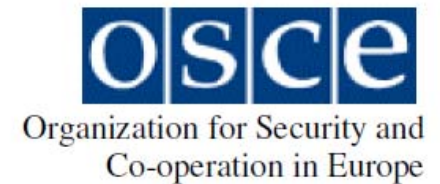




# International Gas Union



## Energy Security from a Natural Gas Perspective



**Torstein Indrebø**  
**Secretary General of IGU**

**4 May 2010, Ashgabat, Turkmenistan**



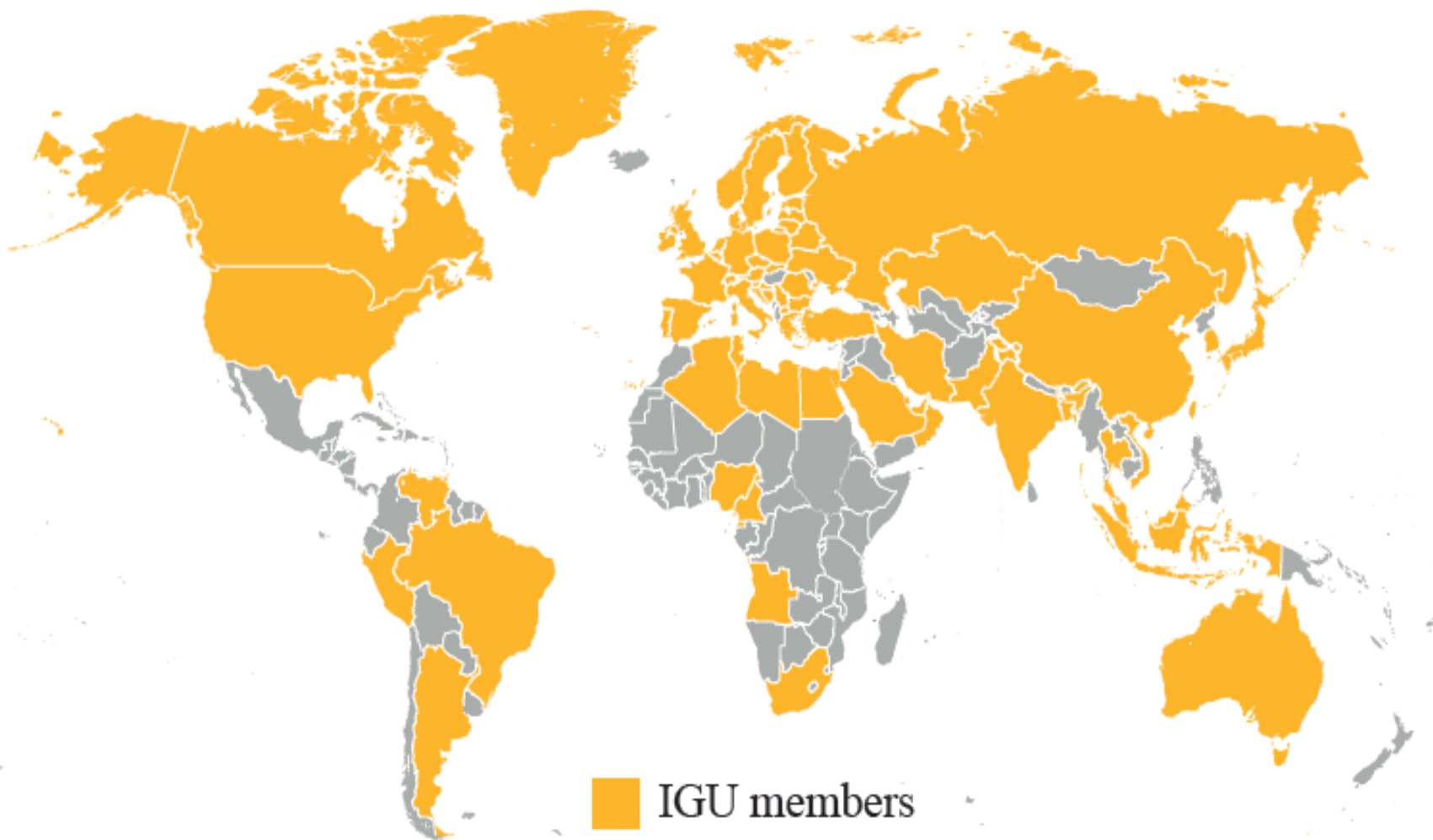


# IGU represents around 95% of global gas market



**News, Views  
and knowledge  
on Gas - World Wide**

**IGU established in 1931**





# The IGU organisational structure



**Torstein  
Indrebø  
Norway**



**Secretary General**

**President**



**Datuk Rahim Hashim  
Malaysia**

**Vice President**



**Jérôme Ferrier  
France**

