

**Vth INTERNATIONAL CONFERENCE
<<ENERGY DIALOGUE: RUSSIA – EUROPEAN UNION. GAS ASPECTS>>**

“World Energy Security and Safety: Challenges and Opportunities”

By:

Datuk (Dr) Abdul Rahim Hashim

President

International Gas Union (IGU)

Malaysian Gas Association (MGA)

21st May 2010
Berlin, Germany



- 1. Introduction – Brief on IGU**
- 2. Global Natural Gas & LNG Industry**
- 3. World Energy Security & Safety**
- 4. Key Challenges & Opportunities**
- 5. Closing Remarks**

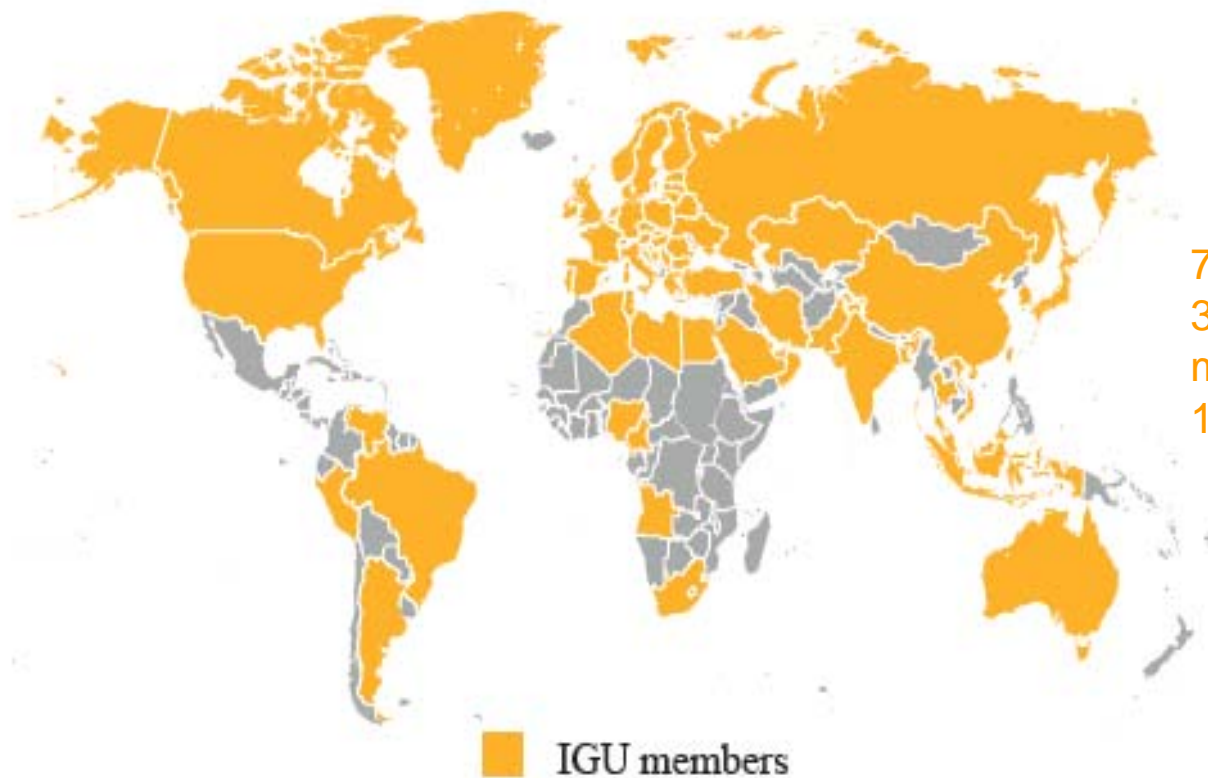


IGU as **THE** spokesman for the gas industry

- ◉ World wide and non–profit organisation established in 1931
- ◉ Promotes technical and economic progress of the gas industry
- ◉ Emphasising sound environmental performance
- ◉ Increased focus on strategic and policy issues
- ◉ Cooperation with IEA, United Nations, World Bank, IEF and others



