



23 July 2021

The Secretary  
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**Attn:** Ms. Lauren Evans  
Team Leader  
Resource Assessments

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### **Via the Planning Portal**

Dear Lauren,

### **SSD7009: Marulan South Limestone Continued Operations Project**

Reference is made to the abovementioned Development Application (DA) currently under assessment by the Department of Planning, Industry and Environment (DPIE) and your correspondence of 6 July 2021 seeking the following additional information:

- Clarification of the assumptions underlying the Greenhouse Gas (GHG) Assessment Report submitted as Appendix Q to the exhibited Environmental Impact Statement (EIS) and explanation of the information submitted in November 2019; and
- Amendment and high-resolution copies of EIS project figures.

The above requests are addressed below.

#### **Item 1: Greenhouse Gas Emissions Assessment**

DPIE has requested that Boral provide clarification of the following matters relating to the assessment of GHG emissions

- Clarification of the methodology used to inform the assessment of GHG emissions and that this was based on the "*worst case scenario*";
- An explanation as to the inclusion of existing emissions in the quantification of operation related emissions; and
- Where construction emissions were factored into emissions estimates at various stages of the project.

Each of the matters raised are addressed below.

#### *1.1 Model assumptions and methodology*

The GHG report assumed that production rates and associated emissions were static throughout the project life and adopted a methodology of translating the emission rates associated with the production profile contained in the National Greenhouse and Energy Reporting (NGER) for 2016 – 2017, with respect to the operations contribution.



Boral acknowledges, that the proposed development seeks to not only continue the current operation but increase production from 3.38Mtpa to 4Mtpa. Accordingly, the project emissions estimates have been revised to reflect this change.

The methodology applied used the 2016 – 2017 NGERs “per unit production” rates that informed the preparation of Appendix Q of the EIS to scale the emissions calculations based on the assumptions and operational factors set out below. Where relevant, data from the 2019 – 2020 NGERs has been incorporated.

- Lime production (i.e. lime processed through the kiln) is anticipated to increase from 72,927tpa to 85,000tpa in the first year of the project life;
- All construction and site preparation works (including vegetation removal) will occur within the first 5 years of the project.
- The worst case scenario emissions, construction and operations, occurs in the first year of the project life when all vegetation removal is anticipated to occur;
- Limestone mining (including overburden removal, haulage, and emplacement) will peak in 2030 (stage 2, year 4 of the project);
- From 2030 it has been assumed that production will remain at peak operations. This will reflect the “worst case scenario” and does not reflect the actual conditions that fluctuate in response to demand;
- Since 2017, the site has introduced generators to site which contributes additional industrial emissions associated with the combustion of diesel. It is also noted that during this period, Boral’s use of electricity has reduced; and
- From 2023, it is envisaged that the use of sub-bituminous coal use will increase and offset the use of natural gas.

The review of the GHG assumptions with respect to operational contributions, revealed a mis-reporting of emissions associated with sub-bituminous coal. In Table 5 in section 3.2 (p.19) of Appendix Q, this source was reported to contribute 3,918 tCO<sub>2</sub>-e from 210 tonnes. It appears a transcription error occurred as the 2016-2017 NGERs report records the emission contribution as 397 tCO<sub>2</sub>-e from 210 tonnes.

Considering the above, the revised GHG emissions for the project are:

- peak annual emissions, construction and operations, in stage 1/year 1 are estimated at 144,342 tCO<sub>2</sub>e (refer to Attachment 1);
- Following the completion of lead in works, peak annual operational emission is estimated to be 144,235 tCO<sub>2</sub>e (refer to Table 1); and
- project total over the 30 year life, 4,308,882 tCO<sub>2</sub>e (including construction emissions).

Table 1 below, provides a revised breakdown of the estimated peak operational emissions.

