



5 Milner Street,
Hindmarsh SA 5000

Phone: (08) 7127 4630

Fax: (08) 82319773

Website: www.ncssa.asn.au

Hon Sussan Ley MP
Minister for the Environment

Submitted via: https://haveyoursay.awe.gov.au/public-comments-on-epbc-act-referrals/survey_tools/referral-epbc-2021-9013

Thursday 9 September 2021

Re: Referral: EPBC 2021/9013 – Whalers Way Orbital Launch Complex

Dear Minister,

The Nature Conservation Society of South Australia (NCSSA) appreciates the opportunity to comment on referral number 2021/9013 for the Whalers Way Orbital Launch Complex. Since 1962, the NCSSA has been a strong advocate for the protection of native vegetation and biodiversity in South Australia with particular attention being paid to nationally and state listed threatened plants, animals and ecological communities and the management of protected areas.

Whalers Way is an area dedicated to nature conservation, specifically protected under South Australian legislation. It also contains habitat for threatened species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and it is a high bushfire risk area. It is not the right location for this rocket Launch Complex, an industrial development requiring an array of large infrastructure and involving explosions.

Particularly, this proposed action as currently described will have unacceptable impact on the vulnerable Southern Emu-Wren (Eyre Peninsula subspecies). One of the launch pads is planned for the precise area within the Whalers Way site that is a 'hotspot' for that subspecies. If the proponent will not alter the proposed location of this launch pad, then this referral should be deemed '**clearly unacceptable**'.

If consideration of this proposed action is to continue, the NCSSA believes an **independent review of potential sites** for this Launch Complex is required. A less environmentally sensitive site must be found for this proposed action. The benefit to the community of 76.2 jobs and \$53.4 million in positive impact to Gross State Product that will be created by this Launch Complex, according to the proponent, could be realised without accepting the direct damage and ongoing risk to the environment, including matters of national environmental significance protected under the EPBC Act, from this current siting.

The NCSSA provides further specific commentary regarding this referral in the attachment to this letter.

If you would like to clarify or discuss these comments, please contact Julia Peacock, Nature Advocate, on 0400 277 423 or via email at julia.peacock@ncssa.asn.au.

Yours sincerely,

Patrick O'Connor
President

Attachment - NCSSA comments regarding referral: EPBC 2021/9013 – Whalers Way Orbital Launch Complex

Alternative viable sites

The area selected for this proposed Launch Complex is a recognised nature conservation area. It is specifically protected under the South Australian *Native Vegetation Act 1991* as a private conservation area (known as a 'Heritage Agreement'), as well as being habitat for state and nationally listed threatened species. It is also adjacent to the Thorny Passage Marine Park.

The property has signage at its gate stating it is a 'wilderness park', so its environmental value is clear to even a casual visitor.



Bradley Theakstone at the entrance to Whalers Way¹

The company states that it has undertaken an 'extensive review' of potential locations across Australia based on their criteria, and that this is the 'optimal site' for launching at 'cost-competitive prices'. In other words, it is the most potentially profitable location for this private development.

However, the NCSSA believes that insufficient consideration has been given to potentially viable, alternate sites. These include:

- Existing rocket launching sites in South Australia, including the company's own site at Koonibba² and the Woomera Rocket Range³, and/or
- The multitude of other potential locations along the entire southern Australian coastline, from WA to Victoria, which are less environmentally sensitive.

The NCSSA notes that other commercial rocket launching facilities exist or are in development in Australia, including in Nhulunbuy in the Northern Territory⁴ and at Abbott Point in Queensland⁵. It is therefore highly likely that the launch capabilities that could be offered from Whalers Way are achievable from elsewhere, but without the associated environmental damage and ongoing risk.

It is difficult for anyone except those with a background in rocket science to assess the feasibility of potential launch sites, and to date this has only been done by the proponent, a party that stands to profit from this private development. An **independent review of potential locations for this Launch Complex is therefore required** that objectively assesses the feasibility of alternate, less environmentally sensitive sites.

