ERM

Level 15
309 Kent Street
Sydney NSW 2000

Telephone: +61 2 8584 8888

www.erm.com

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Subject: Tahmoor South Amended Project – Air Quality and Greenhouse Gas

1 Introduction

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates the Tahmoor Mine, an existing underground coal mine approximately 80 kilometres (km) south-west of Sydney in the Southern Coalfields of New South Wales (NSW). The mine has been operating since 1979 when product coal was first produced.

Currently, up to three million tonnes (Mt) of run-of-mine (ROM) coal is extracted annually from the mine. Product coal is primarily transported via rail to Port Kembla Coal Terminal, or to Newcastle Port Waratah from time to time, for shipment to both Australian and international markets.

Mining within the existing Tahmoor North mining area is scheduled for completion by approximately 2022, depending on geological and mining conditions. Without access to a new extraction area by this time, Tahmoor Mine would commence closure of the mine resulting in cessation of the extraction of the coking coal resource. Accordingly, Tahmoor Coal is seeking approval for the Tahmoor South Project, being an extension of underground coal mining at Tahmoor Mine, to the south of Tahmoor Coal's existing mining area (the Project).

Given its significance to the State, the Project is deemed to be State significant development (SSD) under the provisions of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). Under these provisions, the NSW Minister for Planning and Public Spaces, or delegate, is the consent authority for the Project. Approval for the Project is also required from the Commonwealth Minister for the Environment under the provisions of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Following the receipt of updated Secretary's Environmental Assessment Requirements (SEARs) in June 2018, a comprehensive environmental impact statement (EIS) was prepared by AECOM Australia Pty Limited (AECOM 2018) for the Project. The EIS was publicly exhibited between 23 January and 5 March 2019 by the NSW Department of Planning, Industry and Environment (DPIE). In response, 91 submissions were received from the community and community organisations, and 15 responses were received from government agencies and councils.

On 20 February 2020, a submissions report (AECOM 2020a) was lodged with DPIE which responded to all submissions made during exhibition of the EIS. At the same time (ie 20 February 2020) a project amendment report (AECOM 2020b) was lodged with DPIE to document amendments made to the Project in response to the submissions and to reduce potential environmental impacts of the Project.

The amendments documented in the project amendment report included, among other things, changes to the mine plan and the REA. The changes to the mine plan included the removal of a longwall in the northern part of the mine (LW109), reconfiguration of the longwall layouts to comprise two series of shorter longwall panels, the reduction of the width of the longwalls, and a reduction in the height of extraction within the longwalls. The changes to the REA included a reduction in the proposed extension area by increasing the height of the REA.

Tahmoor Coal has now made the decision to make further changes to the Project to further reduce potential environmental impacts, particularly potential subsidence and biodiversity

impacts. These amendments include the removal of two longwalls, LW107B and LW108B, further changes to the REA design and small amendments to the layout of the ventilation shafts.

With the removal of LW107B and LW108B the life of mining will be reduced from about 2035 as described in the project amendment report (AECOM 2020b) to about 2032 (ie reduction of about three years).

All other aspects of the Project remain the same as those documented in the project amendment report (AECOM 2020b).

Further details on the proposed amendments to the Project are described in Section 2.

2 Amendments to Project

As previously stated, changes are proposed to the Project to further reduce potential environmental impacts, particularly potential subsidence and biodiversity impacts. These amendments include:

- the removal of two longwalls in the southern part of the mine (LW107B and LW108B);
- the containment of the REA within the bounds of the currently approved disturbance footprint; and
- changes to the layout of the ventilation shafts and associated transmission line easements.

The removal of LW107B and LW108B will reduce the estimated production volume of the Project from about:

- 43 million tonnes (Mt) of ROM coal considered in the project amendment report (AECOM 2020b) to 33 Mt;
- 30 Mt of coking coal considered in AECOM 2020b to 23 Mt; and
- 2 Mt of thermal coal considered in AECOM 2020b to 1.4 Mt.

The removal of LW107B and LW108B will also lead to a reduction in the volume of rejects from about 11.6 Mt to 9.7 Mt.

With the removal of LW107B and LW108B the life of the mining will be reduced from about 2035 as described in the project amendment report (AECOM 2020b) to about 2032 (ie reduction of about three years). Some surface works, rehabilitation and mine closure would be undertaken after the completion of mining activities.

