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Ian Blayney MLA
Chairman
Economics and Industry Standing Committee
Parliament of Western Australia
Perth, Western Australia, 6000

Dear Chairman,

Inquiry into the Economic Implications of Floating Liquefied Natural Gas Operations

Thank you for your invitation to make a submission to your Inquiry into the Economic Implications of Floating Liquefied Natural Gas ("FLNG") Operations.

Santos

An Australian energy pioneer since 1954, Santos is a leading oil and gas producer, supplying Australian and Asian customers. With its origins in the Cooper Basin, Santos is one of Australia's largest producers of gas to the domestic market and has the largest exploration and production acreage position in Australia of any company. Santos has also developed major oil and liquids businesses in Australia and operates in all mainland Australian states and the Northern Territory.

Santos also has an exploration-led Asian portfolio, with a focus on three core countries: Indonesia, Vietnam and Papua New Guinea.

With over 3,000 employees across Australia and Asia, Santos' foundations are based on safe, sustainable operations and working in partnership with host communities, governments, business partners and shareholders.

Santos runs its WA activities out of its Perth office. It has a significant oil and gas business in WA, which makes a major contribution to the company's earnings and production. Santos' oil operations in WA include the Santos-operated Mutineer Exeter and Fletcher Finucane facilities, as well as major interests in the Stag field, and the Barrow and Thevenard Island joint ventures.

On the gas side of the business in WA, Santos produces exclusively for the domestic market through its John Brookes, Spar and Reindeer fields using the company's processing capacity at Varanus Island and Devil Creek (near Karratha), two of the State's major domestic gas hubs.

Nationally, Santos is the second biggest supplier of domestic gas, accounting for 14.6% of the Australian market, closely following BHP Billiton with 15.6%. According to Energy Quest (August 2013), the company is the third biggest domestic gas producer in WA, providing 17.5% of the State's domestic gas supply.

Santos is also an active explorer in offshore WA, with recent discoveries at Bianchi and Winchester in the Carnarvon Basin, and Crown and Bassett West in the Browse Basin. This exploration program reflects Santos' long-term commitment to growing its WA business and remaining a significant oil & gas player in the region.

FLNG – Stranded Gas

There are three main drivers behind the development of FLNG technology in Australia. The first is 'stranded' gas. This is a reference to gas discoveries considered too remote or not of a size to be developed economically through a pipeline connection back to an onshore processing facility. A 2008 report from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) identified 140 trillion cubic feet of stranded gas in offshore Australia. The Petrel gas field, 250 kilometres west of Darwin in the Joseph Bonaparte Gulf, is a good example of a stranded gas field. It was discovered in 1969 but has remained undeveloped for decades, with conventional technology and infrastructure, such as a pipeline to shore, compression capacity, jetties and an onshore processing plant, making it uneconomic to develop via onshore processing. Santos, together with joint venture partner and project operator, GDF SUEZ, is now aiming to extract and liquefy Petrel gas using FLNG in a project known as Bonaparte LNG, which is in the early stages of determining its feasibility. The industry's ability to develop stranded resources like Petrel through FLNG will deliver substantial economic benefits to Australia, and will most likely prompt further exploration in under-explored but potentially petroleum-rich waters, leading to the discovery of more significant oil and gas fields in Australian waters.

FLNG – Technology

The oil and gas industry has a long history of technological development. It is constantly looking for ways to do things better, using innovation to access hydrocarbons and bring them to market as cost effectively and efficiently as it can. From the 1870s, when Ludwig Nobel revolutionised the industry through the commissioning of the first bulk tanker, bringing the curtain down on the shipping of oil in wooden barrels, to the more recent combination of horizontal drilling and hydraulic fracturing which has changed the face of energy security in the United States, or the advent of deep-water drilling technology which opened up previously inaccessible fields off North and South America, innovation and petroleum exploration and production are long-time bedfellows. The development of FLNG technology is an innovative response to the commercial and technical challenges of developing stranded oil and gas fields.

