Friends of the Pilliga Inc

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Friends of the Pilliga submission to the Narrabri Gas EIS

Friends of the Pilliga is a small longstanding environmental group, based in Coonabarabran and focused on environmental issues especially those in the Pilliga.

We object to this proposal and recommend that it not be approved. This industry would have negative impacts over the whole extent of the project area and should not go ahead.

The Pilliga is the last remaining large example of temperate woodland in NSW. As such it is a refuge area for a rich diversity of native flora and fauna, communities and ecosystems. It has been identified by the Commonwealth Government as one of only 15 National Biodiversity Hotspots and by Birdlife Australia as a globally significant Bird Area. Biodiversity surveys conducted in October 2011 in and around the project area indicate the presence of significant numbers of threatened and endangered species and support its importance. They are in sharp contrast with results obtained by the proponent's ecologists.

Ecology

The proponents have downplayed the impact on natural areas from all aspects of the proposal.

- Perhaps only the claimed 1000ha will be directly impacted by the removal of vegetation but this industry actually industrialises the entire project area because it is so spread out and requires so much additional infrastructure.
    - The EIS claims that existing roads and tracks will be used for longitudinal infrastructure however there are few existing roads throughout the project area so kilometers of additional roads and pipelines will be required. Already within the limited exploration licence around 3 times the existing roads and tracks have been put in to the well sets. This increases the fragmentation of the area to a much finer scale than at present.
    - Constant noise from generators on well sites may disrupt the navigation and feeding activities of all fauna, including bats. This has been shown in overseas studies. These have also indicated a decline in the number of owls in American gas fields. Bush Stone Curlews appear to require a buffer zone of 3km. Nesting Black Cockatoos would also be impacted.

    - WH&S regulations will require all 24 hour worksites to be highly illuminated (floodlit). This too will impact natural movement of fauna, attracting large numbers of insects and their predators.
    - Increase in intrusion by invasive, non-native species is dismissed as Low in the assessment of risk although it is well known that opening up new roads allows access by foxes, pigs and cats to otherwise less accessible areas. Increased traffic movements *will* bring in weed seeds to otherwise undisturbed sites. And there will be an increase in the amount of native road kill.
    - Consideration is only given to human "sensitive receivers" which are assumed to live no closer than 350m. The smaller the organism, the greater the impact from pollutants etc. Children are smaller than adults and are thus impacted first and disproportionately. Most native organisms are even smaller and actually live within the proposed 50m buffer zone. No studies have been done to examine the impacts on native fauna.
    - Koalas have suffered population crash in the Pilliga but recent surveys indicate their continued presence in the project area. Santos' long-term activities will make population recovery increasingly difficult.
    - A "rewilding" project has been commenced in the adjacent Pilliga National Park by Australian Wildlife Conservancy in conjunction with NPWS. Their ecologists have recently captured an Eastern Pygmy Possum, the first observed since 2011.
    - The Pilliga is an extremely important refuge island in a sea of developed farmland. As such it is vital for the continued existence of a number of endangered species including the Pilliga Mouse, the Regent Honeyeater and the Five Clawed Worm Skink.
- The proposed offset strategy is flawed. Government Biobanking Offset Strategy requires conserving "like for like". The size and diversity of the project area precludes the possibility of finding of anything else the same as it anywhere else in Australia.
- The Biobanking methodology itself is inadequate, considering patches of woody habitat to be linked if they are separated by less than 100m.
- More flares will be required that the EIS indicates. Apparently half the pilots will need a flare in addition to the ongoing flare at Bibblewindi. These flares pose a fire risk as well as risk to native organisms. Their cumulative impact on Siding Spring Observatory, an internationally important scientific establishment, is also significant.
- Impacts are not just limited to habitat removal. The EIS admits it is "likely" that there will be indirect impacts due to fragmentation, noise, traffic, fencing, light, weed invasion, feral fauna, fire, dust, erosion, sedimentation, hydrological change, accidental spills and leaks, and accessibility for hunting and collecting in premitigation stages. It then offers limited or no mitigation strategies but reduces the expected risk to Low (Table 15.22)
- Methane is not the only gas released in the process. Other gases include BTEX, VOCs and other petrochemicals, known to have adverse health impacts on humans. They will also affect native animals.
- Bohena Creek and in fact all Pilliga creek systems are described as being dry most of the time. All old-timers working in the Pilliga know that under every creekbed is a shallow aquifer, reached easily by digging a meter or so in the

sand. Models assume a constant gradient but there are deeper areas where the water is confined in waterholes. No assessment has been made.

