LOCK THE GATE ALLIANCE
AUSTRALIANS WORKING TOGETHER TO PROTECT OUR LAND, WATER, AND FUTURE

Reply to: Georgina Woods
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**Kurri Kurri gas plant submission**

Thank you for the opportunity to make a submission on this project.

Lock the Gate Alliance is a network of hundreds of community groups and tens of thousands of individuals around the country united by a love of land, water and community, and concerned about the impacts of coal mining and unconventional gas.

In New South Wales we work with landholders, Traditional Owners, townspeople and community groups opposed to coal seam gas development in the North West of the state and invasive and damaging pipelines that would deliver that gas to market.

We oppose this project. The proponent has not demonstrated any benefit that it would provide for the people of New South Wales but it is clear that it comes with considerable impacts, including creating inflated demand for damaging and unnecessary coal seam gas and pipeline developments, driving up the price of electricity and contributing to further air pollution and greenhouse gas emissions.

The Environmental Impact Statement submitted by the proponent is not adequate. It is clear from the scanty information provided, however, that the case for developing this damaging proposal has not been made. It will be built too late to "replace" Liddell power station and in any case, analysis has demonstrated that the capacity lost when Liddell closes can and will be made up by demand management, renewable energy, existing gas power stations and new battery storage, all of which will together provide a more affordable and less environmentally-damaging reliable electricity supply than is offered by this project.

In short, we believe the motivation behind this project is political and as such, given its impacts, it is not in the public interest.

The EIS deals in only a perfunctory manner with the principles of ecologically sustainable development, which are fundamental to New South Wales planning law. Strangely, given that electricity generation is New South Wales and Australia's biggest single contributor to greenhouse gas emissions and given the catastrophic harms that will be inflicted if further global warming is not prevented, the EIS identifies "no threats of serious or irreversible harm" in its cursory treatment of the precautionary principle. In consideration of inter-generational equity, it is claimed that the project "is an important component in the long term transition to renewable energy by facilitating the displacement of carbon based electricity generation, which will contribute to maintaining and enhancing the health, diversity and productivity of the environment for the benefit of future generations." The case for this is not made and the proponent needs to be required in its response to submissions to provide a more fulsome account of where the greenhouse emissions from this project sit in the context of the gross intergenerational inequity of climate change. This is particularly

the case in the light of the judgement in *Gloucester Resources v Minister for Planning* (NSWLEC 2019) and this years' judgement in *Sharma by her litigation representative Sister Marie Brigid Arthur v Minister for the Environment* (FCA 2021) which both found that even small contributions to greenhouse gases can contribute to unacceptable impacts if they contribute to catastrophic climate change.

Similarly, the project does not achieve the ESD principle of improved valuation in that it does not ensure, "the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste" are paid for by the proponent and included in the accounting of the project's costs and benefits.

**Timing**

It is claimed that this project is necessary to "replace" Liddell power station, and yet, it is proposed to become operational too late to do that. The retirement of Liddell is due to occur before this proposed power station will be operation, with one unit to shut down in April 2022 and the remaining three units in April 2023.

The Environmental Impact Statement for this project clarifies that "The development is anticipated to be operational by the end of 2023" but even at that time, there may not be connection to the gas pipeline network and the power station will run on diesel. We note the following uncertainty about timing in the EIS:

> *There is the potential that the natural gas lateral and consequently gas supply may not be constructed in time for commissioning and operation of the gas turbines units. This period might be for approximately six months and would depend on the gas pipeline construction timeframe (to be done by a third party). It is noted that operation on diesel during the commissioning phase and initial post-commissioning phase would be as a peaking power station in line with the Proposal objectives, with the overall hours of operation expected to be low, in the order of approximately 2 per cent of available operating hours in that six month period. Following this initial period, the power station would operate as dual fuel once the gas supply to the Proposal Site has been established.*

Construction of a new power station to run on diesel in New South Wales is an absurd proposition given the under-utilisation of gas power stations currently in the network and the availability and increased supply of electricity from cleaner, cheaper and more reliable sources. In June, AGL outlined its planned developments at the Liddell site for solar thermal and storage, further undermining the justification for this development.