**CC Chairman**



**Ho Sook Wah  
Malaysia**

**CC Secretary**

**Ungku Ainon  
Ungku Tahir  
Malaysia**



**CC Vice Chairman**



**Georges Liens  
France**

**PGC A  
Sustainability**

**PGC B  
Strategy**

**PGC C  
Gas Markets**

**PGC D  
LNG**

**PGC E  
Marketing**

*New Committee*

**TASK FORCES**

1. Building strategic human capital
2. Nurturing future generations
3. Geopolitics of Natural Gas

*Gas Chain*

**WOC 1  
E&P**

**WOC 2  
Storage**

**WOC 3  
Transmission**

**WOC 4  
Distribution**

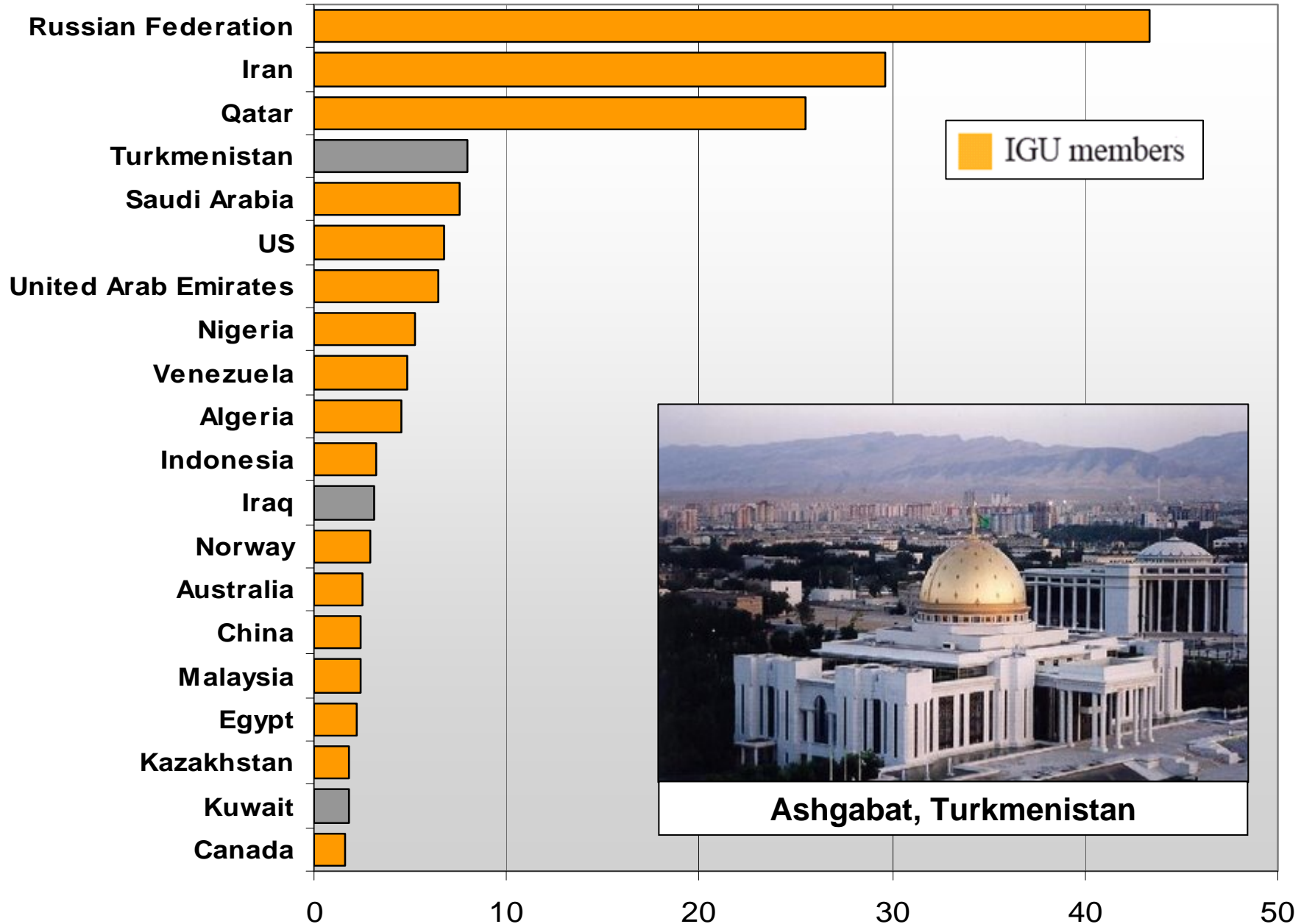
**WOC 5  
Utilisation**



# Top 20 Proven Reserves NG

(source BP Outlook 2009)