¹ <https://www.portlincolntimes.com.au/story/6529766/respect-the-power-of-the-sea/>

² <https://www.southernlaunch.space/koonibba-test-range>

³ <https://www.airforce.gov.au/about-us/bases/south-australia/woomera-range-complex>

⁴ <https://ela.space/what/>

⁵ <https://www.zdnet.com/article/queensland-to-build-small-rocket-launch-site-at-abbot-point/>

Unacceptable impact on Southern Emu-Wren (Eyre Peninsula)

The NCCSA believes that this is a controlled action due to likely significant impacts on listed threatened species, particularly the Southern Emu-Wren (Eyre Peninsula sub-species) and the Western Whipbird. Falsely, the referral states the action will result in “No interference with the recovery of EPBC Act listed threatened or migratory species”.

Rather, the NCCSA believes that this action, as currently proposed, will have unacceptable impact on the threatened Southern Emu-Wren (Eyre Peninsula subspecies).



Southern Emu-Wren (Eyre Peninsula), photo by Dion Thompson

As stated in the referral document in relation to the Southern Emu-Wren (Eyre Peninsula), ‘the highest frequency and broadest geographical section for critical habitat is found in the south-western section of Whalers Way near the Launch Site A’. In other words, Launch Site A is proposed for the location with the most records for the Southern Emu-Wren (Eyre Peninsula), meaning it represents prime habitat and a ‘hotspot’ for this important population.

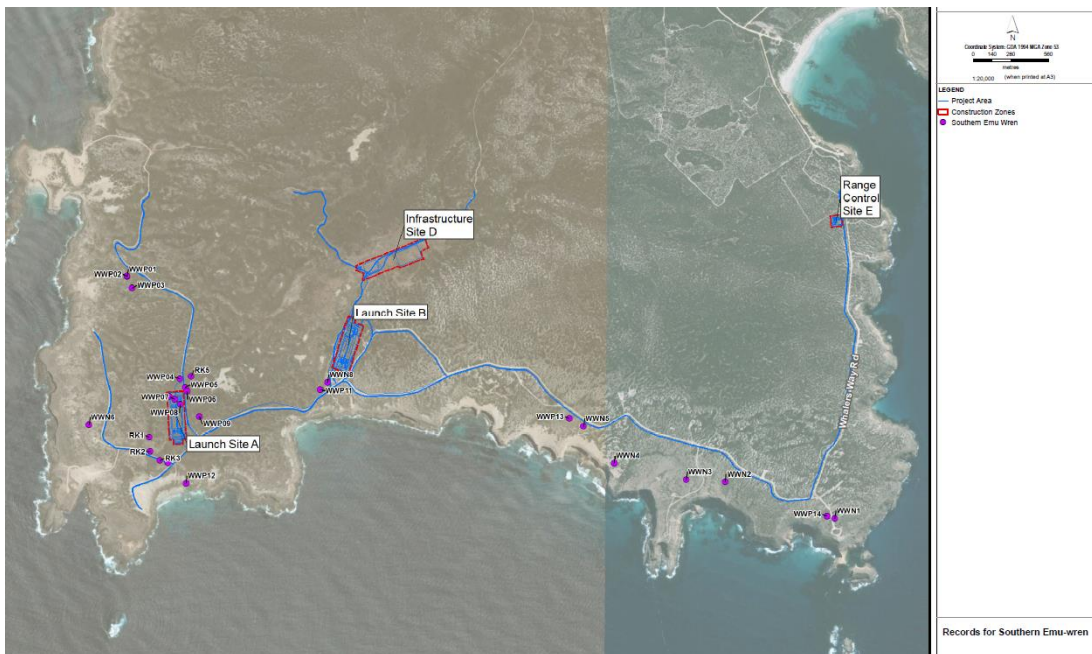


Figure 6 from Attachment 2: Terrestrial Biodiversity Technical Report, showing Southern Emu-Wren records relative to the proposed Site A



Close up of Figure 6 from Attachment 2: Terrestrial Biodiversity Technical Report, showing Southern Emu-Wren records relative to the proposed Site A

This siting is in direct contravention of the recommendation from the proponent’s own consultant’s report⁶, which stated:

“In the first instance, it is recommended that avoidance of all critical habitat for Southern Emu-Wren is prioritised due to the low distribution and narrow band of habitat available”.

If the proponent will not reconsider the location of Launch Site A, then this proposed action should be refused, since it is clearly unacceptable: it is simply incompatible with the protection and recovery of this threatened subspecies.