FLNG – Costs in Australia

Australia's upstream oil and gas industry is currently building almost $200 billion worth of projects, a development phase that Deloitte Access Economics modelling indicates will increase Australian Gross Domestic Product by up to 2.2% per year and deliver around $13 billion a year in royalties and taxes by

2020. According to McKinsey & Company, existing and committed Liquefied Natural Gas (LNG) projects in Australia are expected to contribute $520 billion to the economy over 2015 to 2025.

Driven by growing Asian demand for LNG energy, there is the opportunity for a second wave of LNG investment in Australia. McKinsey & Company puts the potential capital expenditure of those LNG projects, still on the drawing board, at more $180 billion, which would contribute an additional $320 billion to economy. However, according to McKinsey & Company, the cost of building new LNG projects is now about 20% to 30% higher than that of the competition in North America and East Africa, and Australia's uncommitted LNG projects risk going no further than the planning stage.

Unless Australia's higher costs can be contained and, indeed, reduced, the opportunity to meet the growing demand for gas from Asia will be missed. However, one lower cost option is FLNG. In the absence of lower cost options, there is the real risk that in many cases the gas will stay in the ground and Asian demand will be met by our competitors.

Australia is not the only country striving to supply Asia's growing demand for gas. The LNG market is already a competitive one, and there are new suppliers emerging including the US, Canada and East Africa. In the US, the boom in shale gas development has seen that nation begin a shift from LNG importer to major exporter (to date, two US projects have full export authorisation, another two have received Department of Energy approval). If Australia is going to compete successfully for new Asian demand, it must meet the cost challenge. Wood Mackenzie estimated the proposed onshore James Price Point LNG project had a plant capital expenditure alone of US $2,500 per tonne, compared to the current global average cost for greenfield LNG plant development of US $1,200 per tonne. FLNG is estimated to have a capital expenditure of $1,700 per tonne, making it a far more attractive investment proposition, when compared to the current cost for onshore developments in Australia.

Local Opportunities

Bonaparte LNG is currently in its pre-Front End Engineering and Design (pre-FEED) stage of development, so an analysis of its economic impact is yet to be completed. Assuming the project progresses to a Final Investment Decision (FID) in the years ahead, the floating facility will be constructed in Korea, one of only a few places in the world with the ship yard capacity to construct a facility of this size. However, the overall management of the project, the drilling of the wells, the installation of the subsea facilities and the onshore support in Darwin will involve Australian labour, goods and services.

In addition to the opportunities for Australian businesses during the construction and installation stage of the project, the more lasting benefits will come with the service and maintenance work that is required for the 25 year operating life of an FLNG project. Bonaparte LNG expects to spend many billions of dollars on local goods and services during the life of the project.

A good example of the local opportunities, although on a much smaller scale, is the recently completed Santos-operated Fletcher Finucane oil project, in the Carnarvon Basin. The $490 million project went from discovery to first oil in just under two years. Santos estimates that around 60% of the project value was awarded and carried out by local suppliers. Consistent with its procurement policy, Santos provided full, fair and reasonable opportunity for local businesses to participate in the development, in particular:

- A project Procurement and Contracting Strategy Document was written and processes established in line with Santos' Local Industry Participation Policy;
- Specific wording was included within the Invitation to Tender (ITT) documentation requiring all tenderers to provide details of local content and where possible to use local suppliers for the services requested;
- ITT documentation was issued to known local suppliers;
- Contracts were awarded to local suppliers who were technically, commercially and contractually compliant, and
- Local labour was used for performing services, in particular for project management, offshore drilling and installation campaigns and associated logistics activities.

