



# International Gas Union



## IGU Overview and Natural Gas in a Climate Change Perspective

**Mr Erik Gonder**  
**Senior Advisor, IGU Secretariat**

**14-th International Oil & Gas Forum**  
**Oil & Gas 2010**  
**Kiev, Ukraine**





# Tellus and Climate Mitigation





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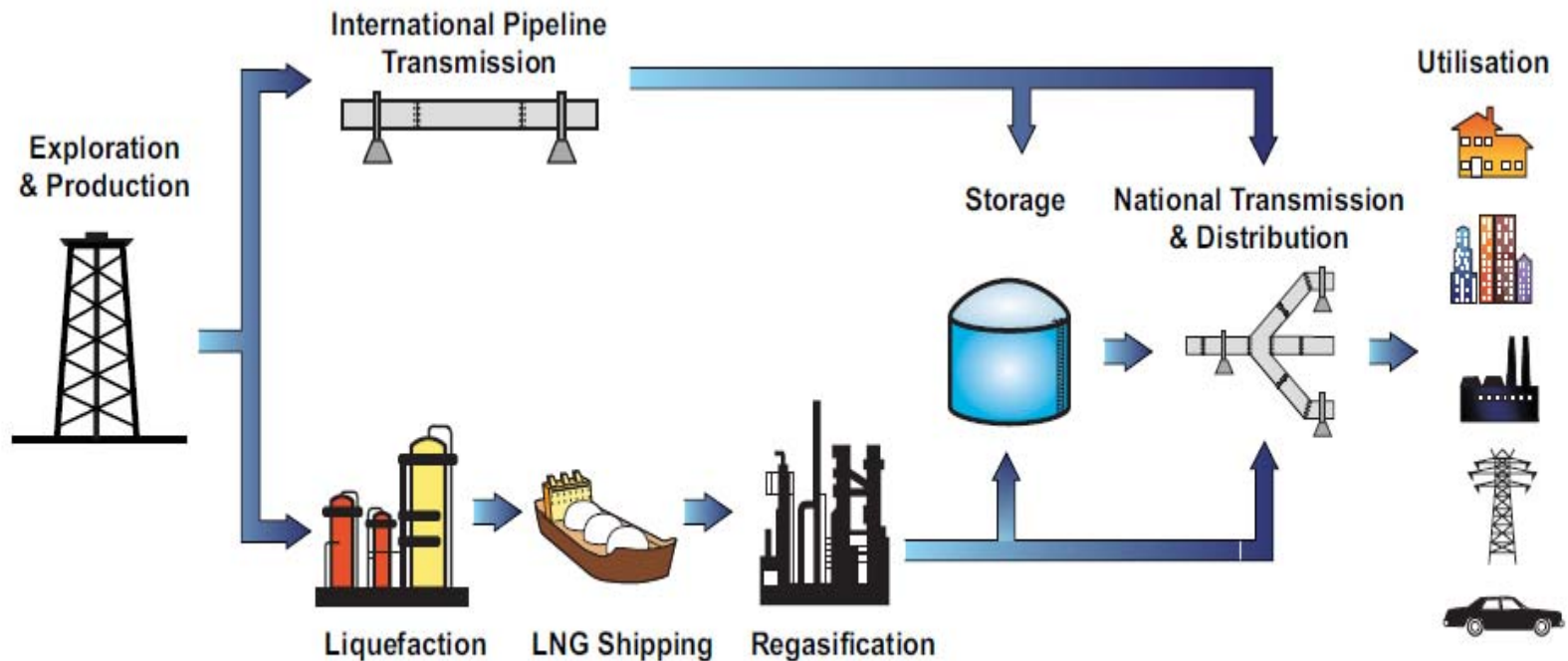
Secretary  
**Ms Ungku Ainon  
Ungku Tahir**  
MALAYSIA