Furthermore, there is little information in the EIS to clarify how the proposed construction timeline will or may be affected by the remediation project currently underway on the Kurri Kurri aluminium smelter site. We address the environmental issues of this contamination further below, but our reading of information about the remediation project indicates that the excavation and treatment of contaminated soils, removal of them to the adjacent storage cell, validation and final capping of the site is expected to take 33 months and has only just begun. These remediation plans currently involve building a water transfer pipeline across the power station site that it appears will not be dismantled until a year after the containment cell has been capped. As the proponent of the remediation project has only just had its Environment Protection Licence varied to allow this work to begin, that indicates that it will be January 2024 before that work is complete. It is clear that there are some practical overlaps between the two projects, given that the remediation project lay out

shows a materials stockpile and a leachate pipeline in the area where the gas power station is proposed to be constructed.

If the proponent of this project intends to begin construction before the remediation project has concluded, then further information needs to be supplied with the EIS regarding how these two projects will proceed alongside each other and what risks that poses to each and to the environment. If there is *not* proposed to be any overlap between the two projects, then the proponent needs to explain how it is possible for the power station to begin construction before the expected completion of the remediation project, which is, as far as we can tell, not likely to occur before the end of 2023.

**Gas pipeline: uncertain, undescribed**

The necessary gas pipeline to connect this power station to the network is not assessed by this EIS and there is no current project proposed for this. The EIS states that, "Also required is a new gas lateral pipeline and gas receiving station (which would be developed by a third party and subject to a separate planning approval)." The EIS indicates that APA, "the proposed developer and operator of the gas lateral and associated infrastructure, is currently gathering data and completing a comprehensive desktop assessment to identify potential pipeline alignment." A desktop assessment is, by its nature, not comprehensive. The lateral pipeline is an intrinsic part of this development and its impacts need to be addressed by the proponent as consequential impacts. Delay to the pipeline would of course, if the power station operates in the intervening time, extend the period where it runs exclusively on diesel.

The impacts of this pipeline are relevant considerations for this EIS given that it would, in the words of the EIS "be required for the power station to operate." And yet, no information is provided about who will propose it, when, where it will go and what its environmental impacts will be. This is not acceptable either from an environmental perspective or practically in terms of the proponent's claim that this power station is necessary. Indeed, it indicates that this proposal has been rushed and not thought through. If the power station is necessary for the National Electricity Market, and the pipeline is necessary for the power station, then arrangements for the pipeline's planning, assessment and construction need to be addressed by the proponent in this EIS. Failure to include this "necessary" element in the EIS in fact reveals that this power station is not necessary and that its promulgation is merely political.

If the proponent is serious, then a pipeline proposal must be brought forth and assessed as part of this application.

**Justification**

The EIS cites out-of-date analysis in its justification chapter and fails to critically analyse the purported need for this project in the context of more recent electricity market projections and NSW's Climate Change Policy Framework.

The EIS cites AEMO's *Advice to Commonwealth Government on Dispatchable Capability* (September 2017) which indicated the national electricity market could need as much as 1,000 megawatts of additional new flexible and dispatchable resources to replace the contribution of Liddell when it closes in 2023. It also cites the 2019 *Electricity Statement of Opportunities* (ESOO) which "indicated that with committed projects and the interconnector upgrades, around 215 MW of new dispatchable supply would be required to ensure NSW only has a one-in-ten year risk of a significant involuntary load shed event in summer 2023-24." On the basis of these two older documents, the

EIS declares, “There is therefore a clear need to fill this gap in dispatchable capacity” without illuminating why a power station more than three times this size, which will only be intermittently used, is proposed to fill this gap.

However, both of the above documents have been superseded by the *Integrated Systems Plan 2020* and their inclusion as background in the EIS is contradicted later by mention of the most recent *ESOO* from 2020, which “acknowledges that the reliability outlook has improved with the planned augmentation of the Queensland to New South Wales Interconnector (QNI) in 2022-23 and the development of 900 MW of local new renewable generation.” The risk to reliability identified by the 2020 *ESOO* is not lack of electricity supply, but the risk “posed by extreme climate induced weather events such as the 2019-20 summer bushfires and the COVID-19 pandemic” (Hunter Power Project EIS Main Text)

Headline declarations in the EIS about necessary investment in electricity generation are not matched with relevant information about where and how that investment that is already occurring. This is necessary information for proper assessment of the claims the proponent is making about the justification for this project. For example, it is stated in the EIS, on the basis of the 2020 *ESOO* that, “In NSW there is a need for 1,480 MW of generation this decade to meet the reliability standard and to meet the more stringent IRM capacity,” but information about how much additional generation and storage capacity is already in development, and when this can be expected to be operational, is not supplied. Our review of publicly available material indicates that there are currently nine proposed battery storage projects in NSW for a total of 1,355MW capacity. The New South Wales Government has committed to providing capital funding for projects with combined dispatchable capacity of 220 MW and pre-investment studies of projects to deliver 2,700 MW of on-demand electricity under its Emerging Energy Program. In order to establish that the impact of this proposal is justified, the proponent must supply information about the gap it is purporting to fill that is up-to-date, non-political and objective.

