



**Application for 15-year  
no coverage  
determination under  
section 151 of the  
*National Gas Law***

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ashurst

GLNG is a Santos PETRONAS Total KOGAS project.

Santos

PETRONAS



TOTAL



KOGAS  
KOREA GAS CORPORATION

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# 1. APPLICATION

## 1.1 Application for a 15-year no-coverage determination

GLNG Operations Pty Ltd (ACN 132 321 192) ("**GLNG**"), on behalf of Santos GLNG Pty Ltd (ACN 131 271 648), PAPL (Downstream) Pty Limited (ACN 147 649 205), KGLNG Liquefaction Pty Ltd (ACN 146 143 311) and Total GLNG Australia (ARBN 146 680 524) (the "**Participants**"), applies to the National Competition Council (the "**NCC**") under section 151 of the National Gas Law (the "**NGL**") for a 15 year no-coverage determination for the proposed pipeline described in section 2.7 (the "**Pipeline**").

The Participants have appointed GLNG as the Operator of the Pipeline and LNG Facility. GLNG makes this application with the consent of each of the Participants. The consent of each Participant for GLNG to make this application is included in Annexure 1.

The Pipeline is an integral part of, and has been specifically designed for, the "Santos Gladstone LNG project" (the "**GLNG Project**"). The GLNG Project involves the development of the GLNG Project coal seam gas ("**CSG**") fields (the "**Gas Fields**"), transportation of the CSG and other gas purchased from third parties through the Pipeline to Curtis Island and the construction and operation of facilities at Curtis Island (the "**LNG Facility**") to liquefy the gas for export to international markets. The Gas Fields are owned by related bodies corporate of the Participants (the "**GLNG Upstream Entities**") and their joint venture partners. The Pipeline and LNG Facility will be owned by the Participants.

## 1.2 Applicant's contact details – National Gas Rule 122(a)

### (a) GLNG Operations Pty Ltd

Contact person: Creina Stone  
Address: Level 22, Santos Place, 32 Turbot St, Brisbane Qld 4000  
Phone: (07) 3838 3816  
Email: creina.stone@glng.com

### (b) Ashurst Australia

Ashurst Australia are the legal representatives of GLNG Operations Pty Ltd and the Participants.

Contact person: Jane Ellis  
Address: Level 38, 123 Eagle St, Brisbane Qld 4000  
Phone: (02) 9258 6307  
Email: jane.ellis@ashurst.com

## 2. THE GLNG PROJECT

The GLNG Project is a fully integrated LNG project, which comprises three inter-related and inter-dependent infrastructure facilities:

- the Gas Fields;
- the Pipeline; and
- the LNG Facility.

CSG extracted at the Gas Fields will be transported through a network of underground flowlines to centralised hub stations for compression and dehydration and then from those hub stations to the Pipeline. GLNG will also utilise GLNG's existing Comet Ridge to Wallumbilla Pipeline (the "**CRWP**"), which is proposed to be looped and extended, to facilitate the transportation of gas from the Wallumbilla and Roma fields (forming part of the Gas Fields) to the Pipeline, the transportation of gas to and from GLNG's underground reservoirs at Roma (the "**Roma Underground Gas Storage Facility**") and for additional flexibility during the Gas Fields ramp up stage. The gas will then be transported through the Pipeline to the LNG Facility for liquefaction and export.

Other gas (both conventional and coal seam) will also be acquired from third parties. It is highly likely that third party conventional gas will need to be processed (beyond AS 4564 Australian Standard Specification for General Purpose Natural Gas) prior to delivery to the Pipeline to ensure it meets the LNG Facility gas specification. GLNG will likely also need to process or manage the gas specification of third party coal seam gas and any gas from the Gas Fields temporarily stored in GLNG's underground reservoirs. Epic Energy Queensland Pty Limited has agreed to supply to GLNG compression and associated services at the Wallumbilla gas hub to assist GLNG in managing gas specification requirements. GLNG is also currently considering construction of a gas treatment facility near Wallumbilla (the "**Treatment Facility**") if required to treat third party gas and/or gas temporarily stored in GLNG's underground reservoirs to ensure it meets the LNG Facility gas specification (discussed below). Any gas processed by the Treatment Facility would be transported through the CRWP and then through the Pipeline to the LNG Facility.

### 2.1 Status of the GLNG Project

All key regulatory approvals have been obtained for the construction and operation of the Gas Fields, the Pipeline and the LNG Facility. GLNG is in the process of obtaining the necessary approvals to construct and operate the Treatment Facility if required. GLNG also has commenced a further environmental impact statement (the "**EIS**") process for the development of additional wells within the Gas Fields area (beyond the well numbers already approved through the initial EIS process for the GLNG Project).

Construction of the Pipeline commenced in the third quarter of 2012 with completion projected for the second quarter of 2014. GLNG plans to deliver the first CSG to the

LNG Facility, for testing of the LNG Facility, in the second quarter of 2014 once testing and commissioning of the Pipeline has been completed.

Construction of the LNG Facility commenced in May 2011. The first cargo of liquefied natural gas ("**LNG**") from the first LNG train of the LNG Facility is expected in the first quarter of 2015, and the first cargo of LNG from the second train of the LNG Facility is expected in the fourth quarter of 2015.

## **2.2 Participants in the GLNG Project**

The Participants and the GLNG Upstream Entities are wholly owned subsidiaries of Santos Limited, Petroliam Nasional Berhad ("**PETRONAS**"), Total and Korea Gas Corporation ("**KOGAS**") respectively as indicated in **Figure 1** and Annexure 2. The percentage interest of the Participants in the GLNG Project is also included in **Figure 1** and Annexure 2.

As indicated in Annexure 3, the GLNG Upstream Entities are the owners of the Gas Fields<sup>1</sup>, which will supply most of the feed gas for the GLNG Project. The GLNG Upstream Entities are parties to a number of joint venture arrangements and under those arrangements have appointed a Santos GLNG Upstream Entity for each joint venture to operate the Gas Fields on their behalf.

The Participants are the owners of the 'downstream' components of the GLNG Project, namely the Pipeline and LNG Facility. The Participants have formed a joint venture and have appointed GLNG to operate the Pipeline and LNG Facility on their behalf. GLNG is owned by the downstream entity Participants in shares that equate to their respective interests in the joint venture.

The gas transported through the Pipeline and processed through the LNG Facility is owned by the Participants. Each Participant's ownership interest equates to its respective interest in the GLNG Project.

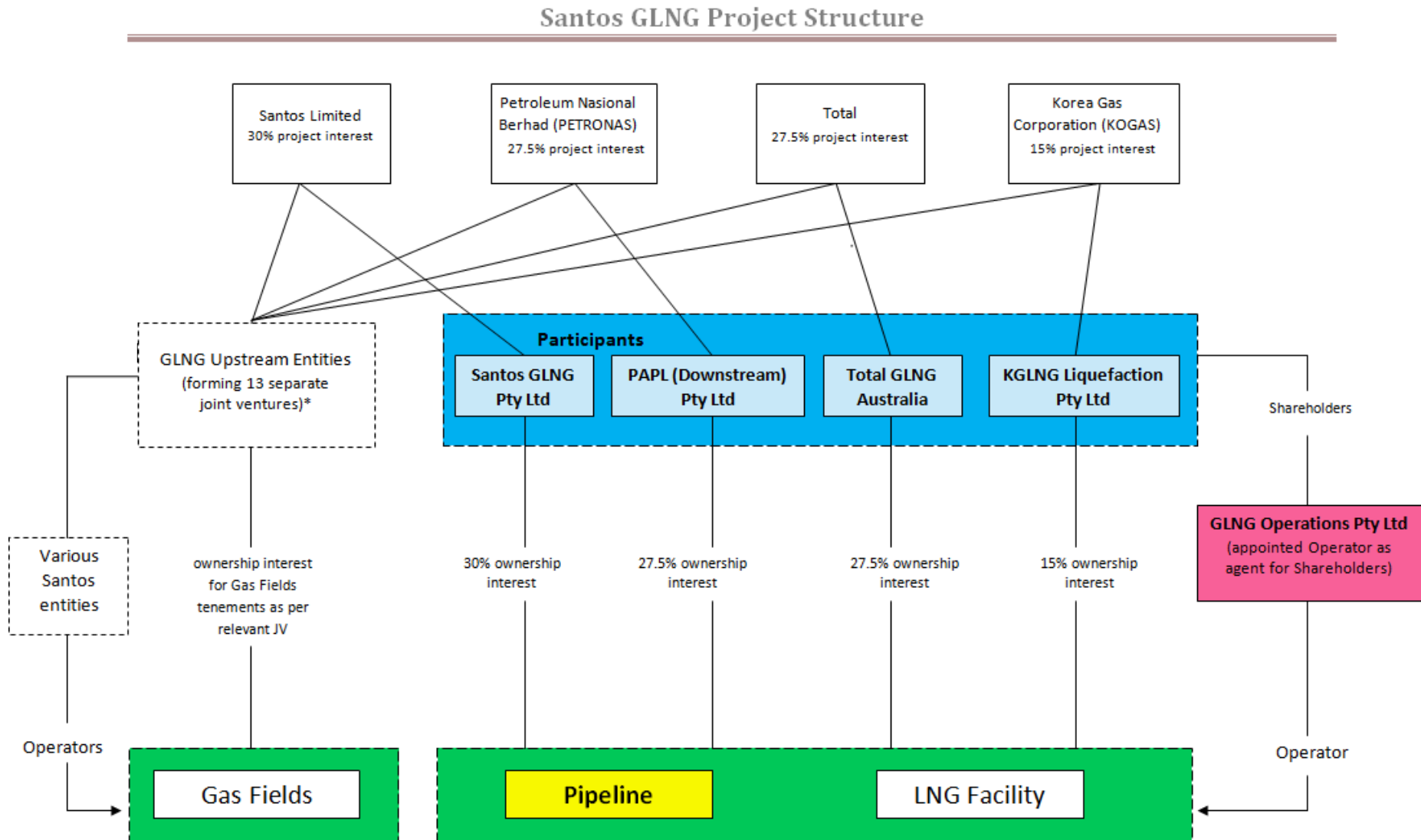
In short, the LNG production process is vertically integrated with the Participants and their related bodies corporates (the GLNG Upstream Entities) owning the Gas Fields, the Pipeline and the LNG Facility.

The Participants and GLNG do not have any relationship with other pipeline owners serving Curtis Island or the Gladstone, Rockhampton and Wide Bay areas or other consumers of gas in these areas. Subsidiaries of Santos Limited do, however, have various interests in other upstream entities that may be served by the Pipeline, as described below.

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<sup>1</sup> APLNG entities (otherwise unrelated to the GLNG Project) also hold an interest in some upstream joint ventures governing the Gas Fields.

**Figure 1** below shows pictorially the relationship between the Participants and the unincorporated joint venture structure.



\* refer to Annexure 3 for details of GLNG Upstream Entities and joint venture arrangements (note APLNG also holds an interest in some upstream joint ventures governing the Gas Fields)

**(a) Santos**

Santos GLNG Pty Ltd (one of the Participants), Santos TOGA Pty Ltd, Santos QNT Pty Ltd, Bronco Energy Pty Ltd, Santos CSG Pty Ltd, Santos Queensland Corp, Santos TPY Corp and Santos TPY CSG Corp (all GLNG Upstream Entities) are all wholly owned subsidiaries of Santos Limited, an Australian oil and gas exploration and production company. Santos Limited's market capitalisation makes it one of Australia's top 50 companies.

Santos' Annual Report for 2011 is provided in Annexure 2, Appendix 1.

Santos Limited has interests and operations in various Australian gas production other than the GLNG Project, including other interests in tenements in the Surat and Bowen basins that are not included in the GLNG Project, as well as interests in Indonesia, Papua New Guinea, Vietnam, India, Kyrgyzstan and Egypt. A map showing Santos Limited's non-GLNG Queensland oil and gas assets is provided in Annexure 2, Appendix 2.

Santos Limited is Australia's largest onshore domestic gas producer accounting for 15% of the Australian domestic market, supplying gas to Queensland (currently Mount Isa and Brisbane) and all other mainland Australian states and territories, ethane to Sydney, and oil and other liquids to domestic and international customers, including CSG from existing wells in the Bowen and Surat basins that are not part of the GLNG Project. Santos also supplies gas domestically in Queensland to customers in Mt Isa and Brisbane separately from the GLNG Project. These arrangements will not change as a consequence of the GLNG Project.

**(b) PETRONAS**

PAPL (Downstream) Pty Ltd (one of the Participants), PAPL (Upstream) Pty Ltd and PAPL (Upstream II) Pty Ltd (both Upstream Participants) are all wholly owned subsidiaries of PETRONAS, the national oil and gas company of Malaysia wholly-owned by the Government of Malaysia. PETRONAS is a fully-integrated oil and gas corporation in a broad spectrum of the oil and gas value-chain and is ranked among FORTUNE Global 500's largest corporations in the world. PETRONAS has four subsidiaries listed on the Bursa Malaysia (Kuala Lumpur Stock Exchange) and has projects and operations in more than 30 countries worldwide. Its business activities include:

- the exploration, development and production of crude oil and natural gas in Malaysia and overseas;
- the liquefaction, sale and transportation of LNG;
- the processing and transmission of natural gas and the sale of natural gas products including power generation;



- the refining and marketing of petroleum products;
- the manufacture and sale of petrochemical products;
- the trading of crude oil, petroleum products and petrochemical products; and
- shipping and logistics relating to LNG, crude oil and petroleum products.

PETRONAS is also a partner in the ELNG Project in Egypt and in the Dragon LNG Project in Wales. It is the world's largest single owner-operator of LNG ships and has long standing relationships with an extensive base of high volume LNG customers in Asia.

PETRONAS' Annual Report for 2011 is provided in Annexure 2, Appendix 3.

On an equity basis, PETRONAS is the largest LNG producer in Asia and is the third largest LNG producer in the world. The company operates the PETRONAS LNG Complex in Bintulu, Sarawak, Malaysia which is the world's largest integrated LNG facility with a total capacity of approximately 23 million tonnes per annum ("**mtpa**") from eight LNG trains. This LNG facility exports a substantial portion of their production to Japan, Korea, Taiwan and China through long-term supply contracts.

In addition, apart from eight liquefied petroleum gas ("**LPG**") bottling plants in Malaysia, PETRONAS operates an LPG extraction facility in Bintulu, Sarawak, Malaysia located in the vicinity of PETRONAS' LNG plants. This facility is operated by MLNG and is designed to extract LPG from the LNG production process.

PETRONAS also has LPG facilities in selected Asian countries. In India, PETRONAS' 50% owned subsidiary, Indian Oil PETRONAS Private Limited, operates a LPG facility in Haldia, West Bengal. In the Philippines, the PETRONAS LPG terminals are located in Iligan and Davao, and are operated by PETRONAS Energy Philippines Inc, a company in which PETRONAS holds 80% interest indirectly. In Vietnam, PETRONAS owns and operates a LPG terminal and bottling facility in Hai Phong, through Thang Long LPG Company, in which PETRONAS has a 71.2% interest. PETRONAS operates a LPG facility in Dong Nai Province, Vietnam through its wholly-owned subsidiary PETRONAS Vietnam Co Ltd.

PETRONAS' Australian operations, other than the GLNG Project, include equity interests in exploration and production permits in Western Australia and the Northern Territory.

**(c) Total**

Total GLNG Australia, Total E&P Australia and Total E&P Australia II are wholly owned subsidiaries of Total, a publicly-traded integrated international oil and

gas company and a world-class chemicals manufacturer. Total operates in more than 130 countries and has over 96,000 employees. Total is active in almost all LNG producing regions and main LNG markets.

Total's Registration Document for 2011 is provided in Annexure 2, Appendix 4.

The group produces LNG in Indonesia, Qatar, Yemen, the United Arab Emirates, Oman, Nigeria and Norway. It is currently constructing a LNG facility in Angola, which is expected to be completed in 2013.

Total markets LNG mainly in Asia and Continental Europe, as well as in the United Kingdom and North America. In 2010, Total sold 12.3 Mt of LNG, an increase of approximately 40% compared to its 2009 sales figures, due in particular to the start-up of a fifth train for its LNG facility in Qatar and the development of its LNG facility in Yemen.

Total's Australian operations, other than the GLNG Project, include owning 24% of the Ichthys LNG Project, which is currently under development in the Northern Territory, Australia. It also has interests in other exploration permits in offshore Western Australia and offshore Northern Territory. Total does not sell gas in the Queensland, New South Wales, Victorian or South Australian markets.

**(d) KOGAS**

KGLNG Liquefaction Pty Ltd and KGLNG E&P Pty Ltd are wholly owned subsidiaries of KOGAS, a company listed on the Korean Stock Exchange. KOGAS was incorporated by the Korean Government in 1983. KOGAS is the world's largest LNG importer with revenue of KRW 28,493 billion in 2011 and over 3,026 employees worldwide.

KOGAS's Annual Report for 2011 is provided in Annexure 2, Appendix 5.

KOGAS imports LNG from around the world and supplies it to power generation plants, gas-utility companies and city gas companies throughout the Republic of Korea. KOGAS currently operates three LNG import terminals in Korea and a nationwide pipeline network spanning over 3,022 kilometres. KOGAS purchases approximately 33 million tonnes of LNG annually.

KOGAS, though another wholly owned subsidiary, has a 10% participating interest in the Prelude FLNG Project, which is a floating LNG project to be located in the Browse Basin, Australia.

## 2.3 Gas Fields

CSG is essentially methane (natural) gas extracted at low pressure from coal seams. CSG produced in Australia typically has a high methane content (about 98%). In the past, natural gas was more often extracted from sandstone, generally at greater depths and higher pressure. Coal seam gas is formed as part of the same natural processes that produce coal over millions of years. The coal seams from which GLNG is producing are typically between 200 and 1,200 metres below the surface. The coal in these seams is naturally filled with gas and water, which keeps the gas trapped in the coal.

Santos began CSG exploration and production in the Surat Basin in 2002. The GLNG Upstream Entities' share<sup>2</sup> of the CSG currently being produced at the Gas Fields is sold by the GLNG Upstream Entities domestically with approximately 120 TJ/month sold to Gladstone and approximately 2880 TJ/month sold at Wallumbilla. Most of the CSG sold at Wallumbilla is transported, by purchasers, west to Ballera in the Southwest Queensland Pipeline and then onto Mt Isa or Moomba and the southern markets of Sydney and Adelaide.

The development of coal seam gas fields involves the drilling of exploration and production wells down into the coal seam. Water is pumped from the coal seam, reducing the pressure within the coal and allowing the gas to be released. The gas flows through coal cleats (small fractures or joints in the coal) toward the well bore. If the release of gas is not sufficient for commercial production, then processes such as hydraulic fracturing may be used to open the coal seams and increase the rate of gas and water production. The average well can produce for up to 20 years, but the amount of gas depends on the thickness of the coal, gas content and the depth of the coal seam. A typical CSG well produces mainly water for 12 months as water pressure is reduced following which CSG flow rates increase and remain steady for a number of years.

It is costly to stop producing CSG from a well once it has been de-watered as water may re-enter the well. This fact, combined with the number of wells required for CSG to LNG production, which generally is far in excess of the number of wells required for LNG production from conventional gas, means that sudden changes in the demand for CSG from the LNG Facility will impose significant costs on the operation of the Gas Fields. GLNG will use the Pipeline as one of the means by which it will manage that equilibrium of production and supply.

The Gas Fields relevant to this application are those located at Fairview, Roma, Arcadia, Comet Ridge and Scotia as shown in Annexure 4. The existing Gas Fields at each of these locations, which are at various stages of development, will be further developed for the GLNG Project with GLNG currently having approval to develop up to 2,650 exploration and production wells in the Gas Fields over the life of the GLNG Project.

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<sup>2</sup> APLNG group entities also hold an interest in some upstream joint ventures governing the Gas Fields. Currently the APLNG group entities transport their share of the CSG produced through existing pipelines (including the QGP Pipeline) for domestic sale.

GLNG also has commenced a further environmental impact statement (the "**EIS**") process for the development of additional wells within the Gas Fields area (beyond the well numbers already approved through the initial EIS process for the GLNG Project).

The first and second trains of the LNG Facility will be supplied by gas produced from existing production wells in the Gas Fields (upon the expiration of domestic gas contracts), the further development of the Gas Fields, gas produced by Santos from Santos' other tenements (including in the Cooper Basin) and other third party suppliers, such as Origin Energy with which GLNG entered into a gas sales agreement in May 2012. Gas that is purchased from some of Santos' other tenements, third parties or which is stored in GLNG's underground storage reservoirs will likely need to be processed by GLNG at the Treatment Facility discussed in section 2.5 or otherwise particularly managed by GLNG (eg through blending) to ensure that it meets the gas specification required by the LNG Facility.

CSG extracted at the Gas Fields will be transported through a network of underground flowlines or field gathering lines to centralised hub stations for compression and dehydration and then from those hub stations to the Pipeline. GLNG will also utilise GLNG's existing CRWP, which is proposed to be looped and extended, to facilitate the transportation of gas from the Gas Fields at Roma to the Pipeline.

In addition to the drilling of exploration and production wells and the construction of field gathering lines, the Gas Fields development also includes, centralised compression and water treatment facilities, accommodation facilities, power generation, water management facilities and other incidental infrastructure and activities.

GLNG awarded the engineering, procurement and construction ("**EPC**") contract for the Gas Fields to Fluor Australia Pty Ltd ("**Fluor**") in January 2011. Engineering is now approximately two thirds complete and site access for construction (land access, environmental and cultural heritage), and long lead procurement continues. Site clearing has also commenced.

## **2.4 LNG Facility**

The LNG Facility cools natural gas to the point at which it turns into a liquid. At atmospheric pressure, natural gas becomes liquid at  $-162^{\circ}\text{C}$ . Natural gas takes up significantly less space in its liquid state than in its gaseous state (approximately one 600th of the volume).

While the process to convert natural gas to LNG differs between plants, the process is broadly the same: a LNG plant is essentially a large cooling system which lowers the temperature of the natural gas by using refrigerants. Natural gas is piped into the plant and is initially treated to remove impurities, carbon dioxide and water from the natural gas. The gas then undergoes a liquefaction process by using refrigerants to lower the temperature of the natural gas until it liquefies. The LNG is then stored in full containment LNG tanks at atmospheric pressure prior to shipping.

To achieve this process, the LNG Facility consists of:

- a liquefaction facility which includes the on-shore gas liquefaction and storage facilities;
- marine facilities which will include a product facility for loading LNG into tankers for export, and a facility and haul road for the delivery of equipment, plant, materials and personnel to and from the LNG Facility site;
- a swing basin and access channel from the existing Targinie Chanel in Port Curtis (the dredging for which will be carried out by Gladstone Ports Corporation in accordance with its Western Basin Strategic Dredging and Disposal Project); and
- a temporary workers accommodation facility on Curtis Island for construction workers.

GLNG made the final investment decision to construct a two train LNG Facility at Hamilton Point West, Curtis Island Lot 1 on SP228454 with a nameplate capacity of 7.8 mtpa on 13 January 2011.<sup>3</sup> The LNG Facility may produce more or less LNG than the nameplate capacity at any point in time depending on feed gas composition, pipeline/plant interface pressure and temperature, site ambient air temperature, refrigeration compressor and refrigeration gas turbine de-rating, refrigeration compressor gas turbine inlet air temperature and facility operating mode (ie whether concurrent ship loading is occurring) with an ultimate capacity of 8.82 mtpa (under favourable conditions). Total LNG production in each year will also be affected by breakdowns of the LNG Facility and ship delays, amongst other things.

Bechtel Australia Pty Ltd and Bechtel Oil, Gas and Chemical Inc ("**Bechtel**") have been contracted by GLNG under EPC contracts to construct Train 1 and Train 2 of the LNG Facility. Construction commenced in May 2011. The first stage of the LNG Facility's development, Train 1, will have a nameplate capacity of approximately 3.9 mtpa with the first cargo expected in the first quarter of 2015. The second stage of the development, Train 2, also has a nameplate capacity of 3.9 mtpa with the first cargo from Train 2 expected in the fourth quarter of 2015.

If the GLNG Project proceeds to full development (ie three trains), the LNG Facility will have a nominal capacity of approximately 10 mtpa. GLNG is yet to make a final investment decision on expanding the LNG Facility to include, or the Pipeline to accommodate, a third train. The Participants will also have to present updated information on logistical and social impacts to the Queensland Government and obtain the relevant secondary approvals before a third train can be constructed.

## **2.5 Gas specification**

CSG from different gas fields, and conventional gas, can generally be used interchangeably in most production processes provided the gas complies with AS 4564

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<sup>3</sup> Santos Limited "GLNG Project sanctioned: Final investment decision on US\$16 billion 2-train 7.8 mtpa project" (13 January 2011) available at <http://www.santos.com/Archive/NewsDetail.aspx?id=1244>.

Australian Standard Specification for General Purpose Natural Gas. To be economical, however, LNG facilities are usually designed for gas of a much narrower gas specification, based on the expected composition of the gas intended to be supplied over the design life of the facility. The Pipeline is also not specifically designed to accommodate the full range of gas specification allowable under AS 4564. The LNG Facility, including contaminant limit levels and removal units (eg acid gas removal units and mercury removal units) has been designed for feed gas of the average specification expected to be produced at the Gas Fields, **[Confidential:**

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**[Confidential:**

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**[Confidential:**

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As discussed above, GLNG will be acquiring some gas for the GLNG Project from third parties. GLNG will also have to store gas, including CSG, from time to time (particularly during the ramp up period) at its Roma Underground Gas Storage Facility. GLNG will construct the Treatment Facility if necessary to ensure that all gas purchased from third parties by GLNG or stored in the Roma Underground Gas Storage Facility meets the specification and contaminant design limits before it is injected into and transported through the Pipeline to the LNG Facility.

CSG originating from fields other than the Gas Fields (ie third party gas) is unlikely to meet the narrow LNG facility gas specification design limits without treatment. Any conventional gas is highly unlikely to meet design limits without treatment. Unless treated prior to entering the Pipeline to meet the design limits, any third party gas transported in the Pipeline exceeding the design limits will comingle with and contaminate CSG from the Gas Fields (and other third party gas treated by GLNG). Consequently, other third parties seeking access to the Pipeline, would likely need to construct gas treatment facilities.

## 2.6 GLNG LNG Commitments

GLNG has entered into binding heads of agreement with two foundation customers – PETRONAS (wholly owned by the Malaysian government) and KOGAS (wholly owned by the South Korean government) (also being the parent companies of two of the Participants in the GLNG Project) – for a firmly committed offtake of **[Confidential:**

**]**:

- PETRONAS has contracted to receive **[Confidential:**

**]**.

- KOGAS has contracted to receive **[Confidential:**

**]**.

**[Confidential:**

**]**

**[Confidential:**

**]**

While the GLNG Project has firmly committed offtake for **[Confidential: ]**, the two train LNG facility will be built to a 7.8 mtpa name plate capacity design. As described above, this capacity will only be achieved in certain environmental and equipment conditions. Under some conditions more LNG may be able to be produced and in others less (ie both above and below the name plate capacity) up to an ultimate capacity of 8.82 mtpa. **[Confidential: ]**

Alternatively, GLNG will seek to sell LNG that is produced in excess of the contracted **[Confidential: ]** on the spot cargo market.

In summary, **[Confidential: ]** has been sold under binding agreements to the value of **[Confidential: ]** representing approximately **[Confidential: ]** of Korea's annual gas consumption and approximately **[Confidential: ]** of Malaysia's annual gas consumption. It was on the basis of these binding heads of agreement that the Participants made the final investment decision on the two-train LNG Facility and the design of the Pipeline that transports the feed gas to the LNG Facility.

The LNG sold from the LNG Facility to the foundation buyers has been sold on a "free on board" basis, meaning the buyers are solely responsible for the shipment of the LNG from the LNG Facility loading berth to their respective designated ports.

