Plan

EPS-ENV-PLN-010

Generation Operation Environmental Management Plan – Modification 2

Version:	2.1
Released:	21 January 2026
Document Owner:	Advisor Environment
Review Date:	21 January 2029

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1. Purpose

The purpose of this Operation Environmental Management Plan (OEMP) is to identify the environmental commitments outlined in the Environmental Assessment (EA) for the Modification 2 (MOD 2) project as approved by Project Approval (PA) MP07_0084 and mitigate potential adverse environmental impacts associated with its operation.

This OEMP has been prepared to address Condition 4.3 of PA MP07_0084 as it relates to MOD 2 only.

1.1 Background

Origin Energy Pty Ltd (Origin) owns and operates Eraring Power Station (EPS) on Rocky Point Road, Eraring within the Lake Macquarie local government area (LGA). Ash generated at EPS is either deposited onsite within the Eraring Ash Dam (ERAD) or recycled offsite (e.g. as a construction material resource).

Origin's ash recycling activities at EPS are undertaken in accordance with PA MP07_0084. Condition 4A.1 of PA MP07_0084 includes a mandatory goal of 80% reuse or recycling of ash from EPS. On 21 June 2022, Origin received approval to modify MP07_0084 (MOD 2) to increase the ash recycling capacity at EPS. The MOD 2 project involves an increase in truck movements accessing and egressing the EPS site to transport ash to a range of end user destinations.

2. Scope

This OEMP covers the ash haulage associated with the MOD 2 project which includes the transport of ash from the following operational elements of the EPS site:

- Coal Combustion Product (CCP) Plant
- Daracon ash recycling facilities

The EA for MOD 2 also included the construction of additional ash storage silos and associated supporting infrastructure on Construction Road, which would be constructed as part of a future stage of the MOD 2 project. Origin notified the Department of Planning and Environment (DPE) on the 5 August 2022 in accordance with Condition 5.9 and 5.10 that development under MOD 2 is planned to be staged. On 5 September 2022 DPE acknowledged the request for staging and requirements for management plans. The Stage 1 component of the MOD 2 project consists of the construction of additional infrastructure at the Daracon site. In accordance with Schedule 2 Condition 5.9, Origin notified the DPE that construction of the additional infrastructure within the Daracon site would commence on the 13 November 2023.

There are existing ash recycling activities undertaken on the EPS site that are not covered under the MOD 2 project. This includes the Boral Bottom Ash Reclamation Area which is an existing power station operation which falls outside the project boundary of MP 07_0084, the FlyAsh Australia facility which operates under a separate local Development Consent DA/684/2009 issued by Lake Macquarie City Council (LMCC) and ash placement at the ERAD. Ash transport associated with these existing ash recycling activities is not within the scope of this OEMP. A Coal Combustion Product Management Plan (CCPMP) has previously been prepared for the original PA MP07_0084 OEMP to address condition 4.3(f) and is therefore not included in this OEMP.

This OEMP has been prepared to address Condition 4.3 of PA MP07_0084 as it relates to MOD 2 only.

3. Definitions / Acronyms

Table 1: Definitions

Term / Acronym	Definition
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BDAR	Biodiversity Development Assessment Report
BLMR	Biodiversity and Land Management Report
CEMP	Construction Environmental Management Plan
CCC	Community Consultative Committee
Council	Lake Macquarie City Council
CCP	Coal combustion product
EA	Environmental Assessment – *Upgrade and Expansion of the Coal Combustion Management System, Eraring Power Station*, dated November 2007, and prepared by HLA – ENSR (HLA-ENSR) as amended by: • *Upgrade and Expansion of the CCP Management System, Eraring Power Station – Submissions Report*, dated 15 February 2008, and prepared by HLA – ENSR (HLA-ENSR, 2008) • Modification application (MOD 1) – *Ash Dam Augmentation Project Environmental Assessment*, dated 15 August 2018, prepared by AECOM and *Origin Eraring Power Station – Ash Dam Expansion MOD 1 – Response to Submissions* dated 3 December 2018, prepared by AECOM (AECOM, 2018); and • *Modification Report – Ash Recycling Facilities, Eraring Power Station,* dated 20 August 2021, prepared by AECOM and *Response to Submission Report – Ash Recycling Facilities, Eraring Power Station,* dated 19 November 2021, prepared by AECOM and additional information provided by the Applicant to support the modification application and included in Appendix A of the Departments assessment report on Modification 2 (AECOM, 2021a).
EPA	NSW Environmental Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPL	Environmental Protection Licence
EPS	Eraring Power Station
ERP	Emergency Response Plan
FFMP	Flora and Fauna Management Plan
GWMP	Groundwater Management Plan
ISO	International Standards Organisation

Term / Acronym	Definition
Reportable Incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits of performance measures/criteria in this approval
KPI	Key Performance Indicators
LGA	Local Government Area
Material Harm	Is harm that: • Involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial; or a) Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (such loss includes the reasonable costs and expense that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good to harm to the environment).
MOD 1	CCP storage facility expansion associated with MOD 1 to the west of the CCP storage facility
MOD 2	Increase in ash recycling activities, including construction and use of new ash storage silos on-site
OEMP	Operation Environmental Management Plan
OTMP	Operational Transport Management Plan
Origin	Origin Energy
PA 07_0084	Project Approval 07_0084 (as modified)
PCT	Plant Community Type
PIRMP	Pollution Incident Response Management Plan
Planning Secretary	The Secretary under the Act, or nominee
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
TfNSW	Transport for NSW

4. Regulatory Framework for the OEMP

4.1 Approval History

PA 07_0084 was issued on 29 April 2008 for the staged expansion of the ERAD in conjunction with changes in the CCP disposal method from lean phase to dense phase. Modification of the PA was approved on 23 December 2019 (PA MP07_0084 MOD1) for the Ash Dam Augmentation Project.

Furthermore, a second Modification to the PA was approved on 21 June 2022 (PA MP07_0084 MOD2) for the ash recycling facilities.

