



Nature Conservation Council

The voice for nature in NSW

7 August 2020

Independent Planning Commission of NSW
Level 3, 201 Elizabeth Street

Sydney NSW 2000

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

To whom it may concern,

Submission of objection: Santos Narrabri Gas Project, Application No. SSD 6456

The Nature Conservation Council of NSW (NCC) is the peak environment organisation for New South Wales, representing 150 member societies across the state. Together we are committed to protecting and conserving the wildlife, landscapes and natural resources of NSW.

NCC objects to the proposed Narrabri Gas Project due to its significant environmental and social impacts. We are firmly of the view that the project is fundamentally inconsistent with the principles of ecologically sustainable development. In producing this submission NCC draws on the considerable expertise of its staff and member groups.

The attached submission outlines our specific concerns in relation to:

- Climate change impacts
- Water resource impacts
- Hazard and risk – bushfires
- Biodiversity impacts
- The public interest

We recommend that the proposed project be rejected. If you seek any further information on the issues raised in this submission please do not hesitate to contact Brad Smith on 0413 280 006 or bsmith@nature.org.au

Yours sincerely,

Chris Gambian
Chief Executive
Nature Conservation Council NSW



NCC submission on the Narrabri gas project, ssd-6367

The following response is based on the NCC submission to the original Narrabri Gas Project Environmental Impact Statement (EIS) in 2017. We include our perspective on elements of the project assessment report by the NSW Department of Planning, Industry and Environment (the DPIE Report) dated 11 June 2020.

1. Recommendations

- The project should be rejected on the grounds of its:
 - greenhouse gas emissions
 - adverse environmental impacts on surrounding areas, in particular the highly valuable Pilliga State Forest
 - unacceptable risks it poses to bushfire, ground water and contamination from waste
- If the project is approved in spite of the manifest inadequacies of the EIS in relation to bushfire risk from the project flares, Santos must be required to indemnify any NSW landholders for any financial loss associated with bushfire damage where an independent assessment confirms that the bushfire was initiated or exacerbated by an activity associated with the Narrabri Gas Project.

2. Context for the proposed project

Over the last nine months, NSW has experienced two catastrophic events:

- Unprecedented bushfires ravaged eastern NSW during the Black Summer of 2019 - 2020. These extreme fires were exacerbated by climate change. Climate change is occurring due largely to the global impacts of fossil fuel combustion. The project under consideration will inevitably add to climate change impacts.
- The COVID19 pandemic has impacted our society on a scale not experienced in a century. The pandemic has had a substantial impact on global and Australian gas markets. The economic impact of the pandemic has been documented in reports from independent expert organisations including:
 - The Australia Institute
 - Institute for Energy Economics and Financial Analysis
 - Climate Council
 - Global Energy Monitor
 - NSW Environmental Defenders Office

Our circumstances have shifted substantially since Santos released the original Narrabri Gas Project EIS in 2017. Yet, in recommending approval for the proposed project, the DPIE Report does not acknowledge these significant events.



In light of the catastrophic impacts that climate change is already causing in NSW, and the global gas glut that has been exacerbated by COVID-19, Santos' Narrabri Gas project is the wrong project at the wrong time.

3. Climate Change Impacts

In 2015, governments including Australia came together and signed the Paris Accord, with an agreed aim of "holding warming well below 2°C and pursuing efforts to limit warming to 1.5°C". The Paris Accord requires a national commitment to limiting global temperature rise to below 2 degrees Celsius (when measured against pre-industrial levels). To have at least a 50% chance of keeping global warming below 2°, a third of global oil reserves, half of gas reserves and over 80% of current coal reserves should remain unused.[1] In order to limit warming below 1.5 degrees, fossil fuel extraction must be even further constrained.

3.1 NSW Net-Zero Emissions Target

The action of NSW DPIE in recommending the Narrabri Gas project for approval is directly contrary to the NSW Climate Change Policy Framework. The framework includes an aspirational objective to reduce greenhouse gas emissions to net-zero by 2050.[2]

Emissions must decline steeply in order to reach net-zero. Assuming the gas from Narrabri is consumed in NSW, all the associated Scope 1, 2 and 3 emissions would be added to the NSW emissions account.[3]

Approval of the Narrabri Gas Project will move NSW further from agreed climate goals and may make the target of net-zero emissions in NSW by 2050 unachievable.