IGU Members responsible for 95% of Global Gas Sales

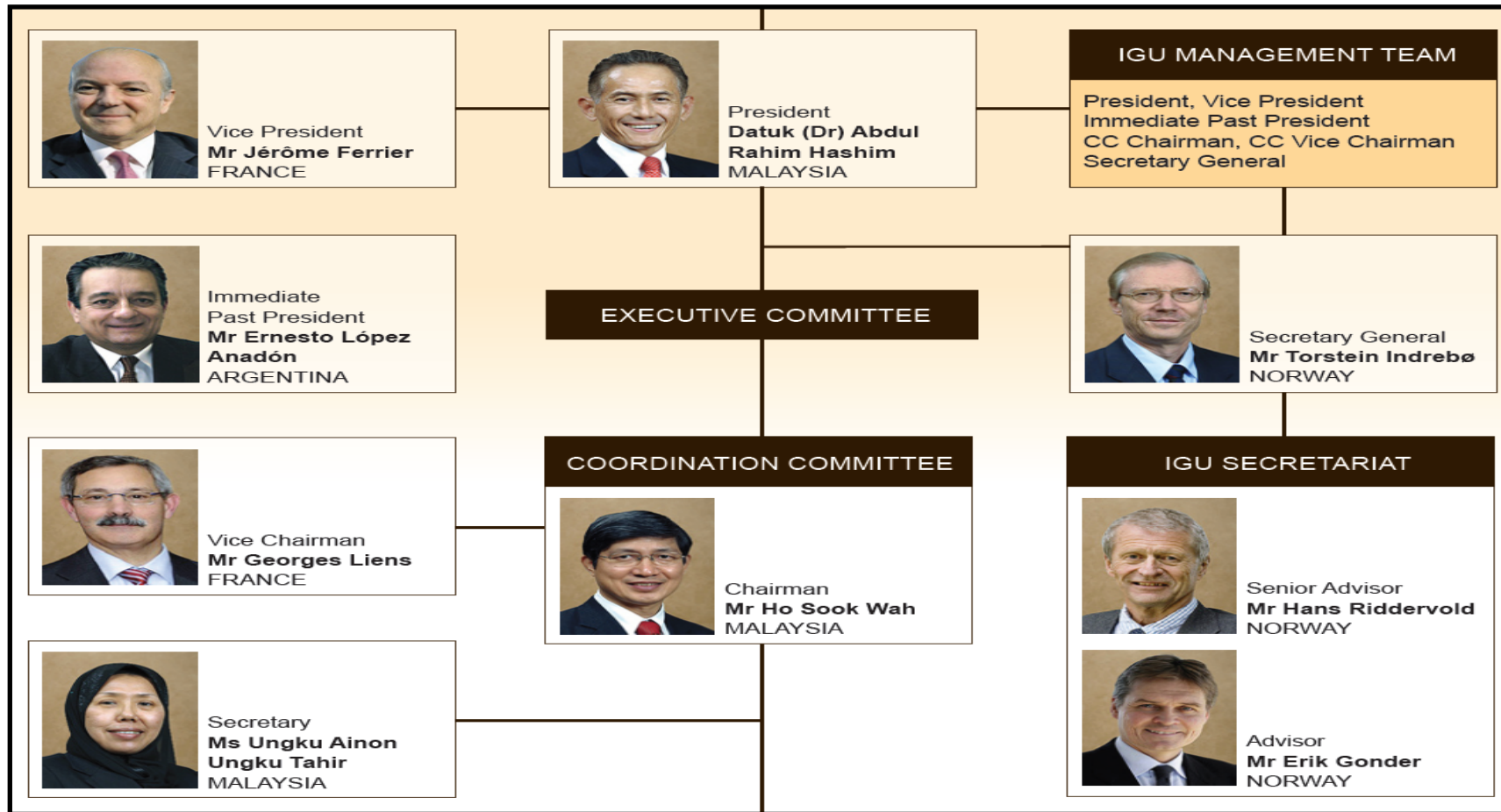


74 Charter members
33 Associate
members
11 Affiliated members

*N.B.: As of April 2010



IGU Organisation Chart for Malaysian 2009 – 2012 Triennium



IGU is creating arenas for Networking - Knowledge - Dialogue

- **IGU World Gas Conferences (WGCs)**

- 24th WGC - Buenos Aires, Argentina, 5-9 Oct. 2009
- 25th WGC - Kuala Lumpur, Malaysia, 4-8 June, 2012
- 26th WGC - Paris, France, 2015



- **Co-sponsor of LNG Conferences**
LNG 16 in Oran, Algeria, April 2010



- **Ministerial Gas Forums**

1st IEF – IGU Ministerial Gas Forum 2008, Vienna

2nd IEF – IGU Ministerial Gas Forum, Doha, November 2010

- **The IGU Research Conference**

IGRC 2011 in Seoul, Korea, October 2011

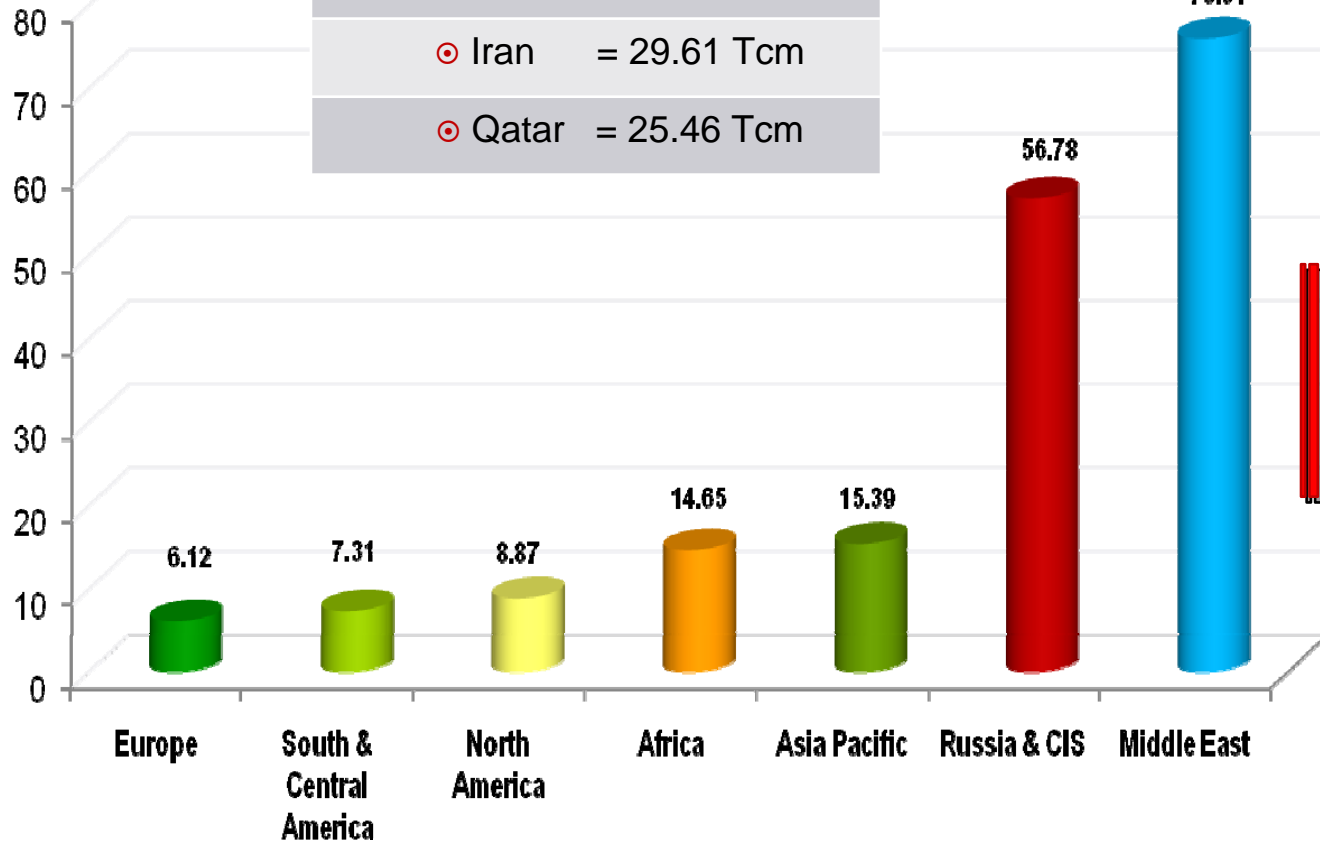


The world's proven gas reserves amounted to 185 Tcm



Proven gas reserves at end 2008

Trillion cubic metres (Tcm)



