

To: Minister for the Environment (For Decision)

PDR: MS20-000397

**Approval Decision Brief (assessment report) – Snowy 2.0 Main Works, NSW
(EPBC 2018/8322)****Timing:** 6 July 2020 - Statutory timeframe for final decision.**Recommendations:**

1. That you consider the information provided in this brief, the proposed decision briefing package, including legal considerations and assessment report at Attachment A and other attachments to this brief.

Considered / Please discuss

2. Consider the responses to your invitation for comment on the proposed decision at Attachment C.

Considered / Please discuss

3. That you agree to approve, for the purposes of each controlling provision, the action as summarised in the table below.

Approved / Not approved

4. That you agree to attach the conditions of approval as set out in Attachment D.

Agreed / Not agreed

5. If you agree with recommendations 3 and 4, that you accept the reasoning in the departmental briefing package as the reasons for your decision.

Signed / Not signed

6. If you agree with recommendations 3 and 4, that you sign the notice of your decision at Attachment D.

Signed / Not signed

7. If you agree with recommendations 3 and 4, that you sign the letters at Attachment E advising Snowy Hydro Limited, relevant Commonwealth Ministers, and the NSW Government of your decision.

Signed / Not signed**Summary of recommendations on each controlling provision:**

Controlling Provisions for the action	Recommendation	
	Approve	Refuse to Approve
National heritage places (ss 15B, 15C)	Approve	
Listed threatened species and communities (ss 18, 18A)	Approve	
Listed migratory species (ss 20, 20A)	Approve	
Commonwealth action (s 28)	Approve	

The Hon Sussan Ley MP, Minister for the Environment

Date:



29/6/20

Comments:

Clearing Officer: Sent 29 / 06 / 2020	Louise Vickery	Assistant Secretary, Environment Approvals and Wildlife Trade Branch	s47F(1) s47F(1)
Contact Officer:	s22(1)(a)(ii)	Director, Southern NSW and ACT Assessments Section	s22(1)(a)(ii) s22(1)(a)(ii)

Key Points

1. The purpose of this brief is to seek your consideration of a final approval decision for the Snowy 2.0 Main Works project under Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
2. Snowy Hydro Limited (SHL – the person proposing to take the action and also the proponent) proposes to construct and operate the Snowy 2.0 Main Works project, which includes a pipeline between Tantangara and Talbingo reservoirs, an underground power station, and associated infrastructure.
3. On 12 June 2020, as recommended in the proposed approval decision brief (Attachment A) you wrote to SHL and relevant Commonwealth Ministers seeking comments on your proposed decision, as required under sections 131AA(1) and 131(1) of the EPBC Act. You also wrote to the NSW Minister for Planning and Public Spaces informing him of your proposed decision.
4. All parties responded to your invitation to comment. The responses are provided at Attachment C and summarised below. Most Ministers commented on the economic and social benefits of the project and noted your intention to approve the project with conditions. No Ministers objected to the project and SHL was the only stakeholder to provide comments on the proposed condition set. Amendments to the proposed condition set are at Attachment B.
5. Under section 130 and 133 of the EPBC Act you are now required to decide whether or not to approve the proposed action, and if you decide to approve, what conditions you will attach to the approval under section 134 of the EPBC Act.
6. The mandatory considerations that you must have regard to when deciding whether or not to approve the proposed action, and the Department's analysis of them, are in the legal considerations document at Attachment A1 of Attachment A.

Consultation

Comments from SHL

7. Comments from SHL ([Attachment C1](#)) were largely focused on aligning the conditions more closely with the requirements of the NSW conditions of approval and to clarify the intent of conditions. Suggested changes from SHL that were incorporated into the final decision notice ([Attachment D](#)) include:
 - a. remove the condition that required monitoring of Alpine Bogs and Fens for 20 years, as the NSW conditions already require monitoring for the life of the action;
 - b. amend conditions relating to monitoring data so that monitoring data collected under management plans is made publicly available as part of the requirement to publicly report on the implementation of management plans, rather than have the monitoring data be made available to the public as requested;
 - c. include 'reasonable' (defined term as per the NSW conditions) in the condition that requires investigation of 'reasonable' measures to protect tributaries identified as priority receiving sites for stocking insurance populations of the Macquarie Perch and Stocky Galaxias;
 - d. align the conditions relating to the timing of submission and content of compliance, incident and non-compliance reporting with the NSW conditions, where the requirements and intent are the same; and
 - e. align the definitions of 'construction' and 'disturbance area', and related definitions, with the definitions of the same terms in the NSW conditions.

Comments from Minister for Finance and Minister for Energy and Emissions Reduction

8. The Minister for Finance and Minister for Energy and Emissions Reduction responded in a joint letter ([Attachment C2](#)). They noted that the proposed approval conditions remain largely consistent with NSW conditions, with additional conditions imposed where necessary to protect matters protected by national environmental law, and to ensure enforceability under the EPBC Act.
9. The response also noted the benefits of Snowy 2.0 in providing security and reliability to the National Electricity Market, stating that it will have the capacity to supply up to 500,000 households at peak demand with up to 175 hours of storage.

Comments from the Prime Minister

10. The response from the Prime Minister ([Attachment C3](#)) stated that infrastructure development will play a critical role in the Government's JobMaker Plan as the nation comes out of the COVID-19 crisis, and that many of the supply chain benefits of the Snowy 2.0 project are already being realised. The Prime Minister indicated that the jobs and economic boost from Snowy 2.0 is more important than ever for the surrounding regional communities, given the combined impacts of summer bushfires and the COVID-19 pandemic. He noted that SHL has already invested \$35 million in the region and 100 local businesses have been involved in the project so far, with more jobs to be realised as the project proceeds.
11. The Prime Minister noted the role of the NSW Government in enabling a fast and comprehensive assessment process for the project on the Commonwealth's behalf. He also noted that the proposed conditions of approval rely on implementation of the NSW conditions to the greatest extent possible, to reduce duplication.

12. The Department notes that the increased alignment of Commonwealth and NSW conditions where possible will further reduce regulatory duplication and provide greater clarity for SHL to comply with their conditions of approval.

Comments from the Minister for Indigenous Australians

13. The Minister for Indigenous Australians ([Attachment C4](#)) stated that he had been advised by the National Indigenous Australians Agency (NIAA) that SHL has and continues to engage with local Indigenous organisations on this project. SHL is working with Indigenous stakeholders to realise employment outcomes and career opportunities for local Indigenous communities. NIAA has also urged SHL to contact the NSW Aboriginal Land Council to ensure there are no other matters of concern.
14. SHL must prepare and implement a Heritage Management Plan, which must include a consultation plan to record consultation with and feedback received from key indigenous stakeholders. SHL must consult with the Department on the preparation of the Heritage Management Plan, during which the Department will ensure the NSW Aboriginal Land Council is contacted as per the recommendation from the Minister for Indigenous Australians to ensure there are no outstanding issues of concern.
15. Based on the above, the Department considers that the recommended conditions of approval are adequate to ensure the matters raised by the Minister for Indigenous Australians are addressed.

Comments from the Department of Industry, Science, Energy and Resources (and Geoscience Australia)

16. On 16 November 2018, at the referral stage of the proposed action, Geoscience Australia provided a submission through the then Department of Industry, Innovation and Science. Based on the information in the referral, Geoscience Australia noted that the proposed action would partially dewater the regional groundwater system, which could affect adjacent local systems and sensitive receptors such as Alpine Bogs and Fens. Geoscience Australia noted that a groundwater impact assessment would be undertaken by SHL, and that the key groundwater issues to be addressed included: the connectivity between groundwater systems; groundwater dependent ecosystems and surface water; the loss of spring flows that sustain water sources; the loss of baseflow to streams; and lowered regional groundwater levels.
17. The Department considers that the assessment of the proposed action by both SHL and NSW (see Attachments F and G of [Attachment A](#)) as well as the proposed conditions of approval that require groundwater and surface water management plans and monitoring of Alpine Bogs and Fens, adequately address the issues raised by Geoscience Australia on the referral.
18. The Department notes that the Department of Industry, Science, Energy and Resources responded to the invitation to comment on the proposed decision on behalf of their whole Department, including Geoscience Australia, and stated that they did not have any comments ([Attachment C5](#)). The Department clarified with Geoscience Australia that they did not have any further comments.

Comments from the Minister for Infrastructure, Transport and Regional Development

19. The Deputy Prime Minister and Minister for Infrastructure, Transport and Regional Development responded ([Attachment C6](#)) and noted your intention to approve the proposed action subject to conditions. He also stated that he looked forward to seeing the economic benefits that the project will deliver to the region.

Comments from the NSW Government

20. The NSW Department of Planning, Industry and Environment responded to your invitation ([Attachment C7](#)) on behalf of the NSW Minister for Planning and Public Spaces. The letter stated that they had reviewed the proposed conditions and noted that they were generally consistent with the NSW conditions.

Comments from external stakeholders

21. As mentioned in the proposed decision brief ([Attachment A](#)), the Department met with three external stakeholder groups who raised concerns about the environmental, social and economic impacts of the proposed action, and who also provided additional information for the Department's consideration after the meetings: Associate Professor Mark Lintermans, University of Canberra; representatives of the National Parks Association of NSW (NPA); and academics and researchers from the Australian National University (ANU). The Department notes:
- a. The preference of each stakeholder is for the Commonwealth to refuse the proposed action.
 - b. Issues raised by external stakeholders relating to the impacts in Kosciuszko National Park, including the NPA's concerns that National Heritage values would be impacted by the proposed action; the feasibility of any alternative energy generation or storage options; and the supposed overstated benefits of Snowy 2.0 to the National Electricity Network were addressed in the proposed decision package, through the NSW assessment, and/or in SHL's documentation ([Attachments F2 and G63 of Attachment A](#)). These matters were considered by the Department in recommending the proposed approval decision.
 - c. A/P Lintermans and ANU provided suggestions of conditions that could supplement the NSW conditions. Where those suggestions were considered necessary or convenient to protect Commonwealth matters, they were included in the Commonwealth conditions (see decision notice at [Attachment D](#)). A summary is provided below, and also against each relevant condition in the table at [Attachment B](#).
 - d. Regarding all stakeholders' suggestions to further protect aquatic ecology:
 - i. The Department considers that the objectives and outcomes of the Biosecurity Risk Management Plan and Threatened Fish Management Plan, which will have input and oversight from NSW agencies and the Department, will ensure that impacts to aquatic ecology are minimised or mitigated. The plans must include timeframes and costs required to undertake necessary work as well as performance criteria, adaptive management, reporting and evaluation (see conditions 12-16 of [Attachment D](#)).
 - ii. The Department supports the view that more can be done to protect captive-bred Macquarie Perch and Stocky Galaxias for release into the wild in the Murrumbidgee catchment. The Department has therefore included conditions for the approval holder to investigate and implement measures to protect tributaries identified as priority receiving sites for the establishment of stocking insurance populations (see condition 13 of [Attachment D](#)).
 - iii. The Department supports the need for an independent peer review of the Biosecurity Risk Management Plan and Threatened Fish Management Plan by a suitably qualified expert/s approved by the Department and has included conditions to that effect (see condition 14 of [Attachment D](#)).

- e. Regarding ANU's suggestion to have open access to operational, scientific and management monitoring data:
 - i. The Department supports this and has included conditions that require ecological and water monitoring data collected under management plans to be made publicly available as part of the approval holder's requirements to publicly report on the implementation of management plans (see conditions 9b, 15, 19 and 25 of Attachment D).
 - ii. The Department will discuss with NSW National Parks and Wildlife Service (NPWS) how ecological data collected as part of NPWS species-specific conservation actions will be made publicly available (see the proposed decision brief and letter to NSW Minister Kean at MS20-000393 for biodiversity offset payment and proposed conservation program details).
 - f. Regarding ANU's suggestion to fund NPWS staff or embed NPWS staff with Snowy 2.0, paid for by SHL:
 - i. The Department supports this suggestion and discussed the suitability of a condition to this effect with NPWS. However, NPWS advised that the lease arrangements with SHL for Kosciuszko National Park already provide for the employment of multiple NPWS staff and therefore additional staff (and conditions to that effect) were not necessary.
22. All information provided by external stakeholders will be provided to relevant Departmental line areas to inform their input into the relevant management plans.

Matters for consideration

23. Except for the matters discussed in this brief and its attachments, the matters for consideration and factors to be taken into account in making your decision remain as set out in the proposed approval decision brief and its attachments (Attachment A).
24. The Department has confirmed with the Species Information and Policy Section that all relevant statutory documents are still current and have not changed from the date of your proposed approval decision. The section noted that the new conservation advice for the Smoky Mouse has not yet been approved.
25. The Department's Environmental Audit Section and Post Approval Section were consulted on the final condition set, and the Environment Legal Branch was consulted in the preparation of this final decision package.

Bushfire impacts

26. As mentioned in the Department's impact assessment and legal considerations (Attachments A1 and A2 of Attachment A), 60 percent of Kosciuszko National Park was burnt to varying degrees during the 2019/20 bushfires and 100 percent of the proposed disturbance area was burnt. As the majority of SHL's surveys and vegetation mapping was undertaken prior to the bushfires occurring the environmental impact assessment on biodiversity values is therefore based on pre-fire conditions.
27. SHL's response to submissions (RTS) and the NSW assessment report (Attachments G64-G78 and F2 of Attachment A) were prepared after the bushfires occurred. Both reports state that the bushfires would have impacted species and communities or their habitat, that would also be impacted by the proposed action. On-ground surveys of the extent and severity of damage and impacts to biodiversity were not undertaken by SHL to inform the RTS due to safety and access restrictions.

28. The NSW Department of Planning, Industry and Environment's report on Matters of National Environmental Significance (Attachment F1 of Attachment A) included a brief assessment of impacts based on fire mapping for Kosciuszko National Park and stated that habitat for the following species and communities had been burnt to varying degrees:
- a. Alpine She-oak Skink (*Cyclodomorphus praealtus*);
 - b. Alpine Tree Frog (*Litoria verreauxii alpina*);
 - c. Broad-toothed Rat (*Mastacomys fuscus mordicus*);
 - d. Smoky Mouse (*Pseudomys fumeus*); and
 - e. Alpine Sphagnum Bogs and Associated Fens ecological community (Alpine Bogs and Fens).
29. The Smoky Mouse, Broad-toothed Rat, Alpine She-oak Skink, and Alpine Bogs and Fens are included on the Department's provisional list of species and communities that require urgent management intervention to support their protection and recovery.
30. The Department understands that the NSW Government, including NPWS, is currently undertaking surveys and mapping of bushfire-affected areas across Kosciuszko National Park to identify impacts on biodiversity, including Commonwealth-listed entities.
31. Without further information on the extent and severity of impacts, the Department cannot rule out the possibility that populations of species or communities or their habitat have been substantially reduced from pre-fire survey records. The Department acknowledges that impacts from the proposed action may now be of greater consequence to bushfire-impacted species and communities.
32. As outlined in the legal considerations document (Attachment A1 of Attachment A) you must take account of the precautionary principle. In recommending conditions of approval, the Department has considered the precautionary principle in the context of uncertainty surrounding impacts of the bushfires. The Department considers uncertainty has been, or can be addressed and reduced in the following ways:
- a. The Department's assessment included consultation with internal line areas, including the Biodiversity Conservation Division and the Threatened Species Bushfire Recovery Expert Panel. Both provided advice about the priority post-fire actions that should be considered and implemented for bushfire impacted entities. This broadly includes control of introduced predators, exclusion of herbivores from unburnt areas, and provision of artificial shelters in burnt areas, where feasible. The Department notes that the mitigation measures required by the NSW conditions aim to control introduced predators and other pests, including herbivores. The Department has a condition to ensure the relevant NSW conditions relating to biodiversity management are implemented.
 - b. SHL must consult with the Department on the preparation of the Biodiversity Management Plan (along with NSW agencies) and so the Department will have oversight of its objectives, content, timeframes for works and application. The Department's input into the plan will ensure mitigation and management is focussed in areas, on species, or on actions that will most protect or benefit impacted protected matters. This includes protecting unburnt areas that may be important refuge areas.

- c. As mentioned in the Department's impact assessment (Attachment A2 of Attachment A), SHL's revised biodiversity offset strategy was reviewed by an independent ecologist to inform NSW's assessment of ecological impacts. The independent ecologist recommended a number of changes to the biodiversity offset strategy, including specific costings toward management actions for fire affected entities. This contributed to an increase of the biodiversity offset liability from \$36 million to up to \$73.8 million.
- d. NPWS will receive the biodiversity offset payments and then be responsible for discharging the funds towards species-specific conservation actions and broad ecosystem outcomes that are aimed towards safeguarding and protecting bushfire-impacted populations and habitat. The Department's input into the development of NPWS conservation programs will also ensure actions are targeted to best protect bushfire-impacted entities that are also impacted by the proposed action (see MS20-000393). The Department notes that the indicative conservation actions proposed by NPWS are consistent with the priority actions of relevant recovery plans and threat abatement plans.

Changes to conditions

- 33. In preparing this final decision brief, the Department has had regard to comments from all parties consulted, as discussed above. As a result, the recommended conditions of approval have changed from the proposed decision (see tracked changes notice at Attachment B2). The table of conditions at Attachment B1 provides reasoning as to why conditions have been attached to the approval, as well as justifications for the changes to the proposed conditions.
- 34. The Department notes that some conditions (including standard conditions, which are not discussed in Attachment B1) were removed, or amended to rectify minor administrative errors, provide clarity to the intent of conditions, and to align definitions with terms defined in the NSW conditions. For example:
 - a. Removal of original Condition 4, which required SHL to notify the Department of the date of commencement of construction. This is now covered by Condition 28 of the approval (a standard administrative condition) as a result of changes to the definitions of 'construction'.
 - b. Removal of original Condition 29, which required SHL to report any known or potential non-compliance with the NSW conditions referred to in the Commonwealth conditions of approval. This was a duplication of the Department's standard administrative conditions on reporting incidents and non-compliance (see Conditions 34-35).
 - c. Amendments to original Condition 38, which required SHL to ensure independent audits of compliance with the conditions are conducted every 12 months. SHL indicated that the condition is onerous and unnecessary and suggested it be altered to align with the timing requirements of the NSW conditions (see Attachment C1). The Department agreed and considers that providing an independent audit of compliance with the conditions 'as requested by the Minister' is more appropriate.
- 35. Consistent with the requirements in subsection 134(4), in recommending the conditions of approval at Attachment D, the Department has considered: relevant conditions that have been imposed under the NSW approval; the information provided by SHL; and the desirability of ensuring that the conditions are a cost effective means for the Commonwealth and SHL to achieve the object of the conditions. The Department considers that the recommended conditions of approval achieve protection of matters protected by the controlling provisions for the action while being cost-effective to SHL as far as possible.

