

Dear Commissioners,

Thank you for inviting further comment on the materials submitted by the proponent in regard to the Narrabri coal seam gas project.

Please find my response set out in a sequential manner across the three Santos documents. These comments are to be read in conjunction with the three documents, I recommend that you read them side by side. My apologies for this instruction, however this is necessary due to the very tight timeline required, as we were only given one week to respond (and I also work full time!).

Please do contact me if you have any questions, or need any clarification. (Ph: 0411 550058).

Santos submission to the IPC following the public hearing (dated 10 August 2020) - some commentary

Mr Kevin Gallagher, on behalf of Santos, (Executive summary, page 2) says that the UK (as a large economy) has moved to 40% gas - this is misrepresenting the situation in the UK. The energy market mix has changed continually in response to effective government policies and subsidies in order to reduce GHG emissions. They have very quickly and decisively closed coal fired power stations. Now the UK are responsibly and seriously replacing all the gas infrastructure, providing very keen and good subsidies to business, families and homeowners to move away from gas. This is funding, to mention a few initiatives, the replacement of gas cooking and gas boilers (used for heating), so that the UK can move fully to renewable energy. For Santos to use the gas mix of the UK energy market as an argument for this appalling project simply shows that Santos are out-of-touch with economics and the current strong need for us all to move away from all fossil fuels.

In summary, this project must be rejected. These documents simply confirm that this very old fashioned idea is no longer relevant. This project cannot be delivered safely.

It is absolutely important that we not read Mr Kevin Gallagher's very confused understanding of climate breakdown, and the use of gas in that mix, as a modern position. The position he presents on page 2 and 3 were the position as it was understood in the 1980s. Times have moved on, and so must Australia and business. It is important that we think about this situation with a realistic understanding of history. Some important dates as follows;

1965 - the year that the president of the American Petrochemical Association announced that the impact of Co2 on climate would start being felt by the year 2000 (that was correct, as we in Sydney had our first over 40 series of days from late Dec 2000 into Jan 2001)

1973 - the year that Exxon admitted that 'global warming' was as a result of burning fossil fuels.

1983 - the year that Climate Change was first taught in NSW schools.

In light of these three important dates, Santos position on Coal Seam Gas as an alternative to burning coal is completely out-of-date ... the proponents assertion belongs to a position aligned to four decades ago. It is no longer a modern position.

Additionally, it is important to note that the DPIE are also using old and out-of-date knowledge and ideas. The leadership of these two organisations are completely out of step with modern thinking and the way that the market and the community are moving.

On page 3 water is mentioned.- I submit that it is prudent to have a diversity of supply. This will ensure that people, crops, animals and plants have a reliable water supply. Where there is no diversity of potable water supply then the source must be protected to the highest standard. In the

case of NW NSW the Great Artesian Basin and the water sources that recharge it must be protected to our full capacity.

The proponent makes what I consider to be some bizarre assertions in their additional documents that makes gas sound like it is on the rise (page 3). I contend this is not my lived experience, as everyone, and I mean EVERYONE, I know is moving away from gas. My father, who is 97 (and was a coal miner 70 years ago) has moved away from gas for heating and cooking. We have replaced Gas at our home .. and even moved to an electric BBQ (it cooks very well thank you). No one wants gas because everyone I know values their children, grand children's and great grand children's futures. Absolutely everyone I know want their descendants to live a good life, and this is looking harder each and every day, with more frequent and named heatwaves, with glaciologists looking like they will soon be out of work due to lack of glaciers, and with the last ice shelf in Canada breaking off at about the same time as Mr Kevin Gallagher penned his biased and antiquated executive summary. (Refer pages 1 to 3).

There is a strong desire, by the market, to move away from gas. There is a global gas glut, therefore there is no need to develop any more gas in NSW. The Australian Capital Territory will be gas-free by 2025.

The proponent claims, at page 6, that "AEMO's 2020 ISP suggests gas-fired power generation may have a more substantive role once coal generators are retired from 2030 onwards. The 2020 ISP identifies that 63 per cent of Australia's coal-fired generation will reach the end of its technical life by 2040. In NSW, this reduction in generation would include coal-fired generators at Liddell, Vales Point, Eraring and Bayswater." It is extremely important to note the use of the word suggests - I utterly reject that this is the suggestion of the AEMO 2020 ISP. Gas, as a fossil fuel, has NO place in a future energy mix. It has no place in a future modern economy, and it certainly has no place in a post-COVID economic recovery.