Top 3 gas reserves holders:

- Russia = 43.30 Tcm
- Iran = 29.61 Tcm
- Qatar = 25.46 Tcm

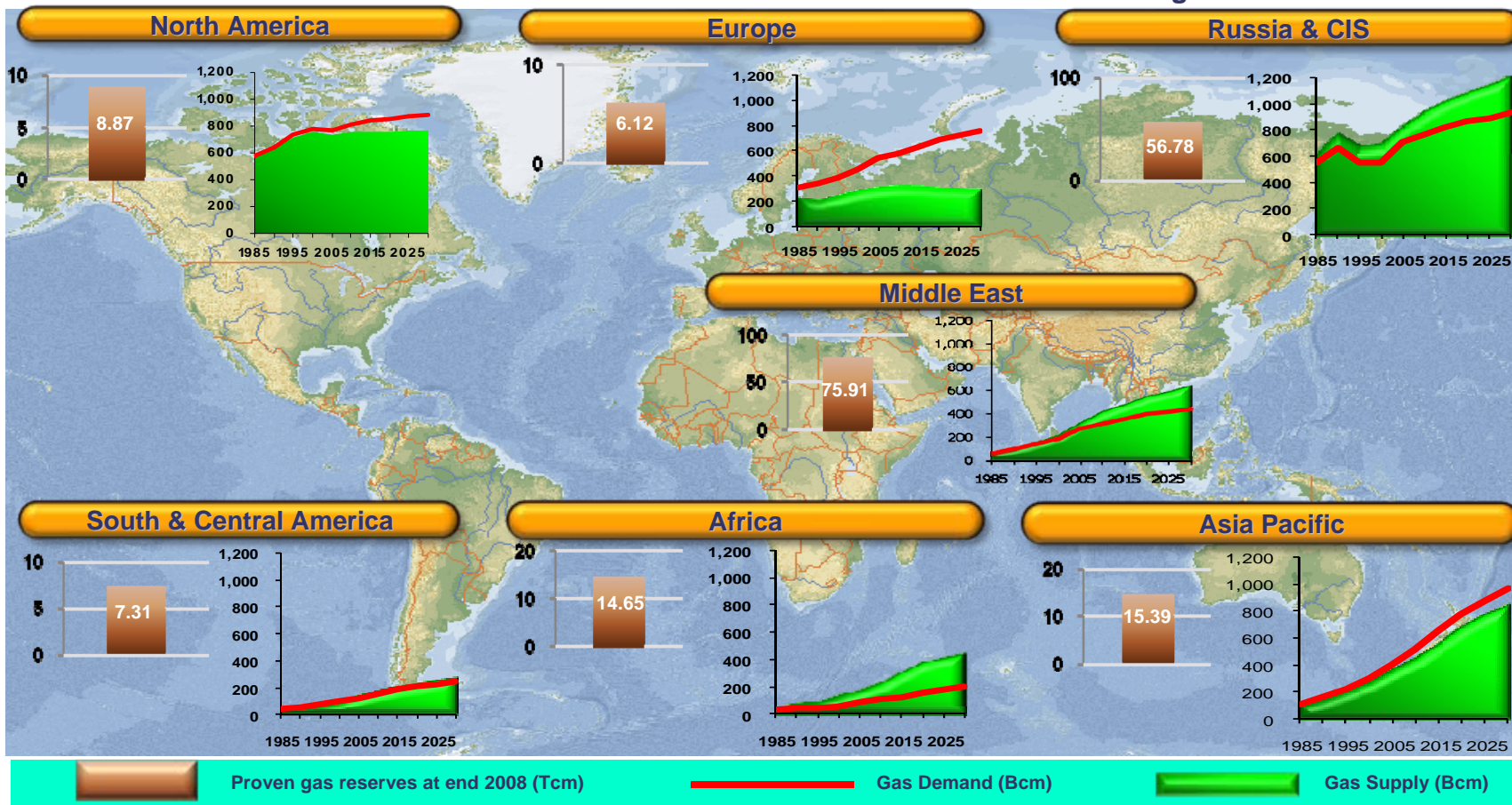
Total volume represents more than 60 years of consumption at today's rate