3.2 Fugitive emissions

The EIS does not adequately account for fugitive emissions. The poor accounting in this EIS is not an isolated problem. There is growing concern about the lack of accurate baseline data on fugitive emissions associated with CSG mining.

The current method for estimating CSG fugitive emissions uses data collected from conventional natural gas extraction. Unconventional natural gas, including CSG, uses a very different method of extraction, which sees more methane escape into the atmosphere rather than captured and used to generate energy.[4]

In Australia, the assumption is that fugitive emissions from unconventional gas equates to 0.12% of gas produced. This is the figure used to calculate fugitive emission levels in the current project EIS (at Appendix R). In the USA on the other hand, the estimate is 2.4% of gas produced, 20 times higher than in Australia.

"The level of fugitive emissions is simply unknown and far more research needs to be done before the claims by the gas industry can be taken seriously".[5]



DPIE's reports takes a statement straight from the 2017 Narrabri Gas Project Final Assessment Report:

“On a life cycle basis, domestic coal seam gas produced electricity would produce up to 50% less carbon emissions compared to coal fired electricity production.” [6]

Since this assessment, science has developed. Scientists and analysts studying the contribution of gas to emissions and industry now argue that when taking into account the best evidence for the rate of fugitive emissions, the power produced by unconventional gas including coal seam gas, has an impact on climate that is comparable to or worse than burning coal for energy.

Furthermore, the emissions from gas-fired power should not be compared with the most carbon intense form of generation, coal. Wind and solar generation, coupled with energy storage such as batteries and pumped hydro, and demand management, provide a near-zero emissions method of electricity generation.

Some recent examples

3.2.1 Global Energy Monitor, a network of energy researchers, released a report in June 2019 showing the changing views of natural gas as a result of recent research in the United States [7].

The researchers referred to the standard reference report from the US Department of Energy (DOE) from 2014 which showed lower life-cycle greenhouse gas impacts from exporting LNG to overseas power plants than from burning domestic coal. This report was based on the assumption that methane leakage was 1.3% for conventional onshore gas and 1.4% for fracked gas.

In 2018, a comprehensive reassessment in the US oil and gas supply chain, based on facility-scale measurements and validated with aircraft observations, concluded that the overall leakage rate for natural gas was 2.3% of gross US gas production, a figure 60% higher than the US EPA inventory estimate [8].

At the higher leakage rate, the claimed advantages of using gas over coal are not valid.

3.2.2 A paper in the science journal Nature, published online on 19th February 2020, indicates that recent ice core analysis from Greenland and Antarctica shows that preindustrial era methane emissions were actually an order of magnitude lower than the previously used estimates. This result indicates that anthropogenic fossil methane emissions have been underestimated by about 25-40%. [9]

3.2.3 The Institute for Energy Economics and Financial Analysis (IEEFA) found that gas is not a “transition fuel”. IEEFA gas analyst Bruce Robertson stated that claims by the gas industry that burning fossil fuels such as natural gas is cleaner than burning coal are not correct. Robertson said that gas is worse than coal in the short term due to its release of methane into the atmosphere.

Methane from gas poses the greatest threat to the warming climate – if you leak more than 2% to 3% of methane, it's worse for the climate than coal. [10]



3.2.4 Satellites have revealed that the fracking heartland of the US (the Permian Basin, which straddles Texas and New Mexico) is leaking greenhouse gas methane at a record-breaking rate. Methane is pumped out of the region's wells and captured for use. Satellite analysis research, led by Yuzhong Zhang at Harvard University, has shown that 3.7% of that gas is lost to the atmosphere [11]. At 3.5% loss levels, natural gas is far worse for the climate than coal.

Parties to the Paris Accord are required to report on national levels of methane (CSG) emissions. If fugitive emissions remain poorly assessed and measured, Australia will not be participating fairly in the ongoing implementation of the Paris Accord.

Recommendation: the project should be rejected on the grounds of its greenhouse gas emissions, both fugitive and from the end use of the gas for power generation.

4. Hazard and Risk – Bushfires

The EIS rightly acknowledges that the proposed development meets the definition of a “potentially hazardous industry” under State Environmental Planning Policy No 33 – Hazardous and Offensive Development. As such, the proponents are required to produce a preliminary hazard analysis.[12] This analysis is included in Chapter 25, in conjunction with the Hazard and Risk Assessment in Appendix S, Volume 12.