ATTACHMENTS (see electronic briefing package for complete list)

- A: Finalised proposed decision briefing package (MS20-000288)
- B: Justification of conditions of approval
- C: Responses to invitation for comment on proposed decision
- D: Approval decision notice FOR SIGNATURE
- E: Letters notifying SHL, relevant Commonwealth Ministers and the NSW Government of the approval decision FOR SIGNATURE

To: Minister for the Environment (For Decision)

Proposed Approval Decision Brief (assessment report) – Snowy 2.0 Main Works, NSW (EPBC 2018/8322)

Timing: 12 June 2020 – to allow for the required 10 business day consultation period under sections 131 and 131AA ahead of the statutory deadline for the final decision of 6 July 2020.

Recommendations:

1. That you consider the information provided in this brief, the NSW assessment report and conditions at Attachment F, the legal considerations report at Attachment A1, and the Department’s summary of impacts to Commonwealth matters at Attachment A2.

Considered / please discuss

2. That you have regard to the approved conservation advices relevant to the proposed action at Attachment H and confirm that you have done so.

Confirmed / Please discuss

3. That you agree to propose to make the decision set out at Attachment B and summarised in the table below.

Agreed / Not agreed

4. That you agree to propose to attach the conditions of approval as set out in Attachment B to the decision at recommendation 3.

Agreed / Not agreed

5. If you agree with recommendations 3 and 4, that you sign the letters at Attachment C to consult with the person proposing to take the action, relevant Commonwealth Ministers, and NSW Government on your proposed decision.

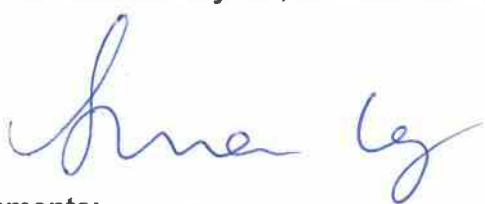
Signed / Not signed

6. That you agree to **not publish** the proposed decision (Attachment B) and an invitation for public comment on the internet under section 131A of the EPBC Act.

Agreed / Not agreed

Summary of recommendations on each controlling provision:

Controlling provisions for the action	Recommendation	
	Approve	Refuse to Approve
National heritage places (ss 15B, 15C)	Approve	
Listed threatened species and communities (ss 18, 18A)	Approve	
Listed migratory species (ss 20, 20A)	Approve	
Commonwealth action (s 28)	Approve	

The Hon Sussan Ley MP, Minister for the Environment		Date:
		12/6/20
Comments:		
Clearing Officer:	Louise Vickery	Assistant Secretary, Environment Approvals and Wildlife Trade Branch
Sent June 2020		
Contact Officer:	s22(1)(a)(ii)	Director, Southern NSW and ACT Assessments Section
		s47F(1) s47F(1) s22(1)(a)(ii)

Key Points:

1. The purpose of this submission is to seek your consideration of the proposed approval decision under Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the Snowy 2.0 Main Works project (the proposed action, described in detail from paragraph 9 below).
2. Snowy Hydro Limited (SHL – the person proposing to take the action and the proponent) owns and operates the Snowy Mountains Hydro-electric Scheme, a large-scale water storage and diversion scheme in southern New South Wales (NSW). SHL proposes to construct and operate the proposed action to increase the pumped hydro-electric electricity generation of the Snowy Scheme by 50 percent and provide large-scale energy storage capacity to the National Electricity Market (see Figure 1 at Attachment D).
3. SHL is wholly owned by the Australian Government and represented by two shareholder Ministers, the Minister for Finance and the Minister for Energy and Emissions Reduction. The Australian Government will provide \$1.38 billion in equity towards the project, subject to the project proceeding.
4. The proposed action was assessed by the NSW Government on behalf of the Commonwealth for the purposes of the EPBC Act under an accredited process, to avoid duplication of environmental assessments. The NSW Government's assessment found that, on balance, the project is in the public interest and the NSW Minister for Planning and Public Spaces approved the action on 20 May 2020, subject to a suite of conditions.
5. The NSW Infrastructure Approval (NSW conditions) includes the requirement that SHL prepare and implement various management plans in consultation with relevant government agencies and experts, and the financial contribution of up to \$85.8 million toward biodiversity and recreation compensatory measures. For the biodiversity offset payment:
 - a. Up to \$73.8 million is to be paid in four instalments to the NSW National Parks and Wildlife Service (NPWS) to compensate for the clearing of 388 hectares (ha) of *native vegetation and threatened species habitat in Kosciuszko National Park*. Approximately \$28 million will fund species-specific conservation measures for eight impacted species, and up to \$45.8 million will directly contribute to landscape-scale, ecosystem

management actions to offset all other impacted biodiversity and enhance the natural values of Kosciuszko National Park. These measures are discussed further in [Attachment A2](#).

- b. Once SHL has paid the funds to NPWS, SHL will have met its biodiversity offsetting obligations and NPWS will then determine how the funds are spent in Kosciuszko National Park. As conditions on the taking of an action cannot be imposed on a third party such as NPWS under the EPBC Act, the Department is considering entering into a separate agreement with NPWS on how these funds will be allocated to achieve long-term conservation outcomes (see [Attachment F1](#)).
 - i. Both parties have agreed that the Department will be consulted on the development of the species-specific conservation program for Commonwealth listed species and communities.
 - ii. However, the Department proposes that you have approval responsibilities for how the rest of the biodiversity funds will be delivered on ecosystem management measures and other species-conservation actions and has prepared briefing and a letter (MS20-000393) to the NSW Energy and Environment Minister, the Hon Matt Kean MP, advising of your preferences.
6. The Department recommends that you propose to approve the proposed action and require the proponent to comply with the relevant sections of the NSW conditions that the Department considers are necessary to avoid, minimise and offset adverse impacts on nationally protected matters, including the environment generally, as this is a Commonwealth action.
7. The Department has recommended additional conditions that are considered necessary and convenient to protect matters protected under the relevant parts of the EPBC Act ([Attachment B](#)).
8. Relevant statutory documents for your consideration (conservation advices, recovery plans, threat abatement plans, and National Heritage Management Principles) are at [Attachment H](#) and are considered further in the legal considerations at [Attachment A1](#).

Proposed action

9. The proposed action is located primarily within the northern section of Kosciuszko National Park in the Australian Alps in NSW, between Cooma and Tumut (see Figure 2 at [Attachment D](#)). The western portion of the action area is steep ravine country, and the eastern portion is on a plateau.
10. The majority of the existing Snowy Mountains Hydro-electric Scheme was constructed between 1949 and 1974. The scheme consists of nine power stations (two of which are underground), 16 major dams, 80 km of aqueducts, and 145 km of interconnected tunnels (see Figure 1 at [Attachment D](#)). The Snowy 2.0 project builds upon the existing scheme.
11. The proposed action involves the excavation and construction of approximately 27 kilometres (km) of underground power waterway tunnels, chambers and shafts to transfer water between the Tantangara and Talbingo reservoirs (see Figure 3 at [Attachment D](#)). A power station will also be constructed approximately 800 metres (m) underground. The proposed action will increase the generating capacity of the Snowy Scheme by up to 2,000 megawatts (MW) and provide up to 350 gigawatt hours of energy storage for future electricity generation.

Construction

12. The main locations for construction works are shown in Figures 4-9 at [Attachment D](#) and are summarised below:
- a. **Tantangara Reservoir** – this is the upper (eastern) reservoir for Snowy 2.0 at a height of 1229 m. Permanent infrastructure at this location will primarily be underground or within the reservoir and includes the upstream headrace tunnel connecting Tantangara Reservoir with the underground power station, the water intake structure, and a fish control structure upstream of the reservoir wall. The surface components in this area are all temporary and include a construction compound, accommodation camp for 500 workers, and ancillary facilities and utilities.
 - b. **Plateau** – this area will support the underground headrace tunnel, two communication cables that will be trenched underground, and a fish barrier on Tantangara Creek.
 - c. **Marica** – this area will be used primarily for the construction of permanent underground infrastructure associated with the underground power station. This includes the power station complex, turbines, transformers, vertical ventilation shaft, and headrace tunnel and surge shaft. Surface components are all temporary and include a construction compound, accommodation camp for 100 workers, and ancillary facilities and utilities.
 - d. **Lobs Hole** – this area is the main laydown and construction area for Snowy 2.0. It will also become the main entrance (portal) to the underground power station during operation. Permanent infrastructure includes the main access tunnel, the emergency egress, cable and ventilation tunnel and portal, all of which will be underground. Permanent infrastructure above ground include water treatment facilities and access roads. All other surface components are temporary, including an accommodation camp for around 1250 workers and other ancillary facilities and utilities.
 - e. **Talbingo Reservoir** – this is the lower (western) reservoir for Snowy 2.0 at a height of 546 m. Permanent infrastructure is primarily underground or within the reservoir and will include the downstream tailrace tunnel connecting the underground power station and Talbingo Reservoir, the water intake structures and gates to control water flow. Surface components in this area are all temporary and include construction compounds and other ancillary facilities and utilities.
 - f. **Rock Forest** – this area is outside of Kosciuszko National Park, near Providence Portal and comprises private property under lease to SHL for use as a logistics and laydown site during construction.
13. The majority of project infrastructure will be constructed underground. Tunnels and caverns will be excavated using at least two tunnel boring machines and drill and blast methods. It is estimated that 8.9 million cubic metres of soil and rock material (spoil) will be excavated. Spoil will be permanently emplaced in five designated areas, either in the two reservoirs or on land, over an area of 85 ha (see Figures 10-13 at [Attachment D](#)).
14. The *maximum surface disturbance area* required for both permanent infrastructure and temporary components is approximately 504 ha, which comprises 467 ha within Kosciuszko National Park and 37 ha at the Rock Forest logistics site. This was reduced from 1680 ha during the NSW assessment process as a result of relocating infrastructure from environmentally sensitive Plateau areas to less-sensitive areas and relocating roads and communication cables to along existing cleared access tracks where possible.

15. The current disturbance area is based on a reference design that sits within a broader construction envelope to allow flexibility in micro-siting during construction. The disturbance area is likely to be reduced during detailed design.
16. Approximately 2000 personnel are expected to be employed during peak construction. Construction will be undertaken 24 hours a day, 365 days a year, for approximately 6 years.
17. Once construction is completed, temporary components will be removed, and on-going rehabilitation and revegetation programs will be implemented, including of spoil emplacement areas, which will be shaped into natural landforms and rehabilitated to complement the existing landscape in Kosciuszko National Park.

Operation

18. Construction, testing and commissioning is estimated to take 6 years to complete, with staged operation commencing in 2025. The *operational surface footprint (post-construction and rehabilitation)* will be about 92 ha around the reservoirs. Operation of the proposed action is expected to continue for the 100-year design life of the project.
19. Once operational, Snowy 2.0 will be capable of generating quick start electricity and pumping and storing water for future energy generation:
 - a. In generating mode, water will flow from Tantangara Reservoir through the headrace tunnel and fall via gravity into the surge tank, spinning the turbines in the underground power station to create electricity, with the water continuing through to Talbingo Reservoir.
 - b. In pumping mode, water from Talbingo Reservoir will be drawn into the tailrace tunnel where the turbines in the power station will spin in the reverse direction to push the water up to Tantangara Reservoir where it can be stored and used for energy generation when needed (see Figure 14 at [Attachment D](#)).
20. All operations will be controlled remotely by SHL and facilitated by the Snowy Mountains Control Centre in Cooma. Approximately 8-16 personnel will be employed for ongoing operation.

Associated actions

21. The proposed action is supported by three additional actions that have been referred under the EPBC Act: Exploratory Works and the Polo Flat Segment Factory proposed by SHL; and the Transmission Connection Project proposed by NSW Electricity Networks Operations Pty Limited (Transgrid).
22. In March 2018, Snowy 2.0 was declared Critical State Significant Infrastructure (CSSI) under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The NSW CSSI declaration covers all actions associated with Snowy 2.0, including transmission lines and ancillary infrastructure works.
23. The *cumulative disturbance area* of the Exploratory Works and Main Works is 630 ha, 597 ha of which is within Kosciuszko National Park.

Exploratory Works (EPBC 2018/8217)

24. The Exploratory Works proposal includes geotechnical and geophysical discovery works to inform the construction techniques for the Main Works. The *Exploratory Works disturbance area* is approximately 126 ha and covers the construction of an exploratory tunnel and portal and other and activities like spoil management. The ~2.5 km exploratory

tunnel at Lobs Hole will become the main access tunnel to the underground power station from the surface.

25. The Exploratory Works was referred to the Department in 2018 and was determined to be not a controlled action, meaning no further assessment or approval was required under the EPBC Act.

26. The Exploratory Works was approved with conditions by NSW in February 2019.

Segment Factory (EPBC 2019/8481)

27. The Polo Flat Segment Factory proposal is located in an industrial area near Cooma, NSW and includes the construction and operation of a factory to manufacture the tunnel lining segments for the Exploratory Works and Main Works. The Polo Flat Segment Factory was referred to the Department in 2019 and was determined to be not a controlled action.

28. On 8 April 2020, SHL's contractor, Future Generation Joint Venture (FGJV) applied for a permit to be issued under section 201 of the EPBC Act for the construction of the Polo Flat Segment Factory. Part 13 of the EPBC Act states that a permit is required for any action that will kill, injure, take, trade, keep or move a listed species or community on Commonwealth land. SHL owns the site where the Segment Factory will be located and is a Commonwealth entity, therefore the site is Commonwealth land.

- a. On 29 April 2020, a permit was issued under section 201 of the EPBC Act, subject to conditions, allowing FGJV to kill, injure or move individuals of two listed species and a listed ecological community at the Polo Flat Segment Factory (Permit E2020/0174 refers).

29. The Segment Factory was approved with conditions by NSW in March 2020.

Transmission Connection (EPBC 2018/8363)

30. The Transmission Connection project involves the construction and operation of new electricity transmission lines and an electricity substation to the west of Talbingo Reservoir. It will connect Snowy 2.0 to the existing transmission network outside of Kosciuszko National Park at Nurenmerenmong, east of Tumbarumba.

31. The Transmission Connection project was referred to the Department in 2018 and was determined to be a controlled action on 5 April 2019, to be assessed by the NSW Government under an accredited assessment process. Transgrid is currently preparing the EIS, which will quantify impacts to Commonwealth matters.

EPBC Act referral

32. On 30 October 2018, the proposed action (Main Works) was referred by SHL under the EPBC Act. The referral was published on the Department's website on 6 November 2018 and public comments were invited until 20 November 2018. Comments were also invited from other Commonwealth ministers. Two public submissions were received, as well as comments from Geoscience Australia on behalf of the then Minister for Industry, Science and Technology. Submissions raised issues regarding:

- a. the need to avoid and quantify impacts on listed threatened species and communities;
- b. the potential for the proposed action to partially dewater the regional groundwater system, resulting in possible water level changes at sensitive receptors such as Alpine Bogs and Fens;

- c. impacts on National Heritage places and the need for the proponent to have ongoing engagement with the Australian Heritage Council throughout the assessment; and
 - d. the adequacy of offsets for unavoidable impacts.
33. On 22 November 2018, the then NSW Department of Planning and Environment (now Department of Planning, Industry and Environment - DPIE) advised that, if determined to be a controlled action, the proposal could be assessed under an accredited assessment process for the purposes of section 87 of the EPBC Act.
34. On 5 December 2018, the delegate determined that the proposed action was a controlled action under the EPBC Act as it was likely to have a significant impact on listed threatened species and communities (sections 18 and 18A), listed migratory species (sections 20 and 20A), national heritage (sections 15B and 15C), and is to be taken by a Commonwealth agency (section 28). As SHL is a Commonwealth agency, the impacts of the action on the whole of the environment require assessment under the EPBC Act.
35. On the same date, the delegate determined that the proposed action would be assessed by the NSW Government under an accredited assessment process, being Part 5, Division 5.2 (state significant infrastructure) of the EP&A Act.

NSW accredited assessment

36. Following the controlled action decision, the NSW Government undertook the assessment of the proposed action on behalf of the Commonwealth and in accordance with the EP&A Act.
37. Key steps in the NSW assessment process included:
- a. Public exhibition of SHL's Environmental Impact Statement (EIS) for 42 days between 26 September 2019 and 6 November 2019 (Attachments G1-G63).
 - i. A total of 222 submissions were received, including 10 from NSW agencies and councils. Five percent of submissions supported the proposed action, 73 percent objected, and 22 percent provided comments.
 - ii. Key issues raised included: the merits, justification, and economic and social benefits of the project; impacts to Kosciuszko National Park; impacts on biodiversity, water, and biosecurity risks; and project design.
 - b. In February 2020, submission of a Response to Submissions (RTS) document by SHL to address issues raised during public exhibition, as well as a preferred infrastructure report that was prepared post-exhibition following refinement of the project design (Attachments G64-G78).
 - c. The NSW Government's review of SHL's assessment documents, preparation of the NSW assessment report for the project (Attachment F2), and determination by the NSW Minister for Planning and Public Spaces including the NSW conditions (Attachment F3).
38. On 20 May 2020, the project was approved under the EP&A Act and published on DPIE's website on 21 May 2020. This started the 30-business day decision timeframe under the EPBC Act, with a final decision due on 6 July 2020.
39. On 27 May 2020, DPIE wrote to the Department advising that NSW had approved the Main Works (Attachment F1):
- a. DPIE concluded that the likely impacts of the proposed action on protected matters would not be unacceptable, provided the action was taken in a manner consistent with

the avoidance, mitigation and offset measures proposed by SHL, and in accordance with the recommended NSW conditions.

