



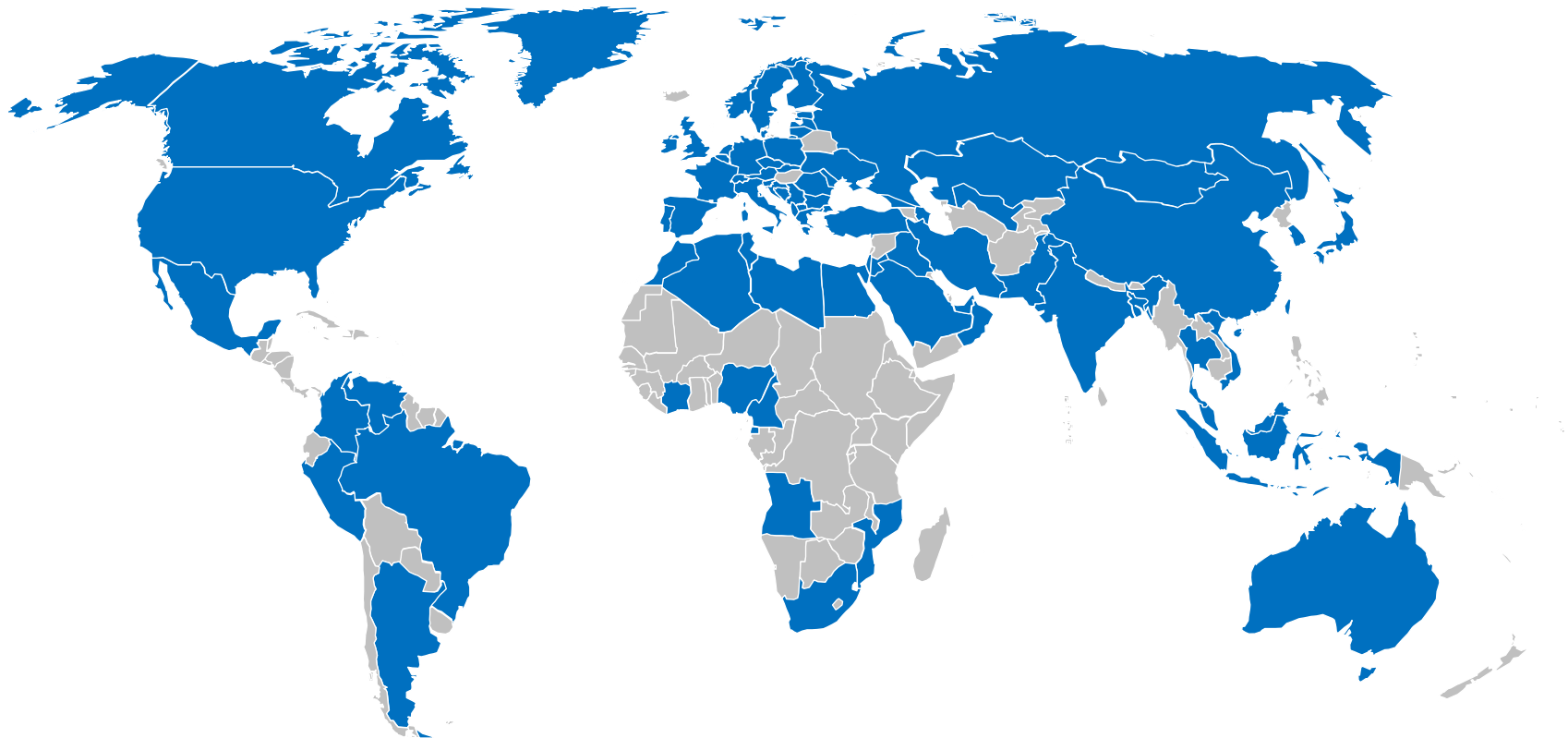
# ***G20 Energy Sustainability Working Group***

## ***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**

[www.igu.org](http://www.igu.org)