tcm

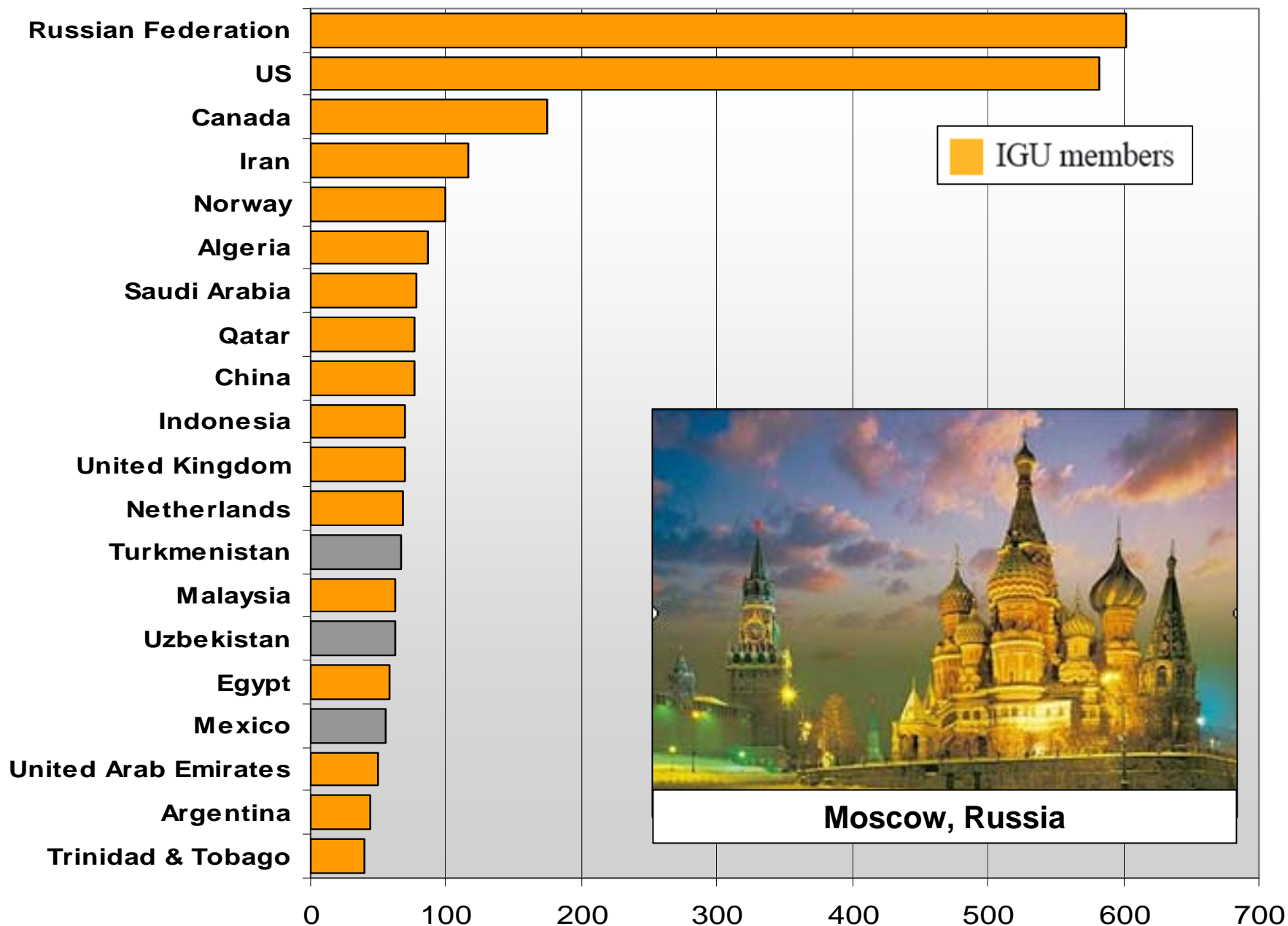


Ashgabat, Turkmenistan

# Top 20 NG Production 2008

(source BP Outlook 2009)

bcm/yr



# Energy security – what does it mean?



- **Reliable supplies**
- **Reliable demand**
- **Reliable transit**
- **Job creation and economic growth**
- **Geopolitics**





# The global energy future

- Rising population – from 6 to 9 billion in 2050
- Human strive for a better life
- Technological progress
- Climate change concerns



## Securing natural gas deliveries also under extreme conditions



- Colder and longer winters



- Technical failure
- Terrorism



- Commercial dispute
- Geopolitical tension



- Natural disasters



**Policy choices**

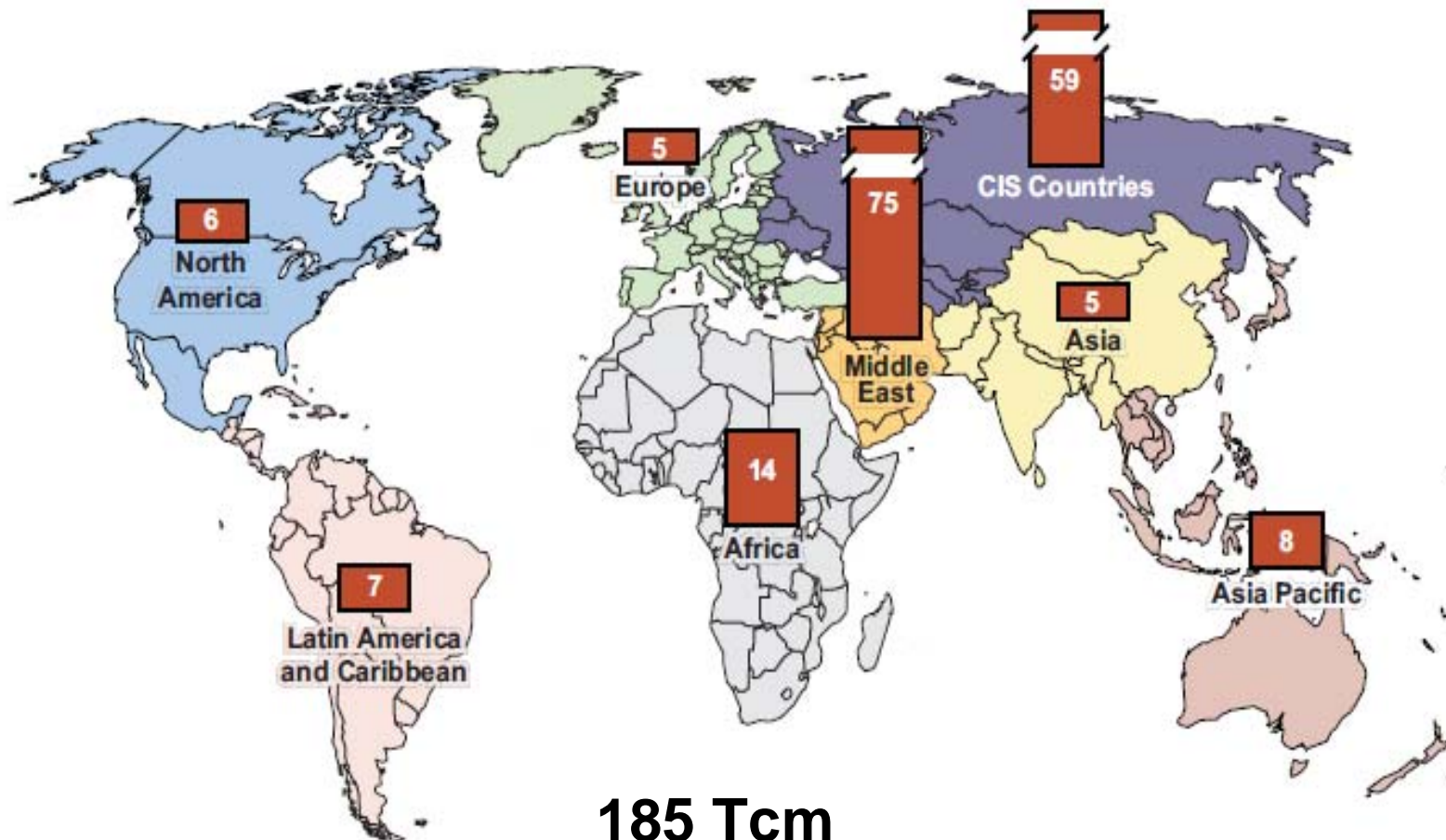
### Questions

- National measures or regional solutions?
- Market players or governments?
- Role of regulators?