- b. DPIE recommended that the Commonwealth endorse the NSW conditions relating to the management of biodiversity, heritage, and landform rehabilitation. The Department's assessment concluded that the NSW conditions that relate to management of spoil, water, and amenity should also be endorsed for the purposes of the EPBC Act.

Impacts

40. A summary of impacts to matters of national environmental significance and the environment more generally, as well as proposed mitigation measures and offsets, is provided at [Attachment A2](#) and in Chapter 6 of the NSW assessment report at [Attachment F2](#).

Consultation

Internal

41. The following line areas were consulted on the Department's input into the NSW draft condition set and in the preparation of this proposed decision briefing package and conditions (see [Attachment E](#)):
 - a. Environment Legal Branch (and Australian Government Solicitor);
 - b. Post Approvals Section in EAD;
 - c. Environment Compliance Branch;
 - d. Protected Species & Communities Branch;
 - e. Office of Water Science;
 - f. Heritage Branch;
 - g. Environmental Biosecurity Office; and
 - h. Office of the Threatened Species Commissioner.
42. Line areas have indicated they would like to be consulted on the preparation of any relevant management plans required by NSW and under an EPBC Act approval; this is discussed further in the legal considerations at [Attachment A1](#) where recommended conditions have been addressed.

External engagement

43. Three stakeholder groups contacted the Department following the NSW approval decision to discuss their concerns about the proposed action ([Attachment I](#)). Departmental staff attended the following (virtual) meetings:
 - a. 26 May 2020 – Associate Professor Mark Lintermans, University of Canberra, regarding impacts to aquatic ecology and the risk of spread of invasive fish and viruses (a previous discussion occurred on 3 March 2020);
 - b. 3 June 2020 – representatives of the National Parks Association of NSW, a community-based advocacy and community engagement organisation advocating for the protection of natural areas in NSW, regarding the environmental impacts and economic merits of the project, and calling for the proposed action to be refused; and
 - c. 4 June 2020 – academics and researchers from the Australian National University, to discuss the approval process (including that Snowy 2.0 should be assessed as a single

project not as separate components), impacts to the environment, funding for NPWS, and how the NSW conditions could be improved upon.

44. The Department acknowledges the above stakeholder concerns and notes that these concerns were also raised during the NSW assessment process and responded to in SHL's RTS report. For issues that fall under the responsibility of the Commonwealth under the EPBC Act, the Department is satisfied that the proposed conditions are appropriate to protect Commonwealth matters. Any currently unresolved impact and mitigation issues can be addressed through the NSW conditions and objectives of required detailed management plans:
- a. As mentioned in paragraph 41, the Department's line areas will be consulted on the content and performance indicators in relevant management plans to ensure good environmental outcomes are achieved for protected matters.
 - b. SHL cannot begin construction unless certain plans have been prepared to the satisfaction of and approved by NSW.
 - c. The Department considers that the Commonwealth does not need to have an approval role for any of the management plans if they are already being approved by NSW and will instead be consulted on preparation of management plans where they relate to Commonwealth matters.
45. The Department has prepared letters to the following stakeholders (including other Commonwealth Ministers with administrative responsibilities) for you to consult on your proposed decision. The statutory timeframe for stakeholders to provide comment is within 10 business days of your invitation:
- a. The Prime Minister, the Hon Scott Morrison MP;
 - b. The Deputy Prime Minister and Minister for Infrastructure, Transport and Regional Development, the Hon Michael McCormack MP;
 - c. The Minister for Energy and Emissions Reduction (and shareholder minister of SHL), the Hon Angus Taylor MP;
 - d. The Minister for Finance (and shareholder minister of SHL), Senator the Hon Mathias Cormann;
 - e. The Minister for Indigenous Australians, the Hon Ken Wyatt AM MP;
 - f. The Minister for Industry, the Hon Karen Andrews MP; and
 - g. The proponent, Snowy Hydro Limited.
46. A letter notifying the NSW Minister for Planning and Public Spaces, the Hon Rob Stokes MP, of your proposed decision has also been prepared.
47. Under section 131A of the EPBC Act, you may invite public comments on your proposed decision and any conditions that you are proposing to attach to the approval. Seeking comments from the public is discretionary and is not recommended in this case. The Department considers that the views of the public in relation to the proposed action are well understood, noting the NSW assessment process included a 42 day public exhibition period. The Department considers that consultation on your proposed decision is unlikely to raise new issues.

Department's recommendation

48. As stated in the key points above, the Department recommends you propose to approve the proposed action and adopt NSW conditions that are necessary to avoid, minimise and offset adverse impacts on nationally protected matters, including the environment generally.
49. The Department has reviewed the relevant information, including suggestions from line areas (Attachment E), and has recommended additional conditions that are considered necessary to protect relevant protected matters and ensure transparency in the approval process. The justification for these conditions is provided in the legal considerations and impact assessment at Attachment A1 and A2.

ATTACHMENTS (see electronic briefing package for complete list)

- A:** Department's assessment documents
- B:** Proposed approval decision notice
- C:** Letters notifying the person taking the action, relevant Commonwealth Ministers, and NSW Government of the proposed approval decision
- D:** Maps and figures
- E:** Internal advice
- F:** NSW Government's assessment and decision documents, including recommendation to the Commonwealth
- G:** SHL's environmental impact assessment documents
- H:** Relevant conservation advices, recovery plans, threat abatement plans, and National Heritage Management Principles
- I:** Meeting requests and additional information from external stakeholders

CONSIDERATIONS RELATING TO DECISION-MAKING UNDER PART 9 OF THE EPBC ACT – SNOWY 2.0 MAIN WORKS, NSW (EPBC 2018/8322)

Using this report

1. This Legal Considerations Report (report) should be read in conjunction with the covering brief and other attachments. This report adopts the terminology defined in the brief (for example, the proponent, proposed action, etc). All attachments refer to attachments to the brief.
2. This report identifies the matters that you must and may consider in making your proposed decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The report also sets out the Department's assessment of how, in approving the proposed action and attaching the proposed conditions to the approval, you would not be acting inconsistently with any applicable recovery plans, threat abatement plans, management plans, management principles and international obligations.
3. In preparing this report, the Department took into account the information in Attachments E-H.

Recommendation

4. The Department concludes in this report, and recommends that you agree, that the proposed action should be approved under sections 130 and 133 of the EPBC Act subject to the proposed conditions specified in Attachment B.

Mandatory Considerations

5. Under section 136, in deciding whether or not to approve an action and what conditions to attach to the approval, you must consider the following, so far as they are not inconsistent with any other requirement of Subdivision B, Division 1 of Part 9 of the EPBC Act:
 - a. matters relevant to any matter protected by the controlling provisions for the actions; and
 - b. economic and social matters.

Matters relevant to any matter protected by the controlling provisions for the action (EPBC Act, s. 136(1)(a))

6. The proposed action was referred to the Department by Snowy Hydro Limited (SHL – the person proposing to take the action and the proponent) on 30 October 2018. The proposed action was determined to be a controlled action on 5 December 2018, on the basis that the action is likely to have a significant impact on certain matters protected under the EPBC Act. The controlling provisions for the proposed action are:
 - a. sections 15B and 15C (National Heritage places);
 - b. sections 18 and 18A (listed threatened species and communities);
 - c. sections 20 and 20A (listed migratory species); and
 - d. section 28 (Commonwealth action).

7. On the same date, it was determined that the proposed action would be assessed by the New South Wales (NSW) Department of Planning, Industry and Environment (DPIE) under an accredited assessment process, being Division 5.2 (State Significant Infrastructure) of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).
8. On 20 May 2020, the NSW Minister for Planning and Public Spaces approved the Main Works under section 5.19 of the EP&A Act, subject to conditions in the Infrastructure Approval (NSW conditions) (Attachment F). The Department was advised of the decision on the same day. The NSW decision was published on DPIE's website on 21 May 2020, which started the Commonwealth decision timeframe on 22 May 2020.
9. On 27 May 2020, DPIE formally wrote to the Department to advise that NSW had approved the Main Works. It included DPIE's consideration of matters of national environmental significance (MNES) and a letter from the NSW National Parks & Wildlife Service (NPWS) outlining governance arrangements for how biodiversity offset funds will be managed (Attachment F1).
10. In preparing this report, the Department has considered the following NSW assessment documents and other information available on the NSW DPIE Major Projects website: <https://www.planningportal.nsw.gov.au/major-projects/project/12891>
 - a. Proponent's Environmental Impact Statement (EIS) (September 2019) (Attachments G1-63);
 - b. Proponent's response to submissions (RTS) and Preferred infrastructure report (February 2020) (Attachments G64-78);
 - c. Proponent's additional information (February and April 2020) (Attachments G79-80);
 - d. NSW Final Assessment Report and NSW conditions (20 May 2020) (Attachments F2 & F3); and
 - e. DPIE's consideration of MNES report (27 May 2020) and recommendation to approve the project under the EPBC Act (Attachment F1).
11. Additional documentation cited in the briefing package is attached to the brief.
12. The NSW assessment report and DPIE's consideration of MNES (Attachments F1 & F2) are the 'assessment report' for the purposes of section 130(2) of the EPBC Act. They summarise impacts on the environment, including matters protected by the above controlling provisions. The findings and conclusions of the NSW assessment report, as they relate to those matters, are outlined below and discussed further at Attachment A2.
13. The NSW assessment report concludes that the likely impacts of the proposed action on MNES will not be unacceptable, provided the action is conducted consistently with avoidance, mitigation and offset measures proposed by the proponent and undertaken in accordance with the relevant conditions.

Table 1 Summary of impacts to Commonwealth matters

EPBC Act Controlling Provision	Relevant sections of NSW assessment report, and proponent's assessment documentation	Acceptability of Impacts
National Heritage places (s15B & s15C)	<p><u>Proponent's documentation</u></p> <p>Impacts to National Heritage places are addressed in chapter 6.6 of the EIS (Attachment G3). Impacts to the values of the Australian Alps National Parks and Reserves National Heritage place (AANPR) are considered minor and relate to geodiversity, ecology, cultural heritage, landscape character and aesthetic values. The EIS states that these impacts will be confined to very small areas within the project disturbance footprint and vantage points overlooking the affected landscapes. It states that the proposed action will positively add to the values through scientific research and heritage findings.</p> <p>The EIS states that the proposed action would have positive impacts on the Snowy Mountains Scheme National Heritage place by expanding on the major civil engineering achievement, which is one of the key National Heritage values.</p> <p><u>NSW assessment report</u></p> <p>Section 6.6 of the NSW assessment report (Attachment F2) finds that the proposed action will have minor impacts on the National Heritage values of the AANPR by impacting on glacial block streams (boulder and cobble deposits formed by freeze and thaw cycles) for the widening of Lobs Hole Ravine Road.</p> <p>The NSW assessment report does not discuss impacts to the Snowy Hydro Scheme National Heritage place.</p> <p>NSW conditions 34-36 require SHL to undertake stakeholder management and prepare and implement a heritage management plan to protect Indigenous, historic, and some natural heritage items (Attachment F3).</p> <p><u>Department's briefing package</u></p> <p>The Department's assessment of impacts to National Heritage places is discussed at Attachment A2 (paragraphs 15-33). The Department considers that the proposed action will have a significant impact on the National Heritage values of the AANPR but not on the National Heritage values of the Snowy Mountains Scheme.</p> <p>The Department concluded that the impact on the AANPR National Heritage place will not be unacceptable if the action is undertaken in accordance with the proposed conditions to achieve the required heritage objectives and outcomes</p>	Acceptable

	(Attachment B). The Department concluded that the impact on the Snowy Mountains Scheme National Heritage place would not be unacceptable.	
Listed threatened species and communities (s18 & s18A)	<p><u>Proponent's documentation</u></p> <p>Impacts to threatened species and communities are addressed in chapter 6.3 of the EIS (<u>Attachment G3</u>) and the biodiversity development assessment report (<u>Attachments G31-G41</u>); and were revised in the RTS (<u>Attachments G64 and G66-G67</u>) and biodiversity offset strategy (<u>Attachment G75</u>). The 'survey area' referred to in this report is defined as the broad 9000 ha area over which biodiversity values were mapped by the proponent.</p> <p>The proponent concluded that the proposed action will have a significant impact on:</p> <ul style="list-style-type: none"> • Smoky Mouse (<i>Pseudomys fumeus</i>) (critically endangered) <p>The proponent's regional surveys recorded the species at 78 locations, which represents the largest known extant population of the species. Approximately 6000-7000 ha of habitat was mapped across the survey area. The proposed action will impact 226.79 ha of predicted habitat for the species. Approximately 84.29 ha of habitat will be cleared, and 142.5 ha will be indirectly impacted from weed invasion, fragmentation, feral animals, increased predation, pathogens, and vehicle strikes. It is estimated that 90% (1593 ha) of habitat within the survey area was burnt during the 2019/20 fires. The size and extent of the population in Kosciuszko National Park post 2019/20 bushfires is unknown.</p> <p>The proponent concluded that the proposed action will have a significant impact on the Smoky Mouse by having a large direct impact to habitat critical to the survival of the species.</p> <ul style="list-style-type: none"> • Alpine Tree Frog (<i>Litoria verreauxii alpina</i>) (vulnerable) <p>The proponent recorded over 300 individuals during targeted surveys, including an additional 1800 tadpoles. The proposed action will impact 54.41 ha of habitat for the species. Approximately 22.87 ha of breeding and foraging habitat will be cleared and an additional 31.54 ha will be indirectly impacted by weed invasion, feral animals, increased predation, pathogens, sedimentation, and hydrological changes. It is estimated that 9.8 percent (70 ha) of habitat within the survey area was burnt during the</p>	Acceptable