Other Matters of National Environmental Significance that will be impacted by this proposal

The NCSSA notes that the referral document states this action has ‘potential’ to have a significant impact on the Western Whipbird, but the Executive Summary of Attachment 2 states that it is likely to have a significant impact on the Western Whipbird, including from habitat loss, fauna mortality from vehicle strike, and indirect impacts that may lead to behavioural changes from noise and light. The NCSSA therefore believes the proposed action will have a significant impact on the Western Whipbird, and that the conclusion of a ‘potential’ impact on Western Whipbird in the tables in Attachment 2 and Attachment 13 is incorrect.

The NCSSA wishes to draw your attention to the current Recovery Plan⁷ for the Western Whipbird as adopted under the EPBC Act. This proposed action will introduce and exacerbate key threats to the Western Whipbird at the Whalers Way site as identified in that Recovery Plan, include by clearing habitat, increasing the risk of frequent and extensive fires, causing habitat fragmentation and isolation, as well as causing a decline habitat quality due to frequent disturbance from launch activity.

The NCSSA is concerned that the potential for impact on other matters of national environmental significant at the site has been given insufficient review, including:

- Impact on the Eastern Osprey which is listed as ‘migratory’ under the EPBC Act. Attachment 13 concludes the action is unlikely to have a significant impact on the Eastern Osprey, however, Attachment 2 states Osprey up to 5km away may exhibit a behavioural response to launch noise. The potential for this species to re-establish in currently abandoned nests close to the proposed launch sites is therefore an issue that requires closer review, particularly when the Complex is launching the planned 35 rockets per year.

⁶ Broadscale distribution and status of the Eyre Peninsula Southern Emu-Wren (*Stipiturus malachurus parimeda*) and Western Whipbird (eastern) (*Psophodes leucogaster leucogaster*) at Whalers Way, June 2020. Ecosphere Ecological Solutions.

⁷ <https://www.environment.gov.au/system/files/resources/3f603fca-2343-44d6-9371-3aa16b4f529e/files/national-recovery-plan-three-mallee-birds.pdf>

The NCCSA understands that many studies from around the world unequivocally link negative productivity outcomes for large raptors associated with human activity encroaching into breeding refuge habitat and that the Cape Wiles/Carnot complex lies within one of three sub-regions identified in SA as retaining significant breeding habitat for the Osprey (as well as the White-bellied Sea Eagle). Expert opinion expressed to the NCCSA on this proposed action was “in recognition of the documented population declines for both these species (the Osprey and White-bellied Sea Eagle), the prospect of industrial development being permitted over yet another stretch of critical habitat must be regarded as grossly irresponsible”, and “the proposed development and increased activity at Whalers Way, which would include the unknown impacts of extreme noise events, can only serve to exacerbate the habitat degradation processes already affecting the several threatened species which occur there in isolated/remnant populations.”

- The action has been assessed as not having a significant impact on the Commonwealth marine area. The NCCSA believes this deserves closer review, including for pollution from heavy metals and other potentially harmful chemicals as rocket debris fall into the ocean.

Direct impact of clearance likely greater than stated in referral

The NCCSA believes that the impact from direct habitat clearance on listed threatened species is likely to be greater than has been stated in the referral.

The referral states that 23.76ha of vegetation will be cleared, but the NCCSA believes this may be an underestimate and further analysis is therefore needed. The area quoted in the referral may represent the precise footprint of the launch pads and associated infrastructure and the road enlargements that will be required for this proposal, but it is not clear if it incorporates all other intended development and damage, including the planned quarry for road materials that will be converted to a 30 megalitre dam. There are also references to temporary ‘lay down’ areas for construction that will be rehabilitated, but no detail regarding their size, location or when and how they would be revegetated. Clearance required to mitigate bushfire risk has also not been included (see below).

Bushfire risk inadequately addressed

The NCCSA believes that the risk of bushfire at the site has not been adequately addressed in the referral, and that the protected threatened birds at the site are at serious risk from increased bushfire risk from this proposal.

Whalers Way is situated in a high bushfire risk zone, and the threatened species of most concern are fire sensitive. However, a Bushfire Management Plan prepared for the South Australian Environmental Impact Statement (EIS) process⁸ has been redacted ‘due to the risk that making such information available could compromise future security measures for the site’⁹. There is therefore no publicly available information about how the risk of launching rockets within this high fire danger environment will be managed.

