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Australian focus on price differential and competition in Asian markets

Resources and Energy report from Canberra outlines challenges in export market

Australian liquefied natural gas deliveries into Asia now face growing competition from other global LNG producers, particularly the US plants under construction, and from market oversupply.

Before the oil price fall, buyers were seeking US contracts based on Henry Hub prices, as a competitive alternative to oil-linked contracts.

Oil-linked

With the fall in oil prices, this dynamic is changing. Assuming a typical US contract with a mark-up of US\$6.25 per million British thermal unit over the Henry Hub price for liquefaction and shipping costs, US LNG exports delivered into Japan will be about US\$10.10 per MMBtu in 2015 dollars, by 2020.

This is marginally higher than the projected Australian oil-linked contract price of about US\$9.30 a gigajoule.

Domestic gas prices across the Eastern seaboard have all been rising over the last three months.

The Wallumbilla hub price has exhibited considerable volatility since late 2014. From a low of \$0.70 a gigajoule in November 2014, the hub price escalated sharply to \$5.70 a gigajoule in January 2015, and has fluctuated widely since then.

The key driver for this volatility has been the varying degrees of uncontracted gas available to the market during this time, as ramp gas from Queensland's coal-seam gas fields has been taken up by the commencement of operations at Queensland Curtis LNG (QCLNG). Since then the Gladstone and APLNG plants have also started.

Given increasing pressure on domestic gas supply as a result of operations at the three LNG projects in Queensland, domestic prices are expected to be volatile over the outlook period.

The collapse in oil prices in the second

Global existing and new liquefaction capacity

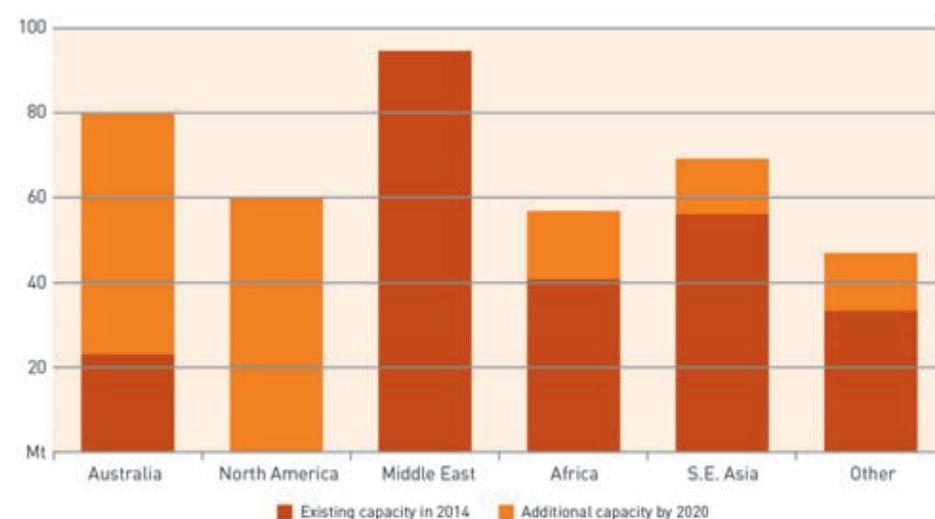


Figure 1: Growth of Australian and other LNG output

half of 2014 will result in lower netback prices in Queensland, which may constrain price rises in the domestic gas markets.

Expansion

That's as global liquefaction capacity is expected to expand significantly over the next five years, as new capacity in Australia and the US enters the market. Installed capacity is expected to grow by 65 per cent through 2020 with approximately 170 million tonnes of nameplate capacity coming online.

This includes 62 million tonnes in Australia through 2020, and at least 67.5 million tonnes in the US.

Despite the recent fall in LNG prices, there are no signs of a slowdown in the US LNG capacity expansion. There are five liquefaction plants under construction in the US which will be completed before 2020, with a total capacity of 62 million tonnes:

- Sabine Pass - 18 million tonnes,
 - Cove Point - 4.6 million tonnes
 - Cameron - 12 million tonnes
 - Freeport - 13.9 million tonnes, and
 - Corpus Christi - 13.5 million tonnes.
- This is expected to increase to 67.5

million tonnes with the addition of a fifth Train at Sabine Pass, Louisiana.

The US plants have introduced an innovative tolling arrangement, whereby the buyers take the risk on the price out of the Henry Hub in Louisiana, but are not exposed to oil prices.

Natural gas demand is expected to grow at an annual rate of 2.0 per cent, from 3,495 billion cubic metres in 2014 to 3,926 billion cubic metres by 2020, according to the IEA Medium Term Gas Report.

