ASSESSMENT REPORT

Eraring Power Station

Modification to Align Conditions with Environment Protection Licence

(05_0138 Mod 1 & 06_238 Mod 1)

1 BACKGROUND

Eraring Power Station is located in Dora Creek, on the western shore of Lake Macquarie approximately 40 kilometres (km) southwest of Newcastle and within the Lake Macquarie local government area (see **Figure 1**). Eraring is the largest coal fired power station in Australia with a nameplate capacity of 2,880 megawatts (MW) and was purchased by Origin Energy Pty Ltd (Origin Energy) from the NSW State Government in 2013.

Figure 1: *Site Location and Regional Context*

The shore length of Lake Macquarie is approximately 174 km with the land around the lake containing large residential areas, several underground coal mines, the Vales Point coal fired and Colongra gas fired power stations along the southern shore and various parks and reserves.

1.1 Regulatory Framework

The regulatory framework of Eraring Power Station is unique as it operates under the *Eraring Power Station Act 1981* (EPS Act), Environmental Protection Licence (EPL) 1429 and several project approvals issued under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Eraring Power Station Act 1981

The EPS Act was enacted in 1981 to allow the Electricity Commission to enter into special arrangements to transfer the power station to an association of private companies, which would assist the Government in funding the operation of the power station.

While most of the provisions of the EPS Act are obsolete as the Commission and its successors are no longer in existence, Section 21 of the Act has ongoing operation.

Section 21 of the Act provides that all development on the "site" for approved purposes is authorised and approved for the purposes of any other Act or instrument under any other Act. Further, the site and any development on the site may be used for approved purposes, notwithstanding any other Act or instrument to the contrary.

Environmental Protection Licence 1429

Operation of the power station is regulated under EPL 1429, which was first issued in 2000 under the *Protection of the Environment Operations Act 1997* (POEO Act) for electricity generation and other activities including coal works, chemical storage and sewage treatment carried out at the premises (see **Appendix D**).

EPL's are administered by the NSW Environment Protection Authority (EPA) and a load-based licensing scheme applies to EPL 1429 which sets concentration and load limits for pollutants emitted by the power station. The statutory scheme for State significant development contemplates the possibility that the conditions on an EPL may diverge from those on a planning consent over time, as additional data becomes available, pollution control standards are changed and the EPL is updated to reflect these changes.

Since 2000, there have been 24 licence variations to EPL 1429. Variations have involved requirements to undertake pollution reduction programs, inclusion of additional monitoring locations and amendments to air concentration limits.

To avoid inconsistencies developing between the two instruments and regulatory overlap, it is common for proponents to seek modifications to the conditions of planning consents to ensure they align with the conditions of the EPL.

Part 3A approvals

Originally built and owned by the Electricity Commission of NSW in 1977, the first of four turbines began service in 1982 with the final turbine commissioned in 1984. Over time, the Electricity Commission and its successor, Pacific Power were restructured and ownership of the power station was transferred to Eraring Energy, a State-owned corporation.

Between 2006 and 2008, Eraring Energy obtained one concept approval and three project approvals for the site under Part 3A of the EP&A Act to increase the capacity of the power station and ash dam. These approvals are summarised in *Table 1*.

Table 1**:** *Existing approvals*

Approval	***Date***	***Description***
Concept Approval (05_0138) - Coal Combustion Product Management Facility	2006	• Long term expansion of the ash dam disposal facility and changes to the ash disposal method and ancillary infrastructure.
Project Approval (05_0138) - Blackstart Generator	2006	• Construction and operation of a 42 MW emergency turbine generator.
Project Approval (06_238) - Capacity Upgrade and Attemperation Reservoir	2008	• Upgrade of plant components and increase in nominal capacity of each turbine from 660 MW to 750 MW. • Construction and operation of a 920 megalitre (ML) cooling water attemperation reservoir and associated infrastructure to manage cooling water temperatures.
Project Approval (07_0084) - Coal Combustion Product Management Facility	2008	• Expansion of the ash dam and changes to the ash disposal method and ancillary infrastructure.

2 PROPOSED MODIFICATION

Following the load shedding events caused by the extreme heat wave in NSW on 10 February 2017, Origin Energy undertook a review of the approval and licence conditions that affect the operational reliability of Eraring Power Station.

Origin Energy is seeking to remove conditions that are duplicated between Project Approvals (05_0138 & 06_238) and EPL 1429. These conditions refer to:

- air quality concentration and load limits, monitoring locations and test methodology;
- surface water volume and temperature discharge limits, including a Thermal Load Strategy; and
- prohibition of pollution of waters under Section 120 of the POEO Act.

EPL 1429, which pre-dates the Part 3A approvals was used as a basis for many of the air and surface water discharge limits. Origin Energy considers the removal of these duplicated conditions from the project approvals would:

- reduce the administrative burden for the Department, EPA and Origin Energy;
- provide cost efficiencies through the streamlining of compliance activities and auditing requirements;
- remove ambiguity and inconsistencies between the documents;
- streamline the approval and modification process to enable more efficient and timely management of environmental issues; and
- align with recommendation 3 in the NSW Government's *Initial Report by the Energy Security Taskforce* (May 2017) to improve the speed and ease with which the Government can respond to an energy emergency, including revising legislative provisions where necessary.