## **2.7 Pipeline**

Gas meeting the specifications of the LNG Facility will be transported from the Gas Fields to the LNG Facility through the Pipeline. The Pipeline is a 420 kilometre gas transmission pipeline designed to deliver gas from the Gas Fields to the LNG Facility. This transmission pipeline is proposed to be structurally separate from any other pipeline and is therefore a "greenfields" pipeline that meets the requirement of section 149(a) of the NGL. Alternatively, insofar as it interconnects to the existing CRWP at the Fairview Pipeline Compressor Station, the Pipeline is a major extension to an existing pipeline that is not a covered pipeline and is therefore a "greenfields" pipeline that meets the requirement of section 149(b) of the NGL.

The classification of the Pipeline is discussed further in section 2.9 below.

### **(a) Design**

The Pipeline is a class 600 high pressure transmission pipeline with an external diameter of 1067 millimetres. It is designed to run at pressures up to 10.2 MPag. The lowest pressure at which the Pipeline will operate is determined by the LNG Facility with production at the LNG Facility reducing if gas enters the Pipeline at less than 6.5 MPag and the LNG Facility effectively shutting down if gas enters the Pipeline at less than 4.5 MPag.

The Pipeline will be designed, constructed and operated in accordance with the Australian Pipeline Standard and constructed of continuously welded high quality/high tensile strength steel, which is manufactured in certified American



Petroleum Institute manufacturing facilities. The Participants intend to install the Pipeline within a 30 metre easement buried to a depth of cover as prescribed by standards according to the use of the land within a particular location, but generally to a depth of between 0.75 and 1.2 metres (to top of pipe) and up to 3.0 metres at some locations such as rail crossings.

The Pipeline will be constructed using traditional open cut trenching, apart from water crossings where horizontal directional drilling or another construction methodology may be utilised.

**(b) Capacity**

The capacity of the Pipeline varies throughout the year as conditions, such as temperature and gas composition, change. In winter, cooler temperatures mean that the Pipeline can be expected to transport up to 1429 TJ/d based on the specification of the CSG from the Gas Fields, while in summer this may reduce to 1378 TJ/d. GLNG's EPC contractor, Saipem Australia Pty Ltd ("**Saipem**"), has estimated that the capacity of the Pipeline will average 1400 TJ/d across the year.

Each train of the LNG Facility requires a daily average flow rate of 600 TJ/d (or 1200 TJ/d for two trains) averaged across the course of a year in order to meet the foundation offtake agreement commitments alone. The actual capacity of the LNG Facility will vary from its name plate capacity from day to day for the technical reasons described in section 2.4, such that on some days the LNG Facility will be operating at less than full capacity and less than 600 TJ/d will be able to be processed. The LNG Facility will frequently need to operate at or closer to its maximum capacity (ie above the name plate capacity) at times to make up this reduction, which requires that the Pipeline also be available to transport at the Pipeline's maximum capacity and to deliver around 695 TJ/d to each train (or 1390 TJ/d for two trains) at any one time.

The notional 'spare capacity' in the Pipeline is consequently required to ensure GLNG can operate the LNG Facility at its maximum capacity where technically possible.

The above analysis assumes the Participants are only performing the **[Confidential: ]** under the offtake agreements. As described in section 2.6, **[Confidential:**

**]**. Alternatively, the Participants will seek to sell LNG produced in excess of the contracted **[Confidential: ]** on the spot cargo market. That is, subject to gas supply the Participants will seek to process in the two train LNG Facility gas in excess of the average 1200 TJ/d described above for supply to the foundation buyers and/or on the spot cargo market. In the event that the two train LNG Facility was able to operate at its ultimate capacity of 8.82 mtpa (under favourable conditions), the maximum

Pipeline capacity based on currently sanctioned plans would in fact be insufficient for the Participants' purposes.

Further, the Pipeline is not only designed to have the capacity required to supply sufficient gas to the LNG Facility, but also to operate as an important buffer between the operations of the LNG Facility and the Gas Fields. The LNG Facility will also, on occasion, have unplanned or planned shut-downs, which means that less gas can be received. It is difficult to shut down the Gas Fields at short notice without loss of production due to the nature of CSG and the number of wells required to produce the gas for the LNG Facility. GLNG has limited storage options for CSG produced at the Gas Fields, but not required by the LNG Facility, and intends to use the Pipeline (and the limited storage facilities being constructed by GLNG at Roma) to temporarily store the CSG in these situations. Any spare capacity in the Pipeline will be used to reduce the impact on the Gas Fields caused by outages (planned or unplanned shutdowns) on Train 1 and/or Train 2 – essentially, the Pipeline will be line packed with gas from the Gas Fields until the Train comes back on line. An inability to use this capacity could require GLNG to virtually instantaneously curtail upstream gas production in the Gas Fields following an outage on the LNG Facility which may result in unplanned gas flaring and even shutdowns in the Gas Fields.

There will be a ramp up period of **[Confidential: ]** for each train of the LNG Facility associated with the ramp up of CSG production in the Gas Fields following commissioning of the LNG Facility. If the Participants were entirely dependent on daily production from the Gas Fields for supply to the LNG Facility, then theoretically there would be "spare" (albeit progressively declining) capacity available in the Pipeline for the limited ramp up period. However, to provide more consistent supply and to maximise LNG cargos during the Gas Fields' ramp up period, the Participants have already commenced storage of gas currently being produced in the Gas Fields in the Roma Underground Storage Facility, which will be drawn upon during the ramp up. The Participants are also seeking to source third party gas for supply to the LNG Facility during the ramp up period (for example, the binding Heads of Agreement signed by the Participants with Origin Energy in May 2012 for the supply of gas from 2015). The extent of any available capacity in the Pipeline during the Gas Fields' ramp up period will be consequently dependent on the Participants' ability to store and/or source supplementary gas supply to the LNG Facility. Once the Gas Fields and the LNG Facility are fully operational, however, any capacity in the Pipeline that may be available will be very uncertain and subject to daily fluctuations in the CSG produced at the Gas Fields and the operation of the Pipeline and the LNG Facility as discussed above.

As stated in section 2.4, the Participants' parent companies are yet to make a final investment decision on expanding the LNG Facility to include a third train. If the GLNG Project proceeded to three trains, the Participants would need to either expand the capacity of the as constructed Pipeline through compression

or looping of the Pipeline, or construct a second pipeline. While the Participants have not formed a view as to which option they might ultimately pursue, very preliminary estimates suggest the addition of compression would be the most cost effective option having regard to the Participants' expected capacity requirements.

**(c) Joint development of the Pipeline**

The Participants did not consider developing a joint pipeline with other LNG proponents constructing facilities on Curtis Island or near Gladstone given the capacity requirements of the GLNG Project. Construction of a pipeline sufficiently large enough to accommodate the requirements of more than one LNG facility would be impractical and uneconomical. Other factors also exclude the suitability or reduce the attractiveness of constructing a joint pipeline with other LNG proponents, including:

- the geographic location of other proponents' gas fields and their distance from the Gas Fields;
- the potentially differing gas specifications of some proponents' gas;
- the considerable incompatibility in project investment decisions and commencement dates; and
- the need to ensure secure gas deliverability to the LNG Facility.

All proponents of LNG facilities at Curtis Island are aware of these factors and have determined to construct their own pipelines, as discussed in section 3 below.

**(d) Route**

The starting point for any pipeline route is a straight line between the entry and exit locations. This is then modified to take account of a wide range of factors including:

- topography/terrain;
- geology/geophysical;
- environment (biophysical);
- safety;
- logistics;
- design;
- constructability;
- social (including landholder requirements);

- cultural heritage; and
- operation, including inspection and maintenance needs.

The objective of the pipeline routing exercise for the Pipeline was to create a continuous easement from Fairview to Curtis Island, following as close as possible to the existing Queensland Gas Pipeline (the "**QGP**") in order to maintain a 'corridor' principle.

A preliminary desktop route was identified in mid-2008, based on existing maps in consideration of the factors identified above. The route was amended during the latter half of 2008 to reflect further available information (obtained, for example, through survey activities). The route was also realigned, where practicable, to follow tenure boundaries and landholder preferences.

In the fourth quarter of 2008 the route was significantly changed at the southern/western end. The original route followed the QGP and was generally parallel to the Carnarvon Development Road on top of the western escarpment. A new route through the length of Arcadia Valley and up the southern escarpment through Lonesome Holdings was selected.

The route now runs largely due north from KP00 before passing over the escarpment at the start of the Arcadia Valley at KP40. The route continues northwards through the Arcadia Valley for approximately 70 km before turning approximately 90 degrees to run over the Expedition Range to minimise the impact on this environmentally sensitive area. The route then runs largely in a straight line for the next 200 km to the Calliope/Callide range area.

In the first quarter of 2009, the Queensland Government announced that it would create an infrastructure corridor for Curtis Island LNG projects. This extends from the Western boundary of Gladstone Regional Council across the Bruce Highway, through the Gladstone State Development Area (the "**GSDA**") and onto Curtis Island. As a result, the Callide Infrastructure Corridor State Development Area (the "**CICSDA**") was established west of the Bruce Highway and the Northern Infrastructure corridor (the "**NIC**") was created through the GSDA. The Queensland Government required GLNG to relocate this section of the Pipeline within the CICSDA and NIC.

In the first quarter of 2010, a significant realignment through Lonesome Holdings occurred saving 9 km of route length.

In first quarter 2011, the route in the NIC was changed to deviate south east adjacent to the intertidal mudflats to provide separation from the other proposed LNG pipelines and facilitate horizontal directional drilling across The Narrows (the water area between Kangaroo Point on the mainland and Laird Point on Curtis Island). GLNG is currently pursuing an alternative construction methodology across The Narrows which could result in a minor route change at this point.

The construction and operation of the Pipeline is intended to be authorised (consistent with the Co-ordinator General's report for the GLNG Project) by three pipeline licences ("**PPL**") granted under the Petroleum and Gas (Production and Safety) Act 2004 (Qld) for each of the mainland (PPL 166), marine crossing including The Narrows (PPL 167) and Curtis Island (PPL 168) sections of the Pipeline. PPL 166 covers approximately 406 km of the Pipeline, PPL 167 approximately 9 km and PPL 168 approximately 5 km.

A map of the route and a description of the Pipeline is in Annexure 5 and is available at <http://www.santosglng.com/resource-library/maps.aspx>.

There are no laterals that form part of the Pipeline with CSG from the Gas Fields being fed into the beginning of the trunk of the Pipeline from the gathering system through feeder pipelines (flow lines) and exiting at the LNG Facility at Curtis Island. The feeder pipelines are not considered part of the Pipeline and this application does not relate to them.

**(e) Cost**

The Participants estimate that they have spent approximately [**Confidential:** ].

The Participants estimate that the design and construction of the Pipeline will cost [**Confidential:** ].

A further [**Confidential:** ] will be spent on additional upstream compression required to ensure that the gas injected into the Pipeline is injected at the correct pressure.

GLNG estimates the cost of operating the Pipeline will be [**Confidential:** ] per annum through to 2030 with most costs relating to repair, maintenance and purchase services and salaries with smaller amounts for material and supplies, tax, insurance, licence and permit fees, utilities, lease and rental, corporate charges and staff related costs. A further [**Confidential:** ] per annum is required to operate upstream compression for Trains 1 and 2.

This estimate of the cost to complete the Pipeline is based on the EPC contract price for the Pipeline, GLNG's management costs and other related activities. GLNG selected Saipem as the EPC Contractor to construct the Pipeline following a competitive tender process as follows:

- GHD Pty Ltd ("**GHD**") carried out pre- front-end engineering design ("**FEED**") process engineering and route development work for the Pipeline, which was completed in the fourth quarter of 2008. A detailed FEED prequalification exercise was subsequently undertaken by GLNG and this resulted in GHD being identified as the only practicable option if the FEED work was to be carried out so as to meet overall GLNG Project

milestones. FEED work was undertaken by GHD between March 2009 and March 2010.

- The staged contracting and procurement strategy adopted for the gas transmission pipeline construction involved a competitive tender for detailed EPC services. GLNG pre-qualified five tenderers for a lump sum EPC contract and an invitation to tender ("**ITT**") was prepared based on the GHD FEED work. All five tenderers submitted priced tenders in accordance with the scope of work and tender conditions.
- The ITT included a pre-defined procedure for evaluation of the EPC bids which was strictly implemented. GLNG technical and commercial evaluation teams were selected which then carried out their respective review (independently of the other) of the five tenderers based on commercial and technical criteria, each individually weighted.
- Based on the technical and commercial evaluation and scoring, two tenderers were short listed for further negotiation. Following further negotiations with the short listed tenderers, a recommendation was made for the award of the EPC contract to Saipem, which occurred in January 2011.
- In parallel with the EPC tender process, for improved optionality and to ensure price competitiveness, GLNG also obtained a proposal from another third party for procurement of critical items (such as line pipe) which could be free-issued to the EPC Contractor. Ultimately only line pipe for the marine crossing (The Narrows) section of the pipe was free-issued (approximately 6 km).

Following other competitive tenders, GLNG ultimately appointed a key EPC Contractor for each of the GLNG Project components:

- Fluor – Gas Fields;
- Saipem – Pipeline; and
- Bechtel – LNG Facility.

**(f) Markets**

The Pipeline is designed to transport gas, treated to the appropriate specifications when necessary, from the Gas Fields to the LNG Facility where it will be liquefied for export. However, the Pipeline could service any area along its route for which it is economic to build an interconnecting pipeline and/or gate station to supply domestic demand, subject to:

- there being capacity in excess of the Participants requirements in the Pipeline;

- where the gas does not meet the specifications required by the LNG Facility, the producer constructing an appropriate treatment plant or entering into a contract with a third party to treat the gas; and
- the gas being injected into the Pipeline at the appropriate pressure.

The Participants do not plan to build any interconnecting pipelines (other than the gathering lines at the Gas Fields and the looping of the CRWP described above) with all gas entering into the Pipeline being transported to the LNG Facility at Curtis Island.

The possible markets that the Pipeline could serve, if the required interconnecting pipelines and gate stations were built, are upstream production and downstream supply.

GLNG does not expect to earn any revenue from these markets because the Pipeline is not being constructed to supply them. In addition, there are no internal transfer pricing arrangements in place for the Pipeline. As a result, GLNG does not expect the Pipeline to generate any revenue.

**(g) Markets – upstream**

GLNG commissioned ACIL Tasman to consider whether other CSG producers, not associated with announced LNG projects, in the vicinity of the Pipeline would be likely to benefit significantly from having access to the Pipeline. In undertaking this review, ACIL Tasman considered small independent producers, that is, producers who are unrelated or otherwise not controlled by, or not already committed under gas sale contracts to, the Participants or other parties who have proposed LNG facilities at Gladstone and located within a 100 km corridor of the Pipeline. A copy of ACIL Tasman's report can be found at Annexure 7.

In summary, ACIL Tasman found the following upstream producers hold interests in tenements within that 100 km corridor:

- Blue Energy Limited;
- a wholly owned subsidiary of PetroChina International Investment (Australia) Pty Ltd ("**PetroChina**") (referred to as the Molopo production area in ACIL Tasman's report attached as Annexure 7); and
- Westside Corporation Meridian Seamgas.

Broadly speaking, the location of the tenements of PetroChina and Westside Corporation Meridian Seamgas means that it is more convenient to connect to the existing Dawson Valley pipeline, which connects to the QGP. GLNG understands that those companies already have arrangements in place with the

Dawson Valley pipeline and that they are already selling gas to the domestic Queensland market.<sup>4</sup>

GLNG notes that both QGC and Westside Corporation Meridian Seamgas have interests in the Paranui Gas Field.

PetroChina has executed a non-binding letter of intent to sell its gas to LNG Limited for the Gladstone LNG Project at Fisherman's Landing.<sup>5</sup> PetroChina and its related entities also hold interests in the Arrow Energy LNG Project.

Blue Energy's gas field interests in the relevant area are, on the other hand, early stage exploration areas. These gas fields have no certified reserves yet, but Blue Energy nonetheless estimates that the areas contain significant gas-in-place.

In so far as the Pipeline has capacity available, GLNG is prepared to make that capacity available to third parties provided it does not result in its own legitimate business interests being compromised. Given the nature of the GLNG Project, any such capacity would have to be interruptible and would be subject to the third party constructing the necessary interconnecting pipeline, treating its gas if required to meet GLNG's gas specifications and injecting the gas into the Pipeline at the appropriate pressure.

#### **(h) Markets – downstream**

ACIL Tasman also considered the extent to which downstream markets could be serviced by gas carried in the Pipeline. Downstream markets include the domestic Gladstone, Rockhampton and Wide Bay markets and the export LNG market.

In summary, ACIL Tasman found that while growth in the Gladstone region was projected to increase from 37.9 PJ/a in 2010-11 to 49.6 PJ/a in 2015, growth thereafter flattened. Rockhampton is projected to have no growth over that period and Wide Bay's consumption and potential growth is minimal.

Sources of natural gas available to consumers at Curtis Island and in the Gladstone area include:

- producers in the Surat and Bowen basins (supplying via the QGP and, if necessary, the Roma to Brisbane Pipeline (the "**RBP**") and Dawson Valley pipeline); and
- producers in other production areas (eg the Cooper/Eromanga basin) connected to the QGP via the South West Queensland Pipeline (the

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<sup>4</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 64-5.

<sup>5</sup> LNG Limited "Gas supply letter of intent signed with PetroChina Australia" (2 August 2012) available at <http://www.lnglimited.com.au/IRM/Company/Showpage.aspx/PDFs/1768-74125198/GasSupplyLetterofIntentSignedwithPetroChinaAustralia>.



"**SWQP**"), Queensland to South Australia/New South Wales Link (the "**QSN Link**") and Moomba hub.

This gas is transported to these consumers through existing transmission pipelines. The Pipeline follows the corridor of the QGP and could also serve these markets subject to the gas meeting the required gas specification and the necessary interconnection facilities being constructed.

The Pipeline could also serve other LNG facilities to be constructed at Curtis Island subject to the gas specification to which those LNG facilities have been designed being the same gas specification as the LNG Facility and the required interconnecting pipelines being built.

GLNG expects other parties intending to develop LNG Facilities at Curtis Island to construct additional export pipelines in the near future, if they have not done so already. For example, the Queensland Curtis LNG Project ("**QCLNG**") commenced construction of a pipeline to transport CSG from its tenements in the Surat Basin to Curtis Island in 2010 and Australia Pacific LNG Project ("**APLNG**") commenced construction of a pipeline from its tenements in the Surat and Bowen Basins to Curtis Island in 2012. These pipelines are expected to also be able to serve the upstream and downstream markets discussed above.

**(i) Expansion options**

The Pipeline could be expanded through adding a compression station and/or looping the Pipeline.

GLNG would only seek to expand the capacity of the Pipeline in order to supply a third train at the LNG Facility once a final investment decision on that third train had been made by the Participants. The Participants have not taken the final investment decision on a third train and, therefore, have not made a decision as to how additional gas to feed that third train would be transported to the LNG Facility. However, GLNG would likely either expand the Pipeline's capacity to 2206 TJ/d (approximately 805 PJ/a) through adding a compression station(s) or constructing a new pipeline. GLNG's preliminary estimate is that the incremental cost of expanding the Pipeline to this capacity by adding a compression station(s) would be **[Confidential: ]**.

GLNG notes that it may be possible to expand the capacity of the Pipeline in excess of this amount through additional compressor stations. However, there are constraints on using compression to expand the Pipeline, such as the maximum allowable operating pressure (the "**MAOP**") of the Pipeline (10.2 MPag) and the limited number of suitable locations for compression stations along the route of the Pipeline (considering landholder approval, topography, sensitive receptors and accessibility, amongst other factors). Given these constraints, GLNG estimates that the Pipeline cannot be expanded to a capacity

in excess of 2625 TJ/d (958 PJ/a). GLNG's preliminary estimate is that the incremental cost of expanding the Pipeline to this capacity by adding further compression stations would be **[Confidential: ]**. In addition, the expanded capacity which has been created by increasing the number of compression stations along a pipeline has a higher risk of being interrupted due to the potential for outage or fault in a compression station.

The Pipeline could also be expanded by looping, however, the Participants do not propose to do this. The front end engineering design for the Pipeline was not undertaken with an intent for future looping (as is typical in the development of Australian gas pipelines). Looping part or all of a pipeline system requires particular attention to the integrity of the existing pipeline and infrastructure which generally adds costs above 'typical' construction costs for a pipeline system. Expanding the Pipeline's capacity to supply a third train would require 350 kilometres of looping, which would cost approximately **[Confidential: ]** per kilometre more than the cost per kilometre of constructing the Pipeline (based on a pipeline of the same diameter and class as the Pipeline). GLNG's preliminary estimate is that this additional cost will increase to **[Confidential: ]** if the Pipeline is fully looped, which would increase the capacity of the Pipeline to 2834 TJ/d. The estimated increase in per kilometre costs for looping the Pipeline is caused by:

- the optimal route chosen for the Pipeline is, along parts of the corridor, not wide enough to easily accommodate looping and it is likely that looping will not be technically feasible along at least one part of the route (requiring a reroute) and difficult at various pinch points, resulting in additional construction costs being incurred;
- where the Pipeline corridor is sufficiently wide to accommodate a second pipeline corridor the second pipeline would generally be traversing less optimal terrain, water crossing points and topography;
- there would be increased safety and other precautions (eg additional marking of the existing Pipeline location) and project management required given the close proximity of the construction of the looping to the operating Pipeline; and

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<sup>6</sup> **[Confidential:**

<sup>7</sup> **[Confidential:**

- depending on the timing of construction, similar environmental, land access, cultural heritage and other approvals and processes would be required as for a standalone pipeline, albeit the environmental and other impacts may be reduced as the corridor will have already largely been cleared.

These costs are likely to make looping the Pipeline uneconomic as compared to expansion by compression or construction of a standalone pipeline, particularly when the costs of interconnection, pressurisation and, if relevant, treating gas to meet the gas specifications, are added. This is reinforced by the fact that GLNG expects looping the entire Pipeline would take between five and seven years from the initial design work to the completion of construction. This length of time is likely to make looping the Pipeline unattractive to potential users. For these reasons, it is unlikely that a third party would seek to expand the Pipeline through looping or a combination of looping and compression.

Equally, if GLNG considered that expansion of the Pipeline by compression would not be sufficient or cost effective, it would be likely to construct a new pipeline given the estimated costs of looping.

## **2.8 Significance of Pipeline to the GLNG Project**

The Pipeline is an integral part of the GLNG Project. The GLNG Project is only viable if there is a secure and long term source of CSG that can be sourced from the Gas Fields and transported by the Pipeline to the LNG Facility. Each component of the GLNG Project, therefore, is necessarily dependent on the other components.

The LNG Facility has been designed for the particular gas specification of the gas produced from the Gas Fields. The Pipeline, and most importantly the Pipeline capacity, has been designed to specifically accommodate the quantity of gas able to be processed by the LNG Facility being constructed at Curtis Island and which has been sold by the Participants under long term offtake agreements. The Participants will have no means of transporting the gas to the LNG Facility and meeting their offtake commitments unless there is secure access to all of the capacity of the Pipeline. The GLNG Upstream Entities have limited ability to "turn-off" a CSG well once it is producing gas due to the nature of the production process and limited capacity to store any gas that cannot be transported, and the Pipeline itself forms part of the GLNG Project's overarching strategy for managing any imbalances between production levels at the Gas Fields and the LNG Facility's processing capacity on any one day.

## **2.9 Pipeline classification**

The Pipeline is situated wholly within Queensland so the question of whether the pipeline is a cross boundary pipeline does not arise. GLNG further submits that the Pipeline should be classified as a transmission pipeline when assessed against the classification criteria in section 13 of the NGL.

The pipeline classification criterion in section 13(1) is:

"whether the primary function of the pipeline is to:

- (a) reticulate gas within a market (which is the primary function of a distribution pipeline); or
- (b) convey gas to a market (which is the primary function of a transmission pipeline)."

GLNG submits that the Pipeline does not reticulate gas within any markets. Instead, the purpose of the Pipeline is to convey gas from the upstream Gas Fields to the LNG Facility so that the gas can be liquefied for export to meet the Participants' long term supply contractual obligations with PETRONAS and KOGAS. GLNG submits that the Pipeline should be classified as a transmission facility as a result.

This conclusion is reinforced by the factors set out in section 13(2), which the NCC must have regard to when determining the classification of the Pipeline:

- The Pipeline has no classification status under the NGL.
- The Pipeline conveys gas from one point (the Fairview Gas Field) to another (the LNG Facility) analogous to a transmission pipeline.
- The external diameter (1067 millimetres), average capacity (1400 TJ/d) and maximum operating pressure (up to 10.2 MPag) are all larger than standard distribution pipelines and are large by comparison to modern transmission pipelines in Australia. As the NCC noted in the Jemena reclassification decision, "Generally transmission pipelines could usually be expected to have larger diameters than distribution pipelines".<sup>8</sup>
- Pipelines proposed by the QCLNG (the "**QCLNG Pipeline**") and APLNG (the "**APLNG Pipeline**") both of which have an extremely similar diameter, capacity, maximum operating pressure and purpose were classified as transmission pipelines by the NCC in May 2010 and July 2012 respectively.

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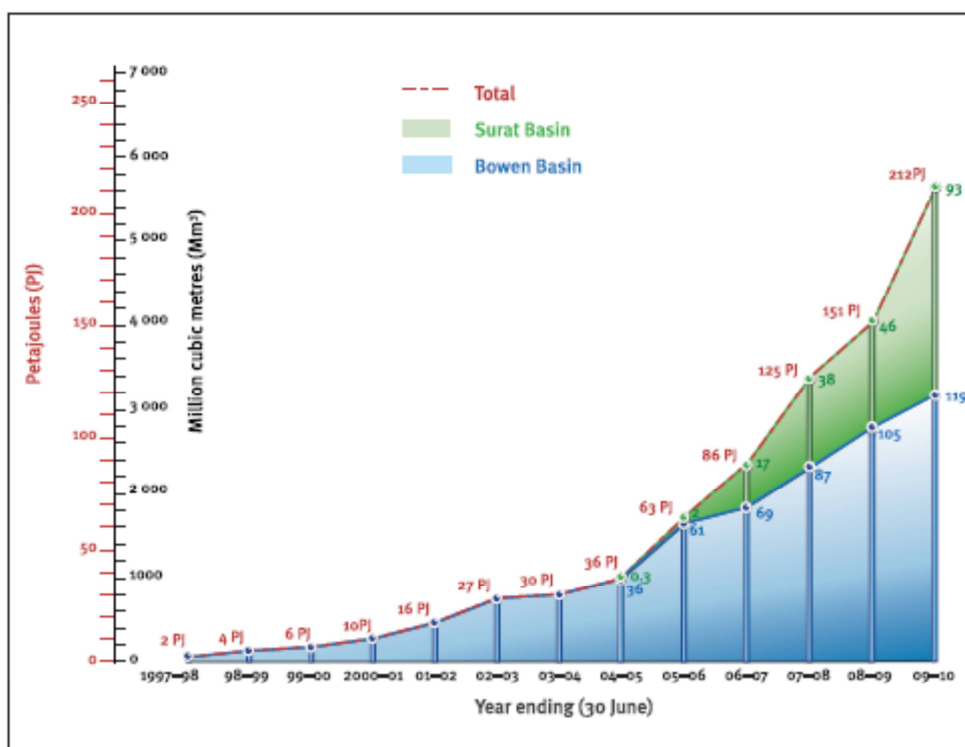
<sup>8</sup> National Competition Council "Jemena Pipeline Reclassification: Final Decision and Statement of Reasons" (29 June 2009) 8.

## 3. OTHER QUEENSLAND LNG PROJECTS

### 3.1 Projects and Background

Queensland's coal seam gas industry has experienced remarkable growth in recent years following a rapid increase in exploration and development. Most significantly, in the past four years there has been increasing interest by Australian and international energy companies in developing Queensland's CSG reserves to develop an export LNG industry based at Gladstone in central Queensland. **Figure 2** shows the increase in CSG production in Queensland from 1997 to 2010 as an LNG industry based at Gladstone has been investigated.

