

Sustainable Energy for All



The gas industry contribution to the goals of the Sustainable Energy for All initiative?

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International Gas Union**

Geneva, 20 January 2015

The Sustainable Energy for All Initiative

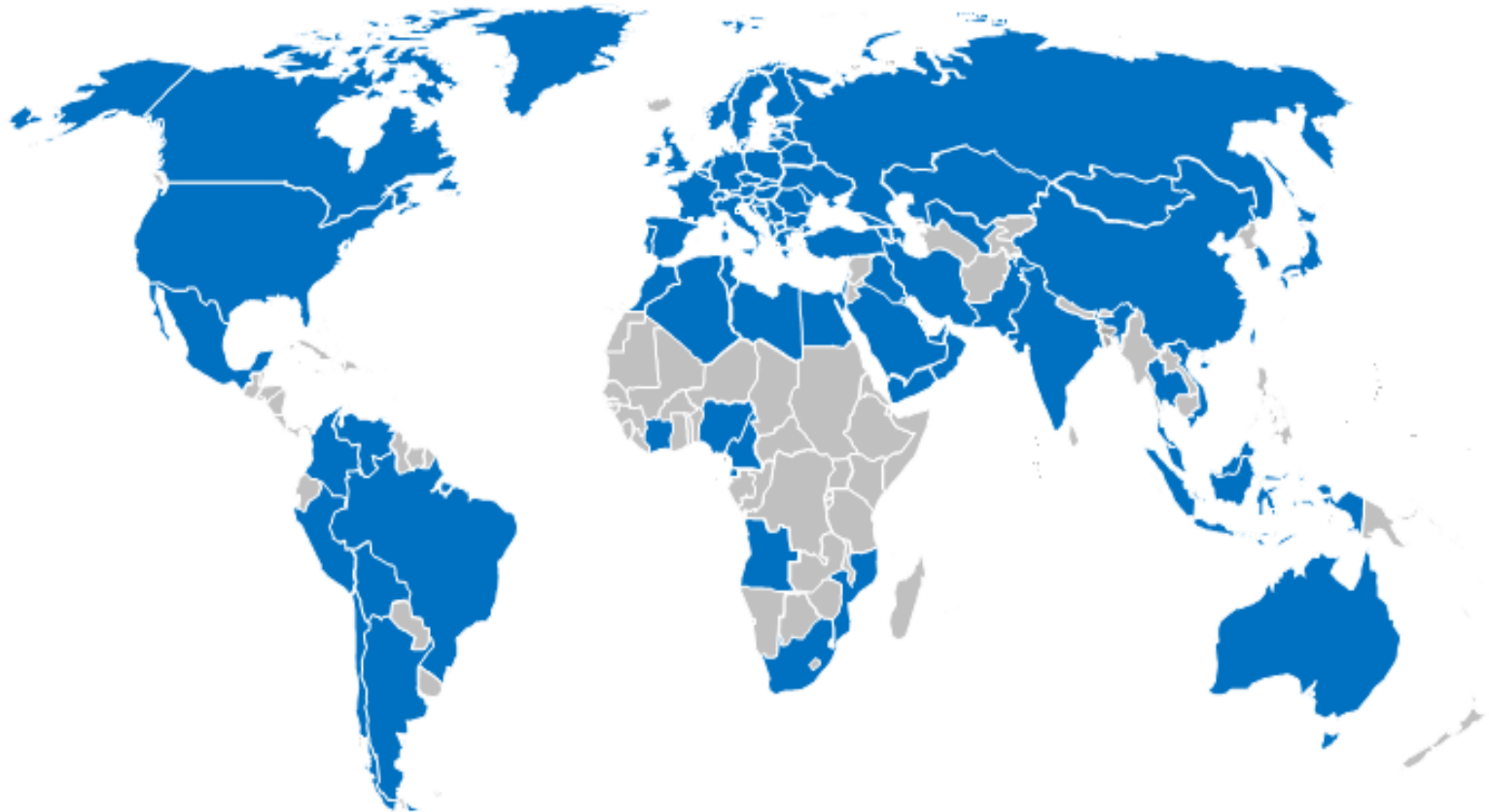
Three interlinked objectives by 2030:

- **Universal access to modern energy services**
- **Double the global rate of improvement in energy efficiency**
- **Double the share of renewable energy in the global energy mix**



Gas can contribute on all targets

IGU Membership



Founded in 1931

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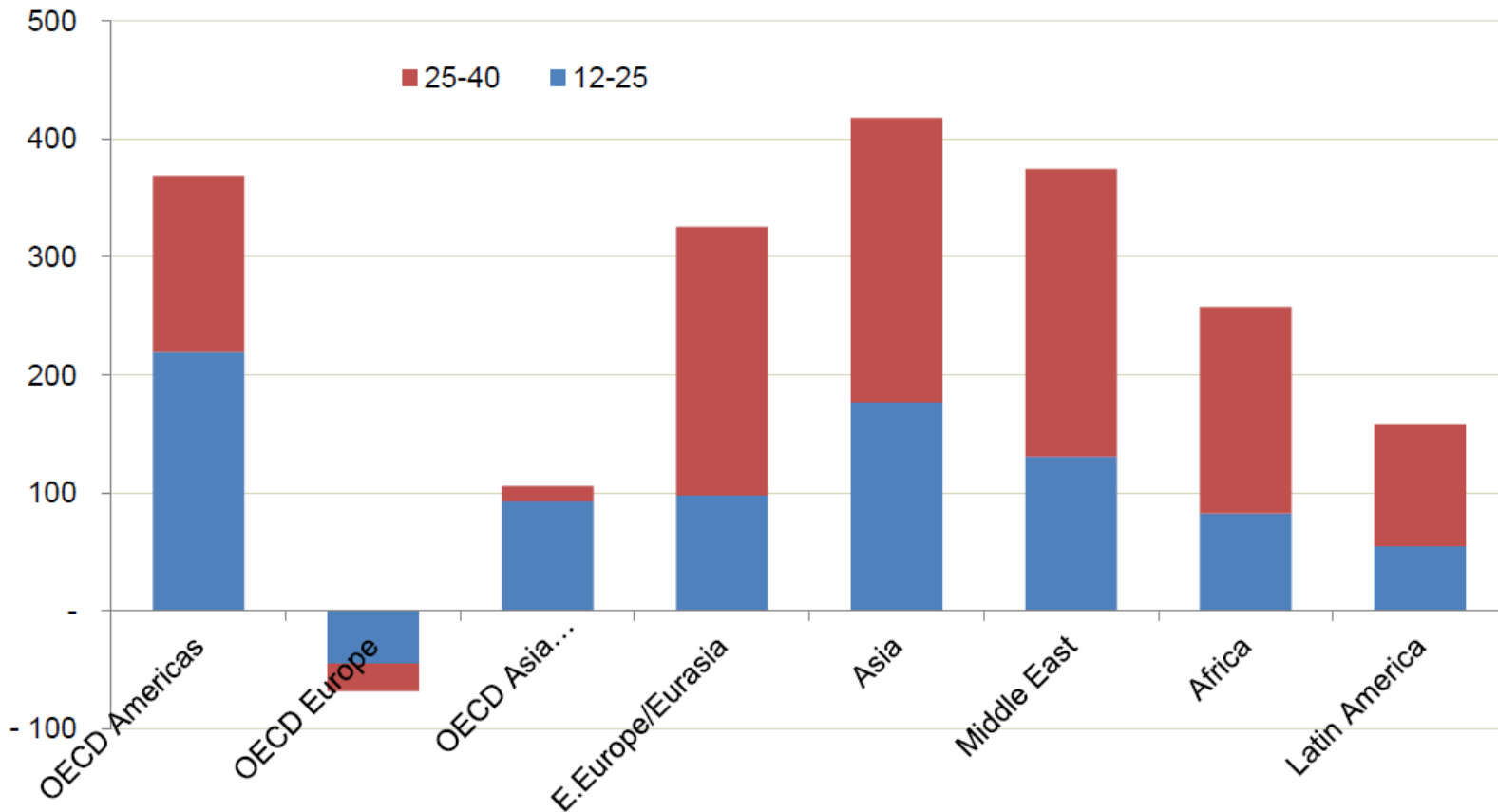
 IGU members

