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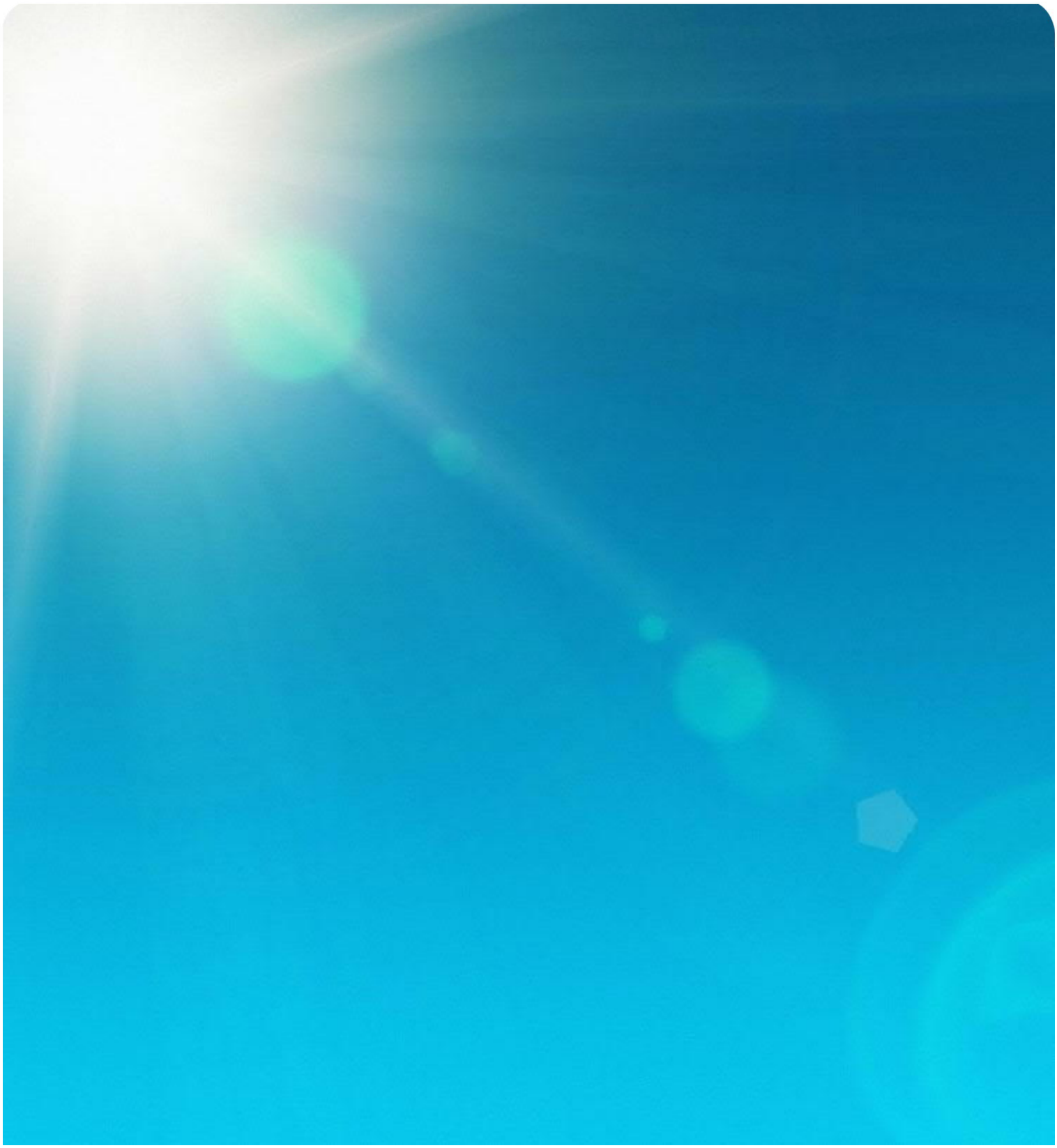
Chapter 18 - Whole of Environment

