“The International Buyers and Sellers meet in Asia”

“Changing Market Dynamics – Challenges & Opportunities”

By:
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1. Introduction – Brief on IGU
2. Global Energy Scenario until 2030
3. Changing Market Dynamics
4. Challenges & Opportunities
5. Closing Remarks
IGU as THE spokesman for the gas industry

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

IGU Members responsible for 95% of Global Gas Sales

As of April 2010

- 74 Charter members
- 33 Associate members
- 11 Affiliated members
Energy demand is expected to grow in the foreseeable future

**Population**
- Average growth of 0.9% p.a.

**GDP**
- Average growth of 2.7% p.a.

**Energy demand**
- Average growth of 1.2% p.a.

- World’s population to increase from 6.7 billion today to 8.0 billion by 2030
- GDP to expand from USD 20 Trillion in 1980 to USD 80 Trillion by 2030
- The world will use 35% more energy by 2030 than in 2005 level!

Source(s): ExxonMobil 2009
2. Global Energy Scenario until 2030

Power generation represents the largest and fast-growing sector

**Gas End Use by Sector 2009**

- Power Generation: 38%
- Transportation: 18%
- Industrial: 27%
- Residential/Commercial: 16%

**Gas End Use by Sector 2030**

- Power Generation: 40%
- Transportation: 18%
- Industrial: 28%
- Residential/Commercial: 16%

<table>
<thead>
<tr>
<th>Sector</th>
<th>CAGR</th>
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<tbody>
<tr>
<td>1) Power Generation</td>
<td>1.7% p.a.</td>
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<tr>
<td>2) Industrial</td>
<td>1.5% p.a.</td>
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<tr>
<td>3) Transportation</td>
<td>1.2% p.a.</td>
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<tr>
<td>4) Residential / Commercial</td>
<td>0.8% p.a.</td>
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- This is due to a radical shift to use less-carbon-intensive fuels such as natural gas to generate electricity.
- By 2030, it will account for 40% of all energy demand, representing 55% of the total growth in energy demand.

Source(s): ExxonMobil 2009, EIA/IEO 2009, PETRONAS 2009
Fossil fuels will still dominate the 2030 energy mix.

Natural gas is the fastest growing energy source.

By 2030, global natural gas demand will be 55% higher than it was in 2005!

Source(s): EIA/IEO 2009, PETRONAS 2009, ExxonMobil 2009
The world’s outlook of natural gas supply - demand balance

- **Middle East**: 75.91
- **Russia & CIS**: 56.78
- **Asia Pacific**: 14.65
- **Africa**: 8.87
- **N America**: 7.31
- **S&C America**: 6.12

Top 3 gas producing countries:
1) **Russia** = 43.30 Tcm
2) **Iran** = 29.61 Tcm
3) **Qatar** = 25.46 Tcm

Total 2008 world’s proven natural gas = 185 Tcm (~6,533 Tcf)

2010 Market Study:
- **United States**: 4.0 Bcfd
- **EU**: 7.0 Bcfd
- **AP**: 16.0 Bcfd

2030 Market Study:
- **United States**: 12.0 Bcfd
- **EU**: 12.0 Bcfd
- **AP**: 38.5 Bcfd

Historical growth of LNG Export volumes (billion cubic metres)
- **Africa**, **Americas**, **Asia Pacific**, **Europe**, **Middle East**

The global rise of LNG business is imperative to satisfy the world’s rising energy demand!
Modest growth in total LNG imports of 5% was registered in 2009, notably in the Americas and Europe.

The U.S market was seen as a safe anchor for LNG. Despite the robust U.S shale gas production, LNG cargoes still flowing notably in the north east enjoying a significant basis premium.

Middle East has became an LNG demand centre.

Spanish LNG demand has dropped significantly due to reduced consumption.

The relatively strong LNG import growth in China and India (+3.1 MTPA combined) were insufficient to cushion the plunge in Japan, Korea & Taiwan (JKT) LNG imports.
3. Changing Market Dynamics

The outlook of long term LNG supply – demand balance and its potential implications

- Market is soft due to significant new supply and weaker demand
- Some supply may be held back
- Liquid markets likely to absorb the surplus (notably the US)

- Market tightens through 2012/2014 because of limited FIDs in 2006 to 2008

- Long term potential excess capacity
- Significant competition for demand
- More perception of over-supply could adversely impact prices via supply connection
- Development of some capacity will be deferred

The long-term view of the LNG industry especially in the LNG demand side looks more bearish than bullish!
Could the LNG industry be classified as a cyclical business that has a habit of changing?

Source(s): Wood Mackenzie 2010, Cedigaz, BP Statistical Review of World Energy
Emerging Asia is likely to be the main growth market for gas globally, notably India and China with growth rate of 8% and 9% respectively.

Asia is expected to remain the largest LNG consumer while Europe will experience the fastest pace of LNG growth.
**The global LNG market is undergoing the transitional state of change**

2009

- Clear linkage between American, European, Middle East & Asian gas markets.
- Starting to open up access to LNG worldwide

2010 & beyond

- Greater overlap between global LNG markets with ample LNG supply
- Wider access to gas market through LNG established

Source(s): RWE 2010
3. Changing Market Dynamics

The rising interest of developing regasification facilities worldwide

- Total planned = 47 projects
- Total capacity = 136.90 MTPA

1) Bahamas 11) Japan
2) Canada 12) Netherlands
3) China 13) Pakistan
4) Croatia 14) Philippines
5) France 15) Poland
6) Germany 16) Singapore
7) India 17) South Korea
8) Indonesia 18) Spain
9) Italy 19) UK
10) Jamaica 20) US

Potential import total:
- Number of projects = 176
- Import capacity = ~780 MTPA

Interest of importing LNG has increased significantly. Current regas capacity is about 470 MTPA. To date, a number of 75 projects which are located in 22 countries, exist and are in operation.

If all project proposals come online, the figure could go as high as 780 MTPA by 2020 with an overall import terminals of 176 projects that are located in a total of 36 countries.

Unprecedented demand growth and import needs are greater than expected.

Potential impact from the unconventional gas development in key gas importing countries especially Asia and Europe.

Unsure on the pace of LNG projects coming online.

Uncertainty over the supplier’s behaviour in channelling gas/LNG volume to end-customers
Opportunities to become LNG volume offtakers that may bolster supply position.

Enhance capabilities towards unconventional gas sector through selective pursuit of regional opportunities.

Continuously build and enhance technical know-how in stranded gas technologies (particularly FLNG) to broaden global gas portfolio.
IGU Messages on Natural Gas

- It is abundant, affordable and acceptable
- Clean, efficient, versatile and environmental friendly fuel
- 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
“GAS : SUSTAINING FUTURE GLOBAL GROWTH”

Kuala Lumpur Convention Centre
4 to 8 June, 2012

THANK YOU FOR YOUR KIND ATTENTION!