

21 August 2020

Commissioners, thank you for the opportunity to comment further on Santos and Department of Planning, Industry and Environment (DPIE) additional material dated 10 August 2020 and 14 August 2020, respectively. I previously lodged a submission to the IPC Panel on the Narrabri Gas Project (NGP) on 7 August 2020.

CLIMATE CHANGE IMPACTS

DPIE SUBMISSION

The DPIE submission made the following statement in relation to climate impacts (page 4):

- project would not generate significant greenhouse gas emissions either incrementally or in a cumulative sense, particularly when you consider that it would be used to sustain existing gas use in East Coast gas market which has been occurring for decades, and is likely to be more than offset by a range of other initiatives in NSW that are being pursued by the State and Commonwealth governments as well as the private sector. This includes the forecast closure of all of NSW's existing coal-fired power stations in the life of the Narrabri Gas Project and the transition to an energy market dominated by renewable energy as outlined in the recent release of the Australian Energy Market Operator's *Integrated System Plan 2020*.

In response:

- With 95% of NSW gas presently supplied from other states, NSW presently has limited Scope 1 (direct emissions) and Scope 2 (electricity consumption) emissions related to upstream gas production. Irrespective of whether Scope 3 (end gas use emissions) represent 'existing gas use' in NSW, the NGP upstream emissions, of between 960,000 to 1,250,000 tCO₂e, will be 'new' to the NSW GHG inventory. By Santos's own calculations, the estimated "social cost" of this carbon in its updated Benefit Cost Analysis (BCA) is between AUD \$164 – \$257 million.¹
- The introduction of NGP Scope 1 and Scope 2 to the NSW inventory are significant relative to:
 - The emissions cuts that NSW and Australia need to achieve annually to meet 2030 emissions targets under the Paris Climate Agreement. Former Australian Chief Scientist, Professor Penny Sackett, noted the annual Narrabri Gas Project Scope 1 and 2 emissions represent 26-44% of NSW required annual cuts, and 14-18% of Australia's annual required cuts, *in the wrong direction*. Despite the DPIE's assertions, no "specific" offset of these emissions is identified, in the sense described by Chief Justice Preston in the Rocky Hill decision (described below).
 - LNG import – Take for example the approved, AIE LNG Terminal at Port Kembla. If constructed, the import terminal is estimated to emit around 3.5%-4.5% of the estimated annual Scope 1 and 2 emissions of the Narrabri Gas Project, while having the ability to deliver the majority of NSW gas supplies. The AIE EIS estimates around 8,314 tCO₂e will be emitted during construction; and thereafter 44,145 tCO₂e each year during operations² - this compares to 960,000 to 1,250,000 tCO₂e annual emissions of the NGP. All other factors being equal (i.e., the Scope 3 emissions from the 'end use' of the gas), this constitutes a significant amount of 'new' Scope 1 and 2 emissions that are able to be avoided in NSW *to achieve broadly the same outcome*. (This is not to overlook ACIL Allen comments made in Santos's additional material, regarding the variance in potential customer base between imported versus local gas, discussed below.)
- Regarding the DPIE's commentary that Narrabri emissions "is likely to be more than offset by a range of other initiatives in NSW that are being pursued", including "closure of all of NSW's existing coal-fired power stations in the life of the Narrabri Gas Project and transition to an energy market dominated by

renewable energy”, I refer the IPC panel again to Chief Justice Preston’s decision in Rocky Hill (Gloucester Resources Limited v Minister for Planning [2019] NSWLEC 7). The Court found:

- “Reductions in GHG emissions by other sources” was not an acceptable argument for the “increase in GHG emissions associated with the Project”. Justice Preston rejected the argument because there was “no evidence before the Court of any specific and certain action to “net out” the GHG emissions of the Project”. He wrote (para 529): *“A consent authority cannot rationally approve a development that is likely to have some identified environmental impact on the theoretical possibility that the environmental impact will be mitigated or offset by some unspecified and uncertain action at some unspecified and uncertain time in the future.”*³
- Additionally, Justice Preston found, the *“possibility of abatement unrelated to the Project [was] not relevant”*. He wrote: *“A consent authority, in determining an application for consent for a coal mine, is not formulating policy as to how best to make emissions reductions to achieve the global abatement task. The consent authority’s task is to determine the particular development application and determine whether to grant or refuse consent to the particular development the subject of that development application. Where the development will result in GHG emissions, the consent authority must determine the acceptability of those emissions and the likely impacts on the climate system, the environment and people. The consent authority cannot avoid this task by speculating on how to achieve “meaningful emissions reductions from large sources where it is cost-effective and alternative technologies can be brought to bear” (Fisher Report, [13]). Such emissions reductions from other sources are unrelated to the development that is the subject of the development application that the consent authority is required to determine.”*

The DPIE, in its response to the IPC, is specifically asking the IPC panel to consider the theoretical possibility that offset actions unrelated to the project (i.e., the closure of coal-fired generation forecast for late 2020s and 2030s and the related uptake in renewable energy via NSW Renewable Energy Zones (REZ)) are acceptable for justifying Narrabri Gas Project emissions. This is directly contradictory to Justice Preston’s decision.

The REZ, and the AEMO Integrated System Plan (ISP) 2020, are also irrelevant as a justification for NGP emissions (though they are relevant to demonstrating that lower-emission and lower-cost energy alternatives to NGP exist). They are not “offsets”—they are a means of transitioning NSW away from dependency on coal.

The AEMO Integrated System Plan 2020, while charting a path to a renewable energy dominated market, holds a limited legal status that makes it actionable; i.e., changes to the National Electricity Market rules and associated rules (effective from 1 July 2020) provide a means for ‘identified’ projects under the plan to expediate assessment under regulatory test for transmission (RIT-T). The RIT-T requires a cost benefit analysis (CBA) that transmission businesses must perform and consult on before making major investments in their networks. Commentators have noted that the RIT-T CBA is very narrow and modelling sensitivities can skew conclusions and thus “have a disproportionate effect on the choice of best development path”⁴. In other words, the ISP presents a likely, but not guaranteed, future path. This adds further weight to the fact that, per Justice Preston’s Rocky Hill decision, these “theoretical possibilities” are not relevant.

SANTOS SUBMISSION – APPENDIX B OPINION OF RICHARD LANCASTER SC

Further to the above, both DPIE and Santos responded to the ‘proposition’ that ‘there should be no new approvals for fossil fuel developments.’ In his opinion, Mr Lancaster SC wrote:

Climate Change

68. I am asked to address the proposition advanced by some objector submissions concerned with climate change that the IPC should adopt a position that there should be no new approvals for fossil fuel development.

72. The contention that there be no new fossil fuel developments approved was raised and rejected in *Rocky Hill*. In *Rocky Hill*, the contribution that the GHG emissions of the proposal would make to climate change was not the essential reason for refusal. The significant unacceptable planning, visual and social impacts of the proposed development in that case were by themselves considered to be sufficient reasons to refuse the application.⁴⁰ In considering the ‘carbon budget’ approach, the Court described this as a “policy decision” and held that “*the better approach is to evaluate the merits of the particular fossil fuel development that is the subject of the development application to be determined*”.⁴¹

In response:

The Court also wrote (para 555):

Other things being equal, it would be rational to refuse fossil fuel developments with greater environmental, social and economic impacts than fossil fuel developments with lesser environmental, social and economic impacts. To do so not only achieves the goal of not increasing GHG emissions by source, but also achieves the collateral benefit of preventing those greater environmental, social and economic impacts.⁵

As Mr Lancaster notes above, the Court found that other social and environmental impacts were ‘significant and unacceptable’ and the project ‘should be refused for these reasons alone’. The Court found (para 556):

Refusal of consent to the Project would prevent a meaningful amount of GHG emissions, although not the greater GHG emissions that would come from refusal of a larger coal mine. ... The GHG emissions of the Project and their likely contribution to adverse impacts on the climate system, environment and people adds a further reason for refusal. Refusal of the Project will not only prevent the unacceptable planning, visual and social impacts, it will also prevent a new source of GHG emissions.