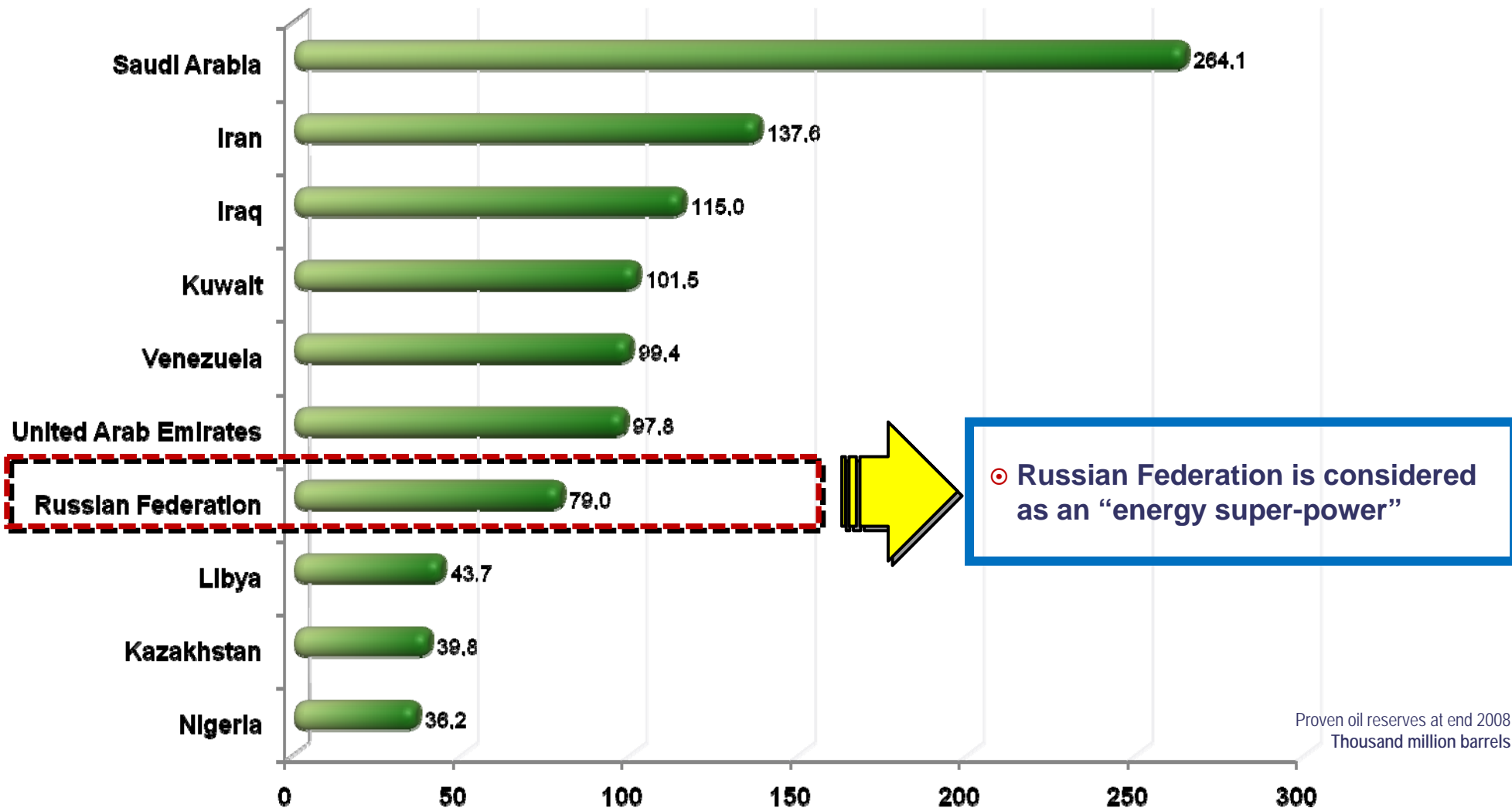
World's supply vs. demand in the short & long term outlook



- Middle East, Russia & CIS and Africa emerge as key gas exporters
- Europe remains the largest net gas importer
- Asia – Pacific and Latin America are net gas importers
- North America has transformed itself to become a self-sufficient gas market

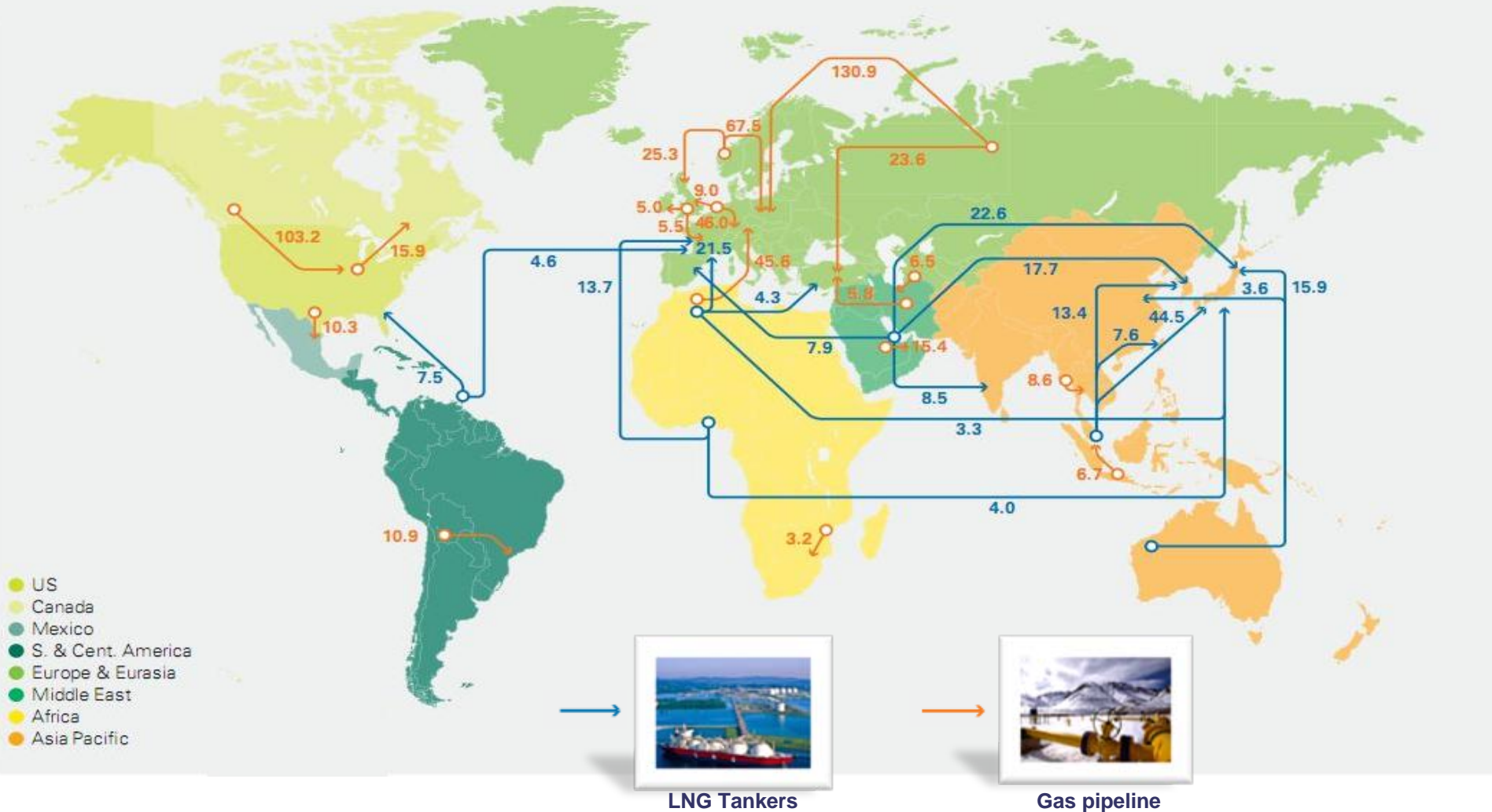


Russia Federation is at the 7th rank in term of world's proven oil reserves



Natural gas modes of transportation in connecting the supply to demand centres

Major gas trade movements worldwide (billion cubic metres)