Contribution

LNG imports contributed an estimated 328 billion cubic metres (241 million tonnes) in 2014, around 9 per cent of global demand, and are projected to grow to 473 billion cubic metres (348 million tonnes) by 2020, 12 per cent of global demand.

LNG imports have traditionally been the preserve of countries with no access to alternative gas supplies, such as Japan and South Korea.

However, in recent decades LNG imports have been growing in areas such as China and Europe, which have access to competitive alternative supplies of gas.

This trend is expected to continue, as almost all the growth in LNG trade over

International Group of LNG Importers issues publication to boost new market knowledge

Jonathan Lauck, Director of Engineering, GIIGNL Technical Study Group and ENGIE

The France-based International Group of Liquefied Natural Gas Importers has published a handbook to promote a broad understanding and knowledge of the retail, small-scale and mobile LNG markets.

The “Retail LNG Handbook” is not intended to provide the reader with detailed operational procedures as such, but sets out the practical issues and requirements to guide and facilitate a skilled operator team to work out suitable operational procedures for necessary applications.

In conjunction with the 2015 Gastech Conference and Exhibition held in Singapore from October 27-30, the GIIGNL unveiled the Retail LNG Handbook.

Available

The 100-page document is available for download from the GIIGNL website. It also addresses the role of LNG import terminals in relation to other smaller markets.

With 75 member companies operating in 25 countries, and with the main objectives to promote the development of activities related to LNG, the body known in French as the “Groupe International des Importateurs de Gaz Naturel Liquéfié” (GIIGNL), is ideally suited to explore the current opportunities and detail the areas in which import terminals can participate in the retail market.

“The terms Retail LNG, Mobile LNG, Small-Scale LNG and other descriptive terms have been used to describe, either the miniaturization of a traditional LNG value chain, or the consumption of LNG by small end-user applications.

For the purposes of this Handbook, the GIIGNL utilizes the term ‘Retail’ to cover the broad scope of LNG activities at scales far less than the traditional LNG value chain.

The retail LNG market has attracted new participants and encouraged existing participants to expand their services into this new area.

As with any new market, uncertainty and challenges exist. The transfer of knowledge to new market participants on



The LNG importing body has 75 member companies operating in 25 countries

the properties and hazards of LNG and the existing codes and standards that have served the industry for decades is of paramount importance.

Players

For existing LNG market participants, the ability to apply lessons learned and establish best practices in smaller-scale applications in a manner that helps to maintain the LNG industry’s long-established record of safety while being commercially viable will be essential.

Traditionally, natural gas has been used for heating, power generation and industrial process purposes.

There has been limited use of natural gas in the transportation sector, in which LNG demand has remained localized and minor in relation to the overall trade.

Today, the influx of supply, the low prices and the environmental benefits of natural gas combined with increasingly stringent regulations on emissions are driving consumers to convert from other fossil fuels.

Natural gas consumers on pipeline systems have the ability to benefit, but for those not connected, LNG may be the only opportunity to convert to natural gas.

Evolution

As this market evolves, a unique opportunity may emerge for some existing participants in the LNG market and could lead to a shift in business focus, potentially adding to or even

transforming the traditional role of LNG import terminals.

In line with the conversion to natural gas, a new market is developing which is different from both the traditional natural gas market, including LNG, and from the oil-based transportation fuel market.

Retail LNG will have its own end users, require new infrastructure, and be subject to unique pricing and market dynamics.

The market has attracted new participants and encouraged existing participants to expand their services into this new area.

The purpose of the handbook is to serve as a reference manual to assist readers to understand the current and future Retail LNG market, LNG supply to this market, safety and operational aspects, applicable codes and standards, and equipment available to be used by the members of GIIGNL and other Retail LNG market participants.

The Handbook was not designed or intended to serve as a standard nor a set of specifications.

Limitations

Although the Retail LNG Handbook may contain much useful information, it is not specifically intended to work out procedures for LNG transfer, storage or distribution to end users.

No proprietary procedure, nor particular manufacture of equipment,

was recommended or implied suitable for any specific purpose in the Handbook.

The Technical Study Group (TSG) was mindful of the following overriding objective during the preparation of its Handbook: leverage the existing knowledge base.

The TSG Identified how the existing human and physical resources of LNG import operating companies can be leveraged to support the development of the Retail LNG market.

Safety

Best practices with regard to safety, design and operation are identified and detailed so that the collective experience of GIIGNL members can be shared with the participants of the Retail LNG market.

The GIIGNL’s TSG produced a draft Table of Contents for its Retail LNG Handbook which captured the current understanding of the Retail LNG market.

This included sections with “contextual” information so that the activities underway in the market could be presented in a manner in which the relationships between Retail LNG and the traditional LNG markets could be understood.