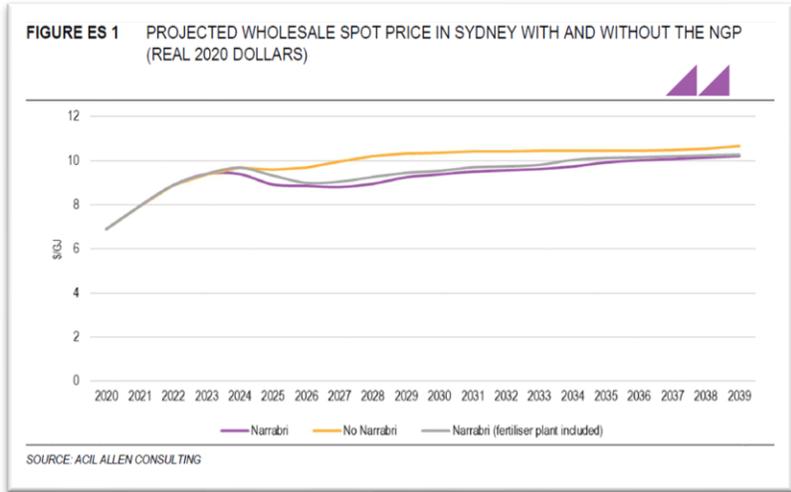
Substantial existing gas is present in Australian and International markets. Obviously, a consideration is cost, which in turn drives benefits, which is discussed below. However, ‘other things being equal’, and contrary to the DPIE’s assertions, developing Narrabri would be an exploitative—rather than sustainable—use of resources. Viable alternatives with fewer environmental and social impacts, including lower emissions, exist.

PROJECT NEED AND BENEFITS

SANTOS SUBMISSION - APPENDIX A ACIL ALLEN

INFLUENCE ON GAS PRICE

The ACIL Allen report presents that, based on the scenarios modelled, the NGP has a potential 4%-12% benefit to Sydney gas prices not including the fertiliser plant option, or a 3%-9% benefit if the fertiliser plant were to proceed. This is an extremely modest benefit with a high level of uncertainty, based on: the unverified inputs from the proponent, the scenarios modelled, and the timing of the said benefit being “the late 2020s and early 2030s” (Figure ES1).



Note that under this modelling scenario, the dispatch of 20% of gas output from the NGP under a long-term contract has the effect of reducing the potential benefit to gas spot price by 25%.

The ACIL Allen report goes on to note that the modelling includes the assumption that two LNG import terminals, Port Kembla and Crib Point, are operating⁶ (though it is unclear what their contribution may be to supply and what impact the NGP would have to gas price if they are not constructed). Differences between the potential target markets for import terminal gas versus NGP gas are discussed:

The role of domestic suppliers and import terminals in supplying the market is therefore somewhat different and may address different segments of the market. For example, import terminals could be effective in supplying gas to meet peak demand periods and acting as small storage facilities and their development set-up allows them to provide this flexible rate of supply. ACIL Allen is of the view that this is likely to be the major benefit of import terminals initially, and this is shared by AEMO. Over time, they are more likely to be needed broadly across the market for supply as large mature sources of supply diminish (e.g. Gippsland basin). However, domestic projects like the Narrabri are more likely to be targeted at providing regular long-term supply to commercial and industrial loads.