**Figure 2 – Queensland coal seam gas – production (1997 – 2010)<sup>9</sup>**



There are currently five LNG projects, including the GLNG Project, which have been publicly announced and which are in the process of developing toward a specific target export date.

In addition to the GLNG Project, the projects are:

- APLNG Project (ConocoPhillips/Origin Energy/Sinopec);<sup>10</sup>
- QCLNG Project (QGC Pty Limited ("**QGC**"), a BG Group plc ("**BG Group**") company);<sup>11</sup>

<sup>9</sup> Department of Natural Resources and Mines "Queensland's petroleum – Exploration and development potential 2010-11 (May 2012) Queensland Government available at [http://mines.industry.qld.gov.au/assets/petroleum-pdf/q-petroleum-2012\\_4.pdf](http://mines.industry.qld.gov.au/assets/petroleum-pdf/q-petroleum-2012_4.pdf).

<sup>10</sup> The Environmental Impact Statement for this project is available at <http://www.aplng.com.au/environment/our-environmental-impact-statement>.

- Arrow Energy LNG Project (Arrow CSG (Australia) Pty Ltd);<sup>12</sup> and
- Gladstone LNG Project – Fisherman's Landing (LNG Limited/Huanqiu Contracting and Engineering Corporation ("HCEC")).<sup>13</sup>

## 1. APLNG Project (ConocoPhillips/Origin Energy/Sinopec)

- ConocoPhillips, Origin Energy and Sinopec (a subsidiary of Sinopec Group) propose to develop a four train LNG facility on Curtis Island called the APLNG Project.<sup>14</sup>
- The APLNG Project was declared a 'significant project' by Queensland's Co-ordinator General on 7 April 2009.
- On 22 February 2011 the APLNG Project gained federal environmental approval.<sup>15</sup>
- The APLNG Project includes the development of the Walloons gas fields and construction of a 360 km export pipeline to Gladstone.
- APLNG made the final investment decision to build the first train of the LNG Facility and the common facilities for two trains with a total capacity of 9.0 mtpa on 28 July 2011 approving the AU\$14 billion first phase APLNG Project.<sup>16</sup> On 20 January 2012 APLNG and Sinopec signed an amendment to their existing LNG sales agreement for the supply of an additional 3.3 mtpa of LNG through to 2035. The marketing of the second train was finalised by this agreement.<sup>17</sup>
- On 29 June 2012, APLNG entered into an agreement with Kansai Electric Power Company for the sale and purchase of approximately 1 mtpa of LNG for 20 years from 2016.<sup>18</sup>
- APLNG submitted a no coverage application for the APLNG Pipeline to the NCC on 1 May 2012.<sup>19</sup> On 28 August 2012, APLNG was granted a 15 year no

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<sup>11</sup> The Environmental Impact Statement for this project is available at <http://www.qgc.com.au/environment/environmental-impact-management/executive-summary.aspx>.

<sup>12</sup> The Environmental Impact Statement for this project is available at [http://www.arrowenergy.com.au/\\_\\_data/assets/pdf\\_file/0018/1656/87307\\_Arrow\\_Energy\\_LNG\\_Project\\_-\\_EIS.pdf](http://www.arrowenergy.com.au/__data/assets/pdf_file/0018/1656/87307_Arrow_Energy_LNG_Project_-_EIS.pdf).

<sup>13</sup> The Environmental Impact Statement for this project is available at <http://www.lnglimited.com.au/irm/Company/ShowPage.aspx?CPID=1238>.

<sup>14</sup> Department of Employment, Economic Development and Innovation "Queensland Coal Seam Gas Overview" (February 2011) Queensland Government 6.

<sup>15</sup> Department of Employment, Economic Development and Innovation "Queensland Coal Seam Gas Overview" (February 2011) Queensland Government 6.

<sup>16</sup> Australia Pacific LNG "Australia Pacific LNG project approved" (28 July 2011) Media release available at [http://www.aplng.com.au/sites/default/files/APLNG\\_FID\\_media\\_announcement.pdf](http://www.aplng.com.au/sites/default/files/APLNG_FID_media_announcement.pdf).

<sup>17</sup> Australia Pacific LNG "Australia Pacific LNG and Sinopec sign binding agreements for further LNG supply and an increase in equity to 25%" (20 January 2012) Media release available at [http://www.aplng.com.au/sites/default/files/APLNG-Sinopec\\_SPA\\_2\\_Joint\\_Media\\_Release\\_Jan\\_12.pdf](http://www.aplng.com.au/sites/default/files/APLNG-Sinopec_SPA_2_Joint_Media_Release_Jan_12.pdf).

<sup>18</sup> Australia Pacific LNG "Australia Pacific LNG and Kansai Electric sign 20 year LNG sale and purchase agreement" (29 June 2012) Media release available at [http://www.aplng.com.au/sites/default/files/120629\\_Australia\\_Pacific\\_LNG\\_and\\_Kansai\\_Electric\\_sign\\_20\\_year\\_LNG\\_sale\\_and\\_purchase\\_agreement.pdf](http://www.aplng.com.au/sites/default/files/120629_Australia_Pacific_LNG_and_Kansai_Electric_sign_20_year_LNG_sale_and_purchase_agreement.pdf).

coverage declaration for this pipeline by the Minister.<sup>20</sup> APLNG announced it had commenced construction of the APLNG Pipeline on 24 September 2012.<sup>21</sup>

- APLNG made the final investment decision to build the second train of the LNG Facility increasing the capacity of the LNG facility to 9.0 mtpa on 4 July 2012.<sup>22</sup>
- APLNG announced it had laid down the first of more than 530 km of pipe as part of the pipeline construction on 29 October 2012.<sup>23</sup> Construction of the pipeline is ongoing and is expected to be complete in the first half of 2014.

## 2. QCLNG Project (BG Group/China National Offshore Oil Corporation)

- QGC proposes to develop a LNG facility at North China Bay on Curtis Island called the Queensland Curtis LNG Project.<sup>24</sup>
- The QCLNG Project was declared a 'significant project' by Queensland's Coordinator General on 4 July 2008.
- The QCLNG Project includes the expansion of the Miles gas fields and construction of a 342 km export pipeline (excluding the collection header) to Gladstone.<sup>25</sup>
- On 22 October 2010 the QCLNG Project was given Federal environmental approval subject to various conditions.
- QCLNG submitted a no coverage application for its pipeline to the NCC on 19 January 2010. The Minister accepted this application and made a no coverage determination for QCLNG's pipeline on 15 June 2010.<sup>26</sup>
- The final investment decision of US\$15 billion to construct a two train LNG facility with capacity of 8.5 mtpa was made on 31 October 2010.<sup>27</sup> The first cargo from this LNG facility is expected in 2014.<sup>28</sup>

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<sup>20</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012).

<sup>21</sup> APLNG "Construction of Australia Pacific LNG's main pipeline begins" (24 September 2012) available at [http://www.aplng.com.au/sites/default/files/APLNG\\_first\\_pipe\\_weld\\_final.pdf](http://www.aplng.com.au/sites/default/files/APLNG_first_pipe_weld_final.pdf).

<sup>22</sup> APLNG "Australia Pacific LNG second train approved" (4 July 2012) available at [http://www.aplng.com.au/sites/default/files/APLNG\\_FID2\\_ASX\\_release.pdf](http://www.aplng.com.au/sites/default/files/APLNG_FID2_ASX_release.pdf).

<sup>23</sup> APLNG "Australia Pacific LNG pipe goes underground" (29 October 2012) available at [http://www.aplng.com.au/sites/default/files/APLNG\\_20121022\\_Pipe\\_goes\\_in\\_the\\_ground.pdf](http://www.aplng.com.au/sites/default/files/APLNG_20121022_Pipe_goes_in_the_ground.pdf).

<sup>24</sup> Department of Employment, Economic Development and Innovation "Queensland Coal Seam Gas Overview" (February 2011) Queensland Government 6.

<sup>25</sup> QCLNG "QCLNG Project" available at <http://www.qgc.com.au/qclng-project.aspx>.

<sup>26</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on QCLNG's no-coverage application (15 June 2010).

<sup>27</sup> Department of Employment, Economic Development and Innovation "Queensland Coal Seam Gas Overview" (February 2011) Queensland Government 6; QCLNG "QCLNG Project" available at <http://www.qgc.com.au/qclng-project.aspx>.

<sup>28</sup> Department of Employment, Economic Development and Innovation "Queensland Coal Seam Gas Overview" (February 2011) Queensland Government 6.

- The QCLNG Project is expected to ultimately supply up to 12 mtpa of LNG<sup>29</sup> through the development of three LNG trains with BG Group previously indicating that it wanted to make a final investment decision on a third train by May 2012.<sup>30</sup>
- On 7 March 2011, BG Group announced that it had signed a sales agreement with Tokyo Gas Co. Ltd for the supply of 1.2 mtpa of LNG for 20 years, commencing in 2015. The LNG will be supplied from both the QCLNG facility and BG Group's global LNG portfolio.<sup>31</sup>
- On 6 May 2011, BG Group announced that it had signed a sales and purchase agreement with Chubu Electric Power Co. Inc ("**Chubu Electric**") for the long term supply of LNG commencing in 2014. Under the agreement, Chubu Electric will purchase up to 122 cargoes over 21 years. The LNG will be supplied from both the QCLNG facility and BG Group's global LNG portfolio.<sup>32</sup>
- On 31 October 2012 BG Group announced that it had signed a heads of agreement with China National Offshore Oil Corporation for the sale of certain interests in the QCLNG Project in Australia for \$1.93 billion.<sup>33</sup> The heads of agreement also provided for the sale of LNG from BG Group's global LNG portfolio.

### 3. **Arrow Energy LNG Project (Arrow CSG (Australia) Pty Ltd)**

- Arrow Energy proposes to develop a LNG facility at Boatshed Point on Curtis Island, called the Arrow Energy LNG Project.<sup>34</sup>
- The Arrow Energy LNG Project was declared a 'significant project' by Queensland's Co-ordinator General on 12 June 2009.
- The Arrow Energy LNG Project includes the development of gas fields in the Surat and Bowen basins, the construction of two gas pipelines (a 580 km pipeline from north of Moranbah to Gladstone, which had its EIS released in March 2012, and a 467 km pipeline from near Dalby to Gladstone, which had its

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<sup>29</sup> QCLNG "QCLNG Project" available at <http://www.qgc.com.au/qclng-project.aspx> .

<sup>30</sup> Matt Chambers "Optimistic BG looks to expand \$18bn Gladstone LNG plant" (10 February 2011) The Australian.

<sup>31</sup> QCLNG "BG Group and Tokyo Gas sign 20-year LNG sales contract" (7 March 2011) Media Release available at <http://www.qgc.com.au/media/142261/bgandtokyosales.pdf>

<sup>32</sup> QCLNG "BG Group and Chubu Electric sign 21-year LNG sales contract" (6 May 2011) Media Release available at <http://www.qgc.com.au/media/142237/chubuspa6may2011.pdf>

<sup>33</sup> QCLNG "BG Group signs heads of agreement for sale of QCLNG stake and new LNG supply" (31 October 2012) available at [http://www.qgc.com.au/media/199131/bg\\_group\\_signs\\_hoa\\_for\\_sale\\_of\\_qclng\\_stake\\_and\\_new\\_lng\\_supply.pdf](http://www.qgc.com.au/media/199131/bg_group_signs_hoa_for_sale_of_qclng_stake_and_new_lng_supply.pdf) .

<sup>34</sup> Arrow Energy "Arrow LNG plant" available at <http://www.arrowenergy.com.au/projects/arrow-lng-plant> ; Department of Employment, Economic Development and Innovation "Queensland Coal Seam Gas Overview" (February 2011) Queensland Government 6.



EIS approved in January 2010) and phased construction of up to four trains, with a projected production capacity of up to 18 mtpa.<sup>35</sup>

- An EIS for its LNG facility was lodged in March 2012. A final investment decision is expected in 2013.<sup>36</sup>
- On 17 August 2012, Arrow Energy announced the award of the preliminary engineering design for the two pipelines to be built for the Arrow Energy LNG Project to WorleyParsons.<sup>37</sup>

#### **4. Gladstone LNG Project - Fisherman's Landing (LNG Limited/HCEC)**

- LNG Limited proposes to develop a mid-scale (3 mtpa) LNG plant at Fisherman's Landing Wharf in the Port of Gladstone.<sup>38</sup>
- On 7 May 2010, the Gladstone LNG Project was given environmental approval subject to various conditions.
- The Gladstone LNG Project – Fisherman's Landing has two stages. The first stage consists of operating a single processing train, providing LNG at a nominal capacity of 1.9 mtpa. The second stage involves the addition of a second train that will double the nominal capacity of the plant to 3.8 mtpa of LNG.<sup>39</sup>
- On 2 August 2012, LNG Limited executed a non-binding letter of intent to acquire gas from PetroChina.<sup>40</sup>
- On 2 November 2012, LNG Limited advised that PetroChina had completed the acquisition of Molopo's Queensland coal seam gas assets.<sup>41</sup>
- On 22 November 2012, LNG Limited confirmed it was set to enter into an EPC contract with HQC in early 2013, to sign a tolling agreement with PetroChina Australia and to finalise project financing for the Fisherman's Landing LNG project. This will allow a final investment decision to be made in 2013.<sup>42</sup>
- LNG Limited is also investigating the expansion of the QGP to transport gas to its LNG plant.<sup>43</sup>
- The expected life of the Gladstone LNG Project – Fisherman's Landing is 25 years.<sup>44</sup>

ACIL Tasman has estimated that approximately 36 mtpa of LNG will be produced at Curtis Island if these projects (excluding Fisherman's Landing) are developed as intended by the proponents.<sup>45</sup> This would involve the development of two trains by

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<sup>35</sup> See the information on Arrow Energy's website generally available at <http://www.arrowenergy.com.au/>.

<sup>36</sup> Arrow Energy "Community Consultation Surat" (November 2010) Presentation available at [http://www.arrowenergy.com.au/\\_data/assets/pdf\\_file/0014/2552/88012\\_Surat\\_Presentation.pdf](http://www.arrowenergy.com.au/_data/assets/pdf_file/0014/2552/88012_Surat_Presentation.pdf).

<sup>37</sup> Arrow Energy "Arrow lays design for 1150km pipelines" (17 August 2012) available at [http://www.arrowenergy.com.au/\\_data/assets/pdf\\_file/0015/2454/133748\\_Arrow\\_lays\\_design\\_for\\_1150km\\_pipelines.pdf](http://www.arrowenergy.com.au/_data/assets/pdf_file/0015/2454/133748_Arrow_lays_design_for_1150km_pipelines.pdf).

GLNG, three trains by QCLNG, two trains by APLNG and two trains by Arrow Energy for a total of nine LNG trains and demand for gas of up to 1915 PJ/a. ACIL Tasman describe this development scenario as the "Industry Case" in their report attached at Annexure 7. On the other hand, the Queensland Department of Employment, Economic Development and Innovation ("DEEDI") is more conservative and predicts that the above projects will produce 28.8 mtpa.<sup>46</sup>

Other projects are being considered by proponents at Gladstone, but these are speculative at this stage. GLNG does not consider these other speculative projects, or the Fisherman's Landing project, further in this application.

### 3.2 The Future for Queensland

The CSG industry has been described as being a 'once in a generation opportunity' by the Queensland Government, with the prospect of significant employment and economic growth for Queensland.<sup>47</sup>

Economic modelling has projected that a 28 mtpa LNG industry could generate up to 18,000 direct and indirect jobs in Queensland, with the Queensland Government committing to support the growing industry through various initiatives, including:<sup>48</sup>

- the establishment of Skills Queensland, focussing on development of priority skills across Queensland;

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38 LNG Limited "Gladstone LNG Project – Fisherman's Landing" available at [http://www.lnglimited.com.au/IRM/content/project\\_australia.html](http://www.lnglimited.com.au/IRM/content/project_australia.html).

39 LNG Limited "Gladstone LNG Project – Fisherman's Landing" available at [http://www.lnglimited.com.au/IRM/content/project\\_australia.html](http://www.lnglimited.com.au/IRM/content/project_australia.html).

40 LNG Limited "Gas supply letter of intent signed with PetroChina Australia" (2 August 2012) available at <http://www.lnglimited.com.au/IRM/Company/ShowPage.aspx/PDFs/1768-74125198/GasSupplyLetterofIntentSignedwithPetroChinaAustralia>.

41 LNG Limited "Molopo Energy & PetroChina Australia" (2 November 2012) available at <http://www.lnglimited.com.au/IRM/Company/ShowPage.aspx/PDFs/1790-77618954/MolopoandPetroChinacompletionofQldAssetPurchase>.

42 LNG Limited "LNG Joint Chief Executive Officer's Update 22 November 2012" (22 November 2012) available at <http://www.lnglimited.com.au/IRM/Company/ShowPage.aspx/PDFs/1794-47534703/AGMJointChiefExecutiveOfficersUpdate>.

43 LNG Limited "Gladstone LNG Project 'Fisherman's Landing': Corporate Presentation" (1 August 2011) available at <http://www.lnglimited.com.au/IRM/Company/ShowPage.aspx/PDFs/1596-35559447/CompanyPresentation/>.

44 LNG Limited "Gladstone LNG Project – Fisherman's Landing" available at [http://www.lnglimited.com.au/IRM/content/project\\_australia.html](http://www.lnglimited.com.au/IRM/content/project_australia.html).

45 ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 23.

46 See Queensland Department of Employment, Economic Development and Innovation website available at <http://www.industry.qld.gov.au/lng/projects-queensland.html>.

47 Department of Employment, Economic Development and Innovation "Queensland's LNG Industry: A Once in a Generation Opportunity for a Generation of Employment" (November 2010) Queensland Government 1.

48 Department of Employment, Economic Development and Innovation "Queensland's LNG Industry: A Once in a Generation Opportunity for a Generation of Employment" (November 2010) Queensland Government 4-6.

- AU\$10 million investment in a CSG/LNG Industry Training Program funded 50/50 by Government and industry, with a specific focus in production skills training, such as drilling, process control and plant operations;
- AU\$5 million investment by Construction Skills Queensland from the *Building and Construction Industry Training Fund* to focus on up-skilling workers for the construction phase of the LNG industry; and
- upgrading and expanding Queensland Minerals and Energy Academy Gateway Schools Program and TAFE facilities to support delivery of industry training and improve gateways for young people to enter the industry.<sup>49</sup>

Economic growth is supported through initiatives to ensure involvement of local suppliers in the growth of the industry, with environmental approval contingent on appropriate measures being evidenced in the Local Industry Participation Plan for each project to involve and develop local industries in each LNG project region. Industry growth has also meant major infrastructure and facility upgrades to local communities, with future management now governed by the Queensland Government's Sustainable Resource Communities Policy.<sup>50</sup>

Completed developments include:

- AU\$4.7 million upgrade to Roma Airport;
- AU\$5.8 million investment in road improvements; and
- AU\$2.6 replacement of the Chinchilla Community Centre

with future commitments outlined in the 2010-11 budget of:

- AU\$37.5 million upgrade to the Toowoomba Hospital;
- AU\$1.3 million to upgrade science laboratories at Dalby State High School; and
- AU\$8.1 million commitment to widen and seal a section of the New England Highway.<sup>51</sup>

Overall, in terms of investment and revenue, the Queensland Government's modelling predicts these developments could increase gross state product by over AU\$3.2 billion

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<sup>49</sup> Department of Employment, Economic Development and Innovation "Queensland's LNG Industry: A Once in a Generation Opportunity for a Generation of Employment" (November 2010) Queensland Government 4-6.

<sup>50</sup> Department of Employment, Economic Development and Innovation "Sustainable Resource Communities Policy: Social Impact Assessment in the Mining and Petroleum Industries" (September 2008) Queensland Government available at <http://rti.cabinet.qld.gov.au/documents/2008/jul/sustainable%20resource%20communities/Attachments/sustainable%20resource%20communities.pdf>.

<sup>51</sup> Department of Employment, Economic Development and Innovation "Queensland's LNG Industry: A Once in a Generation Opportunity for a Generation of Employment" (November 2010) Queensland Government 7-8.

(one per cent), generate private sector investment of over AU\$40 billion and provide royalty returns of over AU\$850 million per annum.<sup>52</sup>

On 12 July 2012, the Queensland Governor in Council approved the GLNG LNG Facility and Pipeline together as an infrastructure facility that is of significance, particularly economically or socially, to Queensland and the Fitzroy and South West Statistical Divisions being the region in which the facilities are being constructed, under section 125(1)(f) of the *State Development and Public Works Organisation Act 1971* (Qld) (the "**SDPWO Act**").<sup>53</sup> Pursuant to section 125(2) of the SDPWO Act, in considering whether an infrastructure facility would be of economic or social significance, the potential for the GLNG Project to contribute to community wellbeing and economic growth or employment levels must be taken into account. In accordance with section 125(3) of the SDPWO Act, in assessing such potential, the contribution the GLNG Project makes to agricultural, industrial, resource or technological development in Australia, Queensland or the region is a relevant consideration.

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<sup>52</sup> Department of Employment, Economic Development and Innovation "Queensland's LNG Industry: A Once in a Generation Opportunity for a Generation of Employment" (November 2010) Queensland Government 1.

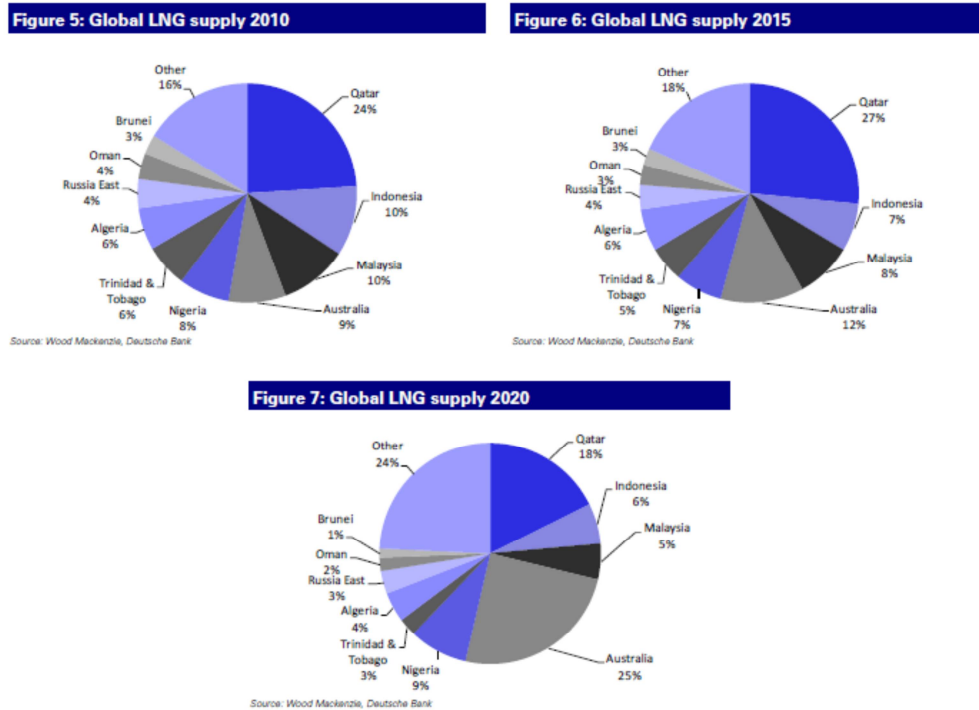
<sup>53</sup> Queensland Government Gazette, Vol 360 No 55 [Friday 13 July 2012] 831.

## 4. THE QUEENSLAND GAS INDUSTRY

### 4.1 CSG Production in Queensland

Australia was ranked the world's fifth largest LNG producer based on installed capacity in 2010<sup>54</sup> and is projected to become the world's largest LNG exporter.<sup>55</sup> **Figure 3** illustrates Deutsche Bank's global LNG supply projections.

**Figure 3: Global LNG Supply Projections**<sup>56</sup>



CSG exploration and development activity has been the key focus for gas exploration in Queensland. Exploration expenditure for the petroleum (including CSG) industry is increasing, with expenditure of approximately AU\$480.5 million for 2009-10 compared with AU\$288.2 million in 2009-09. This was coupled with increased development and drilling, with 678 CSG wells drilled.<sup>57</sup>

This increase in exploration activity and development of CSG reserves has led to the significant expansion of proved and probable (as described in the Petroleum Resource Management System) ("**2P**") CSG reserves for the Surat and Bowen basins. These reserves have increased from 15,858 PJ (as at 31 December 2008) to 32,176 PJ (as at

<sup>54</sup> International Gas Union "IGU World LNG Report 2010" (2010) 16.

<sup>55</sup> International Gas Union "IGU World LNG Report 2010" (2010) 35.

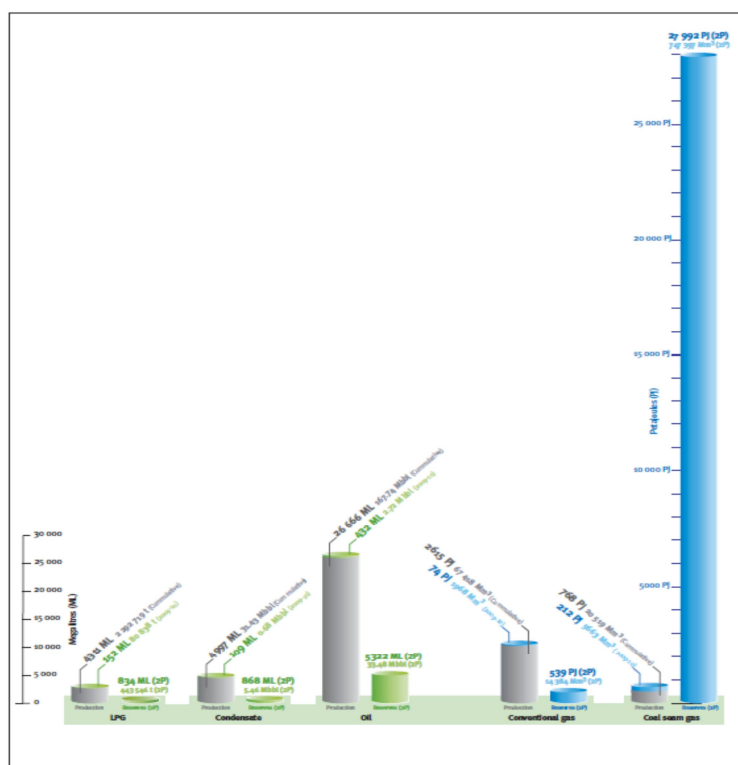
<sup>56</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 7.

<sup>57</sup> Department of Employment, Economic Development and Innovation "Queensland's Petroleum Exploration and Development Potential" (February 2011) Queensland Government 1.

31 December 2010)<sup>58</sup>. These 2P reserves do not include all of the CSG that exists in Queensland with significant quantities existing, but not meeting the 2P standard. As investment in exploration continues, it is likely that these estimated 2P reserve levels will increase. The increase in 2P CSG reserves that has already occurred has been reflected in the announcement of several LNG projects at Gladstone, as discussed in section 3 above, all of which are expected to develop their own transmission pipelines.

Annual production of CSG in Queensland for 2009-10 was 212 PJ with cumulative CSG production as at 30 June 2010 of 768 PJ – see **Figure 4**.<sup>59</sup> This increase in exploration and investment, coupled with increasing domestic and foreign interest has created significant forward movement in the development of an LNG export market, with production expected to increasingly supply the LNG plants proposed for the Gladstone area.<sup>60</sup>

**Figure 4: Queensland – cumulative petroleum production 2009-10<sup>61</sup>**



<sup>58</sup> SKM McLennan, Magasanik and Associates "Gas Market Modelling for the Queensland 2011 Gas Market Review: Final Report" (29 July 2011) 78. This has been calculated by excluding the reserves not located in the Surat and Bowen basins from the total reserves.