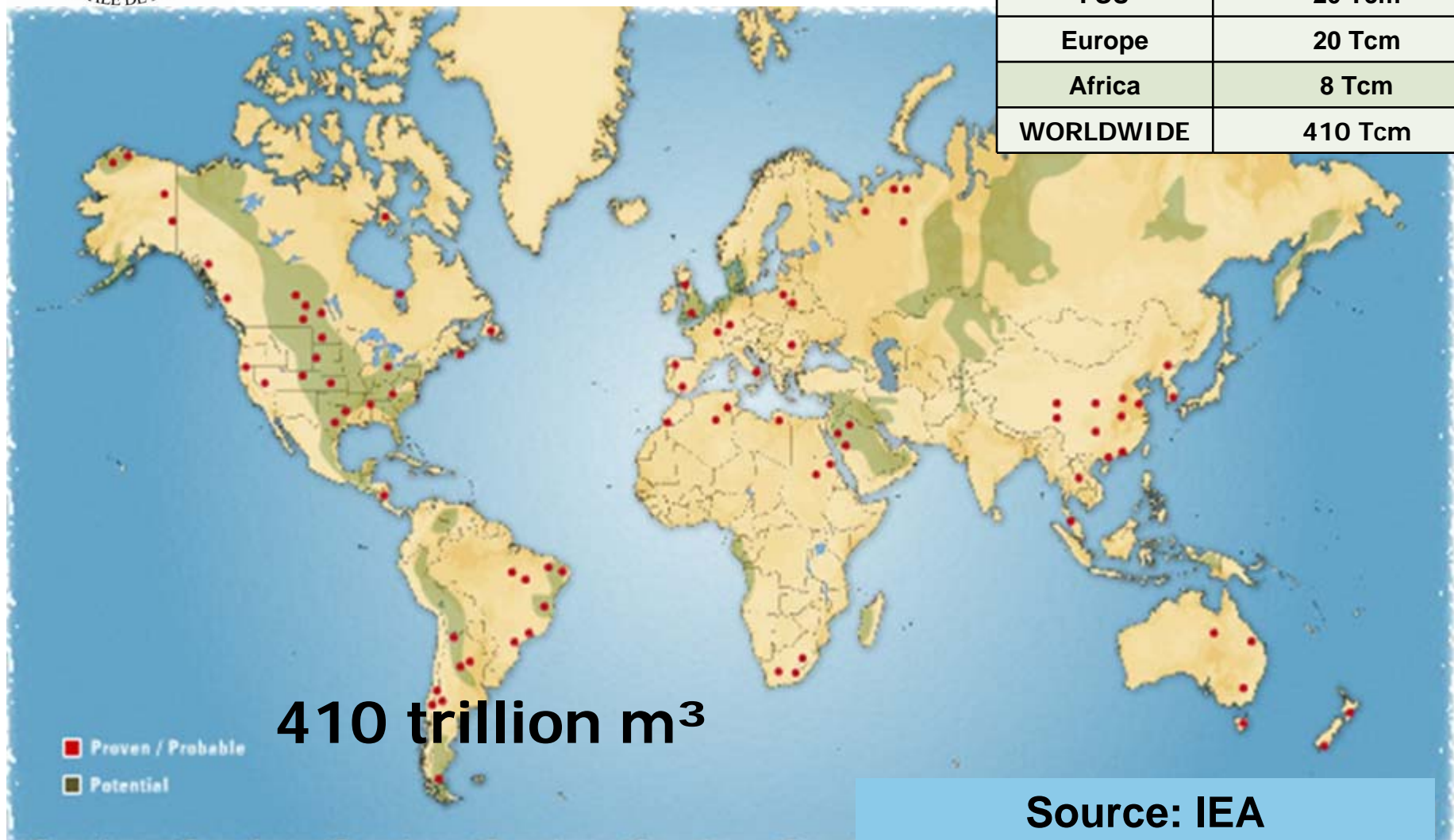


# Distribution of proven gas reserves (est 2008)



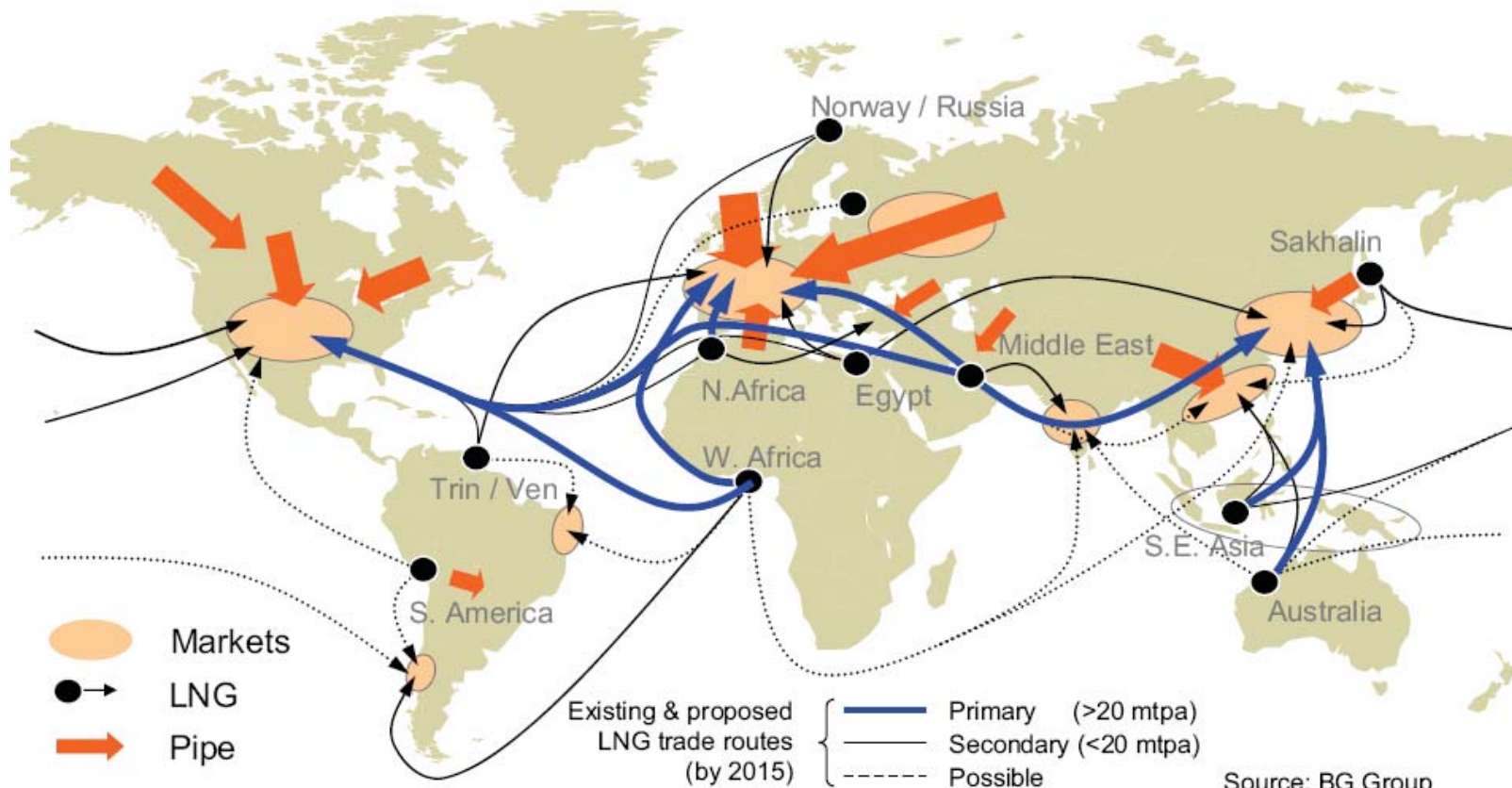
# Shale gas reserves

REGION	SHALE RESERVES
Asia Pacific	120 Tcm
Middle East	71 Tcm
South America	59 Tcm
North America	110 Tcm
FSU	20 Tcm
Europe	20 Tcm
Africa	8 Tcm
WORLDWIDE	410 Tcm



Source: IEA

# Global gas trade enhancing energy security





- **Supply security**

- Production and transmission infrastructure
