



Statement of Reasons for a Decision that the Action is Clearly Unacceptable under the *Environment Protection and Biodiversity Conservation Act 1999*

I, SUSSAN LEY, the Minister for the Environment, provide the following statement of reasons for my decision of 15 June 2021, under section 74B of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), that the proposed action by NW Interconnected Power Pty Ltd to construct and operate a large-scale wind and solar renewable energy project in the shire of East Pilbara, approximately 220 kilometres east of Port Hedland, Western Australia (EPBC 2021/8891), would have clearly unacceptable impacts on matters protected by a provision of Part 3 of the EPBC Act.

Legislation

1. Relevant legislation is at Annexure A¹.

Background

2. On 13 May 2021, NW Interconnected Power Pty Ltd (the proponent), submitted a valid referral in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
3. The proposed action which was referred under the EPBC Act was to construct a large-scale wind and solar renewable energy project in the shire of East Pilbara, situated approximately 220 kilometres (km) east of Port Hedland, Western Australia (WA) (the proposed action). The project site is 666,030 hectares (ha) in size with a permanent clearing footprint of 20,748 ha.
4. A total of 20,748 ha will be cleared as part of the proposed action, with the key infrastructure components to include:
 - a. wind turbines and solar arrays
 - b. downstream processing plants for desalination and production of ammonia and hydrogen
 - c. marine infrastructure corridor (e.g. pipeline and offshore out loading facility platform with rock armouring)
 - d. new permanent town
 - e. transmission and distribution cables, substations, gravel roads, site offices, workshops and warehouses
5. The proposed township, heavy industries facility (downstream plant), renewable energy production area and terrestrial infrastructure development is located approximately 13 km south of the Mandora Marshes component and 26 km inland of the coastal component of the Eighty-mile Beach Ramsar site. A proposed marine infrastructure corridor will link the downstream plant (e.g. desalination plant and ammonia production and storage facility) with an offshore export platform via a pipeline that intersects the Eighty-mile Beach Ramsar intertidal site.

¹ The legislation is provided as background and context and does not form part of the statement of reasons.

6. The proposed action is an expansion to an existing Asian Renewable Hub proposal (EPBC 2017/8112) approved by a delegate of the Minister on 16 December 2020. The new components of the proposed action include an infrastructure corridor of pipelines that will transport ammonia (rather than electricity cables), seawater, and brine through the Eighty-mile Beach Ramsar site; a marine offshore facility to export ammonia; an 8000 person town; expansion of solar arrays, storage evaporation ponds, and heavy industries to support the ammonia and hydrogen production including desalination plant, ammonia production facilities, electrolysis plant, and ammonia/hydrogen storage.
7. I agree with the Department's view that the proposed action (a revised version of the approved proposal) is a significant increase in scale and potential magnitude of impact compared to the original approved project (Table 1).

Table 1. Key differences between this proposed action and the original approved proposal. Important to note that the revised proposal figures have been extrapolated from referral information and in some circumstances may be an underestimate of the likely impacts

	Original Approved proposal (EPBC 2017/8112)	Revised proposal (EPBC 2021/8891)	Change
Export	Direct via undersea electricity cable	Downstream production of ammonia and hydrogen to be loaded on ships.	+ Ammonia chemical processing plant, desalination plant, expanded 5-pipeline and offshore export infrastructure, up to 250 ship calls per year.
Workforce	Fly-in fly-out (FIFO) model	Establishment of a new town for up to 8000 workers within a 2,095 ha development envelope.	+ Permanent new town
Development envelope	662,400 ha	666,038 ha	+ 3,638 ha
Permanent clearing	11,962 ha	20,810 ha	+ 8,848 ha (3,380 ha from the town and industrial area)
Temporary clearing	592 ha	492 ha	- 100 ha
Partial clearing (management)	Undefined	12,762 ha	
Seabed disturbance	15.3 ha	345 ha (also includes temporary clearing numbers above)	+ 329.7 ha
Eighty-mile Beach disturbance	0.2 ha	Undefined	
Wind turbines	1,743 turbines 800m apart	1,743 turbines 700m apart	- 100m in-line turbine spacing
Solar	Up to 2,000 MW solar PV in 37 x 55 MW modules	Up to 10,800 MW solar PV in 18 x 600 MW arrays	Fewer, larger arrays

