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MONTHLY LNG MARKET REPORT

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MONTHLY LNG MARKET

REPORT

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©USAID Energy Policy Program
House 4, Street 88, Sector G-6/3
Ataturk Avenue, Islamabad, Pakistan
Tel: +92 (51) 835 7072, Fax: +92 (51) 835 7071

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MONTHLY LNG REPORT



ISSUE NUMBER 1

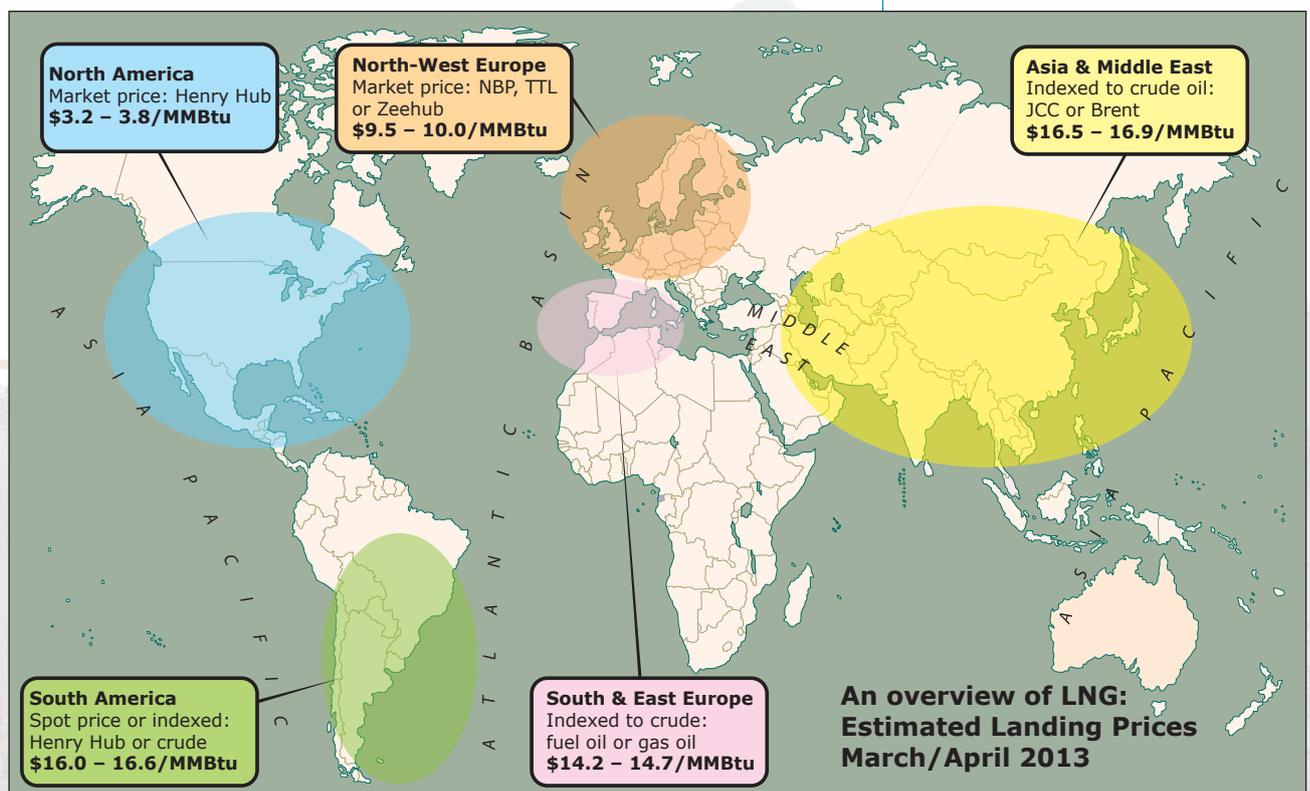
QUARTER ONE 2013

This 'tailored' LNG market report is the first example of the type of information that could be made available to SSGC from the wide variety of LNG information sources that the QED-Team has at its disposal. In addition to the provision of this information where appropriate and helpful the QED-Team will also provide a commentary on the information provide with particular reference to the applicability of that information to Pakistan.