	<p>2019/20 bushfires. The size and extent of the population in Kosciuszko National Park post 2019/20 bushfires is unknown.</p> <p>The proponent concluded that the proposed action will have a significant impact on the Alpine Tree Frog by having a large direct impact to unburnt refuge habitat in Kosciuszko National Park that is considered habitat critical to the survival of the species.</p> <p><u>NSW assessment report</u></p> <p>Impacts of the proposed action on listed threatened species and communities are discussed in section 6.4 of the NSW assessment report (<u>Attachment F2</u>), in the independent expert advice at Attachment F of the NSW assessment report, and in DPIE's consideration of MNES (<u>Attachment F1</u>).</p> <p>The NSW assessment report confirmed that the biodiversity impact assessment for threatened species and communities complies with the NSW Biodiversity Assessment Method. In addition to the Smoky Mouse and Alpine Tree Frog, the NSW assessment concluded that the proposed action would have a significant impact on the following three species:</p> <ul style="list-style-type: none"> • Alpine Sphagnum Bogs and Associated Fens ecological community (Alpine Bogs and Fens) (endangered). <p>Approximately 86.13 ha of the community has been mapped across the survey area and occurs in small patches. The proposed action will clear 1.03 ha of the community, and indirectly impact 4.41 ha from weed invasion, feral animals, sedimentation and changes to hydrology. The NSW assessment report indicates that a further 6.9 ha of the community may be subject to hydrological changes from groundwater drawdown. It is estimated that 56 percent of the community mapped within the survey area was severely burnt during the 2019/20 bushfires.</p> <ul style="list-style-type: none"> • Broad-toothed Rat (<i>Mastacomys fuscus mordicus</i>) (vulnerable) <p>The proposed action will impact approximately 161.97 ha of predicted habitat for the species. Approximately 61.47 ha of habitat will be cleared and 100.5 ha will be indirectly impacted from weed invasion, feral animals, increased predation, pathogens, and vehicle strikes. The proponent estimates that approximately 34 percent of habitat within the survey area was burnt during the 2019/20</p>	
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	<p>bushfires but this has not been confirmed in the NSW assessment report. The size and extent of the population in Kosciuszko National Park post 2019/20 bushfires is unknown.</p> <ul style="list-style-type: none"> Alpine She-oak Skink (<i>Cyclodomorphus praealtus</i>) (endangered) <p>The proposed action will impact 213.16 ha of habitat for the species. Approximately 80.83 ha of habitat will be cleared and 132.33 ha will be indirectly impacted from weed invasion, feral animals, increased predation, pathogens, and vehicle strikes. It is estimated that approximately 35% (779.5 ha) of habitat within the survey area was burnt during the 2019/20 bushfires. The size and extent of the population in Kosciuszko National Park post 2019/20 bushfires is unknown.</p> <p>The NSW assessment concluded that the proposed action would not have a significant impact on the following Commonwealth-listed threatened species for the purposes of the EPBC Act:</p> <ul style="list-style-type: none"> Mauve Burr-daisy (<i>Calotis glandulosa</i>) (vulnerable); Clover Glycine (<i>Glycine latrobeana</i>) (vulnerable); Hoary Sunray (<i>Leucochrysum albicans</i> subsp. <i>tricolor</i>) (endangered); Spot-tailed Quoll (<i>Dasyurus maculatus</i> (SE mainland population)) (endangered); Booroolong Frog (<i>Litoria booroolongensis</i>) (endangered); and Macquarie Perch (<i>Macquaria australasica</i>) (endangered). <p>The NSW assessment report concludes that impacts have been reduced as much as possible through project design refinement and recommended a number of conditions to avoid, mitigate, rehabilitate, monitor, and offset impacts.</p> <p>The NSW assessment report and DPIE's report on MNES (Attachment F1 and F2) did not include an assessment of impacts on the Macquarie Perch against the Significant impact guidelines 1.1 but noted that the introduction of Redfin Perch into the Murrumbidgee River could result in significant stress to the Macquarie Perch population. The NSW conditions also require specific mitigation and offset actions for the Macquarie Perch.</p>	
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	<p>NSW conditions 12-13 require SHL to offset residual significant impacts on the above terrestrial matters by paying money to the NPWS, which will then fund targeted conservation actions (developed in consultation with the Department) within Kosciuszko National Park. The offset amount was calculated based on the costing of species-specific management actions by SHL, NSW agencies and an independent biodiversity expert (Attachment F of Attachment F2).</p> <p>NSW conditions 15-16 require additional offset payments for Alpine Bogs and Fens, should negligible changes to groundwater and ecosystem functionality be detected through monitoring.</p> <p>NSW conditions 17-19 require SHL to prepare and implement a biodiversity management plan in consultation with the Department, to mitigate indirect impacts to terrestrial biodiversity.</p> <p>NSW conditions 20-24 require SHL to undertake mitigation and management measures to minimise biosecurity risks for the Macquarie Perch, and implement a captive breeding program for the species.</p> <p>The NSW assessment concluded that the biodiversity conditions provide an effective, reasonable and achievable method to manage and mitigate the likely impacts to the identified listed species and ecological community and, where impacts are unavoidable, provide a mechanism to secure biodiversity offsets.</p> <p><u>Department's briefing package</u></p> <p>The Department's assessment of impacts to threatened species and communities is discussed at Attachment A2 (paragraphs 34-181). Department considers that the Macquarie Perch is likely to be significantly impacted by the proposed action (from pest species potentially establishing in the species' habitat), in addition to the four species and the ecological community identified by the NSW assessment.</p> <p>The Department concluded that the proposed action will not have an unacceptable impact on the six threatened species and communities if it is undertaken in accordance with the proposed conditions to achieve the required objectives and outcomes (Attachment B).</p>	
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<p>Listed migratory species (s20 & s20A)</p>	<p><u>Proponent's documentation</u></p> <p>Impacts to migratory species are addressed in chapter 6.3 of the EIS (<u>Attachment G3</u>), the biodiversity development assessment report (<u>Attachments G31-G41</u>), and the RTS (<u>Attachments G66-G67</u>).</p> <p>Three migratory species were recorded during surveys for the proposed action, and the proponent determined that no significant impacts were likely:</p> <ul style="list-style-type: none"> • Latham's Snipe (<i>Gallinago hardwickii</i>) Non-breeding migratory species. The species was recorded 58 times (107 individuals) during surveys, usually foraging singly or in pairs in wetlands across the survey area. The proposed action will directly impact on 81.86 ha of habitat for the species. • Satin Flycatcher (<i>Myiagra cyanoleuca</i>) Nine individuals were recorded at five locations across the Plateau and Marica areas in tall forest and grassy woodlands and were observed nesting at one location. No important habitat or important populations occur. • White-throated Needletail (<i>Hirundapus caudacutus</i>) Exclusively aerial species that breeds in Asia but widespread across eastern and south-eastern Australia. The species was recorded flying over the site on three occasions. <p><u>NSW assessment report</u></p> <p>Impacts to migratory species were not addressed in the main NSW assessment report (<u>Attachment F2</u>). A brief summary was provided in DPIE's consideration of MNES at <u>Attachment F1</u> but no conclusions were drawn on the acceptability of impacts.</p> <p>There are no specific NSW conditions to avoid, mitigate, or offset impacts to migratory species.</p> <p><u>Department's briefing package</u></p> <p>The Department's assessment of impacts to migratory species is discussed at <u>Attachment A2</u> (paragraphs 182-207). It considers that the proposed action will have a significant impact on the Latham's Snipe as it will impact an ecologically significant proportion of the population and important habitat for the species. However, these impacts can be mitigated through the broader landscape-scale measures proposed in the NSW conditions to manage</p>	<p>Acceptable</p>
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	<p>biodiversity impacts and rehabilitate habitat across the disturbance area.</p> <p>The Department concluded that the proposed action will not have an unacceptable impact on the Latham's Snipe if it is undertaken in accordance with the proposed conditions to achieve the required objectives and outcomes (Attachment B). The Department also concluded that the proposed action will not have an unacceptable impact on the Satin Flycatcher or White-throated Needletail.</p>	
Commonwealth action (s28)	<p><u>Proponent's documentation</u></p> <p>Impacts to the environment are addressed throughout the EIS and RTS (Attachment G).</p> <p>The proponent has addressed impacts to water; terrestrial and aquatic ecology; soils, contamination and geodiversity; heritage; traffic and transport; amenity, hazards and air; and social and economic considerations, and provided supporting technical reports on each aspect. Impacts were reduced following consultation and project design refinement.</p> <p><u>NSW assessment report</u></p> <p>The NSW assessment report (Attachment F2) indicates that NSW is satisfied that SHL has designed the project to minimise its impacts on the environment but acknowledges that there will still be adverse impacts.</p> <p>The NSW assessment considered submissions from key stakeholders, expert advice from NSW agencies, and independent expert advice on spoil emplacement, water quality, aquatic ecology and groundwater in reaching its conclusions.</p> <p>Chapter 6 of the NSW assessment report outlines the potential residual impacts on the environment and concludes that a suite of conditions is required to mitigate and manage the impacts of the action on the environment (see Attachment F3).</p> <p><u>Department's briefing package</u></p> <p>The Department's assessment of impacts to the environment is discussed at Attachment A2 (paragraphs 208-280). It took into account the proponent's and NSW's assessment on the above issues and concluded that the proposed action will not have an unacceptable impact on the environment if it is undertaken in accordance with the proposed conditions to achieve the required objectives and outcomes (Attachment B).</p>	Acceptable

Economic and social matters (EPBC Act, s. 136(1)(b))

14. In deciding whether or not to approve the proposed action and what conditions to attach to the approval, you must consider economic and social matters, so far as they are not inconsistent with any other requirement of Subdivision B, Division 1 of Part 9 of the EPBC Act.
15. Information on economic and social matters was primarily obtained from the NSW assessment report (Attachment F2); EIS (Attachments G2-3 and G63) and RTS (Attachments G64-65). The key issues are discussed below.

Economic matters

16. The Australian Energy Market Operator's (AEMO, the national transmission planner) 2018 Integrated System Plan (ISP) forecast a transition in the energy sector from coal-fired (thermal) generation to renewables. The ISP found that a portfolio approach of supply resources, including both retention of existing resources and continued growth of utility-scale renewable generation, energy storage, distributed energy resources, flexible thermal capacity and transmission development to be the most efficient approach to provide cost-effective and reliable electricity supply to the National Electricity Market (NEM) over the next 20 years. Snowy 2.0 is one of the only committed projects that could make a substantial contribution to the NEM through the supply of up to 2,000 MW of dispatchable energy.
17. SHL contends that Snowy 2.0 has the following benefits when compared to alternatives in meeting the immediate requirements of the NEM:
 - a. no new dams are required, because Snowy 2.0 uses two existing reservoirs which are of a scale that can provide up to 350,000 megawatt hours of storage;
 - b. SHL has secured tenure for the project and developed the project to a point that it can be delivered by the mid-2020s when storage is required by the NEM;
 - c. the project will be integrated with and leverage off the capabilities of the existing Snowy Scheme; and
 - d. the project is located between the two largest load centres in the NEM (Sydney and Melbourne) and in proximity to renewable energy zones in south western NSW and north western Victoria.
18. Snowy 2.0 has been subject to detailed cost-benefit analysis, market modelling and expert advice, including:
 - a. a feasibility study conducted by SHL (December 2017);
 - b. independent market modelling by Marsden Jacob Associates (December 2017 and December 2018), which suggested that:
 - i. Snowy 2.0 would provide increasing market benefits and associated energy price reductions to consumers as the level of intermittent generation increases in the NEM; and
 - ii. Snowy 2.0 is the cheapest option for the NEM to gain access to both the necessary firm capacity and large-scale storage, within a single project.
 - c. a final investment decision business case conducted by SHL (December 2018).

19. The NSW assessment report ([Attachment F2](#)) acknowledges that a number of energy experts and other stakeholders (e.g. National Parks Association of NSW; NPA) have been extremely critical of the benefits of Snowy 2.0, stating that it is inefficient, uneconomic, and there are better alternatives that can facilitate Australia's transition to a low emission economy. These concerns were also passed onto the Department during the assessment process and discussed in meetings with key stakeholders ([Attachment I](#)).
- a. The NSW assessment report conducted a thorough investigation of the criticisms of the energy benefits, which included:
 - i. reviewing relevant Commonwealth and State policies and plans, including AEMO's ISP for the NEM, which seeks "to maximise consumer benefits in the NEM at the lowest system cost while meeting reliability, security and emissions expectations";
 - ii. considering the findings of the Commonwealth Chief Scientist's Independent Review into the Future Security of the NEM in 2017, which concluded that pumped hydro was currently the only viable commercial technology to provide large grid-scale energy storage; and
 - iii. consulting with AEMO and key agencies in the Commonwealth, including the Energy portfolio.
 - b. The NSW assessment report concluded that Snowy 2.0 is critical for energy security and reliability in NSW as it will provide fast-start dispatchable energy and energy storage for the NEM; support the growth of renewable energy in NSW; increase competition in electricity generation and reduce electricity prices in NSW; and is situated between the two major load centres in the NEM (see [Attachment F2](#) for further NSW assessment).
20. In February 2019, the Australian Government approved the project's final investment decision and agreed to provide a \$1.38 billion equity contribution subject to environmental approvals and financial close. The Government's decision included detailed analysis of the Snowy 2.0 business case, including independent expert banking and legal advice. Another \$3.5 billion was secured by SHL from eight banks.
21. In April 2019, SHL appointed its main contractor with a contract value of \$5.1 billion, which includes \$4.5 billion for capital costs.
22. The proposed action will create 2000 jobs over the 6-year construction period and employ 8-16 for ongoing operation.

Social matters

23. The EIS includes a Social Impact Assessment ([Attachment G61](#)). It concludes that some negative impacts will occur on the 'way of life' of nearby communities, from increased traffic and increased demand for infrastructure and services and facilities. However, numerous beneficial social impacts are expected to arise, including as a result of a stimulated economy, improved recreational facilities in Kosciuszko National Park following construction and project-related road improvements.
24. The Social Impact Assessment states that the proponent will monitor the social impacts that occur as a result of the Exploratory Works, to enable better management of impacts during the Main Works.

Factors to be taken into account

25. In considering the above matters, you must take into account:
- a. the principles of ecologically sustainable development (set out in section 3A of the EPBC Act), including the precautionary principle (set out in sections 3A(b) and 391(2) of the EPBC Act) (section 136(2)(a));
 - b. the NSW assessment report, being the assessment report relating to the proposed action (section 136(2)(b));
 - c. any other information you have on the relevant impacts of the proposed action (section 136(2)(e));
 - d. any relevant comments given to you by another Minister in accordance with an invitation under section 131, 131AA or 131A ((section 136(2)(f) and section 131AA(6)); and
 - e. any information given to you in accordance with a notice under section 132A (section 136(2)(g)).

The principles of ecologically sustainable development (set out in section 3A of the EPBC Act), including the precautionary principle (set out in sections 3A9b) and 391(2) of the EPBC Act) (EPBC Act, s.136(2)(a))

26. In recommending that you approve the proposed action subject to conditions, the Department has taken into account the principles of ecologically sustainable development, including the precautionary principle, in the following ways:
- i. **decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.***
27. In recommending the approval of this proposed action, the Department has considered the long and short-term economic, environmental, social and equitable impacts in accordance with section 3A(a) of the EPBC Act. The Department notes that the proposed action has gone through an environmental impact assessment process with economic, environmental, social and equitable considerations, and included a public consultation process.
28. The NSW assessment report ([Attachment F2](#)) states that the Main Works project will deliver significant economic benefits to NSW and the Snowy Mountains region, including attracting at least \$4.6 billion of capital investment, creating 2,000 construction jobs and helping to reduce electricity prices.
29. As outlined above, Snowy 2.0 will provide 350,000 megawatts of storage capacity to enable greater proportions of variable renewables to enter into the market. This will contribute to the transition to a reliable lower carbon energy system with consequential lower greenhouse and climate change impacts in the long-term.
30. Targeted ecological surveys of the existing environment within the project area were undertaken to increase the understanding of the potential impacts of the proposed action on the environment. The Department notes the ecological surveys were undertaken in accordance with the endorsed NSW Biodiversity Assessment Method.

31. Data on groundwater and surface water quality and quantity, and core sampling, was also collected to better understand the geology, hydrology and hydrogeology of the project area and surrounds. The data was used to inform predictive modelling to also understand the nature and extent of potential impacts on the environment.
32. The Department considers that all short-term and long-term impacts on protected matters will be managed through the recommended conditions for approval under the EPBC Act, and the conditions imposed by the NSW Government.
33. As discussed above, the EIS includes a Social Impact Assessment (Attachment G61), which concluded that some negative impacts will occur on the 'way of life' of nearby communities, but numerous beneficial social impacts are expected to occur.
34. The Department considers that the likely impacts on the environment as a result of the proposed action are satisfactory in terms of the long-term and short-term economic, environmental, social and equitable impacts.
 - ii. ***if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (also the precautionary principle - section 391(2))***
35. In recommending approval of the proposed action, the Department concluded that there is sufficient scientific information to know of, and understand, the likely impacts of the proposed action on matters protected by the controlling provisions of the proposed action.
36. Where there is a lack of certainty regarding the risk or severity of impacts, conditions have been recommended to ensure monitoring is undertaken and response mechanisms are in place to manage those impacts.
 - a. In regard to Alpine Bogs and Fens, there is uncertainty surrounding the scale of impacts from groundwater drawdown during tunnelling. DPIE's report on MNES (Attachment F1) states that the proponent undertook comprehensive modelling of groundwater drawdown, and water loss will be reduced by tunnel pre-grouting and lining, however, there remains some uncertainty as to the amount of the water loss and its extent.
 - i. The NSW conditions require the proponent to monitor groundwater and ecological changes to Alpine Bogs and Fens, and if any negligible impacts occur, an offset is required. The Department has recommended that you endorse the relevant NSW conditions relating to additional offsets for Alpine Bogs and Fens and also recommends an additional condition to extend monitoring of impacts past the end of construction, to ensure any future impacts as a result of the proposed action are captured.
 - b. The Department considers there is also uncertainty around the risk of impacts to native fish species from the transfer and establishment of pest fish and disease to currently unaffected catchments. The NSW conditions require the installation of screens at Tantangara Reservoir to protect the Macquarie Perch and a fish barrier on Tantangara Creek to protect the Stocky Galaxias. The NSW assessment report acknowledges there is residual scientific uncertainty about how effective the fish screens and fish barrier will be over the operational life of the proposed action, and so

the NSW conditions also require the implementation of Biosecurity Risk and Threatened Fish Management Plans (using best available scientific knowledge in consultation with government and an expert advisory committee to meet specified objectives); captive breeding programs for stocking insurance; and trigger, action and response plans to minimise and adaptively manage risks.

- i. The Department considers that the scientific uncertainty can be minimised through further investigation and expert input required by the management plans. The Department has recommended that you endorse the relevant NSW conditions relating to mitigation and offset measures for native fish species and also recommends additional conditions to protect stocking insurance populations, and that the Biosecurity Risk and Threatened Fish Management Plans are peer reviewed by an independent expert approved by the Department.

iii. *the principle of inter-generational equity: that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations*

37. As outlined above, the Department has taken the intergenerational principle into consideration in recommending that the proposed action be approved. The recommended conditions of approval ([Attachment B](#)) include measures that the Department considers are adequate for mitigating impacts to protected matters. The recommended conditions allow for the proposed action to be delivered and operated in a sustainable way to protect matters of national environmental significance, and the environment for future generations.

iv. *the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making*

38. The Department has considered the conservation of biodiversity and ecological integrity in relation to relevant MNES and in recommending that the proposed action be approved. The Department considers the proponent's commitments to avoid, mitigate and manage the impacts of the proposed action, including through the implementation of management plan objectives, and the recommended proposed conditions of approval, allow for the proposed action to not have serious or irreversible impacts on biological diversity and ecological integrity.

v. *improved valuation, pricing and incentive mechanisms should be promoted.*

39. The Department considers the costs of avoidance, mitigation and management measures for any relevant impacts provide appropriate pricing and incentive mechanisms for the protection of matters of environmental significance and the environment.
40. In addition, the NSW conditions provide a financial incentive to further reduce impacts to biodiversity by including the opportunity for the proponent to reduce the final biodiversity offset payment instalment amount if the final disturbance footprint is reduced.

The NSW assessment report, being the assessment report relating to the proposed action (EPBC Act, s. 136(2)(b))

41. In considering the matters set out in section 136(1) of the EPBC Act – matters relevant to protected matters and economic and social matters – you must take into account the assessment report relating to the proposed action. The NSW assessment report relating to the proposed action is at [Attachment F2](#).

Any other information the Minister has on the relevant impacts of the proposed action (EPBC Act, s. 136(2)(e))

42. In considering the matters set out in section 136(1) of the EPBC Act – matters relevant to protected matters and economic and social matters – you must take into account any other information you have on the relevant impacts of the proposed action (including information in a report on the impacts of actions taken under a policy, plan or program under which the action is to be taken that was given to you under an agreement under Part 10 (about strategic assessments)).
43. The Department has considered the proponent's assessment documents (EIS, RTS, which included public comments, and additional information), and material from NSW agencies in considering relevant impacts of the proposed action.
44. The Department has considered information from relevant line areas on the potential impacts of the proposed action on protected matters ([Attachment E](#)). Discussion papers provided by key external stakeholders to inform meetings with the Department were also considered, where the issues raised related to protected matters and economic and social matters ([Attachment I](#)). The Department is satisfied that issues raised by external stakeholders about the emplacement of spoil (in light of the concerns of inappropriate disposal from the original Snowy scheme) and impacts to native fish were assessed by NSW agencies and relevant technical experts and can be adequately managed through the recommended conditions. The Department notes that NPWS, the park managers, will be consulted on all work in Kosciuszko National Park, including best practice measures for rehabilitation and final landform design.
45. There are no strategic assessment reports that are relevant to the proposed action, and all other information relevant to the proposed action is attached to the brief.