Evidence or other material on which my findings were based

8. In making my decision to apply Division 1A of Part 7 of the EPBC Act to the proposed action, I gave consideration to the following:
- a. A brief prepared by the Department of Agriculture, Water and the Environment (dated 15 June 2021)
 - b. The referral, including attachments to the referral
 - c. Advice from the Wetlands, Migratory Species and Office of Water Science Line Areas
 - d. Department of Environment and Conservation *Eighty-mile Beach Ecological Character Description* (2009)
https://www.dpaw.wa.gov.au/images/documents/conservation-management/wetlands/ramsar/eighty-mile-beach-ecd_final-with-disclaimer.pdf
 - e. Eighty Mile Beach Marine Park Management Plan 2014-2024
<https://www.dpaw.wa.gov.au/images/documents/parks/management-plans/decarchive/eighty-mile-beach-management-plan.pdf>
 - f. *Eighty-mile Beach Information Sheet* (2003) <https://rsis.ramsar.org/ris/480v>
 - g. Commonwealth *Significant Impact Guidelines 1.1*
<https://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>
 - h. Commonwealth *Conservation Advice Calidris tenuirostris Great Knot* (2016)
<https://www.environment.gov.au/biodiversity/threatened/nominations/comment/calidris-tenuirostris>
 - i. Commonwealth *Conservation Advice Numenius madagascariensis Eastern Curlew* (2015) <http://www.environment.gov.au/biodiversity/threatened/species/pubs/847-conservation-advice.pdf>
 - j. Commonwealth *Conservation Advice Calidris canutus Red knot* (2016)
<https://www.environment.gov.au/system/files/pages/ab925807-aa38-445d-8e40-27ffecff545f/files/calidris-canutus-consultation.pdf>
 - k. Commonwealth *Wildlife Conservation Plan for Migratory Shorebirds* (2015)
<https://www.environment.gov.au/biodiversity/publications/wildlife-conservation-plan-migratory-shorebirds>
 - l. Bamford et. al (2008) *Migratory Shorebirds of the East Asian - Australasian Flyway; Population Estimates and Internationally Important Sites*. Wetlands International.
<https://www.environment.gov.au/system/files/resources/782ebed5-6bdd-4a41-9759-b60273b52021/files/shorebirds-east-asia.pdf>
 - m. Sumer et. al. (2001) *Scour around coastal structures: a summary of recent research*. Coastal Engineering.
<https://www.sciencedirect.com/science/article/pii/S0378383901000242>
 - n. Sun et. al. (2019) *Laboratory experimental study of ocean waves propagating over a partially buried pipeline in a trench layer*. Ocean Engineering.
<https://www.sciencedirect.com/science/article/pii/S002980181930023X>
 - o. Sumer, B (2014) *Flow–structure–seabed interactions in coastal and marine environments*. Journal of Hydraulic Research.
<https://www.tandfonline.com/doi/abs/10.1080/00221686.2014.881927>

- p. Piersma et. al. (2016) *Anna Plains and Roebuck Bay Benthic Invertebrate Mapping 2016*. Field report. <http://globalflywaynetwork.com.au/wp-content/uploads/2016/11/AnnRoeBIM16-the-field-report.pdf>
- q. Commonwealth EPBC Act Policy Statement 3.21: *Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species* (2017) <https://www.environment.gov.au/epbc/publications/shorebirds-guidelines>
- r. *Japan-Australia Migratory Bird Agreement (JAMBA)* (1981) <http://www.austlii.edu.au/au/other/dfat/treaties/1981/6.html>
- s. *China-Australia Migratory Birds Agreement (CAMBA)* (1988) <http://www.austlii.edu.au/au/other/dfat/treaties/1988/22.html>
- t. *Republic of Korea-Australia Migratory Birds Agreement (ROKAMBA)* (2007) <http://www.austlii.edu.au/au/other/dfat/treaties/2007/24.html>
- u. *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention) (1979) <https://www.cms.int/en/convention-text>
- v. *Convention on Wetlands of International Importance especially as Waterfowl Habitat* (Ramsar Convention) (1971) http://portal.unesco.org/en/ev.php-URL_ID=15398&URL_DO=DO_TOPIC&URL_SECTION=201.html
- w. *Commonwealth Analysis of possible change in ecological character of the Roebuck Bay and Eighty Mile Beach Ramsar sites* (2010) <https://www.environment.gov.au/water/wetlands/publications/analysis-possible-change-ecological-character-roebuck-bay-and-eighty-mile-beach-ramsar>
- x. *Commonwealth Revision of the East Asian-Australasian Flyway Population Estimates for 37 listed Migratory Shorebird Species* (2016) <https://www.environment.gov.au/system/files/resources/da31ad38-f874-4746-a971-5510527694a4/files/revision-east-asian-australasian-flyway-population-sept-2016.pdf>
- y. *Commonwealth Parliamentary Inquiry into the Protection of Aboriginal Rock Art on the Burrup Peninsula* (2018) https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/BurrupPeninsula/Report