<sup>59</sup> Department of Employment, Economic Development and Innovation "Queensland's Petroleum Exploration and Development Potential" (February 2011) Queensland Government 20.

<sup>60</sup> Department of Employment, Economic Development and Innovation "Queensland's Petroleum Exploration and Development Potential" (February 2011) Queensland Government 20. Statistics for Queensland CSG exploration for the final year 2009-10 can be found at pages 13 and 14.

## 4.2 The Global LNG Market

### Global LNG demand/supply balance

Wood Mackenzie estimates that global LNG demand will increase from 203 mtpa in 2010 to 340 mtpa in 2020. Deutsche has made similar predictions based on Wood Mackenzie's modelling – see **Figure 5**.<sup>62</sup> McLennan, Magasanik and Associates ("**MMA**"), on the other hand, has predicted greater global demand, estimated to be between 245 mtpa and 340 mtpa by 2015 with an expected growth rate of 5 to 10% per annum.<sup>63</sup> In 2010, the demand for LNG in the Asia Pacific region was approximately 130 mtpa, with Japan and Korea consuming about 100 mtpa alone. Asia Pacific's LNG demand is forecast by Deutsche Bank to increase to between 200 and 250 mtpa by 2020.<sup>64</sup>

Global gas production and LNG supply has grown rapidly in recent years. Global LNG production capacity increased by 49 mtpa or 25% in 2009. A further 11 mtpa of capacity was commissioned in the first four months of 2010 with 42 mtpa under construction and expected to be commissioned by the end of 2013. This represents an increase of more than 50% in global LNG production capacity in just five years (2008-13).<sup>65</sup>

Despite these increases in LNG production, Wood Mackenzie predicts a world market supply shortfall by 2020 and Deutsche Bank predicts an Asia Pacific region supply shortfall by 2015:

- Wood Mackenzie projects that uncontracted demand (the difference between expected demand and currently contracted supply) will increase after 2014 to reach around 90 mtpa in 2020 and more than double that by 2025. In the long term, global LNG demand is expected to grow to between 350 and 400 million tonnes a year by 2020. In the Asia Pacific market alone, demand is expected to increase from 120 mtpa in 2010 to around 180 mtpa in 2020, about 60 mtpa of which is, as yet, uncontracted.<sup>66</sup>
- Deutsche Bank estimates that there will be a supply shortfall of LNG in the Asia-Pacific region of between 40 to 50 mtpa in 2015-16, which coincides with the timing of the first cargos from many of the projects discussed above in section 3.1.<sup>67</sup>

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<sup>62</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 35.

<sup>63</sup> McLennan, Magasanik and Associates "Queensland LNG Industry: Viability and Economic Impact Study" (1 May 2009) 97.

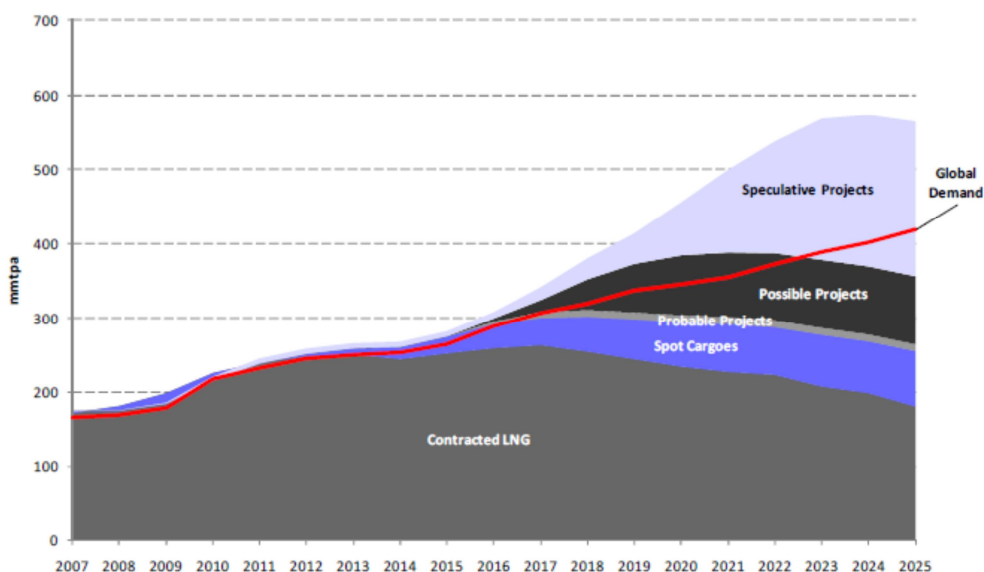
<sup>64</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 44.

<sup>65</sup> Australian Petroleum Production and Exploration Association "State of the Industry 2010: Australian Upstream Oil and Gas Industry" (2010) Australian Petroleum Production and Exploration Association 4.

<sup>66</sup> Australian Petroleum Production and Exploration Association "State of the Industry 2010: Australian Upstream Oil and Gas Industry" (2010) Australian Petroleum Production and Exploration Association 19, Figure 1, which is reproduced from Wood Mackenzie (LNG Tool August 2010).

<sup>67</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 44.

**Figure 5 – Global LNG supply/demand outlook<sup>68</sup>**



Source: Wood Mackenzie, Deutsche Bank

### 4.3 Australian LNG Exports

Australia is the primary source of LNG supply growth in the Pacific Basin.<sup>69</sup> Current Australian LNG exports total approximately 20 mtpa. Deutsche Bank estimates Australia's share of the contracted Pacific Basin market will increase from 19% to 35% by 2017 – see **Figure 6** – underpinning the importance of the Australian LNG sector to investors.<sup>70</sup>

In the short term, exports in 2012-13 are estimated to reach 23 mtpa.<sup>71</sup> This reflects an estimated export value of AU\$12 billion in 2011-12, an increase of 8% from 2010-11 as a result of higher prices.<sup>72</sup> The Bureau of Resources and Energy Economics expect export earnings from LNG to increase to AU\$30 billion (in 2011-12 dollars) by 2016-17.<sup>73</sup> **Figure 7** shows Australia's LNG exports and the value of those exports since 1996-97.

<sup>68</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 36.

<sup>69</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 42.

<sup>70</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 42.

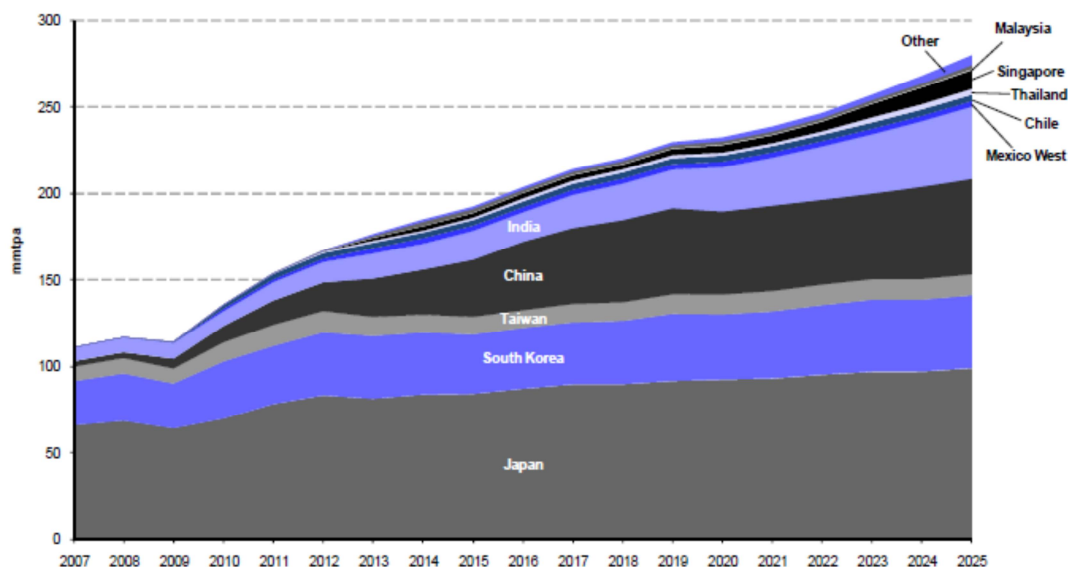
<sup>71</sup> Bureau of Resources and Energy Economics "Resources and Energy Quarterly – March Quarter 2012" (21 March 2012) 46.

<sup>72</sup> Bureau of Resources and Energy Economics "Resources and Energy Quarterly – March Quarter 2012" (21 March 2012) 48.

<sup>73</sup> Bureau of Resources and Energy Economics "Resources and Energy Quarterly – March Quarter 2012" (21 March 2012) 38. This amount is based on an estimated 63 mtpa of LNG being exported.



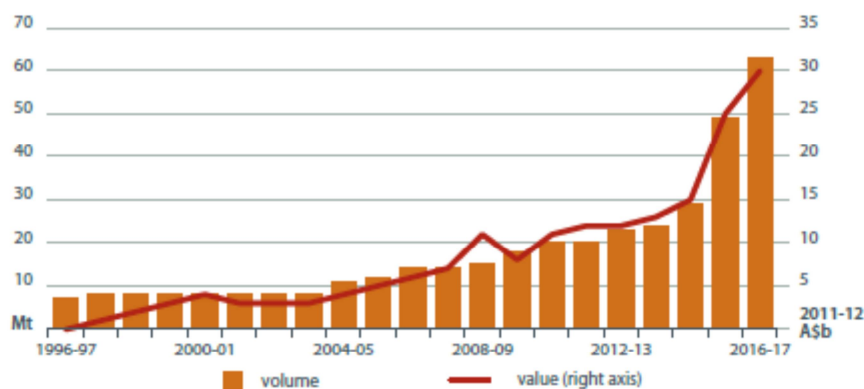
**Figure 6 – Pacific Basin LNG Supply Outlook<sup>74</sup>**



Source: Wood Mackenzie, Deutsche Bank

**Figure 7 – Australia's LNG exports<sup>75</sup>**

Figure 4: Australia's LNG exports



Source: BREE; ABS.

#### 4.4 Domestic demand for gas in Queensland

In 2000, the total market for gas in Queensland was less than 65 PJ per year. By 2009, annual demand for gas had risen to 166 PJ.<sup>76</sup> ACIL Tasman has estimated that demand for gas in the Gladstone, Rockhampton and Wide Bay markets will be 52.2 PJ/a in 2020 (expanding to 52.5 PJ/a in 2030) while demand for gas<sup>77</sup> for production into LNG at Curtis Island alone will be approximately 1915 PJ/a in 2020 once all LNG trains expected

<sup>74</sup> Deutsche Bank "The Australian LNG Handbook" (6 September 2011) 40.

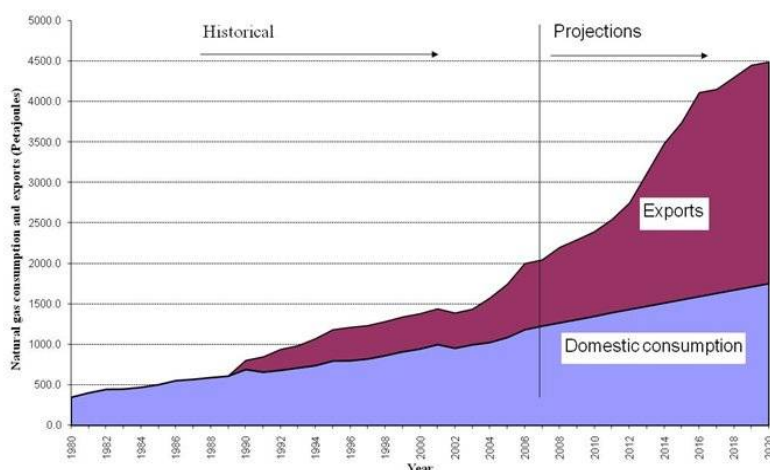
<sup>75</sup> Bureau of Resources and Energy Economics "Resources and Energy Quarterly – March Quarter 2012" (21 March 2012) 47.

<sup>76</sup> Department of Employment, Economic Development and Innovation "Queensland's Petroleum Exploration and Development Potential" (February 2011) Queensland Government 24.

<sup>77</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 27.

to be constructed by the industry are fully operational,<sup>78</sup> and Australia's domestic gas demand (excluding gas for LNG production) is projected to increase by 4% per annum in the medium term, reaching 1,982 PJ per annum by 2030.<sup>79</sup> Australian domestic demand will be fuelled largely by gas fired power generation, increasing in line with the Queensland economic and regional development, and the policies of the Federal and Queensland Governments, discussed below, and demand at Curtis Island will be fuelled by the development of the LNG facilities discussed in section 3 above. **Figure 8** illustrates the trend of domestic and export demand.

**Figure 8: Australian natural gas consumption and export<sup>80</sup>**



#### 4.5 Government policies and gas supply and demand in Queensland and Eastern Australia

The Federal and Queensland governments have implemented various policies, including the Renewable Energy Target Scheme and domestic gas market obligations, that will impact on gas supply and demand in Queensland and Eastern Australia.

##### (a) Renewable Energy Target

In August 2009, the Australian Government implemented the Renewable Energy Target Scheme. The scheme requires 20% of Australia's electricity supply to come from renewable sources by 2020.<sup>81</sup> To achieve this, the Government has set annual targets for each year of the scheme, and requires Australian electricity retailers and large wholesale purchasers of electricity to demonstrate that they meet these targets.

The Renewable Energy Target is likely to reduce gas demand because it will result in more power generation in the National Electricity Market coming from

<sup>78</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 55.

<sup>79</sup> Department of Employment, Economic Development and Innovation "Queensland's Petroleum Exploration and Development Potential" (February 2011) Queensland Government 24.

<sup>80</sup> Parliament of Australia "Australia's natural gas: issues and trends" (1 April 2008) Research Paper 25.

<sup>81</sup> See <http://www.climatechange.gov.au/government/initiatives/renewable-target.aspx>.

renewable sources (in particular, wind generation with possible contributions from geothermal), at the expense of opportunities for base and intermediate load gas-fired power generation.<sup>82</sup> An increase in gas demand caused by the construction of gas electricity generation to back-up intermittent generation sources constructed to meet the Renewable Energy Target, such as wind, is unlikely to occur in central Queensland due to the unsuitability of central Queensland for such intermittent generation.

As a result, ACIL Tasman has found that the Renewable Energy Target is unlikely to have a significant impact on gas demand in the downstream markets relevant to the Pipeline.

**(b) Queensland domestic gas market obligations**

In 2009, the Queensland Government set aside areas of land prospective for CSG that could, if required, be released for exploration and development of resources for future domestic gas supply to address a perceived constraint on domestic gas supply, and to provide additional certainty about the availability of gas to the domestic market, and its price, in the presence of the proposed LNG developments. The Queensland Government has also reserved the right to set aside future gas fields for domestic need, if required, following these reviews.

The requirements of this land reservation was monitored by the Queensland Gas Commissioner with annual reviews of the gas market being carried out. As announced on 19 April 2012, the Queensland Gasfields Commission will be the new body in charge of monitoring the CSG industry. The 2011 review concluded that there was "a tight reserves position as LNG projects prove up reserves to underpin LNG projects".<sup>83</sup>

**(c) Clean Energy Future**

On 10 July 2011, the Australian Government released a policy document, "Securing a Clean Energy Future", which foreshadowed the introduction of a carbon tax commencing on 1 July 2012 at a nominal rate of AU\$23.00 per tonne of CO<sub>2</sub>-e emissions to apply to the top 500 emitters in Australia including the coal mining industry. The tax rate is to increase by 2.5% per year in real terms and remain in place until 30 June 2015. From 1 July 2015, the carbon tax is to be replaced by an emissions permit trading scheme.

The policy document was accompanied by a Treasury report, "Strong Growth, Low Pollution". Treasury has estimated that the international market price in 2015-16 will average around AU\$29/t CO<sub>2</sub>-e in nominal terms and increase at around 5.0% per annum in real terms to 2050. Key assumptions behind the Treasury's analysis now appear unlikely to materialise in ACIL Tasman's view,

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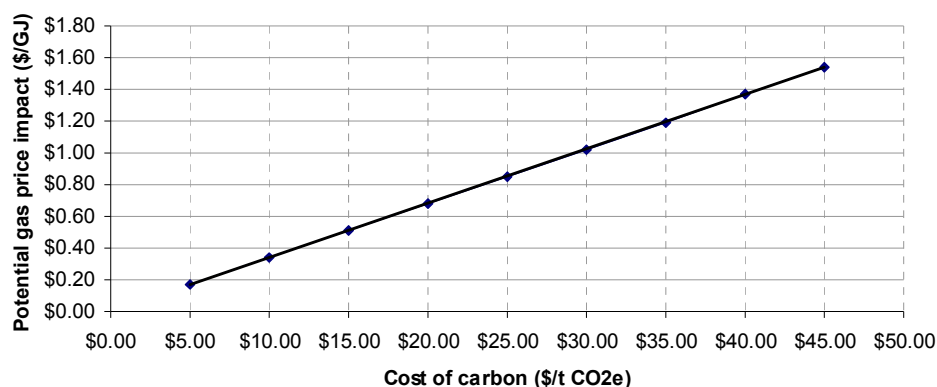
<sup>82</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 39.

<sup>83</sup> Department of Employment, Economic Development and Innovation "2011 Gas Market Review" (2011) viii.

which has led them to use a different carbon price, as described in their report, in their modelling.<sup>84</sup>

**Figure 9** depicts ACIL Tasman's analysis of the impact of different costs of carbon on the price of gas.<sup>85</sup>

**Figure 9: Potential impacts of the Clean Energy Future**



Data source: ACIL Tasman analysis

ACIL Tasman reports that, in practice, one might expect the value uplift to be shared between gas producers and generators so that the producers see higher prices and the generators achieve increased levels of dispatch.

ACIL Tasman's analysis indicates that the Clean Energy Future carbon pricing scheme could result in a rise in real wholesale gas prices of around AU\$0.75/GJ initially (from mid-2012) to around AU\$2.00/GJ by 2030.<sup>86</sup>

#### **(d) Queensland Gas Scheme**

The Queensland Gas Scheme was established in 2005 to encourage the development of gas-fired electricity generation in preference to coal-fired electricity generation to reduce greenhouse gas emissions. Currently, Queensland electricity retailers and other liable parties are required to source 15% of their electricity from gas-fired electricity generation. The Queensland Government intends to transition the Queensland Gas Scheme into the national response to climate change, but it is unclear how it will do so at this stage.

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<sup>84</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 36 - 37.

<sup>85</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 38.

<sup>86</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 39.

**(e) Queensland's Sustainable Housing initiative**

Since March 2006, the Queensland Government's Sustainable Housing initiative has required all new homes to have greenhouse efficient gas, or solar hot water heating systems, or an electric heat pump encouraging demand for gas.

**(f) Queensland's LNG Industry: A Once in a Lifetime Opportunity**

The policy developed by the previous Queensland Government, "Queensland's LNG Industry: A Once in a Lifetime Opportunity", which was released 23 November 2010, outlines a clear strategy to achieve Queensland's development goals, through building a strong CSG industry which supports growth, jobs and communities, encouraging the exploration, production and supply of CSG.<sup>87</sup>

**4.6 Transmission pipeline infrastructure**

**Current Pipeline Infrastructure – Australia**

Australia's gas pipeline network has grown to match the increased gas production, covering approximately 19,000 km.<sup>88</sup>

Increased investment has led to improved connectivity in long haul interstate pipelines. The Eastern Gas Pipeline, Tasmanian Gas Pipeline, the South-East Australia Gas Pipeline and Epic Energy's QSN Link have all introduced new supply options, creating an interconnected pipeline network covering Queensland, New South Wales, Victoria, South Australia, Tasmania, and the Australian Capital Territory.

**Current Pipeline Infrastructure – Queensland**

Specific to the Queensland market, strong investment has seen the growth of an extensive pipeline network, including the Moranbah to Townsville gas pipeline (completed in 2004) and connections between the Roma to Brisbane pipeline and various CSG projects (Scotia, Peat, Fairview and Spring Gully) in the Bowen Basin. The major gas transmission pipelines currently located in Queensland are summarised in the table below:

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<sup>87</sup> Department of Employment, Economic Development and Innovation "Queensland's LNG Industry: A Once in a Generation Opportunity for a Generation of Employment" (November 2010) Queensland Government.

<sup>88</sup> See the pipeline lengths listed at page 90 of the State of the Energy Market 2011 (Australian Energy Regulator "State of Energy Market 2011" (9 December 2011) Australian Energy Regulator, 90).

**Table 1: Queensland – Key pipeline infrastructure<sup>89</sup>**

Pipeline	Location	Length (km)	Capacity (TJ/D)	Constructed	Covered?	Valuation (\$ million)	Current Access Arrangement	Owner	Operator
North Queensland Gas Pipeline	Qld	391	108	2004	No	160 (2005)	Not required	Victoria Funds Management Corporation	AGL Energy, Arrow Energy
Queensland Gas Pipeline (Wallumbilla to Gladstone)	Qld	629	142	1989-91	No	-	Not required	Jemena (Singapore Power International)	Jemena Asset Management
Carpentaria Pipeline (Ballera to Mount Isa)	Qld	840	119	1998	Yes (light)	-	Not required	APA Group	APA Group
Berwyndale to Wallumbilla Pipeline	Qld	113	-	2009	No	70 (2009)	Not required	APA Group	APA Group
Dawson Valley Pipeline	Qld	47	30	1996	Yes	8 (2007)	2007-16	Anglo Coal 51%, Mitsui 49%	Anglo Coal
Roma (Wallumbilla) to Brisbane	Qld	440	219	1969	Yes	296 (2006)	2007-12	APA Group	APA Group
Wallumbilla to Darling Downs Pipeline	Qld	205	400	2009	No	90 (2009)	Not required	Origin Energy	Origin Energy
South West Queensland Pipeline (Ballera to Wallumbilla)	Qld	756	181	1996	No	-	Not required	Epic Energy (Hastings Diversified Utilities Fund; APA Group 19.7%)	Epic Energy
QSN Link (Ballera to Moomba)	Qld-SA and NSW	180	212	2009	No	165 (2009)	Not required	Epic Energy (Hastings Diversified Utilities Fund; APA Group 19.7%)	Epic Energy

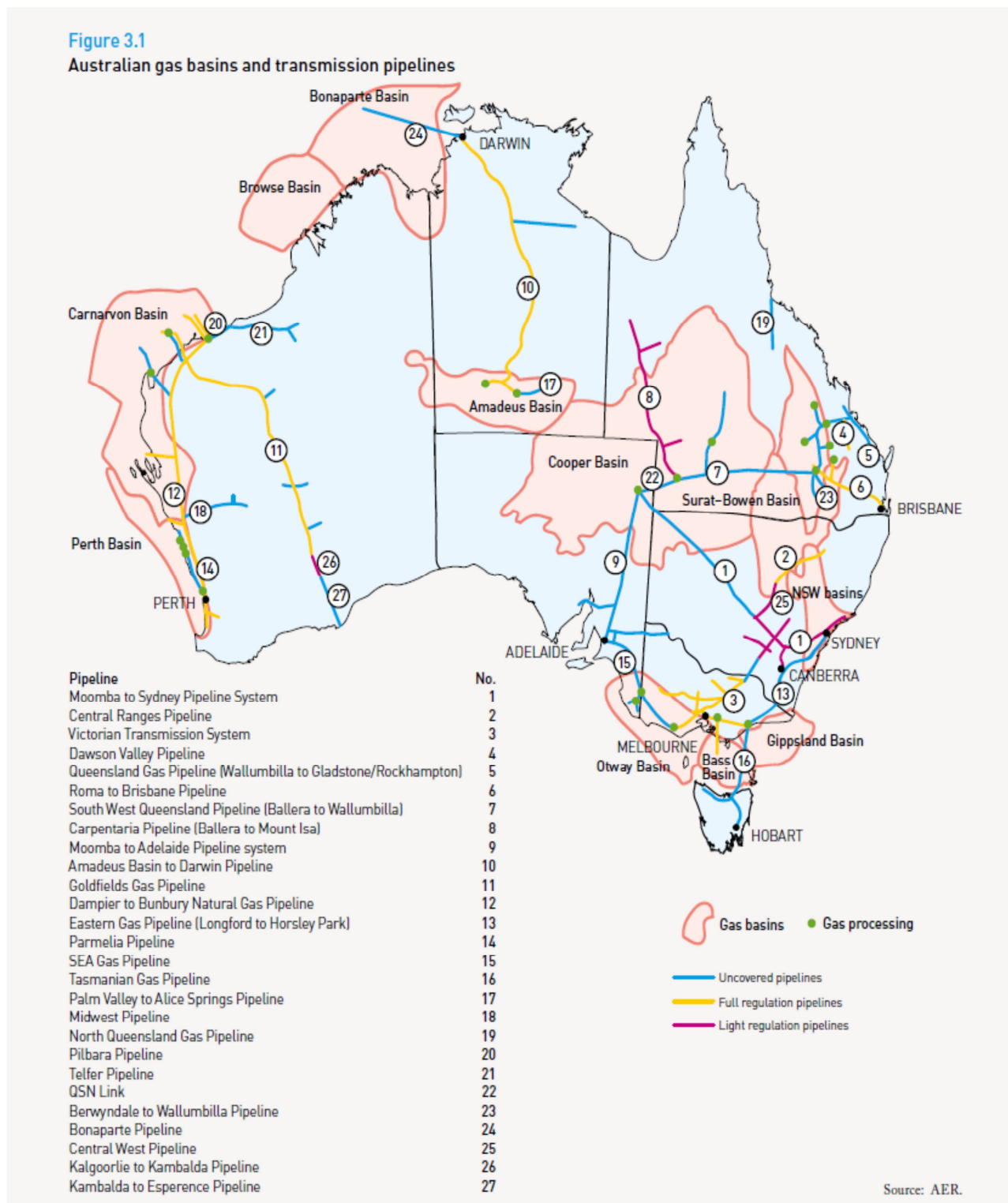
### Future Development

Pipeline construction in Queensland is expected to increase in the next few years to supply gas to the LNG plants proposed for the Gladstone region, with both QCLNG and APLNG having already commenced construction of their respective pipelines.

<sup>89</sup> Australian Energy Regulator "State of Energy Market 2011" (9 December 2011) Australian Energy Regulator 90-1.

## 4.8 The Australian transmission pipeline network

**Figure 10: Major Gas Transmission Pipelines<sup>90</sup>**



<sup>90</sup> Australian Energy Regulator "State of Energy Market 2011" (9 December 2011) Australian Energy Regulator 78.

## 5. CRITERIA FOR GREENFIELDS EXEMPTION

The greenfields exemption relevant to gas pipelines is found in the NGL. The NGL applies nationally through mirror legislation in each State, including the *National Gas (Queensland) Act 2008* (Qld).

Under the NGL, a service provider who is proposing to undertake (but has not yet commissioned) a greenfields pipeline project may apply to the NCC for it to recommend to the relevant Minister that the proposed pipeline be granted a 15 year no coverage determination. Relevantly, a greenfields pipeline project is a project in which a new pipeline that is structurally separate from any existing pipeline, such as the Pipeline, is to be constructed.

If the Minister makes a no-coverage declaration, the relevant pipeline cannot be declared to be a "covered pipeline" for 15 years after the pipeline is commissioned. This provides the applicant with regulatory certainty for the duration of the no-coverage determination.