Liddell power plant is owned by AGL. Liddell's coal-fired plant is slated to close in April 2023. Importantly, on 14 August 2020, AGL lodged a proposal with NSW Planning to install a 500 megawatt (mw) battery storage system at its Liddell power plant, with 150mw proposed to be operating within 18-24 months. AGL has recently reported a 22% fall in full year profit. AGL's CEO Markus Brokhof told The Sydney Morning Herald (15-16 August 2020, page 16) that it is "the right moment" and "the new build of renewables is exactly what the driver is". Of note, AGL was the second company listed on the Sydney Stock Exchange (now ASX), back in 1837 - it is my view that they are well aware of managing so as not to create or be left with stranded assets and that they understand despatchable power. Arguably, they also understand the importance of operating with a social licence. They are responding to the most important threat of our time (climate breakdown).

On Friday 14 August, BHP put a notice on their website notifying lobby groups that they required them to stop backing policies that favour fossil fuels over renewables and that, importantly, they must advocate for emissions reduction (reported in The Sydney Morning Herald 15-16 August 2020, page 4). This is a step toward one leading fossil fuel company moving to develop climate credentials, and aim to meet the Paris Agreement of net zero emissions by 2050. I also put to you that 2050 is not soon enough, and that it is extremely likely that at the next IPCC meeting the global community will have to lift this ambition. I expect that both AGL and BHP will work tirelessly to retain their social licence and meet the new goals. Reading the submission documents, I have no such faith in Santos' maturity or governance to work toward these goals.

Page 7 makes, in my view, an extremely dubious assertion on job creation. It is well known that jobs will be lost in farming (1.8 jobs per gas job), jobs in the services industries (.7 job per gas job), and tourism - as the Narrabri, Coonabarabran, Warrumbungles, bore baths and Pilliga forest are well know tourist destinations who knows how many jobs will be lost ... I can safely attest though that the area will completely and utterly lose it's standing as a tourist destination and the region's world renowned Dark Sky Park will be devastated. My conservative estimate places the job losses

in farming, services and tourism at over 3,100 jobs, in comparison to the 1039 jobs projected to be created. This is a net loss of over 2000 local jobs lost. With this local job loss, there will be a significant loss of economic activity through the commiserate loss of on-spend (the multiplier effect) as a result of each job lost. However, it must be noted that gas field areas in Queensland have noted a small increase in two job sectors that are not mentioned anywhere (neither by the proponent nor Acil Allan), and that is to support welfare recipients (due to substantial job losses in other job sectors) and also a small increase in healthcare professionals due to the detrimental impact that Coal Seam Gas extraction has on human physical and mental health. These jobs are very sad jobs to include in the job data for a project that is not needed. However, if this project were to proceed, it is my estimate that an extra 17 jobs would be created in welfare and healthcare. Further, it behooves you to consider the increased burden on the public purse for welfare and health.

Page 7 also makes, in my opinion, dubious claims on domestic product increases for regions and state. I make two relevant responses to this dubious claim :

1. As mentioned in my earlier submission, in economics we talk about 'externalities'. This is a poorly understood and under researched area of economic measurement. What we are talking about with 'externalities' is the public return. A measurement of wellbeing, if you like. That is, what does a certain item, action or development do that is not measured by 'traditional' monetised measures, such as Gross Domestic Product. This is extraordinarily important, because this is the real value or cost that a community, a society, the environment and our children, including future generations, must bear.
2. Secondly, the Covid Pandemic and the great crash of 2020 has shown us all what we really value, and that includes the health of our families and community, the importance and quality of our children's education, the joy of their play, the beauty of our stories, our poetry and our music - we value our ability to move safely around our neighbourhoods, the intelligence of our public debate and that we depend on the integrity of our public officials, and that we have a future. I am not alone in noting how all of us have relied on our wit, our courage, our wisdom, our compassion and our devotion to our country. This period has shown us clearly the things that make our lives worthwhile and, importantly, it is not a simplistic and unrealistic monetised measurement of Gross Regional Product or Gross State Product. To summarise, these figures do not measure what we value. Imagine the projections if this was fully inclusive and really took into account a renewable future that would deliver benefits for all.

On Page 8 I was shocked to read that the proponent mentions the mild northern winter (2019-20), yet does not offer that they have in part caused this by their pushing of the ultra dangerous fossil fuels. They are destroying their own market - just like a virus that kills its host!!