Findings on material questions of fact

Description of Environment – Eighty-mile Beach Ramsar site

- 9. I note that information in the referral indicated that the proposed action is in proximity to the Eighty-mile Beach Ramsar site. A portion of the proposed action (marine infrastructure corridor) traverses the coastal portion of this site and the town and heavy industries are south of the Mandora Salt Marsh.
- 10. Eighty-mile Beach was designated a Ramsar wetland on 7 June 1990. The Eighty-mile Beach Ramsar site contains two wetland areas that include a 220 km stretch of beach and extensive intertidal mudflats, and the Mandora Salt Marsh that is linked to the intertidal site through the groundwater system but is 40 km inland.
- 11. I note that the Eighty-mile Beach Ramsar site meets six of the nine criteria for listing as a wetland of international importance that includes the following: containing the largest area of continuous intertidal mudflats in Australia's Ramsar estate and containing rare and

outstanding peat mount springs (Criterion 1); as a critical staging area and refugia for migratory birds particularly those in the East Asian Australasian Flyway (EAAF) (Criterion 4); for supporting more than 1% of the population of 21 species of migratory shorebirds (internationally significant) including more than 0.1% of the population of 4 resident bird species (nationally significant) (Criterion 6); at least 500,000 migratory shorebirds regularly use the site during summer (Criterion 5); as critical habitat for the Flatback Turtle (*Natator depressus*) (Criterion 2); and as an important refugia for species biodiversity in arid Australia (Criterion 3).

12. I note that the mudflats are considered to be in excellent condition and the capacity for the Ramsar site to support the large number of birds is underpinned by the variety and abundance of macroinvertebrates, which are their main food source. This food source is key to the survival of the migratory shorebirds since they need to restore energy stores once they arrive to Australia after flying long distances on the Eastern East Asian Australasian Flyway (EAAF).
13. I note that the key ecological characteristic of the Eighty-mile Beach Ramsar site is the uninterrupted tidal movements and process that replenish nutrients and sediments within the site, which ultimately underpin the foodwebs that support migratory shorebirds and other marine fauna. As outlined in Ecological Character Description of the Eighty-mile Beach Ramsar Site, the limits of acceptable change for key aspects of the ecology of the Eighty-mile Beach Ramsar site without risking the ecological character include *unrestricted tides along the entire length of the beach site, not impacted or modified by any artificial structure*.
14. I note that the site is in a region of macro tides, which average 6 to 8 meters, exposing up to 4 km of mudflats at low tide and that this uninterrupted tidal flow is a key ecological characteristic of the Ramsar site.
15. The region also has the highest landfall of cyclones within Australia, and that these extreme weather events are important for the hydrology of the wetlands.
16. I note that the proponent proposes to create a marine infrastructure corridor from the downstream plant to the offshore export facility containing 5 pipelines; 3 of which transport seawater and waste brine to service the desalination plant, and 2 of which are for ammonia export. This will require temporary terrestrial and intertidal clearing of 492 ha and a permanent offshore disturbance of 346 ha.
17. I note the intimate connection between the Eighty-mile Beach Ramsar site and the migratory shorebirds which depend on it, and that impacts to the condition of the Ramsar site protected under section 16 & 17B will also affect migratory species protected under section 20 & 20A of the EPBC Act. As such, migratory shorebirds are key ecological character component of the Ramsar site.

Impacts to Eighty-mile Beach Ramsar site

18. I note that the proposed township, heavy industries facility (downstream plant), renewable energy production area, and terrestrial infrastructure development is located approximately 13 km south of the Mandora Marshes component and 26 km inland of the coastal component of the Eighty-mile Beach Ramsar site. A proposed marine infrastructure corridor will link the downstream plant (e.g., desalination plant and ammonia production and storage facility) with an offshore export platform via a pipeline that intersects the Eighty-mile Beach Ramsar intertidal site.
19. The proposed terrestrial infrastructure corridor will be ~32km long, with an additional ~20km for the offshore marine infrastructure corridor, which involves the installation of 5 pipelines

(3 water and 2 ammonia export) that start at the inland downstream plant area and transverses the coastline, across the coastal dunes and the beach, intertidal, and subtidal habitats within the Eighty-mile Beach Ramsar site. The pipelines will be installed in the intertidal and subtidal habitats by creating a trench at least 3 m deep and possibly up to 500 m wide (from shapefile provided by the proponent) and extend out 20 km offshore into Commonwealth waters to an offshore platform that will be equipped with ammonia export buoys. A permanent stringing yard (containing booster pumps) will be placed within the Ramsar site. This marine infrastructure corridor will require temporary terrestrial and intertidal clearing of 492 ha and a permanent offshore disturbance of 346 ha.