Advisor  
**Mr Erik Gonder**  
NORWAY



## IGU covers the Gas Industry Value Chain



Source: IGU.  
90813-5

**Working Committees**  
**Programme Committees**  
**Task Forces**







# IGU Cornerstone events



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

- **The IGU Research Conference**  
**IGRC 2011 in Seoul, Korea, October 2011**



- **The IGU World Gas Conference**  
**Kuala Lumpur 2012**  
***Paris 2015***

KUALA LUMPUR  
**2012**  
WORLD GAS CONFERENCE



- **Co-sponsor of LNG Conferences**  
**LNG 17 in Houston, USA, April 2013**

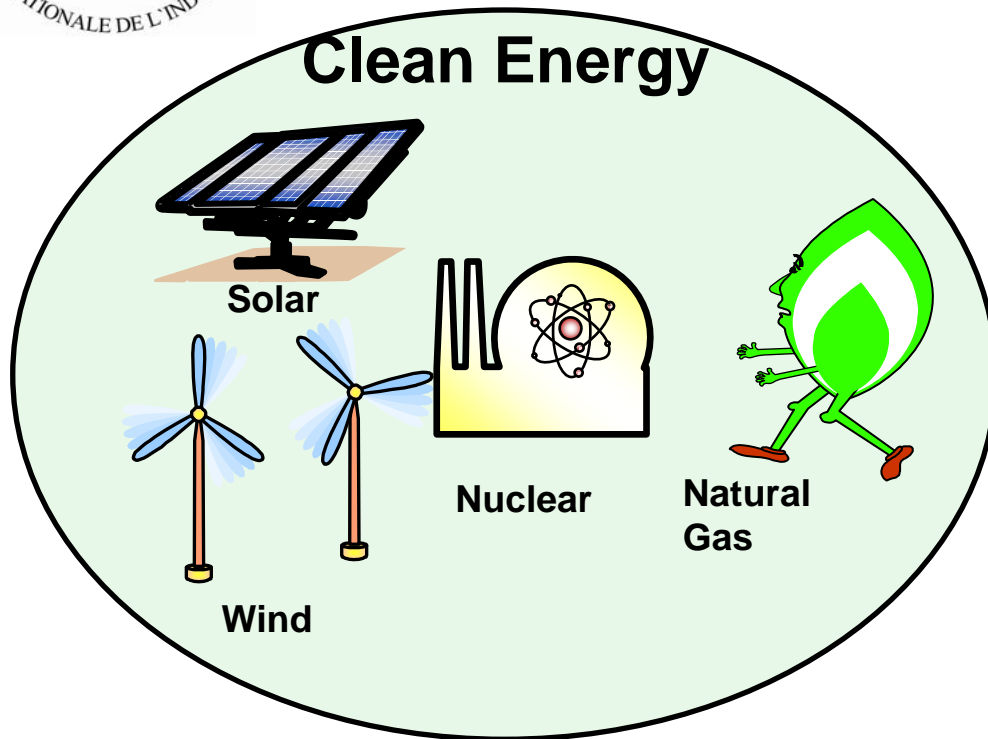


# Energy Challenges and Energy Realities

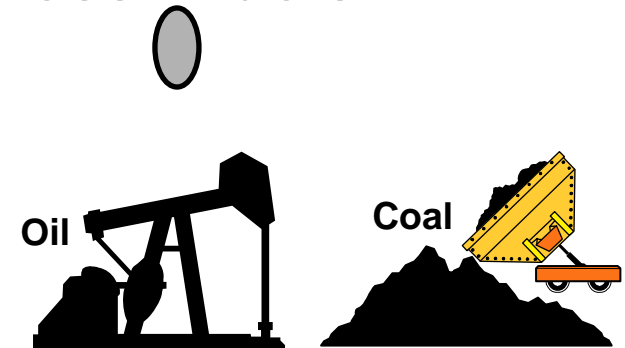
- Rising population – from 7 to 9 billion in 2050
- Human strive for a better life
- Technological progress
- Climate change concerns