As discussed in Section 2, Origin currently intends on staging the project, with Stage 1 of the MOD 2 project including construction of additional Daracon storage silos.

4.2 Project Approval Requirements

Condition 4.3 of PA MP07_0084 requires the preparation and implementation of an OEMP to detail an environment management framework, practices and procedures to be followed during operation of the project.

The requirements of Condition 4.3 are provided in **Table 2**, along with a reference to the section of the OEMP where the requirements have been addressed.

Table 2: Requirements of Condition 4.3 of MP07_0084

Condition Requirement	OEMP Section
4.3 The Applicant shall prepare and implement an Operation Environment Management Plan to detail an environmental management framework, practices and procedures to be followed during the operation of the project. The plan shall be consistent with Guidelines for the Preparation of Environmental Management Plans (DIPNR, 2004) and shall include, but not necessarily be limited to:	This Plan
a) Identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the project, including all approvals, licences, approvals and consultations;	Section 4
b) A description of the roles and responsibilities for all relevant employees involved in the operation of the project;	Section 6.3
c) Overall environmental policies and principles to be applied to the operation of the project;	Section 6
d) Standards and performance measures to be applied to the project, and a means by which environmental performances can be periodically reviewed and improved, where appropriate;	Section 6.2
e) Management policies to ensure that environmental performance goals are met and to comply with the conditions of approval;	Section 6.2
f) Preparation of a Coal Combustion Product Management Plan to outline how the CCP storage facility and associated infrastructure will be managed to minimise potential impacts on the surrounding environment. The Plan shall include, but not necessarily be limited to:	Not applicable to this OEMP and operations under MOD 2.

Condition Requirement	OEMP Section
i) Likely quality and quantity of groundwater seepage and surface water runoff from the CCP storage facility and likely impact on receiving waters; *ii) Management systems or measures to prevent overflows from the CCP storage facility and weir during rainfall events; and* *iii) Water quality monitoring of selenium and other contaminants (both concentration levels and total load) discharged to receiving waters.*	
The Plan shall be submitted for the approval of the Planning Secretary no later than one month prior to the commencement of operations of the project, or within such period otherwise agreed by the Planning Secretary. Operation of the project shall not commence until written approval has been received from the Planning Secretary.	Note

Environmental management, reporting and auditing requirements outlined in Condition 5 and Appendix B of the PA are provided in **Table 3**, along with a reference to section of the OEMP where requirements have been addressed.

Table 3: Environmental Management, Reporting and Auditing requirements of PA MP07_0084 MOD 2

Condition Reference	Condition requirement	Section where addressed in OEMP
5.1	*The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the project (including the application number and the name of the project if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix C.*	Section 8.1
5.2	*The Planning Secretary must be notified in writing via the Major Projects website within seven days after the applicant becomes aware of any non-compliance.*	Section 8.1.2
5.5	*Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Requirements outlined in the Compliance Reporting Post Approval Requirements (2020) or its latest version.*	Section 9.3
5.11	*Within one year of the date of physical commencement of development under Modification 2, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the project. The audit must:*	Section 9.2

Condition Reference	Condition requirement	Section where addressed in OEMP
	a) Be prepared in accordance with the Independent Audit Post Approval Requirements (NSW Government 2020); and *b) Be submitted, to the satisfaction of the Planning Secretary, within two months of undertaking the independent audit site inspection, unless otherwise agreed by the Planning Secretary.*	
5.14	*Within 3 months of:* *a) The submission of an incident report under condition 5.1 above;* *b) Any modification to the conditions of this approval (unless the conditions require otherwise);* *c) The submission of an audit report in accordance with Condition 5.11 of this approval; or* *d) A direction of the Secretary under condition 1 of schedule 2.* *The applicant must review and, if necessary, revise the strategies, plans and programs required under this approval to the satisfaction of the Planning Secretary.* *Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Planning Secretary for approval.*	Section 10
5.15	*The Applicant must:* *a) Make the following information publicly available on its website as relevant to the stage of the project:* *i) The EAs;* *ii) Current statutory approvals for the project* *iii) Approved strategies, plans and programs required under the conditions of this approval;* *iv) A comprehensive summary of the monitoring results of the project which have been reported in accordance with the various strategies, plans and programs approved under the conditions of this approval;* *v) A complaints register, which is to be updated on a monthly basis;* *vi) Any independent environmental audit, and the Applicant's response to the recommendations in any audit; and* *vii) Any other matter required by the Secretary; and* *b) Keep this information up to date, to the satisfaction of the Planning Secretary.*	Section 9.4

Condition Reference	Condition requirement	Section where addressed in OEMP
Appendix B – B2	*Evidence of the tonnage hauled on each route is required to be submitted to Council by the 31 July each year for the proceeding period of 1 July to 30 June each year*	Section 7.2.4
Appendix B – B4	*The contributions must be paid to the Council by the 31 August each year for the proceeding financial year from 1 July to 30 June*	Section 7.2.5

4.3 Environment Protection Licence

EPS is managed in accordance with the Environment Protection Licence (EPL) No. 1429 issued under the Protection of the Environment Operations Act 1997 (POEO Act). Condition L1.1 of EPL 1429 requires Origin to comply with section 120 of the POEO Act, which makes it an offence to pollute water, including groundwater. EPL 1429 also contains monitoring and limit conditions which apply to water discharges from EPS, as well as operational conditions which define certain activities or discharges allowed under the EPL.

4.4 Relevant Legislation

Ash haulage for the MOD 2 project will be undertaken in a manner consistent with the legislative requirements set out in the following:

- *Roads Act 1993* and its regulations.
- *Roads Transport Act 2013* and its regulations.
- Road Rules 2014.

4.5 Related Reports and Plans

EPS overarching Environment Management Plan (EMP) (GEN-HSE-EMP-EPS) is in place for all operations at EPS, including those captured under MOD 2.

As required by Condition 4.10 of PA MP07_0084, Origin is required to prepare and implement an Operational Transport Management Plan (OTMP) for all haulage under MOD 2. The OTMP has been prepared and approved by DPE and forms a key document for the management of haulage operations under MOD 2.

