

From: [Steve O'Donoghue](#)
To: [Steve Barry](#); [Bradley James](#)
Cc: [Clay Preshaw](#)
Subject: FW: Narrabri Stage 3 - revised conditions
Date: Wednesday, 30 March 2022 7:43:38 PM
Attachments: [image003.png](#)
[image005.png](#)
[220329 Draft Conditions \(RES01132649\).docx](#)

Steve, Brad

Whitehaven has provided some advice on the draft Narrabri Stage 3 revised conditions – please see comments below and also in the attached document.

Regards

Steve

Stephen O'Donoghue
Director Resource Assessments
Energy, Resources and Industry | Planning and Assessment | Department of Planning and Environment

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The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: David Ellwood <[REDACTED]>
Sent: Wednesday, 30 March 2022 7:13 PM
To: Steve O'Donoghue <[REDACTED]>; Tony Dwyer <[REDACTED]>
Cc: Clay Preshaw <[REDACTED]>
Subject: RE: Narrabri Stage 3 - revised conditions

Steve,

Thank you for the opportunity to comment on the revised draft conditions provided by the IPC. Our comments are included within the attached as tracked changes.

In addition, we make the following points. We would be most grateful if you could please pass these on to the IPC as well.

We also make the following general comments.

- NCOPL is reviewing options for a pilot/trial of technologies to allow enrichment of methane content in gas streams to be burnt by flares within an approximate 3 year period, consistent with the previous draft conditions. We would therefore be comfortable with including this within the draft conditions (refer to the proposed condition B18(c)).
- The intent to conduct this proactive research reflects the uncertainty around membrane separation technologies, which are not currently used in the Australian coal mining industry.
- We understand that the reduced GHG performance measures included in Condition B18(d) are based on membrane separation technologies.
- Reflective of the above mentioned uncertainty, we therefore propose to describe the reduced GHG performance measures included in Condition B18(d) as emission reduction targets rather than performance measures (this condition is numbered B18(e) in the attached version with the addition of the new B18(c)).

Whilst it is considered that the reduced GHG performance measures would be better reflected as emission reduction targets given the uncertainty in the abatement measures, should the performance measures included in Condition B18(d) be retained by the IPC, we have the following comments:

- Strongly suggest that they are linked to Condition B17, which includes some important context, and also the ability to offset these emissions should the performance measures not be met.
- There are also some minor inconsistencies introduced by this, for instance, the current life of mine performance measure of 0.160 tonnes CO₂-e in Table 3 is effectively redundant as it would be replaced the new life of mine performance measure by 2030.

Reduced GHG Performance Measures

Following our discussion today, we understand that **the reduced GHG performance measures need to be revised**. The only gas that is drained by the goaf gas drainage system is the gas from the 'longwall', based upon historical mine records only approximately 30% of this gas component would be extracted by the goaf gas drainage system. As described in Jacobs (2021) (Appendix C of the Amendment Report), total greenhouse gas emissions were modelled and calculated from four areas of the mine:

- Pre-drainage. This is the gas extracted in front of mining and can be flared when gas volumes reach 3.5 m³/tonne coal and the methane (CH₄) composition exceeds 30%. This gas is extracted through service boreholes.
- Development. This is the gas generated when mining roadways. This gas is extracted through the ventilation of the mine.
- Longwall. This is the gas from the longwall. This gas is extracted through goaf drainage and the ventilation of the mine.
- Outbye longwall. This is the gas from completed, sealed longwalls and outbye areas. This gas is extracted through the ventilation of the mine.

Accordingly, the new emission reduction targets have been updated in the attached based on:

- 'Longwall' methane emissions from Palaris [Table 5.3](#) of 11.7 Mt CO₂-e.
- This gas reports to the ventilation system (approx. 70%) and to the goaf gas drainage system (approx. 30%) (which is based on historical mine monitoring records).
- Assuming an operational efficiency of 90%, and a downtime efficiency of 90%.
- Using a GWP of 25.

David Ellwood

Director NCO Stage 3 Project

Whitehaven Coal Limited

10 Kurrajong Creek Rd, Baan Baa NSW 2390 Australia



From: Steve O'Donoghue <[REDACTED]>

Sent: Tuesday, 29 March 2022 6:54 PM

To: David Ellwood [REDACTED] Tony Dwyer [REDACTED]

Cc: Clay Preshaw <[REDACTED]>

Subject: FW: Narrabri Stage 3 - revised conditions

David, Tony – attached are revised draft conditions provided by IPC with key changes in emission targets – all Scope 1 and changes to Emissions Reduction Plan – note in particular targets for 2020 embedded in the plan.

Also note request from IPC that we could consult with you subject to confidentiality so please only keep internal or with Resource Strategy reps.