20. I agree with the Department's Advice that the impact of this marine infrastructure corridor will exceed the limits of acceptable change for the Eighty-mile Beach Ramsar site as the proposed action would not result in unrestricted tides along the entire length of the beach site, not impacted or modified by any artificial structure, which is a key component of the wetlands ecological character. As described in Table 1, the size and extent of the proposed action crossing these habitats is much larger than the original approved project.
21. I accept the Department's advice that installation of the marine infrastructure corridor will restrict tidal movements and processes, which would be *inconsistent with maintaining the ecological character of the wetland and providing for the conservation and sustainable use of the wetland*. Artificial structures, such as piles to support offshore platforms and rock armouring surrounding the platform, are known to change the flow patterns of oceanographic tidal movements, affect sedimentation transport behaviours along a beach and mudflats (e.g. sand, mud and nutrient replenishment along the beach and mudflats would negatively change), and will lead to direct loss of benthic habitat and ongoing scouring impacts. Even though the modelling has not been undertaken for the proposal, the artificial structures in proposed marine infrastructure corridor will cause a disruption to the tidal movement and processes along the beach for both sand, mud and nutrients, which will negatively impact the ecological character of the Ramsar site.
22. The proposed pipeline will be used to support the desalination plant for both water extraction and diffusing waste brine. Brine from the desalination process is a combination of toxically concentrated salts, heavy metals, and dangerous pre-treatment chemicals that are warmer and denser than seawater. Even though modelling has not been undertaken for the proposal, the amount of seawater proposed to be processed for desalination will result in large discharge volume of brine. This size of outfall will create a "dead zone" within the Eighty-mile Beach area and given the shallow nature of the bay (10 m), and large tidal movements, the dead zone created by the brine outfall will likely impact a large area directly offshore or even within the Ramsar site during yearly large tidal movements. The risks of this dead zone reaching the intertidal area that supports critical foraging habitat for migratory shorebirds would be catastrophic.
23. Even though the referral information states the pipeline corridor will be buried 3 m below the benthic habitats, studies have demonstrated that scour, wave-current combinations and liquidation of the sediments surrounding the pipelines may lead to floating of the pipelines and scouring surrounding the entire length of the corridor, which has led to numerous failures of submarine pipelines. While the cables in the original approved proposal were similarly at risk of being scoured, floating, and failures, the contents within the pipelines in this revised proposal will be transporting highly toxic ammonia and brine. The subsea electricity cables were flexible and clearly would not pose a risk of catastrophic spill within the Ramsar site in the event of structural failure.

24. There is also a continuous spill risk from the estimated 250 ship filling events per year. Though likely smaller in volume, these regular spills will result in local toxicity and a dead zone surrounding the export platform.
25. The referral documentation states that the risk of ammonia spills from the plant and pipeline will be mitigated by best practice engineering design, but no spill mitigation and management plans for the proposed action have been provided. However, it has been demonstrated in other situations that even with the best available engineering technology, there would be a risk of spills. For example, the results of a Parliamentary Inquiry found that Yara Pilbara Fertilisers, utilised the best available engineering technology, such as 24-hour leak monitoring, but even so this resulted in 5 spill events in 2016, totaling 8.42 tonnes of ammonia released into the environment in a single year. In the present circumstances, due to the remote location, the response time to address a spill would take too long in containing the catastrophic impact. In this type of event, it would result in the loss of most, if not all, of the ecological characteristics of the Ramsar site.
26. The advice provided by the Department's Wetlands Section summarises the impacts of the proposed action to the Eighty-mile Beach Ramsar site, and I relied on this advice in making my determination that the impacts would be considered unacceptable. The reasons were outlined using the following 4 criteria:
- a. *Areas of the wetlands will be destroyed and substantially modified* through the establishment of the infrastructure corridor that will result in the modifications of areas of the Ramsar site and these impacts cannot be mitigated or offset. The construction activities will result in the impact and destruction of the mudflats, offshore benthic habitat and communities, macroinvertebrate communities, and other coastal habitats. Additionally, a permanent pump station will be constructed within the Ramsar site.
 - b. *A substantial and measurable change in the hydrological regime of the wetland* will be caused by the infrastructure corridor and other aspects of the proposed action including the following:
 - 1) disruption to tidal flows, caused by the proposed marine infrastructure corridor and offshore marine facility, will impact the deposition and movement of sediments and nutrients that will ultimately impact food webs critical to migratory shorebirds;
 - 2) the marine infrastructure corridor crossing, and associated works area will impact the primary coastal dune system and the 100 kms of discontinuous floodplain immediately inland from the frontal sand dunes; and
 - 3) even small changes to land height from the manufacturing facilities (the ammonia plant and the desalination plant), the town or additional water storages and quarries will capture runoff that currently goes to the marshes or the floodplains behind the dune system.
 - c. *A substantial and measurable change in the physico-chemical status of the wetland* through three new main project components:
 - 1) ammonia production due to the risks with the emissions into the air and spills in water as a result of venting leaks, tank rupture, transfer via pipelines and into vessels and vessel damage. Due to the highly toxic nature of ammonia, a large spill would lead to catastrophic mortality for flora and fauna. Relevantly, the proposed development is located in a high