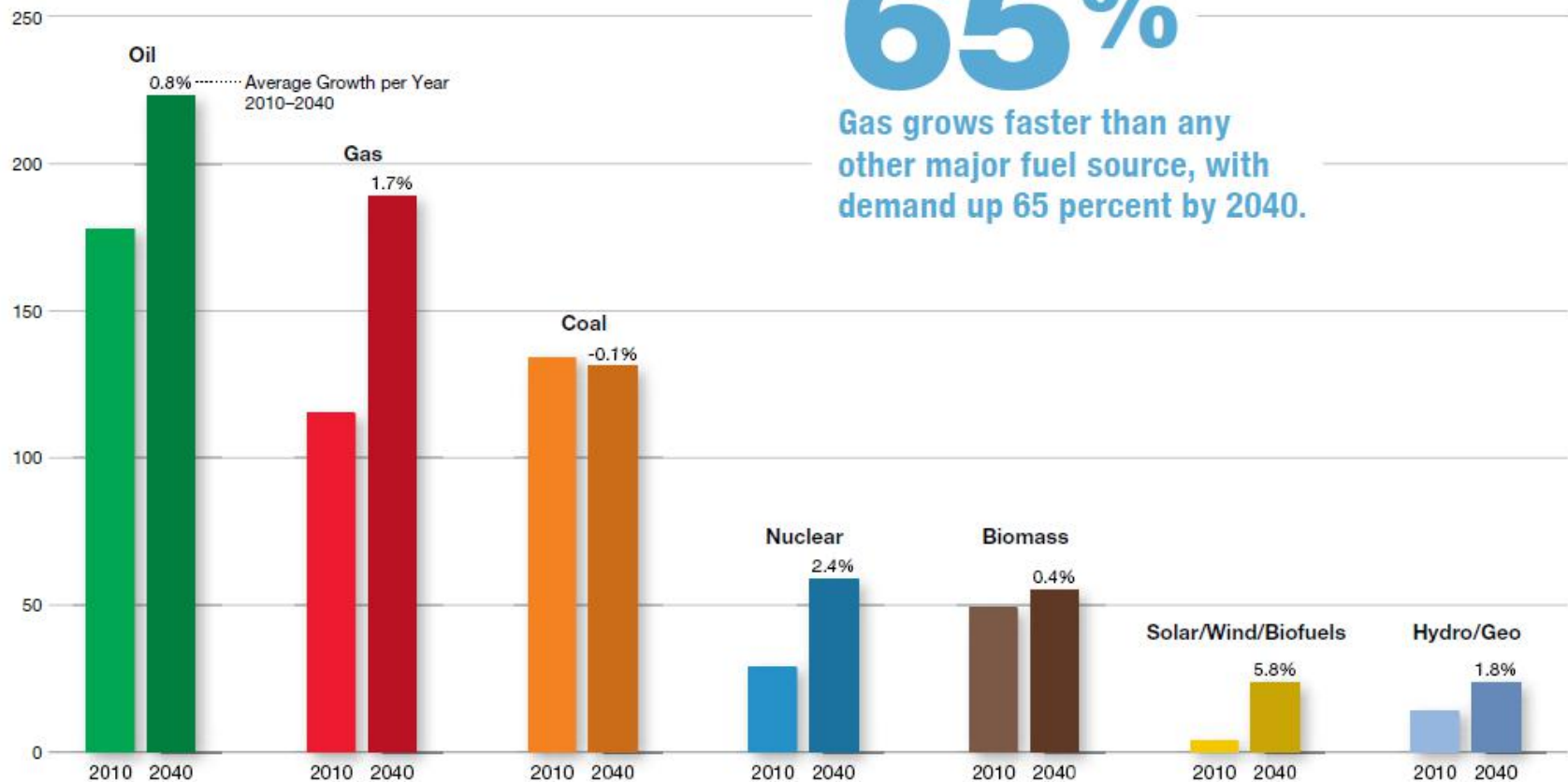
 IGU members

**83 Charter members**  
**43 Associate members**

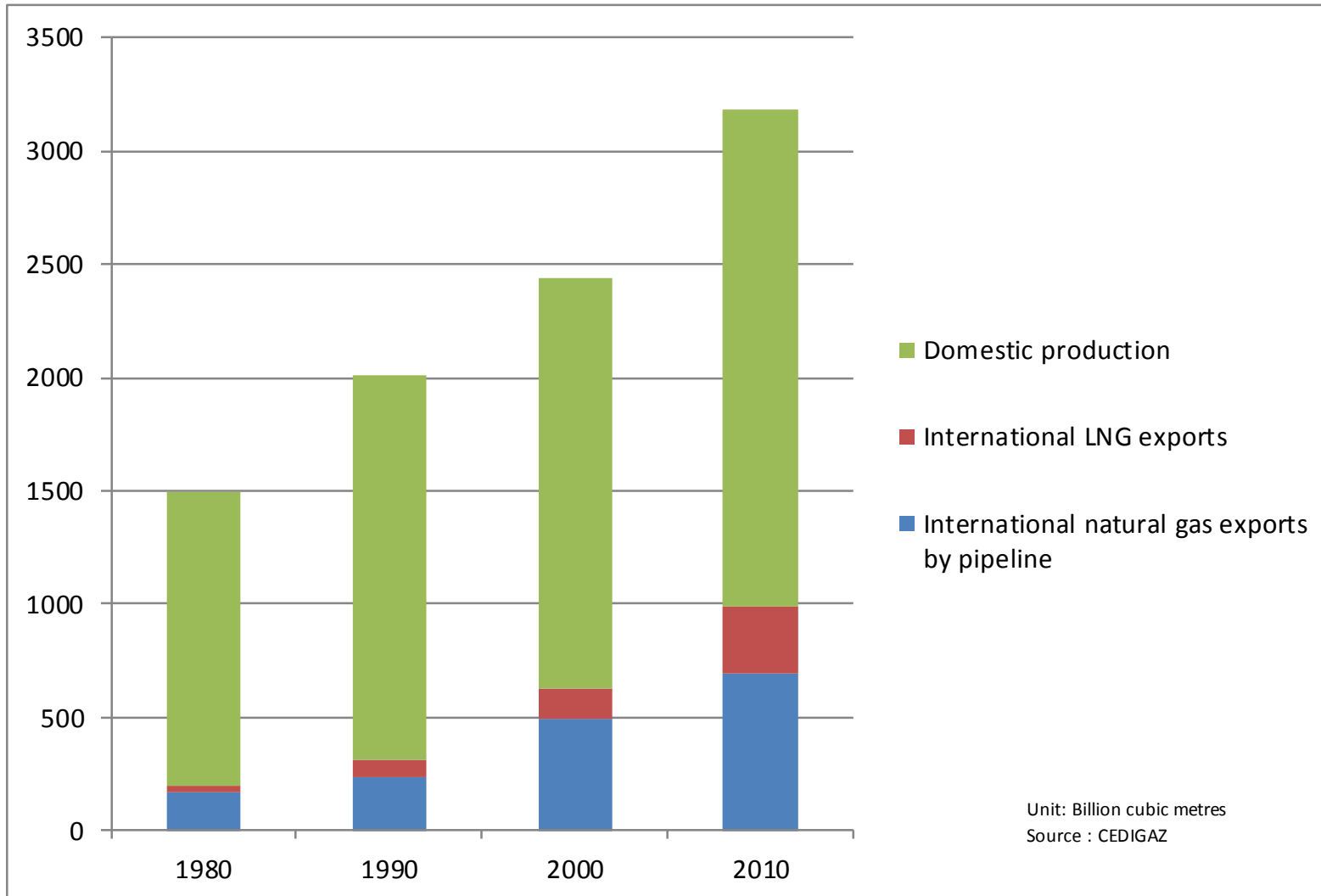
# Gas – fueling more of the world!