Australia-Asia PowerLink Environmental Impact Statement



Chapter 18 - Whole of Environment

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Revision history

Revision	Date	Purpose	Reviewed by	Approved by
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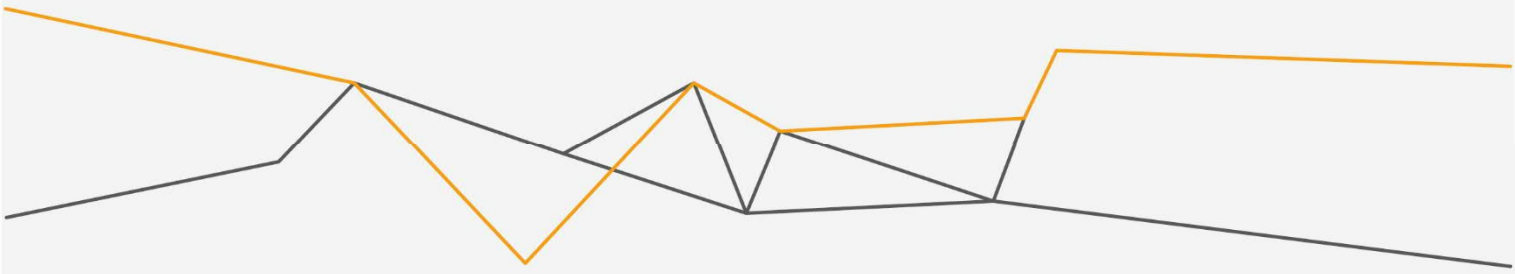

Contents

18 Whole of Environment

The AAPowerLink EIS presents the findings of the impact assessment process undertaken for each of 12 key environmental factors under the *EP Act* (NT) (Terrestrial environmental quality, Terrestrial ecosystems, Hydrological processes, Inland water environmental quality, Aquatic ecosystems, Marine environmental quality, Marine ecosystems, Air quality, Atmospheric processes, Community and economy and Culture and heritage) and three matters protected under the *EPBC Act* (Listed threatened species, Listed migratory and marine species and Commonwealth marine environment). The impact assessment considered direct and indirect impacts, and impacts on the whole of the environment that could occur because of connections and interactions between each factor and cumulative impacts. Chapter 17 provides the proposed approach to environmental and social impact management, including details of proposed management plans and sub-plans to be developed and implemented for all phases of the Project to mitigate impacts

This final chapter provides a summary of the impact assessment findings and discusses predicted outcomes in relation to the NT EPA's environmental objectives and the principles of environment protection and management (as set out in Part 2 of the *EP Act*).

18.1 Terrestrial environmental quality

The impact assessment undertaken for the Terrestrial environmental quality factor (refer Chapter 4) concludes the AAPowerLink proposal will have a minor level of residual impact to land and soils associated with erosion and minor spills of fuels or hazardous chemicals, which will be greatest during construction and will reduce over time as disturbed areas are reinstated and stabilised. All impacts to land and soils were assessed as minor as there is a high level of certainty that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

The impact assessment process considered the inherent connection between land and soils impacts assessed under the Terrestrial environmental quality factor, and the quality of surface water and groundwater available for use by the environment and people, which was assessed under Inland water environmental quality factor.

The findings of the impact assessment undertaken for the Terrestrial environmental quality factor indicate that the AAPowerLink is unlikely to have unacceptable impacts to land and soils, or associated values (surrounding land use and water quality). Therefore, it is concluded that the NT EPA's objective for Terrestrial environmental quality will be met.

18.2 Terrestrial ecosystems

The impact assessment undertaken for the Terrestrial ecosystems factor (refer Chapter 5) concludes the AAPowerLink proposal will have residual impacts associated with the introduction and spread of weeds and impacts to threatened plant species that occur within the direct disturbance footprint at the Darwin Converter Site and in the Overhead Transmission Line (OHTL) corridor. Other impacts to Terrestrial ecosystems were assessed as minor as there is a high level of certainty that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

To manage the identified residual impacts, a Weed Management Plan has been submitted with the EIS (Appendix Q) and Sun Cable has also embarked on targeted threatened species surveys to address identified knowledge gaps and uncertainties with respect to the occurrence of threatened species. The Weed Management Plan provides an approach to managing weed risks that aligns with accepted practice in the NT. Sun Cable has committed to micro-siting of the OHTL infrastructure to avoid known occurrences of threatened species where possible to do so within the parcels of land provided by the NT Government. These measures are expected to be effective in minimising residual impacts to Terrestrial ecosystems to as low as reasonably practicable.

The impact assessment under the Terrestrial ecosystems factor considered the interaction with the Hydrological processes and Inland water environmental quality factors and concluded that level of residual impact predicted under those factors means Terrestrial ecosystems values are unlikely to be affected by changes to hydrological regimes or water quality. The importance of Terrestrial ecosystems to the community and to Aboriginal culture was taken into consideration under the Community and economy factor, where the Social Impact Assessment (SIA) assessed impacts to healthy country and to cultural identity, associated with actual or perceived incremental loss of biodiversity values associated with large scale land clearing, and development across the proposal footprint.