Best if we can meet to discuss in the morning and provide some context – I'll call first thing to arrange time

We need to respond by tomorrow afternoon so need any input from you tomorrow afternoon

Steve

Stephen O'Donoghue

Director Resource Assessments

Energy, Resources and Industry | Planning and Assessment | Department of Planning and Environment

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emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Steve Barry <[REDACTED]>
Sent: Tuesday, 29 March 2022 5:28 PM
To: Clay Preshaw <[REDACTED]>
Cc: Steve O'Donoghue <[REDACTED]>; Philip Nevill <[REDACTED]>; Bradley James <[REDACTED]>
Subject: Re: Narrabri Stage 3 - revised conditions

Dear Clay

Thank you for your email of 26 March 2022 with your proposed revised conditions. With very limited exceptions, the Panel is inclined to adopt the revised conditions in your email (the material exceptions are highlighted in the attached).

One issue that the Panel does require urgent advice on is the measures to be described in the Applicant's Scope 1 Emissions Reduction Plan. Specifically, does the 2030 benchmark proposed by the Panel under condition B18(d)(ii) in the attached give sufficient time for the measures to be described in the Scope 1 Emissions Reduction Plan to be effective and if not why not?

The Panel will consider any further advice the Department can provide before **COB 30 March 2022** on this point.

To the extent that the Department considers that its advice must be informed by consultation with the Applicant or any other Government agency, the Department may do so, provided that whoever consulted is required to keep any communications relating to the conditions confidential until the Application is determined.

Kind regards

Stephen Barry | Planning Director

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New South Wales Government
Independent Planning Commission

From: Clay Preshaw <[REDACTED]>
Date: Saturday, 26 March 2022 at 3:00 pm
To: Steve Barry <[REDACTED]>
Cc: Steve O'Donoghue <[REDACTED]>, Philip Nevill <[REDACTED]>

Subject: Narrabri Stage 3 - revised conditions

Hi Steve,

As discussed, we have prepared a set of revised conditions of consent (see **attached**).

We have tried to capture the intent of your suggested edits, but we have drafted it quite differently.

A few explanatory comments:

- **Reasonable conditions**

- We recognise that GHG emissions abatement technology is rapidly changing and likely to substantially improve over the life of the project.
- However, it is important that any consent conditions are reasonable and are based on the best available scientific and technical evidence.
- We were particularly concerned that your suggested 10 year 'hold-point' may not be reasonable, and may ultimately reduce the likelihood of any meaningful reductions.

- **Best available science**

- This is really a 'cutting edge' space – the most relevant academic literature has only been published in the last 6-12 months.
- Some new literature has even become available since we finalised our assessment report (see **list below**).
- The advice from Palaris (via Department requests) received in May 2021, October 2021 and December 2021 (**attached** for ease of reference) appears to be consistent with the scientific literature.
- Importantly, the Palaris advice also provides more site-specific information about constraints and opportunities.

- **Site-specific options**

- Due mainly to safety reasons, it appears that recovering methane from the ventilation air is unlikely to be reasonable and feasible over the life of the project.
- However, there appears to be a reasonable prospect of flaring methane from other gas streams (e.g. goaf gas) via methane enrichment.
- More specifically, we have calculated the approximate quantitative reductions that 'membrane separation' technology could potentially achieve based on the scientific evidence available.

- **Proposed revised conditions**

- Based on these calculations, we have incorporated a set of "Scope 1 emissions reduction targets" that we consider are reasonably achievable and economically feasible.
- These emissions reduction targets would need to be described in the Plan within 12 months (and approved by the Secretary) and implemented within 3 years.
- There is flexibility built into the conditions, but if implemented successfully from year 4, we have calculated a potential 17% emissions reduction over the life of the project (i.e. 5.3 million tonnes of CO₂e).
- Nevertheless, we have also retained the mechanism to independently review and potentially 'ratchet down' every 3 years.

We have spent a considerable amount of time working on this over the past 10 days, but I note that there are a number of assumptions underpinning our calculations that should be tested with CAS and NCOPL (and Palaris).

We are happy to discuss our revised drafting or the complex technical matters behind that in more detail with you.

Cheers

Clay

Relevant literature

AUSIMM (2022) "Australian Fugitive Methane Reduction: a case study for coal mining", 25 Feb 2022

<https://www.ausimm.com/bulletin/bulletin-articles/australian-fugitive-methane-reduction-a-case-study-for-coal-mining/>

Yang et al (2022) "Enrichment of low concentration methane: an overview of ventilation air methane", 16 Feb 2022

<https://pubs.rsc.org/en/content/articlelanding/2022/ta/d1ta08804a/unauth>

Polish Academy of Sciences (2022) "Will It Be Possible to Put into Practice the Mitigation of Ventilation Air Methane Emissions? Review on the State-of-the-Art and Emerging Materials and Technologies", 23 September 2021

<https://www.mdpi.com/2073-4344/11/10/1141/htm>

CSIRO (2018) "Capture and enrichment of ventilation air methane (VAM) from underground coal mines", 27 June 2018

<https://publications.csiro.au/publications/publication/PIcsiro:EP182965>

US EPA (2019) "Ventilation Air Methane (VAM) Utilization Technologies", July 2019

https://www.epa.gov/sites/default/files/2017-01/documents/vam_technologies-1-2017.pdf.pdf

General CSIRO information

<https://www.csiro.au/en/work-with-us/industries/mining-resources/mining/fugitive-emissions-abatement/mine-ventilation-air-methane-abatement>