- Bohena Creek is not in the poor condition claimed in the EIS. The existence of freshwater mussels is a good indicator of its health. And yet Santos will be permitted to release treated water when it carries flows exceeding 100 megalitres per day. Will there be a gauging station installed at the release site? If not already there, one should be installed before any waste water is allowed to be released.
- Invertebrate and fish studies have been poorly done with no sampling from good condition waterholes on Bohena Creek. In addition to the freshwater mussels these holes also provide refuge for those aquatic fauna relying on good water quality – native fish, freshwater sponges and a range of invertebrates.
- No studies have been made into the impact on stygofauna discovered in 2012. In fact the EIS denies their existence. The project should not be allowed to go ahead until studies have been carried out.
- The projected drawdown, increasing with time, could have significant impacts on the permanence of some water holes and the shallow aquifers, as well as drawing water from under the forest itself, leading to its eventual decline and disappearance. This is considered to be outside the scope of the EIS which is limited to the expected 25 year life of the project. The modelled drawdown of 0.5 metres is not credible given the lack of supporting data.
- Rehabilitation of so-called legacy sites has so far been unsuccessful. A few local eucalypts and wattles have regenerated using the ageing seed bank in the stockpiled topsoil. Very few local grasses or understory plants have established. Invasive weeds such as African Lovegrass dominate and soil health indicators such as ants have not returned. Heavy mulching disguises the problems,

Climate Change

Unconventional gas is being touted as a “transition fuel” to an economy deriving all of its energy from renewable sources. Burning it for power generation is not the solution.

- Methane is many times worse than carbon dioxide as a greenhouse gas, especially in the first 20 years.
- All wells leak in the long term due to failure of concrete etc. Many wells leak from the start. Pipelines and wellhead infrastructure also leak. Methane may burn with less environmental impact than coal but these fugitive emissions greatly increase its impact.
- The background methane level of methane in the Pilliga is negligible. CSIRO studies from 2015 indicate spikes in methane levels around several of the existing wells.
- Recent research by the Melbourne Energy Institute shows that Australia may be dramatically underestimating the fugitive emissions from unconventional gas extraction, including CSG.
- Governments worldwide have signed up to limiting temperature increases to 2°C. At a recent AGM the CEO declared that their business model was based on accepting a 4°C temperature increase. Surely this indicates their acceptance that their business will be a contributor to this eventuality.
- There is little consideration of the impacts of Climate Change and no clear plan to mitigate the additional risk of the project itself.

Aboriginal Cultural Heritage

- From what is contained in the EIS, there is very little knowledge on the location of Aboriginal cultural sites. The location of development impact are not yet specified. The protection of Aboriginal heritage is left to a future management plan with too many unknowns. This combination of ignorance and wishful thinking presents real risks to Aboriginal heritage and is not a good basis for approval of the project.
- Santos' EIS has not properly considered wider cultural issues, especially Aboriginal people's views on how the project would impact on their broad ties to country, their culture, their social cohesion and their community development.
- Attached to and forming part of this submission is a review of the Aboriginal Heritage Component of the EIS by an experienced archaeologist.

Risk Assessment

Spills and fire are two risks of great concern

- Risk of spills from catastrophic failure of pond walls is assessed as very low in the EIS. But less dramatic spills are very common and need consideration. There have already been at least 20 reported spills in the project area, some of which were due to human error. Anything this complicated runs a cumulative risk of failure due to human mistakes. There have been reports on the ABC (4/5/17) that there have been 3 spills of untreated CSG waste water from Santos' infrastructure in Queensland in the last 3 weeks.
- Risk of uncontrolled release and ignition of gas is also assessed as low, being 50 chances in a million per year. Over the 25 year life of the project this gives a cumulative risk of 1.25 chances in 1000 – a much higher probability.
- The permanent flares additionally have potential for risk to their reputation on catastrophic fire days.
- Because risk assessment is over the life of the project there is no consideration of risks associated with long term breakdown of well casings and likelihood of gas leakages. This has already been seen on the Condamine River.
- The EIS promises to stop the risk to those not working in the industry by closing the project area. This effectively turns a public resource into private land without the proponent having to buy it.

Other areas of concern

Language

The EIS is peppered with "Get Out Of Jail Free" terms such as "where practicable", "where required", "may be undertaken", "unlikely to have significant impact". For example: The project "*has the potential* to supply *up to* 200 terrajoules/day; which is sufficient to meet *up to* half NSW's natural gas demand."

Analysis
The EIS seems over-dependent on desktop analysis and modelling. Models are only as good as the assumptions they are based on. Desktop analysis depends on the data already being in existence. Large parts of this area have only been studied superficially previously so the data does not exist.