5. Project Description

5.1 Project Description

The EPS site is located on Rocky Point Road, Eraring, about 40 km southwest of Newcastle in the Lake Macquarie LGA. The entire EPS site comprises approximately 1200 ha of land owned by Origin, with the power station itself located on approximately 150 ha and the ERAD occupying approximately 250 ha. The remainder of the land is largely undeveloped consisting of open grassland, canals and bushland (refer to Figure 1).

Operations at EPS are separated from surrounding land uses by extensive land holdings. Existing development in the vicinity of the site includes the West Wallsend, Newstan, Myuna and Mandalong Collieries, as well as the Vales Point Power Station. The Sydney to Newcastle Railway Line is located west of the EPS and further west the Pacific Motorway (M1) also runs parallel to the Site.

There is a mix of vegetated buffer lands and cleared agricultural land for grazing purposes west of the EPS, and Lake Macquarie lies to the east. The closest residential area is situated in Border Street in the suburb of Eraring approximately 1 km south of the power station itself.

5.2 MOD 2 Project Description

To increase ash recycling rates at EPS, the MOD 2 project involves the following key elements:

- Integration of works currently authorised under local development consent DA/1937/2014/D (existing Daracon operations) into PA MP07_0084, and upgrades to those works to increase throughput capacity to 300,000 tpa, including construction of additional ash storage silos
- Construction of up to four additional 600t ash storage silos on Construction Road to provide additional ash storage capacity and enable export of up to 150,000 tpa of stored ash product.
- Other supporting infrastructure including internal road, weighbridge, crib room, amenities, water tank and pneumatic fly ash pipeline.

Since the approval of the MOD 2 project, the design of Daracon's proposed ash recycling infrastructure was amended to include minor changes to the layout and dimensions of the additional storage silos and additional infrastructure. The revised design includes four silos with a capacity of 130m^3, which can hold up to 100t-130t of ash product depending on variable density, as well as a 'Blendveyor', blower unit, generator, pressure pot and run-of-station feedline. The revised design would not increase truck movements beyond those already approved for the MOD 2 project. Site access and haulage routes would be consistent with the approved development.

A consistency assessment (AECOM, 2023) concluded that the proposed changes are consistent with the approved MOD 2 project, and that the revised project can be undertaken generally in accordance with the EA and Modification Report (AECOM, 2021) and the conditions of PA MP07_0084. This consistency assessment was submitted to the DPE and was confirmed there was no comments on the assessment on the 1 August 2023.

There are existing ash recycling activities undertaken on the EPS site that are not covered under the MOD 2 project. This includes the Boral Bottom Ash Reclamation Area which is an existing power station operation which falls outside the project boundary of MP 07_0084 and the Flyash Australia facility which operates under a separate local Development Consent DA/684/2009 issued by Lake Macquarie City Council (LMCC) (Figure 2).

5.2.1 MOD 2 Project Staging

Origin notified the Department of Planning and Environment (DPE) on the 5 August 2022 in accordance with Condition 5.9 and 5.10 that development under MOD 2 is planned to be staged. On 5 September 2022 DPE acknowledged the request for staging and requirements for management plans. Stage 1 of the MOD 2 project includes the construction of additional infrastructure at the Daracon site. The construction of additional ash storage silos on Construction Road would form a future stage of the MOD 2 project should it be progressed.

Therefore, this OEMP only applies to the haulage of ash from the existing ash recycling facilities at EPS and Daracon's additional infrastructure to be constructed as part of Stage 1.