There are only fleeting references to bushfire management in the EIS summary provided as part of this referral, and the Operational Environmental Management Plan at Attachment 8, including:

- “Firebreaks incorporated along fences to protect and mitigate one of the primary threats to EPBC listed species present.
- All buildings and facilities are sited within the Project Area to achieve suitable clearance from vegetation for fire mitigation purposes. The siting of all buildings and facilities within the Project Area footprint achieves the minimum fire clearance requirements under the National Construction Code.”

⁸ Documents available from

https://plan.sa.gov.au/state_snapshot/development_activity/major_projects/majors/sleaford_southern_launch, noting comments close on 16 September 2021, after which time they presumably become unavailable

⁹ From correspondence between the NCCSA and Plan SA, 11 August 2021

As far as the NCSSA is aware, clearance of firebreaks along fences has not been included in area calculations for proposed native vegetation clearance at the site, and no details have been provided to show how such clearance would 'mitigate threat to EPBC listed species'. The NCSSA is not aware of the minimum fire clearance requirements for the National Construction Code but notes that no provision for any additional clearance beyond building footprints appears to have been made in maps supplied for the referral.

The ongoing risk posed by bushfire to the listed threatened species at the site cannot be overstated. Similar threatened bird species in South Australia to those found at Whalers Way have been heavily impacted by fire, including the Mallee Emu-Wren, which was wiped out from South Australia by fire¹⁰, and the Mount Lofty Ranges subspecies of the Southern Emu-Wren. Therefore, the omission of any information relating to bushfire management represents an inadequate assessment of the risk to the threatened birds at the site.

Timing of assessment

In June 2021, the company was granted permission by the South Australia State Commission Assessment Panel to construct a 'temporary' facility from which to launch three 'test' rockets¹¹. The stated purpose of these 'tests' was to collect empirical data to inform the EIS, particularly to validate modelling of the impact of noise and vibration on the threatened fauna at the site such as the Southern Emu-Wren (Eyre Peninsula), Western Whipbird and Australian Sea Lions.

In the proponent's own document entitled 'Proposed Ecological Test Campaign', dated April 2021, it stated:

1.8 BENEFITS OF THE TEST PROGRAM

The opportunity to perform this test program will allow Southern Launch to undertake several important confirmation experiments in respect of the noise and vibration impact of rocket launches on the local environment. The computational models used for noise and vibration assessment are not specifically orientated to rocket launches and therefore have limitations in their applicability, which are typically compensated for by adding additional layers of conservatism to the models. It is proposed that the test launches will allow for the collection of detailed empirical data which can validate the computational models as well as observe the resultant effect of launches on local fauna. This opportunity to measure real time noise and vibration generation from actual launches will add certainty to the development application process.

... and also that:

Southern Launch is acutely aware of the need to gain social licence for the project to be approved and recognises the extent to which modelled data has not necessarily enabled this on other projects. Southern Launch are concerned that certain groups and individuals will not be satisfied with the level of certainty available from modelled data, whereas empirical launch data will provide a higher level of certainty more likely to allay their concerns.

However, the EIS has been released before these 'tests' have taken place. Assessments of noise and vibration in the EIS are therefore based on models, with data from empirical 'testing' not yet available.

Further assessment under the EPBC Act should not proceed until data from these 'tests' are available. The 'test' launches must take place before December 2021¹².

¹⁰ <https://www.zoo.org.au/fighting-extinction/local-threatened-species/mallee-emu-wren/>

¹¹ https://www.saplanningcommission.sa.gov.au/scap/about_scap/commission_meetings - see Minutes from 16 June 2021. The original application documentation appears to have been removed from the Plan SA website, it should be available on request.

¹² <https://www.theguardian.com/science/2021/aug/24/first-commercial-rocket-due-to-be-launched-from-australia-later-in-2021>

Impact of noise and vibration on threatened species needs further review

The NCSSA questions whether the analysis of the likely impact of noise and vibration from rocket launches on matters of national environmental significance is adequate. The study referred to in Attachment 2 for assessing the impact of noise on birds related to highway noise, which is very different from rocket launching noise. This impact is critical to understand, and again, in the proponent's own document entitled 'Proposed Ecological Test Campaign', it stated:

Should the Statement Government apply the precautionary principle, a reliance on computational modelling to determine the impacts on local fauna without empirical validation may result in the proposed development being refused, or further empirical validation details being requested (which may ultimately require a test campaign) before a decision can be made and the proposal.