wind and high storm area with large tides and a highly sensitive and biodiverse marine environment.

- 2) the development of an 80 Gigalitre (GL) desalination plant, electrolysis plant and evaporation ponds, and necessary brine disposal. The Ramsar site normally experiences low salinity, therefore the hypersaline and warm water is likely to impact marine fauna and benthic habitats. Modelling for the brine outfall has not been provided in the referral information, but there is an assumption that due to the high winds and large tidal movements the brine outfall area of impact will likely be large.
- 3) the manufacturing hub, transport infrastructure, town, food production and industrial activities are highly likely to result in a significant impact on the physio-chemical status of the wetland through the discharge of contaminants, nutrients, and sediments into the Ramsar site.

d. *The habitat or lifecycle of native species dependent on the wetland being seriously affected* due to the impacts listed on the intertidal flats and subtidal habitats, which in turn will impact one of the most important staging and feeding areas for migratory shorebirds in the world. These habitats are also critical for Flatback Turtles. Impacts to these species are 4-fold:

- 1) light pollution associated with the town and 24-hour operation of the ammonia plant and desalination facility is highly likely to have a significant disruptive impact on the behaviour and life stages and ultimately on survivorship of migratory shorebirds and marine turtles which are critical components of the Eighty-mile Beach Ramsar site;
- 2) air and water pollution from the ammonia production, including the kinds of gaseous emissions, as well as discharges into the ocean via a brine discharge pipeline from the desalination plant. Any changes to the water or air quality is highly likely to have a significant impact on the fauna species dependant on the Ramsar site;
- 3) permanent offshore infrastructure increasing vessel traffic as both a risk for direct mortality and as habitat degradation from both pollutant release and potential for invasive species introduction;
- 4) as a result of the construction of a town to be populated by 8000 people, there will be an unavoidable risk of significantly greater human disturbance and a significant risk of increased unregulated beach access including by vehicles, boats and domestic animal access, increased beach pollution and increased boat mooring and anchoring.

27. Advice from the Department's Office of Water Science (OWS) has also identified that the proposed action will impact groundwater and surface water flows depending on the final town and industrial area placement. The proposed action will likely result in cumulative increases in contamination of both surface and groundwater as a result of a permanent town, despite the commitment to wastewater reuse. The industrial area and township are currently proposed to be constructed within the catchment for both the coastal and marsh component of Eighty Mile Beach. OWS provided rough calculation of the level of extraction that will be required for the proposed action, which equates to 152 (cubic metres) m³/minute of intake and approximately 87 m³/min of discharge. This amount of discharge within the shallow and sensitive environments of the Eighty-mile Beach Ramsar site will result in an

impact to marine organisms. Lastly, OWS identified the risk that any rupture of ammonia or brine pipelines would have a significant local impact on the sensitive marine environment.