The proposed project is located in the Pilliga Scrub. This area has a known bushfire history. A fire on this site has the potential to become a large-scale bushfire.[13]

Santos proposes a maximum of 6 pilot flares (average flame height about 4 metres) in addition to safety flares (at least 1 or 2) at Bibblewindi and Leewood. The normal safety flare height will be 1.5 metres, but on occasions, flame height may be up to 30 metres. This extraordinary information is not assessed in the EIS as an additional significant bushfire risk. Further, it is located, not in Appendix S, Hazard and Risk Assessment (Volume 12), but in Appendix Q – Landscape and Visual Assessment.[14]

The EIS has assessed the bushfire risk as follows:

“The likelihood of the project activity causing a bushfire is remote given the range of measures proposed in addition to measures already in place”.[15]

NCC disagrees with this assessment. Using the matrix in the EIS, the risk of bushfires is high, at a minimum. This view has been confirmed by local landholders with bushfire experience in the Pilliga region. Such a risk is totally unacceptable during extreme and catastrophic bushfire weather conditions.

Bushfire risks posed by flares located in forested areas need to be reassessed in the light of the disastrous and unprecedented bushfires in the summer of 2019 - 2020. In the light of the changing nature of our fire seasons any preventable bushfire risk is unacceptable. The flares associated with the project were an unacceptable risk in 2017. They are certainly not an acceptable risk in 2020. If



the flares cannot be turned off during high bushfire risk periods, then this alone should be grounds for rejecting the project.

Recommendation: If the project is approved in spite of the manifest inadequacies of the EIS in relation to bushfire risk from the project flares, then NCC recommends that Santos be required to indemnify any NSW landholders for any financial loss associated with bushfire damage where an independent assessment confirms that the bushfire was initiated or exacerbated by an activity associated with the Narrabri Gas Project. The indemnity should be supported by a bank guarantee to be in place prior to approval of the project.

5. Biodiversity Impacts

Local community groups from the Narrabri Region have long been aware of the biodiversity values of the Pilliga Forest. The Narrabri Gas Project will significantly impact the biodiversity of this important landscape. The following table extracted from the DPIE Final Assessment gives some indication of the importance of the biodiversity that occurs there.[16]

	Vulnerable	Endangered	Critically Endangered
Flora	6	3	1
Birds	5	4	1
Mammals	8	1	-
Reptiles	1	-	-

DPIE made the following statement in their final assessment report:

The Department notes community views that the Pilliga Forest should be protected from resource extraction due to its conservation value and that it is the largest intact remnant forest in western NSW. [17]

NSW DPIE argues that these concerns were acknowledged in 2005 and adequate statutory arrangements were put in place at that time.

Fifteen years have since lapsed. This is an unsatisfactory argument, particularly in light of emerging science on climate change and the changing nature of bushfire seasons. When circumstances change as dramatically as they have in the last 12 months, assessments and expectations must remain evidenced by up-to-date information. The circumstances surrounding the biodiversity impacts of the Narrabri Gas Project should be no exception.



5.1 Koalas

The koala is a unique Australian mammal and a national icon. The presence of koalas is a major drawcard for international tourists to Australia.

The recent report of the Legislative Council Portfolio Committee No. 7 on koala populations and habitat in New South Wales represents a consensus across all political parties that urgent action is required to save the species.[18] This report should be a definitive guide to the Independent Planning Commission on any question relating to the impact of the Narrabri Gas Project on local koala populations.

The most devastating finding of the committee, which elicited significant media comment was that:

“Given the scale of loss to koala populations across NSW as a result of the 2019-2020 bushfires and without urgent government intervention to protect habitat and address all other threats, the koala will become extinct in NSW before 2050”

At the time of the release of the Narrabri Gas Project EIS in 2017, there was some uncertainty over the status of what had been a viable population of koalas in the Pilliga Forest. NCC stated in our submission on the Narrabri Gas Project EIS in 2017 that the Western Woodlands Alliance describes koala populations in the Pilliga East State Forest and classifies that State Forest as a priority area for koala conservation.

The Biodiversity chapter of the DPIE Final Assessment Report [19] provides no assurance that koala populations would be considered during project development.

The DPIE report states that:

“...the exact location of gas field infrastructure (including well pads and associated infrastructure) has not been confirmed at this stage, and would be subject to detailed investigation and assessment during the project life, in accordance with the Santos Field Development Protocol...” [20]

The location of core infrastructure on publicly owned Pilliga State Forest land is undetermined.