At page 9 the proponent disabuses science and the community by saying that people who have spoken against this project are 'ignoring' certain matters. It is clear from reading the proponents responses that they live in a bygone era. In actual fact the proponent ignores modern science and reality. It is my view that the community of NSW deserves far better than old fashioned business ideas (and insults). This project missed its mark by more than three decades. The proponent asserts that the "relative contribution of the Project to Australia's overall greenhouse gas (GHG) emissions ... is not significant." This is a contribution that Australia does not need to make and is not needed, as gas is an old fashioned energy source. NSW does not need it. Further, the proponent does not tell us what the GHG contribution will be. It is my perception that they have been very careful to keep this data hidden from public view. It may be as little as 25% to 30%, as some have implied, but it may just be far more. As we do not have the data, we do not know, but even 1% is too much, as we have no carbon budget left!

What we do know about the Coal Seam Gas is that the Co2 component is not needed (euphemistically called uneconomic) and it will be flared off into the biosphere. Along with the seepage of methane, we know that this project will aid and abet climate breakdown. The safest, and proper, place for Coal Seam Gas is in the ground.

Further, the 3rd paragraph on page 9 asserts that Coal Seam Gas is a 'natural' partner of renewable energy. This is, in my view, an ignorant and frankly stupid comment. Coal Seam Gas, is a fossil fuel. Fossil fuels contribute to climate breakdown and are causing the planet to heat. This heating will result in a climate that is incompatible with human life. Coal Seam Gas is not a partner (whether natural or unnatural) to renewables. This position is unduly promoting a hazardous and polluting fossil fuel over energy sources that are beneficial to humankind and life on this planet. This is a really serious matter - life on this planet is dying, we simply cannot accept irresponsible arguments such as this. The position presented is not, in my view, an honest position. I consider it mischievous of the proponent to suggest that developing more fossil fuels will redress climate breakdown.

Additionally, there are other renewable sources of energy completely ignored by the proponent, including hydroelectricity, green hydrogen and geothermal. The comment about batteries also shows how out of touch the proponent is with the modern energy market. Pumped hydro is a form of battery storage. This can be implemented in small scale (just as Japan has done) or, as is being done with Snowy 2.0, on large scale. Further, batteries come in many forms, and the technology, and various battery forms has improved to the extent that they are no longer considered expensive. AGL announced earlier this month (13 August 2020) that it will be putting significant battery storage into the Liddell power site, along with developing other sites.

Approving this (or any other fossil fuel project for that matter) will give some people false hope. It will send a signal to unscrupulous people wishing to exploit fossil fuels for financial gain that NSW is stuck in the last century and that the community and decision makers do not care. Some people, who are unable to read the market or understand intersections of modernity, change and economic progress are unprepared, and thus unable, to foresee changes. Through this inability to foresee momentous change we are at real risk of creating stranded assets that will cause irreparable damage and pose a financial maintenance burden and continual fire risk on the NSW community. It is my opinion that this proponent has been unable to alter it's view with the changing times.

Further the proponents claims on page 9, suggesting that these wells are needed to stand by renewables, also tells me that they are thinking of a very short term solution, however they are proposing something that the people of NSW will need to manage for between 200 and 1000 years, as alluded to by Mr Kitto in his comments to the IPC Commissioners on the afternoon of the 1 August 2020. This further demonstrates that the proponent is completely out of touch with the emergent energy markets, and the strong community sentiment to preserve life on the planet in the interests of intergenerational equity.

On page 10 the proponent admits that they will produce in excess of 100,000 tonnes of Co2 per annum. The proponent say that they will pay their dues. However, I submit that knowing what we have known for over half a century, that the excess of Co2 is causing irreversible damage to life on this planet, that it is immoral and unethical to approve a project that will produce excessive amounts of Co2.

Coal Seam Gas does not, as erroneously stated on page 10, offer any real alternative. Page 10 clearly says that it will increase Australia's GHG emissions. The percentage is irrelevant - it is unclear how they came to the percentage, and anyone who understands statistics knows that this will change - the important object is that it is an INCREASE in GHG - and will remain a contributor to Australias GHG for evermore.

Again, as claimed on page 10 - it is imperative to stress that the majority of people do not believe that Coal Seam Gas is a transition fuel. This was the case in the 1980's & 90's. This is no longer the case, and shows that the proponent is out of touch with both the energy market and economic thinking (I refer you to AGLs and BHPs announcement of the first half of August 2020).

