



**GAS IMPORT JETTY AND PIPELINE PROJECT
ENVIRONMENT EFFECTS STATEMENT
INQUIRY AND ADVISORY COMMITTEE**

TECHNICAL NOTE

TECHNICAL NOTE NUMBER: TN 031

DATE: 19 October 2020

LOCATION: Gas Import Jetty and Pipeline Works

EES/MAP BOOK REFERENCE: Attachment III: Environmental Risk Report Appendix B Risk Register

SUBJECT: Response to RFI 164 - Section 20.2 Clarification of risk register

SUMMARY The information provided in this technical note provides an explanation of the data relied on to inform the risk assessment and residual risk for risk IDs outlined in RFI 164 that have been deemed to have a consequence of negligible or minor.

REQUEST: Provide the data that has been relied on to inform the risk assessment and residual risk for the following risk IDs that have been deemed with a consequence as negligible or minor:

- FF O1 noise and lighting to waders and waterbirds/migratory birds during operation of the Gas Import Jetty Works
- FF O6 impact of operation on ecological character of the Ramsar site
- Marine Ecology Risk ID's ME4 to ME13, ME16 to ME22, ME26 to ME33, ME36 to ME40, ME47, ME48, and ME51 to ME53.

NOTE:

FF O1 Operational impacts to waders and waterbirds/migratory birds

1. Operation of the FSRU and Crib Point Receiving Facility would generate noise, vibration and light that has the potential to impact upon waders and waterbirds/migratory birds. There is little empirical evidence that the area of Woolleys Beach close to Crib Point Jetty is significantly utilised by shorebirds or other waterbirds. Up to 22 species may use the area. Secondary foraging habitat along Woolleys Beach is located more than 500 metres from the proposed FSRU location (as mapped by Hansen et al., 2011). The closest important roost sites for waders and waterbirds are south of Long Island Point in the north of Hastings Bight (approximately 3.5 kilometres away) and between Fairhaven and Tankerton Pier on French Island (approximately 4 kilometres away).
2. Section 7.2.1.3 Noise and vibration in Technical Report B: *Terrestrial and freshwater biodiversity impact assessment* provides information about potential noise impacts on waders and waterbirds/migratory birds associated with the operation of the Project. Noise levels were modelled for a number of operating scenarios as described in Technical Report H: *Noise and vibration impact assessment*. These predicted noise levels informed the impact assessment for waders and waterbirds/migratory birds. Current noise levels within mapped primary

foraging habitat and immediately adjacent to the large mapped roost area at Long Island Point offshore from the Long Island Point Fractionation Plant were also measured, with maximum sound pressure levels between 64 and 75 dB.

3. A noise level of 45 dB(A) is comparable to a quiet conversation and this noise level is predicted to occur at parts of secondary foraging habitat for waterbirds closest to the Gas Import Jetty and Crib Point Receiving Facility and levels will continue to attenuate at greater distances. The predicted noise levels at these locations and further beyond them into areas of secondary and primary foraging habitats for waterbirds, are well below levels that would be expected to elicit any response by any species of bird. It is not expected that noise of the levels predicted for operational activities associated with the Project at Crib Point Jetty would have measurable effects on use of foraging habitat by any species of waterbird that uses Western Port.
4. Noise from operations at and near the jetty can be expected to attenuate to the point of inaudibility to birds at nearby important roost sites and all other known roost sites. It is thus improbable that noise from operations of the Project at Crib Point would be sufficient to impact in any measurable way on any roost sites of any listed threatened or migratory birds.
5. Section 7.2.1.4 Lighting in Technical Report B: *Terrestrial and freshwater biodiversity impact assessment* provides information about the potential artificial lighting impacts on migratory shorebirds and other waterbirds. The operational lighting associated with the Project is not expected to constitute a measurable impact on waterbirds. An adaptive management framework would also be incorporated into the OEMPs for the Project to detect and respond to any documented impacts of artificial light on migratory birds (EPR-FF12 – Migratory birds). Adaptive mitigation measures may include utilising red filters, shields and directional lighting where practicable and within the constraints of relevant health and safety requirements.
6. Mr Brett Lane addresses EPR-FF12 in his evidence statement (at section 3.4.2, document 76):

Mitigation measure MM-FF12 is an adaptive management strategy for detecting and responding to the potential indirect effects of works or project operation on migratory birds, rather than a specific mitigation or management activity. Given the technically strong assessment, founded on decades of waterbird monitoring data, and conclusions elsewhere in the report on the likelihood of impacts on this group from the Project, this mitigation measure is not considered necessary. The areas proposed for monitoring are not habitat of importance for migratory waterbird species and numbers are comparatively low, making the discernment of trends with any statistical precision challenging indeed. Small numbers of these birds may occur at Woolley's Beach and Jack's Beach but they are well screened from the pipeline works by native vegetation and works will not last long (several weeks in one place).

A better alternative would be to support the Western Port wide waterbird surveys to ensure they continue at the current effective level as these will be sufficient to discern any unlikely project impacts on waterbirds in areas that support meaningful numbers. In the unlikely event that were to occur leading to declines in waterbird numbers exclusively in the Hasting Bight and Hann's Inlet habitat areas (cf. the rest of Western Port) then further investigations of the causes of changes in waterbird use of habitats would be triggered, including investigation of possible impact pathways associated with the project.

7. Lighting calculations undertaken for the Project (see Appendix E- Light spill factual report, Technical Report I: *Landscape and visual impact assessment*) and the review of existing literature on the impacts of light to fauna suggest that the operational phase of the Project is

unlikely to disrupt or displace wildlife from important habitat, nor is it likely to prevent wildlife from undertaking critical behaviours including foraging, reproduction and dispersal.