Domestic Gas

We note the Inquiry's request for Santos' view on current and future domestic gas supply and pricing in WA. Santos has invested heavily in supplying the domestic gas market in WA (at present the company has no LNG interests in WA) and now holds a significant position in two of the State's four domestic gas hubs, Varanus Island and Devil Creek. This investment was brought about by the right market conditions, namely gas demand and gas price, and has been completely independent of WA's domestic gas reservation policy. However, Santos continuously analyses the impact large volumes of reservation gas from the State's LNG projects will have on the domestic gas supply-demand balance as the company continues to explore for, and ultimately develop, gas fields to supply the domestic market. Government should not rely on the sanction of future LNG projects (onshore or otherwise) to provide domestic gas supply through any domestic market obligation. Such an approach runs the risk of reducing the State's energy security as Australia's high cost base or competition from new cheaper LNG supply regions might defer or terminate any planned LNG projects in WA (and their associated domestic gas obligations would not materialise). Likewise the threat of large supplies of domestic gas coming from potential LNG projects may deter the development of those gas fields more suited to domestic supply.

The main drivers for the Santos' major investment in the $1 billion Devil Creek plant were the right domestic market demand and gas price, which underpinned the investment decision. The right market conditions, namely demand and price, stimulated significant investment in shale oil and gas development the United States, which led to the so-called 'shale gale' and turned the nation from a gas importer to imminently a gas exporter. Government has an important part to play in removing impediments to investment and providing an internationally competitive and attractive investment environment.

Current market conditions

Energy Quest states that WA conventional domestic gas production in the 12 months to end of June 2013 was 343.5 PJ, only 0.9 % higher than it was five years earlier (340.5PJ). Domestic gas production reached 347.7 PJ in the 12 months to end of June 2010 and has since declined. According to Energy Quest, "over this period, WA has experienced exceptionally strong economic growth but this has not been reflected in domestic gas production, notwithstanding low gas prices." According to Bureau of Resources and Energy Economics (BREE) statistics, this levelling off in gas demand reflects a drop in gas-use in manufacturing (largely aluminium) and flat gas-use in power generation (more coal and renewables), though offset by higher mining demand (iron ore production).

Future market conditions

In its first Gas Statement of Opportunities document (July 2013), the Independent Market Operator forecast, for the period 2013 to 2022, strong annual growth for WA domestic gas supply of 3.7%, while domestic gas demand is expected to grow by only 1.1% per annum. According to Energy Quest, given that WA's domestic gas demand has not grown in five years, notwithstanding low gas prices and a booming mining sector, even growth of 1.1% per annum might be optimistic.

By 2018, WA will have more domestic gas processing facilities than any other State in Australia. The projected installed domestic gas capacity will be nearly double the expected daily demand. This excess capacity provides a great platform for future commercialisation of small to medium sized resources suited to the domestic market.

WA's LNG infrastructure is well positioned for expansion or backfill, with the attendant possibility for associated domestic gas production. However, even with these sunk-cost advantages, stakeholders cannot afford to be complacent. It is not the prospect of FLNG in WA waters that risks constraining future supplies of domestic gas but the same pressures that preference resource development through FLNG – costs and buyer price expectation. It is imperative that domestic gas sellers and buyers engage in sensible conversation on price in order that the resources can be developed and brought to market in a timely fashion. The current cost environment and smaller, often more technically challenging gas resource make it impossible to offer gas at yesteryears' prices.

The Devil Creek development, which was formally opened in February 2012, is a recent demonstration of Santos' commitment to supplying the WA domestic gas market, and the company remains alert to opportunities to develop smaller gas fields, fields which would be insufficient to underpin an LNG development, either through its own processing capacity or that of a third party.

Conclusion

Santos is of the view that FLNG is an innovation that will grow in its application across the world, and Australia is at the forefront of this technological breakthrough, with the opportunity for Darwin and/or Perth to become centres of excellence for this technology. That said, when evaluating development concepts for offshore discoveries, Santos considers the full range of options for supplying either the domestic or export markets including greenfield onshore development, brownfield developments (i.e. backfill or expansion of existing infrastructure), as well as FLNG.

Yours sincerely

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