# Public and policy perceptions



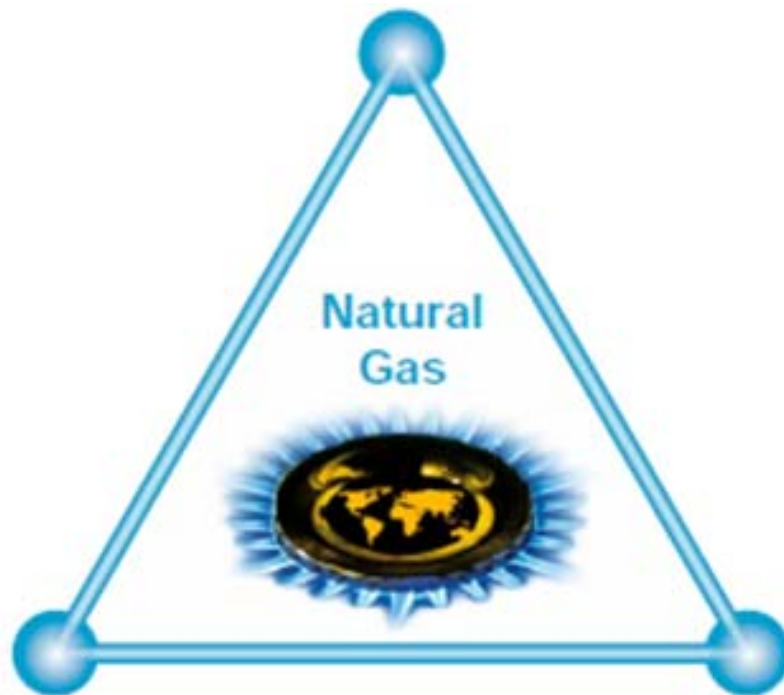
## Fossil Fuels





**A-A-A**

**ABUNDANT**



**ACCEPTABLE**

**AFFORDABLE**





# ABUNDANT:

Plenty of reserves. and more to come



**In addition:**

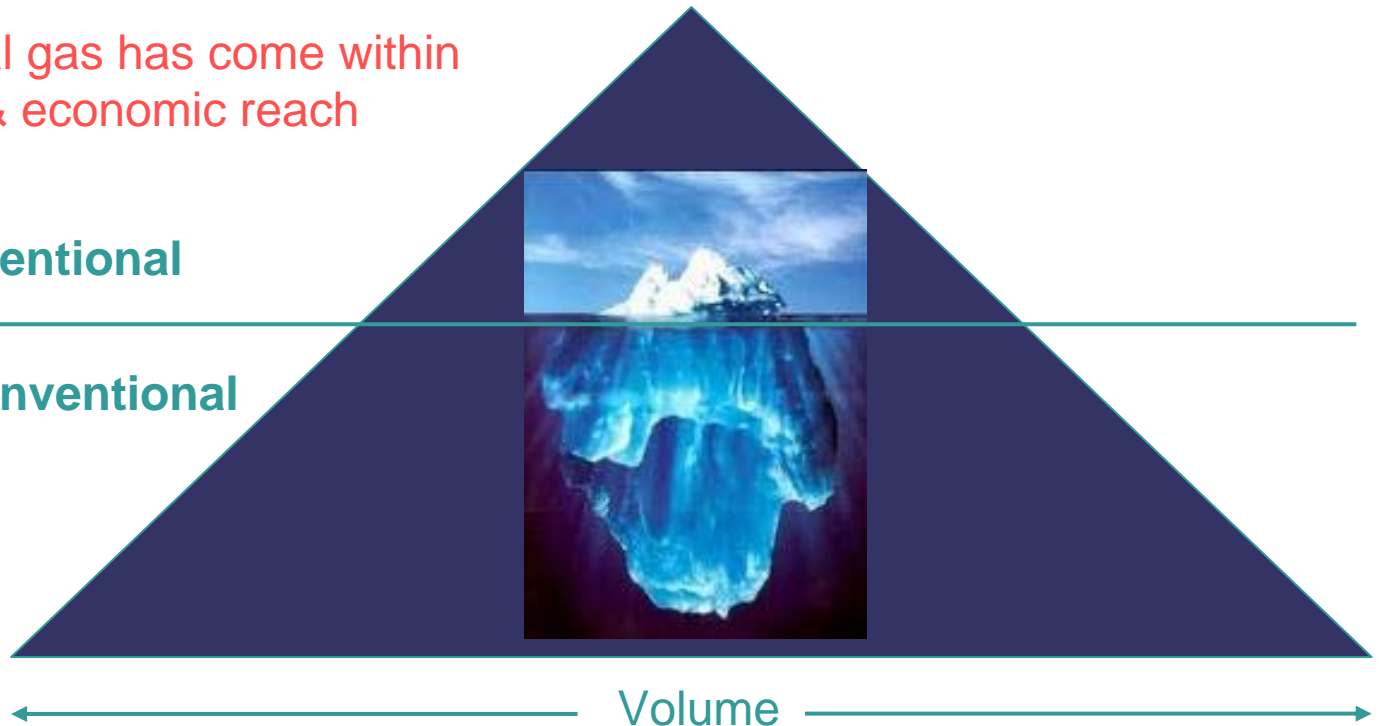
Proven conventional reserves\* are growing

Unconventional gas has come within technological & economic reach



Conventional

Unconventional



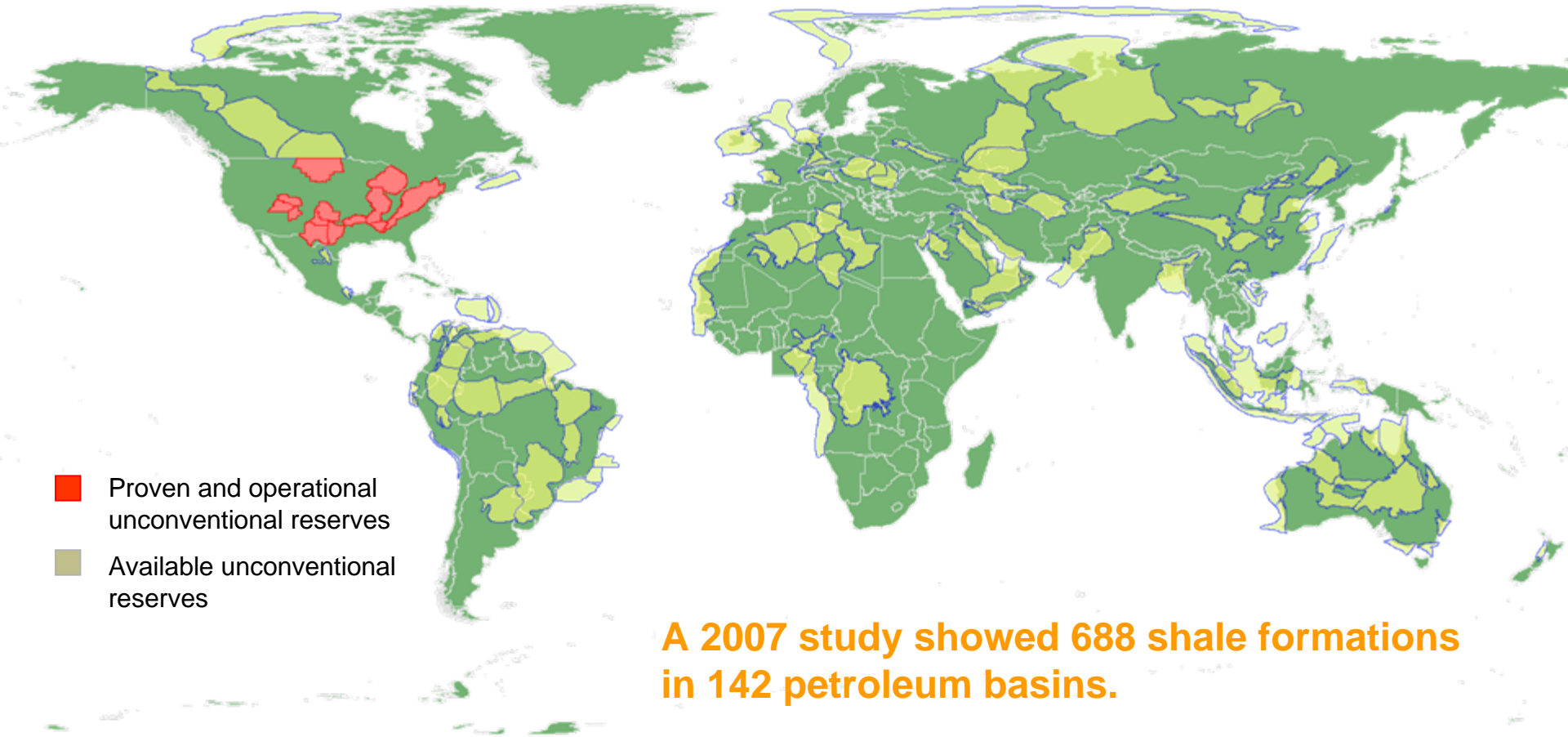
**The total long-term recoverable gas resource base is more than 850 tcm, only 66 tcm has already been produced.**