In order for the Pipeline to receive a greenfields exemption, GLNG (on behalf of the Participants) must demonstrate that the Pipeline would not satisfy one or more of the coverage criteria. If the Minister determines that the Pipeline is unlikely to satisfy the coverage criteria, the Minister must make a 15 year no coverage determination.<sup>91</sup> The Minister must make this determination having regard to the national gas objective in section 23 of the NGL (the "**National Gas Objective**").<sup>92</sup>

### 5.1 History of the greenfields exemption

The greenfields exemption was incorporated into the NGL after a series of reviews into the gas market, and Ministerial decisions, found that such an exemption would promote investment in gas infrastructure and reduce regulatory uncertainty.<sup>93</sup> As the Parer Review found in 2002:

The Gas Code should be amended to enable the granting of binding coverage rulings for fixed periods of time, but with no ability to revoke that ruling within the period unless information relied upon proves to be false or intentionally misleading.<sup>94</sup>

- Parer Review

The Parer Review considered a greenfields exemption justifiable on the basis that if a proposed pipeline does not meet the coverage criteria before it is commissioned, this is unlikely to change within 10 or 15 years (alternatively, if there is a likelihood that a

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<sup>91</sup> NGL, s 157(2)(b).

<sup>92</sup> NGL, s 157(1)(b).

<sup>93</sup> Parer Review "Towards a truly national and efficient energy market, CoAG Energy Market Review Final Report" (2002); Productivity Commission Inquiry Report, Review of the Gas Access Regime (2004); Expert Panel on Energy Access Pricing, Report to the Ministerial Council on Energy (2006) and Ministerial Council on Energy, Review of the National Gas Pipelines Access Regime: Response to the Productivity Commission Review of the Gas Access Regime (2006).

<sup>94</sup> Parer Review "Towards a truly national and efficient energy market, CoAG Energy Market Review Final Report" (2002) 211.



pipeline may not satisfy the criteria now but may do so in the future, this should be foreseeable at the time of assessment).<sup>95</sup> Therefore, an exemption should be available to those pipelines that do not meet the coverage criteria to promote certainty and encourage efficient investment.

As a result of these reviews, the greenfields exemption was introduced into the Gas Pipelines Access Law in 2006,<sup>96</sup> and then enacted in the new NGL in 2008.

## 5.2 National Gas Objective

The objective of the NGL:<sup>97</sup>

... [i]s to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

As the NCC comments in its guidelines, the National Gas Objective closely mimics the National Electricity Objective.<sup>98</sup>

This NGL objective acts as a guide for decision makers to:

- clarify the policy intent of the regime;
- guide and improve the accountability of decision makers;
- provide greater certainty to service providers and access seekers about possible regulatory intervention; and
- to promote national consistency across different jurisdictions and between the gas industry and the electricity industry.<sup>99</sup>

## 5.3 Application of the coverage criteria

As the NCC must be satisfied that the Pipeline is unlikely to meet one or more of the coverage criteria before it recommends to the relevant Minister that a no-coverage determination be made, the analysis set out in this application will consider each criterion taking into account the guidance provided by the NCC in its March 2012 publication "A guide to the functions and powers of the National Competition Council under the National Gas Law: Part D Greenfields pipeline incentives" (the "**Greenfields Guide**").<sup>100</sup>

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<sup>95</sup> Parer Review "Towards a truly national and efficient energy market, CoAG Energy Market Review Final Report" (2002) 211.

<sup>96</sup> *Gas Pipelines Access (South Australia) (Greenfields Pipeline Incentives) Amendment Act 2006 (SA)*.

<sup>97</sup> NGL, s 23.

<sup>98</sup> National Competition Council "Greenfields pipeline incentives" (29 March 2012) 20, citing *Re: Application by ElectraNet Pty Limited (No.3)* [2008] ACompT 3 (30 September 2008).

<sup>99</sup> National Competition Council "Greenfields pipeline incentives" (29 March 2012) 4. The National Gas Objective is seen as promoting consistency between the gas and electricity industries as both objectives are similar.

<sup>100</sup> The NCC is currently updating the Greenfields Guide to reflect recent legislative developments and the Pilbara Decision.

This analysis will commence with an examination of criterion (b), which is to identify the relevant service and whether there is anyone who can profitably develop an alternative pipeline. GLNG will then use this information to consider criterion (a), which is to examine the competitive effects of declaring the Pipeline a covered pipeline on dependent markets. Finally GLNG will consider criteria (c) and (d) (health and safety and public interest) whilst always taking into consideration the National Gas Objective.

As explained below, GLNG submits that criteria (a), (b) and (d) are not satisfied.

## 6. CRITERION (B) – ECONOMIC TO DEVELOP ANOTHER PIPELINE

### 6.1 Statutory Test

The pipeline coverage criterion (b) is:

[t]hat it would be uneconomic for anyone to develop another pipeline to provide the pipeline services provided by means of the pipeline.

### 6.2 Greenfields Guide

In the Greenfields Guide, the NCC sets out its view of how criterion (b) ought to be applied:

Criterion (b) is concerned with Australia's national interest not the private interests of any particular parties. The Council and the Tribunal have consistently found that the appropriate test for assessing whether criterion (b) is met is a social test and that the term 'uneconomic' should be construed in a social cost benefit sense rather than in terms of private commercial interests.<sup>101</sup>

- National Competition Council

### 6.3 Coverage Guide

In the NCC's publication, "Coverage, revocation and classification of pipelines" (the "**Coverage Guide**"), the NCC summarises what is required to determine whether a pipeline is a natural monopoly:

...[i]t generally suffices to compare reasonably foreseeable demand for the pipeline services with the capacity of the pipeline .... If the capacity of the pipeline is sufficient to meet reasonably foreseeable demand for the pipeline services, then the pipeline is a natural monopoly and uneconomical to duplicate, and criterion (b) is satisfied.<sup>102</sup>

- National Competition Council

### 6.4 Part IIIA Competition and Consumer Act 2010 (Cth)

Criterion (b) of section 15 of the NGL is worded in almost identical terms to section 44G(2)(b) of the *Competition and Consumer Act 2010* (Cth) (the "**CCA**"). Indeed, the NCC has stated, and the Australian Competition Tribunal (the "**Tribunal**") has held, that the slight difference in wording (the CCA refers to "uneconomical", while the NGL uses "uneconomic") is not significant.<sup>103</sup>

GLNG agrees with this view and therefore considers that the High Court of Australia's decision in *Pilbara Infrastructure Pty Ltd and Another v Australian Competition Tribunal and Others* [2012] HCA 36 (the "**Pilbara Decision**") is instructive in determining the correct test to apply when examining criterion (b) under the NGL.

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<sup>101</sup> National Competition Council "Greenfields pipeline incentives" (29 March 2012) 22.

<sup>102</sup> National Competition Council "Coverage, revocation and classification of pipelines" (15 May 2012) 62. The NCC is currently updating the Coverage Guide to reflect recent legislative developments and the Pilbara Decision.

<sup>103</sup> See National Competition Council "Coverage, revocation and classification of pipelines" (15 May 2012) 55 and *Re Duke Eastern Gas Pipeline Pty Ltd* [2001] ACompT 2

## 6.5 Decision of the High Court of Australia

In the Pilbara Decision, the High Court approved the test adopted by the Full Federal Court in *Pilbara Infrastructure Pty Ltd and Another v Australian Competition Tribunal and Others* [2011] FCAFC 58 (the "**FFC Pilbara Decision**"), holding that the correct approach to assessing criterion (b) of the CCA is the private profitability test. In its decision, the High Court found that:

The better view of criterion (b) is that it uses the word "uneconomical" to mean "unprofitable". It does not use that word in some specialist sense that would be used by an economist. When used in criterion (b) "anyone" should be read as a wholly general reference that requires the decision maker to be satisfied that there is no one, whether in the market or able to enter the market for supplying the relevant service, who would find it economical (in the sense of profitable) to develop another facility to provide that service.<sup>104</sup>

- High Court of Australia, Pilbara Decision

In applying this test, the High Court emphasised the importance of the return on capital from the development of another facility, such as a pipeline, and noted that this return may come as part of a larger project, such as a LNG project, for which the facility is necessary:

It would not be economical, in the sense of profitable, for someone to develop another facility to provide the service in respect of which the making of a declaration is being considered unless that person could reasonably expect to obtain a sufficient return on the capital that would be employed in developing that facility. Deciding the level of that expected return will require close consideration of the market under examination. What is a sufficient rate of return will necessarily vary according to the nature of the facility and the industry concerned. And if there is a person who could develop the alternative facility as part of a larger project it would be necessary to consider the whole project in deciding whether the development of the alternative facility, as part of that larger project, would provide a sufficient rate of return. But the inquiry required by criterion (b) should be whether there is anyone who could profitably develop an alternative facility.<sup>105</sup>

High Court of Australia, Pilbara Decision

GLNG applies the test adopted by the High Court in this application in preference to the test proposed by the NCC in the Coverage Guide. This is consistent with the NCC's approach in the Final APLNG Application, which adopted the test from the FFC Pilbara Decision.

## 6.6 GLNG's approach

This section applies the interpretation adopted by the High Court in the Pilbara Decision and also draws on the decisions of the Minister for Resources and Energy, the Hon Martin Ferguson (the "**Minister**") on the applications for 15 year no-coverage determinations for the proposed QCLNG Pipeline and the proposed APLNG Pipeline.

## 6.7 Meaning of "anyone"

The criterion requires an analysis of whether it is uneconomic for "anyone" to develop an alternative facility.

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<sup>104</sup> Pilbara Decision, para 105 per French CJ, Gummow, Hayne, Crennan, Kiefel and Bell JJ.

<sup>105</sup> Pilbara Decision, para 104 per French CJ, Gummow, Hayne, Crennan, Kiefel and Bell JJ.

In the High Court's view, the reference to "anyone" in criterion (b) should be read as a general reference including a person currently supplying the service:

In criterion (b), "anyone" includes existing and possible future market participants.<sup>106</sup>

- High Court of Australia, Pilbara Decision

This overturns the Tribunal's previous decisions that held that it must be established that the associated costs and benefits of development for society as a whole from someone **other than** the pipeline owner developing the facility must be considered when assessing for it to be uneconomic for anyone to develop another facility.<sup>107</sup>

## 6.8 Which pipeline is "the pipeline"?

Another threshold issue that must be addressed is to identify what is "the pipeline" for these purposes.

In the final QCLNG recommendation (the "**Final QCLNG Recommendation**") (prior to the FFC Pilbara Decision and the Pilbara Decision), the NCC said that in its view:

...[t]he National Gas Objective requires that the term 'uneconomic' in criterion (b) be given a broad social (national interest) construction. The parameters and number of pipelines that may be constructed for commercial reasons may differ from those which might be optimal from a social perspective.<sup>108</sup>

- National Competition Council

Consequently, the NCC considered:

...[t]hat it may be appropriate to address criterion (b) on the basis of whether an optimally sized and specified pipeline could meet foreseeable demand at less cost than more than one pipeline, rather than to confine that consideration to the pipeline proposed by the Applicant.<sup>109</sup>

- National Competition Council

The Minister, in making his decision, disagreed with the NCC's "... [a]doption of a broader view of criterion (b)" when considering the application of the natural monopoly test.<sup>110</sup> The Minister instead:

...[w]eighed up the competing considerations between commercial decisions and the optimal economic scenario [adopted by the NCC] that arise when making an assessment of this criterion. In relation to the applicant's proposal, balancing the commercial considerations and the national interest, [the Minister] assessed criterion (b) against the proposed capacity provided by the Applicant.<sup>111</sup>

- Minister for Resources and Energy

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<sup>106</sup> Pilbara Decision, para 77 per French CJ, Gummow, Hayne, Crennan, Kiefel and Bell JJ.

<sup>107</sup> *Re Sydney International Airport* [2000] ACompT 1, para 200-206.

<sup>108</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.57.

<sup>109</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.60.

The NCC did not make any conclusions on this issue in its final recommendation on the APLNG application (the "**Final APLNG Recommendation**"). The NCC followed the FFC Pilbara Decision and considered the APLNG Pipeline as proposed by APLNG.<sup>112</sup> The private profitability test adopted by the FFC Pilbara Decision (and approved by the Pilbara Decision) requires the NCC to consider the facts in the marketplace and does not test whether a pipeline can meet reasonably foreseeable demand for the service.

In GLNG's view, the NCC must consider the Pipeline as it is proposed by the Participants now that the High Court has adopted the private profitability test. That is, for the purposes of assessing GLNG's no-coverage application, "the pipeline", in respect of criterion (b), is the high pressure 420 km transmission pipeline, with an external diameter of 1067 millimetres which is designed to run at pressures up to 10.2MPag and with an average capacity of 1400 TJ/d as proposed for the GLNG Project.

Subsequently, the relevant pipeline service is the service provided by the Pipeline; that is, the provision of gas transportation services from the Bowen and Surat basins to Curtis Island.

## **6.9 Private profitability test**

Applying the private profitability test as set out by the High Court in the Pilbara Decision, criterion (b) will not be satisfied if there is anyone "who would find it economical (in the sense of profitable) to develop another facility to provide that service",<sup>113</sup> namely an alternative to the currently proposed Pipeline.

Whether it is economical to develop another facility will depend on the facility and market concerned. This includes an analysis of whether it would be economical for anyone to develop another facility as part of a larger project. This is particularly relevant here because the development of other proposed pipelines to the Gladstone region, like the Pipeline, are being built as part of the development of the LNG projects discussed in section 3.1.

Whilst investment in a pipeline is a sunk cost, this does not mean it is not commercially or economically feasible to duplicate that pipeline. Further, given the integral role the Pipeline has in the development of the overall GLNG Project, it is GLNG's view that its cost and the feasibility of developing alternative pipelines has to be considered in the context of the LNG industry as a whole. Indeed, GLNG notes that there are a number of proponents planning to build similar gas pipelines from the Bowen and Surat basins to the Gladstone region (see section 3). This clearly demonstrates that it is both economically feasible and commercially viable for other parties to develop alternative pipelines to provide the same pipeline services as the Pipeline. In these circumstances, regulatory intervention is inappropriate.

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<sup>112</sup> National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) paras 7.6.

<sup>113</sup> Pilbara Decision, para 77.

Given the number of proponents proposing to build gas pipelines in the Surat and Bowen basins to Gladstone, all of which are able to provide the same or similar service as the Pipeline,<sup>114</sup> it is evident that it is economically and commercially feasible for other parties to develop alternative facilities which provide the same service as the Pipeline.

#### **6.10 Conclusion under private profitability test**

In short, adopting the High Court of Australia's test in the Pilbara Decision, it is economical for another party to develop an alternative pipeline to provide the pipeline services proposed to be supplied by the Pipeline. Consequently, criterion (b) is not satisfied.

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<sup>114</sup> Including the QCLNG Pipeline which has been granted a no-coverage recommendation by the NCC and determination by the Minister.

## 7. CRITERION (A) – PROMOTION OF COMPETITION

### 7.1 Introduction

Under criterion (a), the NCC must recommend that the exemption be granted if it is not satisfied:

[t]hat access (or increased access) to pipeline services provided by means of the pipeline would promote a material increase in competition in at least 1 market (whether or not in Australia) other than the market for the pipeline services provided by the pipeline.

- National Competition Council

### 7.2 Greenfields Guide

In the Greenfields Guide, the NCC describes the purpose of criterion (a):

The purpose of criterion (a) is to limit coverage to circumstances where it is likely to materially enhance the environment for competition in at least one dependent market. Whether competition will be materially enhanced depends critically on the extent to which the incumbent service provider can and is likely, in the absence of coverage, to use market power to adversely affect competition in a dependent market(s). If the service provider has market power, as well as the ability and incentive to use that power to adversely affect competition in a dependent market, coverage would be likely to improve the environment for competition, offering the prospect of tangible benefits to consumers (including reduced prices and better service provision).<sup>115</sup>

- National Competition Council

The Greenfields Guide then sets out what the NCC considers is required for criterion (a) to be satisfied.

### 7.3 NCC recommendation / Minister's decision in other applications

In the Final QCLNG Recommendation, the NCC said:

In the Council's view, the availability of current and potential future alternatives to the QCLNG Pipeline to upstream gas producers means that the vertically integrated operator of the QCLNG Pipeline is unlikely to have the incentive or ability to materially influence competitive outcomes in the upstream gas production market. Accordingly access to the QCLNG Pipeline is unlikely to promote a material increase in competition in the upstream gas production market.<sup>116</sup>

...[g]as users in the Gladstone / Rockhampton / Wide Bay area will have at least gas supply options via the existing QGP and potentially the QCLNG Pipeline. Were any other proposals to proceed, then there would be additional transport options available to downstream gas users to bypass the QCLNG Pipeline ...<sup>117</sup>

...[c]urrently existing interconnection of the southern and eastern Australian jurisdictions provides options for participants in southern and eastern Australian gas sales markets to source gas from

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<sup>115</sup> National Competition Council "Greenfields pipeline incentives" (29 March 2012) 21.

<sup>116</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.40.

<sup>117</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.46.



alternative gas basins such that access to the QCLNG Pipeline is unlikely to promote a material increase in competition in a broader geographic domestic gas sales market.<sup>118</sup>

The Council agrees that the downstream LNG market is already a competitive international market...<sup>119</sup>

In the Council's view, access to the QCLNG Pipeline will therefore not promote a material increase in competition in the downstream LNG market.<sup>120</sup>

- National Competition Council

The NCC reached similar conclusions in the Final APLNG Recommendation.<sup>121</sup>

In his decision on the application for a 15 year no coverage determination for the proposed QCLNG Pipeline, and after noting relevantly that the QCLNG Pipeline was capable of serving the global LNG market, the Minister found as follows:

The availability of existing alternatives to the QCLNG Pipeline to upstream gas producers means that the vertically integrated operator of the QCLNG Pipeline is unlikely to have the ability to materially influence competitive outcomes in the upstream gas production market. Accordingly, I have determined that access to the QCLNG Pipeline is unlikely to promote a material increase in competition in the upstream gas market.

In terms of downstream markets, this should be considered as both the global LNG market and the downstream gas sales market in the Gladstone / Rockhampton / Wide Bay area, as the main domestic regions capable of being served by the QCLNG Pipeline.

I note that the downstream LNG market is already a competitive international market, and access to the QCLNG Pipeline is unlikely to promote a material increase in competition in this market.

I believe that the existing alternative options means that access to the QCLNG Pipeline is unlikely to promote a material increase in competition in the downstream gas market in the Gladstone / Rockhampton / Wide Bay area.<sup>122</sup>

- Minister for Resources and Energy

The Minister made similar conclusions in his decision on the application for a 15 year no coverage determination for the proposed APLNG Pipeline.<sup>123</sup>

In GLNG's view, the same conclusion applies to its proposed Pipeline.

## **7.4 GLNG's approach**

This section draws on the NCC's approach as further developed by the Final QCLNG Recommendation and the Final APLNG Recommendation. It:

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<sup>118</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.47.

<sup>119</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.51.

<sup>120</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.52.

<sup>121</sup> National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) paras 6.26 to 6.28, 6.32 to 6.33 and 6.36 to 6.37.

<sup>122</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on QCLNG's no-coverage application (15 June 2010) 3.

<sup>123</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012) 3.

- (a) identifies the relevant dependent (upstream or downstream) markets;
- (b) considers whether the identified market(s) is separate from the market for the pipeline service; and
- (c) assesses whether access (or increased access) would be likely to promote a materially more competitive environment in the dependent markets.

It also undertakes a competitive effects analysis focusing on the form of regulation factors listed in section 16 of the NGL.

## **7.5 Identification of dependent markets**

GLNG agrees with the approach adopted by the NCC in the Final QCLNG Recommendation and the Final APLNG Recommendation and notes that dependent markets are assessed according to the product, geographic and functional dimensions and, therefore, GLNG does not propose to summarise how markets generally are defined.<sup>124</sup>

The product and geographic dimensions of a market are determined respectively by the substitutability among products and the substitutability among products over a particular geographic area.

The functional dimension of the market is determined by considering the vertical levels of production and distribution and determining and identifying those that comprise the field of competition. In practice, consideration of the functional level of the market merges into the consideration of whether the identified market(s) is separate from the market for the pipeline service and GLNG therefore addresses this issue as part of market definition (see section 7.6 below).

In addition to product, geographic and functional dimensions, the NCC may also consider the temporal dimension. The temporal dimension will be relevant where there are likely to be market or technological changes in the "not too distant" future that may affect the market definition.

## **7.6 Market definition**

GLNG submits that the production of gas, the sale of gas to downstream domestic customers, the transportation of gas through transmission or distribution pipelines, LNG production and the sale of LNG gas are all functionally separate. Whilst these markets are dependent, they are economically separate and distinct. In particular, the production of gas and the sale of gas either to downstream domestic customers or as LNG are economically separate and distinct from the market for pipeline services. The

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<sup>124</sup>

See *Re Queensland Co-operative Milling Association Ltd* (1976) ATPR 40-012 at 17247 for a description as to how a market is determined.

NCC acknowledged this in the Final QCLNG Recommendation and the Final APLNG Recommendation.<sup>125</sup>

Both the Final QCLNG Recommendation and the Final APLNG Recommendation concluded that the:

- (a) upstream production market;
- (b) downstream domestic sales market in Gladstone, Rockhampton and Wide Bay;  
and
- (c) downstream LNG market,

were the relevant dependent markets to consider when determining whether access to the QCLNG Pipeline or APLNG Pipeline respectively would promote a material increase in competition in another market.<sup>126</sup>

GLNG submits that the same principles of analysis and broad market definitions are relevant for its pipeline, but notes that, as explained below, the geographic boundaries for the upstream producer market differs slightly from that of QCLNG and APLNG due to the different route taken by the Pipeline.

#### **(a) The upstream production market**

##### Product dimension

GLNG submits that the relevant upstream product market is the market for the production of gas for the purpose of supplying gas to downstream customers either as LNG (export) or for domestic consumption.<sup>127</sup>

Consistent with the Final QCLNG Recommendation, there is no separate product market for the production and sale of gas for LNG production and the production and sale of gas for domestic supply. In both cases (ignoring gas specification limitations applicable to LNG production), gas could be transported through the Pipeline and any other gas transmission and distribution pipelines and sold to end users as gas. The specific requirements of a LNG facility are not relevant to this analysis.

Any relative increase in price in one market will likely result in producers switching the purpose of their production to that market.<sup>128</sup>

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<sup>125</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.27.

<sup>126</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.26.

<sup>127</sup> Consistent with previous decisions of the Tribunal, there is currently no strong rivalry between gas and other forms of energy, such as electricity. See: *Re: Duke Eastern Gas Pipeline Pty Ltd* [2001] ACompT 2, para 79.

<sup>128</sup> See National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline" (May 2010) paragraph 6.19 and McLennan Magasanik Associates "Queensland LNG Industry Viability and Economic Impact Study, Final Report to the Queensland Department of Infrastructure and Planning" (2009) 136.

As the NCC noted in the Final QCLNG Recommendation, the market for gas in Queensland is made up almost exclusively of CSG with limited amounts of conventional natural gas sold. However, even if substantial quantities of conventional natural gas were sold in Queensland, for the purposes of domestic consumption, the two products are sufficiently similar to be transported through the same pipeline. LNG production, however, requires that the gas meets a certain specification.

#### Geographic dimension

The geographic boundary of the market is limited by the area that could be serviced by Pipeline - that is, the extent to which producers of CSG and natural gas can physically access the Pipeline.

GLNG commissioned ACIL Tasman to consider whether other CSG producers in the vicinity of the Pipeline would be likely to benefit significantly from having access to the Pipeline. In undertaking this review, ACIL Tasman considered small independent producers, that is producers who are unrelated or otherwise not controlled by, or not already committed under gas sale contracts to, any of the Participants or other project proponents who have proposed LNG facilities at Gladstone which are located within a 100 km corridor of the Pipeline. A copy of ACIL Tasman's report can be found at Annexure 7.

In summary, ACIL Tasman found that the producers who hold interests in tenements within that 100km corridor include:

- Blue Energy Limited;
- PetroChina; and
- Westside Corporation Meridian Seamgas.

Broadly speaking, the location of the tenements of PetroChina and Westside Corporation Meridian Seamgas means that it is more convenient to connect to the existing Dawson Valley pipeline, which connects to the QGP. GLNG understands that those companies already have arrangements in place with the Dawson Valley pipeline and that they are already selling gas to the domestic Queensland market.<sup>129</sup>

GLNG notes that both QGC and Westside Corporation Meridian Seamgas have interests in the Paranui Gas Field.

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<sup>129</sup>

ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 66.

PetroChina has executed a non-binding letter of intent to sell its gas to LNG Limited for the Gladstone LNG Project at Fisherman's Landing.<sup>130</sup> PetroChina and its related entities also hold interests in the Arrow Energy LNG Project.

Blue Energy Limited's gas field interests in the relevant area are, on the other hand, early stage exploration areas. These gas fields have no certified reserves yet, but Blue Energy Limited nonetheless estimates that the areas contain significant gas-in-place.

In so far as the Pipeline has capacity available, given the nature of the GLNG Project, any such capacity would be interruptible. However, if there is capacity available in the Pipeline, GLNG is prepared to make that capacity available to third parties provided its legitimate business interests are not compromised, that is:

- GLNG is able to maintain sufficient flexibility to manage the operations of the Gas Fields and the LNG Facility;
- the third party meets the costs of interconnection;
- the third party treats the gas it intends to transport to meet the LNG Facility's gas specification and indemnifies the Participants (including provision of appropriate security) for any loss they may suffer should gas be injected outside the specification;
- the third party injects that gas at the appropriate pressure; and
- the third party compensates GLNG for any additional operational costs it may incur as a consequence of providing access, such as the costs of operating additional compression stations, the costs of negotiating and implementing any third party access, the increased operational risks (particularly with regard to the potential risk to the LNG Facility) and the operational costs of interconnecting with the Pipeline.

**(b) The downstream domestic gas sales market in Gladstone, Rockhampton and Wide Bay**

Product dimension

The product dimension in this context is the supply of gas to customers in the downstream domestic market, including large industrial, small industrial and household consumers through retailers.

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<sup>130</sup>

LNG Limited "Gas supply letter of intent signed with PetroChina Australia" (2 August 2012) available at <http://www.lnglimited.com.au/IRM/Company/Showpage.aspx/PDFs/1768-74125198/GasSupplyLetterofIntentSignedwithPetroChinaAustralia>.

### Geographic dimension

The area that is capable of being served by the Pipeline is Gladstone, Rockhampton and the Wide Bay area. There is scope to develop and interconnect the existing pipeline network in that area so that gas producers can access more consumers across Queensland and eastern Australia.

The NCC noted in both the Final QCLNG Application and Final APLNG Application that a wider downstream domestic sales market may be appropriate because of expected investment in gas pipelines in the future, but determined that there would not be a material increase in competition even if the narrower market for domestic sales in Gladstone, Rockhampton and Wide Bay is adopted.<sup>131</sup>

GLNG considers that the wider market is appropriate, but agrees with the NCC that competition would not be materially increased if the market for domestic gas sales is limited to the Gladstone, Rockhampton and Wide Bay area.

### **(c) The downstream international LNG market**

#### Product market

GLNG submits that the supply of LNG is in a separate product market to the supply of gas in the domestic market. While the same gas is used in the production of LNG as that used for domestic supply, LNG is able to be shipped internationally as its volume is reduced to 1/600<sup>th</sup> the volume of the gas in a gaseous state. This is in response to very specific demand to supply LNG to various end users overseas.

GLNG also agrees with the NCC's conclusion that there is unlikely to be a downstream market for the toll manufacture of LNG.<sup>132</sup> As noted by the NCC, it is unlikely that the significant investment required to construct a LNG facility would be undertaken without a secure source of gas to serve that facility. It is also unlikely that the long term offtake agreements necessary to underpin the investment could be procured without gas supply security.

#### Geographic dimension

LNG produced at Curtis Island can be shipped internationally as indicated by the heads of agreement that GLNG has already entered into described in section 2.6 above. An international market is therefore appropriate.

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<sup>131</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.47; National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) para 6.15.

<sup>132</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.25; National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) para 6.18.