The crucial finding of AEMO’s 2020 *Integrated Systems Plan* is quoted in the EIS, but is not explored: “New flexible gas generators could play a greater role *if gas prices remained low at $4 to $6 per GJ over the outlook period*.” (our emphasis) This is the nub of the case the proponent fails to make in its incomplete justification for this project. AEMO’s *Integrated Systems Plan* found that gas power in the National Electricity Market will continue to fall out to 2030, which means that the existing power stations will be able to supply the necessary gas contribution. Beyond 2030, gas will only increase if it is cheaper than battery storage, at the price cited above. The EIS provides no information about the price at which it will supply electricity to the NEM, which is crucial information to the assessment given that it will affect the likelihood that its capacity will be utilised and will also have potential social and economic impacts if this project contributes to higher electricity prices, as seems likely.

In further justification, the proponent cites the goal of the *Hunter Regional Plan 2036* to “diversify and grow the energy sector by promoting new opportunities arising from the closure of coal fired power stations that enable long term sustainable economic and employment growth in the region.” The key words here are “long-term” and “sustainable” neither of which apply to this project. Further, it is hardly defensible to describe a gas power station as “diversifying” the energy sector.

There is no discussion at all of NSW’s *Net Zero Plan* (2020) or the International Energy Agency’s *Net Zero 2050 Roadmap* (2021). Similarly, there is no discussion of demand-reduction in the section reviewing alternatives to the project. Furthermore, the alternatives section describes battery storage alternatives only in general terms without providing specific information about price trajectories (which are available from the ISP 2020) or projects in development.

The capacity factor assumed for this gas power station is 10%. AEMO has identified that utilisation of existing gas fired power stations in the NEM has fallen and will continue to fall out to 2030. Indeed, the proponent of this project itself already owns an existing gas fired power station nearby at Colongra on the Central Coast which has a current utilisation rate of less than 1%.[1] Relevantly, a complaint has recently been made to the ACCC highlighting evidence that gas generators are not being switched on in response to high demand and/or high price events in the National Electricity Market, and during a recent high price event, the Tomago aluminium smelter reduced its demand voluntarily, while Snowy Hydro's Colongra gas plant remained offline.[2]

Further, the justification section cites political statements made by the Prime Minister and Energy Minister without factual basis. Section 4.3.1 cites a media release as part of the justification for the project, repeating the terms deployed by the Prime Minister and Energy Minister that this power station would be built "in the event that other electricity industry participants do not step in and provide the new dispatchable energy to replace the Liddell power station in the required time frame."

What is needed for this section of the EIS and required in a Response to Submissions from the proponent is an analysis of data from the NEM and the *most recent* forecasts from AEMO showing existing and in-development "dispatchable power," existing and expected demand, and the expected change in electricity availability when Liddell closes. It would be most useful if this analysis included data and forecasts on electricity prices, given that this, too, is a key advantage being cited for this project for which no actual evidentiary basis is supplied.

The justification chapter asserts that "The Proposal is aligned with the Australian Government's energy policy," but does not mention NSW's energy and climate change policy framework, which are relevant considerations in the NSW Minister's determination of this application and which are not aligned with the Australian Government's.

Finally, this power station would be reliant on the supply of gas (or diesel) fuel. Given the challenges that have beset the east coast gas market since the onset of large scale LNG exports from Queensland a decade ago, the proponent needs to supply further information about how it intends to meet its gas demand, and at what price that fuel will be supplied.

**Hazard – bushfire**

The site is in a high fire danger area and has had large bushfires on its boundary twice in the last twenty years.

The bushfire scenario described in the EIS where the bushland to the north west of the site catches fire in a north west wind is reflected in Scenario 1 and, according to the EIS "might be expected to occur once every 10-20 years, not accounting for the influence of climate change." This is a major omission and must be rectified with the supply of further information examining the increased likelihood and intensity of fire in the bushland surrounding the site and the area where the unproposed gas supply pipeline will go.