Conclusions on impacts to the Eight-mile Beach Ramsar site

28. I agree with the Department's advice that that the proposed action would have a significant and unacceptable impact on the ecological character of the Eighty-mile Beach Ramsar site because the installation of marine infrastructure corridor would disrupt tidal movements and processes, which would result in the habitats and lifecycle of native species, that are dependent upon the wetland, being seriously affected.
29. I accept that the proposed action will also be creating a large dead zone in close proximity to the Ramsar site and will create risks of the Ramsar site being impacted by the brine outfall diffuser, which will seriously impact marine and benthic organisms. Further, the proposed action creates the risk of a toxic spill of ammonia within the Ramsar site, which would have catastrophic ecological consequences. These risks include risks associated with the possible rupture of pipelines containing brine, and risks associated with an increase in salinity in waters in the Ramsar site. The proposed action will also give rise to light, air and water pollution in the Ramsar site, including owing to ammonia production, and the establishment of the proposed town.
30. A number of the more significant impacts associated with the proposed action cannot be mitigated or offset. In particular, I agree with the Department's advice that the following risks associated with the proposed action cannot be mitigated:
- Air and water emissions from the ammonia plant, desalination plant and facilitated infrastructure/construction (evaporation ponds, backup generation, cooling towers, cement making, rock quarrying, etc).
 - The facilitated uses and activity associated with a town of 8,000 people.
 - The light pollution associated with the town/industrial facilities/marine offshore facility.
 - The changes to the water regime of the catchment and the tidal regime of the beach.
 - The increased shipping and docking associated with the marine offshore facility and increased traffic (boat and vehicular) as a result of the construction and operation of the marine offshore facility, the industrial complex, the renewable energy hub and the town.
31. I agreed with the Department's advice that, with a high level of confidence, there are the following significant risks:
- Damage from extreme events leading to a catastrophic impact on the biodiversity of the area and of Eighty-mile Beach Ramsar site, particularly as a result of chemical contamination, industrial debris and damage to water and wastewater infrastructure and pipelines, and shipping spills.
 - Challenging disaster recovery efforts due to remoteness and lack of infrastructure and personnel.
 - Planned and unplanned emissions from ammonia and hydrogen production impacting the biodiversity of the area and the Ramsar site.

32. Given the importance of the Eighty-mile Beach Ramsar site and the extensive risks posed by the proposed action as discussed above, that cannot be mitigated or offset, I agreed with the Department that the proposed action would result in a negative change to the ecological character of the wetlands and would therefore result in unacceptable impacts to the Ramsar site.

Inconsistency with the Ramsar Convention

33. Section 334 provides that, in relation to a wetland that is a declared Ramsar wetland, the Commonwealth and each Commonwealth agency must take all reasonable steps to ensure it exercises its powers and performs its functions in relation to the wetland in a way that is not inconsistent with:

- a) the Ramsar Convention; and
- b) the Australian Ramsar management principles; and
- c) if the wetland is included in the List of Wetlands of International Importance kept under the Ramsar Convention and a plan for managing the property has been prepared as described in section 333, that plan.

34. Article 3(1) of the Ramsar Convention provides that parties shall formulate and implement their planning so as to promote the conservation of the relevant wetlands, and as far as possible the wise use of wetlands in their territory.

35. On the basis of the matters discussed above, I do not consider that the attachment of any conditions could render approval of the proposed action consistent with Australia's obligations under the Ramsar Convention. In coming to this view, I have taken into consideration Australia's obligations under the Ramsar Convention in light of the relevant Ramsar COP Recommendations and Resolutions.

36. Further, I agree with the Department that a decision that the proposed action is clearly unacceptable is consistent with the Australian Ramsar management principles, which are at Schedule 6 to the *Environmental Protection and Biodiversity Conservation Regulations* 2000. In particular, this decision would be consistent with principle 3.04, which provides that an action should not be approved if it would be inconsistent with maintaining the ecological character of the wetland, or providing for the conservation and sustainable use of the wetland.

Description of Migratory Species – Eighty-mile Beach Ramsar site

37. I note that Eighty-mile Beach site supports a very large number and diversity of shorebirds, with over 100 species using the site, including 7 listed threatened species and an internationally significant population of 21 species of waterbird, including 4 Australian resident species.

38. Both the *EPBC Act Policy Statement 3.21: Significant Impact Guidelines for 36 Migratory Shorebird Species* and the *EPBC Wildlife Conservation Plan for Migratory Shorebirds* identify the importance of the Eighty-mile Beach Ramsar site as being nationally and internationally significant habitat for migratory shorebirds for staging along the EAAF and providing overwintering habitat for juveniles unable to make the migration. Eighty-mile Beach is the second most important critical habitat in Australia for migratory shorebirds protected under the EPBC Act.

39. The Ramsar site supports an internationally important population of three species of migratory birds listed in Appendix I of the Bonn Convention, which are also listed threatened species under the EPBC Act:
- a. Great Knot (*Calidris tenuirostris*) – critically endangered, migratory
 - b. Eastern Curlew (*Numenius madagascariensis*) – critically endangered, migratory
 - c. Red Knot (*Calidris canutus*) – endangered, migratory
40. As outlined above in the Ramsar Description section, the large continuous mudflats (225 km long and 4 km wide) are in excellent condition. The capacity for the Eighty-mile Beach Ramsar site to support the vast number and array of birds is underpinned by the primary productivity of the site that supports an abundance of macroinvertebrates, which provide food during low tide for shorebirds and waterbirds. This critical ecological function of the Ramsar site underpins four of the six Ramsar listing criteria (Criterion 2, 4, 5, 6).