Any relevant comments given to the Minister by another Minister in accordance with an invitation under section 131, 131AA or 131A (EPBC Act, s. 136(2)(f) and s. 131AA(6))

46. In considering the matters set out in section 136(1) of the EPBC Act – matters relevant to protected matters and economic and social matters – you must take into account any relevant comments given to you under sections 131 (from other Commonwealth Ministers) and 131A (from members of the public).
47. In deciding whether or not to approve the proposed action you must also take into account relevant comments provided by the proponent and person proposing to take the action under section 131AA.
48. Letters inviting comments from the relevant stakeholders are provided for your signature at ([Attachment C](#)).
49. The Department will brief you on responses to these letters when recommending whether to approve the proposed action in your final decision.
50. Seeking comments from the public under section 131A of the EPBC Act at the proposed decision stage is discretionary and is not recommended in this case. The Department considers that the views of the public in relation to the proposed action are well understood, noting the extensive consultation undertaken through the NSW assessment process and that public consultation on a proposed decision is unlikely to raise new issues.

Any information given to the Minister in accordance with a notice under section 132A (EPBC Act, s. 136(2)(g))

51. Section 132A of the EPBC Act provides that, for certain actions, before you decide whether or not to approve the taking of the action for the purposes of a controlling provision, and what conditions (if any) to attach to an approval, you may request the appropriate Minister of the State or Territory to give you a notice stating the method that has been used to assess the certain and likely impacts of the action on things other than matters protected by the controlling provisions for the action.
52. Section 132A of the EPBC Act does not apply to the proposed action as the action does not meet the criteria in s 132A(1).

Person's Environmental history (EPBC Act, s. 136(4))

53. In deciding whether to approve the taking of an action, and what conditions to attach to the approval, you may, under section 136(4) of the EPBC Act, consider whether the person proposing to take the action is a suitable person to be granted an approval, having regard to:
 - a. the person's history in relation to environmental matters;
 - b. if the person is a body corporate – the history of its executive officers in relation to environmental matters; and
 - c. if the person is a body corporate that is a subsidiary of another body or company (the parent body) – the history in relation to environmental matters of the parent body and its executive officers.
54. The proponent advised in its referral that it has never been the subject of proceedings under a Commonwealth, State or Territory environmental law.
55. On 24 April 2020, the Compliance Section in the Department's Compliance Division advised that a search of the Department's Compliance and Enforcement Management Systems database and records held by the Department indicate that there is no adverse compliance history for the person proposing to take the action under the EPBC Act.
56. Given the above, the Department considers that it would be open to you to conclude that the proponent is a suitable person to be granted an approval.

Minister not to consider other matters (EPBC Act, s. 136(5))

57. Under subsection 136(5) of the EPBC Act, in deciding whether or not to approve the taking of the proposed action, and what conditions to attach to an approval, you must not consider any matters that you are not required or permitted by Division 1, Part 9 of the EPBC Act, to consider.
58. The Department has based its recommendation to approve the proposed action with conditions on matters that you are required or permitted by Division 2, Part 9 of the EPBC Act to consider.

Other Considerations

Requirements for decision about National Heritage places (EPBC Act, s. 137A)

59. In deciding whether or not to approve for the purposes of section 15B or 15C the taking of an action, and what conditions to attach to such an approval, you must not act inconsistently with:
 - a. the National Heritage management principles; or
 - b. an agreement to which the Commonwealth is party in relation to a National Heritage place; or
 - c. a plan that has been prepared for the management of a National Heritage place under section 324S or as described in section 324X.
60. The objective in managing National Heritage places is to identify, protect, conserve, present and transmit, to all generations, their National Heritage values.
61. The National Heritage management principles provide a guiding framework for excellence in managing heritage properties. They set the standard and the scope of the way places should be managed in order to protect heritage values for future generations. The National Heritage management principles as prescribed in Schedule 5B of the EPBC Regulations are at Attachment H19.
62. The NSW assessment process, which included public consultation on the EIS, has been undertaken in accordance with the management principles. The proponent's EIS included an assessment of impacts on the National Heritage values of the AANPR and the Snowy Mountains Scheme National Heritage place.
63. The Department considers that the recommended conditions will ensure that the National Heritage values of the AANPR National Heritage place are protected, conserved and transmitted, to all generations. The Heritage Management Plan (along with other management plans that will also benefit the National Heritage values) will be undertaken in consultation with relevant stakeholders and will ensure the management of heritage assets is based on best available knowledge, skills and standards. In addition, the Heritage Management Plan requires consultation with Indigenous stakeholders, ensuring that Indigenous people are the primary source of information on the value of their heritage. Given this, the Department considers that proposed action is not inconsistent with the National Heritage management principles.
64. The Commonwealth has not reached agreement with any party in relation to the management of the National Heritage values of the AANPR or Snowy Mountains Scheme National Heritage place. Management plans the AANPR or Snowy Mountains Scheme National Heritage place have not been prepared under section 324S or section 324X of the EPBC Act.
65. Based on the Department's assessment of impacts to Commonwealth matters at Attachment A2, the Department considers that the proposed action will not have any unacceptable impacts on the National Heritage values of the Snowy Mountains Scheme National Heritage place. Similarly, if the action is undertaken in accordance with the mitigation measures required by the proposed conditions, the proposed action will not have any unacceptable impacts on the National Heritage values of the AANPR National Heritage place.

Requirements for decision about threatened species and endangered communities (EPBC Act, s. 139)

66. Under section 139(1) of the EPBC Act, in deciding whether or not to approve for the purposes of a subsection of section 18 or section 18A the taking of an action, and what conditions to attach to such an approval, you must not act inconsistently with:
- a. Australian obligations under:
 - i. the Biodiversity Convention; or
 - ii. the Apia Convention; or
 - iii. CITES: or
 - b. a recovery plan or threat abatement plan.
67. Section 139(2) states, if:
- a. the Minister is considering whether to approve, for the purposes of a section of section 18 or section 18A, the taking of an action; and
 - b. the action has or will have, or is likely to have, a significant impact on a particular listed threatened species or a particular listed threatened ecological community;
- the Minister must, in deciding whether to approve the taking of the action, have regard to any approved conservation advice for the species or community.

The Biodiversity Convention

68. The Biodiversity Convention is available at:
<http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1993/32.html>.
69. The objectives of the Biodiversity Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.
70. The Biodiversity Convention requires Contracting Parties, as far as possible and as appropriate, to introduce procedures requiring environmental impact assessments of projects that are likely to have significant adverse effects on biological diversity to avoid and minimise such impacts, and requires Parties to introduce appropriate arrangements to ensure that the environmental consequences of their programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account. The proposed action was subject to an environmental impact assessment process under the (NSW) EP&A Act.
71. The NSW assessment report identifies the likely impacts of the proposed action on listed threatened species and communities, and recommends measures to avoid, mitigate and offset those impacts. These measures are reflected in the NSW conditions at Attachment F3.

72. The Department considers that approval of the proposed action will have been carried out in accordance with an EIS, and there are arrangements in place to ensure that the significant adverse impacts of the proposed action on biological diversity are taken into account. The Department also considers that the proposed action will not have unacceptable impacts on biodiversity, including Commonwealth-listed threatened species and communities, if it is taken in accordance with the recommended conditions.
73. The Department therefore considers that you should be satisfied that approving the proposed action, subject to conditions that avoid, mitigation and offset impacts to biodiversity, is not inconsistent with Australia's obligations under the Biodiversity Convention.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

74. CITES is available at: <http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1976/29.html>. The aim of CITES is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
75. The Department considers that you should be satisfied that approving the proposed action, subject to conditions, is not inconsistent with Australia's obligations under CITES as the proposed action does not involve international trade in specimens of wild animals and plants.

Convention on the Conservation of Nature in the South Pacific (Apia Convention)

76. The Convention on the Conservation of Nature in the South Pacific (APIA Convention) is available at: <http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1990/41.html>.
77. The APIA Convention encourages the creation of protected areas which together with existing protected areas will safeguard representative samples of the natural ecosystems occurring therein (particular attention being given to endangered species), as well as superlative scenery, striking geological formations, and regions and objects of aesthetic interest or historic, cultural or scientific value.
78. The APIA Convention was suspended with effect from 13 September 2006. While this Convention has been suspended, Australia's obligations under the Convention have been taken into consideration.
79. The proposed action has undergone an environmental assessment which concluded that the proposed action will not have an unacceptable impact on biodiversity, geological formations and objects of aesthetic interest or historic, cultural or scientific value, subject to the proposed conditions.
80. The proposed conditions of approval place restrictions on the extent of impacts the action can have on biodiversity and heritage assets, and how they are managed in the long-term. The proposed conditions also require ongoing monitoring of potential impacts and obligations for the person taking the action to implement mitigation and corrective actions, and to offset significant residual impacts. As such, the Department considers that you could be satisfied that approving the proposed action, subject to conditions, is not inconsistent with Australia's obligations under the Convention.

Recovery Plans and Threat Abatement Plans

81. Section 139(1)(b) requires you, when deciding whether to approve the taking of an action for the purposes of sections 18 and 18A, and what conditions to attach to any approval, to not act inconsistently with a recovery plan or a threat abatement plan.
82. As set out in Table 1 above and Attachment A2, the following listed threatened species and communities were identified at either the controlled action stage or the assessment stage as having the potential to be significantly impacted by the proposed action for the purposes of sections 18 and 18A:
- a. Alpine Sphagnum Bogs and Associated Fens – endangered ecological community;
 - b. Alpine She-oak Skink (*Cyclodomorphus praealtus*) – endangered;
 - c. Alpine Tree Frog (*Litoria verreauxii alpina*) – vulnerable;
 - d. Booroolong Frog (*Litoria booroolongensis*) – endangered;
 - e. Broad-toothed Rat (*Mastacomys fuscus mordicus*) – vulnerable;
 - f. Clover Glycine (*Glycine latrobeana*) – vulnerable;
 - g. Hoary Sunray (*Leucochrysum albicans var. tricolor*) – endangered;
 - h. Mauve Burr-daisy (*Calotis glandulosa*) – vulnerable;
 - i. Macquarie Perch (*Macquaria australasica*) – endangered;
 - j. Smoky Mouse (*Pseudomys fumeus*) – critically endangered; and,
 - k. Spotted-tailed Quoll (*Dasyurus maculatus maculatus*) – endangered.
83. The following recovery plans are relevant for the above listed species and communities:
- a. Department of the Environment (2015). *National Recovery Plan for the Alpine Sphagnum Bogs and Associated Fens ecological community*. Department of the Environment, Canberra. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/recovery/alpine-sphagnum-bogs-associated-fens>
 - b. NSW Office of Environment and Heritage (2012). *National Recovery Plan for Booroolong Frog* (*Litoria booroolongensis*). Office of Environment and Heritage (NSW), Hurstville. Available from: <http://www.environment.gov.au/biodiversity/threatened/recovery-plans/booroolong-frog-litoria-booroolongensis-national-recovery-plan>;
 - c. Department of the Environment and Energy (2018). *National Recovery Plan for the Macquarie Perch* (*Macquaria australasica*). Canberra: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/recovery/macquaria-australasica-2018>;
 - d. Carter, O. & G. Sutter (2010). *National Recovery Plan for the Clover Glycine* *latrobeana*. Department of Sustainability and Environment, Melbourne. Available from: <http://www.environment.gov.au/resource/national-recovery-plan-clover-glycine-glycine-latrobeana>;

- e. Sinclair, S.J. (2010). *National Recovery Plan for the Hoary Sunray* *Leucochrysum albicans* var. *tricolor*. Department of Sustainability and Environment, Melbourne. Available from: <http://www.environment.gov.au/biodiversity/threatened/recovery-plans/national-recovery-plan-hoary-sunray-leucochrysum-albicans-var-tricolor>;
 - f. Menkhorst, P. & L. Broome (2008). *National Recovery Plan for the Smoky Mouse* *Pseudomys fumeus*. Department of Sustainability and Environment, Melbourne. Available from: <http://www.environment.gov.au/resource/smoky-mouse-pseudomys-fumeus>.
84. These recovery plans are discussed in further detail at Attachment A2 and are provided for your consideration at Attachment H.
85. The Department considers that the following threat abatement plans are relevant for the above listed species and communities:
- a. Department of the Environment (2015). *Threat abatement plan for predation by feral cats*. Canberra, ACT: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats>;
 - b. Department of the Environment and Energy (2016). *Threat abatement plan for infection of amphibians with chytrid fungus resulting in chytridiomycosis (2016)*. Canberra, ACT: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/tap/infection-amphibians-chytrid-fungus-resulting-chytridiomycosis-2016>;
 - c. Department of the Environment and Energy (2017). *Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa) (2017)*. Canberra, ACT: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/tap/feral-pig-2017>;
 - d. Department of the Environment and Energy (2016). *Threat abatement plan for competition and land degradation by rabbits*. Canberra, ACT: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/tap/competition-and-land-degradation-rabbits-2016>;
 - e. Department of the Environment and Energy (2018). *Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi*. Canberra: Commonwealth of Australia. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/threat-abatement-plan-disease-natural-ecosystems-caused-phytophthora-cinnamomi-2018>;
 - f. Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008). *Threat abatement plan for predation by the European red fox*. DEWHA, Canberra. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/tap/predation-european-red-fox>

86. The Department's analysis of whether the proposed action will be undertaken in a manner that is not inconsistent with relevant threat abatement plans is at Attachment A2. The relevant threat abatement plans are provided for your consideration at Attachment H.
87. In summary, the Department considers that the likely impacts of the proposed action on listed threatened species and communities will be avoided and mitigated by the proponent to a reasonable degree under the proposed conditions, and that residual significant impacts will be appropriately offset. The Department considers that the mitigation measures and conservation actions proposed by NPWS are consistent with relevant recovery plans and threat abatement plans. Approving the proposed action subject to the proposed conditions would therefore not be inconsistent with the plans identified above.

Approved Conservation Advices

88. Section 139(2) requires you, when considering whether to approve the taking of action for the purposes of section 18 and 18A, to have regard to any approved conservation advice for a listed threatened species or community that is likely to be significantly impacted by the proposed action.
89. The approved conservation advices relevant to the proposed action are:
- a. Department of the Environment, Water, Heritage and the Arts (2008). *Approved Conservation Advice for Alpine Sphagnum Bogs and Associated Fens ecological community*. Canberra: Department of the Environment, Water, Heritage and the Arts. Available from:
<http://www.environment.gov.au/biodiversity/threatened/communities/pubs/29-conservation-advice.pdf>
 - b. Department of the Environment, Water, Heritage and the Arts (2009). *Approved Conservation Advice for Cyclodomorphus praealtus (Alpine She-oak Skink)*. Canberra, ACT: Department of the Environment, Water, Heritage and the Arts. Available from:
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/64721-conservation-advice.pdf>;
 - c. Department of the Environment (2014). *Approved Conservation Advice for Litoria verreauxii alpina (alpine tree frog)*. Canberra: Department of the Environment. Available from:
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/66669-conservation-advice.pdf>;
 - d. Threatened Species Scientific Committee (2016). *Conservation Advice Mastacomys fuscus mordicus broad-toothed rat (mainland)*. Canberra: Department of the Environment. Available from:
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/87617-conservation-advice-05052016.pdf>; and
 - e. Department of the Environment (2013). *Approved Conservation Advice for Macquaria australasica (Macquarie perch)*. Canberra: Department of the Environment. Available from:
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/66632-conservation-advice.pdf>;

90. The approved conservation advices are discussed in further detail at Attachment A2 and are provided for your consideration at Attachment H. In summary, the Department has had regard to the approved conservation advices relevant to the proposed action and has given consideration to the likely impacts of the proposed action on listed threatened species and communities. The Department is of the view that approval of this proposed action will not be inconsistent with the conservation advices listed above.
91. The Department's Protected Species and Communities Branch was consulted on any upcoming listings in preparing this recommendation. The Department understands that you were provided with a decision brief on recommended listings, including a new conservation advice for the Smoky Mouse, on 30 April 2020. The Department understands that at the time of writing, this has not yet been approved and so has not been considered in this decision.

Requirements for decision about migratory species (EPBC Act, s. 140)

92. In deciding whether or not to approve for the purposes of section 20 or 20A the taking of an action relating to a listed migratory species, and what conditions to attach to such an approval, you must not act inconsistently with Australia's obligations under whichever of the following conventions and agreements under which the species is listed:
- a. the Bonn Convention on Migratory Species (CMS);
 - b. the China-Australia Migratory Bird Agreement (CAMBA);
 - c. the Japan-Australia Migratory Bird Agreement (JAMBA); and
 - d. an international agreement approved under subsection 209(4).
93. This section requires that any decision to approve a proposed action for which listed migratory species is a controlling provision not be inconsistent with the CMS, CAMBA, JAMBA or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA) (being an international agreement approved under section 209(4)).
- a. Under the CMS, the Commonwealth is required to acknowledge the importance of conserving migratory species and to take action to avoid any migratory species becoming endangered. This involves supporting research relating to migratory species, striving to provide immediate protection for migratory species included in Appendix I, and entering into international agreements for migratory species included in Appendix II. CMS is available for your consideration at:
<http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1991/32.html>.
 - b. Under CAMBA, the Commonwealth is required to co-operate with the Peoples Republic of China in the protection of migratory birds and their environment. This agreement includes, but is not limited to, encouraging the formulation of joint research programs and sanctuaries, taking appropriate measures to preserve and enhance the environment of migratory birds, and prohibiting the taking of migratory birds and their eggs. CAMBA is available for your consideration at:
<http://www.austlii.edu.au/au/other/dfat/treaties/1988/22.html>.