On page 11 Santos claim a number of items as GHG mitigation. There number one item is the Moomba sequestration project. The idea of carbon capture and sequestration has been doing the

rounds for quite some time (I was aware of it last century). It is the alchemy of the fossil fuel industry. I have conducted research into this, conversing with leading engineers in Australia, the US and Europe to find whether this is a possibility. It is well understood to be unviable, and a complete 'pipe dream'. There is no way of achieving it, and to attempt to do this is throwing good money after bad. For the cost of continually pursuing this we could install batteries for almost every town in Australia. The other items on the list (solar cells, heat capture etc) are simple items that any ethical and good corporate citizen would do, because it is the right thing to do.

The proponents tone continues in an aggressive manner for Section 4, page 12. A social licence is important, and should not be dismissed through the use of "rabbit ears". This, to my mind, speaks volumes about this proponents ability to be a good and proper corporate citizen. It is expected in Australia that companies, particularly public companies, have proper regard for the triple bottom line, and that they consider their financials along with the environment and society in which they operate.

Discussion on page 14-15 on Fugitive Gases is, in my view, disingenuous. The section has a lot of words but offers nothing. Sadly, it reminds me of someone going to market and hoping to bargain a position to their advantage.

The proponent, at page 17, mentions the salt waste but, in my view, withholds any information on the toxicity of the product. Rather, they propose that this could be made into soda bicarbonate. If approved, we will need to trace where that soda bicarbonate ends up. I neither want it in my cakes, my toothpaste, nor my home cleaning products! The proponent also obfuscates how the toxic waste will actually be dealt with. This has reinforced my view that this proposal is all about take and waste.

I wish to remark on page 18, and the claim for incident notification. It was my perception that a number of people living near test sites experienced incidents with water and noise, yet they spoke at the public hearings, and in the film "Pilliga Rising, of a lack of engagement or rectification by Santos, even though they said they approached the company on multiple occasions. This has led to my forming the view that the company has no social licence. It is my view that they are untrustworthy.

Pages 19 through 29 covers water. Water is an incredibly precious asset in NW NSW. This is an appalling use of this precious community asset. Additionally, having a very wealthy multinational company operating in the water market will most likely distort the market valued water for the NW NSW community. This, in my view, is not in the interest of the NSW community or the broader economy.

At page 30-31 the discussion turns to Aboriginal Cultural Heritage. Surprisingly to me, the response does not acknowledge the traditional owners past, present and emerging. I must admit that I found this section profoundly insulting. The language used suggests that the proponent only sees the Aboriginal claims to country as a heritage claim. This firmly locates their response in the past, as though they are talking of a museum piece, rather than a living, breathing society and culture. That they attest to undertaking NSW government consultation says to me that they have not gone to country and sat with the traditional owners on country. The narrative suggests that the Aboriginal community was spoken at, rather than with. To my mind, it reeks of paternalism, colonialism and an unspoken assertion that terra nullius pervades. Australia is the lucky country, we have a history that takes us back 60,000+ years ... however, we also have a future, and that future includes a valued Aboriginal community. I retain the view after reading this, and having spoken to some of the Aboriginal elders and community in Narrabri, that Santos has been incredibly legalistic, rather than human, in this regard. This shows a lack of respect for the oldest living culture in the world. This, to my mind, is further colonialism through a lack of understanding of the continuity of Aboriginal culture and connection to land. This response, again in my view, speaks to a lack of social licence.

At page 32 Santos discussed the use of offsets. It would have been worthwhile seeing the model/s used to calculate the number of hectares needed for offsets and, further, the policy and employment opportunities in the forestry sectors required to support this. It is not enough to just state offsets, but rather a serious response would have alluded to forestry plans and reporting mechanisms.

At page 33, imbedded in a discussion on fragmentation, the little Pilliga Mouse finally gets a mention. The fragmentation analysis was distressing to read, stating that each well will be 750 meters apart. Well, that is nothing. That is visible from one site to the next. While linear clearing was mentioned, soil compaction was not. In the Queensland gas fields this has been found to have a profound effect on both farming and forestry land. There is no discussion of soil compaction here, and this will also negatively impact our precious fauna such as the Pilliga Mouse and Koalas.

