



DOC20/115960-2

Ms Rose-Anne Hawkeswood
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Hawkeswood,

Port Kembla Gas Terminal (SSI 9471 MOD 1) – Response to Submissions Report

I refer to your email of 10 February 2020 to the NSW Environment Protection Authority (EPA) containing the above and inviting comments and advice from the EPA on the Proponent's Response to Submissions Report (Report).

The EPA has reviewed the Report and this response provides conceptual conditions and comments in the attachment to this letter (**Attachment 1**) to assist Department of Planning, Industry and Environment (Planning) in the project assessment.

Based on the information provided EPA is proposing broad conditions to regulate water discharges which can be refined through negotiation with Planning and the Proponent over the short term. The EPA has also identified several issues on which we seek further information and clarification which will also inform this condition development.

The EPA is happy to meet with Planning and the Proponent at a mutually convenient time to discuss any of these matters.

Should you require any further information please contact Greg Newman on (02) 4224 4100.

Yours sincerely

Date 20/02/2020

A handwritten signature in black ink that reads 'Giselle Howard'.

GISELLE HOWARD
Director Regulatory Operations – Metro South
Environment Protection Authority

Attachment

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ATTACHMENT: EPA COMMENTS

GENERAL COMMENTS

Operational & Environmental Certainty in Approval Conditions

The Proponent's Response to Submissions report (report) questions the EPA calculations on the potential increase in throughput and impacts. As presented in our previous correspondence on the exhibited Modification Proposal (our reference DOC19/1090173, dated 18 December 2019), these calculations were extrapolated from the maximum FSRU throughput rates presented in the report. The Proponent is basing the throughput, the change in scale of the development, and the impact assessment on the current demand scenarios which are drawn from "market analysis". EPA informs planning approvals and associated conditions (including limits) for industrial developments in consideration of engineering specifications, design capacity, and potential throughput to help provide certainty in operation and associated environmental performance. Reliance of demand scenarios alone can create uncertainty as they may be based on multiple factors and subject to further variation.

It is important demand scenario levels are regulated through approval conditions derived from the assessed levels of environmental impact.

Evaluation of Alternative Technologies and Mitigation Measures

The report provides limited detail to addresses several key issues in our previous written submission. Further and more detailed information is requested to resolve these matters and inform approval conditions. This includes the evaluation of closed loop heat exchange systems as well as the evaluation of mitigation options for cold water diffusers, biota entrainment, an ocean outfall, and discharge diversion to Bluescope Steel (BSL).

Evaluation of alternative technologies, contingency measures and mitigation options are a critical component of an assessment, particularly if approval conditions are exceeded or operation impacts were to exceed environmental criteria and / or modelled or predicted impacts.

WATER QUALITY

Water Quality Values of Port Kembla Harbour

The report refers to the limited ecological values for Port Kembla Harbour and its status as a working harbour in several locations. This includes justification for the increase in the modelled cold-water impacts, biota entrainment and Cold Water Mixing Zone mitigation options.

The EPA clearly defined the expected ecological values of the Inner Harbour early in the EIS process (DOC18/959125, dated 14 December 2018). This EPA position was accepted by the Proponent and the outcome of these discussions were that the EIS assessments were undertaken for higher value water quality objectives in recognition of the improvements and current values of Port Kembla Harbour.

EPA recognises and supports the working harbour but will not disregard the existing ecological values of the Harbour during the assessment of this proposal.

Cold Water discharge

The cold-water discharge modelling during periods of increased flow rates (high demand scenarios) indicates that cold water discharge plumes would not comply with ANZECC requirements at certain times. That is, during one month of Spring and two months of Autumn. The impacted area is approximately 300 x 500m (15 hectares) over the bottom 2% of the water column under some modelled scenarios. This is an increase in the Harbour floor area not achieving the relevant temperature criteria. This area is outside a near-field mixing zone and was found to be in the order of 0.5 degrees colder than the ANZECC guidance.

Further discussions are recommended between the EPA, Planning and the Proponent to refine these conditions to regulate these impacts, prevent further potential increases in cold water impacts and consider demand scenarios proposed under this modification application.