**Table 1:** Estimated peak emissions (operational)

Operation Source	Annual Elec Consumption (kWh)	Annual Fuel Consumption (L, t, or GJ)	Scope 1 Estimated emissions (tCO <sub>2</sub> -e)	Scope 2 Estimated emissions (tCO <sub>2</sub> -e)	Scope 3 Estimated emissions (tCO <sub>2</sub> -e)
Electricity	23,421,000			19,323	2,281
Natural Gas		85,000	29,920		9,443
Sub-bituminous coal		7,800	14,820		
Diesel Automotive		7,000,000	10,423		539
Diesel Industrial		40,740	110		
Lime Production		85,000	57,375		
Sub - Total	NR	NR	112,648	19,323	12, 264
<b>Operational Emissions Total</b>			<b>144,235</b>		

### 1.2 Pre-commencement emissions

The existing emissions were included as a baseline as the GHG emissions report had assumed that the extraction and production would continue at existing levels.

It is acknowledged that the operational profile of GHG emissions provided at Appendix 3 of the November 2019 submission uses a uniform emissions profile which does not accurately reflect the proposed project, production rate or the likely emissions rate.

Considering the above, the emissions associated with the both the project have been reviewed and an amended GHG emissions rate per stage/year is now provided at **Attachment 1**. The pre-SSD emissions have been excluded as they do not form part of the project subject of the assessment.

### 1.3 Construction emissions

The table presented in Appendix 3 of the November 2019 response reported only those emissions generated through operational phases of the project life cycle. It is noted that the construction emissions were not included. This is verified by emissions set out in Table 5, section 3.2 (p.19) of Appendix Q to the EIS.

The Edge Environment report assumed that all construction works would occur early in the project following the granting of consent and the subsequent approval of a new Mining Lease. Further detail was also provided in the section 4.0 of the EIS. **Table 2** below summarises the information from each of these documents and where relevant has provided updated information regarding anticipated timing of works.

The information in **Table 2** has been incorporated into (but distinguished from operational emissions) the project emissions profile provided at **Attachment 1**.

**Table 2:** Indicative scheduling of construction works & associated GHG emissions rates.

Stage	Year	Construction element	Total Emission (tCo2-e)
Stage 1	1	Land clearing (physical removal)	13,395
Stage 1	3	Relocation of HV powerline	4
Stage 1	1	Construction of Road Stockpile Area	63
Stage 1	5	Marulan Creek Dam Construction	302.06
Stage 1	3	MSR Realignment works (incl. veg removal)	406
Stage 1	3	Site Office	6
Stage 1	1-3	Mulch spreading	6
<b>Total</b>			<b>14,182</b>

### Items 2: Project figures

Copies of the requested figures have been provided submitted electronically under separate cover.

### Conclusion

We trust that the above information addresses the matters raised.

If you have any questions, or would like to discuss this matter in in more detail, please contact me on mobile phone **0401 894 110** or email at **rachael.snape@boral.com.au**

Yours sincerely,



### **Rachael Snape**

Planning & Development Manager (NSW & ACT)  
Boral Land & Property Group

**Attachment 1: GHG Emissions project life**

Attachment 1: Project Life: GHG Emissions (tCO<sub>2e</sub>)

Stage	Year	Construction Emissions (tCO <sub>2e</sub> )	Operational Emissions (tCO <sub>2e</sub> )	Cumulative (tCO <sub>2e</sub> )
1	FY22	13,460	144,342	144,342
	FY23		137,343	281,686
	FY24	418	140,404	422,089
	FY25		141,473	563,562
	FY26	302	142,625	706,188
2	FY27		142,960	849,148
	FY28		142,960	992,109
	FY29		143,598	1,135,706
	FY30		144,235	1,279,942
	FY31		144,235	1,424,177
	FY32		144,235	1,568,412
	FY33		144,235	1,712,647
	FY34		144,235	1,856,883
3	FY35		144,235	2,001,118
	FY36		144,235	2,145,353
	FY37		144,235	2,289,588
	FY38		144,235	2,433,824
	FY39		144,235	2,578,059
	FY40		144,235	2,722,294
4	FY41		144,235	2,866,529
	FY42		144,235	3,010,765
	FY43		144,235	3,155,000
	FY44		144,235	3,299,235
	FY45		144,235	3,443,470
	FY46		144,235	3,587,705
	FY47		144,235	3,731,941
	FY48		144,235	3,876,176
	FY49		144,235	4,020,411
	FY50		144,235	4,164,646
	FY51		144,235	4,308,882