ACIL Allen further notes that entering into large, long-term supply contracts is the target market of the NGP:

A key non-price factor that is important to reiterate in this assessment is security of supply and long-term availability of supply. This is especially key for commercial and industrial customers who are the target customer group of Narrabri supply. The Narrabri project is likely to be in the position to offer large volumes of gas on long term contracts. This has been difficult in recent times due to the tightness in supply and the relatively little competition in the upstream sector. With the commitment made by Santos to make all the gas produced from the Narrabri project available for the domestic market, a new competitive source of supply close to Sydney contributing around 75 PJ per annum is expected to lead to more competitive prices on long term gas contracts, particularly as the market moves into the late 2020s and 2030s.

If this is the case, and long-term contracts are sought, marginal benefit would arise for spot market price.

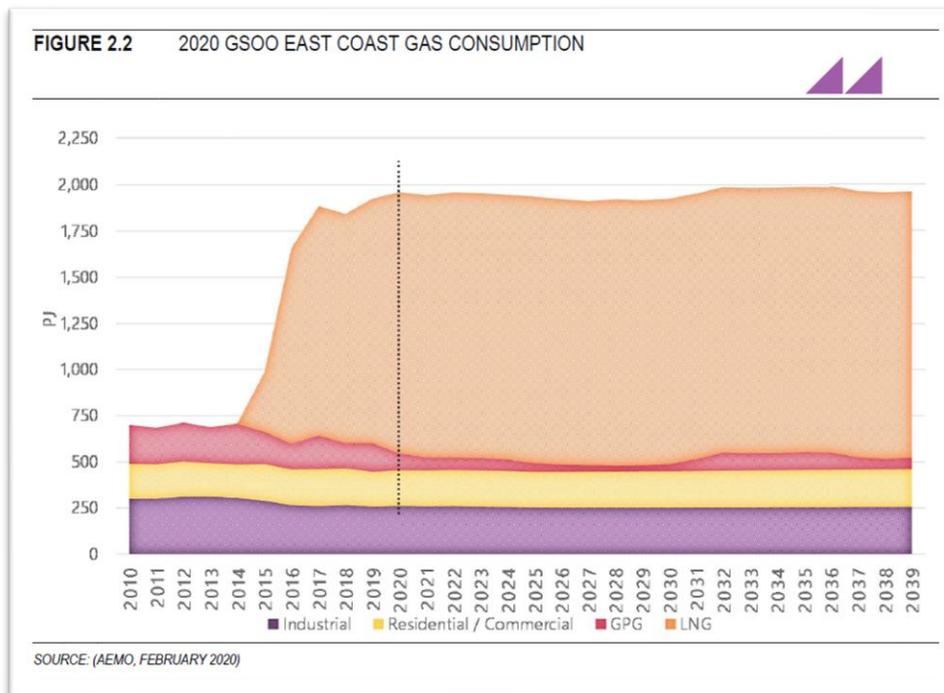
It is also unclear what transportation costs for NGP gas have been factored into the ACIL Allen assessment. The ACIL Allen report (page 23) describes tariffs for Queensland CSG gas, however no mention of the potential transportation costs that will be associated with the construction and operation by APA of the 450 km pipeline necessary to deliver NGP to market.

The proximity of the Narrabri project to major customers in Sydney means it can also compete with many undeveloped 2P projects on economics alone. According to marginal production cost estimates in the 2020 GSOO report by AEMO, the average undeveloped 2P marginal cost of production is \$5.66/GJ. Cheaper sources of undeveloped 2P can still be extracted from the Bass Strait but the majority of this is likely to satisfy Victorian demand in the first instance. Some supply will then also be made available to NSW customers via the Eastern Gas Pipeline and NSW-Victoria Interconnector.

However, New South Wales has also been increasingly reliant on supply from Queensland CSG over the past few years. The marginal cost for undeveloped 2P CSG reserves in Queensland is now estimated to be around \$5.70/GJ. With transportation costs of around \$2.50/GJ added on according to the latest tariffs posted by APA, the delivered cost will be north of \$8/GJ. It is expected that the Narrabri project will be competitive with these prices considering the ability of Santos to reduce costs of production to \$6.40/GJ. This development means the impact from Narrabri on the market is that it will increase competition in the eastern Australian gas market by providing gas consumers with another competitive source of supply. This is a key point in placing downward pressure on gas prices.