- Gas storage and LNG terminals

- **Demand security**

- Energy policy, climate framework
- Long term agreements



## Integration of gas markets

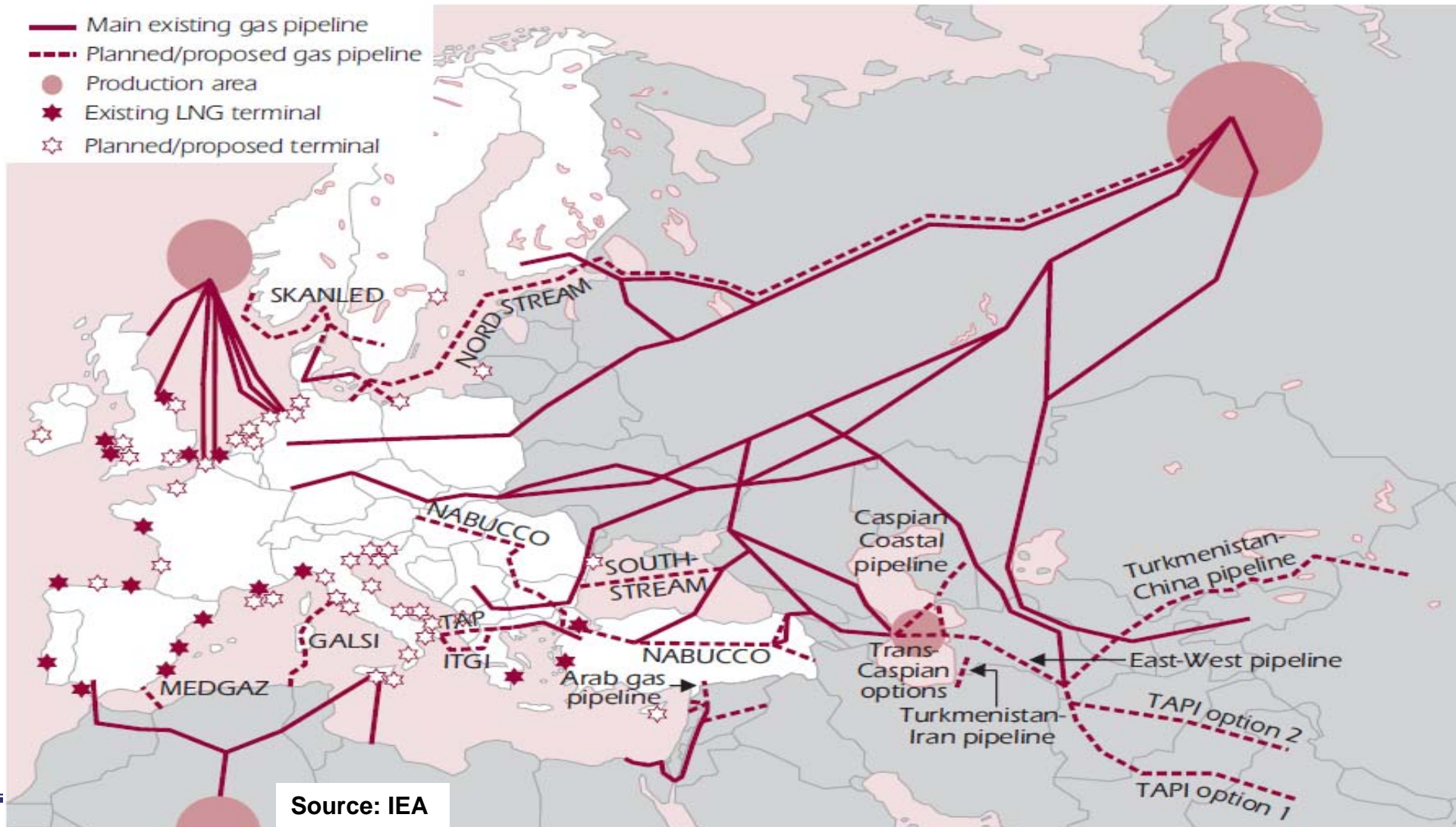
➤ **IGU Strategic Statement 2008**



# Infrastructure projects - key to energy security



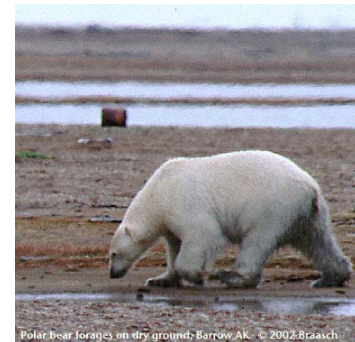
- Main existing gas pipeline
- - - Planned/proposed gas pipeline
- Production area
- ★ Existing LNG terminal
- ☆ Planned/proposed terminal