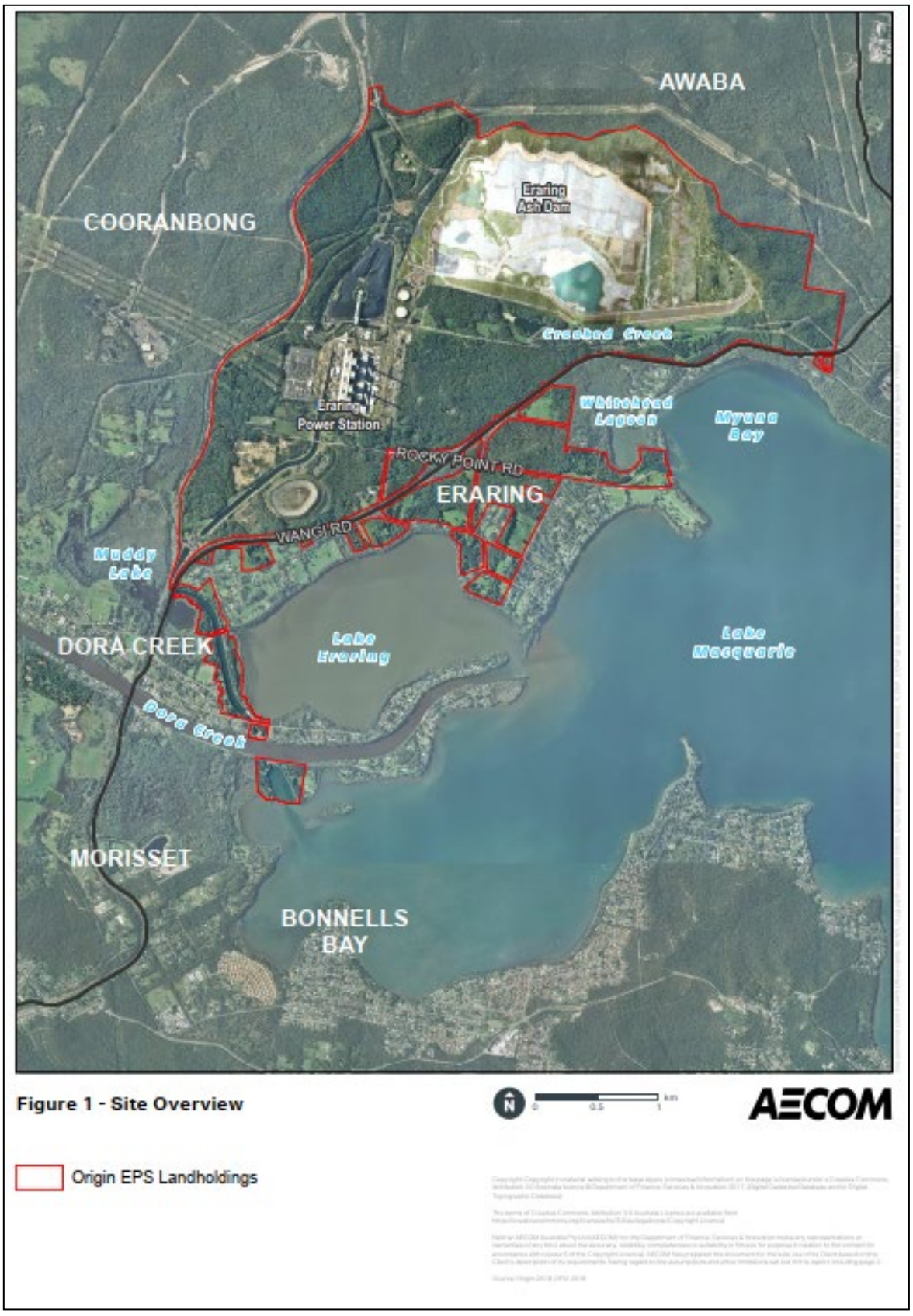

Figure 1 - Site Overview



Figure 2 - Existing Ash Recycling Facilities

6. Environmental Management and Responsibilities

6.1 Environmental Management System

EPS operates and maintains an Environmental Management System (EMS) to the ISO14001 Standard, which supports continual improvement within the EPS operations.

A copy of the EPS Statement of Environmental Commitment (April 2022) is provided in **Appendix A**.

6.2 Environmental Management Plans

Activities associated with operations under MOD 2 are addressed through a range of subsidiary plans and strategies, of which this OEMP forms a key part:

- Environmental Management Plan (Origin, 2021a)
- Water Management Plan (AECOM, 2022b)
- Long Term Ash Management Strategy (updated annually under condition 4A.1) (Origin, 2023)
- Pollution Incident Response Management Plan (Origin, 2022a)
- Operational Traffic Management Plan – MOD 2 Ash Recycling (AECOM, 2022c)
- MOD 2 Ash Recycling OEMP (this Plan)

6.2.1 Environment Management Plan

The Environment Management Plan (Origin, 2021b) (EMP) is the key central document which outlines EPS's EMS in accordance with ISO14001:2015. Further objectives of the EMP are to achieve continual improvement and promote a life cycle perspective through the following activities:

- Plan
    - Identification and review of environmental aspects and impacts through risk assessment;
    - Establish a framework for compliance with legal requirements, permits, approvals and industry standards; and
    - Set out environmental objectives and targets defined by leadership for EPS/
- Implement
    - Set out resources, roles and responsibilities to achieve the objectives of this EMP;
    - Detail provisions for environmental training, competency and awareness;
    - Establish a framework for communication of environmental matters;
    - Set out the requirements for environmental documentation;
    - Describe procedures and activities in place to achieve effective operational control; and
    - Identify procedures for environmental incident management and emergency response.

- Check
    - Provide a framework for environmental monitoring and measurement at EPS;
    - Provide a framework for internal and external environmental performance evaluation;
    - Detail the systems in place to address environmental non-conformities and corrective and preventative actions; and
    - Describe record management procedures with a view of environmental compliance.
- Review
    - Detail procedures for management review of the EMS.

6.2.2 Water Management Plan

The Water Management Plan (AECOM, 2022b) provides a framework for the management of surface water, groundwater and related environmental risks including erosion and sediment control and the prevention of pollution, for all operational land associated with EPS. The Water Management Plan:

- Describes key legislative and statutory requirements specific to EPS water management practices
- Outlines the critical site water management systems and processes
- Identifies procedures in place to minimise the risk of a water pollution incident
- Provides key performance indicators and associated targets for measuring the effectiveness of existing routine and non-routine management measures
- Details the monitoring program implemented across the EPS site
- Outlines the reporting requirements for environmental incidents and community complaints and
- Identifies the process and schedule for ongoing review of the WMP.

6.2.3 Long Term Ash Management Strategy

The Long-Term Ash Management Strategy (LTAMS) (Origin, 2023) is a dynamic document which identifies the strategies to be implemented to maximise the reuse potential of both fly ash and bottom ash produced at EPS. The LTAMS is required by Condition 4A.1 of the approval and requires submitting annually to the Secretary to demonstrate annual progress of reuse and recycling of ash.

The LTAMS is used as a management tool to measure and monitor progress towards improved efficiency and reduction in environment impacts associated with the ERAD. It identifies reuse opportunities and provides an annual progress review of current ash reuse amounts and rates compared to historical data.

6.2.4 Pollution Incident Response Management Plan

The EPS Pollution Incident Response Management Plan (PIRMP) has been developed in accordance with the requirements of the Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012, which commenced on 29th February 2012.

The PIRMP references existing Origin incident response documentation and provides a summary outlining how the existing documentation satisfies each requirement in the Amendment. The PIRMP has been developed for EPL 1429.

6.2.5 Operational Traffic Management Plan – Ash Recycling

The Operational Traffic Management Plan (OTMP) (AECOM, 2022c) has been developed to cover the ash haulage associated with the MOD 2 Project, which includes transport of ash from the following operational elements of the EPS site:

- Coal Combustion Plant
- Daracon ash recycling facilities
- Additional silos (not constructed at this stage).

The objectives of the OTMP are to:

- detail the haulage routes for heavy vehicles transporting ash from EPS associated with the MOD 2 project
- specify the management measures that will be implemented, including a Driver Code of Conduct, to minimise potential impacts to the local community and road users along the haulage routes
- describe the monitoring that will be undertaken to assess compliance with the OTMP
- identify the reporting requirements as relevant to the OTMP.

6.3 Roles and Responsibilities

The Origin Head of Ash Strategy is responsible for coordinating ash recycling activities at EPS including those associated with MOD 2. Roles and environmental responsibilities for implementing this OEMP as it relates to MOD 2 are summarised below in **Table 4**.