In particular this report will cover the following areas:

- Global LNG supply/ demand balances
- LNG prices, short, medium and long-term around the world
- LNG shipping data
- LNG new and general market developments
- The impact on Pakistan LNG

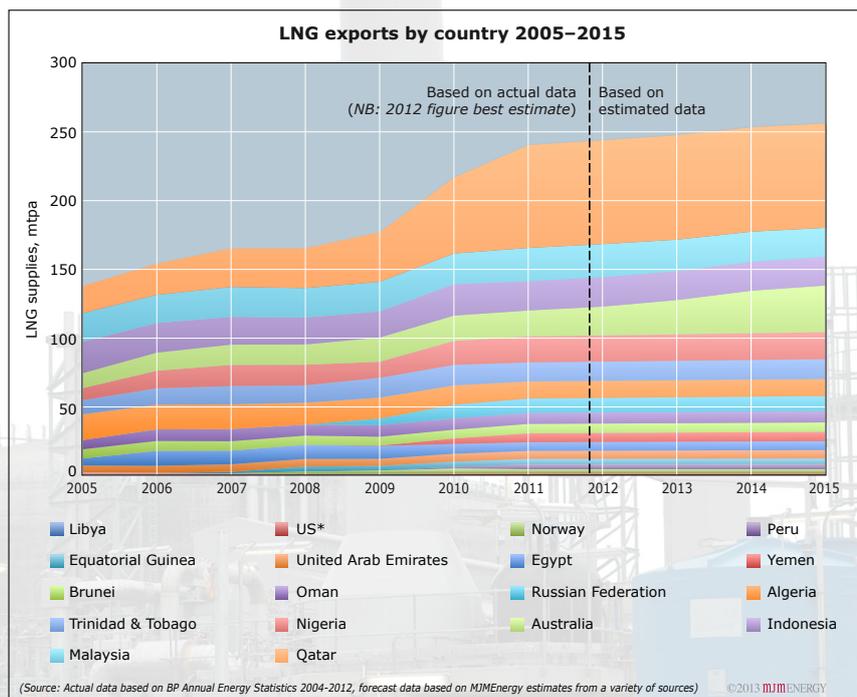
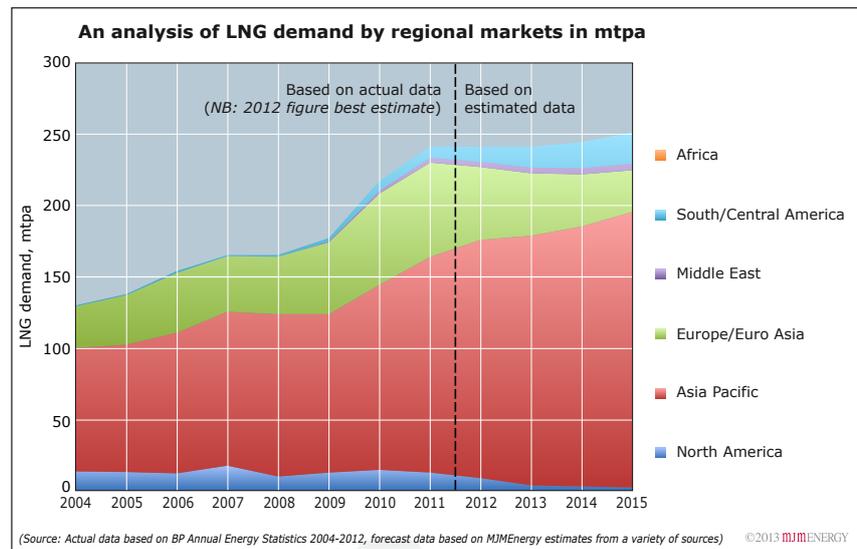
Introduction



General overview of global LNG supply/demand balances

The above diagram provides an overview of the current and forecast (March/April 2013) LNG price ranges for the different regions of the world. In particular it shows the range of prices across the world and their linkage either to local hub market prices as in the case of North America (linked to Henry Hub) and North-West Europe (linked to NBP/TTL/Zeehub).

However in order to fully understand the development of these different pricing hubs and associated prices one needs to see these global LNG prices within the context of global LNG supply and demand as shown by the following two diagrams which provide an overview of supply/demand and how it has developed.



The key points to note, which are of particular importance to Pakistan, are as follows:

Asia is the focus of LNG demand - The demand for LNG in the world is increasingly focused on the Asian markets with over 70 percent of LNG trade being focused on Asia.

