



New South Wales Government

Independent Planning Commission

By email: ipcn@ipcn.nsw.gov.au

21 August 2020

Dear Commissioners,

RE: Public Comment on the Santos Report titled 'Submission to IPC Following Public Hearing' provided by the Applicant on 10 August 2020

Please find below our comments in response to the above report provided by Santos in relation to the Narrabri Gas Project ("NGP").

1. Introduction

Who we are

SAPGen Pty Ltd is a family owned business specialising in developing renewable and hybrid energy power stations, including Gas Power Generation ("GPG").

We recently received Development Approval from the South Australian Government to construct and operate a 422MW Hybrid Power station located regionally in South Australia and to be known as the 'Summerfield Power Station'.

This project comprises 380MW of Combined Cycle Gas Turbines, a 30MW Battery Energy Storage System and 12MW of Solar. Total capital cost of this project is expected to be in the vicinity of \$600m to \$650m.

This power station has been designed in conjunction with our technical partner GE Power and would be the first of its kind in Australia. It has been specifically designed to support the growth of renewable energy generation by providing firm dispatchable power to the grid when the output of renewable generators reduces and/or when demand for grid power peaks.

We expect the project to reach Final Investment Decision in late 2021 and be operational by early 2023.

Connection to Narrabri

SAPGen is majority owned by three brothers Ben, Tim and Matthew Lee who were raised on a farm near Gunnedah NSW.

Prior to establishing SAPGen we were business owners of a pumping and irrigation business in Gunnedah and served many customers in the Narrabri region including Narrabri Shire Council.

Matthew resides in Gunnedah itself, with Tim and our parents residing on the family farm near Mullaley, with Ben residing in Tamworth. We have 2 Santos exploration holes closely located near our family farm, one being approximately 500 metres from our front gate, and the second approximately 5kms away.

The farm has been in our family for 4 generations and we hold no concerns over the fact there may be future gas development in direct proximity to us nor that it may impact our farming operations or our lifestyle in a negative way.

Our Experience with Gas and the Energy Market in Australia

We have spent the past two years working with several independent experts to progress our Summerfield Project to the point of receiving formal Development Approval in June 2020. We are also in the advanced stages of a capital raise process to raise the required funds to construct the project.

We believe this experience gives us a solid understanding of the technical and theoretical factors that drive the energy market and impact of GPG in the National Electricity Market. It also means we have direct current knowledge of the gas market as well as how the electricity market (i.e. customers) views Gas Powered Generation and its impact on the energy market.

A summary of reports/investigations completed by independent experts for our Summerfield project is outlined below.

- Planning Approvals - AECOM
- Environmental Impact Statement (including emissions/noise/water etc) - AECOM
- Technical design – GE Power
- Impact on the Grid (system security & reliability) – Electranet/Independent Consultant
- Impact on competition in the electricity market (of our project being built) – Big 4 Firm
- Impact of coal closures on electricity prices - Big 4 Firm
- Forecast utilisation of gas-powered generation - Big 4 Firm
- Market demand for gas powered generation - Big 4 Firm
- Market supply of gas - Big 4 Firm

Our commercial and market analysis has been completed by a Big 4 Accounting firm, our technical design work has been completed by GE Power, and our planning/environmental works have been completed by AECOM.

Most of these reports are commercial in confidence, but we will reference specific parts of these reports in our submission. If the Commission would like to review certain information, we would be open to discussing how we can share this information with the commission whilst retaining commercial confidentiality.

How does our SA Experience Correlate to NSW and specifically the proposed Narrabri Gas Project?

The electricity market on the East Coast of Australia is effectively a national market i.e. the National Electricity Market (“NEM”) hence the issues around competition, price, security, and reliability, cross state borders. Equally the gas market is an East Coast market, so gas supply, access, and pricing are issues that cross state borders.

We believe that the work we have completed in South Australia is very relevant to the NSW electricity and gas market, and subsequently the NGP.

