



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

TECHNICAL NOTE

TECHNICAL NOTE NUMBER: TN 046

DATE: 27 October 2020

LOCATION: Crib Point Jetty Works and Pipeline Works

EES/MAP BOOK REFERENCE: Technical Report B - Terrestrial and freshwater biodiversity section 7.1.4
Attachment I - Matters of National Environmental Significance Section 6.2.1.
Attachment VII – Map Book, KP20.1 on Mapsheet 11.

SUBJECT: Response to RFIs 41 and 43 - Section 3.3 Threatened species

SUMMARY Explanation of the impacts to migratory birds from night-time activities of the FSRU, particularly light spill.

REQUEST: See below

NOTE:

[41] Explain the impacts to migratory birds from night-time activities of the FSRU, particularly light spill, with regard to FSRU contributing an additional 4,500 square metres of lighting to the existing total lit area in Western Port of 10,200 square metres (Technical Report B, page 190).

1. Section 7.2.1.4 of Technical Report B: Terrestrial and freshwater biodiversity impact assessment (pages 190 and 191) comparatively describes the existing lit area and modelled additional lit area from the FSRU. The additional 4,500 square metres of light spill that would be contributed by the FSRU during operation equates to only 0.002 per cent of the surface area of Western Port. The assessment concludes that this 'is unlikely to impact on foraging success of birds and other fauna in Western Port' due to 'the distance from existing roost sites and foraging habitat, with the secondary foraging habitat for waders and waterbirds along Woolley's Beach being located at least 500 metres from the proposed FSRU location and sitting outside of the area effected by light spill'.
2. As identified in the evidence of Mr B Lane (Table 3, item 3E), 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 not to be important habitat for migratory species, based on decades of bird survey work. Due to the limited use of the most affected area by these birds 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.
3. Impacts will be further minimised as discussed below.

[43] Explain the adaptive mitigation measures to detect and respond to any documented impacts of artificial light on migratory birds and/or Ecological Character of the Ramsar site.

4. Potential impacts of artificial light on migratory birds (and related potential impacts on ecological character of the Ramsar site) are dealt with:

- (a) For construction, by EPR-FF15 for the Gas Import Jetty Works and POS B14 for the Pipeline Works, which provide.

Light generated during construction will be managed in general accordance with the guidance measures described in the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds.

- (b) For operation of the Gas Import Jetty Works, by EPR-FF12. The operation of the Pipeline Works is not considered to have any potential to cause light impacts on migratory birds or the ecological character of the Ramsar site and no POS on this topic is proposed.

5. EPR-FF12 provides:

The Project will adhere to the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds, to the extent practicable. The OEMP will contain a monitoring procedure and an adaptive management response in order to detect, and appropriately respond to, migratory bird strikes with lighting.

Appropriate responses might include red light filters on floodlights, use of green lamps, or dimming/ reducing lighting at sensitive times. These have been shown to significantly reduce avian casualties resulting from bird strikes. Specific thresholds were not identified for migratory birds, however a number of qualitative assessments have shown that lighting of foraging areas does not impact occupation of a foraging area but may impact on migration routes.

The OEMP will include a monitoring program for waders and waterbirds at Woolleys Beach and Jacks Beach to allow for potential responses to the operation of the FSRU to be detected and, if appropriate, mitigated through an adaptive management response.

6. In his expert witness statement,¹ Mr Lane provided commentary on MM/EPR-FF12²:

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. In response to this evidence, the Proponents asked Mr Lane to develop an alternative EPR which would better achieve what the Proponents understood as the objective of EPR-FF12 – to ensure the detection of and appropriate respect to any impacts of the Gas Import Jetty Works on bird populations in the area. Mr Lane:
 - (a) confirmed that it was appropriate that the Project be required to adhere to the principles of the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (Commonwealth of Australia, 2020) (**Wildlife Light Guidelines**) for any detected collisions by birds with lighting; and
 - (b) recommended that for a period of at least one year prior and two years after operation of the FSRU commences, supplementing the regular bird counts in the whole of Western Port with three surveys in spring-summer in addition to the one survey that is already completed in early summer. This would result in four surveys over spring-summer to meet EPBC Act survey standards for this period. This data would be analysed to see if there is a (statistically significant) change in numbers post-operations in areas closest to the Project, compared with more distant areas. If there is a negative difference in the change in numbers, further investigation of impacts and mitigation strategies would be initiated.
8. The Proponents have reviewed EPR-FF12, the Wildlife Light Guidelines and Mr Lane’s advice, and propose a redrafting of EPR-FF12 to capture Mr Lane’s recommendations, improve the clarity of the EPR and ensure the proper application of the Wildlife Light Guidelines, as follows:
 - i. *An artificial light management plan must be prepared and implemented in accordance with the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (Commonwealth of Australia, 2020) including to incorporate Best Practice Lighting Design Principles (as described in the Guidelines).*
 - ii. *The artificial light management plan must include the following requirements:*
 - a. *that for a period of one year prior to and two years after operation of the FSRU commences, three surveys in spring-summer are completed (in addition to the survey that is already completed in early summer);*
 - b. *the data collected from the surveys must be analysed;*
 - c. *where the data collected from the surveys indicates a negative (statistically significant) change in the numbers of birds post-operations in areas closest to the Project compared with more distance areas, further investigation regarding the impact and mitigation measures would be established and implemented.*
9. The Wildlife Light Guidelines explain that Best Practice Lighting Design incorporates the following design principles:
 - (a) Start with natural darkness and only add light for specific purposes.

¹ Document 76, section 3.4.2

² Mr Lane has subsequently confirmed that count frequency in Western Port has dropped to once in the migratory bird non-breeding period and has recommended an increase to four surveys in this period for monitoring – see paragraph 7 (b).

- (b) Use adaptive light controls to manage light timing, intensity and colour.
- (c) Light only the object or area intended – keep lights close to the ground, directed and shielded to avoid light spill.
- (d) Use the lowest intensity lighting appropriate for the task.
- (e) Use non-reflective, dark-coloured surfaces.
- (f) Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.

10. The Wildlife Light Guidelines also acknowledge the important functional role of lighting, and the need to ensure that safety is not compromised. The design of lighting therefore involves balancing. Mr Cook has confirmed that there is no impediment to any element of the Project being designed to comply with the requirements of the Wildlife Light Guidelines.

11. If the monitoring regime required by proposed ERP-FF12 demonstrated an impact on birdlife that was likely to be caused by lighting, further adaptive measures enhancing those already incorporated into the design would be required. As the Wildlife Light Guidelines emphasise, our understanding of the impacts of light on wildlife, our ability to monitor and assess impacts, and our experience in managing impacts, are all developing rapidly.

CORRESPONDENCE: N/A

ATTACHMENTS: N/A