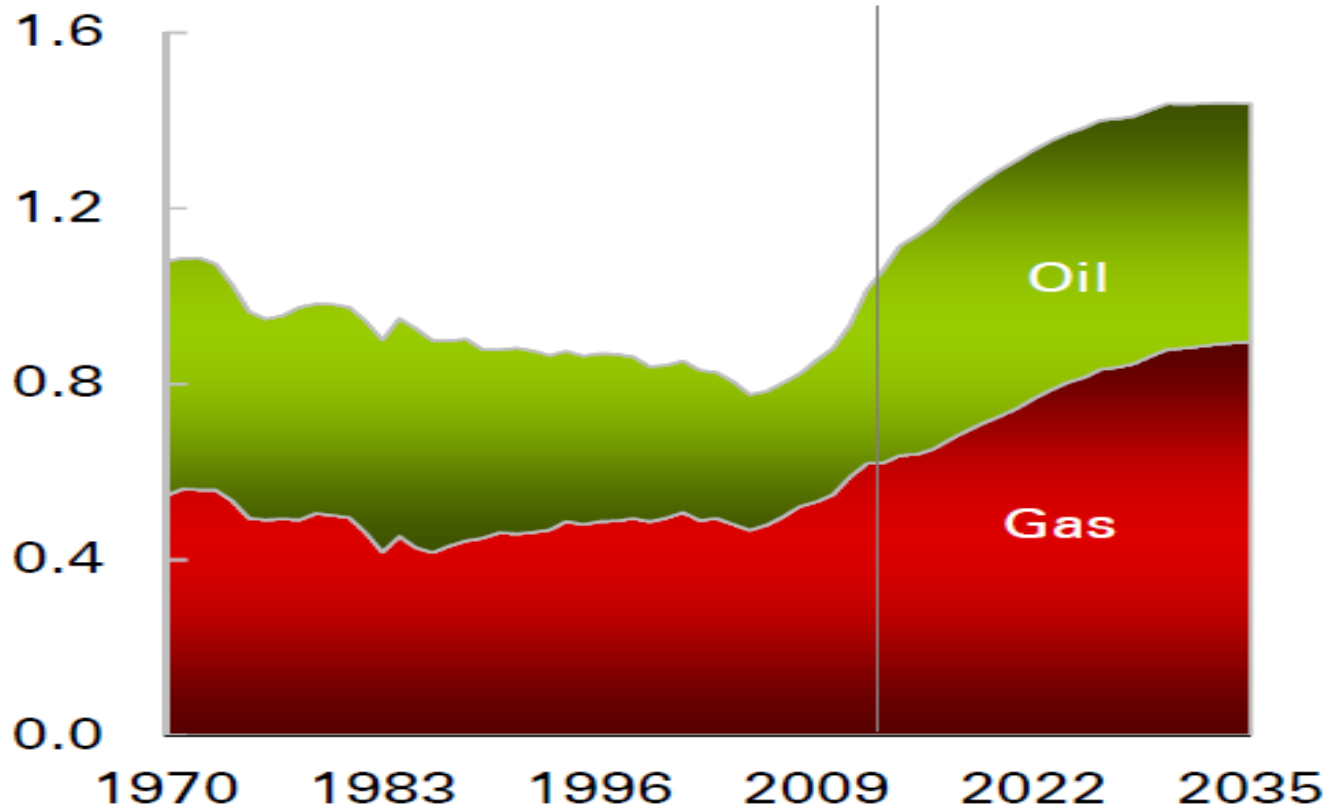


Enable business to do business!