The findings of the impact assessment undertaken for the Terrestrial ecosystems factor indicate that the AAPowerLink will impact terrestrial habitats and fauna, including some threatened species, and there is potential for cumulative impacts associated with future development on the Gunn Point Peninsula and in the greater Darwin region. The magnitude of impacts associated with the AAPowerLink is not predicted to affect ecological integrity or functioning; however, there could be some loss of biodiversity values associated with impacts to range-restricted threatened species. Notwithstanding targeted threatened species surveys were still underway at the time of EIS submission, the preliminary assessment indicates development of the AAPowerLink Darwin Converter Site will result in the loss of a portion of an important sub-population of the range-restricted threatened plant species *Typhonium praetermissum,* which is listed as Vulnerable under the *NT Parks and Wildlife Conservation Act*. Adopting the precautionary principle, the impact of the AAPowerLink to threatened species biodiversity values, and any requirement for offsets, will be re-assessed considering the results of further field surveys before making any final conclusions in relation to meeting the NT EPA's objective for Terrestrial ecosystems.

18.3 Hydrological processes

The impact assessment undertaken for the Hydrological processes factor (refer Chapter 6) concludes the AAPowerLink could have a residual impacts associated with alteration of the hydrological regime of the seasonal swamp located immediately south-west of the Darwin Converter Site, and localised drawdown of groundwater around construction water bores at the Solar Precinct. Other impacts to Hydrological processes associated with minor alteration of overland flows and minor volumes of groundwater extraction proposed along the OHTL and at the Darwin Converter Site, were assessed as minor as there is a high level of certainty that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

The residual impacts to Hydrological processes mainly relate to the precautionary principle being adopted in the assessment because stormwater management system design details and construction bore locations are yet to be finalised. To manage these impacts Sun Cable has committed to stormwater discharges being similar to pre-development conditions and also to engaging a suitably qualified hydrogeologist to determine bore locations and sustainable rates of extraction. These measures are expected to be effective in minimising residual impacts of Hydrological processes to as low as reasonably practicable.

The importance of Hydrological processes to maintaining biodiversity and cultural values was considered in the impact assessment undertaken for the Terrestrial ecosystems factor. Aquatic ecosystems factor, and Culture and heritage factor. It was concluded that changes to the hydrological regime of the seasonal swamp near the Darwin Converter Site could have a localised impact on aquatic habitat, and this impact has been assessed under the Aquatic ecosystems factor and considered under the Culture and heritage factor due to the swamp being identified as having Aboriginal cultural significance. The Culture and heritage factor also considers cultural impacts in the Solar Precinct footprint associated with the loss of drainage depressions (locally referred to as ngulya) and narrow zones of disturbance where the access roads cross watercourses, that whilst not important hydrological features are identified as having cultural significance to the Warlmanpa people.

The findings of the impact assessment undertaken for the Hydrological processes factor indicate that the AAPowerLink is unlikely to have unacceptable impact to the hydrological regimes of surface water or groundwater. Therefore, it is concluded that the NT EPA's objective for the Hydrological processes factor will be met.

18.4 Inland water environmental quality

The impact assessment undertaken for the Inland water environmental quality factor (refer Chapter 7) concludes the AAPowerLink proposal could have a residual impact to water quality in the seasonal swamp located immediately south-west of the Darwin Converter Site associated with increases in turbidity caused by erosion impacts predicted under the Terrestrial environmental quality factor. Other impacts to Inland water environmental quality associated with short-term increased turbidity at watercourse crossings along the Solar Precinct access roads and OHTL, or contamination by waste, wastewater or spills/leaks of fuels and hazardous chemicals, were assessed as minor as there is a high level of certainty that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

The residual impact to Inland water quality mainly relates to the precautionary principle being adopted in the assessment because a large portion of the swamp's catchment will be disturbed, and the erosion and sediment control measures and stormwater management system design details are yet to be finalised. Sun Cable has committed to adopting Best Practice Erosion and Sediment Control Guidelines (IECA, 2008) and to stormwater discharges being similar to pre-development conditions. These measures are expected to be effective in minimising residual impacts of the proposal to Inland water environmental quality as low as reasonably practicable.

The importance of good water quality to maintaining ecological health was considered under the Terrestrial ecosystems and Aquatic ecosystems factors, which assessed potential impacts to riparian vegetation at watercourse crossings and impacts to aquatic habitats associated with residual water quality impacts. The importance of good water quality to protecting amenity and human health was considered under Community and economy, and Human health factors, which considered impacts to consumptive or recreational uses of water.

The findings of the impact assessment undertaken for the Inland water environmental quality factor indicate that the AAPowerLink is unlikely to have unacceptable impact to the quality of surface water or groundwater, or associated ecological health, land uses, amenity or human health. Therefore, it is concluded that the NT EPA's objective for the Inland water environmental quality factor will be met.