**91 Charter members
51 Associate members**

** Status as of end October 2014*

Gas production to increase

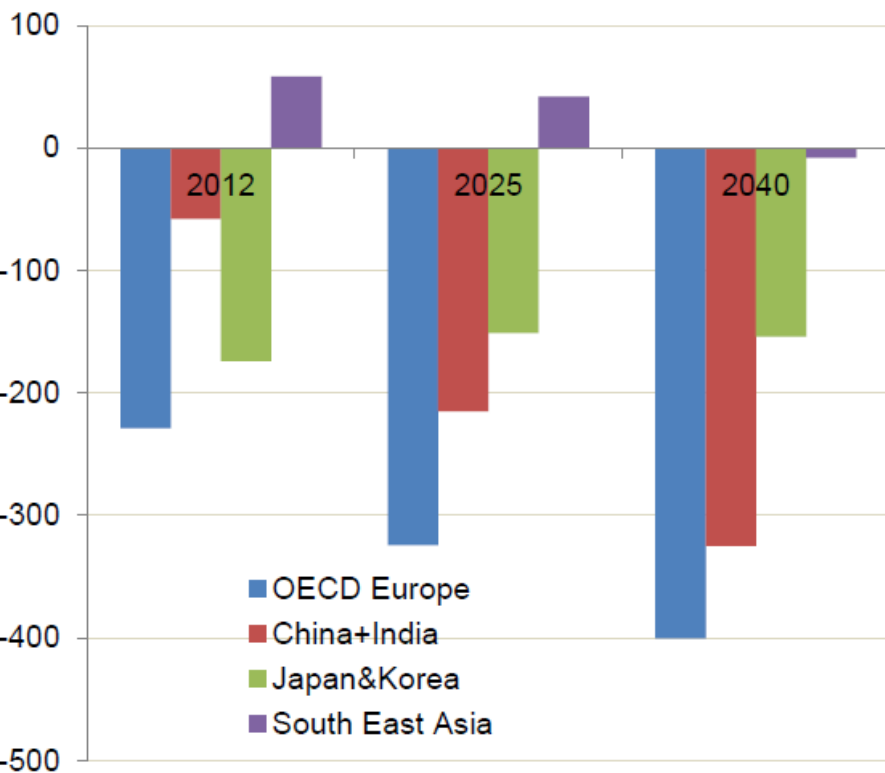
Natural gas production growth by region, IEA WEO New Policy Scenario (bcm)