At page 38 light pollution is discussed, though not in satisfactory detail. The Dark Sky parameters are incredibly important. It is important for science and for tourism. Not discussed at all, darkness is also incredibly important for plant and tree growth, germination and pollinators. This is not discussed. This section alludes to other mines light pollution. This to is absolutely appalling, and should not be used as a 'baseline' for acceptability. Australia lags behind much of the developed world in appreciating that darkness is important for our natural environment.

At page 39 the social impact is discussed. This, in my view, is poorly articulated and suggests that it is a last minute attempt at a response based on poorly formed ideas. It would seem that \$120million is a very low spend to compensate for the incredible damage we would all endure if this proposal was approved.

At page 40-41 bushfire and gas infrastructure is discussed. I found this rather fanciful. The temperature is rising, and we are experiencing far more days over 35 degrees Celsius. While the assessment talks of the infrastructure withstanding 650degrees for 30 minutes, it does not talk about what happens if this fails. What if the fire is 700 degrees Celsius? What can we expect? What will happen? How will this threaten life, plants and animals? I found this explanation lacked a realist approach. We are literally talking about playing with fire!

Page 43 speaks of the flares. They are massive structures standing at 50m tall, and they will stand above the forest canopy, with an extraordinary area having to be cleared around them. I could not find how often, or for how long, they will operate. There is also a very high chance that a willy willy will carry debris into the flare, and that it will ignite. The discussion mentions a whirly whirly, I believe that a willy willy is bigger than a whirly whirly, and I have seen many in NW NSW. They are a common occurrence, and they are only visible because they do carry a lot of debris.

Appendix A - commentary

Some comments on Appendix A: Acil Allen - Update of the Economics

The Update of the Economics assumptions on forecasting demand for the east-coast gas market are somewhat at odds with the information I found. In summary, in the most recent Energy Council gas report, "Gas in Australia: where is it now and where is it going" (2018), AEMO have stated that "Underlying east-coast gas demand has remained flat, with the only material variation being the consumption of gas in NEM gas-fired generation which is heavily affected by both gas price and electricity conditions." Firstly I wish to expand on 'electricity conditions' simply to highlight the growing uptake of renewable (green) electricity, and that a renewable-led recovery will create many thousands of jobs.

(Ref: <https://www.energycouncil.com.au/analysis/gas-in-australia-where-is-it-now-and-where-is-it-going/>)

As stated in the Energy Council report, this AEMO finding is not surprising, given that the ACT will be gas-free by 2025, and anecdotally many people are decommissioning their gas appliances

(I personally decommissioned three appliances last year, and my plumber commented that the tide has turned for gas and that he now does many jobs decommissioning gas fixtures. Many people I know are doing exactly the same).

The Acil Allen Update of the Economics to my mind has a number of issues. The jobs numbers includes both direct and indirect jobs. It is unclear how many local jobs will be created. The indirect jobs are not defined. In my view, the projected jobs losses are extremely optimistic (i.e. there will be far more job losses than forecast in this 'update') and do not match the findings of the Federal Governments Office of the Chief Economist report (Department of Industry, Innovation and Science, 2015) for the Coal Seam Gas market in Queensland, which found significant job losses.

Importantly, this Update of the Economics is, in my opinion lacking somewhat. For instance, it does not consider the economic costs of the loss of the tourism industry and the consequential jobs losses in that sector, which is a real threat to Narrabri, as no one wants to holiday in an industrial landscape. Additionally, the assumed foregone agricultural costs are low, as they do not appear to include the impact caused by a decline in pollinators or soil compaction, and there is no provision for the increased cost burden of the health impacts and wellbeing issues associated with the Coal Seam Gas extraction industry, nor the costs of remediation or ongoing maintenance of coal gas wells after their productive lives are finished. While there was some cost allocation for treated water, I was unable to find the ongoing cost burden for the huge amount of toxic salts waste. It is my perception that this paper has not monetised the full set of data that is needed to make a complete economic assessment.

It is also my view that the Acil Allen Update of the Economics does not consider externalities. These are poorly researched and poorly understood impacts of projects. The externalities could be termed the 'public return', whether positive or negative, or in other words understanding the impacts a project will have on the things that we value. It is my view that for assessments to make sense and be able to inform decisions that they must bring together a full set of monetised items and combine this with the impacts to the things that we value. This will produce a more complete assessment of a project. Without this, economics as a discipline fails us. Thus we are now in the dire mess that we must all together face, that is known as climate breakdown. Economics is a social science, it is all about the things that work to make our society a better place for all. The omissions from this update makes financial predictions/forecasts a very poor way of modelling a project. The report, in my view, has focused on short term shareholder return and not the long-term impacts for all stakeholders. There is virtually no discussion on the negative impacts or consequences of this Coal Seam Gas business.