- c. Under JAMBA, the Commonwealth is required to take special protective measures for the preservation of endangered bird species, to prohibit the taking of migratory birds or their eggs except under specific circumstances and control the exportation and importation of such species. Under this agreement, Australia and Japan agree to exchange research on migratory birds and encourage joint research programs. Each government shall also seek to preserve and enhance the environment of birds protected under the provisions of the agreement and encourage the conservation of migratory birds. JAMBA is available for your consideration at: <http://www.austlii.edu.au/au/other/dfat/treaties/1981/6.html>.
 - d. Under ROKAMBA, the Commonwealth is required to prohibit the taking of migratory birds and their eggs except under specific circumstances, and any sale, purchase or exchange of migratory birds and their eggs. Under this agreement, Australia and the Republic of Korea shall endeavour to take measures to conserve and improve the environment of birds protected under the agreement and to control the impact of invasive animals and plants on the conservation of such birds and their environment. Both governments are required to encourage the exchange of research on migratory birds and encourage joint research programs. ROKAMBA is available for your consideration at: <http://www.austlii.edu.au/au/other/dfat/treaties/2007/24.html>.
94. The White-throated Needletail is listed under CAMBA, JAMBA and ROKAMBA; the Latham's Snipe is listed under the CMS, JAMBA and ROKAMBA; and the Satin Flycatcher is listed under the CMS.
95. The Department considers that approval of this action, subject to the proposed conditions of approval will conserve and enhance the habitat of migratory birds, including through restricting clearance limits for the Latham's Snipe, and undertaken rehabilitation of all impacted vegetation to restore ecological function and structure. The proposed action does not include any taking of, or trade of, migratory birds or their eggs. Therefore, approving the proposed action, subject to the conditions, would not be inconsistent with the obligations of the treaties listed above.
96. Attachment F1, Attachment A2, and Table 1 above, provide supporting information relevant to the above matters. The Department considers that impacts on the Satin Flycatcher and White-throated Needletail are unlikely to be unacceptable. Similarly, if the action is carried out in accordance with the proposed conditions, the impacts on the Latham's Snipe are unlikely to be unacceptable.

Bioregional plans (EPBC Act, s. 176(5))

97. Under section 176(5), you are required to have regard to a bioregional plan in making any decision under the EPBC Act to which the plan is relevant.
98. The proposed action is not located within or near an area designated by a bioregional plan. The Department considers that there is no bioregional plan relevant to your decision.

Considerations in deciding on conditions

99. Under subsection 134(1) of the EPBC Act, you may attach a condition to the approval of an action if you are satisfied that the condition is necessary or convenient for:
- a. protecting a matter protected by a provision of Part 3 for which the approval has effect (whether or not the protection is protection from the action); or

- b. repairing or mitigating damage to a matter protected by a provision of Part 3 for which the approval has effect (whether or not the damage has been, will be or is likely to be caused by the action).
100. Under subsection 134(2) you may attach a condition to the approval of an action if you are satisfied that the condition is necessary or convenient for:
- a. protecting from the action any matter protected by a provision of Part 3 for which the approval has effect; or
 - b. repairing or mitigating damage that may or will be, or has been, caused by the action to any matter protected by a provision of Part 3 for which the approval has effect.
101. The Department recommends you endorse the NSW conditions where necessary to protect matters protected by a provision of Part 3 of the EPBC Act for which the proposed approval has effect. The Department has recommended additional conditions that strengthen the NSW conditions to protect or mitigate damage to protected matters. Further discussion on the impacts and justification for the recommended conditions is at [Attachment A2](#).
102. Subsection 134(3A) states certain conditions cannot be attached to the approval of an action unless the holder of the approval has consented to the attachment of the condition. A letter to the proposed approval holder for the proposed action seeking consent to the recommended conditions is at [Attachment C1](#).
103. Subsection 134(3)(c) states that the conditions that may be attached to an approval include conditions requiring a person taking the action to comply with conditions specified in an instrument made or granted under a State law, such as conditions imposed on the proposed action through the State assessment process. The Department has recommended conditions of this nature.
104. In accordance with subsection 134(4), in deciding whether to attach a condition to an approval, you must consider the following:
- a. any relevant conditions that have been imposed, or you consider are likely to be imposed, under a law of a State or self-governing Territory or another law of the Commonwealth on the taking of the action,
 - b. information provided by the person proposing to take the action or by the designated proponent of the action,
 - c. the desirability of ensuring as far as practicable that the condition is a cost-effective means for the Commonwealth and the person taking the action to achieve the object of the condition.

Relevant State conditions

105. The conditions of approval imposed by NSW are at [Attachment F3](#). The Department has paid close attention to, and requires compliance with, the NSW conditions that are relevant to EPBC Act protected matters, where such conditions are necessary and convenient for their protection.

Information provided by the proponent

106. Information provided by the proponent includes the EIS, RTS and Preferred infrastructure report, and additional information, all provided at Attachment G. The Department has considered this information in forming its conclusions and recommending the proposed conditions.

Cost-effectiveness of conditions

107. The Department considers that the conditions proposed are a cost-effective means of achieving their purpose. The conditions are based on the NSW conditions, which in turn were informed by assessment material provided by the proponent.
108. As far as possible, the Department has recommended conditions that rely on the commitments made by the proponent and/or on measures already required under the NSW conditions.
109. The Department recommends that you attach approval conditions that will require the proponent to comply with applicable NSW conditions. This approach will avoid unnecessary duplication or supplementation of NSW conditions (which the Department considers are largely adequate to protect relevant matters of national environmental significance) but will still allow the Department to retain an ongoing compliance role for the proposed action.
110. In addition to the standard administrative conditions required for an approval under the EPBC Act, the Department recommends you attach additional conditions relating to:
- a. specific habitat clearance limits for protected matters;
 - b. notifying the Department of when biodiversity offset payments have been made to NPWS;
 - c. ensuring management plans include objectives and outcomes that are consistent with relevant Commonwealth statutory documents;
 - d. monitoring for impacts on Alpine Bogs and Fens past the end of the construction period;
 - e. provisions to make monitoring data (including baseline data) available to members of the public, if requested;
 - f. investigating options for the installation of secondary fish barriers to protect additional tributaries for the establishment of stocking insurance populations for threatened fish species, and if proven to be effective, installing secondary fish barriers;
 - g. requirement for an independent peer review of plans related to biosecurity and aquatic species; and
 - h. requirement for consultation with the Department on additional management plans to what was required by the NSW conditions.
111. As discussed in Attachment A2, the Department considers that these conditions are necessary or convenient for protecting the matters protected by the provisions of Part 3 for which the approval would have effect.
112. The Department considers that the conditions proposed are a cost-effective means of achieving their purpose.

Consideration of condition-setting policy

113. In applying this analysis, the Department has had regard to the *EPBC Act Condition-setting Policy (2015)* (the Policy). The Policy outlines the Australian Government's approach to considering state and territory approval conditions when approving a project under the EPBC Act. The *NSW Biodiversity Offsets Policy for Major Projects* is listed in the Policy as an endorsed state policy which is consistent with the standards of a non-statutory Australian Government policy.
114. In accordance with the *EPBC Act Condition-setting Policy (2015)*, the Department considers that it is appropriate to propose conditions that require the proponent to comply with relevant NSW conditions where they relate to offsetting arrangements for EPBC Act protected matters. These conditions will avoid unnecessary duplication of State and Australian Government conditions and allow the Department to retain an ongoing compliance role to ensure the outcomes for the significantly impacted EPBC Act matters are delivered.

Approval timeframe

115. The Department recommends an approval timeframe of 120 years to account for the construction period, proposed operational lifespan of 100 years, and site rehabilitation.

Attachments

116. The attachments cited in this report are attachments to this briefing package and are identified in the proposed decision brief.

**DEPARTMENTAL ADVICE ON MATTERS PROTECTED UNDER THE EPBC ACT –
SNOWY 2.0 MAIN WORKS, NSW (EPBC 2018/8322)**

USING THIS REPORT

1. This Summary of Impacts Report (report) should be read in conjunction with the covering brief and other attachments. This report adopts the terminology defined in the brief (for example, the proponent, proposed action etc). All attachments refer to attachments to the brief.
2. The proposed action was referred to the Department by Snowy Hydro Limited (SHL – the person proposing to take the action and the proponent) on 30 October 2018. The proposed action was determined to be a controlled action on 5 December 2018, on the basis that the action is likely significant impacts on certain matters protected under the EPBC Act.
3. On the same date, it was determined that the proposed action would be assessed by the New South Wales (NSW) Department of Planning, Industry and Environment (DPIE) under an accredited assessment process, being Division 5.2 (State Significant Infrastructure) of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).
4. On 27 May 2020, DPIE formally notified the Department that the proposed action had been approved by the NSW Minister for Planning and Public Spaces under Subdivision 5.19 of the EP&A Act, subject to conditions in the Infrastructure Approval (NSW conditions) (Attachment F).
5. In preparing this report, the Department has considered the following NSW assessment documents and other information available on the NSW DPIE Major Projects website: <https://www.planningportal.nsw.gov.au/major-projects/project/12891>
 - a. Proponent’s Environmental Impact Statement (EIS) (September 2019) (Attachments G1-63);
 - b. Proponent’s response to submissions (RTS) and Preferred infrastructure report (February 2020) (Attachments G64-78);
 - c. Proponent’s additional information (February and April 2020) (Attachments G79-80);
 - d. NSW Final Assessment Report and NSW conditions (20 May 2020) (Attachments F2 & F3); and
 - e. DPIE’s consideration of matters of national environmental significance report (27 May 2020) (Attachment F1).
6. The NSW assessment report and additional report on DPIE’s consideration of matters of national environmental significance (MNES) (Attachments F1 & F2) are the ‘assessment report’ for the purposes of section 130(2) of the EPBC Act. They summarise impacts on the environment, including matters protected by the above controlling provisions.
7. The Department recommends that you propose to approve the proposed action and adopt the relevant sections of the NSW conditions, as well as add additional conditions that are considered necessary and convenient to protect matters protected under the relevant parts of the EPBC Act (Attachment B).

SUMMARY OF IMPACTS

Impacts from the proposed action

8. The controlling provisions for the proposed action are:
 - a. sections 15B and 15C (National Heritage places);
 - b. sections 18 and 18A (listed threatened species and communities);
 - c. sections 20 and 20A (listed migratory species); and
 - d. section 28 (Commonwealth action).
9. Impacts of the proposed action on EPBC protected matters include:
 - a. clearance and disturbance of terrestrial and aquatic habitat;
 - b. changes to hydrological processes;
 - c. potential transfer of invasive fish species and disease between reservoirs and into currently unaffected catchments;
 - d. indirect impacts from noise, lighting, vibration, vehicle strike and introduction of weeds, pests, pathogens and predators;
 - e. removal of Aboriginal heritage and historic heritage artefacts;
 - f. excavation and emplacement of approximately 8.9 million cubic metres (m³) of spoil;
 - g. increased traffic movements; and
 - h. restrictions to parts of Kosciuszko National Park impacting recreational value and Park amenity for users.

Bushfire impacts

10. The Department notes that 60 percent of Kosciuszko National Park was burnt during the 2019/20 bushfires and 100 percent of the proposed disturbance area was burnt, with areas west of the Snowy Mountains Highway severely affected (see Figure 15 at [Attachment D](#)). However, the majority of the proponent's surveys and vegetation mapping was undertaken prior to the bushfires occurring, and the environmental impact assessment on biodiversity values is therefore based on pre-fire conditions.
11. Since then, due to the damage from the bushfires and site access difficulties, limited on-ground survey work has been undertaken to quantify impacts to biodiversity and determine whether extant populations still occur. We note this post-fire work is, or will be, undertaken by relevant NSW agencies and conservation groups.
12. Due to the extent of the 2019/20 bushfires, the Department appointed a wildlife and threatened species bushfire recovery expert panel to assist in prioritising recovery actions for impacted native species and ecological communities. This included a provisional list of species and communities requiring urgent management intervention to support their protection and recovery. Commonwealth-listed species and communities that occur on the provisional list that will also be impacted by the proposed action include Smoky Mouse, Broad-toothed Rat, Alpine She-oak Skink, and the Alpine Sphagnum Bogs and Associated Fens ecological community (Alpine Bogs and Fens).

13. The Department's Biodiversity Conservation Division and the recovery expert panel were consulted on these entities, and their advice considered (Attachment E), in the preparation of this impact assessment report. The advice from the recovery expert panel suggested that the types of actions that the panel considers a priority for bushfire impacted species post-fire, broadly includes control of introduced predators, exclusion of herbivores from unburnt areas, and provision of artificial shelters in burnt areas, where feasible.
14. The Department notes that the mitigation measures required by the NSW conditions also aim to control introduced predators and other pests, including herbivores, and that the offset liability was calculated considering the cost of management for fire affected species.

DISCUSSION

National Heritage places (Sections 15B & 15C)

15. The Snowy Mountains Scheme National Heritage place, and the Australian Alps National Parks and Reserves (AANPR) National Heritage place occur within Kosciuszko National Park (see Figure 17 at Attachment D) and have the potential to be impacted by the proposed action.

Snowy Mountains Scheme

National Heritage values

16. The Snowy Mountains Scheme is listed on the National Heritage List for the following National Heritage criteria (criterion a, b, d, f, g and h):
 - a. the place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history;
 - b. the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history;
 - d. the place has outstanding heritage value to the nation because of the place's importance in demonstrating the principal characteristics of:
 - i. a class of Australia's natural or cultural places; or
 - ii. a class of Australia's natural or cultural environments;
 - f. the place has outstanding heritage value to the nation because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period;
 - g. the place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
 - h. the place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.

Impacts

17. The NSW assessment report (Attachment F2) did not include an assessment of impacts on the National Heritage values of the Snowy Mountains Scheme National Heritage place.
18. The Department considers that the National Heritage values of the Snowy Mountains Scheme National Heritage place predominately relate to the scheme itself and its significance as an unprecedented Australian engineering project.

19. The Department notes that the existing elements of the Snowy Mountains Scheme are not being altered as a result of the proposed action, however some features, including existing infrastructure and reservoirs, will be further utilised for the proposed action. The Department's Heritage Branch advised that there are unlikely to be any adverse impacts to the Snowy Mountains Scheme National Heritage Place (Attachment E).
20. Therefore, the Department considers that, in accordance with the *significant impact guidelines 1.1 for impacts on Matters of National Environmental Significance (2013)* (significant impact guidelines 1.1), the proposed action will not permanently remove, destroy or alter the fabric of the National Heritage place, or notably diminish the value of the National Heritage place in demonstrating technical achievement. The proposed action is therefore unlikely to have a significant impact on the National Heritage values of the Snowy Mountains Scheme National Heritage place.

Australian Alps National Parks and Reserves (AANPR)

21. The AANPR National Heritage place covers approximately 1.6 million hectares (ha) of alpine and subalpine landscapes across NSW, Victoria and the ACT. It covers eleven national parks and nature reserves, including Kosciuszko National Park.

National Heritage values

22. The AANPR is listed on the National Heritage List for the following National Heritage criteria (criterion a, b, d, e, g and h):
- a. the place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history;
 - b. the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history;
 - d. the place has outstanding heritage value to the nation because of the place's importance in demonstrating the principal characteristics of:
 - i. a class of Australia's natural or cultural places; or
 - ii. a class of Australia's natural or cultural environments;
 - e. the place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
 - g. the place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
 - h. the place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.

Impacts

23. Values of the AANPR National Heritage place that occur within or adjacent to the disturbance area and have the potential to be impacted as a result of the proposed action include:
- a. Unique glacial and periglacial features, fossils or karsts that contribute to our understanding of the nature of landscape response to climate during ice ages and have outstanding heritage value to the nation for their importance in the pattern of Australia's natural history including:
 - i. the block streams and fossiliferous beds along Lobs Hole Ravine Road; and,
 - ii. the tufa deposits at Lick Hole Gully and Cave Gully.
 - b. Alpine and sub-alpine ecosystems which support a unique assemblage of cold climate specialist species and represent a rare, significant and unique component of Australia's biological heritage including:
 - i. endemic alpine species and communities and their habitat such as the Alpine She-oak Skink and Alpine Bogs and Fens; and
 - ii. Eucalypt forests that represent the unique ability of a plant genus to adapt along a steep topographical transect, with species replacing each other as climate and topography changes.
 - c. Pastoral landscapes and evidence of transhumant grazing (the practice of moving livestock from one grazing ground to another in a seasonal cycle, i.e. lowlands in winter and highlands in summer) which are valued for demonstrating the use of mountain resources and as an important part of Australia's pioneering history and culture, including:
 - i. plains of North-east Kosciuszko National Park that support summer grasses and herb-fields such as Kiandra, Boggy Plain, Nungar Plain, Tantangara Plain and Long Plain; and,
 - ii. remains of pastoral huts, stockyards and stock routes, including stock fence lines.
 - d. Aesthetic characteristics such as mountain vistas, snow covered crests, slopes and valleys and alpine streams and rivers that evoke strong aesthetic responses and have heritage value to the community for the sense of remoteness and naturalness.
24. While NSW did not undertake a full assessment of impacts against the National Heritage values of the AANPR National Heritage place, the NSW assessment report ([Attachment F2](#)) states that the proposed action would have minor impacts on the National Heritage values of the AANPR National Heritage place as a result of minor impacts on glacial block streams for widening of Lobs Hole Ravine Road.
25. However, the Department has undertaken a full assessment of impacts on the National Heritage values of the AANPR National Heritage place and considers that in addition to the impacts of road widening on glacial block streams (criterion a), the impacts of vegetation clearance; introduction and spread of weeds, pests, pathogens and predators; emplacement of soil on land in Kosciuszko National Park, altering the current landform; and the construction of permanent above-ground infrastructure, may also result in significant impacts to the listed values, particularly criteria b and d.