Table 4: Roles and Responsibilities

Role	Environmental responsibility
Head of Ash Strategy	• Ensure implementation of the OEMP • Monitor conformance with requirements of the OEMP • Investigate complaints and incidents as it relates to haulage operations under MOD 2 and where necessary identify correct actions to prevent a reoccurrence. • Review non-conformances with contract owners as required. • Implement corrective actions and address the recommendations of site audits and incident investigations. • Liaise with external stakeholders and community as required.
Origin Senior Environment and Community Business Partner	• Assist in the implementation of the OEMP and conformance with requirements. • Track and report on environmental performance against the management actions specified in this OEMP, the EPL and relevant project approval conditions. • Maintain complaints and incident register. • Implement corrective actions and address the recommendations of site audits and incident investigations. • Liaise with external stakeholders and community as required.

Role	Environmental responsibility
Origin EPS Staff	• Undertake General Awareness Training and other relevant training as required. • Operate equipment in a safe and environmentally responsible manner. • Maintain site cleanliness and housekeeping. • Report to supervisor any environmental issues identified. • Respond to an environmental emergency in accordance with the Emergency Response Plan and Pollution Incident Response Management Plan.
Contractors	• Undertake General Awareness Training and other relevant training as required. • Operate equipment in a safe and environmentally responsible manner. • Maintain site cleanliness and housekeeping. • Report to supervisor any environmental issues identified. • Respond to an environmental emergency in accordance with the Emergency Response Plan and Pollution Incident Response Management Plan.
Haulage Operators	• Undertake Ash Recycle Drivers Familiarisation Induction and other relevant training as required. • Operate equipment in a safe and environmentally responsible manner. • Maintain site cleanliness and housekeeping. • Report to supervisor any environmental issues identified.

6.4 Training and Awareness

General awareness training will be conducted for all employees and contractors associated with the MOD 2 project as part of the site induction and undergo refresher refreshing training as required throughout the project. This training is given to all levels of staff. Environmental elements of general awareness training include:

- importance of conformance with the environmental policy, requirements of the EPL and obligations associated with environmental management;
- compliance with the requirements of local regulations with emphasis on the need for employees to report any releases, polluted discharge or airborne pollutants;
- environmental issues and associated impacts of the project's operation;
- environmental controls for each potential environmental issue (air pollution, water quality, erosion etc.);
- importance of housekeeping;
- management plans relevant to the works being undertaken;
- incident's notification procedures and corrective action procedures;
- review of the Emergency Response Plan (ERP), Pollution Incident Response Management Plan (PIRMP), and safety procedures, as well as how to respond to an emergency situation; and
- significant actual and potential environmental impacts of each person's work activities and the environmental benefits of improved performance.

Ash recycling haulage operators will also complete an EPS ash recycle drivers familiarisation induction to outline their responsibilities when operating as part of the MOD 2 project.

Personnel will attend refresher courses as required to ensure they are kept up to date with site and project specific procedures and training.

7. OEMP Implementation

The key objective of the OEMP is to ensure the MOD 2 operations comply with the approval requirements outlined in Condition 4.3 of PA MP07_0084 (refer to **Table 3** in **Section 4.2**).

7.1 Environmental Risk Assessment

An EA as detailed in the *Modification Report – Ash Recycling Facilities, Eraring Power Station* (AECOM, 2021) has been prepared for the MOD 2 project. The EA provides an assessment of key potential impacts associated with the MOD 2 project. A Consistency Assessment (AECOM, 2023) was subsequently prepared to evaluate changes to potential environmental impacts associated with the revised design of Daracon's additional infrastructure (refer to **Section 5.2**). The Consistency Assessment concluded that the revised design would be consistent with the approved MOD 2 project and would not generate additional impacts beyond those already assessed for the development.

Potential environmental impacts associated with operation of the MOD 2 project were assessed within the EA. A risk assessment was undertaken to identify the key environmental issues requiring detailed assessment and the management measures to mitigate or manage these potential impacts. This OEMP documents the regulatory requirements, management measures, monitoring and reporting requirements which will be implemented to minimise the potential environmental impacts from the key environmental issues identified in the MOD 2 project EA.

The key environmental issue related to the MOD 2 project, identified in the EA was potential traffic and transport impacts. A traffic impact assessment was prepared to assess the potential impact associated with an increase in truck movements accessing and egressing the EPS, as a result of the MOD 2 project. Subsequently, an OTMP was prepared to address the risks identified by the traffic impact assessment (AECOM, 2022c) and Condition 4.10 of PA MP07_0084. Details of the OTMP and its purpose in relation to the MOD 2 project is presented in **Section 6.2.5** of this OEMP. Management of traffic-related impacts is discussed further in Section 7.2 of this OEMP.

In addition to the traffic and transport assessment, a qualitive assessment was also undertaken on the potential impacts from the MOD 2 project on a range of other environmental factors, including:

- Heritage
- Noise
- Air quality
- Soil and Water (surface water and groundwater)
- Air quality
- Other considerations such as visual amenity, hazards, waste, socio-economic and cumulative impact.

However, the assessment concluded there was likely to be minimal impacts, if any, in relation to these environmental factors from the MOD 2 project. The impacts on these environmental factors from the MOD 2 project is limited further by the planned staging of the project discussed in **Section 5.2.1** above. Furthermore, these environmental factors are already being managed by EPS operations and existing environmental management plans. In consideration, these environmental factors have not been addressed in this OEMP. The

exception to this is water quality, specifically surface water run-off from the MOD 2 operation areas, given the upscaling of Daracon ash storage and temporary silo and the increase in volume in the event of an uncontrolled release. Management of water quality impacts is discussed further in Section 7.3 of this OEMP.

7.2 Traffic and Transport

The key environmental issue related to the MOD 2 project, identified in the EA, was potential traffic and transport impacts. A traffic impact assessment was prepared to assess the potential impact associated with an increase in truck movements accessing and egressing the EPS, as a result of the MOD 2 project. Subsequently, an OTMP was prepared to address the risks identified by the traffic impact assessment (AECOM, 2022c) and Condition 4.10 of PA MP07_0084.