8. Light spill modelling shows that the additional area to be lit by the FSRU equates to 4,500 square metres, or within approximately 70 metres from the FSRU/LNG carrier. Light spill diminishes significantly from the moored vessels with no direct luminance measurable on land. There is currently lighting present on the Crib Point Jetty as well as lighting associated with Hastings, Long Island Point Fractionation Plant and existing operations. The permanent lighting increase associated with the FSRU and Crib Point Facility in the context of these other light sources are unlikely to impact on foraging success of birds.
9. With the implementation of recommended mitigation measures the consequence of operational impacts to waders and waterbirds/migratory birds is considered to be negligible.
10. Refer to evidence by Mr Brett Lane (document 76), Table 3, Item 2E and 3E:

The Technical Report has undertaken a detailed assessment of the impacts on coastal birds and terrestrial fauna arising from operation of the FSRU and Crib Point Receiving Facility. This considered the location of coastal bird activity relative to the facility and concluded that the immediate environs did not support significant numbers of these birds. Intertidal-foraging birds on the more extensive mudflats in Hastings Bight were sufficiently distant that lighting, noise and vibration were highly unlikely to disturb them. Then noise generated by the facility at these distances is at or below recently measured noise levels in this habitat.

Terrestrial fauna near the Crib Point Receiving Facility occur in dense vegetation close to an existing road. The lighting proposed for the site is unlikely to affect any listed species and many of the common fauna species of the area are adapted to the effects of noise and lighting from nearby urban areas, such as Stony Point and Hastings.

...The extent of marine and intertidal habitat used by migrating intertidal and marine birds affected by artificial light is very limited. The areas most affected are confirmed based on decades of bird surveys work NOT to be important habitat for migratory species. For these reasons (the limited use by these birds of the most affected area and the very small proportion of available habitat affected) the impacts of artificial lighting associated with the project are highly unlikely to result in significant disruptions to the breeding, survival and migratory habits of birds. The assessment undertaken is consistent with the National Light Pollution Guidelines for Wildlife, including marine turtles, seabirds and migratory shorebirds (Commonwealth of Australia 2020)

FF O6 Operational activities impact on the Ecological Character of Western Port Ramsar site

11. Operation of the FSRU and pipeline has the potential to impact upon the Ecological Character of the Western Port Ramsar site. The nature and potential effects of these impacts are discussed in Section 7.2.1 of Technical Report B: *Terrestrial and freshwater biodiversity impact assessment*. The operation of the Project is not considered to have a significant impact on the Western Port Ramsar site and the critical elements of the ecological character of Western Port. Limits of Acceptable Change defined within the Ecological Character Description for the Western Port Ramsar site are unlikely to be exceeded for impacts as per the discussion in Section 7.1.5 of Technical Report B: *Terrestrial and freshwater biodiversity impact assessment*.

12. The data relied on to inform this risk included the outcomes of the entrainment and discharge modelling of the FSRU conducted by CEE (see Technical Report A: *Marine biodiversity impact assessment*) and assessment of Limits of Acceptable Change for Critical Components, Processes and Services (see Section 7.1.5, Technical Report B: *Terrestrial and freshwater biodiversity impact assessment*).
13. With the implementation of recommended mitigation measures the consequence of operational impacts to the Ecological Character of the Western Port Ramsar site is considered negligible.

Marine Ecology Risks

14. The data that has been relied on to inform the risk assessment and residual risk for EES Technical Report A: *Marine biodiversity impact assessment* include the following:
 - (a) Baseline assessments including the collection and review of data from desktop databases, literature reviews and field surveys (including measurement of currents near Crib Point, a 12-month seawater temperature monitoring program, 12-month plankton monitoring program (phytoplankton, zooplankton and ichthyoplankton) and marine benthic habitat, ghost shrimp, epibiota and infauna surveys). The information collected or relied on to inform the baseline assessments are detailed in Mr Scott Chidgey's response to IAC RFI (document 164, Appendix). The methodology used for each baseline assessment is provided in Section 4.0 and the findings of the baseline assessments are provided in Section 5.0 of Technical Report A: *Marine biodiversity impact assessment*. Further details of the sampling programs and field surveys are provided in Annexures A-B, A-C, A-D, A-E, A-F and A-G.
 - (b) Section 4.1 of Technical Report A: *Marine biodiversity impact assessment* lists relevant scientific reports, literature and Commonwealth, State and Federal government publications that were reviewed by the persons preparing the assessment. These are further supplemented by a list of references included in the Reference List of the marine biodiversity impact assessment (pages 451 to 482).
 - (c) Data from near-field and regional hydrodynamic models to predict the path and dispersion of the discharge plumes from the FSRU, predict contours of temperature and chlorine produced oxidants and to predict the rate of entrainment. The methodology used for the hydrodynamic modelling is summarised in Section 4.1 and modelling results are provided in Section 6.0. See Annexure A-H: *Hydrodynamics modelling report* for further details.
15. Using the baseline and modelled data, a risk assessment was conducted using an approach that is consistent with the AS/NZS ISO 31000:2018 *Risk Management Process* and EPA Victoria Publication 1287 – Guidelines for Risk Assessment of Wastewater Discharge to Waterways (EPA 2009).
16. Refer also to evidence by Dr Ian Wallis, (document 70, Section 8.7.1), which states:

'The marine impact assessment includes an extensive combination of field studies, review of historical literature, hydrodynamic modelling and risk assessment in accordance with standard methods. A total of 52 potential risks are analysed and assessed, and 9 Ramsar Limits of Acceptable Change also are assessed.'



The peer reviews of the hydrodynamic modelling and risk assessment considered the procedures and findings were reasonable.'

CORRESPONDENCE: N/A

ATTACHMENTS: N/A