Mitigation measures

26. The NSW conditions ([Attachment F3](#)) include measures to avoid impacts on state and local heritage values, which also apply to the values of the AANPR National Heritage place, specifying that the proponent must avoid impacts to:
 - a. any historic heritage items outside the construction envelope and the significant items identified within the construction envelope (listed in Appendices 3 and 4 of the NSW conditions); and
 - b. the tufa deposits outside the construction envelope.
27. These measures will mitigate impacts to criterion a and c.
28. To reduce impacts on biodiversity, the NSW conditions require the proponent to implement a range of mitigation and management measures. The proponent must also pay up to \$73.8 million to NPWS to compensate for residual impacts to biodiversity (discussed at paragraphs 40-44 below). In addition, the proponent must rehabilitate the entire disturbance area and restore ecological structure and function. This includes areas to be used for spoil emplacement, which will be rehabilitated to conform with the surrounding landscape, minimising the impact on aesthetic values. These measures will mitigate impacts to criterion b and d.
29. The proponent must also prepare a Heritage Management Plan in consultation with relevant parties, including the National Heritage Council. The Heritage Management Plan must detail the measures that would be implemented to:
 - a. prepare a detailed archival record of the history of settlement and mining in the Lobs Hole Ravine area;
 - b. minimise impacts on boulder streams and fossiliferous beds along Lobs Hole Ravine Road (in addition to the archiving of these heritage items that is required under the NSW approval for the Exploratory Works).
30. To ensure the National Heritage values are not impacted, the Department has recommended an additional condition that requires the Heritage Management Plan to be prepared in accordance with the National Heritage Management Principles.
31. The Department recommends that you adopt the relevant NSW conditions relating to the above mitigation measures, as the Department considers these measures are suitable and necessary to mitigate any impacts on the values of the AANPR National Heritage place. If undertaken in accordance with these measures, the proposed action is unlikely to result in a residual significant impact on the AANPR National Heritage place.

Conclusion

32. Given the above information, the Department considers that the proposed action will not have an unacceptable impact on the National Heritage values of the Snowy Mountains Scheme National Heritage place. Similarly, if undertaken in accordance with the recommended conditions, the proposed action will not have an unacceptable impact on the National Heritage values of the AANPR National Heritage place.
33. Approval of the proposed action subject to the recommended conditions would not be inconsistent with Australia's obligations under the National Heritage management principles under section 137A of the EPBC Act (see [Attachment A1](#) for more details).

Listed threatened species and communities (sections 18 and 18A)

Background

Surveys

34. The proponent's RTS states that over 9,000 ha of native vegetation across Kosciuszko National Park was surveyed and mapped for the proposed action (see Figure 16 at Attachment D).
35. The RTS states that 76,726 individuals of 46 threatened flora and fauna species were recorded during surveys, including the following Commonwealth-listed species:
 - a. Alpine She-oak Skink (*Cyclodomorphus praealtus*) – endangered;
 - b. Alpine Tree Frog (*Litoria verreauxii alpina*) – vulnerable;
 - c. Booroolong Frog (*Litoria booroolongensis*) – endangered;
 - d. Broad-toothed Rat (*Mastacomys fuscus mordicus*) – vulnerable;
 - e. Clover Glycine (*Glycine latrobeana*) – vulnerable;
 - f. Hoary Sunray (*Leucochrysum albicans* var. *tricolor*) – endangered;
 - g. Mauve Burr-daisy (*Calotis glandulosa*) – vulnerable;
 - h. Macquarie Perch (*Macquaria australasica*) – endangered;
 - i. Smoky Mouse (*Pseudomys fumeus*) – critically endangered; and
 - j. Spot-tailed Quoll (*Dasyurus maculatus maculatus* (SE mainland population)) – endangered.
36. The endangered Alpine Bogs and Fens ecological community was also mapped during surveys.
37. DPIE's report on MNES (Attachment F1) states that the survey methods and effort were appropriate and met the requirements of the NSW Biodiversity Assessment Method (BAM) to identify impacts to terrestrial biodiversity. Relevant past studies and species experts were consulted and referenced in the Biodiversity Development Assessment Report (BDAR). The survey results presented in the BDAR are robust and have led to improved knowledge of the distribution of threatened species within Kosciuszko National Park.

Project design refinement

38. The Department notes that the overall direct surface disturbance area for the proposed action was reduced from 1680 ha to 504 ha during the NSW assessment process.
39. Substantial reductions in the disturbance area have occurred as a result of:
 - a. relocating the power station, ancillary elements and staging areas from environmentally sensitive Plateau areas to less-sensitive areas, including the Rock Forest site located outside of Kosciuszko National Park; and
 - b. relocating roads and communication cables to along existing cleared access tracks where possible.

Appropriateness of offsets

40. A large area of Kosciuszko National Park was surveyed and mapped for the proposed action. Biodiversity values were identified, impacts assessed, and offsets quantified (applying the NSW credit system to generate species and ecosystem credits) in accordance with the NSW *Biodiversity Conservation Act 2016*.
41. Appendix F of the NSW assessment report (Attachment F2) details how the biodiversity offset liability was calculated. In summary:
 - a. The proponent's EIS included a Biodiversity Offset Strategy (BOS) (Attachment G44) which provided a high-level commitment to offset residual impacts to biodiversity within Kosciuszko National Park. The proponent's revised BOS (Attachment G75) considered reduced impacts following project design refinements as part of the RTS. The BOS detailed the approach to offsets for residual impacts and proposed a payment of \$36 million comprising:
 - i. \$22 million for broad ecosystem management measures for weed, pest and predator control. This approach recognises that these landscape-scale actions will benefit all impacted biodiversity.
 - ii. \$14 million for targeted conservation actions for those Commonwealth-listed species the proponent considered to be significantly impacted. The Department notes that the proposed conservation actions were based on Commonwealth conservation advices, recovery plans and threat abatement plans.
 - b. A review of the revised BOS was undertaken on behalf of DPIE by an independent ecologist, who determined that:
 - i. the approach presented in the revised BOS was reasonable to quantify the proposed offset against the ecosystem credit liability of the project;
 - ii. several of the management actions were inadequately costed or not representative of the vegetation condition requirements to deliver and provide for the conservation outcomes over appropriate time scales;
 - iii. the proposed offset was inadequate to provide direct conservation outcomes for all threatened species impacted by the project; and
 - iv. the revised BOS did not adequately demonstrate how the proposed management actions would meet the Commonwealth's direct and like-for-like offset requirements in accordance with the *EPBC Act Environmental Offsets Policy*.
 - c. The independent expert recommended several changes to the method for calculating the offset liability, which resulted in the following:
 - i. increased offset liability for ecosystem management within Kosciuszko National Park from \$22 million in the revised BOS to approximately \$45 million – for landscape-scale actions that will benefit all impacted biodiversity;

- ii. increased species offset liability from \$14 million in the revised BOS to approximately \$28 million, which covers all threatened species to be impacted (including NSW listed species). The offset liability was calculated using a combination of:
 1. the financial equivalent of the credit liability for some species, calculated using the NSW biodiversity offset payment calculator (BOPC); and
 2. costing species-specific management actions for species where BOPC cost was considered disproportionately high; or the species was a priority bushfire affected species; or the species required direct like-for-like offsets in accordance with the *EPBC Act Environmental Offsets Policy*.

42. The NSW conditions (Attachment F3) require the proponent to pay the biodiversity offset liability in four instalments to NPWS. Once the money has been paid, the proponent will have fulfilled their biodiversity offset payment obligation. NPWS will then be responsible for spending the funds on conservation actions outlined in an overarching Biodiversity Offset Strategy and species-specific action plans.
43. The Department has entered into separate discussions with NPWS about how the offset funds will be spent and how the effectiveness of the management actions will be measured. NPWS has provided a governance and accountability framework and outlined broad conservation outcomes that will be achieved through the offset payment (Attachment F1).
44. The Department notes that the indicative conservation actions and broad outcomes proposed by NPWS are consistent with relevant Commonwealth recovery plans and threat abatement plans (see species-specific action plans at Attachment F1). These include conservation actions and outcomes aimed towards safeguarding and protecting bushfire-impacted populations and habitat. NPWS will consult with the Department to finalise the overarching offset strategy as well as these species-specific action plans.

Impacts of proposed action on listed species and communities

45. The proponent concluded in the RTS that the Smoky Mouse and Alpine Tree Frog were likely to be significantly impacted as a result of the proposed action. DPIE's report on MNES (Attachment F1) concluded that, in addition to the Smoky Mouse and Alpine Tree Frog, the proposed action would have a significant impact on the Alpine She-oak Skink, Broad-toothed Rat, and Alpine Bogs and Fens.
46. In addition to the above species and community, the Department considers that based on the information provided in the EIS and RTS, the Macquarie Perch is also likely to be significantly impacted by the proposed action.

Smoky Mouse (*Pseudomys fumeus*) – critically endangered

Species information

47. The Smoky Mouse is a small rodent endemic to mainland south-eastern Australia, where it occurs in NSW, Victoria and the ACT. The recovery plan for the Smoky Mouse states that the species has a relatively wide but disjunct distribution, with populations small and fragmented. The recovery plan also indicates that local extinctions have occurred in several areas, and the extent of the species within Kosciuszko National Park is unknown.

48. The recovery plan states that the Smoky Mouse occurs in a variety of vegetation communities, ranging from coastal heath to dry ridgeline forest, sub-alpine heath and, occasionally, wetter gullies. Common habitat features include the presence of a diversity of heath and bush-pea species, combined with potential shelter sites in the form of woody debris or rocks.

Impacts

49. The RTS states that the Smoky Mouse was recorded at 78 locations throughout the survey area and that this represents the largest known extant population of the species (see Figure 18 at [Attachment D](#) and Figures 5.8.2-5.8.45 at [Attachment G67](#) for more detail). Approximately 6000-7000 ha for the species was mapped within Kosciuszko National Park based on modelled habitat preference.
50. The RTS states that the proposed action will result in the clearance of 84.29 ha of habitat for the Smoky Mouse and may also result in increased predation and vehicle strike.
51. The RTS states that up to 142.5 ha of Smoky Mouse habitat could be indirectly impacted as a result of the proposed action. Indirect impacts on remaining Smoky Mouse habitat may occur as a result of introduced weeds and pathogens such as *Phytophthora cinnamomi*.
52. In accordance with the significant impact guidelines 1.1, the Department considers that the proposed action is likely to have a significant impact on the Smoky Mouse as the habitat to be cleared is necessary for foraging, breeding and roosting and is therefore likely to be habitat critical to the survival of the species. The disturbance of 226.79 ha of habitat will therefore adversely affect habitat critical to the survival of the Smoky Mouse and will also reduce the area of occupancy of the species.
53. DPIE's report on MNES ([Attachment F1](#)) indicates that approximately 90 percent of the known Smoky Mouse habitat in Kosciuszko National Park was impacted by the 2019/20 bushfires. The species has been recorded post fire by NSW agencies, but the impact on the population is unknown and survivorship may be low.

Mitigation measures

54. To reduce the threat of direct impacts to individuals and potential indirect impacts of the proposed action on habitat, the NSW conditions require the proponent to prepare and implement a biodiversity management plan that includes mitigation and management measures to:
- a. Control spread of weeds, pests and pathogens entering the site, including *Phytophthora cinnamomi*;
 - b. Ensure pre-clearance surveys are undertaken;
 - c. Minimise vehicle strike on roads and access tracks, by reducing speed limits from sunset to sunrise and through construction of fencing and fauna underpasses; and
 - d. Minimise clearance of native vegetation and habitat within the site.
55. The entire impact area will also be rehabilitated post construction, but this may take 20 years or more to be completed.
56. The Department considers that these measures are suitable and necessary to reduce impacts to the Smoky Mouse and remaining habitat, and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.

57. However, the proponent concluded, and the Department agrees, that even with these mitigation measures the proposed action will result in the direct clearance of 84.29 ha of habitat critical to the survival of the Smoky Mouse. Therefore, the proposed action is likely to result in a residual significant impact on the Smoky Mouse and offsets are required.

Offsets

58. The RTS states that the total 226.79 ha of Smoky Mouse habitat to be directly and indirectly impacted will be offset. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction. This will be spent on conservation actions for impacted biodiversity, including approximately \$11.53 million for the direct conservation and management of the Smoky Mouse.
59. The NSW conditions indicate that NPWS will prepare and implement a conservation program which will include holistic landscape-scale targeted weed and predator control across Kosciuszko National Park. NPWS will also prepare a species-specific program for the conservation and management of the Smoky Mouse, which must be prepared in consultation with the Department. DPIE's report on MNES includes indicative actions that are proposed to be included in the species-specific program for Smoky Mouse including (see [Attachment F1](#) for full list):
- a. comprehensive regional assessment to survey all known and potential unburnt habitat across Kosciuszko National Park and adjoining lands;
 - b. establish and maintain breeding program for 10 years, including surveys for breeding stock, trapping and capture program and reintroduction program with enhanced predator control; and
 - c. implementation of refuge and nesting habitat replacement in Kosciuszko National Park key habitat areas including gullies adjacent to unburnt or low intensity burnt areas.

Conclusion

60. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Smoky Mouse, and also recommends that you apply a clearance limit to Smoky Mouse habitat in your approval, to ensure no more than 84.29 ha is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Smoky Mouse.

Relevant statutory documents

61. The recovery plan for the Smoky Mouse came into force in 2006 and identifies the major threats to the species as:
- a. predation by introduced carnivores;
 - b. habitat changes due to altered fire regimes;
 - c. vegetation dieback caused by *Phytophthora cinnamomi*; and
 - d. loss, modification and fragmentation of habitat.
62. The overall strategy for recovery of the species, as detailed in the recovery plan, is to:
- a. secure habitat and stabilise population numbers of the Smoky Mouse in known populations;
 - b. implement targeted predator control;
 - c. trial construction of small-mammal refuges;

- d. undertake valid population monitoring;
 - e. establish a captive breeding colony for nutritional studies and potential re-introduction; and
 - f. undertake further research into the floristic composition of habitat used by the Smoky Mouse in each region for future management.
63. The following threat abatement plans are relevant to the Smoky Mouse:
- a. Threat abatement plan for predation by feral cats (2015);
 - b. Threat abatement plan for predation by the European red fox (2008);
 - c. Threat abatement plan for competition and land degradation by rabbits (2016); and
 - d. Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* (2018).
64. These threat abatement plans have the overall aim of reducing further impacts to listed threatened species and communities through a range of management actions. The threat abatement plans state that while eradication would be ideal, these introduced species and pathogens are well established across most of Australia, so eradication is unlikely. Therefore, the aim is to prevent further species decline. Management must be ongoing, targeted and integrated with control programs for other introduced species.
65. The Department has considered the recovery plan for the Smoky Mouse and relevant threat abatement plans in making this recommendation and considers that the recommended conditions require the proponent to undertake mitigation measures in accordance with the recovery plan and threat abatement plans to reduce threats from pests, weeds, pathogens and predators. The conditions also require offset funds to be paid to NPWS, which will provide for conservation actions in accordance with the recovery plan. Therefore, approval of the proposed action subject to the recommended conditions is not inconsistent with the recovery plan or a threat abatement plan.

Alpine Tree Frog (*Litoria verreauxii alpina*) – vulnerable

Species information

66. The Alpine Tree Frog is a small frog that occurs in the alpine and sub-alpine zones of south-eastern NSW and Victoria, generally higher than 1100 m above sea level. The conservation advice states that the Alpine Tree Frog has undergone a dramatic decline throughout its range, and the extent of occurrence has also declined.
67. The species can breed in natural and artificial wetlands including ponds, bogs, fens, streamside pools, stock dams, and drainage channels that are slow flowing or still. Non-breeding habitat and overwintering refuges are poorly known but are likely to include flat rocks, fallen logs, leaf litter and other ground debris. The distribution of this species overlaps with Alpine Bogs and Fens.

Impacts

68. The RTS states that over 300 individuals of the Alpine Tree Frog and 1800 tadpoles were recorded during surveys. The species was recorded at several watercourses across the Plateau area, including Nungar Creek, Eucumbene River and Tantangara Creek. A large population was recorded breeding on the shores of Tantangara Reservoir (see Figure 19 of Attachment D and Figures 5.11.2-5.11.23 of Attachment G67 for more detail).

69. The RTS states that key project elements were removed from the Plateau during design refinement to avoid impacts on species and communities in this area, including the Alpine Tree Frog. However, construction near Tantangara Reservoir for the accommodation camp and infrastructure cannot be relocated and the species will be impacted as a result.
70. The RTS states that the proposed action will result in the clearance of 22.87 ha of habitat for the Alpine Tree Frog, and that 31.54 ha of habitat could be indirectly impacted. The RTS indicates that indirect impacts may occur as a result of sedimentation and run-off into watercourses resulting in changes to water quality; and the introduction of pests, weeds and pathogens (such as chytrid fungus (*Batrachochytrium dendrobatidis*)).
71. Information from an external stakeholder ([Attachment I](#)) indicated that amphibians could be impacted by the introduction of viruses, e.g. ranavirus through the transfer of water between reservoirs. However, Departmental guidance¹ states that amphibian ranavirus has not been detected in Australia outside of Queensland and the Northern Territory (NT). Given this, the Department considers the risk of the Alpine Tree Frog being infected as a result of the transfer of water between reservoirs is low.
72. The Department considers that given the number of records of the Alpine Tree Frog and tadpoles within the disturbance area, the population is likely to be a key source population for breeding or dispersal and is therefore likely to be an important population. Therefore, in accordance with the significant impact guidelines 1.1, the proposed action is likely to have a significant impact on the Alpine Tree Frog as it will reduce the area of occupancy for an important population and has the potential to disrupt the breeding cycle of an important population.
73. DPIE's report on MNES ([Attachment F1](#)) indicates that 9.8 percent of Alpine Tree Frog habitat mapped for the proposed action was burnt during the 2019/20 bushfires, and the impact on habitat outside of the disturbance area is yet to be determined.

Mitigation measures

74. The NSW conditions require the proponent to prepare and implement a biodiversity management plan that includes mitigation and management measures to:
 - a. Control the spread of weeds, pests and pathogens entering the site, including chytrid fungus;
 - b. Ensure pre-clearance surveys are undertaken;
 - c. Minimise discharge of sediments into watercourses; and
 - d. Minimise clearance of native vegetation and habitat within the site.
75. The entire impact area will also be rehabilitated post construction, but this may take 20 years or more to be completed.
76. The Department considers that these measures are suitable and necessary to reduce impacts to the Alpine Tree Frog and its habitat, and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.
77. Even with these mitigation measures, the proponent concludes, and the Department agrees, that the proposed action is likely to adversely affect habitat critical to the survival of the species and reduce the area of occupancy of an important population of the species. Therefore, the proposed action is likely to result in a residual significant impact on the Alpine Tree Frog and offsets are required.