Details of the OTMP and its purpose in relation to the MOD 2 project is presented in Section 6.2.5 of this OEMP.

7.2.1 Relevant Regulatory Requirements

Ash haulage for the MOD 2 project will be undertaken in a manner consistent with legislative requirements set out in the following:

- Roads Act 1993 and its regulations
- Roads Transport Act 2013 and its regulations
- Road Rules 2014

7.2.2 Potential Impacts

PA MP07_0084 does not specify a limit on truck movements associated with ash recycling and historically truck movements have only been limited by the approved capacity of ash recycling infrastructure at EPS.

Operation of the MOD 2 project is anticipated to result in an increase in heavy vehicles entering and exiting the EPS. Modelling presented in the EA (AECOM, 2021) indicated that network performance would continue to operate at a good level of service with minimal delays across all intersections. The traffic impact assessment concluded that the forecast impact on the surrounding road network based on a worst-case assessment would be insignificant, and network performance would continue to operate under good conditions.

7.2.3 Management Measures

The following management measures would be implemented during operation of the MOD 2 project to minimise the potential impacts of ash haulage associated with the MOD 2 project:

- Truck drivers will be required to undertake the Eraring Power Station Ash Recycle Drivers Familiarisation Induction
- Truck drivers will also be required to complete the online Ash Dam Induction (if they are collecting ash from that location) or a specific induction relative to the third party contractor they are working for on the EPS site.
- Truck drivers will be required to comply with the requirements of the OTMP, including the Driver Code of Conduct
- Where possible, maximum truck sizes will be used to minimise the number of vehicle movements.
- Truck movements within EPS will be managed to ensure that queuing does not occur outside the boundary of the site.

7.2.4 Monitoring

Condition 1.6 and Appendix B of MP07_0084 requires Origin to pay an annual contribution to LMCC for the maintenance of roads along the haulage routes. The haulage contribution is required for every tonne of ash transported from EPS along each haulage route and evidence of the tonnage hauled on each route is required to be submitted by 31 July each year.

Origin currently utilises contract mechanisms to calculate the ash tonnage hauled along each route and the required haulage contribution. Records of haulage volumes and receipt of ash are provided to Origin by contracted companies.

Haulage data records will be maintained by Origin and provided annually to LMCC in accordance with the requirements of Appendix B of MP07_0084.

7.2.5 Reporting

Monitoring data and haulage records will be used to calculate the tonnage of ash transported along each haulage route for the purpose of calculating haulage contributions required to be paid to LMCC. Records of the tonnage hauled on each route will be reported to LMCC annually by 31 July each year, in accordance with Condition 1.6 and Appendix B of PA MP07_0084.

7.3 Water Quality

7.3.1 Relevant Regulatory Requirements

Management of surface water and groundwater across the EPS site is undertaken in accordance with the Water Management Plan (AECOM, 2022b). Water management associated with the MOD 2 project will be undertaken in accordance with the following standards and regulatory requirements:

- WM Act and it's regulations
- EPA's Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales
- EPL 1429 including the following relevant conditions:
    - P1.3 – Location of monitoring/discharge points and areas
    - L1.1 – Must comply with Section 120 of the POEO Act which prohibits pollution of waters
    - L3.7 – Water and/or land concentration limits
    - L4.1 – Volume and mass limits
    - M2.6 – Water monitoring requirements
    - M3.2 – Monitoring in accordance with the Approved Methods Publication.

7.3.2 Potential Impacts

Potential impacts to surface water may include:

- potential water quality impacts to receiving waters
- changes to runoff patterns resulting in erosion and sedimentation.

Potential impacts to surface water quality and receiving waters from operation of the MOD 2 project relate to potential for increased pollutant volumes, primarily ash, to be discharged to receiving environments.

The fly ash storage and handling system operates as an enclosed system, with low risk of spills or air emissions during the material transfers or filling of trucks. The revised design for Daracon's additional ash recycling infrastructure includes a sump drain which would capture

accidental spills and stormwater and divert it to the existing wastewater management system. These design aspects will minimise the potential impacts to water quality.

Potential impacts to groundwater quality associated with the operation of the MOD 2 project are considered unlikely and have not been addressed.

7.3.3 Management Measures

The management measures listed in **Table 5** will be implemented during operation of the Project to minimise potential impacts to surface water.

Table 5: Surface water runoff management measures

Management measure	Timing	Responsibility
Operational activities will be undertaken in accordance with the EPS Water Management Plan (AECOM, 2022b) to minimise potential impacts to the receiving environment	Ongoing	EPS Environmental Business Partner
Accidental leakage or spills of ash material will be managed in accordance with Origin's existing operating procedures (Origin, 2021a)	Ongoing	EPS Environmental Business Partner
Clean water drains will be inspected monthly and maintenance will be conducted as required to maintain flow capacity.	Monthly	Operations Personnel
Stormwater channels will be inspected monthly and following significant rainfall (>10 mm/day) and maintenance will be conducted as required to maintain flow capacity.	Monthly and following significant rainfall	Operations Personnel
Surface water monitoring activities (as Water Management Plan (AECOM, 2022b will be implemented for the MOD 2 Project in accordance with the requirements of EPL 1429 and PA MP07_0084	Ongoing	EPS Environment Business Partner

7.3.4 Monitoring

Existing surface water monitoring activities would continue in accordance with the requirements of EPL 1429. Samples are analysed for the parameters specified in the EPL, including relevant detection limits, methods for analysis and general comments on sampling procedures.

Surface water monitoring locations are as per EPL 1429. Surface water monitoring will be undertaken in accordance with the EPL requirements and Water Management Plan (AECOM, 2022b).

7.3.5 Reporting

Monitoring results in accordance with EPL 1429 will be published on the Origin Energy website (https://www.originenergy.com.au/). Compliance Reporting will occur in accordance with Section 9.3 below.