## **7.7 Promotion of competition**

Having identified the relevant markets, the NCC must consider whether access to the Pipeline would materially increase competition in any of those markets. In doing so, it must consider the "form of regulation factors" in section 16 of the NGL. In GLNG's view, the section 16 factors relevant to this application are:

- (a) the presence and extent of any barriers to entry into the market for gas pipeline services;
- (b) the presence and extent of any network externalities (that is, interdependencies) between a natural gas service provided by a service provider and any other natural gas service provided by the service provider;
- (c) the extent to which any market power possessed by a service provider is, or is likely to be, mitigated by any countervailing market power possessed by a user or prospective user;
- (d) the presence and extent of any substitute, and the elasticity of demand, in a market for a pipeline service in which a service provider provides that service; and
- (e) the presence and extent to which GLNG has an incentive to exercise its market power or co-ordinate with third parties to exercise that market power.

GLNG submits that criterion (a) is not satisfied when these factors are applied to the Pipeline for each dependent market as described below.

## **7.8 Promotion of competition in upstream production market**

### **(a) Barriers to entry**

Like all pieces of significant infrastructure, and considered on a stand-alone basis, the Pipeline could be considered to have economies of scale because, theoretically speaking, the average costs of transporting gas through the Pipeline would decrease as the quantity of gas transported through it increases. It therefore could be argued that GLNG could have market power that it could take advantage of once the Pipeline is built.

However, it is also necessary to bear in mind that the Pipeline is an integral part of the overall GLNG Project. That is, the Pipeline is only being built on a fit-for-purpose basis as a component of the GLNG Project to facilitate the export of LNG. As the NCC noted, it is unlikely for a LNG facility to be built without a secure supply of gas being supplied to that LNG facility.<sup>133</sup> This means any economies of scale must be considered within the constraints of the GLNG

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<sup>133</sup>

National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.25; National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) para 6.18.

Project, not in the context of whether the Pipeline would meet market demand as it would if it was being built on a stand-alone basis.

In addition, the Pipeline's capacity will be fully utilised transporting, or managing the transportation of, gas to meet the requirements of the LNG Facility and the Participants, and the Participants' contractual commitments to the foundation customers. This means any usage by a third party will necessarily be limited by the requirements of GLNG and the Participants.

Finally, contrary to most analyses undertaken relevant to the transport of gas along stand-alone transmission pipelines, in this case the demand for pipeline services by the LNG export industry alone easily exceeds the supply potential of the Pipeline. The significant development of the upstream gas fields in the Surat and Bowen basins, the construction of several LNG facilities at Curtis Island and the need to transport the CSG from the gas fields to the LNG facilities means there will be significant and increasing demand for pipeline services connecting the two. This is indicated by the proposed development of alternative pipelines by other LNG proponents who are also developing LNG facilities at Curtis Island. Construction of a pipeline sufficiently large to accommodate the requirements of even two of the proposed LNG facilities would be impractical and uneconomical.

**(b) Interdependency concerns**

Santos sells gas domestically in Queensland to customers in Mt Isa and Brisbane from the Cooper Basin. This will not change as a consequence of the GLNG Project. GLNG also submits that Santos' ownership in other gas tenements is not a competitive concern because Santos Limited, through its wholly owned subsidiary Santos GLNG Pty Ltd (being one of the Participants) only has a 30% interest in the GLNG Project. The other three Participants, being the wholly owned subsidiaries of PETRONAS, Total and KOGAS, will have the incentive to ensure that they maximise the use of the Pipeline and, in doing so, obtain the best price for any capacity that may be available in the Pipeline sold to third parties.

In addition, there are alternative pipelines that are expected to be constructed to serve other LNG facilities being developed by other parties as described in section 3 above and alternative pipelines that supply various downstream domestic gas markets in which the Participants have no interest as described in section 7.8(d) below. These developments will exercise further constraints on the ability, if any, of the Participants to exercise any incentive to engage in anti-competitive conduct.



**(c) Countervailing power**

GLNG submits potential customers in the upstream production market have countervailing power because of the opportunities for both small and large producers to economically bypass the Pipeline.

The large CSG producers in the Surat and Bowen basins are in various joint venture arrangements that propose to construct their own pipelines to serve their LNG facilities at Curtis Island with QCLNG and APLNG already having commenced construction of their respective pipelines. In addition, there are other pipelines that currently supply gas to the domestic market, such as QGP and RBP. This means the small producers have a range of options available to them. According to ACIL Tasman:

"Molopo and Westside have existing gas sales agreements for supply at Moura and in Gladstone (via the Dawson Valley Pipeline and QGP). These agreements demonstrate that the small independent CSG explorers in the vicinity of the GLNG Gas Transmission Pipeline and other upstream assets currently have practical options for delivering their gas to markets."<sup>134</sup>

- ACIL Tasman Report

**(d) Alternative pipelines/substitutability of pipeline services**

As discussed in section 4.6 above, there are alternative pipelines available to transport gas from the upstream production market to downstream markets. In particular, for domestic demand, alternative pipelines include the QGP, Wide Bay Pipeline and RBP, which are all within 100 km of the Pipeline, and other pipelines that provide interconnection to those pipelines.<sup>135</sup> There is also the SWQP which producers can use to backhaul gas to markets in Mt Isa and northern New South Wales, among others.

When compared to these alternative pipelines, the proposed Pipeline is unlikely to be attractive to small gas producers because of the narrow specification of the gas that it will accept. The gas transported through the Pipeline by these producers must meet the specifications of the LNG Facility regardless of whether the gas will be used by these producers in a manner that requires gas of this specification. Meeting this specification is likely to impose additional costs for these gas producers, including, the cost of constructing or accessing a treatment plant, costs that may arise due to third party use of the Pipeline and increased costs due to the loss of flexibility in the operations of the Gas Fields and LNG Facility. GLNG would pass through these additional costs to users as discussed in more detail in section 9.8 below.

Gas that is transported through the Pipeline must also be injected at the pressure of the Pipeline.

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<sup>134</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 66. The Molopo production area is now owned by PetroChina as described in the ACIL Tasman report attached at Annexure 7.

<sup>135</sup> See also National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.35.

Small gas producers would also have to construct appropriate connection facilities at the Pipeline and into Gladstone (or some other delivery location) if they intend to deliver gas to the domestic downstream market. Under current sanctioned plans, the Pipeline has three receipt points along its route at which the gas that GLNG intends to transport through the Pipeline will be injected. By comparison, the QGP has five receipt stations (Wallumbilla, Fairview, Westgrove, Rolleston and Moura). Connection costs to the QGP may be reduced by using one of these additional receipt stations on the QGP.

In addition, as the Pipeline is being built as part of the GLNG Project, it only has one delivery point – the LNG Facility – while the QGP has ten delivery points providing access to the domestic gas market.

These additional upfront capital costs are likely to make connection to the Pipeline less commercially viable when compared with connecting to other transmission pipelines, such as the QGP.

In addition to the upfront costs of connecting to the Pipeline, the price of using the QGP is likely to be less than the price of using the Pipeline. ACIL Tasman's modelling in sections 5 and 6 of their report find that, at a load factor of 80%, it would be cheaper for upstream producers to use the QGP. This suggests that there would be little demand for capacity on the Pipeline other than for the GLNG Project.

The existence of these alternative pipelines as substitutes limits any market power that GLNG may have in the upstream production market and its ability to use any such power.

**(e) Coordinated conduct and incentives to exercise market power**

GLNG submits that there is limited risk of coordinated conduct between pipeline owners because:

- GLNG has no incentive to undertake coordinated conduct because GLNG intends to utilise all of the Pipeline's capacity for the transportation of gas to serve its LNG Facility as part of the GLNG Project (that is, the commercial imperative of the GLNG Project is to sell LNG to its foundation customers and on the spot cargo market and for export generally); and
- there are a number of alternative pipelines available to upstream producers, specifically:
  - (i) those that are being built to service LNG facilities, which may have different gas specifications and different amounts of capacity available at different times; and

- (ii) those that are 'market' or third party transmission pipelines, which have the incentive to maximise usage and which generally supply the domestic market, both of which would make coordinated conduct unlikely.

In addition, if GLNG has any market power, it will have limited incentives to exercise any such market power despite the vertically integrated nature of the GLNG Project:

- As discussed in sections 2.6 and 2.7 above, the Participants have binding heads of agreement pursuant to which **[Confidential: ]** of LNG produced at the LNG Facility is fully committed for 20 years following the first cargo from the LNG Facility. Feeding sufficient gas into the LNG Facility to ensure these commitments are met and maximising any opportunities on the spot cargo market, while ensuring that the Gas Fields and LNG Facility have operational flexibility, means GLNG expects the Pipeline will be operating at full capacity for almost all of the time. GLNG does not expect the Pipeline to have substantive amounts of spare capacity available and any capacity that is available is likely to be very uncertain, of short duration and subject to daily fluctuations.
- In addition, the bypass opportunities available to upstream gas producers indicates that any attempt to foreclose upstream producers from transporting gas by denying access to the Pipeline would be unsuccessful; such producers would simply interconnect with another pipeline resulting in GLNG missing out on revenue that it would have otherwise earned.

**(f) NCC's recommendation / Minister's decision in other applications**

In the Final QCLNG Recommendation, the NCC considered:

... [t]hat the Applicant's vertical integration into the upstream gas production market provides it with some incentive to refuse access to other upstream gas producers .... However, with the existing pipeline network providing a range of alternative gas transport options and the probability of other transmission pipelines being constructed by proponents of LNG production projects such action is unlikely to be successful...<sup>136</sup>

- National Competition Council

Further,

As well as the existing pipeline network and the QCLNG Pipeline, there are a number of proposals for integrated gas transport / LNG production facilities involving the construction of transmission pipelines from the Surat Basin to Gladstone currently scheduled to be

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<sup>136</sup>

National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.34.

commissioned within the next 3-4 years. These will potentially offer additional alternatives to the QCLNG Pipeline for transporting gas from the Surat Basin to Gladstone.<sup>137</sup>

- National Competition Council

In his decision on the application for a 15 year no coverage determination for the proposed QCLNG Pipeline, in relation to the upstream gas market, the Minister found as follows:

The availability of existing alternatives to the QCLNG Pipeline to upstream gas producers means that the vertically integrated operator of the QCLNG Pipeline is unlikely to have the ability to materially influence competitive outcomes in the upstream gas production market. Accordingly, I have determined that access to the QCLNG Pipeline is unlikely to promote a material increase in competition in the upstream gas market.

- Minister for Resources and Energy

The NCC reached similar conclusions in the Final APLNG Recommendation<sup>138</sup> and the Minister reached a similar decision following that recommendation.<sup>139</sup>

In GLNG's view, the same conclusion applies to its proposed Pipeline.

## **7.9 Promotion of competition in downstream domestic gas sales market**

### **(a) Barriers to entry**

The barriers to entry discussed in section 7.8(a) above are equally relevant to the downstream domestic sales market. The Pipeline's economies of scale, insofar as they apply, are therefore unlikely to operate as a barrier to entry into the downstream gas sales market.

### **(b) Interdependency concerns**

The same interdependency concerns discussed in section 7.8(b) above will be present in the downstream domestic gas sales market. These concerns are unlikely to have any impact on competition in the downstream domestic gas sales market for the same reasons as discussed above for the upstream production market.

### **(c) Countervailing power**

Countervailing power in the downstream gas market varies from customer to customer depending on that customer's size and demand for gas. GLNG submits that there is likely to be strong countervailing power held by downstream customers, both domestic and international, given the availability of alternative pipelines.

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<sup>137</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.36.

<sup>138</sup> National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) paras 6.26 to 6.28.

<sup>139</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012) 3.

**(d) Alternative pipelines / substitutability of pipeline services**

As for the upstream producers discussed above, there are several alternative pipelines that serve the downstream Gladstone, Rockhampton and Wide Bay markets, including:

- the existing or an expanded QGP;
- the existing or an expanded QGP together with backhaul arrangements on the RBP and or SWQP/QSN Link; and
- any spare capacity available on the four other pipelines proposed by other parties intending to develop LNG facilities at Curtis Island.

The additional costs from accessing the Pipeline when compared with other alternative pipelines as discussed in section 7.8(d) above are likely to be the same in the downstream domestic sales market. These costs can be avoided if downstream customers use another pipeline, making access to the Pipeline less attractive.

The alternative pipelines available to consumers in the downstream domestic gas market are also available to provide gas transportation services. These pipelines serve not only the upstream production market discussed in section 7.8(d) above, but may also provide gas from other production areas through interconnection and backhaul arrangements. The existence of these substitutes limits any market power that GLNG may have in the downstream domestic gas market and its ability to use any such power.

**(e) No incentive to exercise market power and co-ordinated conduct**

The lack of incentive for GLNG to exercise market power and co-ordinate conduct discussed in section 7.8(e) above are equally relevant here. There is only a risk of co-ordinated conduct in so far as GLNG competes in the market to supply transmission pipeline services. As a result, GLNG submits that there is likely to be limited risk of co-ordinated conduct because it expects to use all of the Pipeline's capacity to transport gas to the LNG Facility solely for export. There are also a number of alternative pipelines available and the time periods and amount of capacity available are likely to be substantially different for each pipeline.

In any case, any incentive for GLNG or the Participants to exercise their market power is limited by the alternative pipelines available. Any strategy to foreclose access to the Gladstone, Rockhampton and Wide Bay markets is unlikely to be successful given these alternatives.

**(f) NCC's recommendation / Minister's decision in other applications**

In the Final QCLNG Recommendation, the NCC said:

... [g]as users in the Gladstone / Rockhampton / Wide Bay area will have at least gas supply options via the existing QGP and potentially the QCLNG Pipeline. [If other proposals proceed], then there would be additional transport options available to downstream gas users to bypass the QCLNG Pipeline. [Consequently] ... the operator of the QCLNG Pipeline will likely have little incentive or ability to exercise market power in the downstream gas sales market. Accordingly the Council considers that access to the QCLNG Pipeline is unlikely to promote a material increase in competition in the downstream gas sales market in the Gladstone / Rockhampton / Wide Bay area.<sup>140</sup>

- National Competition Council

In his decision on the application for a 15 year no coverage determination for the proposed QCLNG Pipeline, and after noting relevantly that the QCLNG Pipeline was capable of serving the domestic gas sales markets in the Gladstone/Rockhampton/Wide Bay area, the Minister found as follows:

I believe that the existing available options means that access to the QCLNG Pipeline is unlikely to promote a material increase in competition in the downstream market in the Gladstone / Rockhampton / Wide Bay area.

- Minister for Resources and Energy

The NCC reached similar conclusions in the Final APLNG Recommendation<sup>141</sup> and the Minister reached a similar decision following that recommendation.<sup>142</sup>

In GLNG's view, the same conclusion applies to its proposed Pipeline.

## **7.10 Promotion of competition in downstream LNG market**

### **(a) Barriers to entry**

The barriers to entry discussed in section 7.8(a) above are even more relevant to the downstream LNG market, particularly if one considers the role of a transmission pipeline in the broader context of the global LNG industry. The Pipeline's economies of scale, insofar as they exist, are therefore unlikely to operate as a barrier to entry into the downstream LNG market.

The Pipeline has been designed to meet the specifications of the LNG Facility with capacity to feed two LNG trains while providing the Gas Fields and LNG Facility with operational flexibility. The Pipeline may be expanded to feed a third train if desired. The economies of scale decline in importance when considered against the size of the pipelines required to support such investment, even just in the context of Australia, as illustrated by the analysis presented in section 6.9 above.

The LNG Facility, indeed the GLNG Project, however, is being developed as part of growing international demand for LNG. The international LNG market is

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<sup>140</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.46.

<sup>141</sup> National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) paras 6.32 and 6.33.

<sup>142</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012) 3.

highly competitive. This market is supplied by multiple LNG facilities worldwide, and as discussed in section 4.2, more facilities are expected to be constructed worldwide to meet increasing worldwide demand. While Australia was ranked the world's fifth largest LNG producer worldwide based on installed capacity in 2010, price continues to be set on the basis of world supply and demand.<sup>143</sup> In this context, given Australia's contribution to the global LNG industry, and the role of the Pipeline in that industry, then insofar as the Pipeline can be said to have any economies of scale, they are unlikely to operate as a barrier to entry into the downstream LNG market.

Further, due to the investment involved (being tens of billions of dollars) in an end to end LNG project, significant volumes of gas are required to be exported over a long period in order for it to be viable. As discussed in section 2.7(c), construction of a pipeline sufficiently large to accommodate more than one LNG facility would be impractical and uneconomical.

**(b) Interdependency concerns**

The same interdependency concerns arise in the downstream LNG market as the upstream production market. However, these interdependencies are even less likely to have any competitive impact on the downstream LNG market because the effect of Santos' ownership of additional gas fields is negligible given the capacity of the Pipeline and LNG Facility as compared with global supply and demand for LNG.

**(c) Countervailing power**

The number of alternative pipelines and LNG facilities that are expected to be built, the competitiveness of the international LNG market and the fact that purchasers of LNG are generally large with significant countervailing power (eg state owned enterprises) indicate that customers for the services of the Pipeline also are likely to have strong countervailing power. That is, if they are unable to secure what they require from one producer there are ample alternatives available to them, not just in Australia, but in other parts of the world.

**(d) Alternative pipelines / substitutability of pipeline services**

Other prospective LNG producers have announced that they will build their own pipelines to transport gas to their LNG facilities at Curtis Island. As well as demonstrating that the construction of a pipeline sufficiently large to accommodate more than one LNG facility is not practical or economical, this also reflects the need for a secure gas supply (including secure and uninterrupted pipeline transportation) to support the significant investment decision required to proceed with construction of an LNG Facility. Differing LNG

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<sup>143</sup>

International Gas Union "IGU World LNG Report 2010" (2010) 16.

facility design gas specifications may also create practical obstacles to the sharing of a pipeline by LNG producers.

Even if access to the Pipeline would enable an additional LNG train to be built at another LNG facility (which is unlikely given GLNG's expected capacity utilisation of the Pipeline and given that an LNG facility owner will preferentially utilise or expand the capacity of its own pipeline because it is already tied into its LNG facility and also more likely to be proximately located to its gas source), such an additional train would not materially promote competition in the downstream international LNG market.

The availability of an additional train of LNG at Curtis Island is unlikely to have any impact on price, which is determined in the international market. In addition, third party use of the Pipeline given its size, relative to the size of the international LNG market, is unlikely to materially promote competition in that market.

**(e) Coordinated conduct and incentives to exercise market power**

As discussed above, GLNG submits that it has no incentive to engage in coordinated conduct because proponents of LNG facilities at Curtis Island are each expected to construct pipelines to meet their own gas transmission needs and their respective LNG projects have been developed to meet their own commercial objectives, as has the GLNG Project.

The Participants have no incentive to exercise market power. While the Participants are vertically integrated in the Gas Fields, Pipeline and LNG Facility, they separately or together have limited ability to foreclose access to the downstream LNG market because access to the Pipeline is highly unlikely to have any impact on the price of LNG.

In any case, the Participant's primary commercial objective in operating the Pipeline is to ensure that the LNG Facility receives a secure supply of gas and it fulfils its contractual obligations to its foundation customers. Any additional gas able to be produced or sourced and processed by the LNG Facility can be exported.

**(f) NCC's recommendation / Minister's decision in other applications**

In the Final QCLNG Recommendation, the NCC said:

... [t]he downstream LNG market is already a competitive international market. Australia's key LNG markets are Japan, South Korea, China and Taiwan, with some 79 per cent of Australia's LNG going to Japan (AER 2009, p. 26). Apart from Australia, which was the world's sixth largest exporter in 2008 (AER 2009, p. 27), there are several other exporters of LNG of which the largest are Qatar, Malaysia and Indonesia. Some 18 countries import



LNG with a further 17 having import plants under construction or planned (AER 2009, p. 26).<sup>144</sup>

- National Competition Council

The Minister noted, in his decision on QCLNG's application for a 15 year no coverage determination, that the proposed QCLNG Pipeline could serve the downstream LNG market. However, the Minister concluded:

I note that the downstream LNG market is already a competitive international market, and access to the QCLNG Pipeline is unlikely to promote a material increase in competition.

- Minister for Resources and Energy

The NCC reached similar conclusions in the Final APLNG Recommendation<sup>145</sup> and the Minister reached a similar decision following that recommendation.<sup>146</sup>

GLNG submits that the same conclusion applies to its proposed Pipeline given the similarities between the proposed QCLNG Pipeline, the proposed APLNG Pipeline and GLNG's proposed Pipeline and that the downstream LNG market under consideration is identical in each instance.

## 7.11 Conclusion

GLNG submits that:

- the Participants do not have market power and, as such, they are unable to adversely affect competition in the upstream producer market, downstream domestic market or downstream LNG market; and
- even if the Participants did have market power, given the integral nature of the Pipeline to the GLNG Project and the Participants' contractual obligations to supply LNG to its foundation customers, they have neither the ability or the incentive to use that power to adversely affect competition in a dependent market.

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<sup>144</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.51.

<sup>145</sup> National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) paras 6.36 and 6.37.

<sup>146</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012) 3.

## 8. CRITERION (C) – HEALTH AND SAFETY

### 8.1 Statutory test

Under criterion (c), the NCC must recommend that the exemption be granted if it is not satisfied:

[t]hat access (or increased access) to the pipeline services provided by means of the pipeline can be provided without undue risk to human health or safety.

### 8.2 Greenfields Guide

In the Greenfields Guide, the NCC states the following:

The rationale for this criterion is that coverage should not occur where access or increased access to pipeline services provided by a facility may pose a legitimate risk to human health or safety.<sup>147</sup>

- National Competition Council

### 8.3 NCC's recommendation/Minister's decision in other applications

In the Final QCLNG Recommendation, the NCC noted that:

The safe use of natural gas transmission pipelines through appropriate operator practice and regulation is well established in Australia. The Council sees no basis to suggest that access to the QCLNG Pipeline would compromise human health or safety.<sup>148</sup>

- National Competition Council

In his decision on the application for a 15 year no coverage determination for the proposed QCLNG Pipeline, the Minister found as follows:

I ... note that the gas industry in Australia is characterised by the safe use of pipelines through appropriate operator practice and regulation.

- Minister for Resources and Energy

The NCC came to the same conclusion in the Final APLNG Recommendation<sup>149</sup> and the Minister reached the same decision following that recommendation.<sup>150</sup>

### 8.4 Application of criterion (c) to the Pipeline

GLNG will operate the Pipeline in accordance with the pipeline licence, all applicable Queensland and Federal laws and good industry practice, which ensure that human health and safety is not at risk as a result of the operation of the Pipeline.

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<sup>147</sup> National Competition Council "Greenfields pipeline incentives" (29 March 2012) 23.

<sup>148</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.89.

<sup>149</sup> National Competition Council "No Coverage Determination for the Proposed APLNG Pipeline: Final Recommendation" (July 2012) para 8.4.

<sup>150</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012) 4-5.

## **8.5 Conclusion**

GLNG does not consider that human health or safety would be at risk if parties were to access the services provided by the Pipeline.

## 9. CRITERION (D) – PUBLIC INTEREST

### 9.1 Statutory test

Under criterion (d), the NCC must recommend that the exemption be granted if it is not satisfied:

[t]hat access (or increased access) to the pipeline services provided by means of the pipeline would not be contrary to the public interest.

### 9.2 Greenfields Guide

In the Greenfields Guide, the NCC notes the following:

The term 'public interest' is not defined in the NGL but the Council considers that this term allows consideration of a broad range of issues, with a particular focus on public interest issues raised directly by the national gas objective.<sup>151</sup>

- National Competition Council

In addition to the National Gas Objective, the Coverage Guide lists a number of factors it is likely to take into consideration when considering the 'public interest', including relevantly:

- efficiency losses resulting from coverage;
- regulatory costs;
- disruption costs; and
- impact on investment.<sup>152</sup>

### 9.3 Coverage Guide

In the Coverage Guide, the NCC notes that:

The use of the double negative in criterion (d) ... does not constitute an additional positive requirement for satisfaction that access would be in the public interest. Rather, the Council must be satisfied that the overall costs of coverage do not outweigh the benefits of coverage.<sup>153</sup>

- National Competition Council

### 9.4 Relevant decisions

In order for this criterion to be fulfilled, it is not necessary that access be in the public's interest. Rather, criterion (d) requires that granting access not be contrary to the public interest; taking into account the overall costs and benefits of access.<sup>154</sup>

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<sup>151</sup> National Competition Council "Greenfields pipeline incentives" (29 March 2012) 23.

<sup>152</sup> National Competition Council "Coverage, revocation and classification of pipelines" (15 May 2012) 69-74.

<sup>153</sup> National Competition Council "Coverage, revocation and classification of pipelines" (15 May 2012) 69.

<sup>154</sup> *Re Duke Eastern Gas Pipeline* [2001] ACompT 2, in reference to criterion (f) of Part IIIA CCA.

As already noted, the term "public interest" is not defined. However, the general view adopted by the NCC, and largely endorsed by the Tribunal, is that this assessment requires deciding whether the costs of access do not outweigh the benefits.<sup>155</sup>

As to what constitutes the overall costs and benefits of access, the High Court in the Pilbara Decision emphasised the broad nature of the inquiry that is to be undertaken by the Minister.<sup>156</sup> According to the High Court:

Because so many different kinds of consideration may be relevant to an assessment of what is "contrary to the public interest", many if not all those matters which can be described as "social costs" *could* be relevant to that assessment. And the significance to be attached to such social benefits would, no doubt, be affected by the existence of any countervailing social benefits. But it is important to keep at the forefront of consideration that ... the Minister has been satisfied that access or increased access would *not* be contrary to public interest.<sup>157</sup>

- High Court of Australia, Pilbara Decision

The NCC must undertake a similarly broad inquiry when making its recommendation to the Minister.

In undertaking a review of any decision made by the Minister, the High Court also held that the breadth of the approach taken by the Tribunal was necessarily determined by the scope of the Minister's decision. The High Court said that it is not:

... expected that the Tribunal, reconsidering the Minister's decision, would lightly depart from a ministerial conclusion about whether access or increased access would not be in the public interest. In particular, if the Minister has not found that access would not be in the public interest, the Tribunal should ordinarily be slow to find to the contrary ...<sup>158</sup>

- High Court of Australia, Pilbara Decision

## 9.5 NCC's recommendation / Minister's decision in other applications

In its Final QCLNG Recommendation, the NCC said:

In the absence of a material promotion of competition in any market (or any other potential benefits arising from access) and given the costs that would result from coverage to the QCLNG Pipeline, the Council considers that coverage would be contrary to the public interest and coverage criterion (d) is not met.<sup>159</sup>

- National Competition Council

In his decision on the application for a 15 year no coverage determination for the proposed QCLNG Pipeline, the Minister found as follows:

In line with the National Gas Objective, I believe that it is important to encourage efficient investment in capital intensive infrastructure assets such as gas transmission pipelines.

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<sup>155</sup> *In the matter of Fortescue Metals Group Limited* [2010] ACompT 2, para 1161 and the National Competition Council "Coverage, revocation and classification of pipelines" (15 May 2012) 69.

<sup>156</sup> Pilbara Decision, para 111-112 per French CJ, Gummow, Hayne, Crennan, Kiefel and Bell JJ.

<sup>157</sup> Pilbara Decision, para 111 per French CJ, Gummow, Hayne, Crennan, Kiefel and Bell JJ.

<sup>158</sup> Pilbara Decision, para 112 per French CJ, Gummow, Hayne, Crennan, Kiefel and Bell JJ.

<sup>159</sup> National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.97.

In considering the costs and benefits in the public interest, the granting of a no-coverage determination improves regulatory certainty for investors.

Improving regulatory certainty and encouraging efficient investment is in the public interest and is consistent with the National Gas Objective. This is particularly so when assets subject to access regimes form part of a capital intensive vertically integrated production process with a long operating life.<sup>160</sup>

- Minister for Resources and Energy

In addition, the Minister, in his decision on the application for a 15 year no coverage determination for the proposed APLNG Pipeline, said:

In considering the benefits of access, the Council has noted that the "finding that access would not promote a material increase in competition ... is critical." Without any other apparent public benefit, access is likely to be contrary to the public interest.<sup>161</sup>

- Minister for Resources and Energy

## **9.6 Our approach**

This section is guided by the Minister's decisions on the Final QCLNG Application and Final APLNG Application reiterated above in section 9.5. GLNG also addresses additional points it considers to be relevant to the public interest criterion, which the NCC may wish to take into consideration.