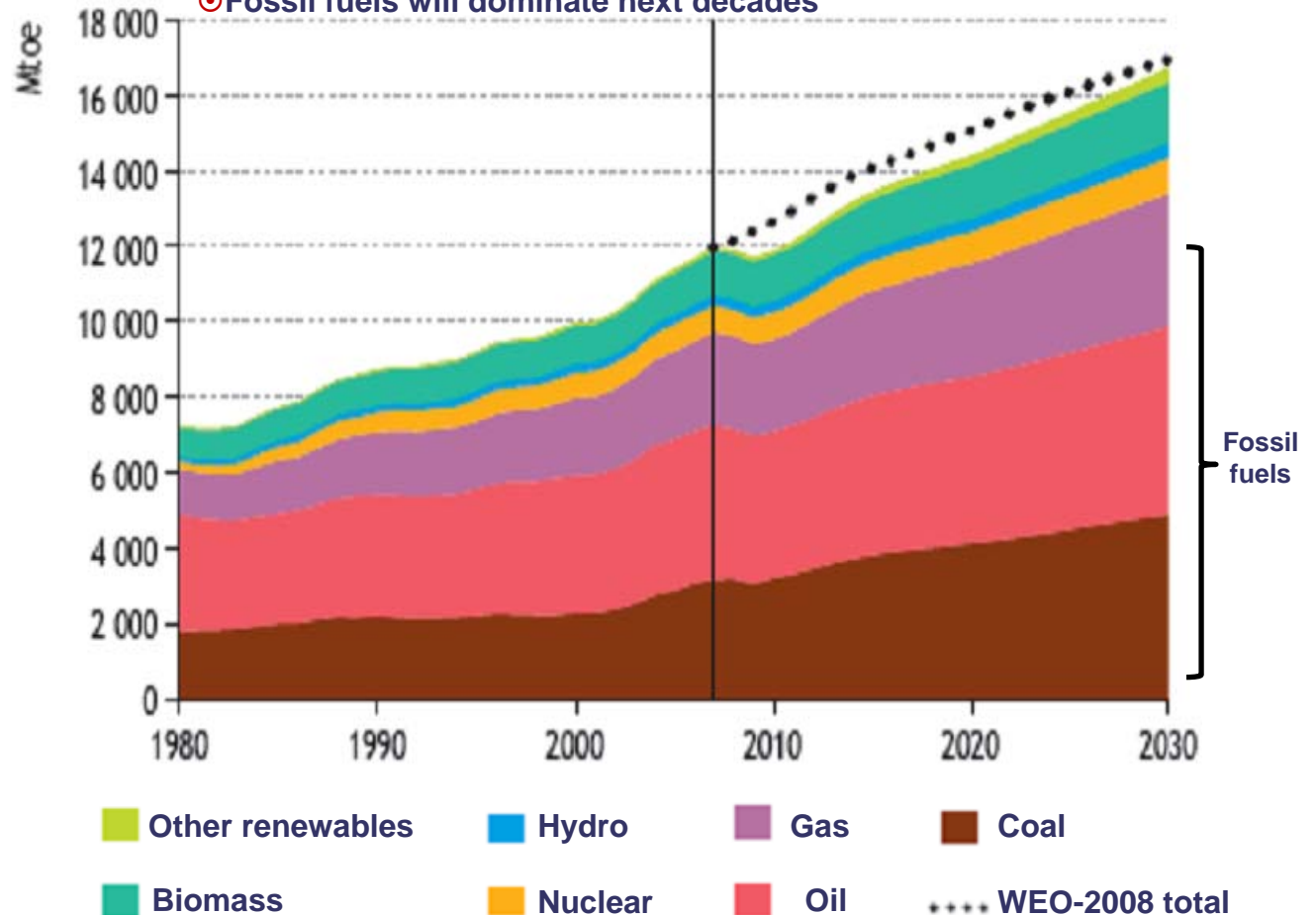


IEA forecasts continuing dependence on fossil fuels in the future



- Fossil fuels, i.e. oil, gas and coal, will continue to dominate the global energy mix during next few decades.
- Penetration of renewable energy into the global energy market has thus far been relatively small and gradual.
- Increasing competition for energy security particularly to secure the long-term supply of oil and natural gas.

- Population growth from 6.7 billion in 2010 to about 9 billion by 2050
- Urbanisation continues
- Increased level of global prosperity
- Fossil fuels will dominate next decades



Security of oil supply and safety aspect

- ⊙ Offshore rig/platform accident e.g. in the Gulf of Mexico
- ⊙ One of the worst offshore crude oil spill in the United States history



Tragic news

- ⊙ Transocean's Deepwater Horizon drilling rig explosion on April 20, 2010
- ⊙ The sinking of the Deepwater Horizon rig to about 5,000 feet below the ocean's surface on April 22, 2010
- ⊙ The situation created serious implications:-
 - 1) the loss of 11 crew members
 - 2) extensive damage to:-
 - environment;
 - nearby wildlife;
 - marine life; and
 - well-being of the nearby local population that dependent on local marine related industry



Security of coal supply and safety aspect

⊙ Even worst, numerous records of accidents from the explosion of coal mines:-

1. Russia's largest Raspadskaya coal mine exploded on 8 May 2010

- ⊙ Death of 60 coal workers
- ⊙ 30 being trapped and missing (13 May 2010)