18.5 Aquatic ecosystems

The impact assessment undertaken for the Aquatic ecosystems factor (refer Chapter 8) concludes the AAPowerLink proposal could have a residual impact to aquatic habitats associated with the seasonal swamp located immediately south-west of the Darwin Converter Site due to impacts predicted under the Hydrological processes and Inland water environmental quality factors (see above). Other impacts to Aquatic ecosystems associated with direct habitat loss and indirect impacts from dust deposition, were assessed as minor as there is a high level of certainty that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

As previously stated, the precautionary principle has been adopted in the assessment considering the uncertainty that exists in relation to the prediction of impacts, and the resilience of the aquatic ecosystem, which is adapted to large variations in water levels that occur naturally in the ecosystem. The mitigation measures proposed in the EIS are likely to be effective in ensuring there is no unacceptable impact to Hydrological processes and Inland water environmental quality; and Sun Cable has made a commitment to ongoing monitoring and adaptive management to address the uncertainty that exists with respect to the resilience of the aquatic ecosystem swamp. These measures are expected to be effective in minimising residual impacts of the proposal to Aquatic ecosystems to as low as reasonably practicable.

The cultural importance of aquatic ecosystem associated with the seasonal swamp at the Darwin Converter Site, and watercourses traversed by the Solar Precinct access roads and OHTL corridor was considered under the Culture and heritage factor.

The findings of the impact assessment undertaken for the Aquatic ecosystems factor indicate that the AAPowerLink could have a localised impact on the aquatic ecosystem associated with the seasonal swamp but is unlikely to impact aquatic ecosystem biodiversity, ecosystem function or ecological integrity more broadly

at any location across the proposal footprint. Therefore, it is concluded that NT EPA's objective for the Aquatic ecosystems factor will be met.

18.6 Marine environmental quality

The impact assessment undertaken for the Marine environmental quality factor (refer Chapter 9) concludes that the AAPowerLink will have residual impacts to marine water quality in the nearshore areas of Shoal Bay associated with installation of the Subsea Cable System, which will result in elevated turbidity in the marine waters for approximately one month during cable laying and installation activities. Other impacts to marine water and sediment quality associated with disturbance of sediments in the deeper offshore areas, disturbance of sediments and Potential Acid Sulfate Soils (PASS) at the Shore Crossing Site, or spills of fuels or hazardous chemicals, were assessed as minor as there is a high level of certainty that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

To manage the identified residual impacts to Marine environmental quality Sun Cable has committed to undertaking a cable route selection survey and ensuring the Subsea Cable System route avoids important marine habitats identified under the Marine ecosystems factor, as far as practicable, and selecting cable burial methods to suit the local seabed conditions. These measures, along with the short duration of the construction activities, are expected to be effective in minimising residual impacts to Marine water environmental quality to as low as reasonably practicable.

The impact assessment under the Marine environmental quality factor considered the potential for land-based impacts predicted under the Terrestrial environmental quality at the Shore Crossing Site (i.e. disturbance and runoff of sediments, PASS and spills), to cause impacts to marine water quality. The importance of good marine water quality to protect marine habitats and fauna was considered under the Marine ecosystems factor, which assessed the level of resilience of the marine ecosystem to the residual water quality impacts predicted under the Marine environmental quality factor. The importance of good water quality for maintaining beneficial uses such as recreational and commercial fishing were considered under the Community and economy factor, which concluded these uses will not be affected by the short-term impacts to marine water quality associated with the AAPowerLink cable laying and burial activities.

The findings of the impact assessment undertake for the Marine environmental quality factor indicate that the AAPowerLink will have a short-term impact to Marine environmental quality (water quality); however, the short duration is expected to ensure there is no unacceptable impact to marine habitats, biota or other beneficial uses of the marine waters. Therefore, it is concluded that the NT EPA's objective for the Marine environmental quality factor will be met.

18.7 Marine ecosystems

The impact assessment for the Marine ecosystems factor (refer Chapter 10) concludes that the AAPowerLink will have a minor residual impact to marine habitats and fauna, associated with direct disturbance of benthic habitats in the Subsea Cable System corridor, and the short-term marine water quality impacts as predicted under the Marine environmental quality factor. Impacts to marine fauna associated with noise or light emissions, interaction with vessels, spills or fuels or hazardous chemicals or emissions of heat or Electromagnetic Fields (EMF) from the operating cables, were also assessed as minor as there is a high level of certainty that the that unacceptable impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

To ensure there is no unacceptable impact to marine ecosystems, as indicated above, Sun Cable has committed to undertaking a cable route selection survey and ensuring the Subsea Cable System route avoids important marine habitats, as far as practicable. Notwithstanding the surveys and final route selection were still underway at the time of EIS submission, the assessment of the two route options under consideration indicates there is unlikely to be unacceptable impacts to important marine habitats either from direct disturbance or due to water quality impacts. This conclusion is drawn on the basis that irrespective of the final route, the area of direct seabed disturbance is narrow and water quality impacts will be experienced for a short duration.