Source: IEA

- The cleanest fossil fuel
- Technology is developed and easily transferable
- Affordable - large subsidies not required
- Mitigate CO2 emissions at low cost
- Enables wind and solar energy

 ***Gas - part of the climate solution***





## Renewable energy and Carbon Capture and Storage (CCS)



- **CCS, solar and wind power require huge subsidies**
- **Technology needs further development**
- **Solar and wind power only works part time!**

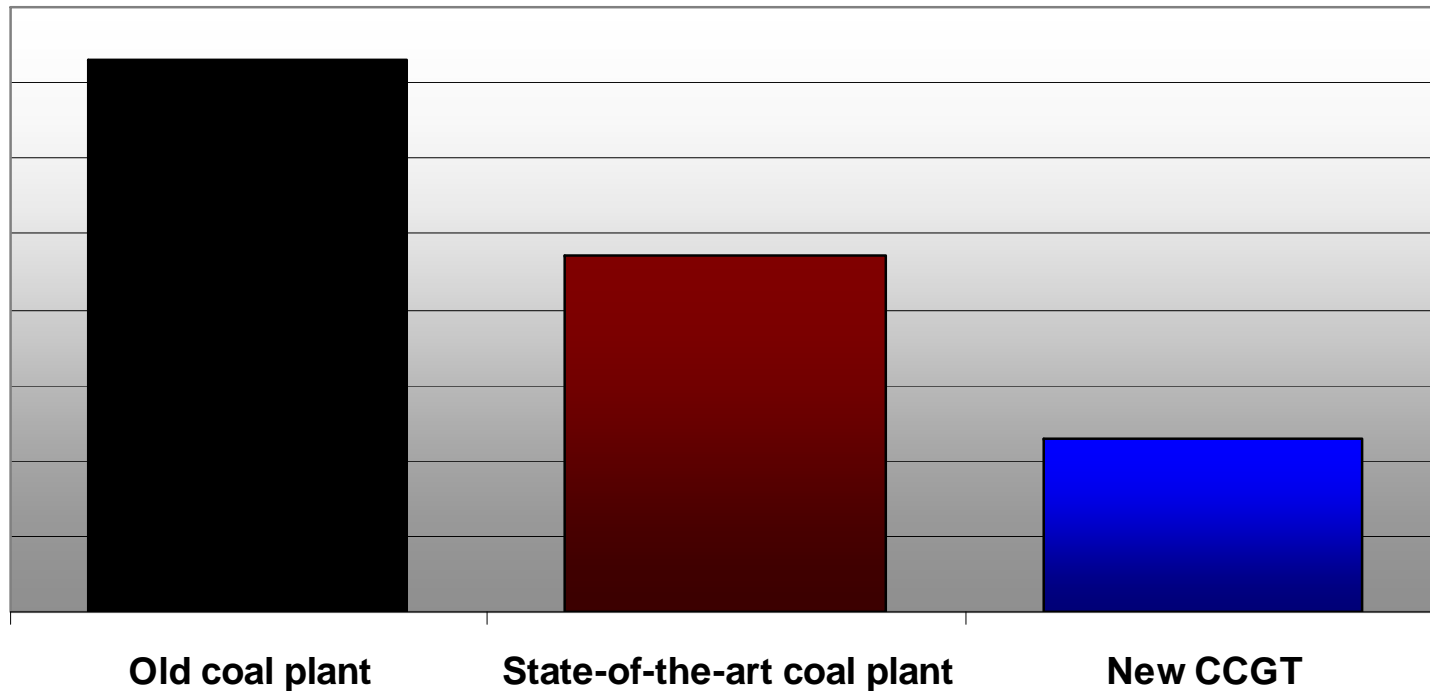
 **Decades before large impact on GHG emissions**



# Natural gas in power generation - climate friendly

- Replace coal with gas
- GHG reduction potential

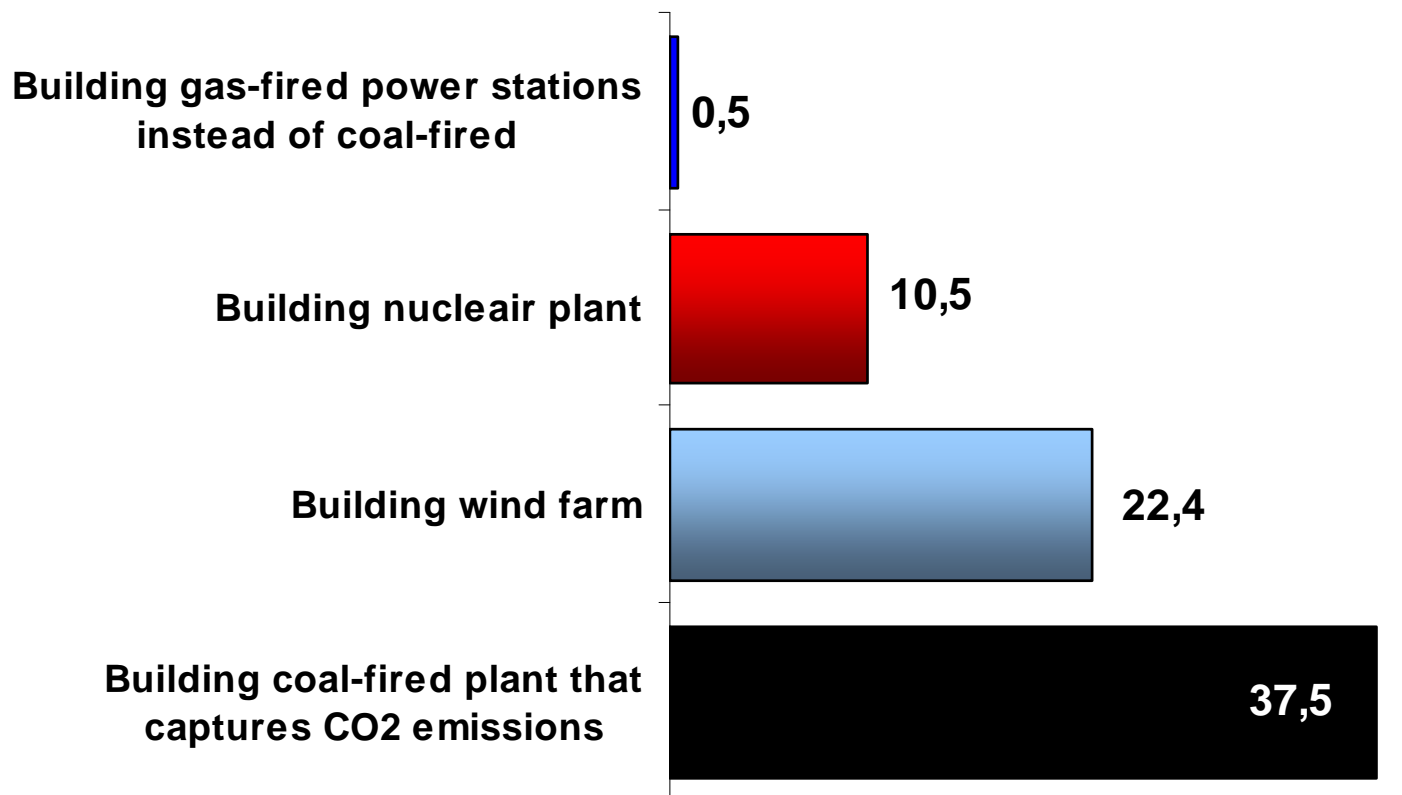
CO<sub>2</sub> emission for different types of power generation