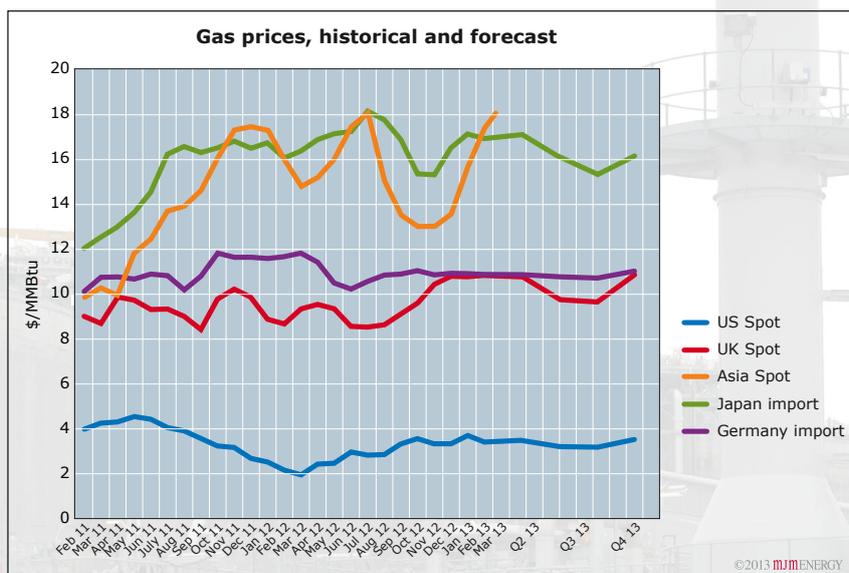
Oil indexation – Despite the liquidity of the North American gas market hub, HH (Henry Hub) and the trading hubs in North-West Europe (NBP, TTL, Zeehub) the majority of LNG is still currently indexed against the price of crude oil and crude oil products as evidenced by the linkage of LNG prices to JCC (Japanese Crude Cocktail) or Brent.

However, in addition to the above market dynamics, which were initially driven by long-term oil-indexed contracts, there is an increasing amount of LNG being traded on a short-term or spot basis, which is currently estimated around 25% of aggregate LNG trade. (NB: The LNG industry does not have an agreed definition of LNG spot trades but most analysts use contracts of four years or less.) Therefore having set the context of global LNG prices the purpose of the next section is to examine short-term factors and how these influence LNG prices.

Short-term factors

December 2012 and January 2013 have seen a tightening of LNG markets around the world, driven by cold weather in both Asia and Europe. In addition the unscheduled shutdown of two nuclear reactors in South Korea in November has led to concerns of power shortages and increasing LNG imports. Asian spot prices have risen towards oil-indexed contract prices.

LNG supply and demand commentary and outlook



**Overview of LNG
current and
forecast prices**

There are some additional constraints on LNG supply at present, in particular Yemen production remains halted following December's explosion as a gas feed pipe. However, Nigeria production seems to have recovered from recent problems, and Qatari production remains high. The impact on gas supply of the attack by militants on the Tiguentourine/In Amenas gas facility in Algeria on 16 January has been limited thus far, although wider security concerns in North Africa could impact on LNG exports.

	Dec '12	Jan '13	Feb '13	Q2 2013
JCC (\$/bbl)	108.74	111.59	108.96	98.75
US Spot Gas	3.60	3.70	3.40	3.20
UK Spot Gas	11.00	11.16	10.78	9.72
Japanese Import Gas	17.60	17.10	16.90	16.07
Asian Spot LNG	15.80	16.10	15.90	15.50
German Import	10.90	10.89	10.85	10.75

Although much depends on the weather, LNG spot prices are expected to ease from late February onwards as there are large volumes of gas in storage in Europe, North America and Asia.