2. A total of 198 death from other coal mines accidents in the United States from 1970 to 2010 includes:-

- Upper Big Branch Mine, located in West Virginia exploded in April 2010
 - ⊙ 29 coal miners were reported dead

3. China registered with the highest death records:-

- ⊙ March 2010 : 153 miners were trapped in the northern province of Shanxi
- ⊙ Nov 2009 : 104 miners were killed from the explosion in northeastern province of Heilongjiang
- ⊙ Sept 2008 : series of coal mines accidents that killed 254 miners in northern China
- ⊙ Sept 2007 : series of coal mines accidents that killed 181 miners in the eastern province of Shandong



© RIA Novosti /ya Fitalev



Security of gas supply and safety aspect

- ① The enhancements of world energy security and safety being shifted to promoting continued growth of the global gas industry due to:-
 - a) Awareness on mitigating climate change
 - b) The penetration of new gas markets via LNG business

Gas production



Gas Plants



Transportation

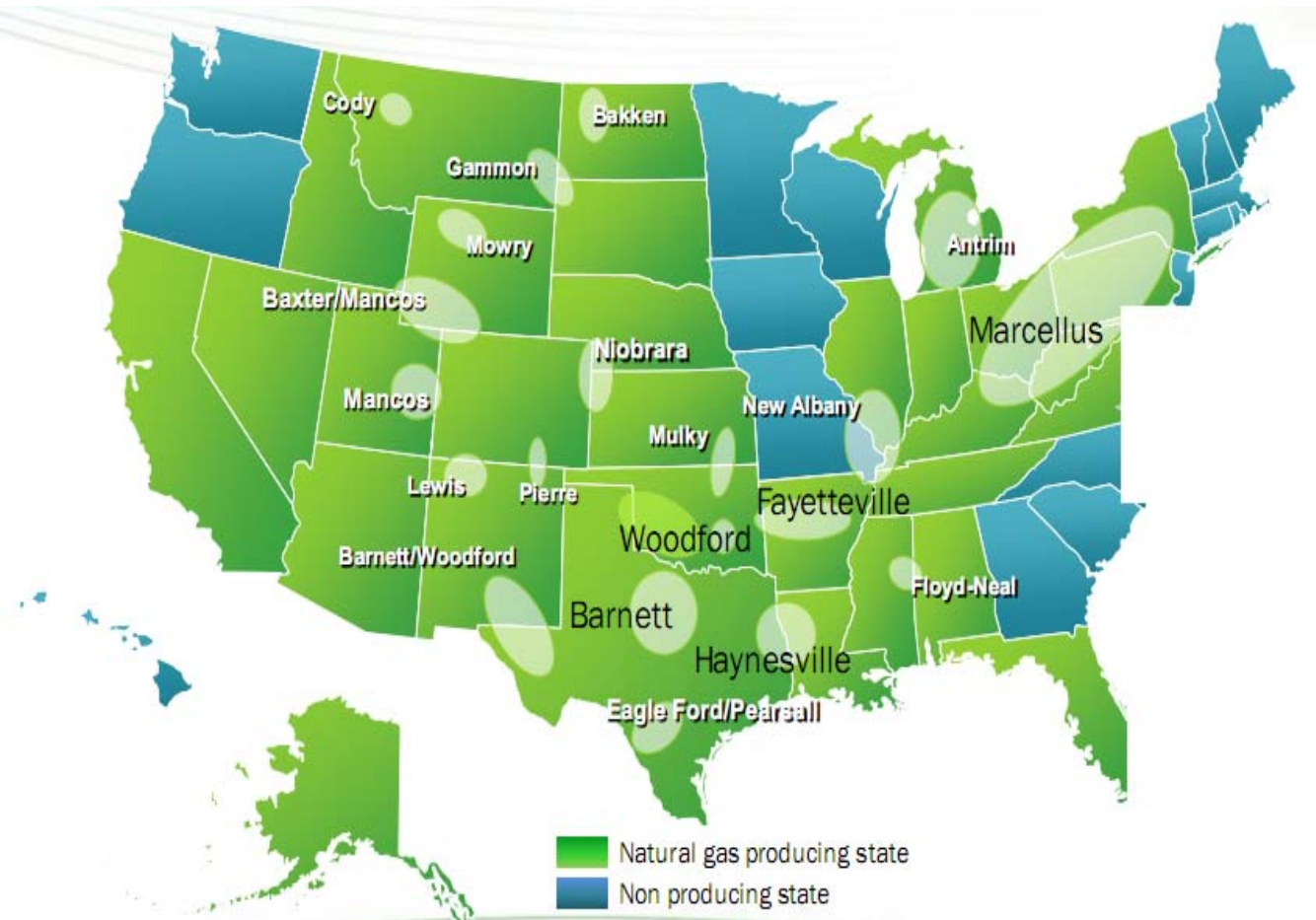


● No record of environmental damage relating to natural gas industry



The commercialisation of unconventional gas in the United States gas market

Discoveries are widespread across the U.S. - 32 of 50 States produce Natural Gas



- Emphasis on commercially develop unconventional gas e.g. shale gas, coal-bed methane & tight gas.
- This leads to the creation of new dynamics in the global gas and LNG landscape
- LNG imports are reduced from Middle East, Africa and Russia. LNG movements redirected into Europe and Asia.
- It is believed could in the future contribute to the global natural gas balance