Benefits
So-called benefits are exaggerated. Experience in Queensland indicates that only limited numbers of local jobs materialize, house prices fall in the aftermath or in a downturn, existing businesses are robbed of qualified staff, cost of rental accommodation skyrockets because FIFO workers masquerade as locals.

Chief Scientist's Recommendations
In 2014, the NSW Chief Scientist, Mary O'Kane released a report which made 16 recommendations. At the time she said that "*there is still much for the Government to do"* before the industry could go ahead safely. Few of these recommendations have been implemented.

Recommendations

- That the EIS not be approved,
- That the proposal not be given the go ahead at all,
- That the rehabilitation strategy be reviewed in the light of its current failure,
- That all stages of the process be independently monitored for compliance with any conditions imposed already and in the future.

There is nothing to be gained by this project. A few people will make a lot of money by exporting a resource belonging to the Australian people. And we, the citizens will be left with a legacy of costs to environment, health and community.

Yours faithfully

Jane Judd
Convenor
Friends of the Pilliga

Attachment: A review of the Aboriginal Heritage Component of the EIS by an experienced archaeologist.

This independent review was requested by some residents of Coonabarabran who are very concerned about the proposed Narrabri coal seam gas project. It has been provided free of charge.

The reviewer is an archaeologist and cultural heritage manager with 30 years of experience in the management and protection of Aboriginal heritage in NSW. The reviewer: worked with the National Parks and Wildlife Service for over 20 years; is currently an independent heritage consultant; has a Bachelor of Science, a Bachelor of Arts (Hons) in archaeology and a PhD from the Australian National University; and has published widely on topics around protecting Aboriginal heritage and Aboriginal values in regard to the marine environment, protected areas and forested landscapes.

NARRABRI COAL SEAM GAS PROJECT EIS: REVIEW OF ABORIGINAL HERITAGE COMPONENT. May 2017

The Aboriginal heritage section of the EIS comprises three separate components

- Appendix N1: The Aboriginal cultural heritage assessment report [ACHAR] prepared by Central Queensland Cultural Heritage Management PL [CQCHM].
- Appendix N2: The Cultural Heritage Management Plan
- Chapter 20 in the EIS

It is important to note that because the development is deemed to be of state significance, the Aboriginal heritage protection requirements of Part 6 of the NPW Act have been switched off. In particular the procedures and practices around the issuing of an Aboriginal Heritage Impact Permit [AHIP] to allow harm to an Aboriginal object do not apply. Instead, the management and protection of Aboriginal heritage has been guided by the Secretary of the Department of Planning's requirements and OEH recommendations for the proposed development. The latter, for the most part, are consistent with processes established under the NPW Act and in some cases go beyond what is normally required e.g. ethnobotanical research.

1. Appendix N1 of the EIS – the ACHAR

Overall this is a comprehensive and professional report which meets the Secretary's requirements and addresses all the recommendations of OEH. Conversion of information from this report into the CHMP and the main body of the EIS should ensure that Aboriginal values within the subject area, both tangible and intangible, are not diminished. The challenge will be to maintain and continue to follow procedures over the 25 year development period and subsequent mining operations.

Review of the report is divided into five sections

a) Underlying principles

The cultural heritage assessment is premised on two principles – the avoidance principle and the precautionary principle. The first notes that the proposed infrastructure will directly affect only a very small proportion of the project area and its positioning is sufficiently flexible to allow avoidance of all Aboriginal sites. While this is desirable, the reality is that over a 25 year period, flexibility is likely to be reduced and infrastructure specifications are bound to change, potentially leading to impacts on Aboriginal sites. Without the Part 6 AHIP procedure in place, management and mitigation of Aboriginal sites may not be adequate or appropriate. The assessment should not be placing so much reliance on avoidance as a management tool.

Application of the precautionary principle in this context states that if there is uncertainty over whether a phenomenon is an Aboriginal object it will be assumed that it is, for example, an unmodified piece of quartz or a scar on a tree. An Aboriginal origin for such features can be very difficult to determine without corroborating evidence. A rigorous, scientific approach to identification of Aboriginal objects is archaeological best practice and should be advocated in the assessment. If there is uncertainty and the feature can be easily avoided, the precautionary principle may be appropriate; otherwise, a professional diagnosis of the feature must be made, with dissenting reports if relevant. The recording of erroneous sites undermines both the profession of archaeology and exacerbates the issues already faced by AHIMS.

b) Archaeological and historical context

There is an excellent review and synthesis of previous archaeological, anthropological and historical records, including oral history records. This has provided a good basis for understanding traditional and historical associations of Aboriginal people and the local landscape.