Medium to long-term upwards price pressures (bull factors)

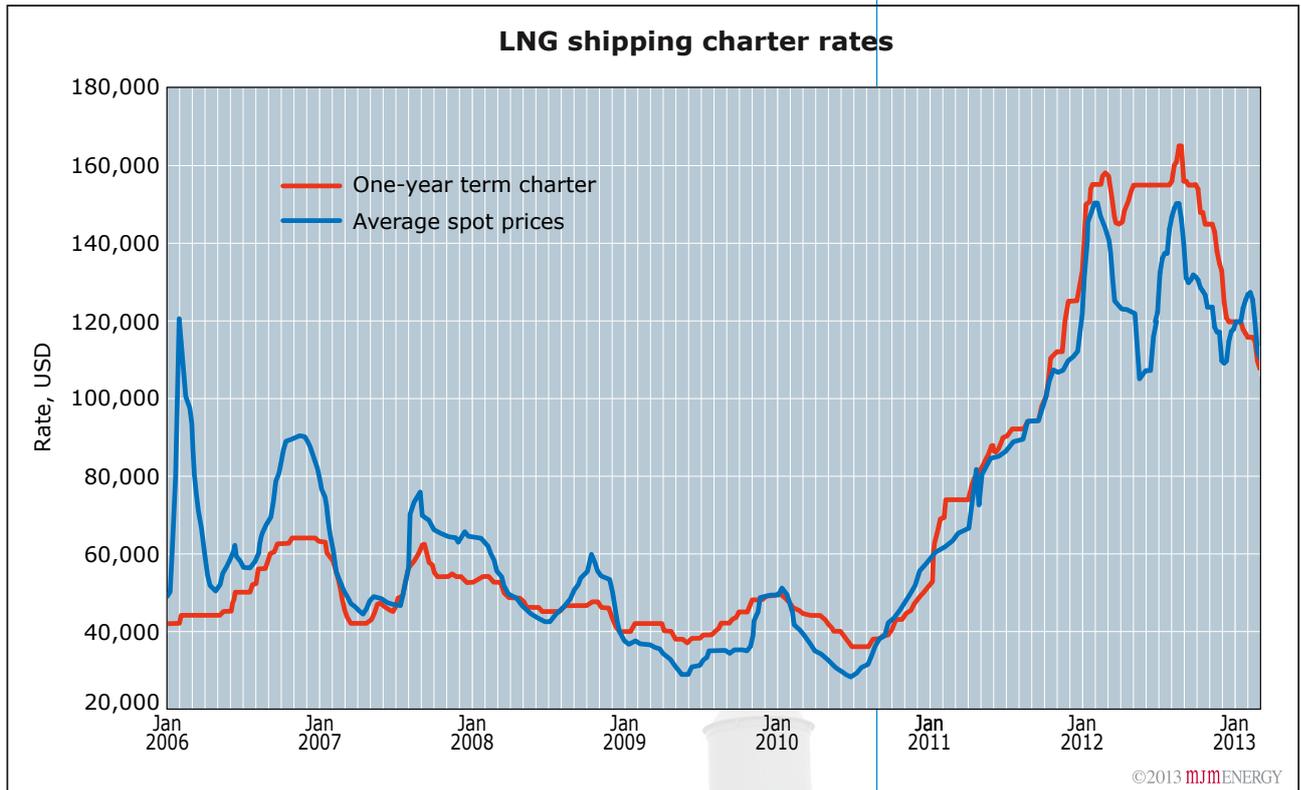
A number of new LNG import facilities are being expected to start or increase LNG imports over the early part of 2013, including the commissioning of new LNG terminals at Dabhol (India) and Jurong Island (Singapore), and the proposed start of Egypt LNG imports via a Floating Regasification and Storage Unit (FRSU)

Medium to long-term downwards price pressures (bear factors)

There are a number of factors likely to place downwards pressure on LNG prices during 2013 and following years.