All non-compliances will be recorded, corrective actions identified and responsibility for corrective actions assigned. Non-compliances with PA MP07_0084 will be reported to DPE in accordance with the procedures detailed in **Section8.1**.

8. Incidents and Complaints

8.1 Environmental Incidents and Non-compliance

In accordance with the EPS site's EMS, all hazards, near misses and incidents are to be managed in accordance with the Origin Incident Management Directive (ORG-RMS-DIR-006). All employees and contractors are advised to report all safety and environmental issues or incidents to the Site Manager and EPS Environment team.

An environmental incident is an unplanned event that causes or has potential to cause material harm to the environment. Environmental incidents include but are not limited to:

- spills of chemicals including oils and fuels
- spillway releases, up to and including a dam break failure
- unintended damage to native vegetation
- injury to wildlife and
- dust and noise impacts on the surrounding community.

Incidents causing or threatening material harm to the environment, as defined by Section 147 of the POEO Act, will be managed in accordance with the following documents:

- Origin Incident Management Directive (ORG-RMS-DIR-006)
- Origin Emergency Response Plan (DOC07/33699)
- EPS Pollution Incident Response Management Plan (DOC14/98647)

8.1.1 Incident Notification, Reporting and Response

In accordance with Condition 5.1 of PA MP07_0084, the Planning Secretary must be notified in writing via the Major Projects website immediately after EPS becomes aware of an incident.

The notification must identify the project (including the application number) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix C of PA MP07_0084.

Appendix C of PA MP07_0084 identifies that a written incident notification addressing the requirements below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident.

Written notification of an incident must:

a) Identify the project and application number;
b) Provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
c) Identify how the incident was detected;
d) Identify when the Applicant became aware of the incident;
e) Identify any actual or potential non-compliance with conditions of approval;
f) Describe what immediate steps were taken in relation to the incident;
g) Identify further action(s) that will be taken in relation to the incident; and
h) Identify a project contact for further communication regarding the incident.

Within 30 days of the date of which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities with a detailed report on the incident addressing all of the following requirements:

a) A summary of the incident
b) Outcomes of an incident investigation, including identification of the cause of the incident;
c) Details of the corrective and preventive actions that have been, or will be, implemented to address the incident and prevent recurrence; and
d) Details of any communication with other stakeholders regarding the incident.

8.1.2 Non-compliance Notification

A non-compliance is defined as an occurrence, set of circumstances or development that is in breach of the approval but is not an incident. EPS must notify the Planning Secretary in writing via the Major Projects website within seven days after EPS becomes aware of the non-compliance, in accordance with condition 5.2 of PA MP07_0084.

The non-compliance notification must identify the project and application number, set out the condition of approval that the project is non-compliant with, the way in which is does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

8.2 Corrective Actions

All employees and contractors are urged to report all environmental issues or incidents to their supervisors. All incidents will be investigated, and corrective actions identified and implemented where relevant.

Supervisors and/or the EPS Environment team will ensure that corrective actions and preventative actions relating to an incident or non-compliance are determined, responsibilities assigned and accepted and deadlines for completion are set. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

Details of incident investigations and corrective actions will be recorded in the Origin Collective Intelligence System (OCIS) and tracked to completion and sign off by the EPS Environment team. Incidents and corrective actions will be reviewed at six-weekly environment and safety meetings to ensure continuous improvement and shared learning.

8.3 Complaints Handling

Complaints can be made via the following methods:

- Phone call: (02) 4973 0700
- Postal mail: PO Box 5044, Dora Creek, NSW 2264
- Website: https://www.originenergy.com.au/contact-us/general-enquiries.html

Initial contact for complaints will be dealt with verbally by the Community Relations Business Partner with the complaint logged in Origin's Incident Management System.

Complaints logged via the Incident Management System will be reviewed and a corrective action initiated depending on the level of action required, with a written response provided on completion of any investigation.

In accordance with Condition 5.15 of PA MP07_0084, a complaints register, which is updated on a monthly basis, will be publicly available on the Origin Energy website: (https://www.originenergy.com.au/).

9. Monitoring and Reporting

9.1 Environmental Inspections and Monitoring

Environmental monitoring and surveillance during the MOD 2 project will be carried out on an ongoing basis by suitably trained and experienced Origin staff or contractors. Monitoring and surveillance activities are described within the relevant sections of this OEMP for each respective environmental issue detailed in **Section7.0**.

Monitoring activities will be undertaken in accordance with relevant guidelines provided in Origin's EPL 1429, PA MP07_0084, EMS, and EMP. Records of monitoring results required by Origin's EPL are published on the Origin Energy website: (https://www.originenergy.com.au/).

9.2 Independent Environmental Auditing

The Origin EPS EMS is independently audited for accreditation compliance at least every three years in accordance with ISO 14001:2015 – Environmental Management Systems. Components of the systems are audited more frequently.

In accordance with Condition 5.11 and 5.12 of MP07_0084, within one year of the date of physical commencement of development under MOD 2, and every three years after, unless the Planning Secretary directs otherwise, EPS must commission and pay the full cost of an Independent Environmental Audit of the project. The audit must:

a) Be prepared in accordance with the *Independent Audit Post Approval Requirements* (NSW Government 2020); and

b) Be submitted, to the satisfaction of the Planning Secretary, within two months of undertaking the independent audit site inspection, unless otherwise agreed by the Planning Secretary.

In accordance with the specific requirement of the Independent Audit Post Approval Requirements (NSW Government 2020), the Applicant must:

i. Review and respond to each Independent Audit Report prepared under Condition 5.11;

ii. Submit a response to the Planning Secretary and any other NSW agency that requests it, together with a timetable for the implementation of the recommendations of the Independent Audit Report;

iii. Implement the recommendations to the satisfaction of the Planning Secretary; and

iv. Make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary.

As described in Section 9.4 below, the independent environmental audit and the response to the recommendations in the audit, will be made publicly available on the project website.

Origin undertook the first IEA of the project in March 2024. The audit's scope and submission timeframe was consistent with correspondence issued by the DPE on 19 October 2023.