2. SAPGen Response to Santos, ‘Submission to IPC Following Public Hearing’ 10 August 2020

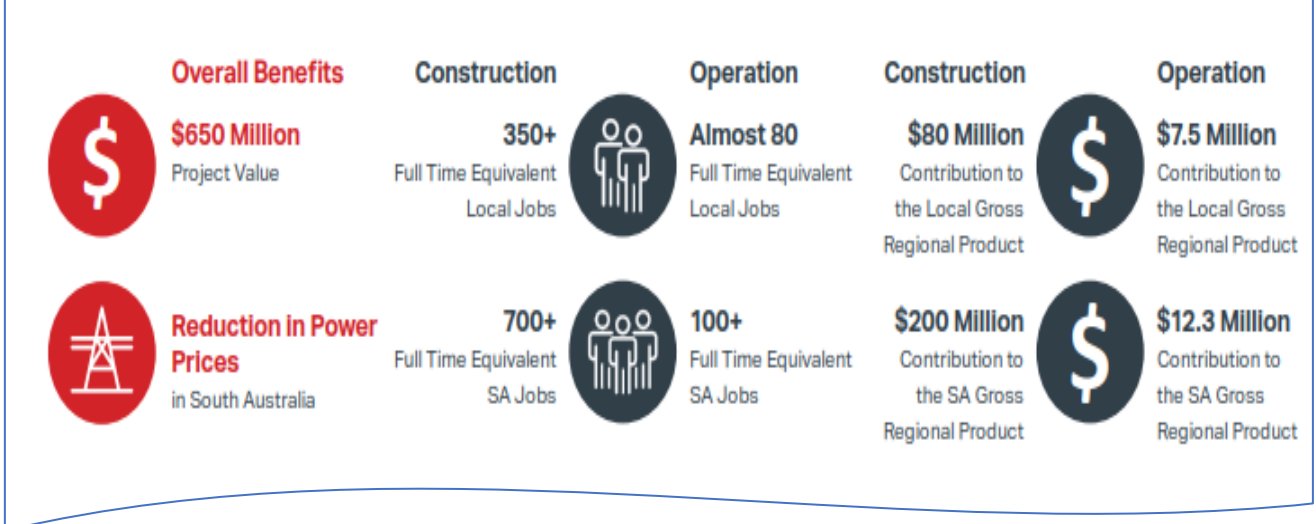
For ease of reference we have selected specific statements made by Santos in the above report and included our comments directly related to each Santos statement. Our comments are not meant to be an exhaustive review of the Santos report. We have attempted to focus on key parts of the Santos report where we believe we have relevant knowledge or experience to allow us the liberty to make relevant comments.

For the avoidance of doubt, when we refer to “energy” we are referring to both pure gas supply in terms of the gas market, and electricity generated from gas powered generation sources.

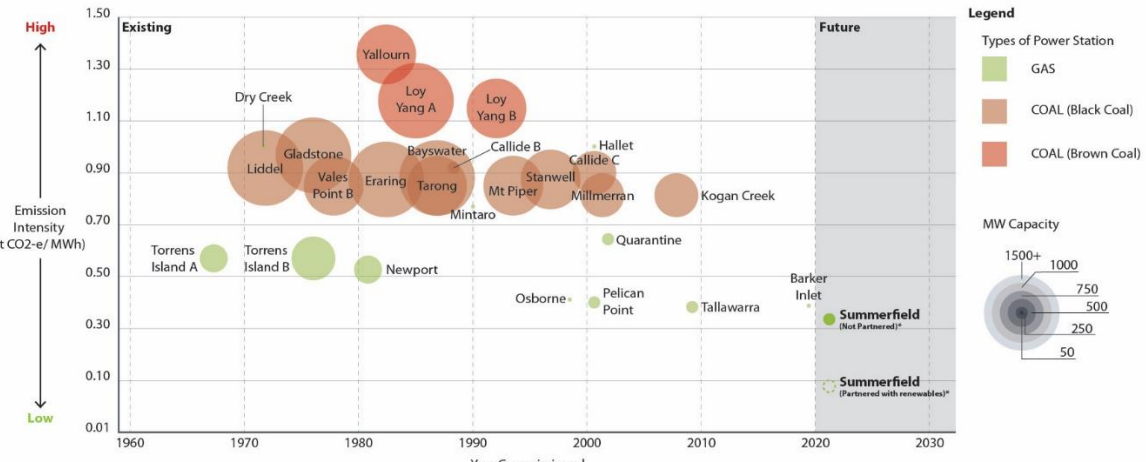
Santos Statement	Section of Report	SAPGen Comment
The Narrabri Project... “is critical for energy security and reliability...”	Executive Summary	<p>AEMO in their 2020 Integrated System Plan reference the need for Gas Powered Generation (“GPG”) in the NEM. Further the AEMO CEO reiterated this view in an article in the Australian Financial Review on August 18 when she stated.</p> <p><i>“With two thirds of Australia’s coal plants retiring in the next 20 years, we know that a portfolio of large scale variable renewable resources, rooftop solar, firmed up with storage and fast-start gas plants and supported by targeted, cost-effective network investments, will deliver the most affordable energy future”</i></p> <p>Put simply, in our experience the most important factor in planning to construct a new GPG project is availability and price of gas. SAPGen believes that the NGP will be critical to ensuring that the required volume of gas is available to GPG projects and at an economical price making future GPG projects economically viable.</p>
The Project has the potential to supply up to 200 terajoules of natural gas per day, which is sufficient gas	Section 1, page 5	<p>An additional 200 TJ of gas each day would sufficiently add to liquidity in the NSW Gas market which if we simply apply market law of supply and demand should put downward pressure on gas prices.</p> <p>In a GPG project gas input costs can comprise up to 90% of the annual operating expenses of the project.</p>