Santos further stated that:

“This approach to siting gas field infrastructure is standard for the gas industry, where a level of flexibility is required in the placement of gas wells as the field develops over time...” [21]

Such an approach can be likened to that which has caused environmental disasters in gas fields in the USA [22], and emerging problems for adjoining landholders in the gas fields in Queensland.



If the location of the gas extraction infrastructure in the Pilliga Forest is left up to Santos, there is no accountability regarding protection of habitat and food trees of the critically endangered Pilliga koala population. This is unacceptable.

5.2 Biodiversity Offset Package

The Nature Conservation Council has been following the development of the concept and implementation of biodiversity offsets in NSW for the last 10 years. Our published report on biodiversity offsetting details our concerns, which can be summarised as:

- Biodiversity schemes in NSW have failed to deliver the promised outcomes regarding biodiversity.
- Biodiversity offsetting schemes in NSW have become weaker over time as standards have slipped.
- The latest Biodiversity Assessment Methodology contains fewer best practice principles and standards than any previous scheme and will likely deliver worse outcomes. [23]

The EIS for the Narrabri Gas project has comprehensively failed on biodiversity offsets and should not be approved on this basis.

6. Water Resource Impacts

The Narrabri CSG Project proposes to bring ancient, contaminated coal seam water from the depths of the earth to the surface. Santos seeks approval for the drilling of 850 wells through the Pilliga Sandstone aquifer (part of the Great Artesian Basin) and into the coal seams beneath, between 500 and 1200 metres underground. The aquifer contains good quality groundwater sources used for stock, domestic use and irrigation. The proposal will remove around 1.5 gigalitres of water per year from deep coal seams to allow the coal seam gas to escape to the surface through the bores. [24]

The farming and rural communities of the Narrabri district rely heavily on irrigation water from the Great Artesian Basin. The extent of irrigation activity is illustrated by the EIS map showing groundwater bore locations within 30kms of the project area boundary [25]. Many irrigators in the Narrabri region are understandably concerned about the potential for the water extracted from the coal seams (average 1.5 gigalitres per year) to contaminate the Great Artesian Basin aquifer on which they rely for water for stock, domestic or irrigation purposes. [26]

Local opposition to the Narrabri Gas Project relates to concerns that the 850 gas wells will contaminate the Pilliga sandstone and the Namoi Alluvium aquifers. The water produced from the coal seams is not the same good quality groundwater currently used by the community of the Narrabri. The water from the seams may have been in intimate contact with coal for millions of years, absorbing elements which could be harmful if they leak into the irrigation water in the aquifers. Data analysis of produced water is hard to find in the EIS. One table provides concentrations of various potentially toxic elements in the produced water [27]. These elements



add to the high levels of salinity which have to be treated before the produced water can be used for irrigation purposes.

Elements such as the following are found in the produced water from the coal seams:

- Arsenic
- Cadmium
- Chromium
- Cyanide
- Fluoride
- Lead
- Mercury
- Molybdenum
- Nickel
- Selenium

All are potentially toxic to animals. They are capable of causing residues if they become concentrated to higher levels in irrigation water or the crops and pastures that it irrigates. All are important for the classification of wastes under NSW EPA Waste Classification Guidelines.

NCC considers that the potential contamination of heavily utilised aquifers constitutes a major potential environmental problem that should have been assessed in detail in the EIS. Yet it is barely mentioned.

6.1 Gas well integrity

NCC is concerned that gas well integrity cannot be guaranteed. Similar projects have seen gas well failure allowing the mixing of produced water and gas from leaking wells with good quality water in aquifers.

A review article published in 2014 showed that the percentage of wells showing integrity failure was highly variable, ranging from 1.9% of wells to 75% of wells. None of the datasets showed a rate of zero for well failure.[28] The abstract of the paper described a situation analogous to the Narrabri Gas Project proposal in these terms:

“Boreholes drilled to explore for and extract hydrocarbons must penetrate shallower strata before reaching the target horizons. Some of the shallower strata may contain groundwater used for human consumption ... Although it has been routine practice to seal wells passing through such layers, they remain a potential source of fluid mixing in the subsurface and potential contamination. This can occur for many reasons, including poor well completion practices, the corrosion of steel casing and the deterioration of cement during production or after well abandonment. Boreholes can then become high permeability potential conduits for both natural and man-made fluids”.