The impact assessment considered the importance of marine ecosystems to the community and to Aboriginal culture under the Community and economy factor, where the SIA assessed impacts to healthy country (including recreational and commercial fishing) and cultural identity, associated with impacts to marine habitats and fauna. The assessment identified potential for social and cultural impacts that are linked to community concerns about impacts to the marine ecosystems of Darwin Harbour associated with a range of development pressures.

The findings of the impact assessment undertaken for the Marine ecosystems factor indicate the that the AAPowerLink proposal is unlikely to have unacceptable impact to marine habitats, biodiversity, ecological integrity, or ecological functioning. Therefore, it is concluded that the NT EPA's objective for the Marine ecosystems factor will be met.

18.8 Air quality

The impact assessment for the Air quality factor (refer Chapter 11) concludes that the AAPowerLink proposal will have minor residual impacts to air quality associated with emissions of particulate matter (dust) and nitrogen dioxide diesel exhaust emissions during the construction phase, with no residual impacts predicted during operations. Atmospheric dispersion modelling predicted that emissions could exceed relevant air quality assessment criteria for protection of human health and amenity at distances between 307-943 m from the construction work fronts, with this distance increasing to 1,079 m at the Solar Precinct and 3,593 m at the Darwin Converter Site when the naturally high background concentrations of particulate matter occur during the dry season associated with native vegetation burning and dust storms. As most of the footprint is in remote areas, and the nature of exposure to air emissions is transient over the construction phase, there are few locations where people are likely to be affected by the construction air emissions. The impacts were assessed as minor as there is a high level of certainty that unacceptable nuisance or human health impacts can be avoided or mitigated by adopting routine measures as described in the EIS.

The impact assessment considered the potential for interaction between Air quality and the Human health factor by assessing pollutants that can cause health impacts (i.e. $PM_{2.5}$, PM_{10} and NO_2). Potential for interaction between Air quality and the Community and economy factor was considered by assessing pollutants that can cause nuisance impacts to people and communities (i.e. Total Suspended Particulates and deposited dust). The potential for depositional dust to impact on terrestrial and aquatic habitats and fauna, was considered under the Terrestrial ecosystems and Aquatic ecosystems factors.

The findings of the impact assessment undertaken for the Air quality factor indicate that the air emissions associated with the AAPowerLink will intermittently exceed air quality criteria over the construction phase but are unlikely to cause unacceptable impacts to human health, ecosystem health or amenity. Therefore, it is concluded that the NT EPA's objective for the Air quality factor will be met.

18.9 Atmospheric processes

The impact assessment for the Atmospheric processes factor (refer Chapter 12) concludes that the AAPowerLink proposal will have a major positive impact on reducing GHG emission associated with power generation in the NT and Singapore. The AAPowerLink Carbon Study and Greenhouse Gas Abatement Plan (Appendix H) predicts there will be short to medium term residual impacts associated with construction phase GHG emissions produced from fuel combustion (vessels, logistic, plant and equipment, travel and power generation), vegetation clearing and soil carbon loss. Sun Cable has committed to GHG mitigation measures to reduce construction emissions to as low as reasonably practicable, and there is a high level of certainty that the emissions will be offset by the renewable electricity produced in the first four years of operation. The AAPowerLink will become increasingly carbon positive over its operational life. The proposed mitigation measures are expected to be effective in minimising GHG emissions to as low as reasonably practicable over the construction phase, such that the positive impact will be achieved as early as possible.

The positive contribution of GHG emissions reductions to economic development and growth, was considered under the Community and economy factor, where the SIA assessed impact to economies and jobs and

concluded that the AAPowerLink as potential for transformational positive impacts to the NT economy and an emerging renewables sector.

The findings of the impact assessment undertaken for the Atmospheric processes factor indicate that the AAPowerLink will contribute significantly to the NT Government's aspirational target of achieving net zero GHG emissions by 2050, and the Territory's ability to adapt to a changing climate. Therefore, it is concluded that the NT EPA's objective for the Atmospheric processes factor will be met.

18.10 Community and economy

The impact assessment for the Community and economy factor (refer Chapter 13) concludes that the AAPowerLink proposal has potential to bring significant social and economic benefits to the NT (and Singapore) by avoiding power generation emissions and contributing towards achieving net zero GHG targets. The scale of the proposal also means there are significant opportunities associated with direct and indirect employment and facilitated economic development activity associated with having access to low emissions, renewable electricity that is in high demand across the world. There is a high level of certainty that the AAPowerLink will provide significant social and economic opportunities, but less certain (based on past experiences of development in regional and remote NT) is the extent to which those opportunities can be realised for local communities. The community's acceptance of the AAPowerLink proposal, and Sun Cable's social licence, will depend on the extent to which benefits are indeed realised for local communities and businesses, and the level of trade-off associated with the residual negative impacts to environmental, social and cultural values.