Santos Statement	Section of Report	SAPGen Comment
to meet up to half of NSW's natural gas demand		In very simple terms for every \$ the gas price reduces, GPG projects become more economically viable and we have a significant amount of data available to support this assertion.
A growing component of energy demand will need to be met by natural gas supply to complement renewables growth and battery storage in Australia as ageing coal-fired power plants close over coming decades	Section1, page 5	<p>SAPGen has worked closely with renewable developers in South Australia and NSW on developing GPG projects to complement renewable assets.</p> <p>Our research indicates that each 100MW of GPG can provide dispatchable firm back up to an additional 400MW (potentially greater) of wind powered generation. This combination allows renewable energy generators to offer firm supply contracts to their customers and reduce spikes in energy prices during peak demand periods or when renewable generators are not generating.</p> <p>We are presently in discussions with renewable asset owners looking to secure offtake from our South Australian GPG plant to allow them to expand their renewable generation asset base and see similar demand in NSW for GPG to support renewable generation growth.</p>
Because of Santos' commitment that all the gas produced from the Project will be available for the domestic market, a new competitive source of supply close to Sydney is expected and this will lead to more competitive prices on long term gas contracts,	Section 2, page 7	<p>SAPGen has been in discussions with gas suppliers for our Summerfield project for approximately 12 months. Clearly the gas market has changed considerably in recent months due to Covid, but hopefully once a vaccine is found this market will normalise in the coming years.</p> <p>Long term gas supply contracts are essential to developing new GPG projects. Our experience is that pre-Covid, securing long term gas supply contracts was difficult given the limited availability of gas in the East Coast market.</p> <p>Our experience in discussing long term gas supply contracts gives us confidence that an additional 200TJ of gas into the NSW domestic market would increase the availability of long term gas supply contracts for GPG assets or industrial users, which is a critical factor in the economic case for new GPG or any industrial user of gas.</p> <p>Feedback from investors is that to fund new GPG or industrial projects, gas contracts of 5-10 years are required, to give the project financial certainty. We believe that NGP will considerably increase the number of these long-term contracts in the east coast has market.</p>

Santos Statement	Section of Report	SAPGen Comment
particularly into the late 2020s and 2030s		
The Project will offer large volumes of gas on long term contracts. This has been difficult in recent times due to the tightness in supply and the lack of competition	Section 2, page 7	<p>SAPGen’s recent experience as a large customer negotiating with suppliers in the East Coast gas market supports this statement.</p> <p>Based on our current experience we are confident that with the NGP’s significant increase in supply of gas, the availability of long term has contracts for gas consumers whether they be industrial clients of GPG assets will increase.</p>
This Project will create more jobs than previously estimated due to the economic restrictions placed on the previous model – the number of jobs created is 17 per cent higher (a total of 222 jobs) in the Moree-Narrabri region than in the NGP EIS and 78 per cent higher for NSW (a total of 912 jobs).		<p>SAPGen engaged an independent firm to complete an investigation and report into the jobs that our Summerfield project would create. We would like to highlight the key numbers from this report for the sake of comparison to NGP.</p> <p>Our analysis indicates that on a \$650m project we could generate up to 350 + local FTE jobs during construction and 700 + FTE statewide jobs and 80 local FTE jobs once operational.</p> <p>Santos have cited 222 local jobs out of the NGP which we believe seems conservative given the scale of the NGP is considerably greater than our Summerfield project.</p>

