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Zina Ainsworth
Environment and Community Manager
SIMEC Mining
2975 Remembrance Driveway
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Re: Tahmoor Coal MOD3 - GHG Assessment - Response to NSW EPA submission

Dear Zina,

Tahmoor Coal Pty Ltd (Tahmoor Coal) received a submission from the NSW Environment Protection Authority (EPA) relating to the greenhouse gas (GHG) assessment prepared by EMM Consulting Pty Ltd (EMM) for the proposed Modification 3 (MOD3) to Tahmoor Coal Mine (the MOD3 GHG assessment).

Specifically, the NSW EPA requested the following information:

1. The proponent is required to nominate and commit to measurable and achievable reduction Scope 1 and Scope 2 targets.

2. Specifying Scope 3 emission goals is encouraged but not required.

3. Scope 1 goals must be specified in absolute terms (i.e., tonnes CO*2*-e for a given year), with emission intensity goals specified where appropriate.

The draft *NSW EPA Guide for Large Emitters* states in Section 4.5.4 that:

> proponents are required to set an overarching long-term scope 1 GHG emission goal for the project's residual emissions that represents a meaningful contribution to the emissions reduction objectives of the State. Interim scope 1 emission goals that establish a trajectory to achieving the overarching scope 1 goal, must also be specified for the project. Interim goals are to be specified at 5-yearly or shorter-term intervals. Scope 1 goals must be specified in absolute terms, e.g. tonnes CO_2-e for a given year, with emission intensity goals specified where appropriate….
>
> …'A meaningful contribution' refers to the expectation that the project's scope 1 emissions would reduce at a comparable rate to the relevant industry-sector emissions trajectory, or if this does not exist, to the overall NSW net zero emissions trajectory (Box 9). Proponents should compare the average annual percentage change in project emissions to 2030 and 2035 relative to the average annual percentage change in the relevant industry-sector or overall NSW net zero emissions trajectory over these time frames, and note any project-related emissions projected for 2050.

Section 5.2.1 of the MOD3 GHG assessment quantified the annual percentage change in emissions from Tahmoor Coal to 2030 and 2035 relative to the NSW net zero emissions trajectory.

Firstly, the comparison was conducted purely on the difference in calculated annual emissions between existing approved operations and MOD3 operations, defined as Scenario 3 in the MOD3 GHG assessment. Because the changes under MOD3 relate to a revision to the annual ROM coal extraction under the approved mine plan, the difference in annual emissions between existing approved and MOD3 operations varied significantly, with the annual changes in emissions for Scenario 3 ranging from -867% to +3,885%.

Therefore, a comparison was made in Section 5.2.1 for the calculated annual percentage change in Scenario 2 emissions (MOD3 operations) relative to the NSW net zero emissions trajectory. This comparison returned the following:

- To 2030, an average percentage change of -7.2%, relative to the corresponding NSW net zero emissions average percentage change of -7.6%.

- To 2035, an average percentage change of -10.2%, relative to the corresponding NSW net zero emissions average percentage change of -8.6%.

On the basis of the above comparisons, in accordance with the draft *NSW EPA Guide for Large Emitters*, it was concluded that the average percentage change in annual emissions to 2030 and 2035 was generally aligned with the corresponding NSW net zero emissions average percentage change. It was concluded that the annual Scope 1 emissions from Tahmoor Coal under MOD3 were shown to reduce *at a comparable rate to the… overall NSW net zero emissions trajectory* as listed in in Section 4.5.4 of the draft *NSW EPA Guide for Large Emitters*. Relative to the average percentage change in annual emissions to 2030 and 2035 under the NSW net zero emissions trajectory, there was a minor increase (+0.4% at 2030) or reduction (-1.6% at 2035) for MOD3 operations. Consequently, specific emission reduction targets were not included in the MOD3 GHG assessment report.

Tahmoor Coal is currently subject to the Safeguard Mechanism emission caps. The Safeguard baseline for the mine has been calculated and audited. The site-specific emissions intensity is 0.5454 t CO_2-e per t ROM coal for the mine.

The Safeguard Mechanism will be the driving factor for implementing emission reductions at Tahmoor. To illustrate the reductions required relative to the annual GHG emissions projections for Scenario 2 from the MOD3 GHG assessment, Tahmoor Coal have provided the current annually varying baseline relative to the projected MOD3 ROM coal extraction rate, which is presented in Table 1.