The SIA concluded that the AAPowerLink could have a high level of residual impact associated with:

- Reduced quality, affordability and availability of public and private accommodation due to a large direct workforce, and indirect population growth associated with induced economic development activity
- Loss of cultural heritage and/or reduced access to cultural sites, including community sensitivities relating to the potential for damage to culturally significant sites during construction
- People's perception of reduced social, cultural, recreational and ecological values of the Barkly region and Gunn Point region. This impact is rated as high due to community concern about cumulative residual impacts associated with a range of other developments proposed in the Darwin and Barkly regions.

Sun Cable has made commitments to maximise the benefits of the AAPowerLink to the wider NT and specifically to the Barkly (where the proposed Solar Precinct is located), due to the potential for long-term employment opportunities to the region. The Social Impact Management Plan (SIMP; refer Appendix J) submitted with the EIS establishes a framework for minimising and managing potentially negative social impacts, and maximising opportunities to the NT. The SIMP also records Sun Cable's social commitments against key performance indicators (KPIs). These measures are expected to be effective in minimising residual impacts to as low as reasonably practicable, and to ensure benefits are realised for the NT community wherever possible.

The inherent links between the Community and economy factor, and all other factors, were considered through the SIA (refer Appendix I). The assessment of impacts under the Culture and heritage factor, informed the SIA's consideration of impacts to cultural identity. The SIA considered how the proposal could impact people's value and use of land and seas, and the provision of ecosystem services, based on the residual impacts predicted under the Terrestrial ecosystems factor, Hydrological processes factor, Inland water quality factor, Aquatic ecosystems factor, Marine environmental quality factor, and Marine ecosystems factor. The assessment of impacts under the Air quality factor and Human health factor, informed the SIA's consideration of impacts to the living environment, which covers community amenity, and impacts to social infrastructure and services.

The findings of the impact assessment undertaken for the Community and economy factor indicate the AAPowerLink will provide significant opportunity for enhancement of communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians. The SIMP provides a framework

for ensuring benefits are realised and there are no unacceptable impacts. Therefore, it is concluded that the NT EPA's objective for the Community and economy factor will be met.

18.11 Culture and heritage

The impact assessment for the Culture and heritage factor (refer Chapter 14) concludes that the AAPowerLink proposal could have residual impacts associated with direct impact to heritage features when the land is cleared for development of the infrastructure. The Heritage Impact Assessments (refer Appendix V and W) recorded numerous sites of Aboriginal and/or archaeological significance, and it is expected that sacred sites clearances and surveys of the remaining unsurveyed parts of the proposal footprint, will identify more.

To manage residual impacts to heritage, site-specific mitigation measures for all sites are to be determined in consultation with site custodians, Aboriginal Areas Protection Authority (AAPA) and the Heritage Branch, and will be documented in a Cultural Heritage Management Plan (CHMP). Sun Cable has committed to consulting with Traditional Owners through ILUA negotiations and Aboriginal site custodians through the AAPA Authority Certificate process. As these processes are well-established under NT law, they are expected to ensure there are no unacceptable impacts to heritage features.

The importance of the environment and heritage to Aboriginal people is considered under the Community and economy factor. The SIA assessed impacts to cultural identity associated with damage or reduced access to sacred sites, and to healthy country and the living environment associated with environmental impacts.

The findings of the impact assessment undertaken for the Community and economy factor indicate the AAPowerLink proposal has the potential to impact sacred sites, culture and heritage; however, sites will be protected and managed in accordance with the requirements of NT law and commitments made under ILUAs. Therefore, the NT EPA's objective for the Culture and heritage factor will be met.

18.12 Human health

The impact assessment undertaken for the Human health factor (refer Chapter 15) concludes the AAPowerLink could have residual impacts to Human health associated with increased incidence of COVID-19 outbreaks associated with a large transient workforce that is drawn from across the NT, Australia and overseas. Sun Cable has committed to compliance with all federal, Territory, and local requirements set out for COVID-19 health measures, as well as guidelines set out by the World Health Organization (WHO), and these measures are likely to be effective in ensuring impacts are as low as reasonably practicable.

Other impacts to Human health associated with air emissions and noise emissions, and exposure to biting insects were assessed as minor as there is a high level of certainty that unacceptable human health impacts can be avoided or mitigated by the measures proposed in the EIS. There will be no residual impacts to Human health associated with low level exposure to EMF proximate to the AAPowerLink infrastructure.