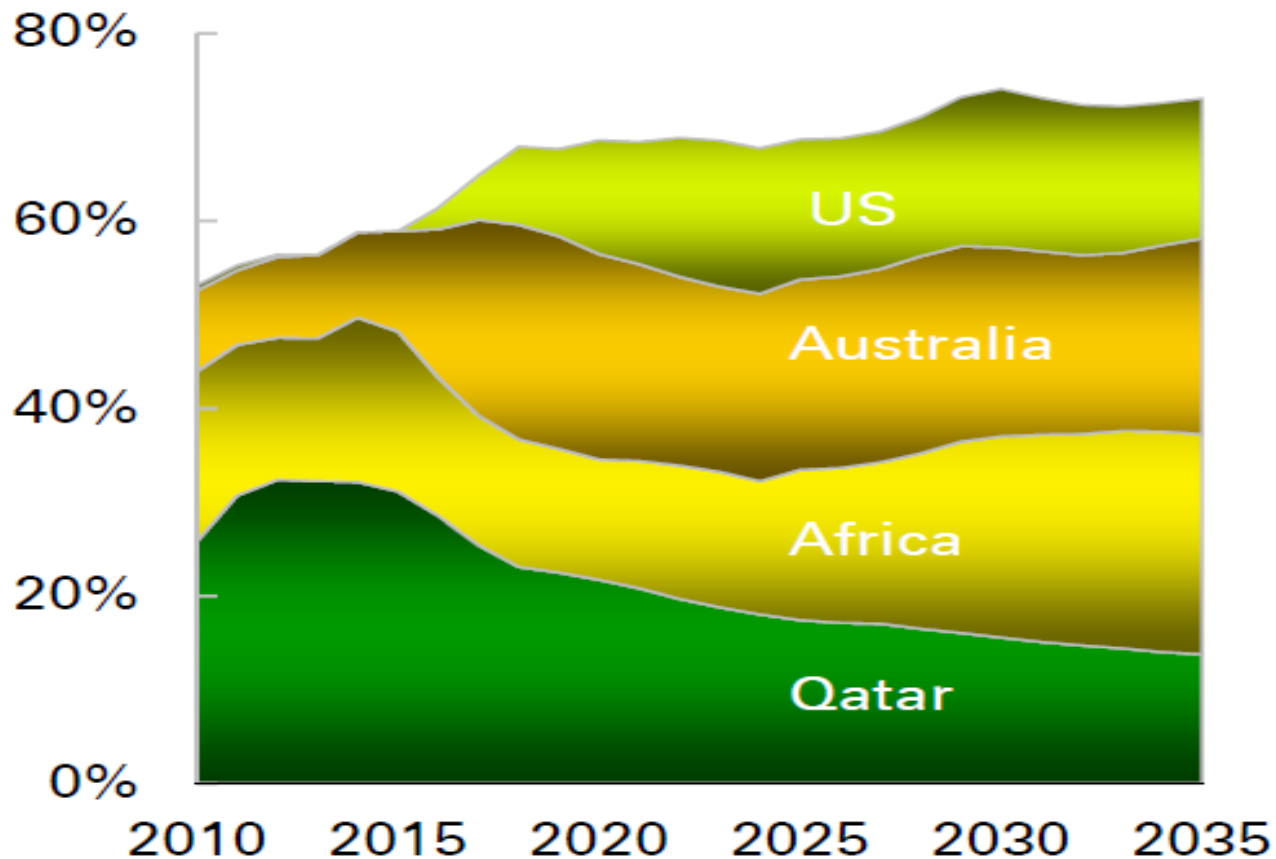
Impact of of new technology....