- IEA-WEO2009 -



\* 185 tcm in 2008

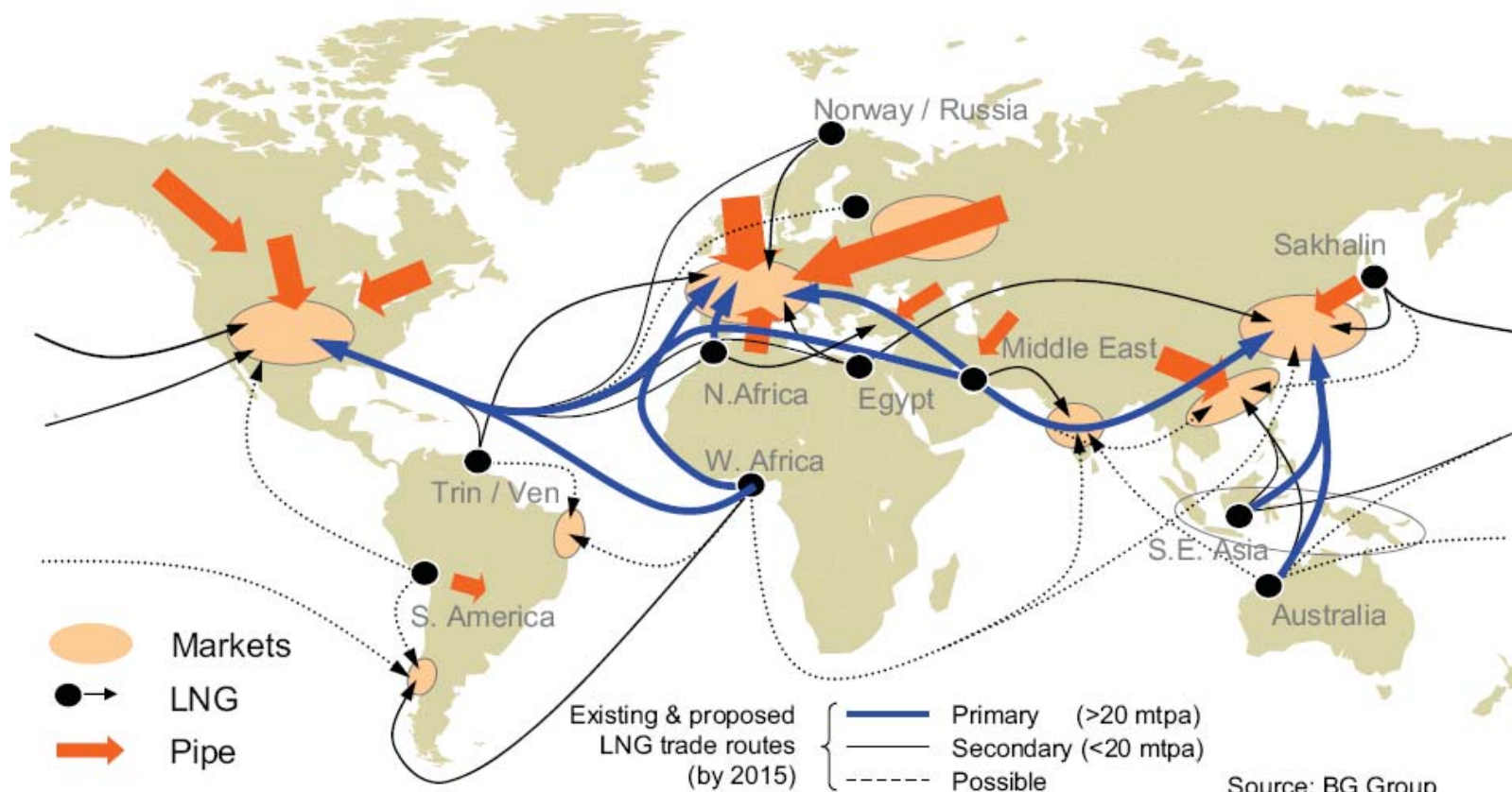
## Worldwide shale potential





# ABUNDANT

## Global gas trade enhancing also energy security

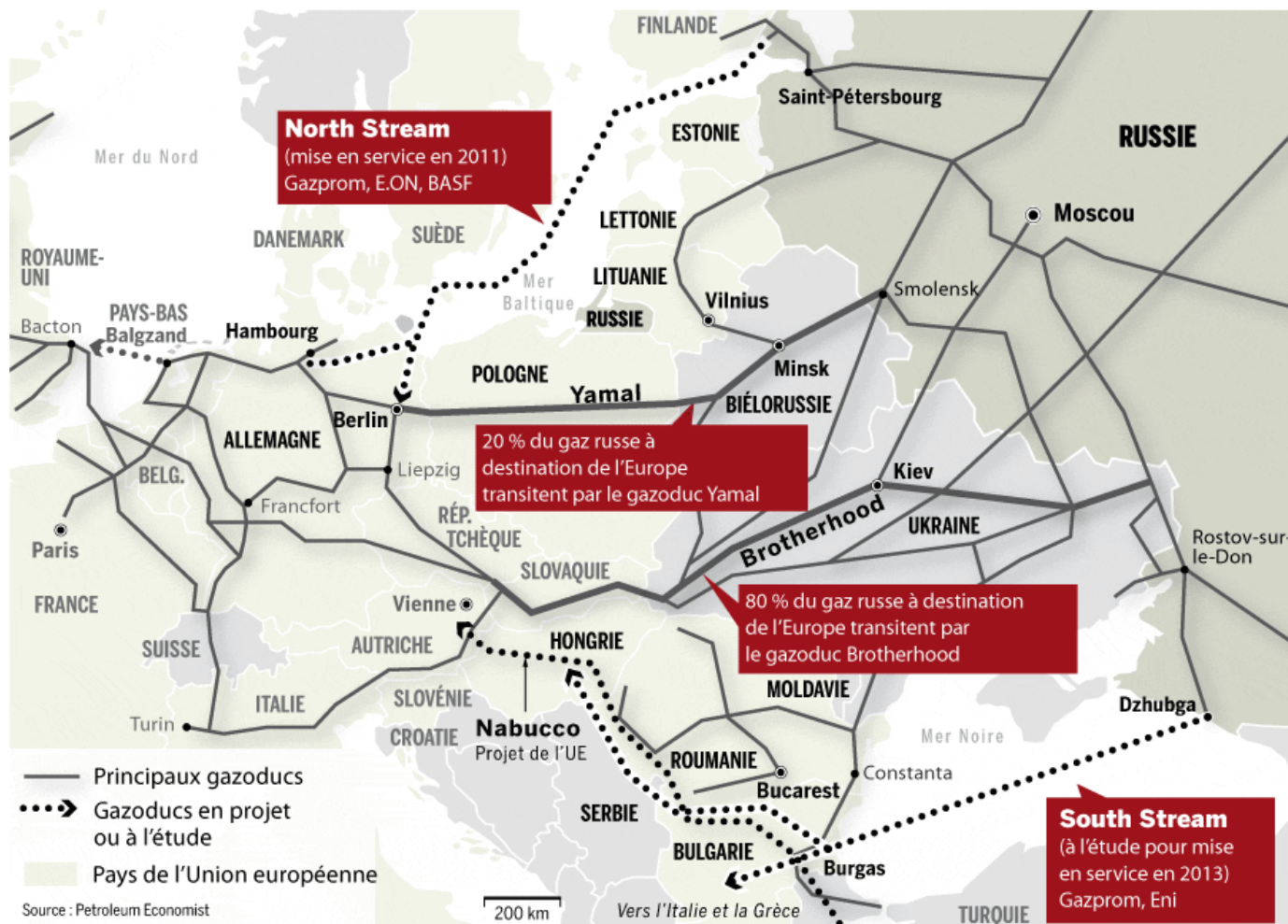


Source: BG Group



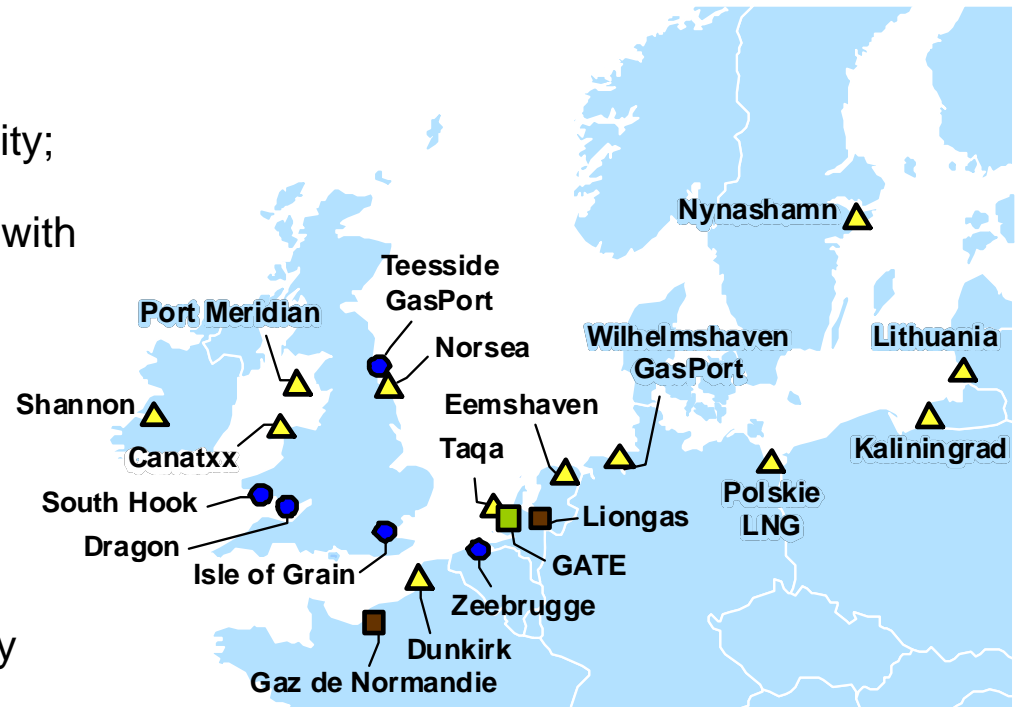


# ABUNDANT: Accessible



## Main projects: LNG regasification terminals in EU27

- Currently there is 160 bcm/yr of existing LNG regasification capacity;  
23 existing plants in 8 countries
- 5 projects are under construction with a total capacity of 30 bcm/yr:
  - “GATE”, The Netherlands
    - due 2011, 12 bcm/yr
  - “Grain 3”, UK
    - due 2010, 7 bcm/yr
  - “Nynäshamns”, Sweden
    - due 2012, 0,3 bcm/yr
  - “OLT Toscana Offshore”, Italy
    - due 2011, 3,8 bcm/yr
  - “Fos Cavaou”, France
    - due 2011, 6,6 bcm/yr