To make an informed decision you must consider all these matters. It is my view that the project will do far more harm than good.

Appendix B

At this point in the response I turn my attention briefly to Appendix B, a legal opinion.

It is disappointing to read, in paragraph 8, that the legal opinion includes a prediction of energy demand 20 years hence, declaring "This would meet approximately 50% of NSW's gas demand". There is plenty of evidence that gas demand will significantly drop over the next 5 to 10 years, so I recommend that this crystal ball opinion not be considered as fact, and am extremely disappointed to read something so blatantly of a 'Nostradamus nature' among other paragraphs that are stating factual information, such as the number of wells, the 95,000 hectares of the field size and that it is Coal Seam Gas.

Paragraph 17 starts the subsection on Public Hearings. The legal opinion INCORRECTLY identifies the dates of the Public Hearing, by completely omitting 25 July 2020. In my view, this error, along with the above crystal ball opinion, exhibits a lack of accuracy. This begs the question, how much more of this document might be inaccurate?

Further, in paragraph 24, the opinion is "that there is no apparent significant risk of harm" to the water sources. In North West NSW water sources are scarce. Rainfall is incredibly low, thus is not a consistent reliable source. Rainfall is diminishing with global heating. Global heating is currently at 1.1degrees above pre-industrial levels. This has resulted in longer and deeper droughts in NSW across this century. Droughts will get worse due to our GHG emissions. Water is therefore a precious resource. The precautionary principle must be invoked, as there is only one reliable source of water for agriculture and people in this region. Mr David Kitto (and others in response to the Commissioner's questions on 1 August 2020) clearly admitted that there was risk and uncertainty about the well infrastructure and the aquatards. It is unknown what will happen when drilled through, or how the aquatards will respond to pressure. It would be reckless to approve this project given this level of uncertainty about this only source of water. Professor Stuart Khan (University of New South Wales) observes that it is prudent to protect water sources. If there is no potable water there is no business, there is no food, there is no life! How do we apply "adaptive management" when the water source is damaged by pathogens. Put simply, we need water, but we do NOT need Coal Seam Gas. We are killing the planet, and the proponent wants to also risk precious water!!

Paragraphs 26 to 34 discuss, at length, the principles of ESD. My opinion differs from this author. It is my strong view that the principles of ESD must be demonstrably articulated. The author has not considered that the general public are also consumers of the products of the DPIE (indeed, the public fund the Department, and the public servants are simply that, "public" servants). The principles of ESD should be articulated so that ALL interested parties can understand the information. It is elitist to suggest that only 'some' should be able to understand this information. I feel completely alienated from the process, as I cannot see how the principles of ESD were applied. I am certain that I am not alone in this. This shortcoming has material consequence, as it is not an honest or transparent approach. This lack of articulation has left many people wondering how seriously our public servants understand 'intergenerational equity' and the 'precautionary principle'.

On the matter argued in paragraphs 35 to 39 (with special note of paragraph 35), it is my observation that there is a certain class of people in Australian society who have dominated the discourse. This class of people peddle the myth that obfuscating information is acceptable and has always been done. This obfuscation of very important topics, the desire to keep it imbedded in a narrative rather than clearly articulating the matter, means that they retain power. This continues to enable the inequality that Australia experiences. This is reflected in poor gender balance, poor indigenous representation, poor minority representation and poor people-living-with-disability representation right across decision making and important leadership roles in Australia. This view, that certain objects and principles can be hidden from us, is wholly and blatantly unacceptable. While-ever this line of argument is accepted by decision making bodies, Australia will remain an unfair and unequal society. This will result in decisions that are not in the interest of the majority of Australians, or future generations.

The commentary in paragraph 38 attempts to balance the other objects of the Act, declaring that there is no hierarchy. The author appears to argue that as the NWA did not call those out, that it diminishes the two that they did. There is no supporting argument to this position, it is simply the opinion of one person. Possibly, it would have been worthwhile to all of us if each of the objects had been articulated, so that we could have a fair chance of understanding them. That the NWA strongly and deeply cares for two objects does not make an imbalance across all the objects. What it projects is that they really, truly and deeply care about the environment and intergenerational equity. It is my view that the point of this paragraph does not stand scrutiny.