## Energy mix continues to evolve

Quadrillion BTUs

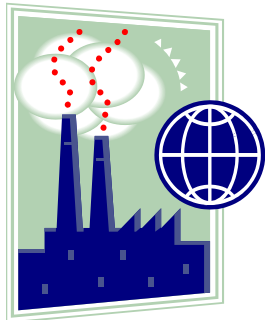


# Evolution of gas markets



# 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



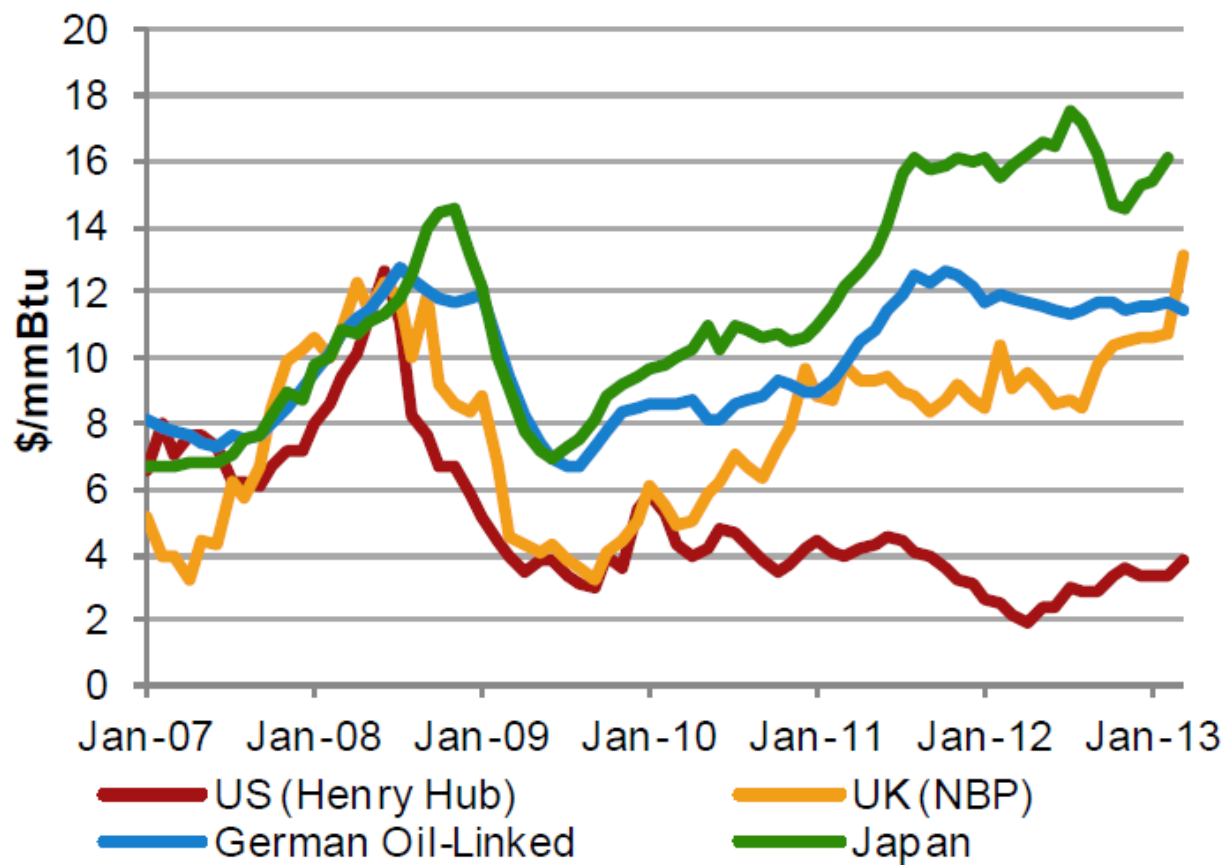
***Policies increasingly impacting energy markets***