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[1] 20 May 2021. Institute for Energy Economics and Financial Analysis. https://ieefa.org/ieefa-australia-why-gold-plated-gas-plan-makes-zero-sense/

[2] Ketan Joshi. 25 May 2021. "The curious case of Tomago: fake blackouts feeding a fossil fuelled future" *RenewEconomy*. https://reneweconomy.com.au/the-curious-case-of-tomago-fake-blackouts-feeding-a-fossil-fuelled-future/

**Environment – air pollution**

If it ever operates, this power station will contribute to air pollution for nearby residents. Indeed, the proponent claims that the site was selected for its lack of proximity to population centres in Sydney, even though there are residential areas only 2.5 kilometres away from this site.

The maximum 24 hour NOx concentration limit when the plant runs on diesel is 86 mg/Nm³ (42ppm), which is perilously close to the *Protection of the Environment Operations (Clean Air) Regulation 2010* limit of 44ppm. This is reason enough for the New South Wales government to reject the proposition that this power station be allowed to operate as a dual fuel facility. Further, running this power station on diesel will add to the load of $PM_{2.5}$ concentrations in the district. As the EIS identifies, maximum background 24-hour average $PM_{2.5}$ level at the nearest Government monitoring station (Beresfield) is only just under the criterion (25µg/m³), "so small additions at any point may lead to the criterion being just exceeded" and annual average $PM_{2.5}$ levels already exceeds the criterion. Similarly, the EIS admits that measured $O_3$, which forms in the atmosphere as a pollution by-product of NOx emissions, "occasionally exceed assessment criteria nearly every year." Given this context and the likelihood of more hot days than average as a result of climate change, it is necessary for the proponent to do more work investigating the effect on nearby populations and vegetation of increased NOx and ozone concentrations.

Furthermore, given the under-utilisation of gas power in the NEM already, and the delayed operation of this project until six months after the retirement of Liddell, the need is clearly not pressing for it to ever be run on diesel. Such a concept must be ruled out by the EPA and the Planning Minister.

**Environment – contamination**

The EIS states that "A Site Audit Statement prepared by a site auditor in accordance with Part 4 of the *CLM Act* stating that the land to which the statement applies is suitable for the proposed use in accordance with the proposed Rezoning Master Plan for ReGrowth Kurri Kurri must be in place prior to Snowy Hydro taking possession of the Proposal site." Extraordinarily, no detailed investigations of existing water or soil contamination or any remediation measures were provided with the EIS, and no detail is provided about the remediation project that is already underway there. This is an unacceptable omission.

Contrary to the EPA's request, no site audit statement or site audit report certifying suitability of the land for the proposed land use was provided with this EIS but it is admitted by the proponent that these certifications are necessary before construction can commence. There's no clear indication when this will occur, or what degree or nature of risk there might be that the decontamination will fail or be delayed.

The groundwater assessment in the EIS appears to be based on a single observation of depth and quality at the existing bores. As a result, there are speculative statements, such as the elevated groundwater "may" be as a result of recent rainfall and elevated sulphate levels at two bores "may be indicative of historical contamination, or of the influence of acid sulphate soils." This is not adequate and the proponent must prepare and supply a complete groundwater assessment, including discussion of groundwater contamination and whether construction and operation of this facility will interact with or exacerbate that contamination.

The groundwater assessment also states that “historical discharges from the aluminium smelter have impacted groundwater quality, mostly around the existing stormwater ponds and waste areas.” Clearly there is a need for a more comprehensive assessment of this matter.

The alluvial aquifer below the site is labelled “alluvial water source” but is not named. Designation of it as less productive appears to have been made on the basis of a single set of water quality data. None of the groundwater samples were tested for metals contamination, despite the acknowledged likelihood of contamination plumes in the vicinity. If groundwater is intercepted during construction, and needs to be removed, there appears to be no knowledge or consideration about how this water will be handled, treated or disposed of.

**Environment – greenhouse**

This proposal is for the most polluting type of gas plant – open cycle – and the EIS states that, “The gas turbine plant layout would not make provision for future conversion to a combined cycle gas turbine.” Combined cycle configuration uses gas and steam together to generate energy, and routes waste heat back into a steam turbine, making it far more efficient and less greenhouse intensive.