9.3 Compliance Reporting

Compliance reports will be prepared for submission to DPE in accordance with Conditions 5.5 – 5.8 of PA MP07_0084 and the requirements of DPE's *Compliance Reporting Post Approval Requirements (DPE, 2020)* or its latest version. The Compliance Reports will outline the compliance status of the project in relation to the conditions of PA MP07_0084.

Compliance Reports will be submitted to the DPE in accordance with the timeframes set out in *Compliance Reporting Post Approval Requirements (DPE, 2020)* being an Operation Compliance Report. This report will be submitted to DPE within one year of commencement of operations and annually thereafter, unless otherwise agreed to by the Planning Secretary in accordance with condition 5.6 of the approval

As described in Section 9.4 below, each compliance report will be made publicly available within 60 days of submitting it to the Planning Secretary.

9.4 Access to Information

In accordance with Condition 5.15 of MP07_0084 Origin will make the following information publicly on its website as its relevant to the stage of the MOD 2 project:

i. The Environmental Assessment;
ii. Current statutory approvals for the project;
iii. approved strategies, plans and programs required under the conditions of this approval;
iv. a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the various strategies, plans and programs under the conditions of this approval;
v. a complaints register, which is to be updated on a monthly basis; and
vi. any independent environmental audit, and the Applicant's response to the recommendations in any audit.

This information will be kept up to date, to the satisfaction of the Planning Secretary.

10. OEMP Review

The OEMP will be subject to periodic review and updates to reflect changes in site operational practices during the MOD 2 project and changes in Origin's environmental performance framework.

In accordance with Condition 5.14 of PA MP07_0084, the OEMP and associated management plans will be reviewed, and if necessary revised, within three months of:

- submission of an incident report
- submission of an Independent Audit
- modification of the Development Consent and
- issue of a direction of the Planning Secretary of DPE.

Where this review leads to a revision of the OEMP, the revised documents will be submitted to DPE for approval within four weeks of the review.

Other triggers for OEMP review may include:

- findings and recommendations of site inspections and/or incident investigations
- changes in environmental legislation and/or policies and
- new technologies/innovation relevant to applied methods and controls that provide innovative means of executing work in order to meet environmental performance criteria.

11. References

AECOM (2023) *Consistency Assessment: MOD 2 Ash Recycling Project – Revised Design*, AECOM Australia, Newcastle, 23 June 2023.

AECOM (2022a) Eraring Power Station Ash Dam Augmentation Project – Operational Environmental Management Plan, AECOM Australia, Newcastle, 21 April 2022

AECOM (2022b) Origin Energy Eraring Power Station – Water Management Plan, AECOM Australia, Newcastle, 20 January 2022.

AECOM (2022c) Operational Traffic Management Plan – Eraring Power Station MOD 2 Ash Recycling, AECOM Australia, Newcastle, 27 October 2022.

AECOM (2021) Modification Report – Ash Recycling Facilities, Eraring Power Station, dated 20 August 2021, prepared by AECOM and Response to Submission Report – Ash Recycling Facilities, Eraring Power Station, AECOM, 19 November 2021.

AECOM (2018a) Response to Submissions Report – Origin Eraring Power Station – Ash Dam Augmentation MOD1, AECOM Australia, Newcastle, 3 December 2018.

DPE (2018) Compliance Reporting: Post Approval Requirements, June 2018, NSW Department of Planning and Environment, June 2018.

HLA–ENSR (2008) Upgrade and Expansion of the CCP Management System, Eraring Power Station – Submissions Report, HLA-ENSR, 15 February 2008.

HLA-ENSR (2007) Environmental Assessment – *Upgrade and Expansion of the Coal Combustion Management System, Eraring Power Station*, HLA-ENSR, November 2007.

Origin (2020) Eraring Power Station Long Term Ash Management Strategy (LTAMS), Version 2.0, Origin Energy Eraring, 3 October 2020.

12. Document Control

Author (To Whom any changes are to be recommended)	
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Reviewed by		
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Advisor Environment	Peter Waddingham	21/01/2026

History

Date	Author	Version	Nature of Change
09/11/2022	Mikayla Henderson	1.0	Initial document
08/02/2024	James Epstein	2.0	Updated to reflect changes following completion of construction
09/01/2026	Sam Hamilton	2.1	Minor review, noting position title only. No material updates required.

Related Documents	
Title	**Document ID**
EPS Pollution Incident Response Management Plan (PIRMP)	EPS-ENV-PLN-002
Eraring Power Station Environmental Compliance Manual	EPS-ENV-PLN-003
Eraring Power Station Water Management Plan	EPS-ENV-PLN-007
Eraring Power Station Environmental Management Plan	EPS-ENV-PLN-008

Review Requirements
This document is next due for review 21 January 2029 by Advisor Environment.
Controlled Document Location
OpenText ID: 69325036

13. Appendix A – EPS Statement of Environmental Commitment

Origin Energy Eraring Power Station

Statement of Environmental Commitment

Origin Energy is committed to managing its operations at Eraring Power Station in an environmentally responsible manner and continually improving its performance and Environmental Management Systems. Eraring Power Station is a 2,880MW coal fired power station in Lake Macquarie, NSW.

We commit to protecting the environment through:

- Complying with compliance obligations, and all other legal requirements.
- Being innovative and practical in response to emerging issues;
- Understanding and responding to how our business impacts on our stakeholders;
- Training our people to be environmentally responsible;
- Establishing objectives and targets;
- Regularly managing, reporting and reviewing our environmental performance; and
- Engaging positively with stakeholders including our community and Regulators.

The success of our policy depends on its implementation by all Origin Energy employees and contractors.

The Energy Transition

Origin's ambition is to lead the energy transition through cleaner energy and customer solutions. Over-time, we will evolve and optimize our portfolio of assets, products and services to meet customer demand and preference. We are also committed to supporting our people, communities and customers through this major period of change for our sector, as we continue to play our role in Australia developing a reliable, affordable and low carbon system.

Anthony Ham

Group Manager – Coal Asset Operations



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