- **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**



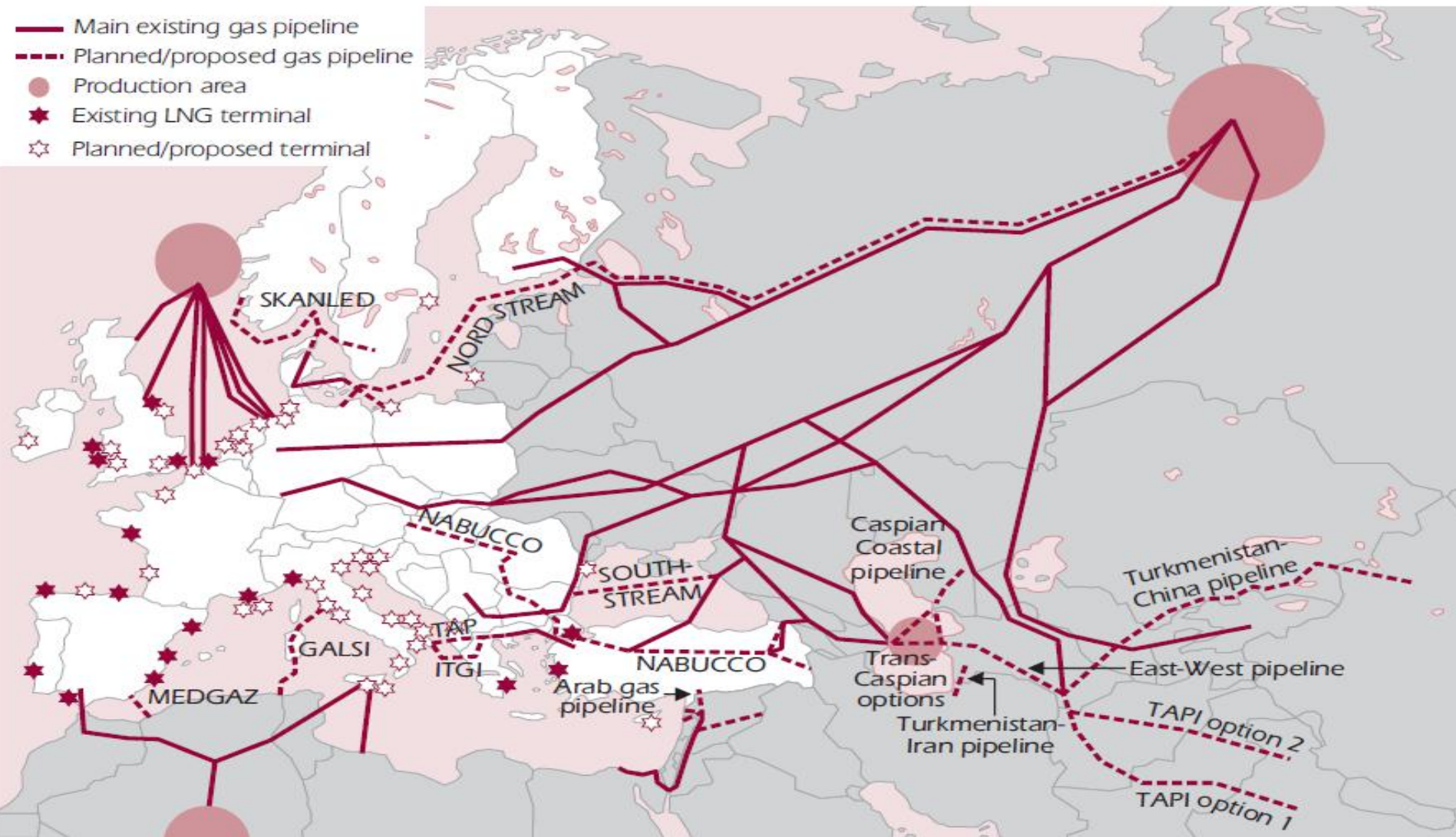
***Huge regional variations!***

# 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**

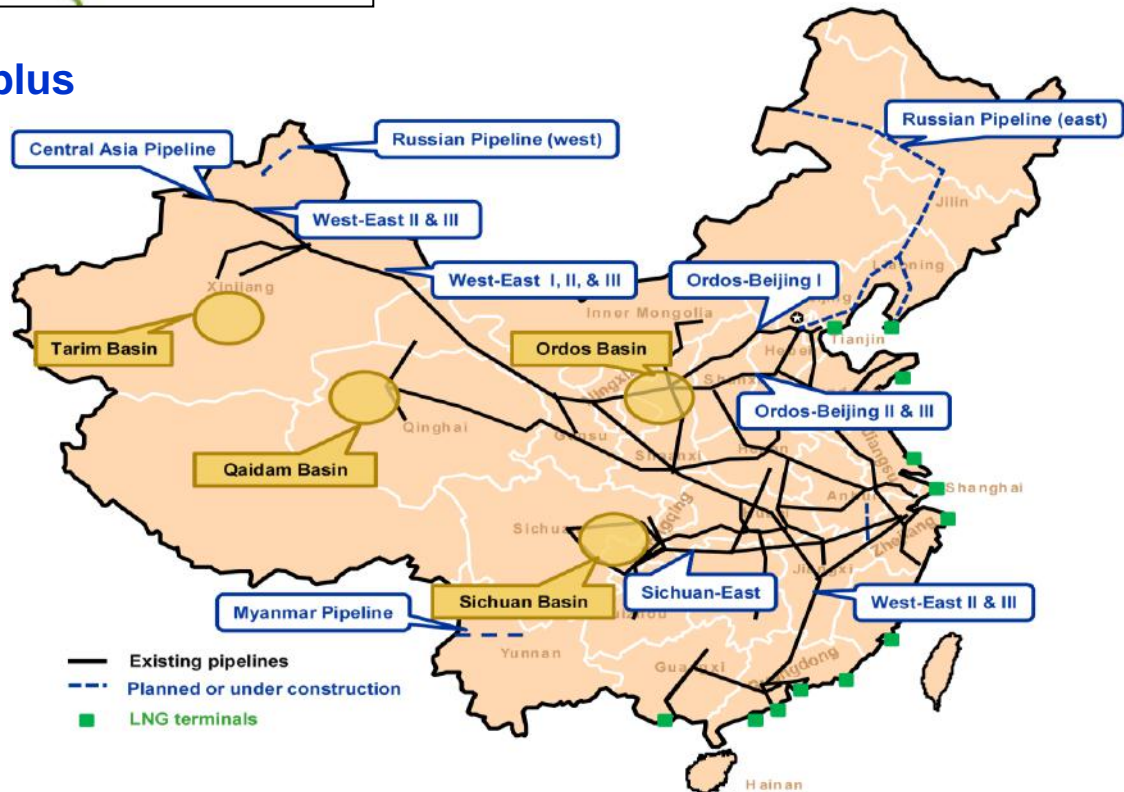