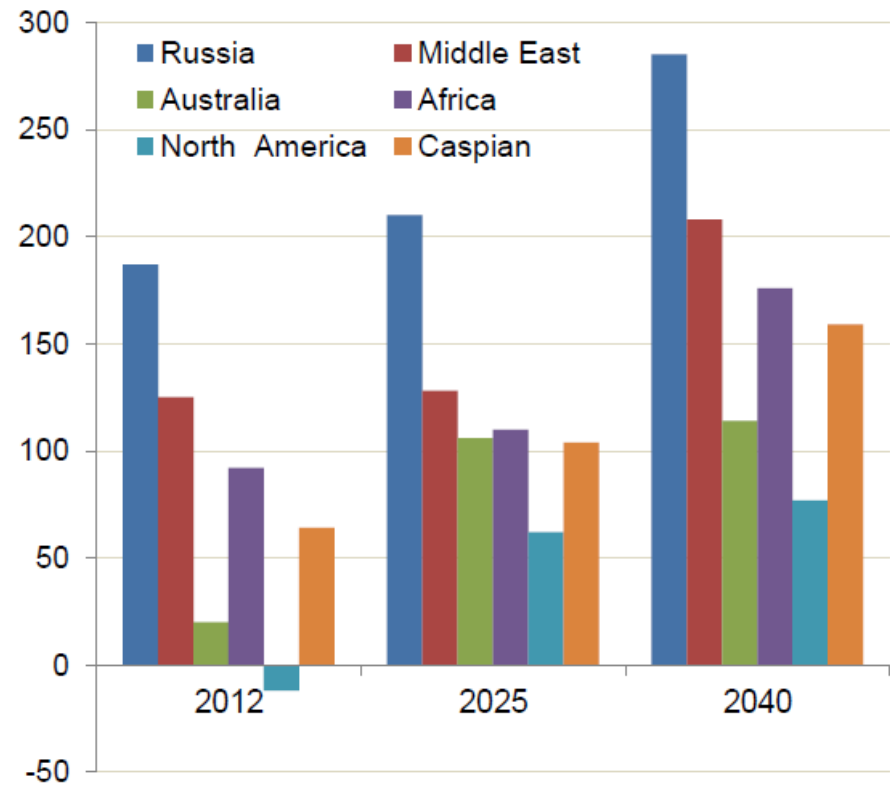
Source: IEA World energy outlook 2014, New Policy Scenario

Inter-continental trade will increase rapidly

**Major net gas importing regions:
Imports (bcm)**



**Major net gas exporting regions:
Exports (bcm)**



Energy Access- Pipelines

Need for:

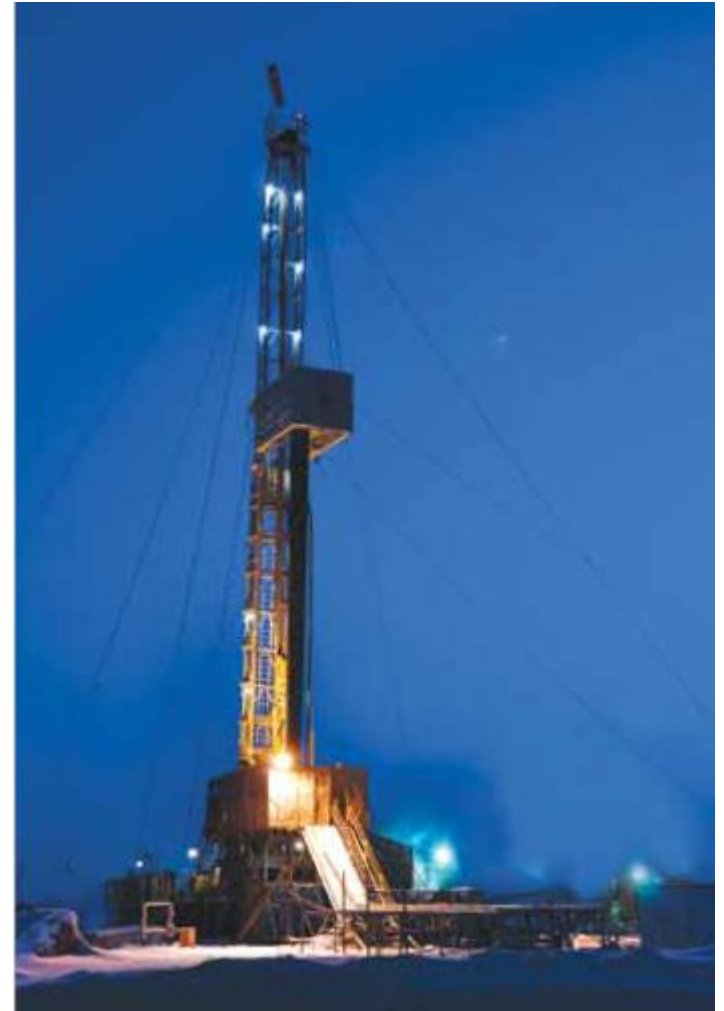
- Standardized Inter-regional and Inter-continental regulatory agreements for use of pipelines