The proposed modification is described in more detail in the information that accompanied the modification application (see **Appendix C**).

3 STATUTORY CONTEXT

3.1 Section 75W Modifications

Project Approvals (05_0138 & 06_238) were originally granted under Part 3A of the EP&A Act. Although Part 3A was repealed on 11 October 2011, the projects remain as 'transitional Part 3A projects', and can be modified under Section 75W of the EP&A Act.

The Department is satisfied that the proposals are within the scope of Section 75W, as they would not increase the environmental impacts of the project and would not change the project as approved.

3.2 Approval Authority

The Minister for Planning is the approved authority for the modification application. However, under the Minister's delegation dated 11 October 2017, the Director, Resource and Energy Assessments, may determine the application. This is because no public submissions were received on the proposal, no reportable political donations were made and Lake Macquarie City Council did not object to the proposal.

4 CONSULTATION

The Department made the modification application and Environmental Assessment publicly available on its website on 6 September 2017. The Department also referred the application to the EPA, which did not raise any specific concerns about the modification applications (see **Appendix E**).

5 ASSESSMENT

The project approvals include conditions with air quality, cooling water temperature and volume discharge limits, consistent with limits set in EPL 1429.

The Department's assessment of the proposed removal of these conditions from the project approvals are summarised in Table 2.

Table 2: *Proposed changes to conditions*

Proposed Change	***Assessment***	***Recommendation***
Protection of the Environmental Operations Act 1997		
Compliance with Section 120 of the *POEO Act* prohibiting pollution of waters unless expressly provided in the EPL. • *Project Approval (05_0138) condition 2.6* • *Project Approval (06_238) condition 2.12*	• This condition demonstrates that pollution of waters, beyond that allowed by the EPL, are expressly prohibited under the planning approvals. • The Department considers that these requirements remain relevant to the operations of the power station, and are already sufficiently aligned with the requirements of the EPL. • Accordingly, the Department considers these conditions should be retained in the project approvals.	• No change.
Air Quality		
Monitoring and discharge points • *Project Approval (05_0138) condition 3.1* • *Project Approval (06_238) condition 3.1 – 3.4*	• These conditions relate to the method, location and frequency of monitoring air quality pollutants, and are already specified in the EPL. • The Department notes that the EPA is the lead regulator for the power station, and considers that these matters should be solely regulated by the EPA. • However, rather than removing details about monitoring air pollutants from the project approvals, the Department considers that sufficient flexibility can be achieved by allowing these matters to be varied under the project approvals with the formal agreement of the EPA. • This would allow the EPA to consider the merits of varying these requirements as more data becomes available or pollution standards change over time. • It would also avoid the potential for inconsistency with the EPL over time, and ensure the project approvals are not silent on these matters.	• Update condition 3.1 of Schedule 2 to Project Approval (05_0138) to allow monitoring and discharge points to be varied with the agreement of the EPA. • Update conditions 3.1, 3.2, 3.3 and 3.4 of Schedule 2 to Project Approval (06_238) to reference the EPL.
Identification of monitoring and discharge points • *Project Approval (06_238) condition 2.3*	• Condition 2.3 of Schedule 2 to Project Approval (06_238) is cross-referenced by conditions 3.1 – 3.4 of Schedule 2 to Project Approval (06_238) to identify the monitoring/discharge point locations. • Given the recommended updates to conditions 3.1 – 3.4 removes the cross-references to condition 2.3, the Department considers it is appropriate to remove this condition.	• Remove condition 2.3 of Schedule 2 to Project Approval (06_238).

Proposed Change	***Assessment***	***Recommendation***
Air quality discharge concentration limits • *Project Approval (05_0138) condition 2.4* • *Project Approval (06_238) condition 2.4*	• These conditions provide concentration limits for discharges of certain pollutants. • The Department considers that the prescribed air quality limits should be retained in the project approval, but provision should be made to allow these limits to be varied with the agreement of the EPA. • This is consistent with a performance-based or outcomes-focused approach which ensures air quality standards are maintained while affording sufficient flexibility for the EPA (as the lead regulator of the power station) to vary these limits over time to reflect contemporary standards.	• Update condition 2.4 of Schedule 2 to Project Approvals (05_0138) and (06_238) to allow limits to be varied with the agreement of the EPA.
Water Quality		
Cooling water volume discharge limit of 11,000 ML per annum • *Project Approval (06_238) condition 2.18*	• The volume discharge limit of 11,000 ML per day was included when EPL 1429 was first issued in 2000 and pre-dates Project Approval (06_238). • The condition is in place to limit the number of fish species which become impinged at the inlet water canal screens, reduce the entrainment of larval species in the cooling water flows, and reduce the size of the thermal plume from the cooling water outlet canal. • The Department considers that the project approvals should retain reference to the water volume discharge limits, but provision should be made to allow these limits to be varied with the agreement of the EPA.	• Update condition 2.18 of Schedule 2 of Project Approval (06_238) to allow volume discharge limits to be varied with the agreement of the EPA.