Figure 8 and 9 within Attachment 2 shows sound in the range that can purportedly cause hearing damage in birds (125 dBA) will be experienced over the locations where threatened birds have been recorded as part of EIS surveys. For the Western Whipbird, the assessment of significance of impact in Table 16 states:

"Operational noise through the launching of rockets at a frequency of one every three weeks for a duration of 1 minute and 15 seconds will generate noise levels that will likely impact the species 4-5km from the launch site. The species is sensitive to discrete, unpredictable disturbances such as sudden loud noises that can cause physiological effects, such as stress, avoidance and fright-flight responses, which may also lead to dynamic behavioural disrupt the breeding cycle of an important population".

Misleading or inaccurate statements in the referral

The NCSSA notes the following misleading or inaccurate statements in the referral:

- The statement that "vegetation and habitat clearance in any areas of biodiversity importance has been avoided as much as possible" is misleading, since the site of most importance for Southern Emu-Wren (Eyre Peninsula) will be directly cleared and severely impacted. A more accurate characterisation of the choice of location is included in Attachment 2, "there is a risk that some of the proposed clearing may pose a direct threat to the local viability of the ecosystems and potentially heavily impact upon individual threatened species."
- Similarly, statements regarding the proposed action being undertaken in a manner that aligns with Conservation Advice are misleading, since the proposed action will increase and exacerbate the key threats of land clearance resulting in habitat fragmentation and inappropriate fire regimes, as outlined in the Conservation Advice for the Southern Emu-Wren (Eyre Peninsula). As stated in Attachment 2, "the Project activities will contribute to fragmentation of fauna habitat by increasing the number and width of access tracks and clearing six discrete areas."
- The statement under 5.3.2.1 that "existing land uses and general amenity will largely be unaffected by the construction and operation of the complex, including from rocket launches" is false. The existing land uses of nature conservation and tourism will be negatively impacted, as will the general amenity of the site by the construction of the necessary infrastructure, which includes concrete launch pads, various buildings, car parks, elevated water tanks of 23 metres and 40 metre high lightning towers.
- "In principle agreement has been reached to alter the existing Heritage Agreement and maintain the same area of vegetation subject to protection". Whilst this is true, it is misleading. Vegetation not currently

'protected' will be incorporated in the Heritage Agreement whilst vegetation currently 'protected' will be excised to facilitate the action. The net impact will be a loss of native vegetation, and therefore habitat.

- Under 6.1, the proponent has responded that "Southern Launch is a start-up company, so does not have a direct record of undertaking development", however, the proponent already operates a rocket testing range at Koonibba¹³, which involves shooting test rockets into the 'uninhabited national park'.
- In Section 3.1. Site Selection, the proponent has stated that: 'The site is largely covered with remnant vegetation; however, previous recreational uses have degraded areas of vegetation. The site is the subject of a Heritage Agreement; however, some areas of the site are specifically excluded from that agreement'. Whilst it is correct that there are some areas within the site that have been degraded, for example the area around where "Infrastructure Site D" is proposed, the vast majority of the area is in good condition from an environmental perspective, as reflected by the referral document's summary of the vegetation assessment which described vegetation condition largely moderate to high.

The sites currently specifically excluded from the Heritage Agreement are not areas proposed for the Launch Complex infrastructure. Instead, the areas earmarked for development are mainly covered by high quality vegetation in good condition which is providing habitat for threatened species. These will have to excised from the Heritage Agreement to facilitate the project.



Undisturbed, good quality coastal heath, the proposed location of the launchpad referred to as 'Site A'

