

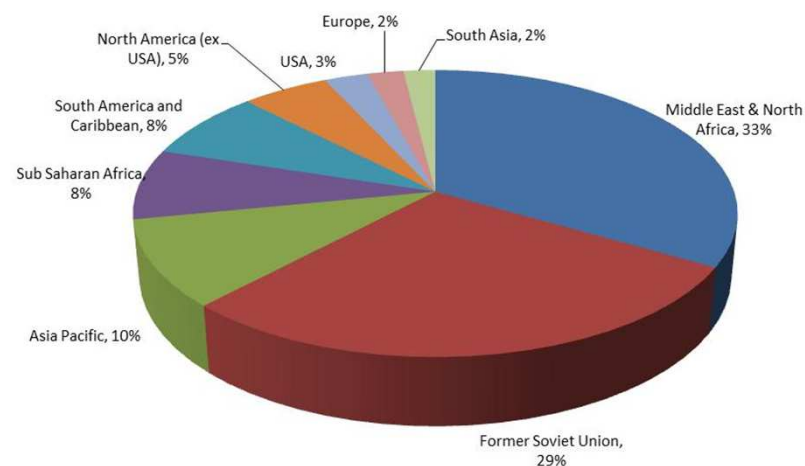
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Conventional Resources

<i>[trillion cubic feet]</i>	Proven Reserves (Source: BP)	Undiscovered Conventional Resources (Source: USGS)
Middle East & North Africa	3,114	941
Former Soviet Union	1,875	1,623
Asia Pacific	456	738
Sub Saharan Africa	223	744
South America and Caribbean	271	679
North America (ex USA)	84	574
USA	330	?
Europe	125	149
South Asia	81	159
Total	6,558	5,606
	↓	↓
	55 years	47 years



✓ 2013 Gas Consumption: 118 Tcf

Conventional Resources

Frontier areas of exploration



Arctic

- USGS: ~30% of undiscovered gas could be found in the Arctic
- Highest potential areas:
 - Norway, in Barents sea (e.g.: Snohvit)
 - Russia's main arctic gas potential in Barents and Kara seas (e.g.: Shtokman). Under explored areas in east Siberia, Laptev and Chukchi seas could also hold gas.
 - North America, experience in Prudhoe Bay but rest mostly unexplored.
 - Greenland is believed to be a promising area, but harsh environmental conditions and lack of infrastructure will probe to be costly.

Other areas

Holding relevant discoveries, but where exploration potential is still high and significant geological risk and technical challenges are present include:

- Middle East
- Australia Offshore
- Central Asia
- East Africa

Unconventional Resources

Shale Gas

<i>[trillion cubic feet]</i>	Risked Technically Recoverable
North America	2,279
Asia	1,840
South America	1,431
Africa	1,361
Europe	883
FSU	445
Total	8,240

US/Canada already proved concept. Mexico's reform potential.
 China and Australia with highest resources, water could be a constraint.
 Argentina holds 802 Tcf, concentrated in Neuquen.
 Algeria and South Africa taking initial exploratory steps.
 Poland and France with high resources. Regulatory limitations.
 Western Siberia leading activity, .

 **70 years**

Coal Bed Methane

- Resources estimated at 2,980 – 9260 Tcf (25 – 78 years of consumption).
- Russia, China, Australia and North America show highest potential.

Gas Hydrates

- Estimated resources ranging 10,000 – 100,000 Tcf
- No economical incentive yet, but several research projects underway (Japan/US)

Conclusions



- Natural gas reserves are abundant, plenty of years of supply from proven reserves and known plays.
- Vast amounts of additional resources are available, albeit under more challenging conditions.
- Geographical distribution of resources will become a challenge as largest endowments (Russia / Middle East) at large distance from consumption areas (India / China / Europe)
- Natural Gas has the potential to play key role in energy markets, increasing share leveraged by its abundance and lower environmental impact vs. other fossil fuels.