Long Term Gas Contracts

Regarding long-term gas contracts, there is a need. However, no consideration of demand side gas management is given or discussed, including for commercial customers. This will be required over the life of the Project if States are to achieve net zero by 2050 plans. Figure 2-2 of the ACIL Allen report, sourced from the 2020 AEMO GSOO, makes this clear – forecasting a virtually unchanged level of gas demand for residential and commercial customers between 2020 and 2039.

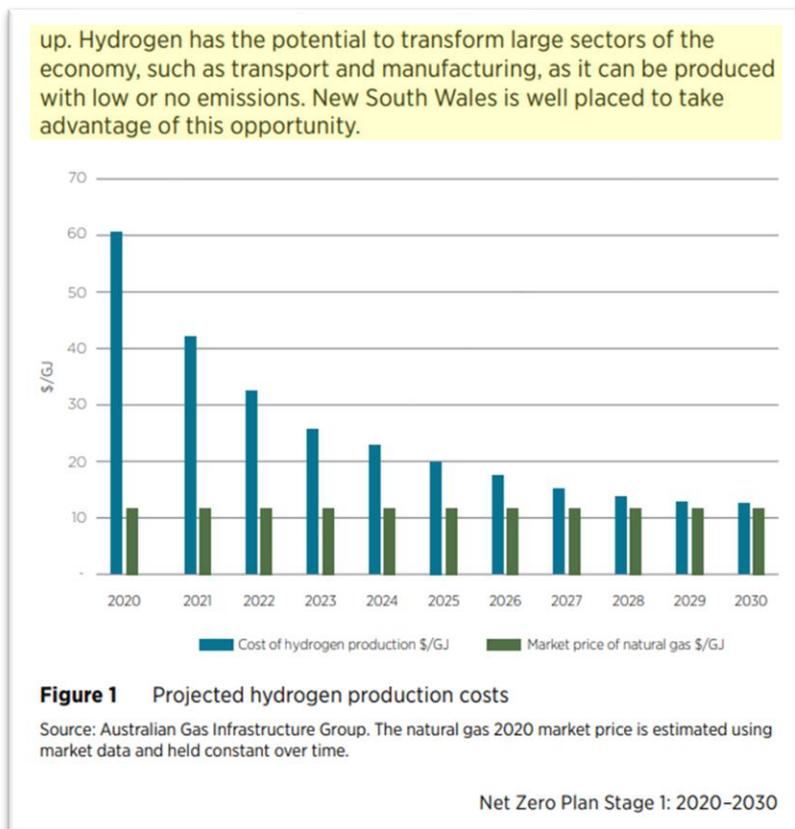


Obviously, many factors are at play, and there are many uncertainties.

- As the Australia Institute has pointed out, prior to the development of the LNG industry, Australia had cheap gas. However, if Australia were to have a gas-driven industrial workforce and economy, it would have happened when we had cheap gas. The concept that this will develop off the back of reduced, but

still higher than pre-LNG industry prices, is unrealistic. There are more complex factors at play than gas supply and gas prices in influencing Australia’s manufacturing sector revival.