The baseline projections have been derived using a combination of the site-specific emissions intensity of 0.5454 t CO_2-e/t ROM coal and the coal mining industry default emissions intensity of 0.3054 t CO_2-e/t ROM coal. The balance between the site specific and default emission intensity factor changes from 90:10 in FY24 to 0:100 in FY30. The declining baseline emissions presented have been calculated through the application of the annual decline rate of 4.9% out to 2030 and 3.285% each year thereafter (Clean Energy Regulator 2024[1]).

[1] https://cer.gov.au/schemes/safeguard-mechanism/safeguard-baselines

Table 1 Annual emissions and Safeguard Mechanism reductions – Tahmoor Coal

Year	ROM coal (tpa)	Scope 1 emissions (t CO_2-e/year) – Scenario 2 MOD3 GHG assessment	Projected Safeguard Mechanism baseline emissions (t CO_2-e/year)	Difference (t CO_2-e/year)	Reduction relative to Scenario 2 MOD3 GHG assessment emissions (%)
FY24	2,518,066	1,021,515	1,248,575	227,060	22%
FY25	3,941,724	1,599,057	1,768,438	169,381	11%
FY26	3,600,134	1,460,482	1,453,725	-6,757	<-1%
FY27	3,845,099	1,559,858	1,389,240	-170,618	-11%
FY28	3,186,803	1,292,804	965,711	-327,094	-25%
FY29	3,057,388	1,240,304	762,733	-477,571	-39%
FY30	2,668,377	1,082,492	535,316	-547,176	-51%
FY31	3,643,677	1,478,147	694,427	-783,719	-53%
FY32	3,411,562	1,383,984	615,969	-768,014	-55%
FY33	3,460,124	1,403,684	590,030	-813,654	-58%

It can be seen from the data presented in Table 1 that for projected MOD3 Scope 1 emissions, the annual Scope 1 GHG emission reductions required to be achieved by Tahmoor Coal to meet Safeguard Mechanism obligations would increase from less than 1% in FY26 to 58% by FY33.

At the time of reporting, the data in Table 1 represents the current understanding of Tahmoor Coal's emission reduction obligations under the Safeguard Mechanism. Annual GHG emissions from Tahmoor Coal would be recorded, reported and audited on an annual basis in line with actual ROM coal extraction rates, coal mine waste gas capture and flaring rates and mine ventilation air methane emissions monitoring. The Safeguard Mechanism baseline and emission reduction obligations would therefore be reviewed on an annual basis in response to actual site operations.

As specified in Section 5.3 of the MOD3 GHG assessment, to assist with meeting future Safeguard Mechanism reduction obligations, Tahmoor Coal are considering the implementation of the following measures:

- Flare optimisation -– this measure will involve the optimisation of the three flares to maximise burning of CH_4 to reduce the need for ambient venting of mine waste gas at certain CH_4 concentrations. Tahmoor Coal forecast these improvements to be in place in 2025. Expected to achieve a 10% reduction in mine waste gas venting emissions and 10% increase in flaring emissions.

- Increase in power generation capacity – Tahmoor Coal is investigating additional power generation capacity from the combustion of captured mine waste gas by a third party where technically and commercially viable. This measure would reduce the amount of gas that is flared or vented onsite reducing Scope 1 emissions, and supply additional electricity for onsite operations, reducing Scope 2 emissions. Tahmoor Coal forecast the potential timing for future power generation capacity would be approximately 2027, subject to determination of technical and commercial viability and based on feasibility study and approvals. Expected to reduced annual flaring and venting emissions by 20% and reduce annual purchased electricity requirements (Scope 2 emissions reduction).

- VAM control technology – Tahmoor Coal is undertaking a concept study into the use of a regenerative thermal oxidiser (RTO) for the destruction of VAM at the mine. The intent would be to progress to a pre-feasibility level study for this technology to understand the system capability, and system requirements such as power, water and land availability. Tahmoor Coal estimate the potential timing for such equipment would be in the late 2020's, depending on whether the process is technically and commercially viable. If viable, this measure is expected to achieve at least at 79% reduction in fugitive methane emissions from the mine.

It is considered that these measures would supplement the existing gas capture and utilisation infrastructure at the mine which already assist Tahmoor Coal with reducing annual GHG emissions. Any surplus emissions relative to Safeguard Mechanism obligations would be dealt with via the purchase of approved offsets.

Yours sincerely

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