Proposed Change	***Assessment***	***Recommendation***
Cooling water temperature discharge limit of 37.5°C • *Project Approval (06_238) condition 2.19*	• Thermal load effects from the discharge of cooling water into the seagrass beds present in Myuna Bay are a key environmental impact associated with operation of the power station. • The EPL, which pre-dates Project Approval (06_238), provided the basis for establishing a maximum temperature discharge limit of 37.5°C. • The cooling water discharge limits are regulated in the EPL under conditions L3.1 – concentration limits and L3.6 water and/or land concentration limits. • In addition, the EPL (condition E2 – Seagrass Monitoring Program) requires reporting on the effects of temperature on seagrass health every three years. • Ongoing studies provide the EPA with the ability to implement an adaptive management approach where thermal discharge limits in the EPL are informed by data gathered in the nine years since the project was approved. • The project approval contains additional requirements to manage the thermal load effects including a Thermal Load Strategy (condition 2.20) and the Aquatic Ecological Monitoring Program (condition 3.8). • The Department considers that the project approval should retain reference to the cooling water discharge limits, but provision should be made to allow these limits to be varied with the agreement of the EPA as the lead regulator of the power station.	• Update condition 2.19 of Schedule 2 of Project Approval (06_238) to allow temperature discharge limits to be varied with the agreement of the EPA.
Thermal Load Strategy • *Project Approval (06_238) condition 2.20*	• The Thermal Load Strategy was approved by the Department in November 2009 and implemented at the power station ever since. • The objective of the Thermal Load Strategy is to minimise the occurrence and frequency of elevated temperature discharges from the cooling water outlet canal into Myuna Bay. • The Department considers that the project approval should retain the requirement to implement the Thermal Load Strategy, but provision should be made to allow the strategy to be revised with the agreement of the EPA.	• Update condition 2.20 of Schedule 2 of Project Approval (06_238) to allow the Thermal Load Strategy to be revised with the agreement of the EPA.

6 RECOMMENDED CONDITIONS

The Department has prepared Notice of Modifications (see **Appendix A**) and consolidated development consents (see **Appendix B**) for the Project Approvals (05_0138 and 06_238).

The amended instruments do not remove the pollutant limits for air and water discharges from the project approvals, but allow these limits to be varied with the agreement of the EPA. They also allow the existing Thermal Load Strategy to be revised with the agreement of the EPA.

The conditions that prohibit pollution of waters have not be removed unless expressly provided in the EPL, as the Department considers that these requirements remain relevant, and are already aligned with the EPL.

The Department has also taken the opportunity to make minor administrative changes to the consent, including updating the name of government agencies.

7 CONCLUSION

Origin Energy has sought to modify the conditions of two of the project approvals for the Eraring Power Station (05_0138 and 06_238). The proposed modifications seek to update the approvals to ensure pollutant discharge limits are regulated consistently between the Department and the EPA in line with current best practice and in accordance with the conditions of the EPL.

The proposed changes to the project approvals would improve the operational responsiveness and efficiency of the power station while having no material impact on the way the project is operated or any additional environmental impacts.

Overall, the Department considers that allowing pollutant limits for air and water discharges to be varied with the agreement of the EPA reflects the role of that agency as the lead regulator of the power station under the *Protection of the Environment Operations Act 1997*. It also minimises regulatory overlap and avoids potential inconsistencies developing between the two instruments over time.

The Department is therefore satisfied that the modifications are in the public interest, and should be approved, subject to the amended conditions of approval.

8 RECOMMENDATION

It is recommended that the Director, Resource & Energy Assessments, as delegate for the Minister for Planning:

- **consider** the findings and recommendations of this report;
- **determine** that the request (05_0138 Mod 1 & 06_238 Mod 1) fall within the scope of section 75W of the EP&A Act;
- **modify** the approvals (05_0138 & 06_238); and
- **sign** the attached modification of approval (**Appendix A**).

Recommended by:

19/10/17

Anthony Ko
Planning Officer
Resource and Energy Assessments

Recommended by:

19/10/17

Nicole Brewer
Team Leader
Resource & Energy Assessments

9 DECISION

The recommendation is Approved/Not Approved by:

Michael

20/10/17.

Mike Young
Director
Resource and Energy Assessments
as delegate of the Minister for Planning

APPENDIX A:

NOTICES OF MODIFICATION

APPENDIX B:

CONSOLIDATED CONSENTS

APPENDIX C:

SUPPORTING INFORMATION

See the Department's website at http://majorprojects.planning.nsw.gov.au/

APPENDIX D:

EPL 1429

APPENDIX E:

EPA SUBMISSION