- Reliance on gas will increasingly become a business risk this decade. Increasingly, large industrial producers (including miners such as Rio Tinto and BHP, speaking at the Energy and Mines Australia Summit⁷) are realising that it not just their investors scrutinising their emissions intensity—increasingly it will be their customers. As customers seek to understand the carbon emissions associated with their supply chains, lower carbon, ‘greener’ producers and manufacturers will gain a new advantage. Entry into long-term gas (fossil fuel) supply contracts may actually penalise Australian manufacturers over the life of the NGP, both in terms of customer expectations, and potential future costs of offsetting carbon emissions.
- In my previous submission, I referred the IPC Panel to the Northmore Gordon report that found that by developing a gas strategy that focuses on transitioning away from gas instead of trying to find new supply, Victoria could more than halve total gas consumption by 2030.⁸ These measures were similarly discussed in an earlier 2017 report, “A Short-Lived Gas Shortfall A review of AEMO’s warning of gas-supply ‘shortfalls’”, prepared by the University of Melbourne. Such findings are equally pertinent to NSW.
- The development of a hydrogen industry, which is the source of much research and investment including by the NSW Government, will also increasingly come into play. The January 2020 report released by the Hydrogen Council, prepared by global consultancy McKinsey, indicates that with a step-up in investment (<5% of annual global energy spend), the cost of hydrogen production and distribution could decrease by up to 50% by 2030.⁹ Analysis found that hydrogen would be cost-competitive across more than 20 applications, including commercial vehicles, long-range transport, industrial heating, residential heating and cooling and industry feedstock. Existing gas is unlikely to have to compete against ‘more gas’; the development of competitively priced hydrogen—that has the advantage of being low carbon—will place downward pressure on the price of gas. NSW has itself, in its “Net Zero Plan Stage 1: 2020-2030”, plans to “set an aspirational **target of up to 10% hydrogen in the gas network by 2030**.”¹⁰



The timing of these developments playing out is uncertain. However, their influence is likely to start being felt in the 'late 2020s and 2030s'—when the timing of the NGP's said gas-price benefits have been modelled to arise.

COST BENEFIT ANALYSIS

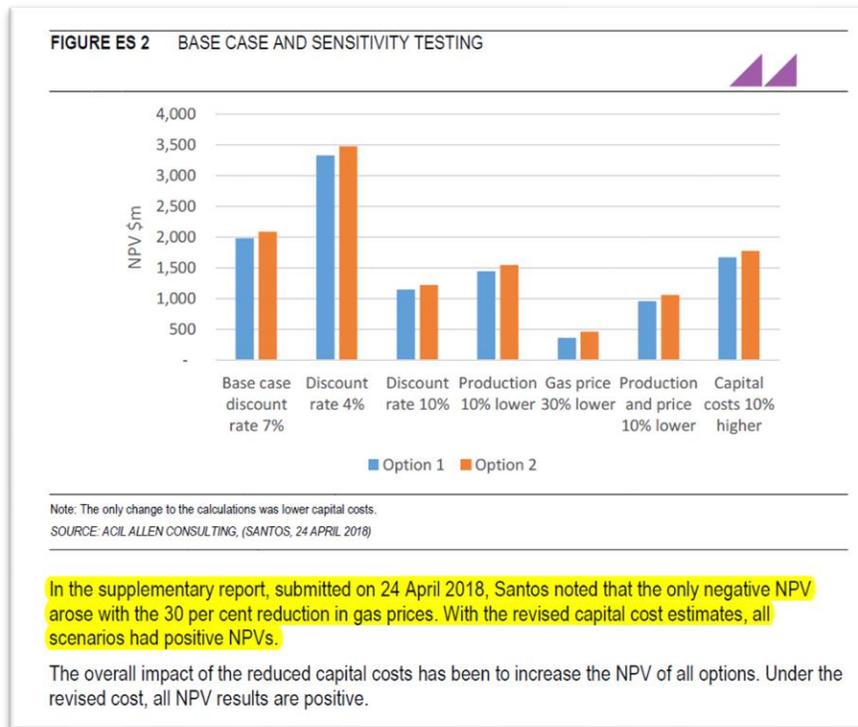
- Previous submissions including the Australia Institute have pointed out the discrepancies between the project valuation presented in the Cost Benefit Analysis (CBA) and the financial accounting of the project owners (Santos and CLP Group) which places the value of the project at zero. Submitters have pointed out that while there are differences between economic and financial evaluation approaches, you would generally expect the project value to be 'ballpark'. Rather than explain this gap in the updated ACIL Allen Benefit Cost Analysis (BCA), the gap (discrepancy) has increased it by around AUD 500 million.
- Previous submitters have raised the concern that the consultants performing the economic assessment in the EIS (GHD) did not seek to verify project data and assumptions, and that this is inconsistent with NSW guidelines. The updated BCA prepared by ACIL Allen similarly has not sought to verify Santos project data and assumptions.

