

تطورات صناعة الغاز العالمية

Developments in the Global Gas Industry

The global natural gas industry has doubled since 1980. From relative insignificance, it has now transformed itself into a major player in the world energy and power markets, and it now plays an important role in energy and power policies of most countries.

Global Demand for Gas and Projection (2015) - (Billion Cubic Meters)

Region	1980	2007	2015
North America	659	813	818
Europe	264	544	552
Pacific Countries	35	170	182
OECD	958	1527	1552
East Europe/Eurasia	438	682	699
Asia	36	319	460
Middle East	36	294	380
Africa	14	101	143
Latin America	36	127	158
Non-OECD	560	1523	1840
World	1518	3050	3392

Source: International Energy Agency

Demand - World demand for primary natural gas has risen from a mere 1,517 billion cubic meters (bcm) in 1980 to more than 3,049 bcm in 2007, according to the International Energy Agency. The larger part of this increase has come in the non-OECD countries. Whereas, OECD countries (viz. EU, USA, Canada and Japan) have had a relatively modest increase of about 50% in these 27 years, the non-OECD demand has jumped three fold during this period. Asia and the Middle East are the regions with the highest growth in consumption of gas, rising almost 8 times during this period.

Gas for power generation – The leading demand for gas is power generation, and this currently accounts for almost 40% of global demand. Gas is favoured over coal and oil for environmental reasons (low carbon emissions). Equally, gas powered plants also have low capital costs and can be constructed in shorter periods of time. Construction costs per megawatt capacity unit are significantly lower for gas compared to all other alternatives (coal, oil, nuclear, wind and solar energy). Only with a carbon emission penalty (as some countries have started doing) of above \$30, nuclear energy turns out to be the cheapest option.

Gas driven vehicles - Though gas driven vehicles have been introduced, their role in the transport system is currently negligible, even though they play a substantial role in some individual segments, e.g. in some public transport vehicles. Some Asian countries have started phasing out petrol driven buses. All public transport vehicles in Delhi are required to run on CNG. South America accounts for almost 40% of such vehicles. However, gas driven vehicles face a key barrier, namely gas delivery which must be as widely available as petroleum. Consequently, in the immediate future, such vehicles are likely to be confined to fleet vehicles like taxis, city buses etc.

Abundant supply and reserves – Global proven gas reserves are estimated to be more than 180 trillion cubic meters. Half of these are located in three countries, Russia, Iran and Qatar, in that order. While consumption has doubled since 1980, so have the reserves. There is no resource constraint for gas as it is for petroleum oil. Gas supplies are abundantly available for as long as demand can be reasonably projected. In the latest reported year, 2008, new additions (new discoveries) were 190% of production. Consequently, there is enough gas available to meet projected demand till 2030, the current forecast period of International Energy Agency.

Producers – Russia holds the world's largest gas reserves and is also the world's largest gas exporter. Iran comes second, and is also the third largest gas consumer after USA and Russia. This is followed by Qatar whose production is estimated to have reached 79 bcm in 2008, and is expected to rise further. Liquid natural gas (LNG) forms a major part of exports from Qatar. Whereas till 1980, the bulk of gas production (and consumption) was from the developed world's OECD countries, this has changed now. Russia has emerged as a key producer and supplier to the Western countries.

Middle East – The Middle East has the world's largest reserves even if it is not the leading producer right now. It holds 41% of the world's proven reserves. The region also has the lowest production costs. At the same time, countries in the region are struggling to keep pace with demand because of their rapid economic expansion in recent years. The key demand for gas in the region is for power generation.

U.A.E. - U.A.E.'s presence in the gas industry is not as strong as in oil. The same is also true for Saudi Arabia. Nevertheless, both major oil producers have seen their production go up more than 6 fold since 1980, though similar rapid growth is not expected in the coming years. At 6.5 trillion cubic meters, U.A.E.'s reserves are large but most existing production is kept aside for re-injection.

Supply of Gas, Current and Outlook of Gas, By Region & Selected Countries, bcm

Region/Country	1980	2007	2015
North America	657	777	791
Europe	219	294	279
Pacific Countries	12	51	75
OECD	888	1122	1145
East Europe/Eurasia	480	858	903
Asia	70	354	434
Middle East	38	357	493
- Iran	4	116	135
- Qatar	3	66	165
- Saudi Arabia	11	67	85
- U.A.E.	8	51	53
Africa	23	206	257
Latin America	36	143	162
Non-OECD	647	1918	2249
World	1535	3040	3394

Source: International Energy Agency

Role of trade – There is a considerable mismatch between location of gas availability and location of its demand. Consequently, the role of transportation and trade is important. Gas does not lend itself as easily to transport as does oil. Currently, the OECD region faces a supply shortage of about 400 bcm of gas, which it must import from the non-OECD countries. Transport is either through pipelines or liquefied form (LNG). There is currently a major surge in liquefaction capacity which is a major key to the future of the gas business, particularly, its price.

Recent trends - Worldwide primary gas demand fell in response to the economic crisis triggered off in 2008. Prior to the crisis in the first half of 2008, there was a rapid growth in demand for gas, indicating robust long term demand and requirement of gas. With economic recovery, however, gas demand is bound to make a comeback. In the next five years to the year 2015, demand growth is projected at 2.5% per annum.

Outlook – Non OECD countries, viz. the developing countries are expected to supply the entire increase in natural gas production. How demand for gas will grow depends considerably on government policies. Demand for gas is expected to peak in approximately ten years by when power generation is expected to switch to in favour of renewable sources and nuclear power. The resource and reserves being abundant, the key to this sector's future is the development of liquefaction capacity and laying down pipelines for transport.

Growth in demand - Highest increases in demand are forecast for the non-OECD countries and they are expected to account for 80% of the gas demand by 2030. One of the biggest increases in absolute terms is projected for the Middle East region to feed its power industry. The highest projected growth rate is in China and India, which is more than 5% per year.