

11 May 2022

NSW Department of Planning and Environment (DPE)

Attention: Stephen O'Donoghue

Dear Stephen

**Re: Eraring Power Station - Ash Dam Expansion - Proposed Modification 2 (MP07_0084-Mod-2)
Request for additional information (21 April 2021)**

I refer to your letter dated 21 April 2021 and follow up notification on 9 May 2022 requesting additional information in regard to MP07_0084-Mod-2. This letter responds to the DPE RFI.

- **further detail regarding existing and proposed daily maximum and average traffic movements**

Origin provided clarification of truck numbers to the DPE by email on 8 April 2021. This letter provides further clarification to address the specific request of the DPE.

Table 9 of the Modification Report presents the following traffic numbers.

Table 9 Trip Generation Forecast

Assumption	Existing operation (peak)		Proposed with modified operation (peak)		Net change	
Daily truck movements	188		411		+223	
60% of daily truck movements occur in a five-hour period in the morning	113		247		+134	
Peak hour truck movements	23		49		+26	
Distribution	In	Out	In	Out	In	Out
Peak hour truck movements accessing / egressing the site	12	12	25	25	+ 13	+ 13
Peak hour truck movements accessing / egressing the site via the north	6	6	13*	13	+ 7	+ 7
Peak hour truck movements accessing / egressing the site via the south	6	6	13*	13	+ 7	+ 7

* values rounded up for assessment purposes

The truck numbers as outlined in the Modification Report are based on the following:

- Existing: 540,000 tpa ash recycling
- Future: 1,400,000 tpa ash recycling
- with assumptions:
 - o operations six days per week and 49 weeks per year
 - o average ash tonnage per truck of 28.8 tonnes
 - o a peak to mean (P/M) factor of 1.5 for existing operations, that is given ash recycling does not follow a routine schedule and is market driven, it is expected on peak days for existing recycling there may be 50% more trucks accessing the site to collect ash than an average day
 - o a peak to mean factor of 1.2 for future operations, that is there may be 20% more trucks accessing the site than on an average day - the reason for the lower P/M factor in the future is because the cumulative peak will be flatter when the offtake from all ash recycling facilities increases.

Table 1 of the Modification Report refers to the throughput of the existing facilities if they were to operate at their maximum capacity, that is a throughput of 1,050,000 tpa. It is noted this has not been realised to date but if it had been and using the same assumptions as set above with regards to operations and ash truck capacity, the average number of existing daily truck movements would be 248 truck movements per day. In terms of a daily maximum (peak) number of existing truck movements this is estimated to be between 322 and 347 movements per day based on P/M factors of 1.3 and 1.4 respectively.

For the purpose of assessing traffic impacts in the Modification Report the existing scenario is represented by actual existing ash recycling at 540,000 tpa (estimated maximum 188 truck movements per day), and not the maximum existing capacity throughput of 1,050,000 tpa (up to an estimated maximum of 347 movements per day), so as to assess the cumulative impact from the maximum increase expected in the future where existing facilities and facilities approved by MP07_0084-Mod-2 all operate at maximum annual capacity.

We understand the DPE want further confirmation of the maximum number of trucks associated with ash recycling facilities that are the subject of Mod-2, noting the additional 223 quoted in Table 9 of the Modification Report which is assessed as the increase could include trucks from any or all existing ash recycling facilities as well as Mod-2 approved facilities.

In this regard as outlined in the Modification Report the existing Daracon facilities can theoretically, recycle ash at a rate of up to 300,000 tpa, they are just not approved to do so, and additional proposed storage (up to 1350 tonnes) would enable this level to be sustainably achieved. The existing Daracon facilities include two load out points and each can load two trucks per hour. If they were to outload ash 24 hours per day, at the maximum rate, this would be 96 trucks per day or 192 truck movements per day. Daracon have advised that a reasonable maximum number trucks per day, enabling them to achieve 300,000 tpa is 60 trucks per day or 120 truck movements per day (refer to Attachment A).

The other facility which is the subject of Mod-2 is seeking approval for up to 150,000 tpa of ash recycling. The concept design for this facility shows that it also is proposed to have two load out points and theoretically could achieve the same daily maximum load out volumes as the Daracon facility, however, noting it is seeking to recycle 150,000 tpa, that is 50% of the Daracon facility, maximum daily truck number are estimated at 50% of the Daracon facility, i.e. 30 trucks per day or 60 truck movements per day.

In summary the ash recycling facilities that are the subject of Mod-2 may generate a maximum 180 daily one-way truck movements. This includes approximately 44 truck movements associated with the existing Council approved Daracon facility that transfers to Mod-2.

Table 1 summarises whole of site ash recycling maximum daily truck movement estimates. Table 2 summarises maximum daily ash recycling truck numbers for facilities approved by MP07_0084.