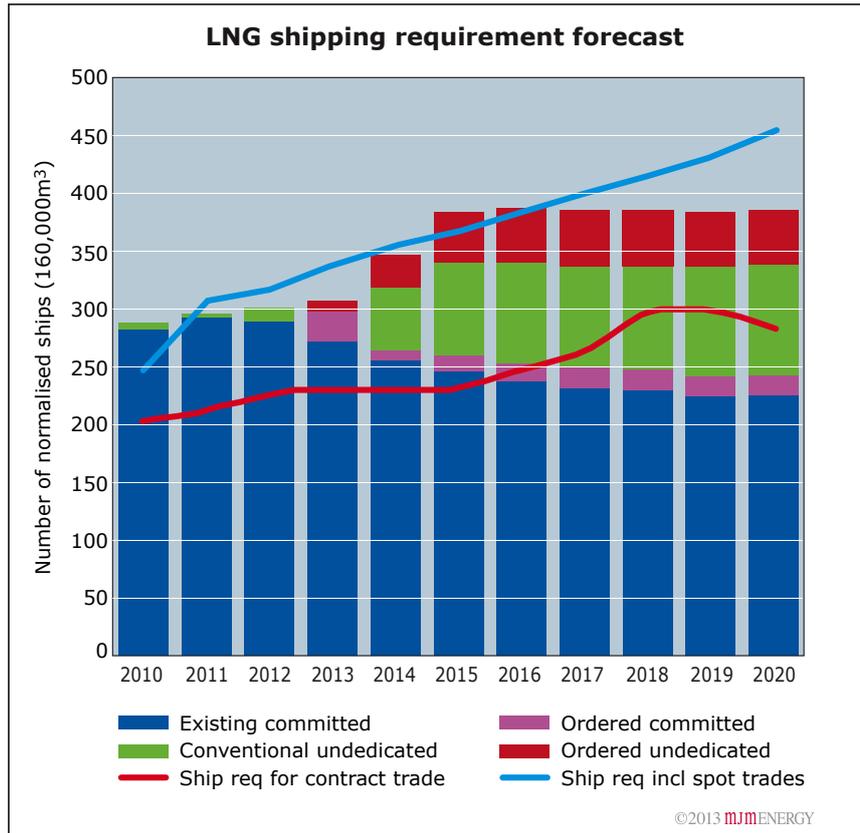
- A landslide election victory by the Liberal Democratic Party in Japan makes a nuclear restart more likely, perhaps mid-2013, this could remove a significant volume of LNG demand from the market
- NERA report commissioned by US Department of Energy seems likely to encourage Government approval of US LNG exports, potentially increasing available LNG supplies to world markets
- Oil prices likely to fall due to oversupply and failure of December OPEC meeting to agree quota cuts.

- The South Korean Government considering permitting private companies to build coal-fired power. This could potentially reduce South Korean demand for LNG
- Most US shale gas production forecasts continue to rise, as shale gas is extracted as a byproduct of shale oil



The graph above provides an indication of LNG vessel charter rates with information gathered from a variety of sources. In particular this chart provides information on the average spot charter rates for LNG vessels in the range 130,000-160,000m³ and one-year term charter rates for vessels of a similar size. It is worth noting that LNG vessel charter rates have increased consistently from around \$45,000/day in 2010 to an average of \$147,000/day in 2012. There are currently 378 LNG vessels active in the LNG market at the moment with a typical vessel making an average of 11 laden voyages. As can be seen from the above graph both the one-year term and the spot charter rates peaked in 2012 at around \$150,000 /day for vessels in the range 130,000m³ to 160,000m³. In addition, with the growth of LNG trade some, 27 new orders (two Moss-type tanks and 25 membrane) were placed with mainly South Korean yards, with ships in the range 150,000m³ to 172,000m³ averaging 155,000m³.

LNG shipping and terminals



This rise in prices as evidenced by the above diagram that shows despite activity in the construction of additional LNG vessels, the market is still quite tight.

In addition to normal LNG vessels the industry also provides LNG vessels with the facility to regasify LNG known as 'Floating Regasification and Storage' vessels (FRSU). Typically these are in the range of 138,000m³ to 170,000m³ although one FRSU currently on order is sized at 210,000m³. Typical FRSU charter rates are around \$110,000/day for vessels in the range 138,000-160,000m³ and more than \$125,000/day for vessels larger than 160,000m³.

LNG news round-up

Centrica do a 20 year LNG import deal with Cheniere – Whilst the deal is still subject to regulatory approval Centrica has agreed terms with Cheniere Energy for the purchase of 89 bcm of gas over 20 years from the Sabine gas liquefaction plant in the US. Of particular interest is the pricing structure, under which Centrica will pay Cheniere a fixed fee of \$3 per mmbtu plus a commodity fee of 115% of HH (Henry Hub) price for the procurement and liquefaction of the gas. Therefore based on current HH prices Centrica would expect to be paying a delivered price of around \$9/mmbtu for the gas, which is less than current NBP prices in the UK. However it should be noted that as the US begins to actively export LNG into world markets one would expect HH prices to increase.

<http://www.ft.com/cms/s/0/e5079bfa-953a-11e2-a4fa00144feabdc0html#axzz2OY1ruwNJ>

Qatargas has agreed to supply the commissioning cargo the new Jurong Island LNG facility in Singapore during Q1 2013.