US oil and gas supply

Billion toe



New LNG suppliers emerging - facilitates disruption management



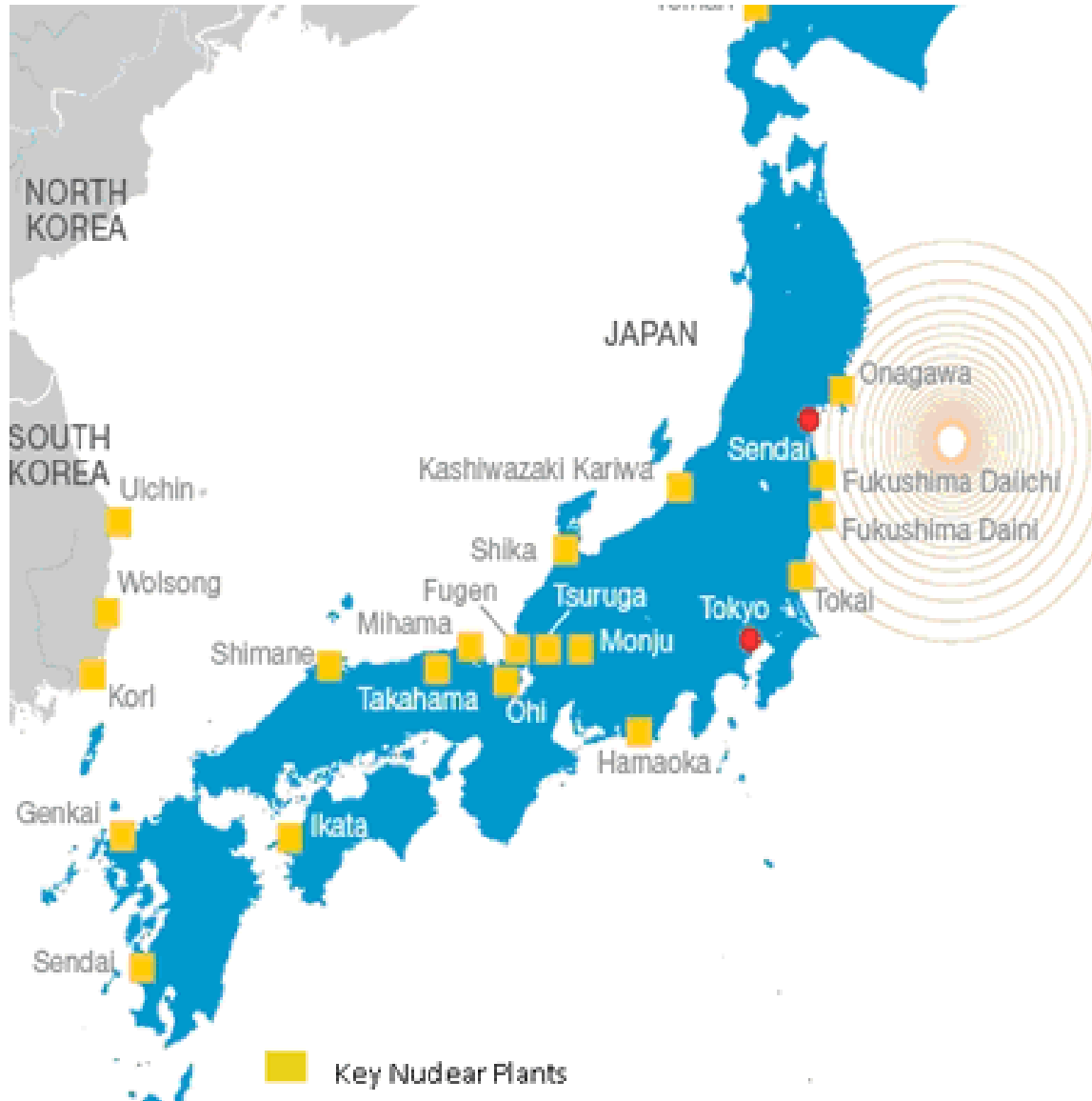
Access to sustainable energy & economic development based on gas