The TSG members volunteered to draft relevant sections that captured the global nature of the Retail market and matched the relevant experience of TSG members and their respective companies, with the required content.

Through a series of review cycles the individual sections of the Handbook were completed. “Regional coordinators” then ensured that any regional differences were captured and explained.

Sections

A Handbook coordinator then compiled all of the sections into a draft Handbook which was reviewed and edited by the full body of the TSG prior to issuance of the final GIIGNL Retail LNG Handbook.

With regard to the Retail LNG market, the following representative examples of themes observed by the GIIGNL’s TSG are provided:

Properties and Hazards of LNG - The inherent risks associated with LNG that have been observed and carefully mitigated for close to five decades exist in the Retail LNG market.

Although there are differences in scale and scope between the markets, the lessons learned and practices employed by LNG Import Terminal operators provide the Retail LNG market with demonstrative guidance on what prudent operations can look like.

Understanding the hazards of LNG, managing the associated risks and maintaining operational protocols and operator knowledge are imperative for all participants of the Retail LNG market.

Codes and Standards - Industries involved in LNG trade, governments,

class societies and other interested parties have worked together for many years to create codes, standards, rules and regulations that represent the collective knowledge of the participants and the current best practices within the industry.

These documents can reflect the “state-of-the-art” in terms of technologies and capture the operational best practices that have been gained through actual technical design processes, operational experience, research and development and testing.

However, regional differences in the application of particular codes and standards still exist.

While the current operation of LNG Import Terminals is viewed as having a robust and well proven set of codes and standards, it has been recognized that the scale and scope differences that exist with Retail LNG have produced “gaps” in coverage that should be addressed with the drafting of focused codes and standards.

Current Market - Retail LNG market drivers were identified and illustrative value propositions detailed.

Although it was confirmed that significant opportunity exist for participants in the LNG value chain, GIIGNL’s TSG has found that many proposed Retail LNG developments appear to have overstated the economic benefits that can be derived. The market

drivers for the adoption of LNG as a fuel vary from region to region.

Additionally, the drivers for adoption will vary within the different end user markets. However, it can be stated that the main drivers will be environmental benefits (e.g. compliance with regulations) and lower cost.

Equipment - As with other “emerging” markets, there can exist a corresponding emergence of new technologies and improvement in existing technologies.

While some advancement with regard to the equipment utilized in the Retail LNG value change is being observed, much of the improvement has been found to be in the “economies of scale” that have arisen due to increased utilization of proven equipment and technologies.

Availability of LNG Supply - Although some challenges exist, LNG Import Terminals have been confirmed as ideal “hubs” in a distributive model of LNG supply to the retail markets. They provide the basic infrastructure required to supply these markets and can be modified or expanded to perform new services and add new distribution capabilities.

Aspects of LNG Supply - With regard to safety, security, staffing, equipment siting, and transfer operations LNG import terminals provide excellent references for developing Retail LNG facilities and for conducting safe and efficient Retail operations.

Trends and Prospects - The general level of interest in Retail LNG that can be observed in the press and trade publications has been observed by GIIGNL’s member companies.

Although the industry “buzz” is substantial, volumes of LNG traded in the Retail Market currently and for the foreseeable future will only represent a small percentage of the global LNG trade.

However, even these modest volumes will offer many opportunities for current and new LNG market participants to develop new business, expand their services and increase utilization of existing infrastructure.

The environmental benefits are significant, the technology employed is well developed, and the economics workable in many cases.

Conclusions

As surmised by the GIIGNL’s TSG at the outset of their endeavour, virtually every member company had historical experience with, were in the midst of expanding their services to include, or was actively engaged in the study of, Retail LNG.

As a representative body of experienced, long term LNG Import Terminal operators, GIIGNL was uniquely qualified to stress in its Handbook the importance of managing the inherent risks associated with LNG, the application of suitable codes and standards and the use of proper equipment.

The study of the aspects of LNG supply and use including safety, security, staffing, equipment siting, and operations is hoped to provide an illustrative framework from which the industry can jointly move towards best practices.

While Retail LNG is considered by many to be “new” there is substantial historical experience with all aspects of the market.

LNG Import Terminals, including the experience and competence of their staffing, can play a key role not only in the incubation and growth of the Retail market, but also in the moulding and shaping of an adequate regulatory framework, of applicable codes and standards and operational best practices.

GIIGNL’s Retail LNG Handbook has been produced to serve as a starting point, guide and reference for the participants of this emerging market. ■

Please always consult the GIIGNL website www.giignl.org to check for the latest version of this Handbook.

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Tel: +44 (0)20 7253 2700 www.lngjournal.com