- Existing
- ▲ Planned
- Under Construction
- Deferred/cancelled/rejected







# Environmentally ACCEPTABLE



- **Gas is the cleanest-burning fossil fuel**
- **Gas plants emit:**
  - 50% less CO<sub>2</sub> than a modern coal plant
  - 60-70% less CO<sub>2</sub> than an old coal plant
- **There are still hundreds of old coal plants in operation today**

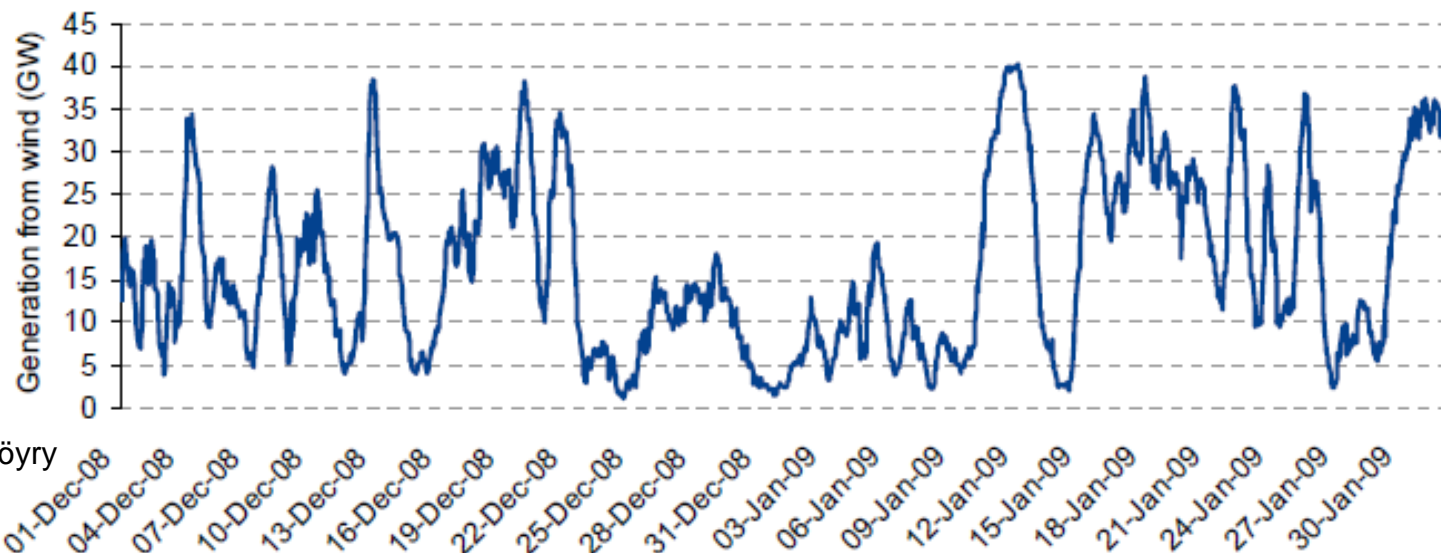




## ACCEPTABLE: Complement to renewables



- Wind power is intermittent
- Nuclear cannot match this variability
- Gas is the cheapest and most flexible back-up option for wind power



Source: Shell/ Pöyry



# AFFORDABLE: Attractive economics for electricity producers



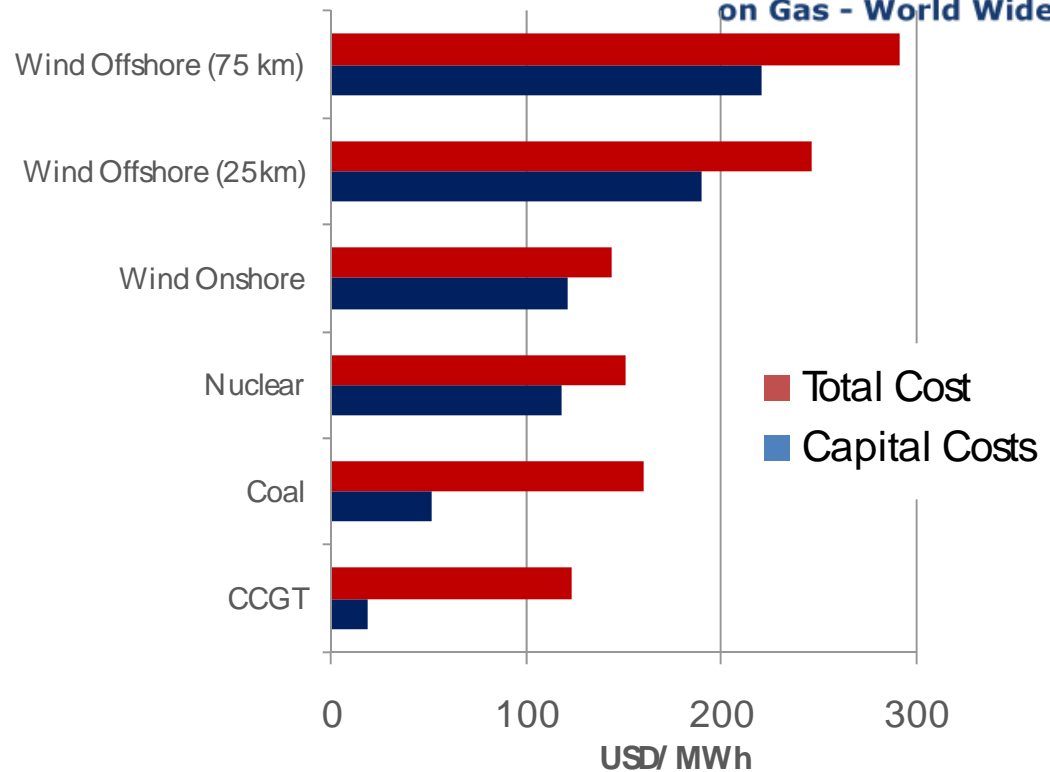
● **Gas plants more energy efficient than coal plants**

