10 June 2022

Mr Tony Chappel
Chief Executive Officer
NSW Environment Protection Authority

BY EMAIL

Attention: [redacted]
cc: air.policy@environment.nsw.gov.au

Dear Mr Chappel

Re: Draft Protection of the Environment Operations (Clean Air) Regulation 2022

Origin Energy (Origin) thank the NSW Environment Protection Authority (NSW EPA) for providing us with the opportunity to provide feedback on the draft Protection of the Environment Operations (Clean Air) Regulation 2022 (NSW) (Draft Clean Air Regulation).

Origin Energy

Origin is Australia's leading energy retailer with over 4 million residential and business customers. Our customer footprint extends to every Australian state and across the Pacific with LPG.

We have 7,400 MW of gas, coal and renewable generation and energy storage across the east coast - powering Australian homes and businesses.

Origin was the first Australian company to set carbon emissions reduction targets endorsed by the global, independent Science Based Targets initiative.

Origin seeks to lead the transition to a decarbonised future by:

- Exiting coal fired power generation with announcement of Notice of Closure for Eraring Power Station (EPS).
- Accelerating the growth in renewable energy supported by peaking generation.
- Investing in storage to support growth of renewable energy.
- Developing scalable domestic and export hydrogen business.
- Growing our in-house Virtual Power Plan.

As relevant to the Draft Protection of the Environment Operations (Clean Air) Regulation 2022 in NSW Origin own and operate the EPS and Uranquinty Power Station (UPS) which operate in accordance with the existing Clean Air Regulation 2021.

Eraring Power Station (EPS)

EPS is Australia's largest power station at 2,922 MW and accounts for approximately 25% of NSW's energy requirements. It consists of 4 x 720 MW coal fired units and a 42 MW diesel fired gas turbine. Construction of the power station began in 1977. The first steam turbine was brought online in 1982, with the second and third in 1983, and the fourth in 1984. The generating capacity of each of the four steam turbines was upgraded from 660 MW to 720 MW between 2011 and 2012.

In February 2022 Origin notified the Australian Energy Market Operator (AEMO) of the planned early retirement of Eraring in August 2025, at the end of the three-and-a-half year notice period. Origin intends to utilise the Eraring site beyond any retirement of the coal-fired power station, with plans to install a large-scale battery.

Origin will work with our people and the local community to determine the most appropriate transition planning for any eventual closure.

As relevant to air emissions which are currently regulated under the Clean Air Regulation 2021, the 2011-12 upgrade of EPS included the installation of low NOx (oxide of nitrogen) burners that result in the EPS having the lowest NOx emission concentrations of all NSW coal fired power stations. Sound environmental management including air emissions is central to Origin's strategy for the responsible operation of EPS.

Since 2020 Origin have been engaging with the NSW EPA on a coal fired power station licence review process, with a focus on air emissions. This has included development of:

- a new Site-Specific Air Emission Monitoring Plan;
- a Continuous Emissions Monitoring Systems Quality Assurance and Control Procedure;
- an Air Pollution Control Equipment - Maintenance, Operation and Fault Response Procedure
- a continuous particulate matter monitoring feasibility study; and
- completed a dioxin and furan emissions study.

Origin operate EPS in the Lake Macquarie region of NSW. Both Origin and the NSW Department of Planning and Environment (NSW DPE) measure ambient air quality in the region and air quality including ambient nitrogen dioxide (NO_2) and the secondary pollutant ozone (O_3) which can result from NOx emissions. Air quality in the region is very good and ambient levels of both NO_2 and O_3 are well within health-based standards for these pollutants set by the National Environment Protection (Ambient Air Quality) Measure. This can be interpreted to mean that EPS's contributed airshed NOx emissions which are controlled by low NOx burners and diligent power station operations are acceptable at current levels and there is no justification for the introduction of new standards for emissions. This is further emphasised by the remaining life of the asset with Origin potentially bringing forward the closure of Eraring to – at earliest – 2025.

Potential Impacts of the Draft Protection of the Environment Operations (Clean Air) Regulation 2022

The key change proposed by the Draft Clean Air Regulation 2022 in Part 5 is the proposed changes to NOx emissions introduced by extending the provisions to phase out Group 1-2 industries, to phasing out Group 1-4 industries. EPS currently belongs to Group 3 and with the proposed changes it would transition to Group 5 in 2025 and Group 6 in 2030, (noting Origin has provided notice to AEMO indicating the potential early closure of EPS in mid-2025).

The current Clean Air Regulation 2021 has an air emissions limit for NOx of 2500 mg/Nm^3 applicable to electricity generation facilities. EPS has a 100^{th} percentile EPL NOx limit of 1100 mg/Nm^3 and we are compliant with this limit.

If the Draft Clean Air Regulation 2022 as drafted is implemented, it would require EPS to meet the following NOx standards:

- 800 mg/m3 by 1 July 2025; and
- 500 mg/m3 by 1 July 2030.

With the benefit of the low NOx burner technology, the normal operations of EPS can achieve 800 mg/Nm^3 for the majority of the time although it is possible emissions above this level could occur resulting in an exceedance of the proposed 2025 standard. EPS could not meet a 100th percentile standard of 500 mg/Nm^3 without significant investment in emission controls. The estimated cost of these additional controls is in excess of $350M with operational costs of more than $28M per annum.[1] Cost of this order significantly exceed costs outlined by the NSW EPA in the Regulatory Impact Statement[2] prepared in support of the Draft Clean Air Regulation 2022, and upon which the EPA's cost benefit analysis suggests are sustainable for industry to implement.
Additionally, the significant cost to implement the emission control measures required to meet the proposed standards would place further pressure on energy affordability.

The July 2025 date for introduction of the Group 5 standard precedes the potential August 2025 cessation of coal generation at EPS and should one or more generation units be required to remain operational beyond 2025, the proposed emission standard may impact the reliable operation of EPS.

Origin acknowledges the NSW government energy policy - the NSW Electricity Roadmap that is being implemented and resulting in transition of electricity sector, including early retirement of large coal power station over the next 15 years. Origin have already responded in this regard by announcing a Notice of Closure for EPS from 2025. We are of the view this transition is the key enabler for a natural progression to lower power station emissions including NOx and therefore the proposed Clean Air Regulation 2022 is not required to achieve this outcome and would only act to disrupt an orderly transition away from coal fired electricity generation.

Conclusion

We thank the NSW EPA for the opportunity to provide our feedback on the proposed Draft Protection of the Environment Operations (Clean Air) Regulation 2022.

Given the significant impact the proposed Regulation could have on NSW coal fired power stations, Origin is of the view that more extensive, direct and coordinated consultation with industry should be undertaken.

Origin would be pleased to engage further with the EPA on the development of a final Protection of the Environment Operations (Clean Air) Regulation 2022.

Yours sincerely

Tony Phillips
Group Manager, Coal Asset Operations
Origin Energy

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[1] WSP, 'Considerations for Retrofitting Emissions Control Systems in Australian Coal Power Plants', September 2020, https://www.energycouncil.com.au/media/dtyjfcdh/addendum-and-report.pdf
[2] Environment Protection Authority Regulatory Impact Statement Proposed Clean Air Regulation 2022