Although initially a small importer, Singapore LNG imports are likely to grow rapidly. In addition the terminal has been redesigned to facilitate re-loading of LNG cargoes and could see Singapore develop as a regional LNG hub

(<http://www.qatargas.com/English/MediaCenter/news/Pages/12NovQGtoddeliverfirstcargotoSLNG.aspx>)

Nigeria recovered from recent interruptions as force majeure has been lifted at the Bonny Island LNG plant.

Pipeline sabotage had affected gas supplies to the Bonny Island LNG plant, with gas producers and ultimately Nigeria LNG (NLNG) declaring force majeure on supply contracts. However by mid-December force majeure had been lifted on all contracts and NLNG deliveries re-commenced.

Yemen LNG supply was disrupted due to a gas pipeline explosion on 16 December.

The Balhaf LNG export facility in Yemen has been subject to a number of problems due to attacks on the supply pipeline and related infrastructure. Following repairs to the pipeline, LNG loading re-started on in early January.

<http://www.bloomberg.com/news/2012-12-16/yemen-lng-pipeline-attacked-for-eighth-time-amid-rising-prices.html>

<http://www.argusmedia.com/pages/NewsBody.aspx?id=829191&menu=yes>

Egypt plans to start importing Qatari LNG from mid-2013 using an FRSU.

Although Egypt has been an LNG exporter since the early 2000s, a combination of growing indigenous natural gas demand, and existing LNG export commitments, and opened opportunities for LNG imports to Egypt to resolve shortfalls for power generation and industrial users. Citadel Capital has announced a joint venture with QInvest of Qatar to build and own facilities to import LNG via an FRSU.

(<http://www.arabnews.com/citadel-capital-joint-venture-import-lng-egypt>)

GAIL of India commissions Dabhol LNG terminal south of Mumbai.

After many delays and difficulties the Dabhol terminal in Maharashtra, India, has finally been commission in December 2012, creating a new terminal on India' west coast and making natural gas available to western and southern states of Maharashtra, Karnataka, Goa, and Tamil Nadu.

(<http://www.lngworldnews.com/gail-of-india-commissions-dabhol-lng-terminal/>)

US Government allows GAIL to export LNG from US to India.

While currently there are restrictions on exports of LNG from the US to countries with which the US does not have a free trade agreement, these restrictions have now been relaxed to allow GAIL of India to ship LNG from the US Sabine Pass terminal (due to be operational in 2017/18) to India under a 20-year, 3.5mtpa contract. This may lead to other US LNG export projects being approved.

<http://www.pennenergy.com/wirenews/oilgasnews/2013/01/31/us-eases-curbs-to-allow-gail-ship-shale-gas-to-india.html>

Impact on Pakistan

While the short-term pressures are pushing spot LNG prices up, medium to long-term factors suggest increasing supplies of LNG over the next few years, potentially making it easier for Pakistan to secure cargoes either under contract or via the spot market.

The entrance of new LNG terminals at Dabhol and Singapore, whilst potentially increasing competition for LNG supplies in the region, may also increase the liquidity and ease of LNG trading regionally, particularly given Singapore LNG's ambitions to operate as an LNG trading and re-loading hub.

Moves towards support of US LNG exports are likely to increase the supply (and potentially reduce the cost) of LNG to Pakistan either from US cargoes, to displacement of future Qatari, Australian or East African LNG production.

With the Cheniere / Centrica deal making the headlines as a result of the US exploitation of its unconventional gas resources, it useful to briefly highlight the potential impact of unconventional gas on Pakistan. Whilst estimates of the availability of unconventional gas varies wildly with potential plays throughout the world, the location of many of these unconventional gas plays does mean that either additional LNG will come onto the world gas market or local unconventional gas may displace LNG imports. Both these activities could if sufficiently widespread drive down global LNG prices. Hence the importance of SSGC having a price re-opener in its GSA.

Future special one off articles:

In addition to the above it is hoped that a number of special articles will be written providing an introduction to key aspects of the world LNG market. Suggested areas may include:

- Overview of LNG pricing structures
- Overview of the world of unconventional gas and its potential impact on Pakistan
- LNG liquefaction, what it costs and how it works
- LNG regasification, what it costs and how it works
- LNG shipping, types, costs and current developments.

www.ep-ep.com.pk
info@ep-ep.com.pk