- 55-60% vs. 34-42%

● **Gas has much lower capital costs per MW installed:**

- 50% of coal
- 20% of nuclear
- 15% of wind

● **key for cash-strapped economies!**



CCGT: Combined Cycle Gas Turbine  
Total Cost = Capital + Fuel + Operating

Source: DECC (Mott MacDonald) June 2010

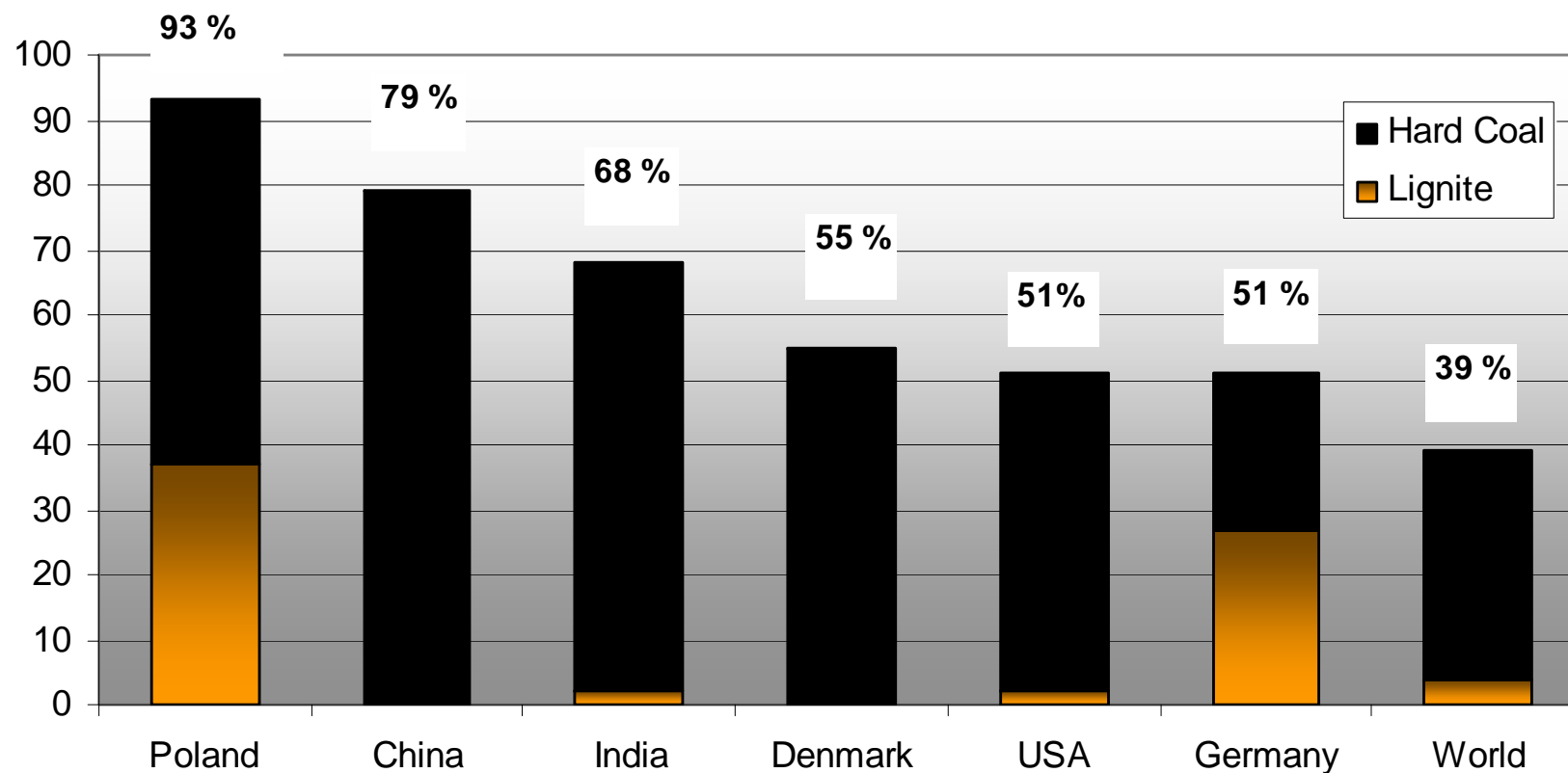




# AFFORDABLE: Fuel switching potential



Percentage of lignite and hard coal in power generation



# A robust climate-friendly energy strategy

- Enhance energy efficiency and savings
- Increase the use of gas in power generation
  - Gradually replace coal with gas
- Phase in cost effective renewable energy
- Develop Carbon Capture and Storage for gas and coal

 ***Pick the "low-hanging fruits" first!***



# Policy messages needed to build trust in natural gas

- 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***





- **Cleanest fossil fuel**
- **Developed and easily transferable technology**
- **Affordable – No large subsidies required**
- **Mitigate CO2 emissions at low cost**
- **Enables wind and solar**

A large, solid blue arrow points from the left towards the text.