The Narrabri CSG Project presents a threat of irreversible damage to the environment. There is a lack of full scientific certainty about if and how such damage could be rectified. This triggers the



precautionary principle which should result in the project being rejected on the grounds that it is inconsistent with the principles of Ecologically Sustainable Development.

6.2 Assessment against the EPBC Act ‘water trigger’

The EIS acknowledges that the project requires the approval of the Commonwealth Environment Minister under Section 24D of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) – the ‘water trigger’.

Under the EPBC Act, potential impacts of the proposal must be assessed against the Commonwealth Significant Impact Guidelines [29] (the Guidelines). The action is prohibited if it is likely to have a significant impact on a water resource. [30]

The EIS deals with the assessment of the water trigger guidelines briefly, concluding that the project will have no significant impact on the water resources in the vicinity of the project.[31] NCC rejects this notion. This project may have a significant impact on water resources.

The purpose of the water trigger guidelines is to inform decisions regarding a proposed development’s likely impact on a water resource. Therefore, NCC suggests that these guidelines can assist the IPC to determine that the development will have a significant impact and should be rejected under the EP&A Act. Below is a brief assessment of the project against the Guidelines:

Is the impact significant? (5.1.1)

Significant is defined as an impact which is ‘important, notable or of consequence’. If contamination of the Great Artesian Basin aquifer by produced water occurs as a result of the project, the impact will be significant.

Is the impact likely? (5.1.2)

The guidelines require there to be a ‘real or not remote chance or possibility’ of impact. The review in the Journal of Marine and Petroleum Geology indicated that it is almost certain that the produced water will leak into the Pilliga sandstone aquifer and/or the Namoi Alluvium. Gas well data sets from around the world all record at least some leaking wells.

The EIS at 11.6.3, fails to acknowledge or consider the possibility of water quality in the aquifers being impacted by leakage from bores. NCC rejects the statement in the EIS:

“There is no potential for low quality groundwater at depth in the Gunnedah Basin to contaminate higher-quality groundwater sources in the overlying Pilliga Sandstone and Namoi Alluvium”

Contrast this with a statement from Dr Matthew Currell, Senior Lecturer & Program Manager (Environmental Engineering), School of Engineering, RMIT University, Melbourne who was briefed by the NSW Environmental Defenders’ Office on behalf of the North West Alliance to provide expert advice on the Narrabri Gas Project:



“It is my opinion that there are significant potential environmental impacts that could arise from the proposed NGP, and that the risk of these impacts occurring has not been given full and adequate consideration in the relevant sections of the EIS”.

Two major risks are:

1. *Groundwater and surface water contamination, particularly with coal seam gas produced water and/or other wastewater produced as a result of the project*
2. *Fugitive gas migration into aquifers overlying the target coal seams and/or into the atmosphere (a greenhouse gas and/or air pollution risk).[32]*

Is the water resource valuable? (5.2.1)

The EIS acknowledges that the shallow groundwater resources of the Namoi Alluvium and the Pilliga Sandstone aquifers have high value [33]. The map of registered water bores in the EIS demonstrates the value of groundwater in the Narrabri area.

Guidelines on changes to water quality (5.4)

Contamination of the aquifers with produced water would trigger three relevant criteria out of five in guideline 5.4(a) and would also meet the water quality criterion in guideline 5.4(b).

NCC maintains that the project may have a significant impact on a water resource and calls on the IPC not to approve the project

7. Waste management

Daily treatment and disposal of a significant quantity of produced water from underground coal seams is a significant aspect of the Narrabri Gas Project. The salt concentrated out of produced water amounts to a long-term average of 47 tonnes of salt per day, with a peak of around 115 tonnes per day in project years two to four. At peak, daily disposal of the salt concentrate would require two and a half B-Double truck movement equivalents per day [34].

The EIS Executive Summary states that the salt would be:

- Classified as general solid waste under NSW EPA Guidelines
- Transported by truck to be disposed of at an appropriately licensed facility [35]

NCC disputes both suggestions.

Given that the produced salt will contain unknown concentrations of contaminants which are liberated from coal seams or from drilling muds, NCC recommends classifying produced salt as a restricted solid waste.



Further, this large volume of salt will cause substantial and long-lived environmental risks in the location that it is disposed. These risks require careful assessment.

Salt can cause geochemical reactions that compromise the integrity of landfill liners and caps. The integrity of the landfill must be maintained over a thousand-year timescale to avoid catastrophic and difficult to remediate impacts on groundwater and surface water.