Source: BP Statistics 2013

**Turkmenistan supplies 30 bcm/yr plus**



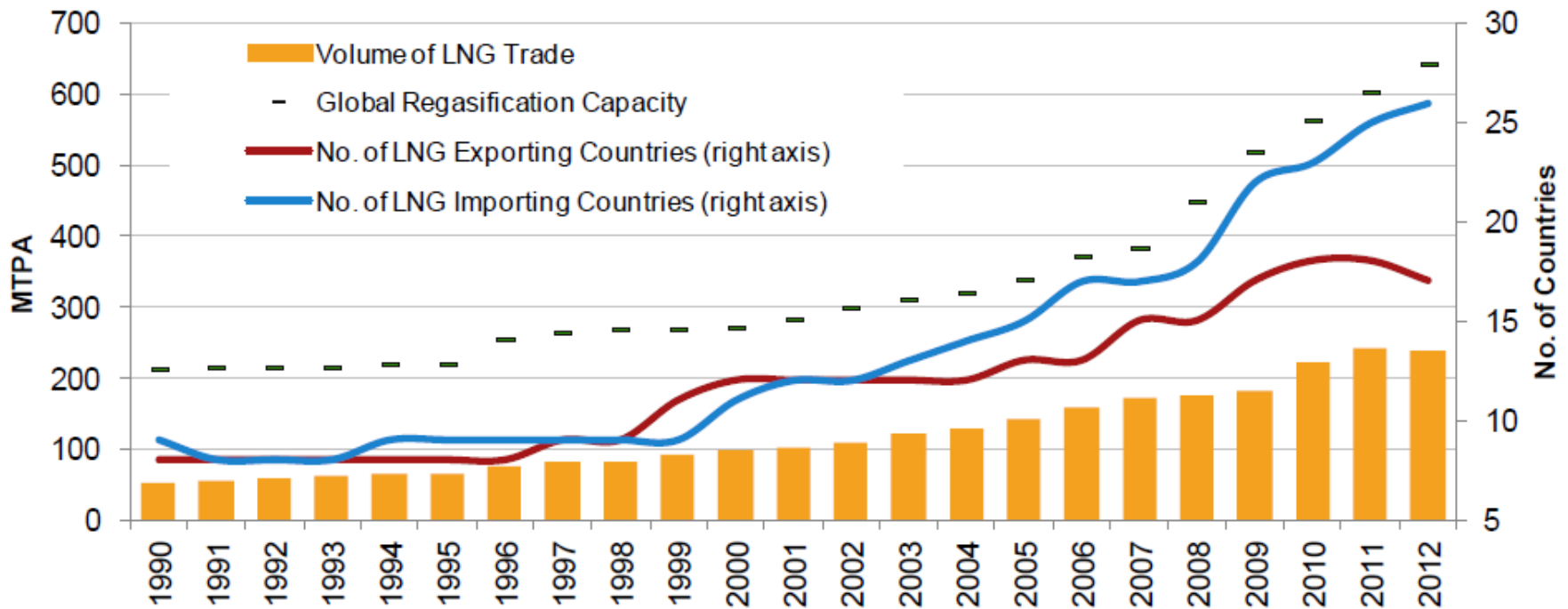
**Myanmar supplies 10 bcm/yr plus**

Source: SHWE Gas Movement



Source: IHS CERA, various sources.