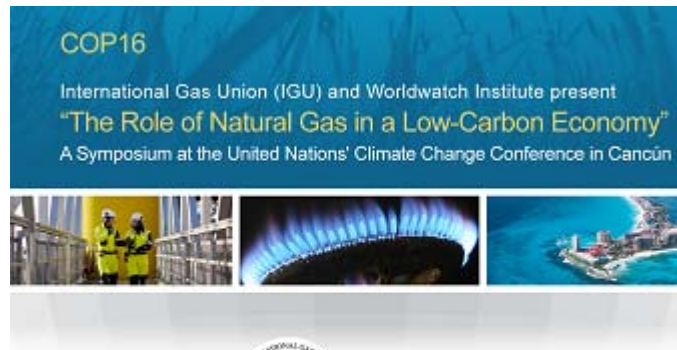
***Natural Gas - part of the  
climate solution***



# IGU is creating arenas for sustainable solutions



- **Ministerial Gas Forum**  
2nd IEF – IGU Ministerial Gas Forum,  
Doha, Qatar, 30 Nov 2010
- **UN Climate Change Conference (COP16), Cancún, Mexico**
  - IGU Worldwatch Gas Symposium, 5 December





# The IEF-IGU Ministerial Gas Forum



News, Views  
Knowledge  
- World Wide





# Natural Gas CARES

**C****Clean**

Natural Gas is clean. Natural gas produces less nitrogen oxide than coal, and more than 50% less CO<sub>2</sub>. Gas produces no sulphur and no solid waste.

Natural gas promotes sustainable transport. Natural gas vehicles can improve air quality and energy efficiency in large cities.

**A****Affordable**

Natural gas is the affordable choice. Modern gas-fired plants have a capital cost that is half that of coal, one-third the cost of nuclear and one-fifth the cost of onshore wind.

Natural gas does not require subsidies. Unlike heavily subsidized renewable technologies, natural gas use allows countries to affordably reduce their emissions.

**R****Reliable**

Natural gas is available now. Gas is readily available from a variety of sources, both pipeline and LNG. The environmental benefits of gas can be realised immediately.

Natural gas is versatile. Gas can serve as a flexible partner in power generation for intermittent energy sources like wind and solar, facilitating the phase-in of renewables.

# for the World

**E****Efficient**

Natural gas is efficient. Modern gas-fired power plants are 40% more efficient than coal plants.

Natural gas saves time. Gas-fired plants require less construction time than nuclear or coal plants.

**S****Secure**

Natural gas is abundant. Global production will increase over the next 20 years, with growing supplies from both conventional and unconventional resources.

Natural gas is safe. The natural gas sector has the best safety record in the industry.

It is time to act. It is time to choose Natural Gas.

**International Gas Union***The Voice for the Gas Industry Worldwide*[www.igu.org](http://www.igu.org)

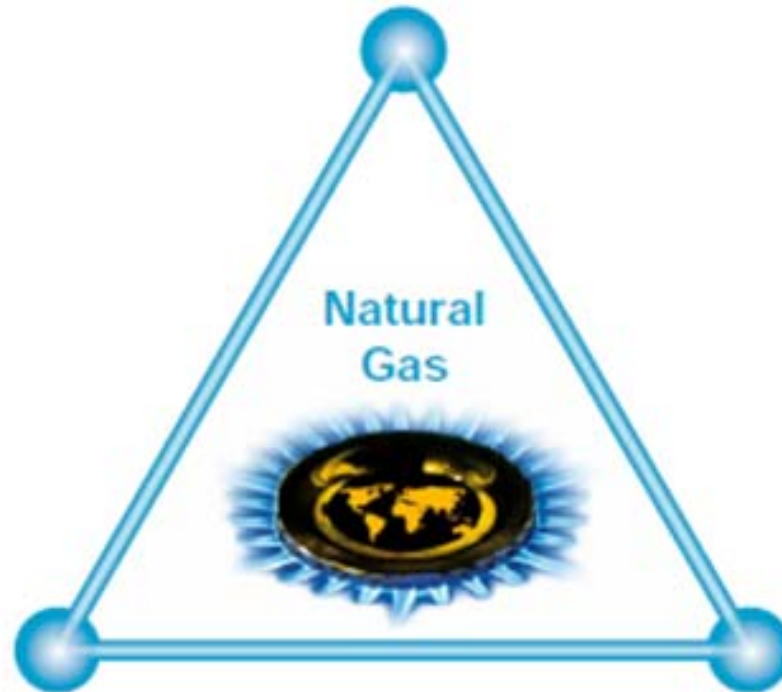
25th World Gas Conference  
"Gas - Sustaining Future Global Growth"  
Kuala Lumpur, Malaysia  
4-8 June 2012

[www.wgc2012.com](http://www.wgc2012.com)



# Thank you for your attention!

## ABUNDANT



## ACCEPTABLE

## AFFORDABLE





# 25th World Gas Conference KL 2012



**Thank you for your attention!**



*photo:WGC 2012*

***Selamat Datang!***



4-8 June 2012  
Kuala Lumpur  
Malaysia