Santos Statement	Section of Report	SAPGen Comment
		 <p>Overall Benefits</p> <ul style="list-style-type: none"> \$650 Million Project Value 350+ Full Time Equivalent Local Jobs Almost 80 Full Time Equivalent Local Jobs \$80 Million Contribution to the Local Gross Regional Product \$7.5 Million Contribution to the Local Gross Regional Product <p>Reduction in Power Prices in South Australia</p> <ul style="list-style-type: none"> 700+ Full Time Equivalent SA Jobs 100+ Full Time Equivalent SA Jobs \$200 Million Contribution to the SA Gross Regional Product \$12.3 Million Contribution to the SA Gross Regional Product
<p>Natural gas is the natural partner for renewable energy power generation as Australia and the world transitions towards a low-carbon economy. Gas is not considered a replacement for renewables but is</p>	<p>Section 3, page 9</p>	<p>Our experience in South Australia has shown considerable interest from renewable asset operators to contract with GPG to allow them to offer firm electricity contracts to consumers, hence it is not a case of either renewable or GPG but rather a case that in our current experience the market is already moving to recognise the need for both generation sources to work together in partnership.</p>

Santos Statement	Section of Report	SAPGen Comment
<p>required to complement renewables growth in solar and wind in Australia, which is intermittent.</p>		
<p>Fuel switching to natural gas for electricity generation can deliver an improvement in emissions intensity of the electricity grid</p>	<p>Section3, page 9</p>	<p>As part of our feasibility and planning work for our Summerfield project we have undertaken a comparison of a combined cycle gas plant emissions v other traditional generation types, as well as when used as a partner to renewable energy generation.</p> <p>When operating as a stand-alone plant Summerfield will emit approx. 0.30 Tonne of Co2 per MWH of electricity produced, which is a reduction of up to 80% in Co2 per MWH when compared to existing coal generation.</p> <p>When gas is combined with renewable energy to provide firm power to consumers and industry the emission levels drop to as low as 0.10 tonnes Co2per MWH, a reduction of up to 90% v traditional coal.</p>

Santos Statement	Section of Report	SAPGen Comment
		<p data-bbox="728 395 1429 419">Australian (NEM) Power Generation Station Performance Comparison 2018-2019</p>  <p data-bbox="728 438 1870 901"> Legend Types of Power Station ■ GAS ■ COAL (Black Coal) ■ COAL (Brown Coal) </p> <p data-bbox="1702 646 1870 805"> MW Capacity 1500+ 1000 750 500 250 50 </p>
<p data-bbox="192 930 488 1383">Gas power generation is expected to continue to provide a reliability and security role to complement renewable generation in the National Energy Market according to forecasts by the AEMO and State and Federal Government policy</p>	<p data-bbox="488 930 689 997">Section 3, page 10</p>	<p data-bbox="689 930 2072 997">As part of our South Australian project we have engaged with regulators and State and Federal Governments directly on this point.</p> <p data-bbox="689 1029 2072 1141">We have received written confirmation from senior levels of the South Australian Government including the South Australian Energy Minister confirming that the introduction of new GPG sch as Summerfield is critical to supporting the South Australian Government’s strategy of growing renewable energy generation.</p> <p data-bbox="689 1173 2072 1220">To quote the South Australian Energy Minister, the Hon Dan van Holst Pellekaan MP.</p> <p data-bbox="689 1252 2072 1383"><i>“Your project will provide various benefits to the state including improving the reliability of the power system through the fast start dispatchable gas power plant and battery storage. It should also improve grid stability through its ability to respond quickly to variations in grid voltage and frequency. In particular, with increasing volumes of renewable technology, South Australia needs modern and flexible generators to replace ageing</i></p>