Source: EIA 2009



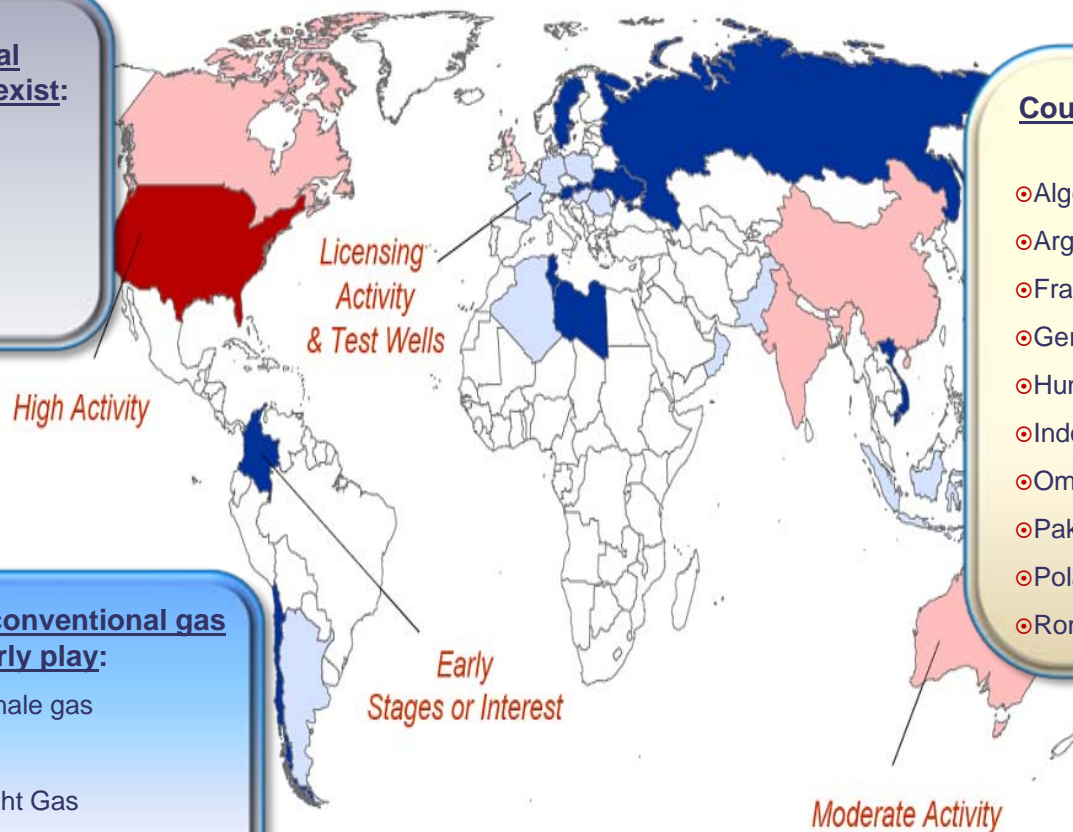
The United States gas market's revolution gave impetus to other countries to monetise unconventional gas

Global Unconventional Gas Activity



Countries where commercial production exists or will soon exist:

- Australia - CBM
- China – CBM, Tight Gas
- India – CBM
- United Kingdom - CBM



Countries with acreage allocation and test-well activity:

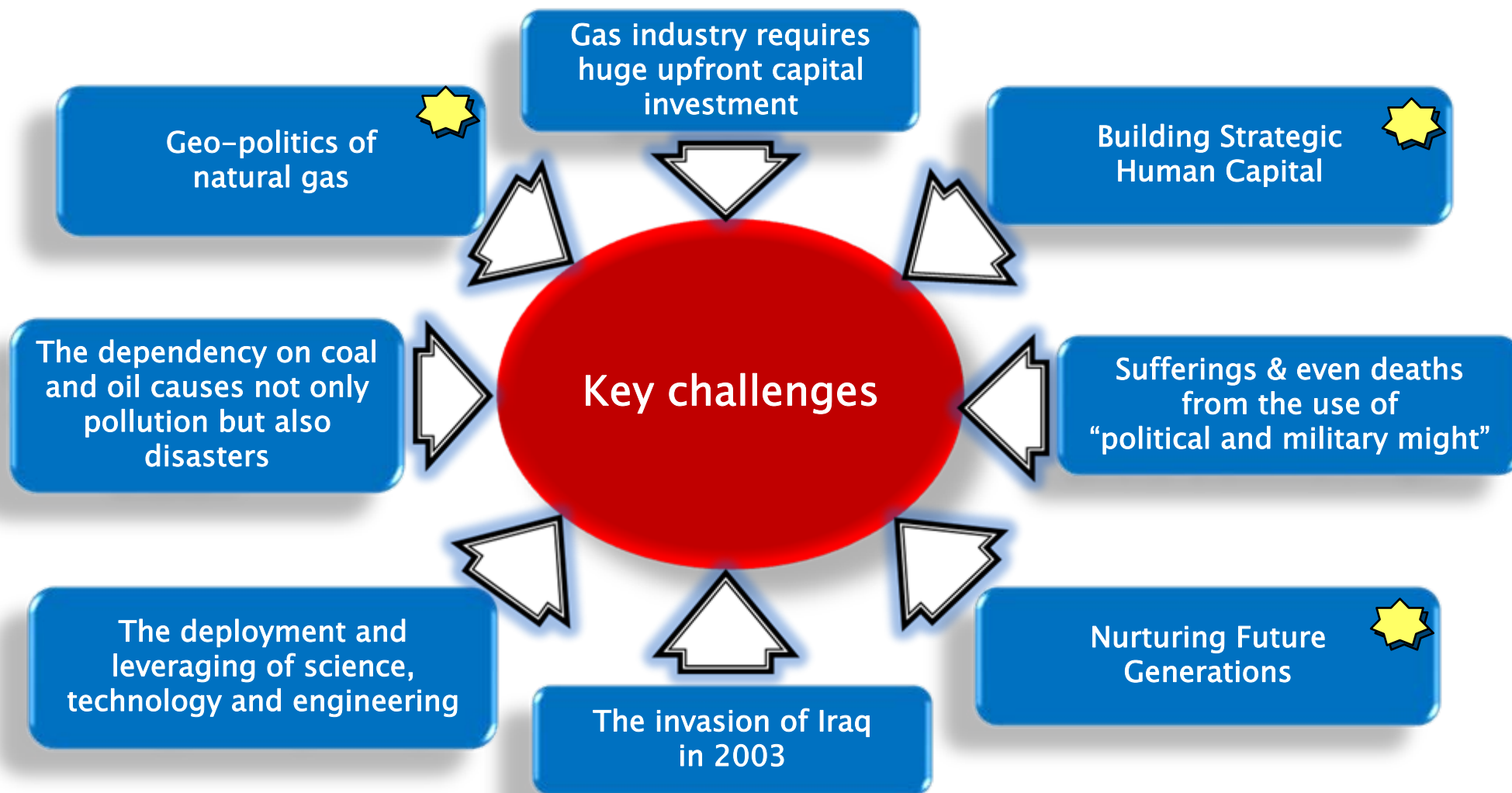
- Algeria – Tight Gas
- Argentina – Tight & Shale Gas
- France – CBM, Tight & Shale gas
- Germany – Tight Gas
- Hungary – Tight Gas
- Indonesia – CBM
- Oman – Tight Gas
- Pakistan – Tight Gas
- Poland – CBM, Shale & Tight gas
- Romania – Tight gas & CBM