**UN – World Bank initiative
“Sustainable Energy for All”:
IGU/gas industry contributing
with competence**

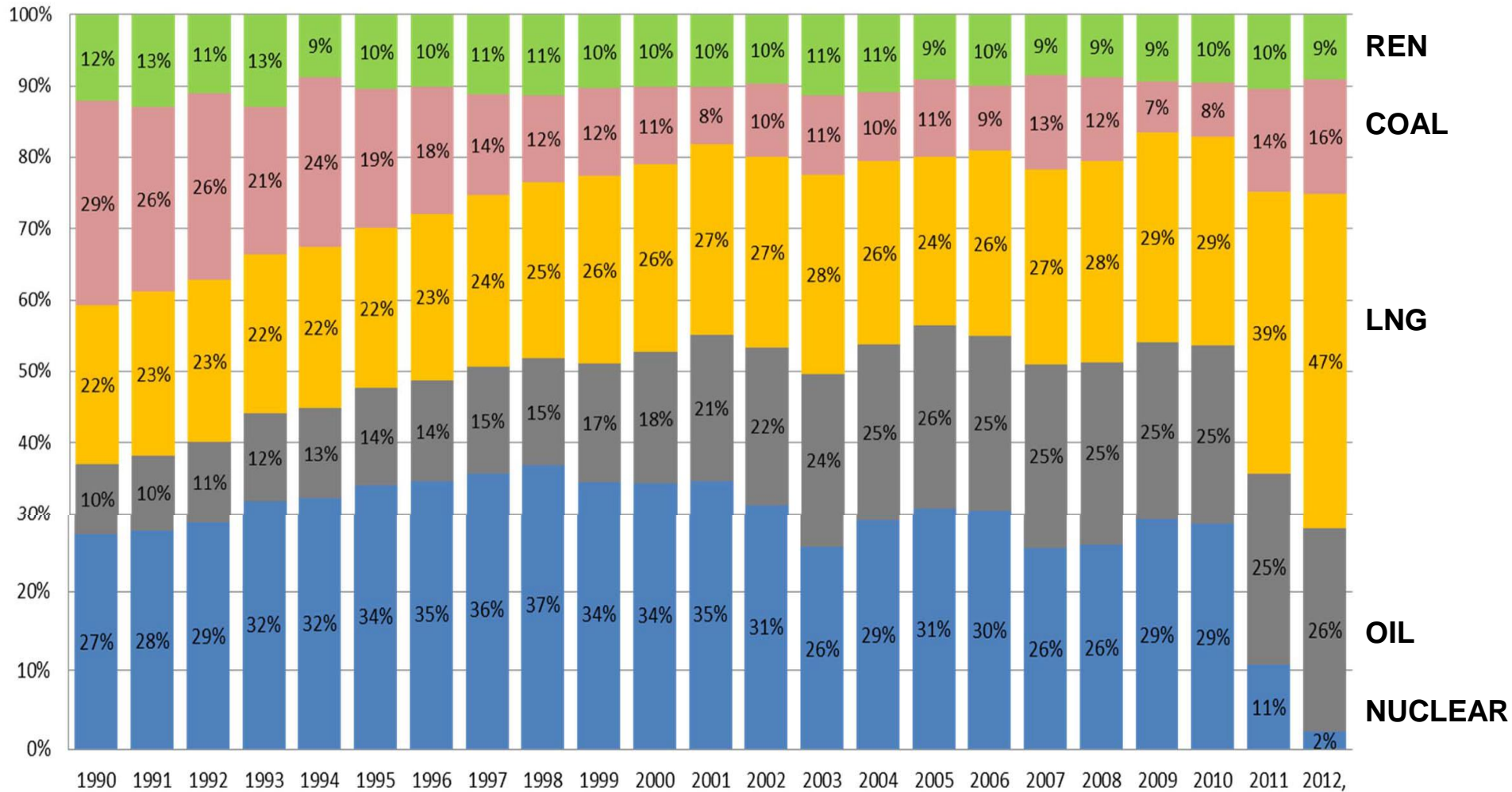


Fukushima earthquake - 11 March 2011



LNG replaced nuclear (NBR/METI)

Electricity Generation by Fuel



Source: Compiled by METI based on "Outline of Electric Power Development in FY 2010" etc.

Supply post-Fukushima

- Around 12.5 million tons in 2011 from the Atlantic Basin
 - Cargoes diverted from West Africa and Europe
- Europe – increased pipeline supplies (Russia, Norway)
- LNG demand increase 15 mill tons in 2012 (20 bill cm)
- Qatar, Russia, Malaysia and Indonesia arranged swaps and diverted cargoes.



Successful response by gas industry

Conclusions – strengthening gas markets

- G20 – enhance the energy dialogue
 - Governments, industry, international organisations
- Policies to support infrastructure investments
- Transfer policy competence/experience
 - What works and what does not work?



G20 support for stable regulatory framework

Thank you!



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