A suggested approach could include, but may not necessarily be limited to the following:

1. Limits of flow rates and temperature for both the high and low demand scenarios as presented in the modification application. These limits could take into account short temporal scales (eg hourly or daily) to provide a more realistic pattern of the variation of thermal discharges over the year. For example;

High Demand	Low Demand
April – September	October-March
13,000 m ³ /hr	3,250 m ³ /hr
Water temperature discharge limit no more than 7 degrees cooler than ambient water temperature at any time.	

2. A clearly defined mixing zone/s.
3. A monitoring and verification program to confirm model outcomes assessed in the modification proposal. This could involve a modification of Approval Condition Schedule 3, Condition 3 and the development of specific contingency measures which will be implemented should temperature impacts be greater than modelled impacts. Note: Contingency measures could include feasibility assessments, works, offsets, or financial assurance.

The development of alternate approach to the above (based on thermal loading) could also be developed in discussion with the EPA, Planning, and the Proponent.

EPA seeks a meeting with Planning and the Proponent to develop and refine the above condition.

Cold Water Dilution with Diffusers

The Report states that: *"Consideration was given to the use of diffusers to improve plume mixing behaviour. Diffusers are effective for the modification of near-field zones but have no significant effect on far-field mixing zones. The predicted areas of non-compliance ... relate to the far-field model predictions. As such diffusers would not significantly improve overall outcomes as considered in the far-field modelling."*

The report then states that *"under the spring high season production scenario, temperatures within a thin layer of the water column between -13.2 to -13.5 m (below low tide) are predicted to be approximately 0.5°C colder than the ANZECC Guideline limits at the edge of the nearfield mixing zone."*

The above statements appear contradictory. The concern with the discharge relates to the near-field mixing zone and not far-field modelling. The seabed within the near-field mixing zone is also impacted which forms a near-field boundary. It is unclear if an improved outcome could be achieved through diffusers or other mechanism.

EPA requests clarification of the above statements in relation to diffusion.

Industrial Discharges – Modelling Parameters

The EPA has previously questioned the possible overestimation of the current BSL heated water contribution in the Thermal Plume Modelling due to the use of data from when the premises was operating 2 blast furnaces, instead of the current single blast furnace. The report does not appear to provide sufficient clarification on this issue, particularly the paragraphs relating to *Modelling Scenario 11 & 12*. These statements should be further clarified as they are contrary to the EPA expectation that heated waters from BSL would raise ambient temperatures and their removal could result in a greater cold water discharge impact due to a lower ambient temperature in the harbour.

EPA requests further clarification on the above BSL thermal discharges model outcomes.

Marine Biota Entrainment

The existing approval condition (Schedule 3 Condition 2) states "*the FSRU will be designed and constructed to minimise entrainment of aquatic organisms and plankton*". The report draws on previous assessment findings which suggests entrainment is likely to be an issue, particularly during high demand periods where intake velocity is 1.57 metre per second. The impacts of these flows do not appear to have been assessed in detail.

EPA recommends Planning liaise with Department of Primary Industries (Fisheries) and the EPA in the assessment of this issue and the development of appropriate approval conditions and assessment of mitigation options.

AIR QUALITY

Gas Engine Utilisation

In our previous correspondence the EPA recommended a condition of approval that the operation of the FSRU and any berthed LNG carriers be restricted to only 2 engines, consistent with the scenarios assessed in the Air Quality Impact Assessment.

In the absence of additional assessment and the likelihood of operating more engines than that assessed in the Air Quality Impact Assessment, the EPA will recommend conditions for engine utilisation on any issued EPL. Where the Proponent raises operational challenges with these conditions, the EPA may request further information on the engine utilisation and / or a revised assessment of air quality impacts.

Marine Diesel Oil (MDO) Operation Restriction

The Proponent is requesting the modification of Condition 8 which states that the proponent must not operate the FSRU using marine diesel oil (MDO) for more than 72 hours in any calendar year while berthed at the site. The requested modification would instead require limiting MDO use to as "low as practicable".

The EPA refers Planning to our previous advice on this issue (DOC19/1090173, dated 18 December 2019).