The impact assessment considered the potential for residual impacts predicted under the Air quality factor to interact with the Human health factor. While the magnitude of predicted impacts associated with air and noise emissions is such that impacts to Human health are unlikely, the potential for those emissions to impact welfare and amenity were considered under the Community and economy factor. The induced impacts to health services associated with impacts to Human health were also assessed under the Community and economy factor, where the SIA assessed potential impacts on social infrastructure and services. The potential for noise emissions associated with the operation of the OHTL may impact several receptors, however; project design including micro-siting of infrastructure is anticipated to mitigate the potential for this impact to occur. The findings of the impact assessment indicate that the AAPowerLink is unlikely to cause unacceptable impacts to the health of the NT population, or health services, and therefore the NT EPA's objective for the Human health factor is likely to be met.

18.13 Cumulative impacts

The impact assessment undertaken for each environmental factor considered cumulative impacts to the factor associated with the residual impacts from the AAPowerLink proposal, existing impacts from other developments and land uses, and impacts associated with reasonably foreseeable developments. Chapter 3 of the EIS describes the 'other developments' considered in the assessment and the cumulative impacts are discussed in each EIS chapter.

The outcomes of the cumulative impact assessment undertaken for each factor indicate there is limited potential for cumulative impacts to occur at the time the AAPowerLink is constructed because most of the proposal footprint lies across areas with low levels of existing development, and therefore low levels environmental disturbance and impact. Further, the impact assessment undertaken for each factor predicts only minor to moderate residual impacts associated with the AAPowerLink, and these are mostly short to medium term impacts associated with construction activities. On this basis, considering the cumulative impacts from the AAPowerLink and other existing developments and land uses, does not alter the predicted outcome for each environmental factor as described above.

There is potential for cumulative impacts associated with the AAPowerLink and reasonably foreseeable development activities in the Barkly region associated with the Barkly Regional Deal, onshore gas development in the Beetaloo Basin, agriculture and various mining projects. Cumulative impacts from these activities and the AAPowerLink residual impacts are most likely to affect the Community and economy factor and Culture and heritage factor. These impacts would be most pronounced if the construction phases of various projects overlap with the AAPowerLink construction phase when there will be an influx of workers and contractors into regional communities and townships increasing demand for accommodation, and large volumes of traffic on the road.

There is potential for cumulative impacts associated with reasonably foreseeable development activities in the Darwin region, and specifically at Murrumujuk, Gunn Point Peninsula where the Darwin Converter Site will be built alongside the proposed Project Sea Dragon hatchery. Cumulative impacts from these activities and the AAPowerLink residual impacts are most likely to affect the Terrestrial ecosystems, Community and economy and Culture and heritage factors. In relation to the Terrestrial ecosystems factor there is potential for cumulative impacts to an important sub-population of the threatened plant species *Typhonium praetermissum* from the combined land clearing associated with the AAPowerLink and Project Sea Dragon hatchery. In relation to Community and economy, and Culture and heritage, there is potential for cumulative impacts to occur as incremental development over time alters the nature of the Gunn Point Peninsula such that the areas recreational, cultural and heritage values are lost or degraded.

Sun Cable has committed to undertaking further targeted surveys and assessment of the *Typhonium praetermissum* sub-population, and to managing impacts to social and cultural values through a SIMP and CHMP. It is assumed that similar requirements would need to be met by future developments. The NT Government regulatory processes provide for consideration of cumulative impacts in decision-making.

A further consideration is that the renewable energy generated by the AAPowerLink has potential to drive economic development in the NT, by providing a significant source of low-cost, clean electricity. The type and scale of development that could occur is difficult to predict, but it is reasonably foreseeable that mining and manufacturing-based industries could be made more feasible by having access to this resource. For example, having a supply of renewable electricity has potential to accelerate the development of the Middle Arm Sustainable Development Precinct proposed by the NT Government. These developments are outside of Sun Cable's control; however, are being identified here to inform future decision-making.

18.14 Matters of National Environmental Significance

The impact assessment for Matters of National Environmental Significance (MNES) protected under the *EPBC Act* (see Chapter 16) concludes that the AAPowerLink will not have any residual significant impacts to the assessed matters. Impacts were assessed with reference to *EPBC Significant Impact Guidelines 1.1* produced by the Commonwealth Government (DEWHA 2013). The findings of the impact assessment for each protected matter are summarised below.