It is noted in the EIS that, “There is the potential for the Proposal’s gas turbines to be fired on a certain percentage of hydrogen in the future when the technology and infrastructure becomes more economic. However, this would require some modification to the power station and gas turbines.” No further information is provided about this modification, its timing and feasibility or what “certain percentage” is envisaged.

The EIS assesses greenhouse emissions assuming 10% capacity for gas and 2% for diesel. On this level of utilisation, it is estimated that the project will create 0.5Mt of greenhouse gases per year after the first year, for a total of 14.8Mt over its thirty year operation. It is claimed that this equates to an emissions intensity of 0.52 tonnes of CO2 equivalent per MW hour, which is less than comparable gas plants, including the proponent’s Colongra plant. While this annual emission level is contextualised within NSW and Australia’s current annual greenhouse emissions (0.4% and 0.09% respectively), no information is provided about how the project relates to NSW’s Net Zero Plan, the Australian Government’s emissions reduction commitments, or a carbon budget capable of achieving the Paris Climate Agreement temperature goals, to which both the Australian and NSW Governments have committed.

The International Energy Agency in May released its Special Report, *Net Zero by 2050 Roadmap for the Global Energy Sector*. This report provides important guidance for the New South Wales Government for its own net zero by 2050 pledge. Crucially, the report notes that within the broader energy sector, the electricity sector is the first in the IEA’s scenario to achieve net zero emissions, “mainly because of the low costs, widespread policy support and maturity of an array of renewable energy technologies.” Achieving NSW’s net zero goal is not simple given the range of challenges and barriers in different activities that create greenhouse pollution, but the task in the electricity sector is the clearest and most straightforward of these and building new sources of unabated greenhouse pollution in the electricity sector is fundamentally unnecessary, unacceptable and at odds with New South Wales’ stated policy and its responsibility to future generations.

There is considerable confusion in the public discussion about the role of gas in our pathway to zero emissions and here, too, the IEA’s report provides guidance. Its scenario shows that globally, “Generation using natural gas without carbon capture rises in the near term, replacing coal, but starts falling by 2030 and is 90% lower by 2040 compared with 2020.” Given that New South Wales already has under-utilised gas capacity in the National Electricity Market and that our own AEMO

has indicated that the role of gas in the NEM is likely to fall during this decade, there is no justification for this project.

The proponent and the Commonwealth and New South Wales Governments have failed to provide clear and detailed modelling, planning and policy guidance regarding the future of gas in the NEM in the context of Australia's obligation to participate in global efforts to prevent 1.5 or 2 degrees average global warming. The environmental impact statement for this project is dangerously incomplete without such analysis and the only option available to the Minister in the absence of information that demonstrates that this project is consistent with that obligation is to refuse it.

**Environment – biodiversity**

The existing transmission easement to the site barrels through an area of wetland that is zoned E2 under Cessnock's Local Environment Plan. Though the power station itself will be built on the already-developed land of the former Kurri Kurri aluminium smelter, there is consequential development, including the unknown gas pipeline connection, that may have a significant impact on biodiversity given the sensitivity of the surrounding landscape. The woodlands of the Kurri Kurri area host critically endangered Regent honeyeaters, several endangered ecological communities and the nationally listed *Grevillia parviflora ssp parviflora*. Nearby wetlands host endangered and migratory waders and other birds. The Sydney to Newcastle gas pipeline is roughly 15km south east of the project site and between the two lie forests, woodlands and wetlands highly likely to be habitat for threatened species. Indeed, the vegetation surrounding the site to the north and west is mapped habitat for critically endangered regent honeyeaters. The proponent admits that a pipeline connector will be necessary but provides no information about where it will be built or what the impact of that construction will be. Given that the pipeline is consequential to the power station development this is not acceptable and must be corrected.

In addition, we note that the EIS admits that measured $O_3$, which forms in the atmosphere as a pollution by-product of NOx emissions, "occasionally exceed assessment criteria nearly every year." Given this context and the likelihood of more hot days than average as a result of climate change, it is necessary for the proponent to do more work investigating the effect on nearby vegetation and threatened species habitat of increased NOx and ozone concentrations.

The forest surrounding the site is mapped as Regent honeyeater habitat and the species is listed in New South Wales as at risk of "serious and irreversible impact." The EIS concludes for this species that "the impact is very minor in the context of the extent of habitat available to the species in the locality" but no account was considered about the indirect impact of air pollution, particularly ozone, on Regent honeyeater habitat.