## **9.7 Public interest considerations and the Pipeline**

GLNG has submitted that criteria (a) and (b) are not satisfied with respect to the Pipeline as set out in sections 6 and 7 above. Consequently, GLNG submits that the application for a 15-year no-coverage exemption must be granted.

Even if the NCC considers that both of these criteria are satisfied (in addition to criterion (c)), GLNG submits that the costs of coverage and, therefore, regulated access to the Pipeline would outweigh the public interest, which means that access would be contrary to the public interest (and criterion (d) would not be satisfied).

The Pipeline is not a stand-alone pipeline. It is an essential delivery system which is part of the Participants' vertically integrated GLNG Project. The Pipeline is integral to the entire GLNG Project (ie the GLNG Project cannot proceed without the Pipeline). If the Pipeline is not granted a no coverage determination, it means any third party can apply to have the Pipeline covered under the NGL. If the Pipeline was covered under the NGL, this would jeopardise the GLNG Project given the purpose for which the Pipeline has been designed and constructed.

Therefore the costs which must be considered as against the public interest are those costs which would arise should the GLNG Project not proceed or, if it did proceed, which

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<sup>160</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on QCLNG's no-coverage application (15 June 2010) 6.

<sup>161</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012) 5

would be incurred by virtue of the GLNG Project having to operate with third parties using the Pipeline. In summary, the costs of regulated access could include:

- (a) increasing inefficiencies and disruptions in the operation of the Pipeline specifically, and the GLNG Project more broadly;
- (b) reducing the incentives to invest in the GLNG Project (and potentially future projects);
- (c) reducing the incentives to invest in CSG and LNG production in Australia;
- (d) limiting or reducing the economic and development benefits if the growth of Australia's CSG and LNG export industries is stunted by disincentives to invest; and
- (e) the costs of addressing any coverage application lodged with the NCC and the costs of regulation if coverage was the outcome of any such application.

## **9.8 Inefficiencies and disruptions**

As discussed above, the Pipeline is an integral part of the GLNG Project, used to transport gas from the Gas Fields to the LNG Facility.

The Pipeline has been designed and will be built on a fit-for-purpose basis, including in terms of capacity.

The two train LNG Facility requires an average supply of 1200 TJ/d to meet firm offtake agreement obligations. The capacity of the Pipeline is expected to average 1400 TJ/d across the year but may be reduced to 1378 TJ/d during summer. As described in section 2.7(b) the maximum capacity of the Pipeline (including the notional 'spare' capacity) needs to be fully available to the Participants without interruption to accommodate the day to day fluctuations in the LNG Facility produced by the technical matters identified in section 2.4 above (including variations in feed gas composition, pipeline/plant interface pressure and temperature, site ambient air temperature and facility operating mode) to ensure the LNG Facility can operate at its maximum capacity when technically possible. The Participants' offtake agreement supply obligations assume this will occur, and that occasions where the LNG Facility, for technical reasons, is operating below maximum capacity, will be offset by operation at or closer to maximum capacity on other occasions.

In the event the Participants are able to process gas at the LNG Facility in excess of the firm commitments for supply to the foundation buyers and/or for sale on the spot cargo market, the maximum Pipeline capacity on current sanctioned plans would be insufficient.

GLNG also will use the Pipeline to manage the operations of the Gas Fields and the LNG Facility. During planned or unplanned shutdowns of the LNG Facility the Pipeline will be used for temporary gas storage as described in section 2.7(b). An inability to use the Pipeline capacity for this purpose could require GLNG to instantaneously curtail

upstream gas production in the Gas Fields following an outage on the LNG Facility which may result in unplanned gas flaring or shutdowns in the Gas Fields and a loss of production and efficiencies in operation.

In summary, all Pipeline capacity is accounted for by the GLNG Project requirements. Any regulated third party access to the capacity of the Pipeline would undermine these operations and arrangements and ultimately jeopardises the Participants' ability to meet both firm offtake commitments and achieve maximum total offtake potential for the GLNG Project.

This potential damage to GLNG's operations is heightened by the increased risk that third parties could inject gas that does not meet the LNG Facility's design limits. As detailed in section 2.5 above, this could result in:

(a) **[Confidential:**

**]**

Regulated access to the Pipeline under the NGL would also result in planning difficulties for GLNG and potentially inefficient expansions of the Pipeline. The final investment decision on whether to construct a third train at the LNG Facility may be compromised by third party access to the Pipeline because options available to expand the Pipeline will be naturally more limited as a consequence. For example, if GLNG is obliged to expand its Pipeline to accommodate a third party user, this would require the construction of a compression station to increase the Pipeline's capacity. A third party user is likely to require less capacity than GLNG would require if it was to expand the pipeline to accommodate a third train resulting in a smaller compression station being built. If this smaller compression station is built on the most optimal site, then GLNG's options if it decides to proceed with a third train would be constrained. That is, it may



have to choose a far less cost-effective expansion than it is currently considering. Any of these scenarios could have a significant and detrimental impact on GLNG's ongoing commercial operation in the export LNG industry.

In short, if the Pipeline is covered under the NGL, the potential inefficiencies and disruptions that are likely to arise would impact most significantly on the broader GLNG Project.

## **9.9 Decreasing incentives to invest in the GLNG Project**

As noted above, in making his decision on the QCLNG Pipeline application, the Minister considered, "[i]mproving regulatory certainty and encouraging efficient investment is in the public interest and is consistent with the National Gas Objective."<sup>162</sup> The Minister emphasised this issue again in his decision on the APLNG Pipeline application.<sup>163</sup>

GLNG submits that the disincentives to efficient investment in the GLNG Project should be given considerable weight in the NCC's analysis of criterion (d) because of the high likelihood of this cost emerging over the 15 year period (if the no-coverage exemption is not granted).

GLNG submits that if the NCC recommends, and the Minister decides, that a no-coverage exemption should not be granted there are a number of potential consequences:

- it would likely result in significant regulatory uncertainty as it could encourage third parties to apply to have the Pipeline covered under the NGL;
- the Participants would incur considerable additional expenses in responding to any coverage application made;
- losses in dynamic efficiency would occur as the Participants would be hesitant to further expand their facilities (whether that be the Gas Fields, Santos' other tenements, the Pipeline or the LNG Facility) as any expansion would have to overcome the complications created by a third party using part of the capacity of the Pipeline;
- dynamic efficiency would be reduced due to delays in innovating and implementing new technology/operating procedures and GLNG's ability to use the Pipeline to optimise the management and operation of the GLNG Project as a whole; and
- increases in the risk of gas entering the Participants' LNG Facility which exceeds the facility design limits, increasing the Participants' exposure to the significant potential costs and losses identified in sections 2.5 (and such exposure highly

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<sup>162</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on QCLNG's no-coverage application (15 June 2010).

<sup>163</sup> Decision of the Hon Martin Ferguson AM MP, Commonwealth Minister for Resources and Energy on APLNG's no-coverage application (28 August 2012).

unlikely to be adequately mitigated by the indemnity and financial security able to be offered by a small gas producer).

This uncertainty is likely to compromise the commercial viability of the Participants' investment in the GLNG Project, including the Pipeline and the ongoing development of the Gas Fields and the LNG Facility. The significant benefits from the development of the GLNG Project described in section 9.11 below may well not be realised in the event of this regulatory uncertainty and the costs of access.

#### **9.10 Decreasing incentives to invest in the CSG and LNG production in Australia**

In addition to the cost of the inefficiencies and disruptions to the GLNG Project specifically, allowing the Pipeline to be subject to a coverage application may impact on the wider LNG industry in Australia. As stated in section 3 above, there are several other major projects that are proposed for the region.

Refusal to grant the Participants a 15 year no-coverage exemption may result in some parties reassessing the commercial viability of their proposed projects or later expansion plans. This could substantially affect the industry's long term growth potential and would be contrary to the National Gas Objective. These other projects are likely to have similar benefits to those of the GLNG Project representing an even greater loss to the regional, Queensland and Australian economies.

#### **9.11 Economic and regional development**

Decreasing the incentives to invest in the GLNG Project, and CSG and LNG production in Australia will have flow on effects to the economic and regional development expected to be created as a result of these investments.

The GLNG Project alone is expected to increase Australia's real gross domestic product ("**GDP**") by an average of around AU\$3.5 billion a year.<sup>164</sup> This is equivalent to approximately 0.2% of real GDP per year. This increase in real GDP has a discounted present value (using a seven percent real discount rate) of AU\$29 billion. To place this in perspective, this discounted present value is equivalent to nearly 2.5% of the level of Australia's GDP in 2007-08. In addition, the GLNG Project is expected to contribute over AU\$40 billion in federal income tax and AU\$9 billion each year in additional exports over its life.<sup>165</sup>

Similar economic benefits are expected in Queensland with its gross state product expected to increase on average by AU\$4.1 billion or 1%.<sup>166</sup> In the period after 2022, when the GLNG Project could reach production of 10 mtpa, real gross state product is

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<sup>164</sup> GLNG Operations Pty Ltd "Application for Governor-in-Council approval of the GLNG Infrastructure Facility as an Infrastructure Facility of Significance" (16 November 2011) 5.2(a) and 5.2(b)..

<sup>165</sup> Santos Limited "Prime Minister launches works on GLNG plant (27 May 2011).

<sup>166</sup> GLNG Operations Pty Ltd "Application for Governor-in-Council approval of the GLNG Infrastructure Facility as an Infrastructure Facility of Significance" (16 November 2011) 5.2(b).

likely to be almost AU\$6.4 billion or 1.4% over the period 2009 to 2033.<sup>167</sup> In the period after 2022, the net average annual increase is likely to be almost AU\$1 billion a year or 0.4% higher.<sup>168</sup> In an average year, employment in Queensland (generated indirectly by the GLNG Project) could increase by around 4,300 jobs increasing to almost 5,000 additional jobs per year after 2022.<sup>169</sup> Consistent with these increases, Queensland state revenue is expected to increase by AU\$6 billion over the next 25 years.<sup>170</sup>

The regional economies in which the GLNG Project is located are likely to benefit to a greater extent from the GLNG Project on a per capita basis than the wider Queensland and Australian economies. Regional residents can be expected to benefit from increased employment opportunities and opportunities to supply the project with goods and services. It is estimated that the GLNG Project will create 5,000 jobs indirectly related to the GLNG Project's construction, in addition to 1,000 permanent jobs in production.<sup>171</sup>

Given the relative size of the regional economies, the GLNG Project expenditures in the local region will be significant. While project expenditures will vary from year to year, in an average year (including both construction and operating expenditures) the GLNG Project is estimated to spend AU\$142 million on a range of goods and services in the Pipeline and Gas Fields and a further AU\$374 million on the LNG Facility.

The significant expenditure of the GLNG Project involves a direct contribution to non-GLNG Project regional production (that is production by industries other than the GLNG Project) of around AU\$60 million per year for the Pipeline and Gas Fields and around AU\$153 million a year for the LNG Facility.<sup>172</sup>

As noted earlier, on 12 July 2012, the Queensland Governor in Council approved the GLNG LNG Facility and Pipeline together as an infrastructure facility that is of significance, particularly economically or socially, to Queensland and the Fitzroy and South West Statistical Divisions being the region in the which the facilities are being constructed, under section 125(1)(f) of the SDWPO Act.<sup>173</sup> Pursuant to section 125(2) of the SDWPO Act, in considering whether an infrastructure facility would be of economic or social significance, the potential for the GLNG Project to contribute to community wellbeing and economic growth or employment levels must be taken into

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<sup>167</sup> GLNG Operations Pty Ltd "Application for Governor-in-Council approval of the GLNG Infrastructure Facility as an Infrastructure Facility of Significance" (16 November 2011) 5.2(b) and 5.4.

<sup>168</sup> GLNG Operations Pty Ltd "Application for Governor-in-Council approval of the GLNG Infrastructure Facility as an Infrastructure Facility of Significance" (16 November 2011) 5.2(b) and 5.4.

<sup>169</sup> GLNG Operations Pty Ltd "Application for Governor-in-Council approval of the GLNG Infrastructure Facility as an Infrastructure Facility of Significance" (16 November 2011) 5.2(b).

<sup>170</sup> Santos Limited "Prime Minister launches works on GLNG plant (27 May 2011).

<sup>171</sup> GLNG Operations Pty Ltd "Application for Governor-in-Council approval of the GLNG Infrastructure Facility as an Infrastructure Facility of Significance" (16 November 2011) 5.2(c).

<sup>172</sup> This conversion from sales revenue to value added is based on the average ratio of value added to sales revenue for Australian industry derived from the 2004-05 national input output tables.

<sup>173</sup> Queensland Government Gazette, Vol 360 No 55 [Friday 13 July 2012] 831.

account. In accordance with section 125(3) of the SDPWO Act, in assessing such potential, the contribution the GLNG Project makes to agricultural, industrial, resource or technological development in Australia, Queensland or the region is a relevant consideration.

These economic benefits are predicted to reduce if this no coverage application is not granted. The reduction is due to GLNG's inability to guarantee the transportation of a secure supply of CSG for the purpose of the GLNG Project and its foundation customers, thereby reducing GLNG's incentive to invest in the Australian economy.

### **9.12 Regulatory Costs**

The NCC has recognised that the substantial regulatory costs sometimes associated with access regimes may outweigh the benefits of granting access.<sup>174</sup> GLNG has estimated that the regulatory costs that GLNG would likely and reasonably incur if a 15 year no-coverage was not granted, would be between AU\$114,000 and AU\$138,000 for responding to a coverage application and the initial development and implementation of an access arrangement (both amortised over the first five years of coverage) followed by an ongoing annual cost to maintain that access arrangement of AU\$235,000 to AU\$305,000. See Annexure 6 for details.

GLNG considers that this amount is an accurate reflection of expected regulatory costs and while this may be small compared to the total cost of the GLNG Project, it remains a substantial liability. The significance of this cost is exacerbated when one considers the limited transportation services that access to the Pipeline might provide. When placed in this perspective, GLNG submits that the significant regulatory costs demonstrate that granting access to the Pipeline would not be in the public interest.

### **9.13 Conclusion**

GLNG submits that the costs of access would far outweigh the limited benefits associated with granting access. For example, the substantial costs of access would likely include:

- the substantial disincentives that access would have on GLNG to invest in the GLNG Project;
- the substantial disincentives that providing for access would have on investment in the wider industry in Australia;
- the significant regulatory and other costs to GLNG; and
- the risks to the GLNG Project delivery.

These costs are juxtaposed against the limited benefits that third party access would provide the public. As explained above, access to the Pipeline would be unlikely to

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<sup>174</sup>

National Competition Council "Coverage, revocation and classification of pipelines" (15 May 2012) 71 and National Competition Council "No Coverage Determination for the Proposed QCLNG Pipeline: Final Recommendation" (May 2010) para 6.97.

promote a material increase in competition in any market because of the alternative pipelines already existing in, and proposed for, the region. Any benefit that results from third party access to the Pipeline must be substantially discounted given the availability of these other pipelines. Other benefits from access might include the social and environmental benefits from the minimisation of unnecessary infrastructure. However, as discussed in section 6 above, it is unlikely that access to the Pipeline will result in less infrastructure given the needs and intentions of other parties that propose to develop LNG facilities at Curtis Island.

As the Tribunal has held, the benefits and costs must be weighed according to their likelihood of occurring. Therefore, GLNG submits that the NCC should provide significantly more weight to the large financial regulatory and other costs and likely reduction in dynamic efficiency as a result of access, than the potential undefined benefits of access which GLNG argues are not certain because GLNG's projected utilisation of the Pipeline would not leave sufficient volume to third parties to generate substantial public benefits. This means that, even taking into account the potential benefits of promoting competition in a dependent market (if the NCC comes to this conclusion) or the avoidance of uneconomic duplication of infrastructure (if the NCC disagrees with the above submissions), the total benefit to the public would be limited due to a lack of capacity for third party use. This limited public benefit would clearly be outweighed by the costs associated with access.

Therefore, GLNG submits that access to the Pipeline is not in the public interest and that, consequently, criterion (d) is not satisfied.

## 10. COMPLIANCE CHECKLIST

The information required by rules 121 and 122 of the National Gas Rules (the "NGR") is contained in this application as follows:

Rule	Requirement	Summary	Location in application
121(1)(a)	The route of the pipeline.	The Pipeline runs for approximately 420 km from the Fairview Gas Field, Queensland to Curtis Island, Queensland.	Section 2.7
121(1)(b)	The end points of the trunk of the pipeline (i.e. the points defining the extremities, where the trunk begins and ends).	The trunk of the Pipeline commences at the Fairview Gas Field, Queensland.  The trunk of the Pipeline will end at Curtis Island, Queensland.	Section 2.7
121(1)(c)	If a lateral forms part of the pipeline – the point where the lateral interconnects with the trunk and the end point of the lateral.	No laterals form part of the Pipeline.	Section 2.7
121(1)(d)	The range of diameters for the principal pipes (including laterals).	The Pipeline has an external diameter of 1067 millimetres.	Section 2.7
122(1)(a)	The name and contact details of the applicant.	The applicants are Santos, GLNG Pty Ltd, PAPL (Downstream Pty Ltd), KGLNG Liquefaction Pty Ltd and Total GLNG Australia ( <b>the Participants</b> ). GLNG Operations Pty Ltd makes this application on behalf of the Participants as the Participants' agent.	Section 1.2

Rule	Requirement	Summary	Location in application
122(1)(b)	A short description sufficient to identify the pipeline and its route together with a website address at which a map of the route, and a description, of the pipeline can be inspected.	A description and map of the Pipeline's route can be accessed at <a href="http://www.santoslng.com/resource-library/maps.aspx">http://www.santoslng.com/resource-library/maps.aspx</a> .	Section 2.7, Annexure 5
122(1)(c)	A statement of the basis on which the project for the construction of the pipeline is to be regarded as a greenfields pipeline project.	<p>The Pipeline is a greenfields pipeline because it will be structurally separate from any existing pipeline and used solely to transport gas to the LNG Facility at Curtis Island.</p> <p>Alternatively, insofar as it interconnects to the existing CRWP at the Fairview Pipeline Compressor Station, the Pipeline is a major extension to an existing pipeline that is not a covered pipeline and therefore meets the requirement of section 149(b) of the NGL to be a "greenfields" pipeline.</p>	Section 2.7
122(1)(d)	A statement of expenditure already made on the construction of the pipeline and an estimate of the expenditure yet to be made together with a statement of the basis on which the estimate has been made.	<b>[Confidential:]</b>	Section 2.7

Rule	Requirement	Summary	Location in application
		1	
122(1)(e)	An estimate of the pipeline's capacity and an estimate of the extent to which the pipeline's capacity is likely to be utilised by the applicant or associates of the applicant.	<p>The Pipeline will have an average, as built, free-flow capacity of 1400 TJ/d. This capacity will vary with environmental conditions and the composition of the gas transported.</p> <p>The Pipeline has been designed so that sufficient gas to meet the Participants' commitments to foundation customers is transported to the LNG Facility and will be fully utilised by the Participants. This takes account of variations in the production capability of the LNG Facility while also giving the Gas Fields operational flexibility during LNG Facility shutdowns.</p>	Section 2.7
122(1)(f)	A statement of the services to be provided by means of the proposed pipeline.	The Pipeline will provide to the Participants, described in section 2.2, gas transport services from the Gas Fields to the LNG Facility located at Curtis Island.	Section 2.7
122(1)(g)	A statement of the	The Pipeline connects the Fairview Gas	Section 2.7



Rule	Requirement	Summary	Location in application
	<p>locations to be served by the proposed pipeline and, in relation to each downstream location, a statement of other sources of natural gas available at the relevant location.</p>	<p>Field to Curtis Island. The Pipeline may also connect the Gladstone, Rockhampton and Wide Bay areas if appropriate connection facilities are constructed.</p> <p>Other sources of natural gas available to consumers at Curtis Island (and the Gladstone, Rockhampton and Wide Bay areas) are:</p> <ul style="list-style-type: none"> <li>• producers in the Surat and Bowen basins (supplying via the QGP and, if necessary, the RBP and Dawson Valley pipeline); and</li> <li>• producers in other production areas (eg the Cooper/Eromanga basin) connected to the QGP via the SWQP, QSN Link and Moomba hub).</li> </ul>	
122(1)(h)	<p>A statement of any existing pipelines, and any proposed pipelines of which the applicant is aware, that serve (or will serve) any of the same locations or that pass (or will pass) within 100 km of any of the same locations.</p>	<p>The existing transmission pipelines that are within 100km of GLNG's proposed pipeline are the QGP, Wide Bay Pipeline, RBP and Dawson Valley pipeline.</p> <p>The capacity of the QGP is currently 52 PJ/a, and was expanded by 49 TJ/d in 2010.</p> <p>QCLNG commenced construction of a pipeline similar to the Pipeline from its CSG fields in the Surat Basin to Curtis Island in 2010. QCLNG anticipates construction will take 18 months.</p> <p>APLNG commenced construction of another similar pipeline from its CSG fields in the Surat Basin to Curtis Island in 2012.</p>	Section 2.7

<b>Rule</b>	<b>Requirement</b>	<b>Summary</b>	<b>Location in application</b>
		GLNG expects Arrow Energy to commence construction on its proposed transmission pipelines to Curtis Island in the near future.	
122(1)(i)	An estimate of the reserves of natural gas available at any upstream location to be served by the pipeline and an estimate of the rate of production from that location.	MMA estimated in 2011 that 2P reserves in the Surat and Bowen basins were 32,176 PJ (as at 31 December 2010).  The rate of production from these reserves is expected to increase as LNG facilities at Curtis Island are commissioned and domestic gas demand increases.	Section 4.1
122(1)(j)	An estimate of expected demand at each downstream location to be served by the pipeline including for each location a description of the expected customer base and an indication of the revenue expected from each location.	The reasonably foreseeable demand for pipeline services in the Gladstone, Rockhampton and Wide Bay regions will be around 52.5 PJ/a in 2030. <sup>175</sup>  The reasonably foreseeable demand for LNG facilities located at Curtis Island is up to 1915 PJ/a. <sup>176</sup>  GLNG does not expect to earn any revenue from the Pipeline.	Sections 2.7(f) and Annexure 7
122(1)(k)	The identity of all parties with an interest in the proposed pipeline and the nature and extent of each interest.	The Participants and owners of the Pipeline are Santos, GLNG Pty Ltd, PAPL (Downstream Pty Ltd), KGLNG Liquefaction Pty Ltd and Total GLNG Australia.  GLNG Operations Pty Ltd is appointed as the Operator to construct and	Section 1.1 and 2.2

<sup>175</sup> ACIL Tasman "Gas Demand Study" (25 January 2013) ACIL Tasman 27.

<sup>176</sup> ACIL Tasman Report "Gas Demand Study" (25 January 2013) ACIL Tasman 55.

<b>Rule</b>	<b>Requirement</b>	<b>Summary</b>	<b>Location in application</b>
		operate the Pipeline as agent for the Participants. The Participants have shareholdings in GLNG proportional to their joint venture interest.	
122(1)(l)(i)	A description of any relationship between the owner, operator and controller of the pipeline (or any 2 of them).	See above	Section 2.2
122(1)(l)(ii)	A description of any relationship between the owner, operator or controller of the pipeline and a user of pipeline services or a supplier or consumer of gas in any of the locations served by the pipeline.	Uncontracted gas from Santos' tenements in the Bowen and Surat basins that are not part of the Gas Fields could theoretically be sold as third party gas to the Participants for the GLNG Project (although there is currently no sale agreement in place).  Santos will continue to supply gas to customers in Mt Isa and Brisbane.	Section 2.2
122(1)(l)(iii)	A description of any relationship between the owner, operator or controller of the pipeline and the owner, operator or controller of any other pipeline serving any one or more of the same locations.	The Participants own the CRWP, which connects with the Pipeline at Fairview. The CRWP serves a similar upstream production market location to the Pipeline.  The Participants and GLNG do not have any relationship with the owner, operator or controller of any other pipeline serving any one or more of the same locations.	Section 2.2
122(1)(m)	A statement of whether it would be feasible to expand the capacity of the pipeline and, if so, an explanation of how	The capacity of the Pipeline may be expanded by looping the Pipeline or adding one or more compressor stations to the Pipeline.  If a final investment decision to construct a third train at the LNG	Section 2.7

Rule	Requirement	Summary	Location in application
	<p>the capacity might be expanded and an estimate of the cost.</p>	<p>Facility is made, GLNG may expand the capacity of the Pipeline by adding compression station(s). GLNG's preliminary estimate is that this would provide capacity of <b>[Confidential: ]</b> at an <b>[Confidential: ]</b>.<sup>177</sup></p> <p>The Pipeline could be expanded further by the addition of more compression stations. However, GLNG estimates that the Pipeline's capacity as a result of such additional compression is limited to 2625 TJ/d (approximately 958 PJ/a) by the maximum allowable operating pressure of the Pipeline (10.2 MPag) and the limited number of suitable locations for compressor stations available. GLNG's preliminary estimate is that expanding the Pipeline to this capacity will <b>[Confidential: ]</b>.</p> <p>Although the Pipeline has not been designed to be expanded by looping, GLNG's preliminary estimate is that the cost of looping the Pipeline with a pipeline of the same diameter and class</p>	

<sup>177</sup>

**[Confidential:**

]

Rule	Requirement	Summary	Location in application
		<p>would cost <b>[Confidential: ]</b> per kilometre more than the cost per kilometre of constructing the Pipeline if the Pipeline was looped for 350 kilometres in order to provide sufficient capacity to feed a third train at the LNG Facility. This increases to <b>[Confidential: ]</b> if the Pipeline is fully looped. The capacity of the Pipeline if it is fully looped would increase to 2834 TJ/d. This is more expensive than constructing the Pipeline because:</p> <ul style="list-style-type: none"> <li>• increased safety and other precautions will be required to protect the integrity of the existing Pipeline;</li> <li>• the Pipeline has not been designed with the intention of it being looped in the future; and</li> <li>• any looping will take a less optimal and, therefore, more expensive route than the Pipeline.</li> </ul>	
122(1)(n)	An estimate of the annual cost to the service provider of regulation.	<p>GLNG expects the cost for the initial development and implementation of the access arrangement to be between AU\$114,000 and AU\$138,000 (both amortised over the first five years).</p> <p>GLNG estimates that there will be an ongoing annual cost of AU\$235,000 to AU\$305,000 to comply with its regulatory obligations under the access arrangement and the NGL.</p>	Section 9.12 and Annexure 6

## DICTIONARY

**2P** means proved and probable reserves

**ACCC** means the Australian Competition and Consumer Commission

**APLNG** means the Australia Pacific LNG Project venture between ConocoPhillips, Origin Energy and Sinopec

**APLNG Pipeline** means the pipeline being developed as part of the APLNG Project to transport gas to that project's LNG Facility at Curtis Island.