- Listed threatened species and communities

Ecological surveys undertaken across the Solar Precinct and Darwin Converter site footprint did not detect the presence of listed threatened species or communities. Notwithstanding surveys covering the remainder of the footprint (i.e. the OHTL corridor) were in progress at the time of EIS submission, that footprint is very localised (i.e. 22m wide corridor of clearing) and substantive disturbance will only occur over a short time frame in any one location during construction, therefore the likelihood of significant impacts to threatened species is very low. This conclusion will be re-assessed in the Supplementary EIS considering the results of further field surveys.

The Subsea Cable System traverses a large area of marine habitat, and therefore intersects with suitable habitat for many threatened marine species including marine mammals, marine turtles and elasmobranchs (whales/sharks). Construction and operation of the Subsea Cable could have an impact on these species through direct mortality, loss of habitat and/or disruption to behaviour because of light, electromagnetic frequencies (EMF) or noise. However, the presence of cable-laying ships, the generation of noise and production of light during construction, and heat and EMF during operations will – at most – have a very spatially- and temporally-limited impact on individual sensitive species. Direct mortality due to collisions between marine mega-fauna and large, slow-moving ships that will be used for cable-laying are rare and will be mitigated against through reduced vessel speeds in high-risk areas.

- Listed marine and/or migratory species

The conclusion for migratory species mirrors that of threatened species. A significant impact to migratory species is unlikely because they are either unlikely to be present within some components of the proposal – particularly the Solar Precinct – or because the area of influence associated with proposal activities is very restricted in space and time.

No important habitat or ecologically significant proportions of populations of migratory species have been identified within the marine footprint of this proposal. There are 18 migratory shorebird species known from the Gunn Point Beach area, which qualifies it as important habitat for migratory species. However, an assessment under EPBC guidelines has concluded that proposal activities will not result in a significant impact to migratory shorebirds, and therefore this environmental value will be maintained.

- Commonwealth marine area

The restricted Subsea Cable System footprint means that it is unlikely that the proposed action will have a significant impact on the Commonwealth marine area.

18.15 Objects of the Environment Protection Act 2019

Through the impact assessment process documented in this EIS, Sun Cable has demonstrated consideration of the principles of ecologically sustainable development, and application of the decision-making hierarchy and waste management hierarchy as set out in Part 2 of the *EP Act*. The EIS addresses all requirements of the environmental impact assessment process as set out in Section 42 of the *EP Act* (Purpose of the environmental impact assessment process) and Section 43 of the *EP Act* (General Duty of Proponents). Appendix B provides a checklist that documents how each of the requirements of the Act have been met and cross-references relevant sections of the EIS document.

18.16 Conclusion

The outcomes of the impact assessment process documented in this EIS for each of the NT EPA's environmental factors, including consideration of the interaction between environmental factors and cumulative impacts, indicate that the AAPowerLink proposal can be implemented consistent with the principles of environment protection and management (as set out in Part 2 of the *EP Act*) and without causing any substantial detrimental effect on achievement of the NT EPA's objectives.

The outcomes of the impact assessment process documented in the EIS for MNES protected under the *EPBC Act* indicate that the AAPowerLink proposal is unlikely to have a significant impact on any protected matters.

It is noted that there is some uncertainty with respect to the occurrence of a few listed threatened species. However, targeted survey work to resolve this uncertainty was underway at the time of EIS submission, and Sun Cable has committed to re-assessing impacts to the NT EPA's objective for Terrestrial ecosystems and to protected matters under the EPBC Act in the Supplementary EIS if the surveys reveal potential for any additional threatened species to occur.

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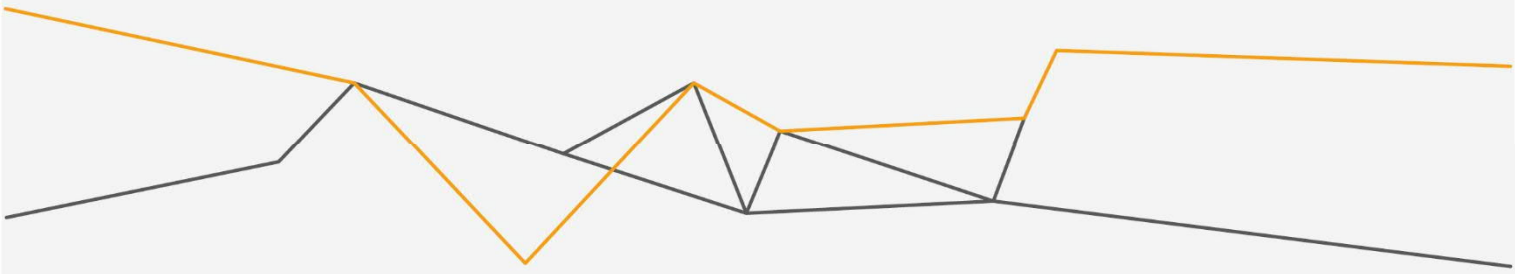

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