IN CONDUCTING THE ANALYSIS IN THIS REPORT ACIL ALLEN CONSULTING HAS ENDEAVOURED TO USE WHAT IT CONSIDERS IS THE BEST INFORMATION AVAILABLE AT THE DATE OF PUBLICATION, INCLUDING INFORMATION SUPPLIED BY THE ADDRESSEE. ACIL ALLEN CONSULTING HAS RELIED UPON THE INFORMATION PROVIDED BY THE ADDRESSEE AND HAS NOT SOUGHT TO VERIFY THE ACCURACY OF THE INFORMATION SUPPLIED. UNLESS STATED OTHERWISE, ACIL ALLEN CONSULTING DOES NOT WARRANT THE ACCURACY OF ANY FORECAST OR PROJECTION IN THE REPORT. ALTHOUGH ACIL ALLEN CONSULTING EXERCISES REASONABLE CARE WHEN MAKING FORECASTS OR PROJECTIONS, FACTORS IN THE PROCESS, SUCH AS FUTURE MARKET BEHAVIOUR, ARE INHERENTLY UNCERTAIN AND CANNOT BE FORECAST OR PROJECTED RELIABLY.

- The Australia Institute identified that assumed operating costs of \$6.25/GJ for the NGP in the CBA prepared by GHD (published in the EIS), were below public estimates by other analysts, including AEMO, which in 2015 were estimated between \$6.53 and \$7.98 per GJ.¹¹ ACIL Allen, in Section 3.5.1 of their report, include Table 3.3 that shows AEMO estimates for the Gunnedah Basin, as at 2020, are estimated at \$6.40/GJ. Santos's operating cost estimate—which was unchanged in the ACIL Allen update—remains more optimistic than the AEMO estimate.
- The ACIL Allen report makes significant changes to the capital cost, based on Santos's 'experience with the cost of well completions in Queensland and South Australia'¹². However, ACIL Allen has not verified this information nor do they provide a rationale for why such cost reductions would also apply to NGP as a greenfields site, relative to Queensland and Cooper Basin fields which are established.
- Figure ES2 in the ACIL Allen report continues to demonstrate how sensitive the NPV of the Project is, including around the capital cost. An increase in capital cost, coupled with a decrease in gas price (a scenario that has not been modelled) would limit and/or potentially erase NPV. This would be further compounded if operating cost is under-estimated (see Figure ES2 over page).
- As with earlier discussion surrounding the impact on gas price, it is unclear how pipeline tariffs associated with a new APA pipeline to connect the NGP have been accounted for—or whether they have been included.
- Further weaknesses that were highlighted in the GHD model remain in the ACIL Allen report (refer Table 5.1):
 - There is minimal consideration of the costs of potential impacts to water resources.
 - Social cost of GHG emissions is likely to be under-estimated, based on analysis that project emissions are likely to be under-estimated (fugitive emissions and CO₂ gas content).
 - Potential impacts to human health are not accounted for. Recent research in this area has revealed that the effects of air pollution arising from fossil fuels are roughly twice as bad as previously estimated, with the "economic costs of climate-induced health risks are at least an order of magnitude larger than has previously been understood."¹³

Additionally:

- Visual impacts to the Pillaga Forest due to CSG infrastructure have not been considered.
- Impacts to cultural heritage have not been considered. (It is not reasonable to think that full avoidance is possible in all instances.)



I draw attention to these aspects to point out that the economic benefits, which have been put forward to justify the NGP's significant potential adverse environmental and social benefits are marginal and continue to be highly uncertain. Indirect costs associated with the NGP are also likely to be greater than accounted for.