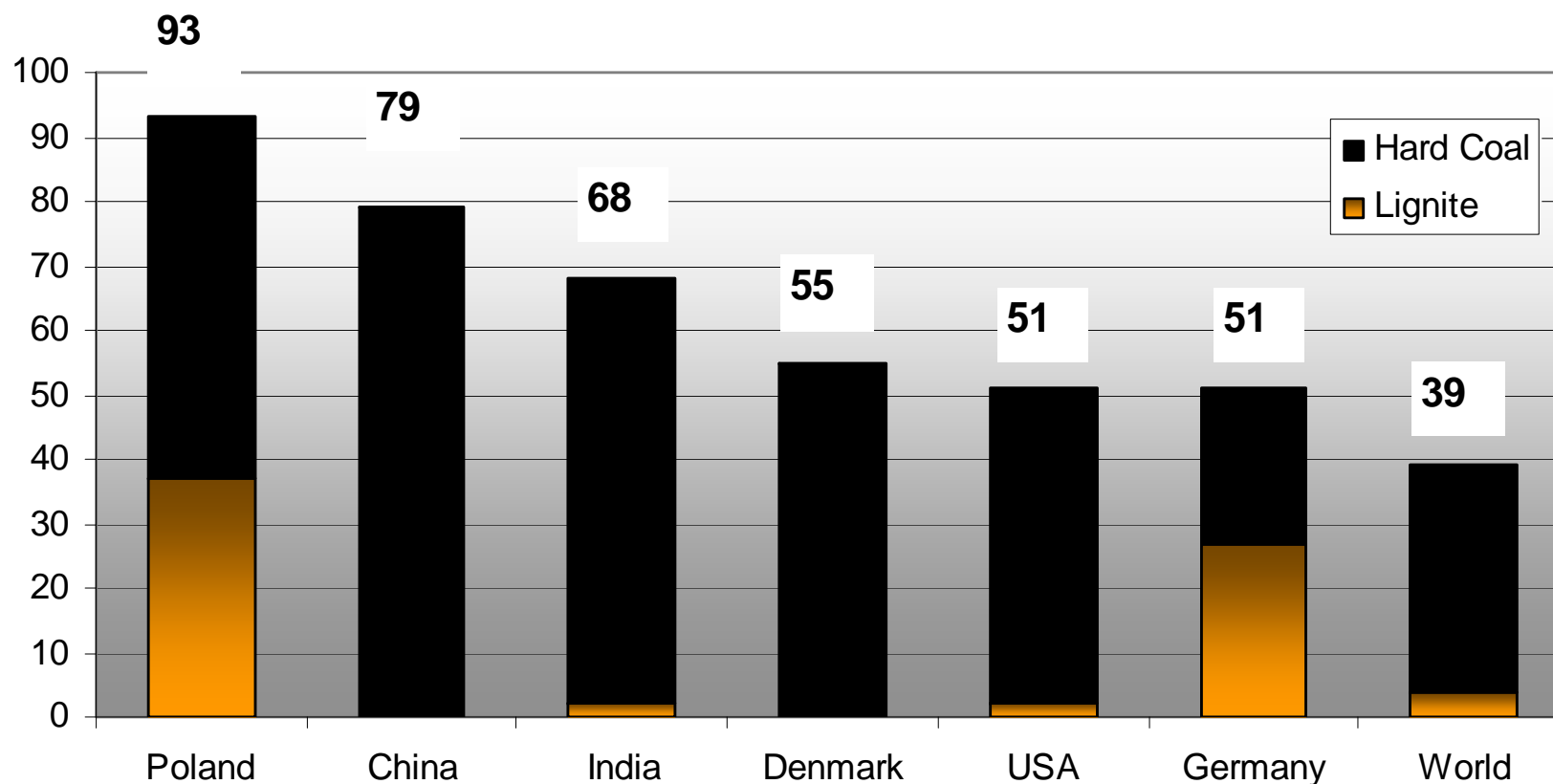
Source: Deutsche Bank/Statoil



## Cost of saving carbon emissions € per tonne of CO2 by 2030



## Percentage of lignite and hard coal in power generation



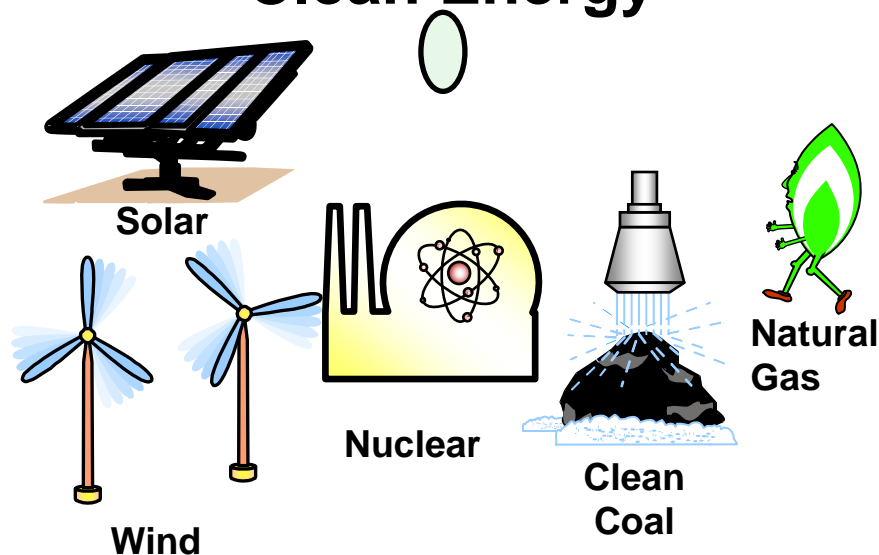


# Public and policy perceptions



News, Views  
and knowledge  
on Gas - World Wide

## Clean Energy



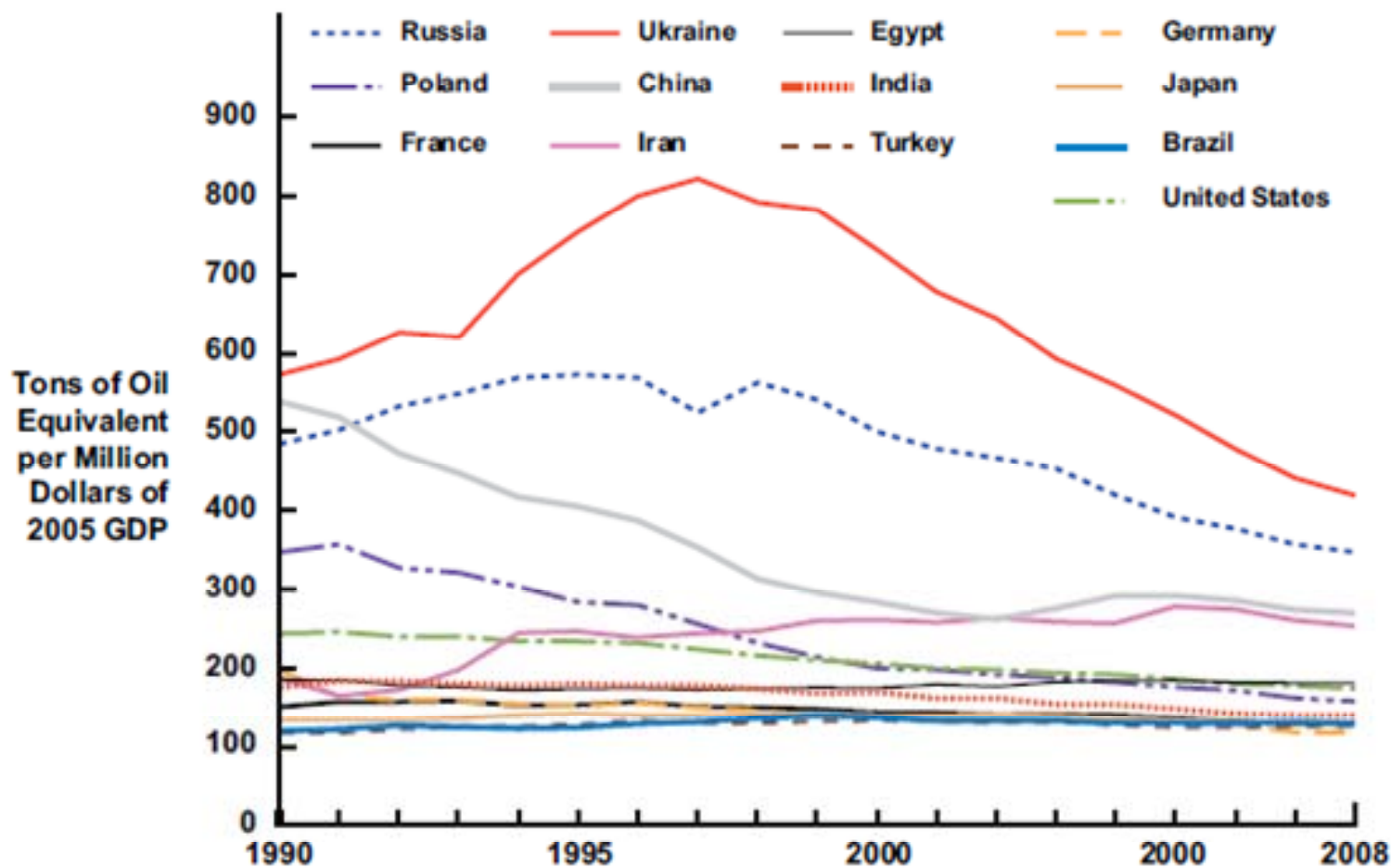
## Fossil Fuels



**GHG Emissions Spectrum**



# Energy intensity trends...



Source: IHS Cambridge Energy Research Associates.





# IGU is creating arenas for....



## ***Networking - Knowledge - Dialogue***

- **The IGU World Gas Conference**  
Buenos Aires 2009  
Kuala Lumpur 2012
- **Co-sponsor of LNG Conferences**  
LNG 16 in Oran, Algeria, April 2010
- **Ministerial Gas Forums**  
2nd IEF – IGU Ministerial Gas Forum, Doha, Qatar, 30 Nov 2010
- **The IGU Research Conference**  
IGRC 2011 in Seoul, Korea, October 2011

KUALA LUMPUR  
**2012**  
WORLD GAS CONFERENCE





# The IEF-IGU Ministerial Gas Forum



News, Views  
Knowledge  
- World Wide



# Policy messages - energy security

- Policy documents to reflect role of natural gas
- Regulations to support infrastructure investments

➡ ***Gas: Green, abundant, affordable, secure***

➡ ***Gas: Part of the long term energy solution***





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