# LNG offers enhanced energy security



# Supply disruptions and responses

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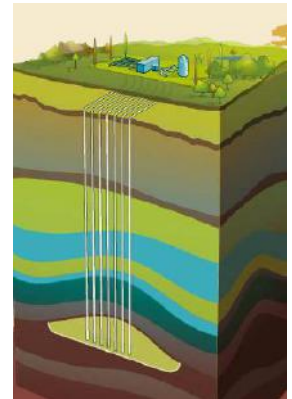
- **High pressure pipes extremely reliable**
  - Underground pipes not exposed to weather
- **Gas industry used to variable demand**
  - Annual, seasonal, daily
- **Portfolio of supply sources**
- **Market response: use of flexibility and trade routes**
  - Information sharing and business relationship



***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

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- 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

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

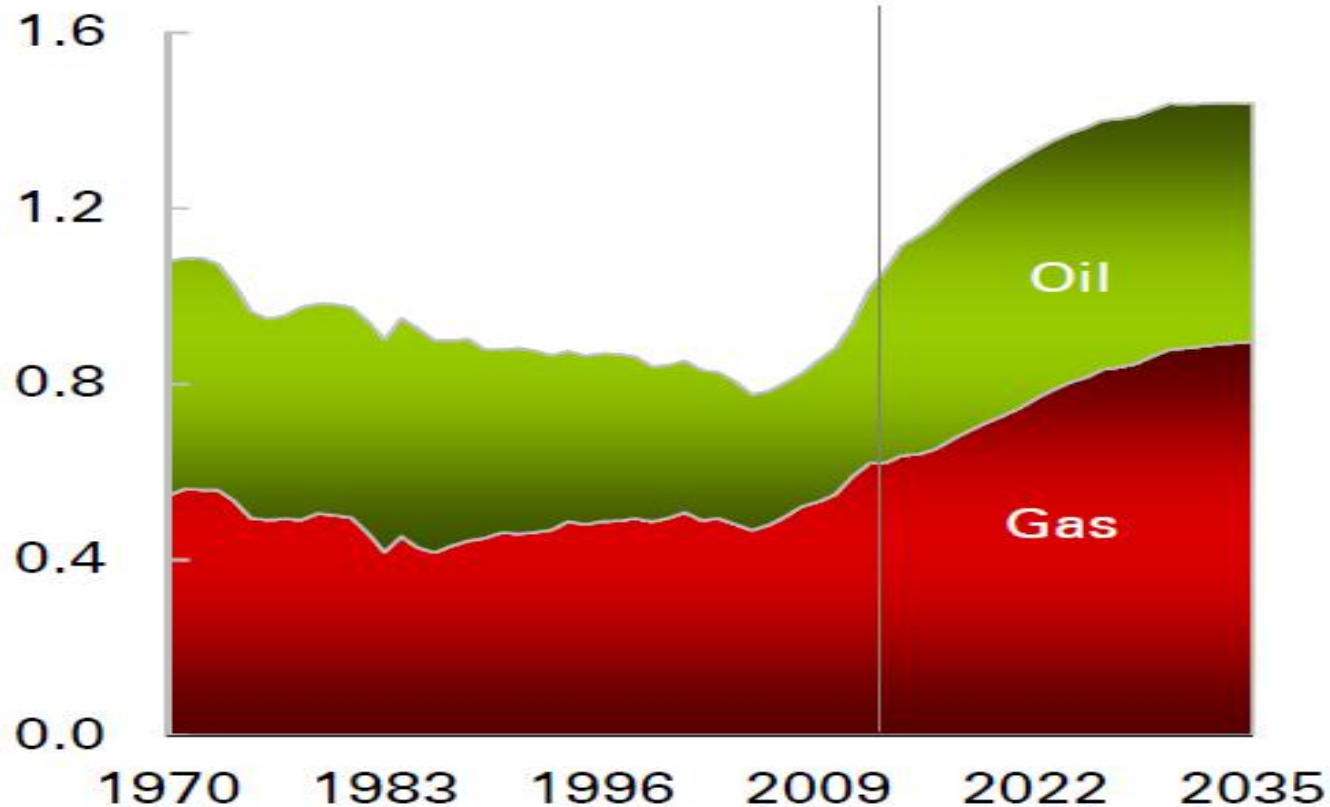


***Enable business to do business!***

# Impact of of new technology....

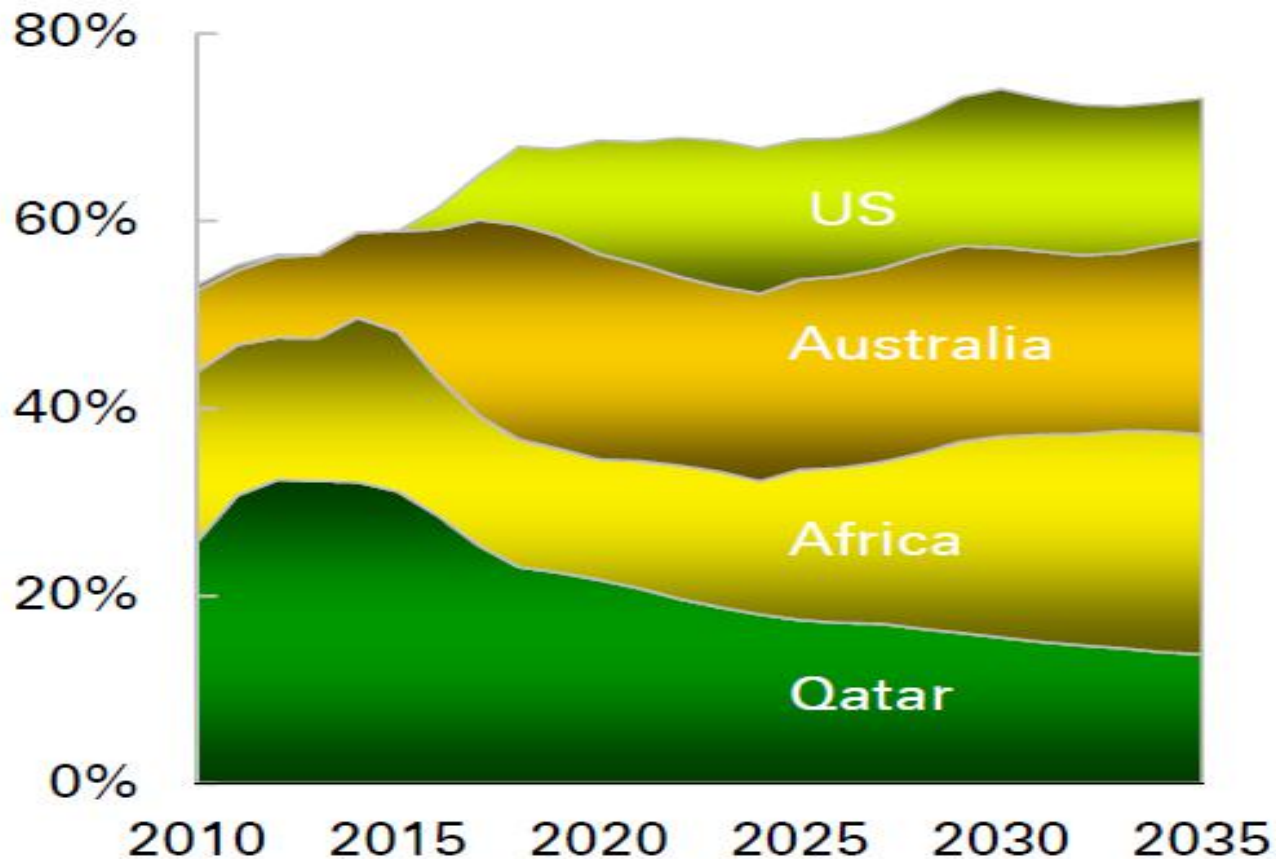
## US oil and gas supply

Billion toe





# New LNG suppliers emerging - facilitates disruption management



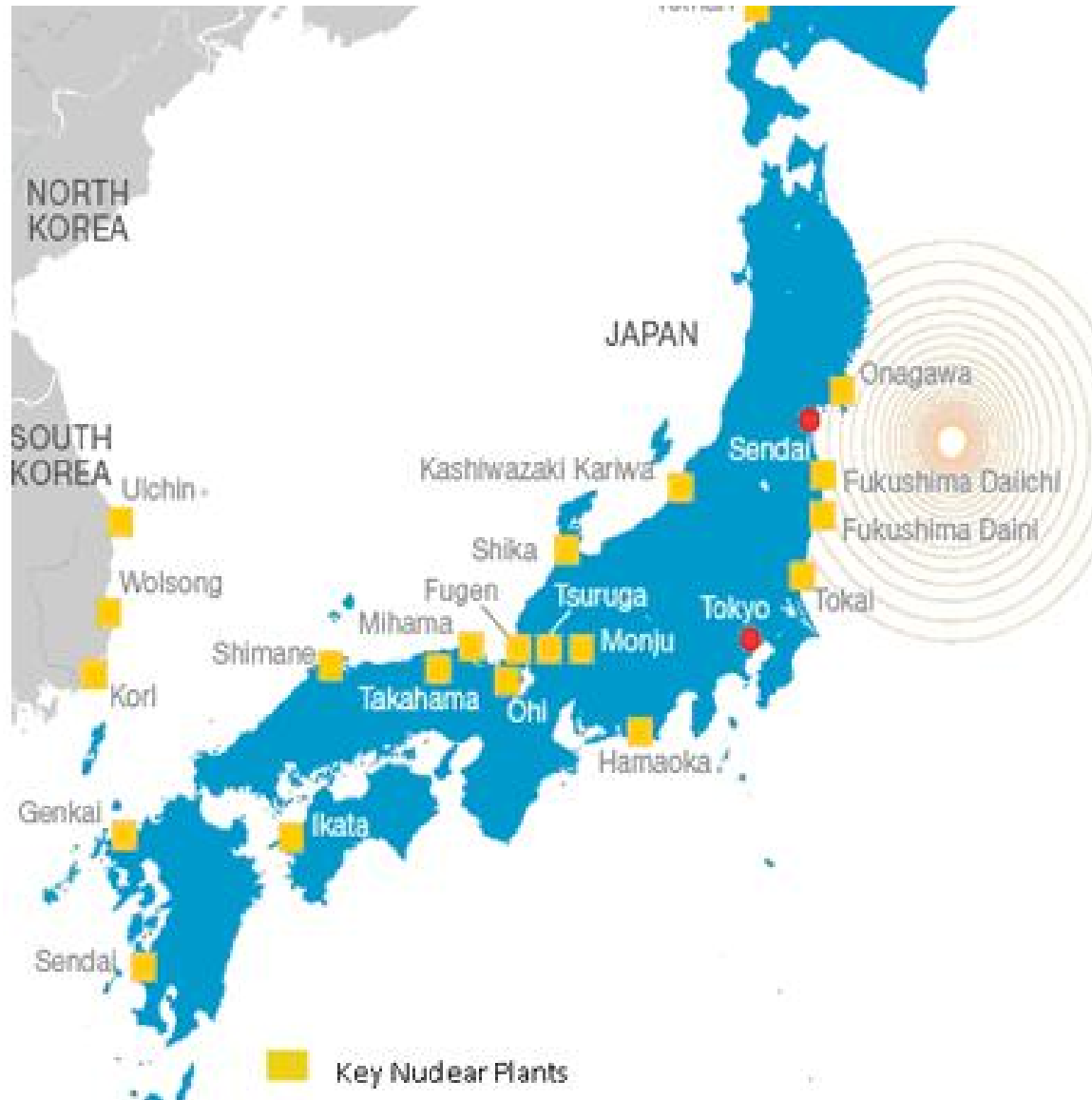
# Access to sustainable energy & economic development based on gas