Both the revised NPV of the project, and projected potential benefits to gas spot market price, can be easily erased by increases to capital cost, increases to (optimistically low) production costs, lowered gas price, more fully considered socio-economic cost.

IN CLOSING

The NGP has already led to significant adverse socio-economic impacts in its host community. People feel anxious, stressed, lost, and powerless to prevent the adverse environmental and socio-economic impacts they know they will face. They know that this is, ultimately, a project that will exacerbate, rather than work to alleviate, future environmental challenges. This is clear from the level of objection to this project voiced by the public and in the submissions made.

In the recent (June 2020) Independent Review of the EPBC Act – Interim Report, Professor Graeme Samuel stated: *“Australia’s natural environment and iconic places are in an overall state of decline and are under increasing threat. The current environmental trajectory is unsustainable”*.

Santos and the DPIE continue to assert that the NGP “meets the guidelines”—yet that provides no assurance when recommendations by the Chief Scientist to regulate the CSG industry in NSW have barely been addressed. At a Commonwealth level, Professor Graeme Samuel has very clearly demonstrated that environmental regulation *“is ineffective. It does not enable the Commonwealth to*

play its role in protecting and conserving environmental matters that are important to the nation. It is not fit to address current or future environmental challenges.”

Are NSW policy makers absolutely certain their position is stronger? Are the tens of thousands of concerned members of the public wrong?

Public interest requires that all the costs and benefits be properly accounted for and the uncertainties and assumptions be clearly understood. That has not occurred in the economic analysis of the project, which continues to contain crucial flaws.

What we do echoes through the generations.

The IPC Panel can be reasonably assured that no significant harm will come to Australia’s East Coast gas market by not approving the Narrabri Gas Project.

Can it say the same of its host communities and environment if the project is approved?

Please, Commissioners, decide this project with eyes set firmly on the future and the environmental challenges we together face.

REFERENCES

¹ Santos, Narrabri Gas Project Submission tot IPC following Public Hearing, Appendix A, Economic Analysis, Page 28

² <https://ausindenergy.com/wp-content/uploads/2019/04/PKGT-EIS.pdf>, page xvi

³ https://www.caselaw.nsw.gov.au/decision/5c59012ce4b02a5a800be47f#_Toc431206 paragraph 529-530

⁴ <https://www.energycouncil.com.au/analysis/the-2020-isp-a-lonely-planet-guide-for-transmission/>;
<https://reneweconomy.com.au/market-operators-20-year-transition-plan-remains-an-orphan-without-taylors-backing-90135/>

⁵ https://www.caselaw.nsw.gov.au/decision/5c59012ce4b02a5a800be47f#_Toc431221

⁶ Santos, Narrabri Gas Project Submission tot IPC following Public Hearing, Appendix A, Economic Analysis, Page 24

⁷ <https://australia.energyandmines.com/>

⁸ <https://environmentvictoria.org.au/2020/06/03/the-gas-jig-is-up-heres-how-victoria-can-get-off-gas/>

⁹ https://hydrogencouncil.com/wp-content/uploads/2020/01/Path-to-Hydrogen-Competitiveness_Full-Study-1.pdf

¹⁰ DPIE, Net Zero Plan Stage 1: 2020-2030, Page 30

¹¹ Santos, Narrabri Gas Project Submission tot IPC following Public Hearing, Appendix A, Economic Analysis, Page 25

https://d3n8a8pro7vhm.cloudfront.net/lockthegate/pages/3158/attachments/original/1495668434/AppendixD_RodCampbellEconomics.pdf?1495668434

¹² Santos, Narrabri Gas Project Submission tot IPC following Public Hearing, Appendix A, Economic Analysis, Page 25

¹³ <https://oversight.house.gov/news/press-releases/oversight-committee-and-top-experts-examine-new-data-on-the-health-and-economic>; <https://www.vox.com/energy-and-environment/2020/8/12/21361498/climate-change-air-pollution-us-india-china-deaths>