Impacts to Migratory Species

41. According to the *Analysis of possible change in ecological character of the Roebuck Bay and Eighty Mile Beach Ramsar sites, Migratory Shorebirds of the East Asian - Australasian Flyway; Population Estimates and Internationally Important Sites, Revision of the East Asian-Australasian Flyway Population Estimates for 37 listed Migratory Shorebird Species, and EPBC Wildlife Conservation Plan for Migratory Shorebirds*, one of the key causes of migratory shorebird decline is the loss of staging habitat. Given migration is energetically expensive, most migratory shorebirds require high quality staging habitats along the migration path where they can feed and replace energy.
42. As outlined above in the Ramsar Section (paragraphs 19, 21), the proposed action will install a marine infrastructure corridor through a critical staging area for migratory shorebirds. Significant disruption to the tidal flows as a result of this infrastructure will impact the deposition and movement of sediments and nutrients, which in turn will impact the foodwebs of the intertidal habitats (e.g. mudflats) that the migratory shorebirds depend upon in this staging area to replace energy stores.
43. The Department's Migratory Line Area advice and published literature has outlined that these critical foodwebs are based on unique zoobenthos communities, including marine macroinvertebrates, which are sensitive to changes in environmental conditions. The proposed action will change environmental conditions in three main ways that will be detrimental to the productivity of these foodwebs, namely including through the acute impacts of ammonia spillage (paragraph 23), the impacts of desalination plant brines (paragraph 22) and the chronic increase in pollutants from the town and new shipping route (paragraph 24, **Error! Reference source not found., Error! Reference source not found.**).
44. Other impacts to migratory shorebirds identified by the Department's Wetlands Section advice include:
- a. Artificial light and the loss of darkness associated with the town and the 24-hour operation of the ammonia plant and desalination facility is highly likely to have a significant disruptive impact on the behaviour, life stages, and ultimately on survivorship of migratory shorebirds; and
 - b. human disturbance resulting from the construction and inhabitancy of the proposed town.

45. Given the significance of the Eighty-mile Beach Ramsar site as a critical staging, breeding and/or refugia site to endangered and critically endangered migratory shorebirds and the extensive risks to these species outlined above, I agree with the Department that it is clear that the proposed action would have a significant and unacceptable impact on the Eighty-mile Beach Ramsar site and the migratory species it supports.

Inconsistency with the Bonn Convention, CAMBA, JAMBA and ROKAMBA

46. I note that Australia has taken a lead role in protecting migratory birds in the EAAF by signing international agreements with Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA), alongside as a party of the Bonn Convention and the Ramsar Convention.

47. The Bonn Convention, Article 2(3)(b) obliges parties to endeavour to provide immediate protection for migratory species included in Appendix 1. Article 3(4) provides further detail in respect of this obligation, requiring Parties that are Range States of a migratory species listed in Appendix I to endeavour:

- a. to conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction;
- b. to prevent, remove, compensate for or minimise, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species; and
- c. to the extent feasible and appropriate, to prevent, reduce or control factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating already introduced, exotic species.

48. The Ramsar site performs a critical, and irreplaceable role for the migratory birds of the EAAF and there is no alternative site in the event of significant impacts to the Eighty-mile Beach Ramsar site. For this reason and the reasons listed above, I consider that the approval of this action would be inconsistent with Articles 2 and 3 of the Bonn Convention and would not be a good faith implementation of the obligations that Australia has undertaken under CAMBA, JAMBA and ROKAMBA.

Avoidance and Mitigation Measures

49. The referral states that the project design will avoid impacts to the Ramsar site and migratory birds by:

- a. Selection of the main development envelope to separate the nearest turbine from the coastal portion of Eighty-mile Beach by 38 km, and from the Mandora Marsh by 13 km.
- b. Scheduling of pipeline installation works to avoid seasonal activity peaks for migratory shorebirds and marine turtles.
- c. Reduction of the habitat clearing footprint during the design stage to the minimum practicable.
- d. Development of a terrestrial environmental management plan and a marine environmental management plan (not yet developed).
- e. Development of an avifauna monitoring program and collection of mortality data post commissioning of the turbines (not yet developed).