In our submission to the 2017 EIS, NCC requested that the proponent provide an assessment of the worst case scenario salt disposal option if some or all of the salt were to have sufficient concentrations of key potentially toxic elements to classify it as restricted solid waste under EPA guidelines.

This analysis has not been forthcoming.

The Secretary's environmental assessment requirements include a credible waste management strategy. The EIS lacks such a waste management strategy. The EIS fails to adequately plan for the possibility of highly contaminated salt requiring daily management.

Legal and environmentally appropriate disposal of the large amount of salt generated by the Narrabri Gas Project (regardless of its solid waste classification) is a major constraint on the project. The failure to deal with this fundamental environmental problem in detail in the EIS is unacceptable. One of the reasons the AGL coal seam gas project at Gloucester was unsuccessful was the proponent's attempts to clandestinely dispose of waste through unapproved Hunter Water sources.

7.1 Example of thorough expert report on the disposal of salt

NCC would like to provide a contrast to the official NSW government report by comparing how an expert report looks at the same issue of salt disposal from produced water in the NGP EIS [36]:

CSG produced water typically exhibits poor quality, due to its extended period of residence within coals... Contaminants that are characteristic of CSG produced water include high levels of sodium, heavy metals and other trace elements (such as barium and boron), high levels of salinity..., fluoride, ammonia, organic carbon and other potential contaminants. ... The apparently unusually poor water quality associated with the particular coal seams targeted in the project (Gunnedah Basin coals). [37]

As documented in a 2014 report to the Office of the Chief Scientist and Engineer, in addition to having high salinity, the water produced from the coal seams in the Narrabri region also contains significant levels of heavy metals, boron and fluoride, which could make the water an environmental and human health hazard, and a major potential source of groundwater and surface water contamination in the area. [38]

The overall volume of this waste brine (salt) may be under-estimated by a factor of two. ... No detailed chemical assay of this waste brine was provided in the project EIS to aid the



detailed risk assessment of the production, handing and disposal of the material... Outstanding questions that are not addressed in the produced water management plan include:

- *Has a suitable facility been identified and have they agreed to accept the material in the estimated volumes proposed?*
- *Have detailed chemical analyses and hazard assessment of the brine material been conducted, based on the wastes produced during the Bibblewindi Pilot Project?*

Important analytes that are missing from these tables (in Appendix G of the EIS), and which may be future contaminants impacting the groundwater due to CSG activity include:

- *Iron (both total and dissolved)*
- *Arsenic*
- *Aluminium*
- *Ammonia*
- *Dissolved and total organic carbon*
- *Dissolved methane*
- *Hydrogen sulfide*
- *Uranium and other radionuclides*

Without any baseline data on these particular species that could be present in significant quantities in produced water...any future assessment of whether groundwater quality has been impacted by CSG will be extremely difficult. [39]

8. Precedent

There are striking legal similarities between the current project and a project known as the Weal case, heard by the NSW Court of Appeal. [40] The Weal case involved a development approval for a rail freight terminal at Bathurst. Noise was a major environmental issue. The consent authority, Bathurst City Council, accepted a consultant's report on noise which left the noise decision up to the EPA. The Council did not give the development application the consideration required by law, rather left the critical matter of noise impact to the EPA.

The majority of the NSW Court of Appeal declared the original Council consent void.

The similarities between the Narrabri Gas Project and the Weal case apply to the disposal of salt through the life of the proposed project. The Narrabri Gas Project EIS provides no accurate and independent analysis of the salt extracted from the produced water and appears to leave the management of the salt disposal up to the NSW EPA.

There are clear deficiencies in the 2017 Santos EIS, and in the 2020 DPIE Final Assessment Report on the Narrabri Gas Project, with respect to the disposal of salt waste from produced water.

The report of the Water Expert Panel (WEP) concedes deficiencies in the EIS with respect to wastewater disposal:



Recommendation 16: The WEP recommends to Santos that a full analysis be undertaken of representative produced water, and its ranges and means, as this would allow a mass balance to be established across the reverse osmosis and salt recovery units. [41]

The WEP also stated that:

The EIS does not give a breakdown of the constituents of the salt recovered from the treatment process, referring to it only as “salt”. It is possible to infer the likely composition from the constituent concentrations....it is possible to estimate the quantities of lesser components including components of particular concern in the salt produced by NGP. [42]

Recommendation: Further research should be conducted to provide a detailed breakdown of salt constituents. The salt may have to be classified as a hazardous waste and handled accordingly.