Santos Statement	Section of Report	SAPGen Comment
		<p><i>generators whose retirement has been flagged to the market. South Australia is an ideal location to demonstrate the capability of this technology.”</i></p> <p>The NSW Energy Minister recently validated his South Australian colleagues view by supporting a Hybrid Gas/Battery project with State Government financial support under the NSW Emerging Energy Program. This program supports the development of innovative large-scale electricity generation and storage projects which enhance electricity system reliability and security in NSW</p> <p>2016 South Australia Blackout</p> <p>South Australia suffered from a well-publicised statewide blackout in 2016.</p> <p>GE Power have analysed this event in a 2019 paper (“Peaking Plant Applications”) with their commentary below.</p> <p><i>“During the month of September 2016, torrential weather resulted in transmissions lines and pylons being damaged in the South Australian region, causing a contingency event on the grid due to voltage depressions below allowable limits based on protection settings of various wind farms. This caused certain wind farms to be disconnected from the grid, resulting in a shortfall of power generation in the region, which then resulted in the trip of the Victorian interconnector due to overload (650 MW peak import limit), as too much power was being imported from the Victorian grid instantaneously to replace the shortfall of wind generation within the South Australian region.</i></p> <p><i>Historically, in such events, spinning synchronous generation technologies such as gas and coal generation would suppress the rate of change of frequency when the Victorian interconnector was disconnected, hence allowing enough time for load shedding to automatically take place in the South Australian region to avoid a complete system blackout. However, with the South Australian region heavily reliant on renewable energy generation during the contingency event which could not supply the equivalent amount of inertia, the rate of change of frequency exceeded the response capability of load shedding systems to avoid a system blackout.</i></p>

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		<p><i>Since the South Australian event in September 2016, many measures have been taken to increase grid stability and to allow better management of grid events whilst still maintaining high levels of renewable energy generation. This includes, battery storage systems, fast start peaking and grid firming dispatchable power plants, which have made the South Australian network more resilient against state-wide blackouts.</i></p> <p><i>This change in electricity supply dynamics is envisaged to occur in the Victoria and New South Wales regional segments based on the forecasted renewable energy penetration in those regions, based on similar renewable energy targets as South Australia. The learnings from the South Australian region are being discussed and applied to other regions in Australia to ensure grid resilience during the transition to a high renewable energy grid. The lessons learned, and measures taken, are applicable to other regions around the world, that are also forecasted to be heavily reliant on renewable power generation. The result of this is the emergence of the peaking, grid firming, and energy storage segment.”</i></p>
<p>Gas power generation is expected to continue to provide a reliability and security role to complement renewable generation in the National Energy Market according to forecasts by the AEMO and State and Federal Government policy (AEMO 2020 ISP, AEMO 2020 Gas</p>	<p>Section 3, page 9</p>	<p>We have received multiple independent reports and advice that our SA project will contribute to system security and reliability in the NEM by the provision of inertia and frequency control.</p> <p>This confirmation includes a certificate of compliance from the SA Office of the Technical Regulator. We have also held early discussions with AEMO and confirm that our GPG would be critical for supplying System Restart Ancillary Services (“SRAS”) in the NEM. SRAS means the ability of a generator to perform a ‘black start’ after a failure in the grid - to then ‘re-start’ the grid.</p> <p>To provide this critical SRAS fail-safe service to the grid the generator in question must be able to re-start even if the grid is completely offline, or ‘black’. GPG will play a critical role in providing this fail-safe service to the NEM as coal fired plants continue to retire.</p>

Santos Statement	Section of Report	SAPGen Comment
Statement of Opportunities)		
<p>Gas is not considered a replacement for renewables but is required to complement renewables growth in solar and wind in Australia, which is intermittent. Similarly, battery storage is currently suitable for short term backup supply but cannot sustain the NSW electricity grid for extended durations.</p>	<p>Section 3, page 9</p>	<p>We have undertaken independent analysis analysing the impact on the forecast closure of coal plants and the ability of renewable generation to not only fill the supply gap, but also provide system security services to the NEM currently provided by coal generators.</p> <p>Our findings indicate that GPG will be required as coal retires from mid-2020's onward to provide dispatchable power in the NEM.</p> <p>The prevalence of GPG will occur in parallel to renewable generation and not instead of it.</p> <p>Further, our research indicates that if coal fired power station closures are brought forward from their current advertised dates, which we believe is highly likely, then this only increases the need for GPG to fill the gap in dispatchable power that cannot be met by renewable energy alone.</p>

Conclusion

This paper is designed as a brief commentary to the IPC in response to the Santos Paper dated 10 August and is based on our very recent and current experience developing a GPG in South Australia and the related exposure to the NEM and East Coast Gas market this brings.

If the commission would like further details around any of our comments made, we would be open to discussing a way of sharing information that is commercially sensitive but may assist in the commission's deliberations.

Finally we would like to re-iterate the fact that we are local residents who live in the Gunnedah region with Santos wells near our family farm and we are supportive of the Narrabri Gas Project.

Yours Sincerely,



Ben Lee

Managing Director

Matthew Lee

Director