Countries where unconventional gas is still an early play:

- Austria & Slovakia – Shale gas
- Chile – CBM
- Columbia – CBM & Tight Gas
- Libya – Tight gas



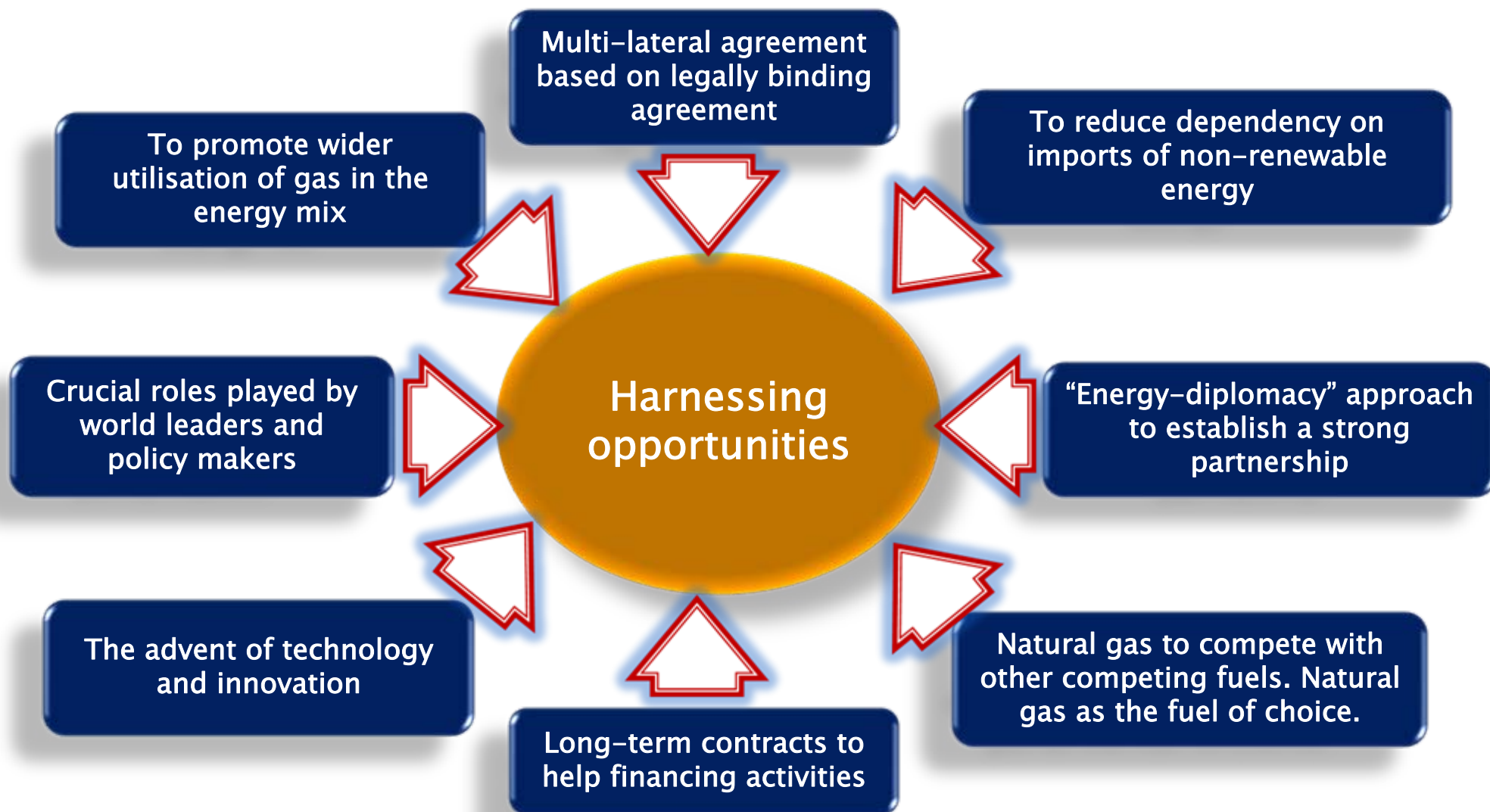
Issues relating to world energy security and safety



Key deliverables at the 25th World Gas Conference (WGC), Kuala Lumpur in 2012

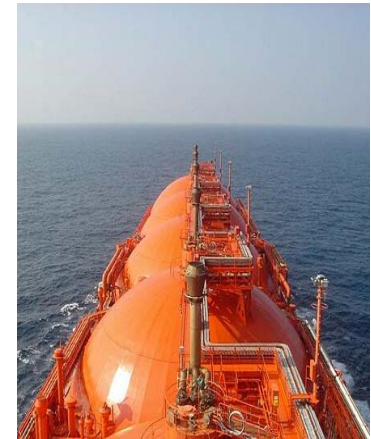


Issues relating to world energy security and safety



IGU Messages on Natural Gas

- ◉ Clean, efficient, versatile and environmental friendly
- ◉ Available and abundant
- ◉ Continue to play a substantial role in global energy demand
- ◉ Basis for sustainable economic growth



***Natural gas
– major part of the long term energy solution***



25th World Gas Conference



**“GAS : SUSTAINING FUTURE
GLOBAL GROWTH”**

**Kuala Lumpur Convention Centre
4 to 8 June, 2012**



CHARMING COUNTRY, COLOURFUL CITY



THANK YOU FOR KIND ATTENTION



Welcome to

**25th World Gas Conference
and Exhibition**

4-8 June 2012
Kuala Lumpur, Malaysia

<http://wgc2012.com>