Other potentially useful sources of information are research conducted on cypress pine forests in the Snowy River valley region of Kosciuszko national park, by John Banks, Ian Pulsford and others particularly the impacts on white settlement and rabbits on forest structure.

Another source of information could be Forestry Corporation NSW records of due diligence surveys for Aboriginal sites in the Pilliga forests managed by the Crown– these are conducted prior to harvesting operations.

The report says little about contemporary connections of Aboriginal people with the subject area and surrounding region, despite the concerns raised by Aboriginal people about loss of access should the gas field be developed. Are there aspirations for getting back on country? What kind of involvement do local communities currently have in management of local protected areas and state forests and/or are they used for gathering resources, culture camps, etc? What is the significance of the two Aboriginal Areas in the region?

c) Aboriginal consultation

This appears to be a complex and drawn out process, which has been well managed and well documented. The proponent made every reasonable effort to communicate with all RAPS and the OEH Aboriginal consultations requirements have been followed. Over 500 RAPs is a large number of groups/individual to be involved in an assessment process and the tables showing how concerns and issues have been addressed were very useful. However, one individual, Dolly Talbot, may not be satisfied with how her concerns were addressed. A face to face discussion could be worthwhile, to identify whether there are underlying cultural factors affecting Dolly Talbot's concerns.

Although due process has been followed, the report provides no real sense of Aboriginal views and perceptions of the proposed development as a whole, for example, its potential impacts on groundwater or on the overall natural and cultural landscape, or its potential social or economic benefits/disadvantages. It would be useful to have an indication of the range of Aboriginal views on the proposed development, in addition to responses framed by the consultation process.

The report could acknowledge the shortcomings of the OEH consultation process *viz.* many Aboriginal people object to the assumption that cultural information will be freely given on request, to facilitate the assessment process [Stage 3]. Instead many Aboriginal people consider that consultants/developers need to earn the right to receive cultural information by demonstrating they will be respectful and trustworthy.

d) Data management, methodology, significance assessment, predictive model

A detailed quantitative analysis of the reliability of AHIMS data and an audit of same through a pilot study was valuable and useful. The plan to eventually audit all AHIMS sites in the subject area is commendable, providing the amendments to grid coordinates, etc are accepted by OEH.

Trialling the pre-clearance surveys tested the methodology, but a more rigorous quantification of visibility and its impacts on site detectability should be included. Developing a standard recording form for completion by the sites officers, containing all information on methodology, results and analysis is recommended

The significance assessment process focussed on site types rather than on individual sites, on the potentially erroneous assumption that all sites will be avoided hence significance is therefore not a major concern. However, if a site is to be impacted, its level of significance is critical to the decision making process. The significance assessment table did not recognise the contribution of previous archaeological investigations to the current state of knowledge and how the sites in the subject area may contribute to this knowledge. Overall, the significance component of the assessment was not very thorough.

Predictive model – too detailed and difficult to follow and by own admission, is not very reliable.

e) Heritage management and mitigation

As discussed above, avoidance may not always be possible, and other measures must be put in place, with adequate detail. Mention is made of relocation of sites, presumably referring only to stone artefacts, but no detail is provided. Would the process followed be the one described in the OEH code of practice?

2. Cultural Heritage Management Plan

The cultural heritage management plan [CHMP] has been developed from the ACHAR and the comments provided above are relevant to it. Additional comments are provided below

- What is the legal status of the CHMP?
- Cultural Heritage Coordinator to be nominated by Working Group – who is the employer? Is he/she to be paid a wage, is it an identified position, is it a fulltime position? The selection process and decision making for this position must be fully documented
- Concerned that too much emphasis on avoidance; process for artefact reallocation needs a more detailed description or reference to OEH code.
- Zone 1 – what if it is not possible to avoid a site, what technical expertise will be used when deciding on processes for minimising impacts?
- Does the Working Group get an opportunity to comment on proposed works?
- New finds – is 2 days enough time to deal with the matter??
- How will the Working Group represent the views of the wider community – will there be a newsletter or regular community meetings?

3. Chapter 20

Chapter 20 in the EIS is a summary of the ACHAR and the comments provided in regard to the ACHAR are relevant to it. Additional comments are provided below.

Impacts on cultural values associated with water/changing land use/ etc – Aboriginal concerns about these more general values have not been well described and mitigation through monitoring may not be adequate. Proposed mitigation measures may not be reducing the risk to low – very low [p. 20-29]. The Working Group should be participating and providing opinions in regard to this matter.