On paragraphs 40 through 52, it is quite apparent that the author has overlooked the item at his paragraph 43(b), which calls on us to consider "the degree of that uncertainty". The degree of uncertainty is very high. There is only one true source of scarce water in North West NSW, with no other water to rely on. This water is very important for life support in this region. There is no other reliable supply. The risk of damage to the water is extremely high. I heard a number of people present at the Public Hearing regarding how the few test wells had already destroyed a potable water supply, declaring that a Santos representative advised them not to use the water. Water is imbedded in the geological makeup of this area. Putting in these wells will disrupt the geological formation at each and every one of the gas well sites. It is not 'a mitigable risk' nor is 'adaptive management' acceptable. Across the past few weeks we have heard peoples stories of how they are now left in far worse positions.

At paragraph 46, and again at paragraph 48, the author cites cases that have no bearing on the locality of NW NSW. These cases, regarding situations in the Hunter Valley, cover an area where multiple water sources are in place, notably as Newcastle is endowed with multiple water sources, including Glenbawn Dam, the Tomago Sandbeds, Chichester Dam, Grahamstown Dam, an incredible storm water collection system and access to major water storage facilities at Mardi Reservoir, Mangrove Creek storage facility, as well as access to unpolluted seawater for desalination. If one or even two water sources are polluted and poisoned in the Newcastle and Hunter regions, while being distressing, people still have other water sources to rely on. Access to multiple reliable water sources must be considered prudent for any population. These extracts of cases have no bearing, as NW NSW must rely on only one permanent source (there is no permanent alternative) and this must elevate the "degree of that uncertainty", doubling up with uncertainty as to where alternate usable water can be sourced.

Paragraphs 54 to 58 speaks of ongoing monitoring. It was my understanding, from the hearings, that the cost of monitoring water supplies / water assets must be mostly borne by the users of the water (the land holder), rather than by the proponent. This situation is highly unfair to residents and farmers and, in the forest areas, to the animals and plants who rely on the water. As the water asset does not simply belong to one land allotment, it is possible that a neighbour of a person hosting a gas well could be impacted. They would gain no royalties, but yet must carry an unimaginable risk of destruction to their water source/water asset. This discussion on water monitoring confused me, as I understood that this would not occur very often (less than an annual event) and only at one or two locations. I understood that this would not occur at each water font unless the water-user paid for water testing. Water does not belong to just one landholder - the source of the water is a shared resource. It was also unclear to me what people would do if their water was poisoned or if a once-reliable water source disappeared? Or what would happen if there was mass tree die-off or a mass animal death-event?

On paragraph 66 to 67, where the author claims that we should reflect on:

(iii) the conservation of access principle which is that each generation should have a reasonable and equitable right of access to the natural and cultural resources of the earth.

I wish to propose that this is, indeed, well understood through the way farmers use the agricultural land (regenerative farming practices), through the established practices and use of water sources, and further it is now well understood people need trees and forests to retain sound mental health. Having visited the Pilliga Forest I can attest to the benefits that this beautiful and unique natural resource provides to the current generation. I would argue that we are making a reasonable use of the natural resources of the region. Having visited the Pilliga Forest sandstone caves, I can also claim to have made use of cultural resources. We do have a reasonable and equitable access to enjoy the natural and cultural resources of NW NSW.

Paragraph 68 through 75 on climate change must be challenged based on the principles of intergenerational equity, as follows:

- i) the conservation of options principle which requires each generation to conserve the natural and cultural diversity in order to ensure that development options are available to future generations;
- (ii) the conservation of quality principle that each generation must maintain the quality of the earth so that it is passed on in no worse condition than it was received;

This proposal must be rejected based on the ecological breakdown that life is undergoing due to the heating and changing climate. This proposal will clearly accelerate climate breakdown through its contribution to excess Co2 and methane. The quality of the earth is already severely damaged by fossil fuel use, and this project will further exacerbate the failing condition of life on earth. The earth is right now being passed to our grandchildren in far worse condition than we received it. Further, on paragraph 75, I maintain that if the issue of climate change was considered by Mr Kitto throughout the assessment, then it was not articulated in an open and clear manner. I find this claim confusing. This is fundamental to life on our planet and should be articulated.