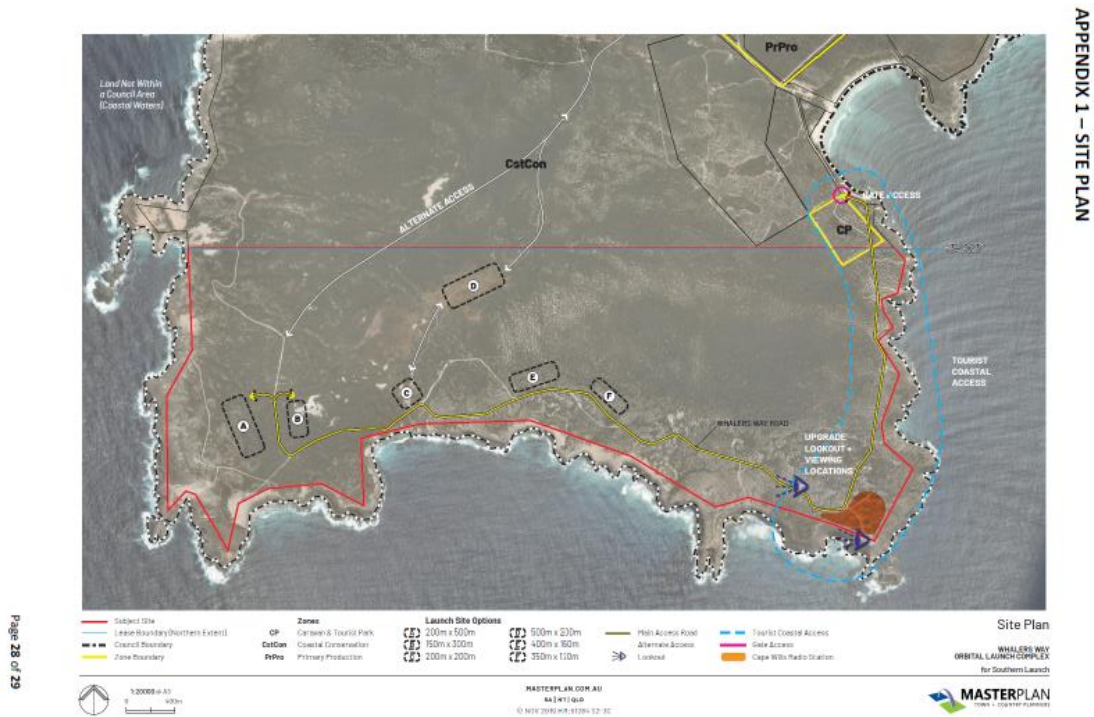
¹³ <https://www.southernlaunch.space/koonibba-test-range>

Further impacts on MNES if the Complex is permitted to expand

In response to question 1.15, the company has stated that this is not part of a staged development, however, future expansion at the site is clearly intended. In the Environmental Impact Statement (EIS) summary, in section 2.3 Project Description, the proponent states:

“The WWOLC is proposed to be developed in stages over time at an estimated cost of approximately \$43m. The current proposal represents the initial development of the complex and is the subject of this EIS.”

This intention to further develop the site beyond what is currently being assessed is evidenced by the map included in the *Guidelines for the preparation of an Environmental Impact Statement: Whalers Way Orbital Launch Complex* released by the South Australian State Planning Commission in July 2020¹⁴, which clearly contemplates up to 6 launch pads, four more than have been applied for under this referral.



Attachment 2 also refers to a ‘Stage 5 – Non-conventional launch facilities (not part of the current application)’.

Therefore, further impact on matters of national environmental significance, greater than what is described in this referral document, would result from any future stages of development at this site.

Conservation status of the Southern Emu-Wren (Eyre Peninsula subspecies)

The referral documentation states that there are 11 known populations of Southern Emu-wren (Eyre Peninsula). The NCSSA notes that there has been no systematic survey for this subspecies in over a decade. Urgent survey work is required to confirm if previously extant populations persist. The next addition of the Action Plan for Australia Birds, due for release in December of this year, assessed the status of this subspecies to be ‘endangered’.

Sea dumping permit

The NCSSA understand the proponent may require a sea dumping permit to allow rockets to fall into the ocean, and suggests this requires further review.

Assessment approach

As stated earlier, if the proponent will not reconsider the location of the current Site A, this proposed action should be deemed 'clearly unacceptable' under the EPBC Act.

The State-based EIS process is taking place at the same time as this referral has been made, with public submissions due on September 16¹⁵. The EIS does not adequately address all matters of national environmental significance protected under the EPBC Act, nor does it provide an adequate and independent assessment of possible locations for this project.

Therefore, the NCSSA does not believe it is appropriate for this proposal to be assessed under the EPBC Act by accredited bilateral assessment, on referral documentation, on preliminary documentation or by EIS.

The NCSSA therefore believes that for a project of this size, complexity and novelty, any further assessment under the EPBC Act should be by public inquiry, with the first step being an **independent review of potential sites** for this Launch Complex.

¹⁵ https://plan.sa.gov.au/state_snapshot/development_activity/major_projects/majors/sleaford_southern_launch