50. I agree with the Department's advice that the main risks to the Ramsar site and migratory species, as discussed above, would not be adequately addressed by these measures. I am of the view that even if these were provided it would not completely mitigate the proposed action impacts, and the proposed action would still result in permanent and irreversible damage to the Eighty-mile Beach Ramsar site and the migratory species it supports.

Offsets

51. The Eighty-mile Beach Ramsar site is critical habitat for the migratory birds of the EAAF due to its location (as an entry/exit point for Australia), unique combination of permanent and temporary wetlands, unique zoobenthic (e.g. macroinvertebrates) community, excellent condition, and the high site fidelity of listed migratory species. I agree with the Department's advice that there is no alternate site which could be used for offsetting impacts to the Eighty-mile Beach Ramsar site.

52. For the reasons outlined in paragraph 51, it is my view that there are similarly no appropriate offsets for impacts to migratory birds at the Eighty-mile Beach Ramsar site.

Other impacts of the proposed action

53. I note that there are other likely significant, and possibly unacceptable impacts to other matters protected under the EPBC Act as a result of this proposed action. However, in light of my findings above, it is not necessary for me to consider these impacts for the purposes of making my decision.

Conclusion

54. I am of the view that the impacts of the proposed action on matters of national environmental significance are clearly unacceptable because the action would result in unavoidable, permanent and irreversible damage on the Eighty-mile Beach Ramsar site that provides critical habitat to survival of migratory birds. I also consider that approval of the action would be inconsistent with Australia's obligations under the Ramsar Convention, Bonn Convention, CAMBA, JAMBA and ROKAMBA.

55. In making this decision, I considered the information contained in my Department's internal brief. I did not consider any other information including public comments received during the referral process.

56. On the basis of my considerations above, I have decided under section 74B of the EPBC Act, that it is clear that the action would have unacceptable impacts on matters protected by a provision of Part 3, namely Ramsar wetlands (s16 & 17B) and migratory species (s20 & 20A). Therefore, I have decided that Division 1A of Part 7 of the EPBC Act should apply to this referral.

Signed


SUSSAN LEY

Enc.

Annexure A

Section 68 of the EPBC Act relevantly provides:

- (1) A person proposing to take an action that the person thinks may be or is a controlled action must refer the proposal to the Minister for the Minister's decision whether or not the action is a controlled action.
- (2) A person proposing to take an action that the person thinks is not a controlled action may refer the proposal to the Minister for the Minister's decision whether or not the action is a controlled action.

Section 74B of the EPBC Act relevantly provides:

- (1) This Division applies to the referral of a proposal to take an action if, within 20 business days after the Minister receives the referral:
 - (a) the Minister considers, on the basis of the information in the referral, that it is clear that the action would have unacceptable impacts on a matter protected by a provision of Part 3; and
 - (b) the Minister decides that this Division should apply to the referral.
- (2) If this Division applies to a referral, any other provisions of this Chapter that would, apart from this subsection, have applied to the referral cease to apply to the referral.
- (3) Subsection (2) has effect subject to paragraph 74D(6)(a).

Section 74C of the EPBC Act provides:

- (1) As soon as practicable after making the decision under paragraph 74B(1)(b) in relation to a referral, the Minister must give written notice of the decision to:
 - (a) the person proposing to take the action that is the subject of the referral; and
 - (b) the person who referred the proposal to the Minister (if that person is not the person proposing to take the action that is the subject of the referral).
- (2) The notice must:
 - (a) state that the Minister considers that the action would have unacceptable impacts on a matter protected by a provision of Part 3; and
 - (b) set out the reasons for the Minister's decision.
- (3) After receiving the notice under subsection (1), the person proposing to take the action may:
 - (a) withdraw the referral and take no further action in relation to the proposed action; or
 - (b) withdraw the referral and refer a new proposal to take a modified action to the Minister in accordance with Division 1; or
 - (c) request the Minister, in writing, to reconsider the referral.

Note 1: Section 170C sets out the procedure for withdrawing a referral.

Note 2: A referral of a proposal to take a modified action will be a new referral for the purposes of this Chapter.

Section 334 of the EPBC Act relevantly provides:

- (1) This section applies in relation to a wetland that is a declared Ramsar wetland.
- (2) The Commonwealth and each Commonwealth agency must take all reasonable steps to ensure it exercises its powers and performs its functions in relation to the wetland in a way that is not inconsistent with:
 - (a) the Ramsar Convention; and
 - (b) the Australian Ramsar management principles; and
 - (c) if the wetland is included in the List of Wetlands of International Importance kept under the Ramsar Convention and a plan for managing the property has been prepared as described in section 333—that plan.