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

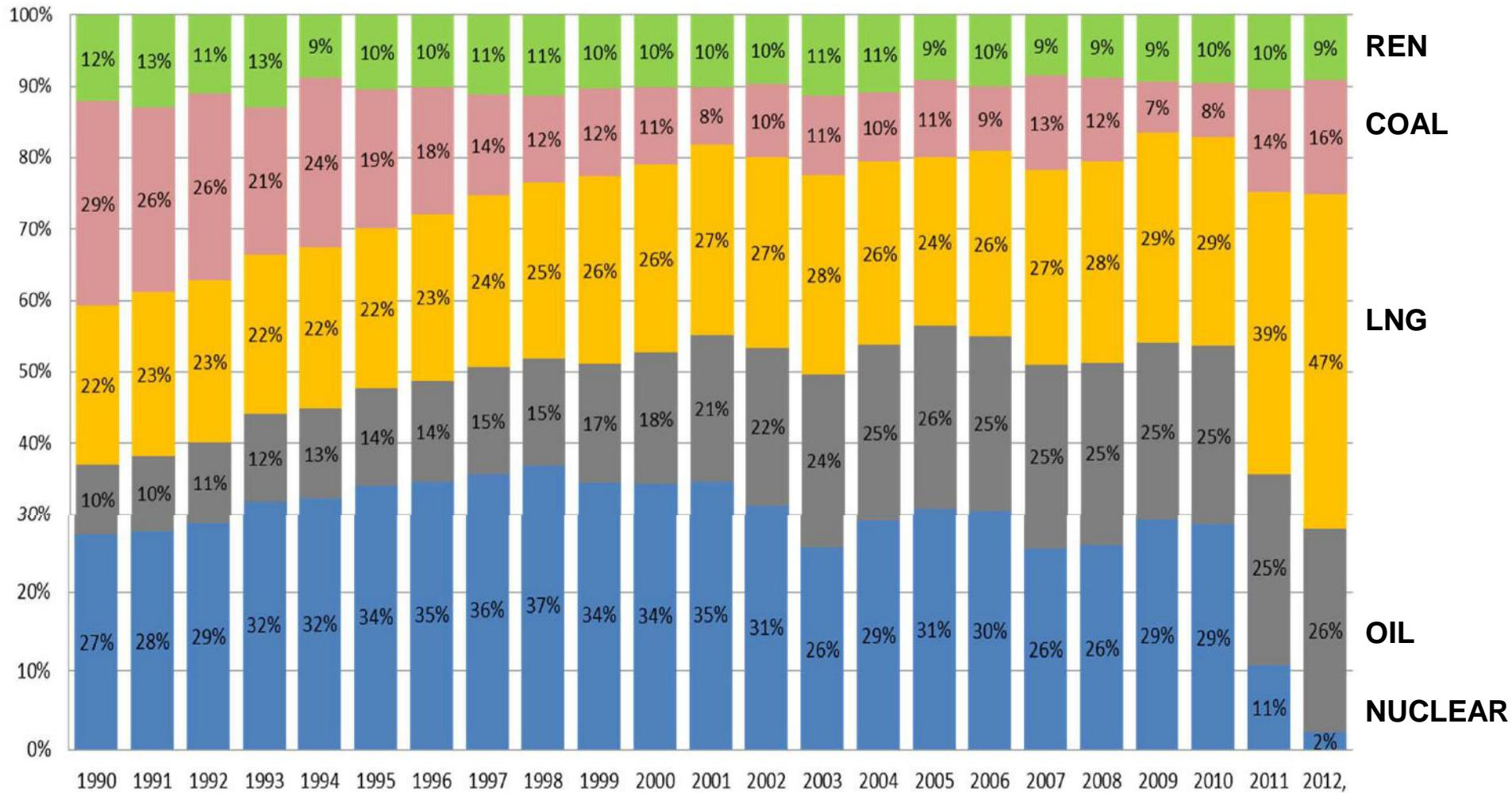


# Fukushima earthquake - 11 March 2011



# LNG replaced nuclear (NBR/METI)

## Electricity Generation by Fuel



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

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# Supply post-Fukushima

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- 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

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- 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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