9. Current gas markets

NCC addressed the issue of gas supply and the impact of the Santos LNG export project on domestic gas markets in some detail in our 2017 submission.

The Australian Government in 2017 implemented the Australian Domestic Gas Security Mechanism (ADGSM) to constrain LNG exports if required to meet the needs of domestic users. Australia was the world’s largest exporter of LNG in 2019, and despite east coast gas supply tripling in the last decade, exports have put pressure on domestic gas availability and prices. In 2020, AEMO forecasts that LNG exports consume 1414 PJ of east coast gas, which is 71% of total east coast gas consumption.[43]

Earlier this year the NSW and Commonwealth Governments signed a bilateral agreement in relation to energy supplies in NSW. That agreement sets a target of 70 petajoules (PJ) of new gas to be supplied into the east coast market. This is a trivial amount compared with export volumes.

Despite the gas supply pressures created by gas exports, there are economically feasible alternatives to provide gas to the state.

An Andrew Forrest (Fortescue Metals, WA) backed LPG import venture located at Port Kembla was approved by the NSW Planning Minister in April 2019. The proponent is Australian Industrial Energy (AIE) and the project will have the capacity to deliver 100 PJ of gas per annum. The Narrabri Gas Project plans to deliver 70 petajoules per annum. AIE has a modification under consideration for an expansion to 140 PJ per annum – twice the capacity of the Narrabri Gas Project.

The Port Kembla Gas Terminal will have to build a short pipeline extension to the existing gas transmission network to supply NSW or Victoria with gas. AGL has also applied for a similar gas import terminal at Newcastle. In contrast, the proposed project would require a further development application to build a significant pipeline to connect it to existing lines.



If a gas supply shortage does eventuate, NCC strongly suggests to the IPC that there are many alternatives to resolve the problem of gas supplies to NSW industries.

9.1 Demand side measures

There is also a demand side alternative to this project.

50 PJ, or 43% of NSW's annual gas consumption, is residential and commercial. [44] This demand is almost completely substitutable through electrification and efficiency upgrades.

Governments around the globe are taking note of the financial and environmental benefits of switching gas appliances to efficient electric ones. An ever-increasing number of cities and regions are looking to wean off gas as part of their strategies to reduce greenhouse gas emissions and to help households cut their energy bills.

In Amsterdam, councils have decided to go gas free by 2040. They are not looking for new sources of gas supply. Many cities in the US, including Berkeley, San Jose, San Francisco, Houston, Los Angeles and New Orleans, are moving to ban gas connections as part of their journey towards a carbon-free future.

In Australia, the ACT has announced its plans to go gas-free, although they haven't yet developed a strategy to transition. The NSW Government, with its firm commitment to achieving net-zero emissions, requires a plan to transition away from this dirty fossil fuel.

A report by consultants Northmore Gordon (March 2020), commissioned by Environment Victoria found that Victoria could reduce its gas demand by over 100 PJ, or 50%, by replacing aging, inefficient gas systems with efficiency measures and electrification, such as heat-pumps, reverse cycle AC, building insulation, and induction cooking.

The same upgrades in NSW would yield the same result - halving NSW total gas demand.

These upgrades are existing commercial technologies and could be rolled out through simple changes to existing energy efficiency programs. In most cases these upgrades would reduce energy waste and energy bills.

Planning bodies in NSW urgently need to include consideration of demand side measures, rather than focussing entirely on gas production and supply.

10. Employment impacts

ACIL Allen's macroeconomic assessment shows that the Narrabri Gas project will have a negative impact on employment and output in some sectors, such as manufacturing, mainly because of competition for labour and some increases in local costs.[46]



11. The Public Interest

Under the NSW EP&A Act (1979), the public interest is one of nine matters that a consent authority must consider when determining a development application. The IPC has the role of determining whether this project meets the public interest test, free from any political influence which may have impacted the department's assessment.

The proposed project will result in damage to biodiversity the environment on and around the project site. The project poses risks that are unacceptable. There are other options for gas supply and demand.

By rejecting coal seam gas and instead pursuing efficiency and electrification, NSW can meet climate goals and help households and businesses to reduce energy bills. We can leave the beautiful Pilliga forest intact.

Approval of the Narrabri gas project is unnecessary, and firmly not in the public interest.



References

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