Paragraph 89 makes clear that the combination of the Mining Sepp at clause 14(2) calls on the consenting authority "in determining a development application for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies.. " therefore when combined with the three fundamental principles of intergenerational equity being:

- i) the conservation of options principle which requires each generation to conserve the natural and cultural diversity in order to ensure that development options are available to future generations;
- (ii) the conservation of quality principle that each generation must maintain the quality of the earth so that it is passed on in no worse condition than it was received;
- (iii) the conservation of access principle which is that each generation should have a reasonable and equitable right of access to the natural and cultural resources of the earth.

It is clear that each one of these principles is breached by this proposal. For this reason, and based on the Mining Sepp at clause 14(2), the proposal must be rejected, as the significant greenhouse gas emissions will irretrievably cause damage to the natural and cultural diversity, quality and use of resources (such as farm land, the Great Artesian Basin, the unique Pilliga Forest and the Dark Sky area) for the next generation (if not the current one!).

With regard to applicable State and National policies, I wish to draw your attention to the Reserve Bank of Australia's (RBA) call to action. The RBA monitors climate risks as part of its monetary policy and financial stability mandates. In late June 2020 the RBA joined a group, including 66 of the world's central banks, that warned the world's GDP will collapse by 25% before the end of this century unless decarbonisation of the economy is taken seriously. It is understood, within scenarios for future financial stability, that climate change is a systemic economic threat that, if left unchecked, will undercut prosperity and job security.

A low-emissions transition is inevitable, and would be cheaper and much less damaging if there was early action. As Australians, we need to make stable and long-term decisions that will lead to net-zero emissions in the very near term. For this reason the Narrabri Coal Seam Gas project must be rejected. This project provides nothing to benefit the people of NSW now, or into the future. Indeed, by putting pressure on financial stability NSW, as Australia's largest state economy, will be put at risk. Therefore it is extremely likely that if this fossil fuel project goes ahead that there will be negative impacts to the NSW community. The RBA calls on decision makers to avoid making decisions that will cause harm to financial stability. The impacts of a heating climate (droughts, firestorms, costs to human health of smoke and dust, bleached coral reefs with the decline of fisheries and tourism) are causing harm to the Australian economy. It is my opinion that the RBA makes very clear that the financial stability of Australia is put at risk by increases in our GHG output. This will impact the costs borne by the broader community of NSW.

The RBA's policy position, along with ASICs direction for Directors to have regard to climate change risk, ensure that a business is geared towards creating sustainable, long-term value and contributing to an economy that recognises the interrelated economic, social, human and environmental drivers of prosperity and wellbeing. It is my view that this proposal will adversely impact these drivers that are so important to the NSW and the Australian economy.

While social licence, as discussed in paragraphs 92-95, may not be a term at law (does not appear in any statute or legislative instrument), it is a term that is well recognised in Australia. This is evidenced by Australian Parliamentary Enquiry, held in 2018 which, amongst other issues, considered 'social licence' as an important aspect of any company's ability to operate in Australia. (Refer https://www.aph.gov.au/Parliamentary_Business/Committees/House/Industry_Innovation_Science_and_Resources/MiningSector/Report/section?id=committees%2Freportrep%2F024209%2F26615) .

The social licence represents the trust that the community has in a company or an organisation. This is based on transparency, fair returns, sustainable long-term value and how well a company responds to disputes.

My perception, formed while listening to the public hearing, is that Santos has not, and does not take peoples concerns seriously. I formed the perception that the proponent has very poor dispute resolution frameworks. I formed this opinion after listening to a number of people who believed that they had been negatively and gravely impacted by Santos gas wells, and the lack of accessibility to a sound, fair and transparent process to settle disputes with Santos. I recall hearing one person saying he was fearful of being sued for simply speaking of his experience. This formed the perception in the my mind that Santos are untrustworthy.

As a social licence is built on trust and good governance, it is my strong view that Santos does not have a social licence.

Further thoughts on social licence, ASIC calls on companies to have regard for their near and long term influence on company returns as well as the wider economy. As it is my opinion that the proponent has not disclosed transparently its adherence to ESD, nor declared the amount of Co2 and methane that will be emitted (except to say that Co2 will exceed 100,000 tonnes per annum), it is my strong view that they have forfeited their social licence to operate. The social licence is about understanding governance and the impact that the company will have on the wider economy (this includes economic, social, and environmental impacts).

I wish to thank you for considering my thoughts and opinions, and wish you well in your deliberations.

With kind regards
Carolyn Crossman
B.SocSci, M.SocSci
Member Economic Society of Australia