**Bechtel** means Bechtel Australia and Bechtel Oil, Gas and Chemical Inc

**BG Group** means BG Group plc

**BHPB** means BHP Billiton Limited

**CCA** means the *Competition and Consumer Act 2010* (Cth)

**Chubu Electric** means Chubu Electric Power Co. Inc

**CICSDA** means the Callide Infrastructure Corridor State Development Area

**Coverage Guide** means a publication by the National Competition Council entitled, '*A guide to the functions and powers of the National Competition Council under the National Gas Law: Part B Coverage, revocation of coverage and classification of pipelines*', dated May 2012

**CRWP** means the Comet Ridge to Wallumbilla Pipeline

**CSG** means coal seam gas

**DEEDI** means the Department of Employment, Economic Development and Innovation

**EIS** means Environmental Impact Statement

**EPC** means engineering, procurement and construction contractual arrangement

**EPC Contractor** means Saipem Australia Pty Ltd

**FEED** means front-end engineering design

**FFC Pilbara Decision** means the decision of the Full Federal Court in *Pilbara Infrastructure Pty Ltd and Another v Australian Competition Tribunal and Others* [2011] FCAFC 58

**Final APLNG Recommendation** means the NCC's final recommendation to the Minister dated 17 July 2012 on APLNG's no coverage application

**Final QCLNG Recommendation** means the NCC's final recommendation to the Minister dated 5 May 2010 on QCLNG's no coverage application

**Fluor** means Fluor Australia Pty Ltd

**Gas Fields** means the coal seam gas fields owned by the GLNG Upstream Entities as described in section 2.3

**GDP** means gross domestic product

**GHD** means GHD Pty Ltd

**GLNG** means GLNG Operations Pty Ltd

**GLNG Project** means Gladstone LNG project which is comprised of three inter-related and inter-dependent infrastructure facilities being the Gas Fields, the Pipeline, and the LNG Facility

**GLNG Upstream Entities** means those entities identified as upstream entities in Annexure 2

**Greenfields Guide** means a publication by the National Competition Council entitled, '*A guide to the functions and powers of the National Competition Council under the National Gas Law: Part D Greenfields pipeline incentives*', dated March 2012

**GSDA** means the Gladstone State Development Area

**HDF** means Hastings Diversified Utilities Fund

**HCEC** means Huangiu Contracting and Engineering Corporations

**ITT** means an invitation to tender

**KOGAS** means the Korea Gas Corporation

**LNG** means liquefied natural gas

**LNG Facility** means the Participants' facility at Curtis Island which cools natural gas to the point in which it turns into a liquid for export as described in section 2.4

**LPG** means liquefied petroleum gas

**MAOP** means maximum allowable operating pressure

**Minister** means the Minister for Resources and Energy

**MMA** means McLennan, Magasanik and Associates

**mtpa** means million tonnes per annum

**National Electricity Market** means the wholesale electricity market and electricity transmission grid that operates in Queensland, New South Wales, Victoria, South Australia and Tasmania

**National Gas Objective** means the national gas objective set out in section 23 of the NGL

**NCC** means the National Competition Council

**NGL** means the National Gas Law

**NIC** means the Northern Infrastructure corridor

**NGR** means the National Gas Rules

**Operator** means the person responsible for the management and day to day operation of the relevant facility

**Participants** means the parties described as such at section 1.1 and as otherwise identified as downstream entities in Annexure 2

**PetroChina** means PetroChina International Investment (Australia) Pty Ltd

**PETRONAS** means Petroliam Nasional Berhad

**Pilbara Decision** means the decision of the High Court in *Pilbara Infrastructure Pty Ltd and Another v Australian Competition Tribunal and Others* [2012] HCA 36

**Pipeline** means that proposed pipeline described in section 2.7

**PPL** means the petroleum pipeline licences

**QCLNG** means Queensland Curtis LNG Project

**QCLNG Pipeline** means the pipeline being developed as part of the QCLNG Project to transport gas to that project's LNG Facility at Curtis Island

**QGC** means QGC Pty Limited

**QGP** means Queensland Gas Pipeline

**QSN Link** means the Queensland to South Australia/New South Wales Link

**RBP** means the Roma to Brisbane Pipeline

**Roma Underground Gas Storage Facility** means GLNG's underground gas reservoirs at Roma

**Saipem** means Saipem Australia Pty Ltd

**SDPWO Act** means the *State Development and Public Works Organisation Act 1971* (Qld)



**SWQP** means the South West Queensland Pipeline

**Treatment Facility** means a treatment facility to be constructed by the Participants for the purposes of the GLNG Project to ensure gas acquired from third parties meets the gas specifications required by the LNG Facility

**Tribunal** means the Australian Competition Tribunal

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Parliament of Australia, "Research Paper – Australia's natural gas: issues and trends" (1 April 2008)

Productivity Commission Inquiry Report, "Review of the Gas Access Regime", Report No 31 (June 2004)

# **ANNEXURE 1 – CONSENT OF PARTICIPANTS**

## ANNEXURE 2 – GLNG PROJECT PARTICIPANTS

<b>Santos</b>		
<b>Percentage Interest in Project: 30%</b>		
Santos GLNG Pty Ltd (downstream entity)	ABN:	12 131 271 648
	ACN:	131 271 648
	Registered Office Address:	Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
Santos TOGA Pty Ltd (upstream entity)	ABN:	46 077 536 871
	ACN:	077 536 871
	Registered Office Address:	Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
Santos QNT Pty Ltd (upstream entity)	ABN:	33 083 077 196
	ACN:	083 077 196
	Registered Office Address:	Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
Bronco Energy Pty Limited (upstream entity)	ABN:	70 121 979 664
	ACN:	121 979 664
	Registered Office Address:	Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
Santos CSG Pty Ltd (upstream entity)	ABN:	72 121 188 654
	ACN:	121 188 654
	Registered Office Address:	Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
Santos Queensland Corp. (upstream entity)	ABN:	75 111 733 969
	ARBN:	111 733 969
	Registered Office Address:	Santos International Holdings Pty Ltd Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
Santos TPY Corp. (upstream entity)	ARBN:	102 958 707
	Registered Office Address:	Santos International Holdings Pty Ltd Ground floor, Santos Centre

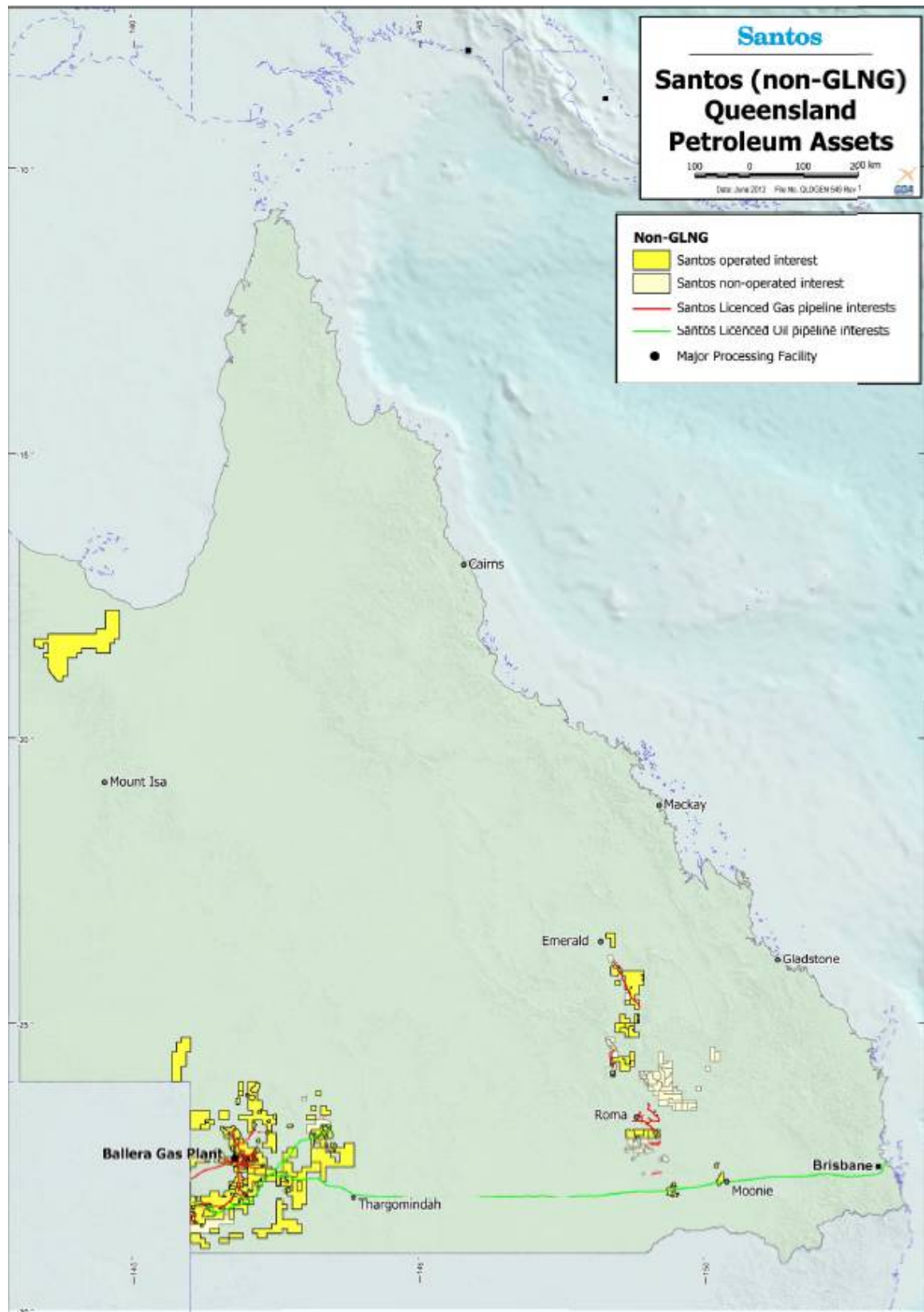
		60 Flinders Street ADELAIDE SA 5000
Santos TPY CSG Corp. (upstream entity)	ABN:	84 108 566 052
	ARBN:	108 566 052
	Registered Office Address:	Santos International Holdings Pty Ltd Ground floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
<b>PETRONAS Percentage Interest in Project: 27.5%</b>		
PAPL (Downstream) Pty Limited (downstream entity)	ABN:	43 147 649 205
	ACN:	147 649 205
	Registered Office Address:	Level 36, Santos Place 32 Turbot Street, Brisbane, QLD 4000
PAPL (Upstream) Pty Limited (upstream entity)	ABN:	58 131 318 888
	ACN:	131 318 888
	Registered Office Address:	Level 36, Santos Place 32 Turbot Street, Brisbane, QLD 4000
PAPL (Upstream II) Pty Limited (upstream entity)	ABN:	90 146 203 901
	ACN:	146 203 901
	Registered Office Address:	Level 36, Santos Place 32 Turbot Street, Brisbane, QLD 4000
<b>Total Percentage Interest in Project: 27.5%</b>		
Total GLNG Australia (downstream entity)	ARBN:	146 680 524
	Registered Office Address:	BGC Centre, Level 13 28 The Esplanade PERTH WA 6000
Total E&P Australia (upstream entity)	ARBN:	112 603 880
	Registered Office Address:	BGC Centre, Level 13 28 The Esplanade PERTH WA 6000
Total E&P Australia II (upstream entity)	ARBN:	149 617 167
	ABN:	52 149 617 167
	Registered Office Address:	BGC Centre, Level 13 28 The Esplanade PERTH WA 6000
<b>KOGAS Percentage Interest in Project: 15%</b>		

KGLNG Liquefaction Pty Ltd (downstream entity)	ABN:	39 146 143 311
	ACN:	146 143 311
	Registered Office Address:	Level 11, 28 The Esplanade PERTH WA 6000
KGLNG E&P Pty Ltd (upstream entity)	ABN:	31 146 143 339
	ACN:	146 143 339
	Registered Office Address:	Level 11, 28 The Esplanade PERTH WA 6000

# APPENDIX 1 – SANTOS 2011 ANNUAL REPORT



## APPENDIX 2 – MAP OF SANTOS' NON-GLNG QUEENSLAND OIL AND GAS ASSETS



## **APPENDIX 3 – PETRONAS 2011 ANNUAL REPORT**

# **APPENDIX 4 – TOTAL 2011 REGISTRATION DOCUMENT**

## **APPENDIX 5 – KOGAS 2011 ANNUAL REPORT**

## ANNEXURE 3 – GLNG UPSTREAM ENTITIES AND JOINT VENTURE ARRANGEMENTS

Field	JV	Permits	Operator	Participants
<b>Joint Ventures with Texan Operating Agreements</b>				
Fairview	Fairview JV	ATP 526P PLs 90-92, 99-100	Santos TOGA Pty Ltd	Santos TOGA Pty Ltd Santos TPY CSG Corp Santos TPY Corp Santos Queensland Corp Bronco Energy Pty Ltd PAPL (Upstream) Pty Ltd Total E&P Australia Total E&P Australia II KGLNG E&P Pty Ltd Australia Pacific LNG Pty Limited Australia Pacific LNG (Moura) Pty Ltd Australia Pacific LNG (CSG) Pty Ltd

Field	JV	Permits	Operator	Participants
Arcadia	Arcadia JV	ATP 653P PLAs 420, 421 & 440	Santos TOGA Pty Ltd	Santos TOGA Pty Ltd Santos TPY CSG Corp Santos TPY Corp Santos Queensland Corp Bronco Energy Pty Ltd PAPL (Upstream) Pty Ltd Total E&P Australia Total E&P Australia II KGLNG E&P Pty Ltd Australia Pacific LNG Pty Limited Australia Pacific LNG (Moura) Pty Ltd Australia Pacific LNG (CSG) Pty Ltd
Comet Ridge	ATP 745P JV	ATP 745P	Santos TOGA Pty Ltd	Santos TOGA Pty Ltd Santos TPY CSG Corp Santos TPY Corp Santos Queensland Corp Bronco Energy Pty Ltd PAPL (Upstream II) Pty Ltd Total E&P Australia

Field	JV	Permits	Operator	Participants
				Total E&P Australia II KGLNG E&P Pty Ltd Australia Pacific LNG Pty Limited Australia Pacific LNG (Moura) Pty Ltd Australia Pacific LNG (CSG) Pty Ltd

<b>Field</b>	<b>JV</b>	<b>Permits</b>	<b>Operator</b>	<b>Participants</b>
Comet Ridge	ATP 804P JV	ATP 804P	Bronco Energy Pty Ltd	Bronco Energy Pty Ltd Santos CSG Pty Ltd PAPL (Upstream II) Pty Ltd Total E&P Australia III KGLNG E&P II Pty Ltd Australia Pacific LNG (CSG) Pty Ltd
Roma	ATP 631P JV	ATP 631P PLAs 281, 282	Bronco Energy Pty Ltd	Bronco Energy Pty Ltd Santos CSG Pty Ltd PAPL (Upstream II) Pty Ltd Total E&P Australia III KGLNG E&P II Pty Ltd Australia Pacific LNG (CSG) Pty Ltd
Scotia	ATP 803P JV	ATP 803P	Bronco Energy Pty Ltd	Bronco Energy Pty Ltd PAPL (Upstream II) Pty Ltd Total E&P Australia III KGLNG E&P II Pty Ltd
<b>Joint Ventures with AIPN Operating Agreements</b>				
Fairview	ATP 655P JV	ATP 655P	Santos CSG Pty Ltd	Santos CSG Pty Ltd PAPL (Upstream II) Pty Ltd

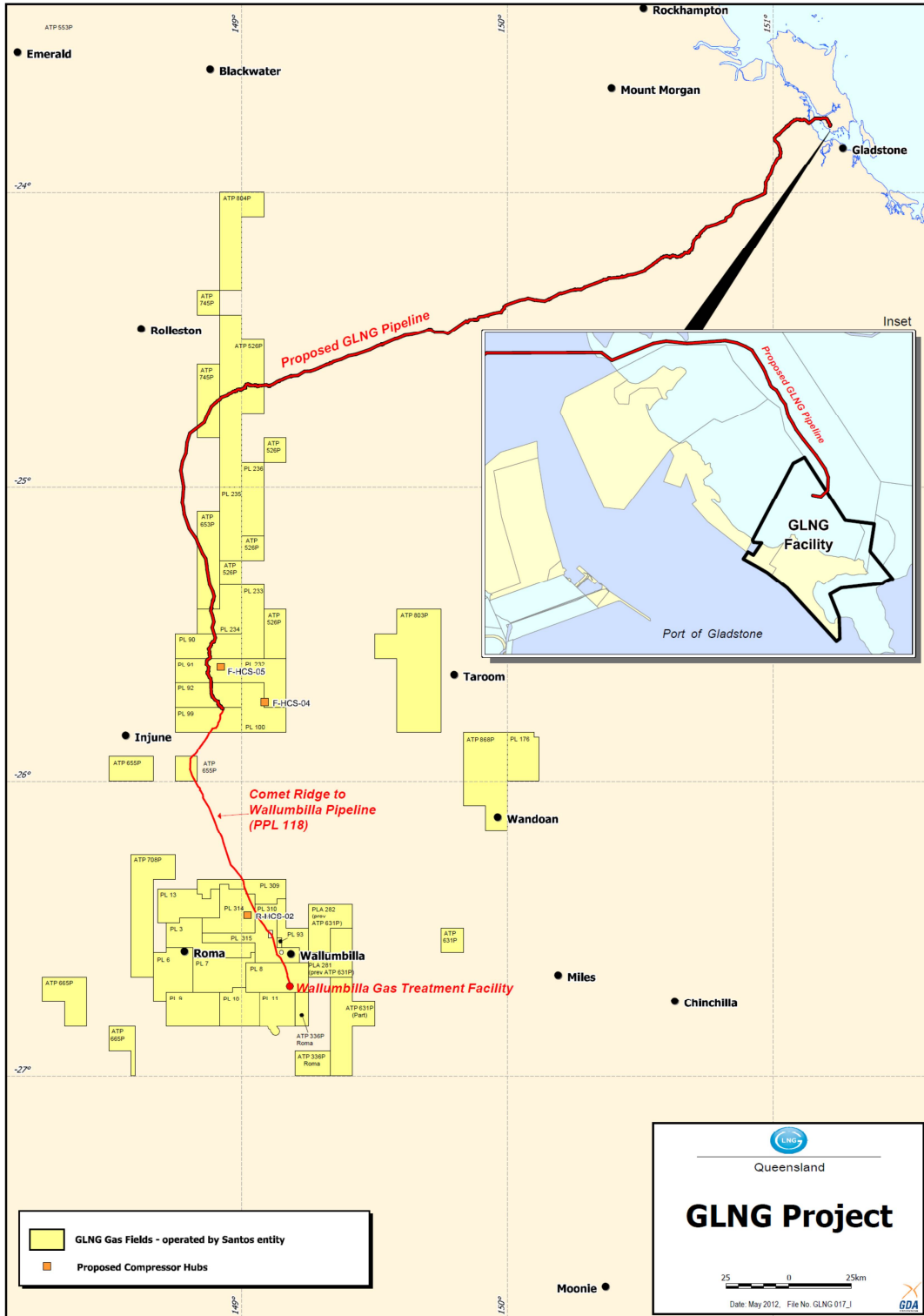


Field	JV	Permits	Operator	Participants
				Total E&P Australia Total E&P Australia II KGLNG E&P Pty Ltd

Field	JV	Permits	Operator	Participants
Roma	Roma JV	ATP 336P  PLs 3, 6-9, 13, 93, 309, 310, 314 and 315 (excludes Waldegrave, Drillsearch and Mascotte)  PLAs 477-480	Santos CSG Pty Ltd	Santos CSG Pty Ltd  PAPL (Upstream) Pty Ltd  Total E&P Australia  Total E&P Australia II  KGLNG E&P Pty Ltd
Roma	PLs 10&11 JV	PLs 10&11  (excludes Waldegrave & Snake Creek East)	Santos CSG Pty Ltd	Santos CSG Pty Ltd  PAPL (Upstream II) Pty Ltd  Total E&P Australia  Total E&P Australia II  KGLNG E&P Pty Ltd
Roma	ATP 708P JV	ATP 708P	Santos QNT Pty Ltd  (These interests will be transferred to Bronco Energy Pty Ltd once third party consents have been obtained.)	Santos QNT Pty Ltd  PAPL (Upstream II) Pty Ltd  Total E&P Australia III  KGLNG E&P II Pty Ltd
Roma	ATP 665P JV	ATP 665P	Santos QNT Pty Ltd  (These interests will be transferred to Bronco Energy Pty Ltd once third party consents have been obtained.)	Santos QNT Pty Ltd  PAPL (Upstream II) Pty Ltd  Total E&P Australia III  KGLNG E&P II Pty Ltd
Scotia	PL 176 JV	PL 176	Santos CSG Pty Ltd	Santos CSG Pty Ltd

Field	JV	Permits	Operator	Participants
				PAPL (Upstream II) Pty Ltd Total E&P Australia Total E&P Australia II KGLNG E&P Pty Ltd
Scotia	ATP 868P JV	ATP 868P	Santos CSG Pty Ltd	Santos CSG Pty Ltd PAPL (Upstream II) Pty Ltd Total E&P Australia Total E&P Australia II KGLNG E&P Pty Ltd

# ANNEXURE 4 – MAP OF GLNG PROJECT INCLUDING GAS FIELDS





# ANNEXURE 5 – DESCRIPTION AND MAP OF PIPELINE

## Description of the Pipeline

The proposed high pressure steel Gas Transmission Pipeline (**GTP**) for the GLNG Project is approximately 420 km in length and has been designed to transport gas from the Coal Seam Gas (CSG) fields at Roma, Fairview and Arcadia Valley area to the proposed LNG Plant on Curtis Island.

The GTP has been designed and will be constructed in accordance with AS 2885.1 – 2007 Pipelines – Gas and Liquid Petroleum as well as other applicable standards and regulations, including the Australian Pipeline Industry Association (APIA 2009) Code of Environmental Practice.

Key engineering and design features of the GTP are provided in Table 1 below.

**Table 1: GTP specification**

Design Element	Preliminary Specification
Length	420 km
Pipeline Route	From Fairview, the pipeline will traverse mostly rural land and numerous ranges. The final 90km of pipeline is to be located within the Callide Infrastructure Corridor Area (CICSDA) and the Gladstone State Development Area (GSDA) followed by a marine crossing to terminate at the LNG Plant on Curtis Island.
External Diameter	1067 mm
Wall Thickness	14.1 mm – 23.5 mm
Line pipe specification	API 5L X70 PSL2
Pipe manufacturing type	Submerged Arc Welded-Helical (SAWH) for majority of pipeline SAWL (Longitudinal Seam) for specified areas; i.e. marine crossing
Factory Coating (external)	Double layer Fusion-bonded Epoxy (DFBE) coating
Factory Coating (internal lining)	Two-part liquid epoxy
Pipe Joint External Coating	Two-part liquid epoxy
Pipeline medium	Sales quality gas
Operational Pressure	Up to 10.2 MPag
Maximum Allowable Operating Pressure (MAOP)	10.2 MPag.
Specified minimum yield stress	485 MPa
Standard Construction ROW Width (for Mainline GTP and Curtis Island GTP sections)	40 m (narrowed to 30 m in sensitive areas).

<b>Design Element</b>	<b>Preliminary Specification</b>
Operational Easement width (for Mainline GTP and Curtis Island GTP sections)	30 m
Minimum depth of cover	In accordance with AS2885.1 & reviewed at Safety Management Study, typically ranging from 750mm up to 3000mm for other locations such as rail crossings.
Corrosion Protection	External coating and impressed current cathodic protection maintained and operated in accordance with AS2885 Part 3.
Non Destructive Testing	100% radiography or ultrasonic testing of welded joints. Hydrostatic pressure testing of completed pipeline to 125 % of MAOP as per AS2885 requirement
Pipeline monitoring system	The pipeline will be remotely controlled from a control room using an ICSS (Integrated Control & Safety System) for control of process parameters & isolation valves.
Main line valves	Main line valve facilities will be located at intervals and used for isolating sections of the pipeline and venting gas to enable maintenance activities or isolation in the unlikely event of an incident
Scraper Launching / Receiving Facilities	Scraper trap facilities will be provided for the launching and receiving of scrapers and ILI tools to permit pipeline cleaning and internal inspection with minimum interference to normal pipeline operation.
Area of disturbance (for Mainland GTP and Curtis Island GTP section)	Approximately 1,750 – 1,850 ha
Hours of operation (construction)	Typically 10 hours a day, 6.00 am to 5.00 pm (with a one hour break), 7 days a week.
Pipeline Life	Design & operations 42 years
Buried Marker Tape (for Mainland GTP section)	Buried marker tape will be placed over the top of the fibre optic cable and the pipeline at specific locations; i.e. MLV stations, river crossings, etc.
Marine Crossing	A segmental lined tunnel (3.4m internal diameter) across the mudflat and the Narrows channel area; i.e Marine Crossing.

## Map of the Pipeline's route





# ANNEXURE 6 – ESTIMATED COST OF REGULATION

## Estimate of Annual Cost of Full Regulation

The estimated cost to the service provider of full regulation is AU\$349,000 – AU\$439,000. This includes:

- one-fifth of the costs of developing and implementing the Access Arrangement and Access Arrangement Information (AU\$79,000 – AU\$92,000);
- the annual costs of complying with the requirements of full regulation (AU\$235,000 – AU\$305,000); and
- one-fifth of other costs incurred over the first five years of full regulation (AU\$35,000 – AU\$42,000).

## Estimate of the initial cost of developing and implementing the Access Arrangement and Access Arrangement Information

Obligation	Description	Amount
<b>Preparation of Access Arrangement and Access Arrangement Information</b>		
	Legal Costs <ul style="list-style-type: none"> <li>• addressing preliminary issues with regulator</li> <li>• preparation of access arrangement including capacity trading requirements, changes of receipt and delivery points, extension and expansion requirements and queuing requirements</li> <li>• preparation of access arrangement information including detailed financial and operational information</li> <li>• preparation of confidentiality guidelines</li> <li>• review and</li> </ul>	AU\$265,000- AU\$300,000

	preparation of submissions in relation to draft determination <ul style="list-style-type: none"> <li>considering and responding to other party's submissions in relation to draft determination</li> </ul>	
	Expert report in relation to appropriate reference tariff	AU\$50,000 - AU\$60,000
	Management costs <ul style="list-style-type: none"> <li>addressing preliminary issues with regulator</li> <li>director's time</li> </ul>	AU\$80,000- AU\$100,000
<b>TOTAL</b>		AU\$395,000 - AU\$460,000
<b>Initial cost amortised over the first five years of coverage</b>		AU\$79,000 - AU\$92,000

**Estimate of the annual cost to the service provider of full regulation**

<b>Obligation</b>	<b>Description</b>	<b>Amount</b>
<b>Marketing staff separate from Associate's related businesses</b>		
	Cost of hiring one and a half additional employees to carry out marketing responsibilities	AU\$165,000 - AU\$200,000
<b>Keeping consolidated and separate accounts</b>		
	Management costs: <ul style="list-style-type: none"> <li>company secretarial</li> <li>maintenance of corporate records</li> </ul>	AU\$20,000 - AU\$30,000
<b>Annual reporting to the AER</b>		

	<p>Legal costs</p> <ul style="list-style-type: none"> <li>• preparation of annual compliance order</li> </ul>	AU\$20,000 - AU\$30,000
	<p>Management costs</p> <ul style="list-style-type: none"> <li>• company secretarial</li> <li>• director's time</li> </ul>	AU\$20,000 - AU\$30,000
	<p>Management costs</p> <ul style="list-style-type: none"> <li>• maintenance of corporate records</li> <li>• director's time</li> </ul>	AU\$10,000 - AU\$15,000
<b>TOTAL</b>		AU\$235,000 - AU\$305,000

**Estimate of other costs incurred over the first five years of full regulation**

<b>Obligation</b>	<b>Description</b>	<b>Amount</b>
<b>Annual tariff adjustment</b>		
	Management costs in relation to the maintenance of corporate records	\$5,000
<b>Access disputes / application</b>		
	Management costs	\$50,000
	<p>Legal costs, including in relation to:</p> <ul style="list-style-type: none"> <li>• addressing preliminary issues with the regulator</li> </ul>	\$70,000 - \$100,000

	<ul style="list-style-type: none"> <li>• preparing submissions</li> <li>• considering and responding to other party's submissions</li> <li>• review and preparation of submissions in relation to the draft determination</li> </ul>	
	Expert costs	\$50,000 - \$75,000
<b>TOTAL</b>		\$175,000 – \$230,000
<b>ANNUAL COST (amortised over the first five years of coverage)</b>		\$35,000 - \$46,000

## **ANNEXURE 7 – ACIL TASMAN REPORT**