- Open access for third party agreements
- Better options and use of reverse flow possibilities

Energy Access- Unconventional Gas

- **Industry needs to address and focus on the environment challenges**
- **Find «light» infrastructure solutions**
- **Use Best practice from already developed areas in North America**



Energy Access - LNG

- **Provides flexibility to already existing gas markets**
- **Give options for buyers and sellers in a price volatile market**
- **Small scale LNG is less expensive and can open up gas use in new region**
- **Give options to areas with limited access to competitive alternatives**



The LNG terminal will offer business opportunities:

LNG trading

LNG storage

Infrastructure for small-scale LNG activities

Energy Efficiency

- **Replacing older power stations with modern CCGT**
- **Substitution for oil in transport**
- **Increase use of biogas**
- **Gas in heating**



Environment Challenges

● Gas as Transportation fuel

- CNG and LNG
- Infrastructure developments
- Address Sox and Nox
- Only available alternative
- LNG as bunker fuel will reduce sulphur pollution in shipping



● CCS

- Need more and improved test facilities
- Need strong finance support from authorities
- Important to be able to keep environmental targets with continuation of use of gas



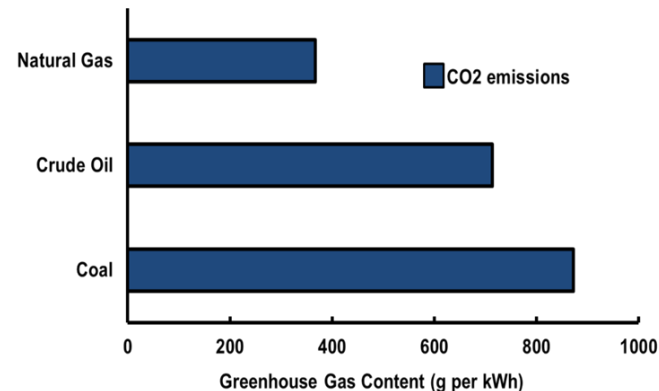
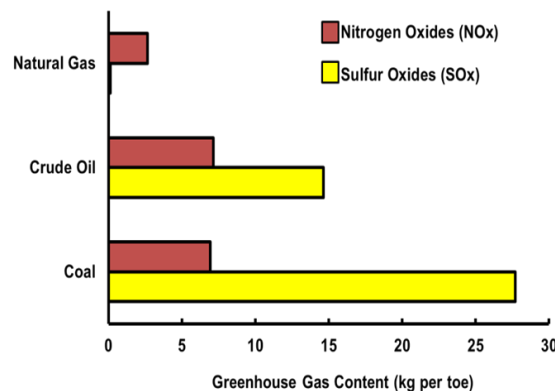
● Methane emission and Flaring

- Important for the industry to take initiatives to find best practice for reduction of methane emission
- Huge potential in building infrastructure to distribute gas from developments that today are flaring gas
- Best practice needed



Environmental Challenges

- **The Natural Gas Industry needs no subsidies**
 - Deal with climate and supply in a natural way
- **The Gas Industry is supporting a well functioning «cost for carbon» scheme**
- **Gas as transportation, heating & cooking and power generation fuel will reduce pollution in big city areas**
- **Good compliment to wind and solar power generators**
- **Emissions of particles from natural gas are almost negligible**



Source: IPCC and IHS CERA

Natural gas partnering with renewables

Society needs energy 24 / 7

Gas



Wind



Solar



Hydro



Capacity
utilisation

90-100%

30-40%

10-25%

Droughts

***Natural gas easy
to turn on and off***



Thank you for your attention!



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