The containment of the REA within the currently approved disturbance footprint will ensure that no native vegetation, particularly the Shale Sandstone Transition Forest (SSTF) endangered ecological community, will be required to be cleared for the REA. However, to accommodate the reduced footprint, the height of the REA will be increased by 10 m from a top of reduced level (RL) 310 m that was proposed in the project amendment report (AECOM 2020b) to a top of RL 320 m.

The changes to the layout of the ventilation shafts and associated transmission line easements are aimed at reducing clearing of the SSTF during their construction.

All other aspects of the Project remain the same as those documented in the project amendment report (AECOM 2020b).

3 Impacts of the Amended Project on Air Quality

The Air Quality assessment completed by ERM in 2020 included dispersion modelling for a maximum ROM throughput of 4 Mt per year (ERM, 2020a). The amended project is not proposed to exceed this production rate and would therefore not result in any changes to particulate emissions associated with these activities.

One of the main sources of dust emissions for the project was wind erosion from the REA, accounting for approximately 10% of the total TSP emissions from the site. As this footprint is expected to reduce in size this will result in a reduction in emissions at the REA.

It is therefore anticipated that the amended project is not likely to result in any increases in particulate emissions or ground level concentrations compared to those presented in ERM (2020a).

4 Impacts of the Amended Project on Greenhouse Gas Emissions

A reduction in total years of operation and therefore subsequent ROM production over the life of the mine, will result in a reduction in greenhouse gas emissions. Using the same assumptions as those presented in the Greenhouse Gas Assessment (ERM, 2020b), the following tables present a summary of the re-calculated scope 1, 2 and 3 emission estimates.

These values represent a reduction over the life of the mine of approximately 22% for scope 1, 23% for scope 2 and 25% for scope 3 from those presented in ERM (2020b). This is not unexpected as the amended project reduces the life of mine by 3 years and ERM (2020b) also included 2020.

Summary of estimated CO_2-e (tonnes) – all scopes

Scope 1 Emissions (t CO_2-e) (based on the power plant operating)							Scope 2 Emissions (t CO_2-e)	Scope 3 Emissions (t CO_2-e)
Year	Diesel	Unleaded Petrol	Methane	SF_6	Post-Mining Activities	Total	Electricity	Energy Production
2021	465	7	89,971	0.4	6,614	97,058	11,929	525,244
2022	2,029	30	157,843	1.9	28,844	188,749	52,024	2,880,188
2023	3,311	50	508,623	3.1	47,061	559,048	84,879	4,837,896
2024	4,156	62	626,743	3.8	59,071	690,036	106,540	6,618,074
2025	3,728	56	652,197	3.4	52,991	708,976	95,574	6,467,475
2026	4,178	63	701,435	3.9	59,380	765,059	107,098	7,763,571
2027	4,189	63	835,956	3.9	59,543	899,755	107,391	7,735,856
2028	4,656	70	1,455,162	4.3	66,177	1,526,069	119,356	8,463,474
2029	3,761	56	1,305,609	3.5	53,459	1,362,888	96,417	6,939,653
2030	4,080	61	1,294,164	3.8	57,990	1,356,299	104,589	6,515,485
2031	3,564	54	910,576	3.3	50,654	964,851	91,360	5,520,472
2032	943	14	264,345	0.9	13,407	278,711	24,181	1,565,209
Total	**39,060**	**587**	**8,802,624**	**36**	**55,191**	**9,397,498**	**1,001,338**	**65,832,595**
					Annual average	**783,125**	**83,445**	**5,486,050**

Note: Total values may not always equate to the sum of the numbers shown due to rounding

5 References

AECOM 2018, Tahmoor South Project - Environmental Impact Statement, prepared for Tahmoor Coal Pty Ltd by AECOM Australia Pty Ltd.

AECOM 2020a, Tahmoor South Project - Response to Submissions, prepared for Tahmoor Coal Pty Ltd by AECOM Australia Pty Ltd.

AECOM 2020b, Tahmoor South Project - Project Amendment Report, prepared for Tahmoor Coal Pty Ltd by AECOM Australia Pty Ltd.

ERM 2020a, Tahmoor South Project – Air Quality Impact Assessment, prepared by ERM on 10 February 2020

ERM 2020b, Tahmoor South Project – Greenhouse Gas Assessment, prepared by ERM on 10 February 2020