Table 1: Whole of site peak maximum daily ash truck traffic movements (if all facilities operated at maximum annual capacity)

Existing	Future	Net change
347 (as clarified above) – note this is an estimate only, as existing facilities have not historically operated at maximum capacity	411 – this is the forecast truck numbers in the Modification Report	64 – this is the difference between existing and proposed, and is a theoretical value assuming all facilities operate at maximum annual capacity

Table 2: MP07_0084 ONLY peak maximum daily ash truck traffic movements (if all facilities operated at maximum annual capacity)

Existing	Future	Net change
Only activity is the EPS CCP Plant, 120 (based on 300,000 tpa ash recycling), note, there are no truck no. limits on this facility and historically this facility has been underutilised with much lower daily truck numbers	300 (180 as clarified above) + 120 EPS CCP Plant 120 for Daracon 60 for new silos 120 for EPS CCP Plant (existing)	180 – this is the difference between existing and future, and is a theoretical value assuming all facilities operate at maximum annual capacity (Note there are 44 existing movements from Daracon that are simply transferred over to Mod-2 – these do not increase impacts on the road network).

Notes:

- the traffic numbers in table 1, are based on applying a peak-to-mean factor to annual average ash recycling capacities, as presented in the Modification Report
- the traffic numbers in table 2, are based on the engineering capacity of ash load out facilities and advice from operators on the theoretical and practical maximum daily truck numbers in order to achieve the forecast maximum annual tonnages
- the difference in net change between table 1 and 2 is due to the different methods used to calculate the truck numbers and assumptions used by both methods
- the peak to mean ratio is higher when facilities are considered in isolation (i.e. Table 2) and this flattens (reduces) when whole of site ash recycling (i.e. Table 1) is considered at a maximum rate

With regards to peak hour truck movements, the facilities approved by MP07_0084 being the CCP Plant, Daracon facility and proposed new silos have two truck loading points each, that is 6 loading points, and each loading point can load two trucks per hour. This equates to a maximum of 12 trucks being loaded per hour, and therefore the expected maximum number of trucks entering / leaving the site per hour would be 24 if all MP07_0084 facilities were operating at maximum capacity. However, with regards to ash trucks entering the site, this is market driven and they do not run to a fixed

schedule, so it is possible more or less than 12 trucks could access the site per hour and park up while they wait to be loaded. With regards to ash trucks leaving the site, they need to park up for approximately 15 minutes to allow ash to settle in the tank trailers before they leave the site, so again it is possible more or less than 12 trucks per hour could leave the site, depending on actual timings to enter, load, park up and leave.

The maximum truck numbers assessed in the Modification Report and included in this letter are estimates, noting the market driven nature of ash recycling and the fact ash trucks do not run to a schedule. We have discussed the potential for limits on truck numbers being included in the conditions of Mod-2 with on-site operators who may be impacted by these limits and their response is that if the limits constrain their ability to supply ash, then the ash trucks would alternatively source ash from elsewhere, e.g. other coal fired power stations. That is the prospect of limits on truck numbers being included in the conditions of Mod-2 has the potential to negatively impact on Origin's ability to increase ash recycling which would be inconsistent with the intent of the Modification.

In general, the estimates of daily maximum truck numbers and movements are considered reasonable, but there is less certainty with the maximum hourly estimates, for the reasons outlined.

- **correspondence from the owner of DA/1937/2014 regarding the potential surrender of this consent subject to the determination of the modification application.**

Refer to Attachment B.

Yours sincerely



Matt Davies
Principal Advisor Environment
Energy Supply and Operations

Origin
m 0460 011 693
e matt.davies@originenergy.com.au

Attachment A – Daracon Facility Truck No.s

RE: Trucks



Charlie Peden <charlie.peden@bfgdaracon.com.au>

To: Davies, Matt

You replied to this message on 29/04/2022 3:48 PM.

Rep

Matt

At the moment we are working to 100,000 tonnes PA and at this stage our maximum number of trucks in one day has been 22 trucks in one day 44 movements.

My estimate is as follows per day

Tonnes PA	Max Loads	Max Movements	Average Loads	Average Movements
100,000	22	44	12	24
200,000	44	88	24	48
300,000	60	120	36	72

Regards

Charlie Peden | Business Development Manager | BFG Daracon

33 Jura Street, Heatherbrae | PO Box 411, Raymond Terrace NSW 2324, Australia

p: 02 4987 7087 | m: 0428 733 951

Charlie.Peden@bfgdaracon.com.au



Attachment B - Correspondence from the owner of DA/1937/2014 regarding the potential surrender

2nd May 2022

Origin Energy Eraring
Attention: Brett Murphy
Eraring Flex and Future Manager
Generation and Development

Dear Brett

**Re: Eraring Ash Dam Expansion – MOD 2 Ash Recycling Facilities (MP07_00874-Mod-2)
Potential Surrender of Consent DA/1937/2014**

Please find our in principal agreement to surrender Lake Macquarie City Council Consent DA/1937/2104 subject to the determination of the above-mentioned modification application.

This is on the understanding that any new approval will not limit or reduce the capacity or the ability to perform the currently approved operations under the conditions of the existing consent, including production and transport tonnages.

Yours faithfully

BFG Daracon Pty Ltd

A handwritten signature in black ink, appearing to be 'AK', written over a faint circular stamp.

Adam Kelly
Director