¹ https://www.agriculture.gov.au/sites/default/files/documents/infection_with_ranavirus.pdf

Offsets

78. The RTS states that the total 54.41 ha of Alpine Tree Frog habitat to be directly and indirectly impacted will be offset. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction, to be spent on conservation actions for impacted biodiversity, including \$4.4 million for the conservation and management of the Alpine Tree Frog.
79. The NSW conditions indicate that NPWS will prepare and implement a conservation program which will include holistic landscape-scale targeted weed and predator control across Kosciuszko National Park. NPWS will also prepare a species-specific program for the conservation and management of the Alpine Tree Frog, which must be prepared in consultation with the Department. DPIE's report on MNES includes indicative actions that are proposed to be included in the species-specific program for the Alpine Tree Frog including (see [Attachment F1](#) for full list):
- a. monitoring for key populations in Nungar Creek, Tantangara Creek/Murrumbidgee River and the Eucumbene River, and fencing key habitat to prevent access to breeding habitat by feral horses; and
 - b. implement a monitoring program looking at habitat characteristics, fecundity and breeding success in managed and unmanaged sites, in combination with local microclimate variables, particularly moisture, to better understand the impacts of feral horses, as well as the impacts of climate change on populations and identify potential climate change refugia.

Conclusion

80. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Alpine Tree Frog, and also recommends that you apply a clearance limit to Alpine Tree Frog habitat in your approval, to ensure no more than 22.87 ha is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Alpine Tree Frog.

Relevant statutory documents

81. The conservation advice for the Alpine Tree Frog was approved in April 2014 and states that the main threats to the species are:
- a. trampling of habitat by feral horses and cattle, leading to compaction of the soil and sphagnum (in bogs and fens), increased run-off and other changes to hydrology, accelerated erosion and invasion by exotic weeds;
 - b. changes to natural water flows as a result of groundwater extraction;
 - c. climate change including increased UV-B radiation;
 - d. inappropriate fire regimes;
 - e. potential infection with amphibian chytrid fungus; and
 - f. building activities, such as construction and management of hydroelectric facilities, and development of ski resorts leading to habitat loss and changes in water flow.
82. The conservation advice states the priority actions to assist in the recovery of the species are to:
- a. maintain natural water flows in all breeding habitats;
 - b. manage any changes to hydrology that may result in changes to water table levels and/or increased run-off, sedimentation or pollution;

- c. identify and undertake weed management at sites to reduce and/or remove weeds using appropriate methods;
 - d. reduce the size of populations of feral horses, and subsequently reduce the damage being caused to natural environments;
 - e. develop and implement suitable hygiene protocols to protect known sites from further outbreaks of amphibian chytrid fungus;
 - f. promote the regrowth of bog and fen vegetation species; and
 - g. retain fallen timber, rocks and other debris near wetlands and creeks; protect breeding pools from clearing or disturbance such as pollution.
83. The Department has had regard to the conservation advice for the Alpine Tree Frog in making this recommendation and considers that the recommended conditions require the proponent to undertake mitigation measures in accordance with the conservation advice. The conditions also require offset funds to be paid to NPWS, which will provide for conservation actions in accordance with the conservation advice.

Alpine She-oak Skink (*Cyclodomorphus praealtus*) – endangered

Species information

84. The Alpine She-oak Skink is a small lizard that occurs in alpine grasslands, alpine heathland and alpine grassy heathland above 1500 m in the Australian Alps from Omeo Plain in the south, to Kiandra in the north. The distribution of this species overlaps with Alpine Bogs and Fens.

Impacts

85. The RTS states that 37 individuals of the Alpine She-oak Skink were recorded from 24 locations across the survey area, primarily in sub-alpine dry grasslands and heathlands along the Plateau area (see Figure 20 of Attachment D and Figures 5.12.2-5.12.26 of Attachment G67 for more detail).
86. The RTS states that key project elements were removed from the Plateau during design refinement to avoid impacts on species and communities in this area, including the Alpine She-oak Skink. As a result, only one location where the species was recorded will be directly impacted by the proposed action.
87. However, the RTS states that 80.83 ha of habitat for the species will be cleared, with indirect impacts on up to 132.33 ha of retained habitat. Indirect impacts may occur as a result of the introduction or spread of weeds, predation by feral pest species such as cats and foxes, and the facilitation of increased levels of trampling of habitat by hooved feral animals such as horses and pigs.
88. The Department considers that the disturbance area contains habitat critical to the survival of the species, as the habitat is necessary for foraging, breeding and dispersal. In accordance with the significant impact guidelines 1.1, the Department considers that the clearance of 80.83 ha will adversely affect habitat critical to the survival of the species, and the proposed action is therefore likely to result in a significant impact on the Alpine She-oak Skink.
89. DPIE's report on MNES (Attachment F1) indicates that approximately 35 percent of the known habitat for the species in Kosciuszko National Park was burnt during the 2019/20 bushfires. The size of the population is currently unknown, and survivorship may be low.

Mitigation measures

90. The NSW conditions require the proponent to prepare and implement a biodiversity management plan that includes mitigation and management measures to:
 - a. Control the spread of weeds, pests and pathogens entering the site;
 - b. Ensure pre-clearance surveys are undertaken; and
 - c. Minimise clearance of native vegetation and habitat within the site.
91. The entire impact area will also be rehabilitated post construction, but this may take 20 years or more to be completed.
92. The Department considers that these measures are suitable and necessary to reduce impacts to the Alpine She-oak Skink and its habitat, and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.

Offsets

93. The proponent considers that the proposed action is unlikely to result in a significant impact on the Alpine She-oak Skink for the purposes of the EPBC Act, as only one location where they were recorded will be impacted; the removal of 80.83 ha of habitat represents only 4 percent of suitable habitat across the survey area; areas of suitable habitat will be retained; and indirect impacts will be mitigated. The proponent therefore concluded that offsets were not required.
94. However, the Department considers that even with the mitigation measures, the clearance of 80.83 ha of habitat will reduce the area of occupancy for an important population of the species. Therefore, the proposed action is likely to result in a residual significant impact on the Alpine She-oak Skink, and offsets are required.
95. The RTS states that the total 213.16 ha of Alpine She-oak Skink habitat to be directly and indirectly impacted will be offset, as required by NSW legislation. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction. This money will be spent on conservation actions for impacted biodiversity, including \$2.6 million for the conservation and management of the Alpine She-oak Skink.
96. The NSW conditions indicate that NPWS will prepare and implement a conservation program which will include holistic landscape-scale targeted weed and predator control across Kosciuszko National Park. NPWS will also prepare a species-specific program for the conservation of the Alpine She-oak Skink, which must be prepared in consultation with the Department. DPIE's report on MNES includes actions that are proposed to be included in the species-specific program for the Alpine She-oak Skink including (see [Attachment F1](#) for full list):
 - a. contribute to feral herbivore management programs in habitat areas including management of pigs, deer, and rabbits;
 - b. carry out regular monitoring (with a focus on northern Kosciuszko National Park) of species abundance, extent and condition to determine population trends through time and effectiveness of management actions; and
 - c. Genetic Rescue Program – Link with Zoos Victoria captive breeding population program to improve the diversity of the population in Kosciuszko National Park.

Conclusion

97. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Alpine She-oak Skink, and also recommends that you apply a clearance limit to Alpine She-oak Skink habitat in your approval, to ensure no more than 80.83 ha is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Alpine She-oak Skink.

Relevant statutory documents

98. The conservation advice for the Alpine She-oak Skink was approved in December 2009 and identifies the known threats to the species as loss and degradation of habitat; wildfire; and predation. Climate change and weed invasion are listed as potential threats.

99. The conservation advice states the priority actions to assist in the recovery of the species are to:

- a. ensure infrastructure or development activities involving substrate or vegetation disturbance in areas where the Alpine She-oak Skink occurs do not adversely impact on known populations;
- b. develop and implement a management plan for the control of weeds within the species range;
- c. where appropriate, manage total grazing pressure at important/significant sites through exclusion fencing or other barriers;
- d. develop and implement a management plan for the control and eradication of feral horses, deer and pigs in the region; and
- e. develop and implement a management plan for the control and eradication of black rats, foxes, cats and wild dogs in the region.

100. The threat abatement plan for predation by feral cats (2015) is relevant to the Alpine She-oak Skink. It suggests the use of control techniques such as shooting, live trapping or baiting, but notes that feral cats are widespread across Australia, so management must be targeted, integrated and ongoing.

101. The Department has had regard to the conservation advice and relevant threat abatement plan in making this recommendation and considers that the recommended conditions require the proponent to undertake mitigation measures in accordance with the conservation advice and threat abatement plan.

102. The conditions also require offset funds to be paid to NPWS, which will provide for conservation actions in accordance with the conservation advice. Therefore, approval of the proposed action subject to the recommended conditions is not inconsistent with a threat abatement plan.

Broad-toothed Rat (*Mastacomys fuscus mordicus*) – vulnerable

Species information

103. The Broad-toothed Rat is a small terrestrial and mostly nocturnal rodent. It has a highly fragmented distribution, with scattered records across the Great Dividing Range from near Warburton (Victoria) to the Brindabella Range (ACT) and around Barrington Tops (NSW).

104. Preferred habitats include alpine and subalpine heathlands, grassland adjacent to boulder outcrops, swamps, sedgeland, coastal grassy or shrubby dunes, and sometimes forests with grassy understories. Habitat suitability is largely determined by the availability of cover and grasses, and proximity to drainage lines.

Impacts

105. The RTS states that the Broad-toothed Rat was recorded at several locations within and adjacent to the disturbance area during surveys, from Link Road in the west, across the Plateau and towards Tantangara Reservoir (see Figure 18 of [Attachment D](#) and Figures 5.8.2-5.8.45 of [Attachment G67](#) for more detail). The RTS states that the population within Kosciuszko National Park is considered an important population as it is the largest national population of the species, occurs over a large relatively unfragmented area, and would be considered important for breeding and dispersal as well as maintaining genetic diversity.
106. The RTS states that 61.47 ha of habitat for the Broad-toothed Rat will be cleared as a result of the proposed action and individuals will potentially be impacted as a result of an increase in predation by feral animals such as cats and foxes.
107. The RTS states that up to 100.5 ha of habitat could be indirectly impacted as a result of the proposed action, through the potential increase of weeds, pathogens (including *Phytophthora*) and feral animals such as horses and pigs.
108. In accordance with the significant impact guidelines 1.1, the Department considers that the clearance of 61.47 ha of habitat is likely to reduce the area of occupancy of an important population and a significant impact as a result of the proposed action is therefore likely.
109. DPIE's report on MNES ([Attachment F1](#)) indicates that there is uncertainty regarding the extent of impact from the 2019/20 bushfires and the remaining extent of the population in Kosciuszko National Park, particularly around Tantangara Reservoir and the Plateau.

Mitigation measures

110. The NSW conditions require the proponent to prepare and implement a biodiversity management plan that includes mitigation and management measures to:
- a. Control the spread of weeds, pests and pathogens entering the site;
 - b. Ensure pre-clearance surveys are undertaken;
 - c. Construct road underpasses to link habitat; and
 - d. Minimise clearance of native vegetation and habitat within the site.
111. The entire impact area will also be rehabilitated post construction, but this may take 20 years or more to be completed.
112. The Department considers that these measures are suitable and necessary to reduce impacts to the Broad-toothed Rat and its habitat, and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.
113. The proponent considers that the proposed action is unlikely to result in a significant impact on the Broad-toothed Rat for the purposes of the EPBC Act, as the removal of 61.47 ha of habitat represents only 0.1 percent of the national occupancy of the species; suitable habitat will be retained; and mitigation measures will be put in place to reduce indirect impacts.
114. However, the Department considers that even with the mitigation measures, the clearance of 61.47 ha of habitat is likely to reduce the area of occupancy for an important population of the species. Therefore, the proposed action will result in a residual significant impact on the Broad-toothed Rat and offsets are required.

Offsets

115. The RTS states that the 161.97 ha of Broad-toothed Rat habitat to be directly and indirectly impacted will be offset, as required by NSW legislation. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction. This money will be spent on conservation actions for impacted biodiversity, including \$1.29 million for the protection of the Broad-toothed Rat.
116. The NSW conditions indicate that NPWS will prepare and implement a conservation program which will include holistic landscape-scale targeted weed and predator control across Kosciuszko National Park. NPWS will also prepare a species-specific program for the conservation of the Broad-toothed Rat, which must be prepared in consultation with the Department. DPIE's report on MNES includes actions that are proposed to be included in the species-specific program for the Broad-toothed Rat, including (see [Attachment F1](#) for full list):
- a. contribute to the genetic rescue program – developing genetic markers in scats to improve population monitoring across the species range in Kosciuszko National Park; and
 - b. carry out intensive feral animal control at key population sites including using techniques such as soft jaw trapping.

Conclusion

117. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Broad-toothed Rat, and also recommends that you apply a clearance limit to Broad-toothed Rat habitat in your approval, to ensure no more than 61.47 ha is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Broad-toothed Rat.

Relevant statutory documents

118. The conservation advice for the Broad-toothed Rat was approved in May 2016 and identifies the main threats to the species as:
- a. predation by foxes, feral cats;
 - b. too frequent burning;
 - c. global climate change;
 - d. habitat loss and fragmentation;
 - e. habitat change and resource depletion due to livestock and feral herbivores, weeds, pathogens; and
 - f. competition with other native rodents.
119. The conservation advice states the priority actions to assist in the management and recovery of the species are to:
- a. implement predator control programs;
 - b. maintain and protect habitat, including reducing the frequency of extensive and intense fires, and reducing the impacts of livestock and feral herbivores;
 - c. control or eradicate woody weeds in and around important subpopulations; and
 - d. maintain a captive breeding colony.

120. The threat abatement plan for predation by feral cats (2015) is relevant to the Broad-toothed Rat. It suggests the use of control techniques such as shooting, live trapping or baiting, but notes that feral cats are widespread across Australia, so management must be targeted, integrated and ongoing.
121. The Department has had regard to the conservation advice and relevant threat abatement plan in making this recommendation and considers that the recommended conditions require the proponent to undertake mitigation measures in accordance with the conservation advice and threat abatement plan.
122. The conditions also require offset funds to be paid to NPWS, which will provide for conservation actions in accordance with the conservation advice. Therefore, approval of the proposed action subject to the recommended conditions is not inconsistent with a threat abatement plan.

Macquarie Perch (*Macquaria australasica*) – endangered

Species information

123. The Macquarie Perch is a freshwater fish native to the cooler middle-upper reaches of the Murray-Darling Basin. In NSW, extant populations are known to occur in the upper reaches of the Lachlan, Murrumbidgee and Murray catchments and in the Hawkesbury/Nepean catchment on the east coast.
124. Habitat critical to the survival of the Macquarie perch is described as all areas within the species' range that are characterized by flowing runs or riffles and small complex rock piles, and in some waterways, instream woody habitats that provide cover.
125. The NSW assessment report states that Tantangara Reservoir provides environmental flows via Tantangara Dam into the Murrumbidgee River, which contains a significant population of the Macquarie Perch.

Impacts

126. The RTS states that environmental DNA surveys identified the presence of Macquarie Perch in the Lower Tumut River Catchment (below Blowering Reservoir), the Mid and Lower Murrumbidgee River Catchments, and the Murray River Catchment to Hume Reservoir (near Albury). It is not considered present in Talbingo or Tantangara reservoirs (see Figure 21 of Attachment D).
127. The NSW assessment report (Attachment F2) indicates that one of the main threats to the species from the proposed action is the potential transfer of Redfin Perch into Tantangara Reservoir from Talbingo Reservoir and ultimately into the Mid Murrumbidgee River below the Tantangara dam. Macquarie Perch are known to occur, and Redfin Perch are currently considered absent, in this part of the catchment.
128. Redfin Perch have been linked with the decline in numbers of Macquarie Perch through competition for food, such as fish larvae and aquatic macroinvertebrates, and via direct predation on Macquarie Perch larvae and juveniles. The establishment of Redfin Perch in the Mid Murrumbidgee River where Macquarie Perch currently exist, would likely result in a significant impact on the Macquarie Perch.
129. Redfin Perch are also the primary vector for the Epizootic Haematopoietic Necrosis Virus (EHNV). Redfin Perch are present in Talbingo Reservoir and not in Tantangara Reservoir. While EHNV has not been detected in Talbingo Reservoir before, there is potential for EHNV to be present at levels below detectability or establish within Talbingo Reservoir at some point in the future.

130. If the proposed action facilitates the transfer of Redfin Perch through the pipeline, this would lead to an increase in the risk of an outbreak of EHNV within Tantangara Reservoir. If an outbreak occurs within Tantangara Reservoir, water released from the dam into the Mid Murrumbidgee River may contain the disease. As Macquarie Perch have been shown to be susceptible to EHNV under laboratory conditions, it is possible that a wild population could be affected if they were to come in contact with the disease.
131. The NSW assessment report and DPIE's report on MNES ([Attachment F1 and F2](#)) did not include an assessment of impacts on the Macquarie Perch against the significant impact guidelines 1.1. However, the NSW assessment report indicated that while the likelihood of occurrence was low, the introduction of Redfin Perch into the Murrumbidgee River could result in significant stress to the Macquarie Perch population.
132. In accordance with the significant impact guidelines 1.1, the Department considers that the introduction of Redfin Perch as a result of the proposed action would result in an invasive species that is harmful to an endangered species becoming established in the endangered species' habitat. Therefore, the proposed action has the potential to result in a significant impact on the Macquarie Perch.

Mitigation measures

133. The NSW conditions require the proponent to install fish screens at the southern end of the Tantangara Reservoir (near the dam wall) to prevent the movement of pest fish (in all its forms: eggs, larvae, juveniles and adults) and spread of disease to the Mid Murrumbidgee River and Lake Eucumbene.
134. In addition, the proponent must prepare a Biosecurity Risk Management Plan to the satisfaction of the Director-General of NSW Department of Primary Industries (NSW DPI), which must be prepared in consultation with DPIE, NPWS and the Department. The plan must detail measures to minimise the biosecurity risks associated to the development, including the movement and/or spread of weeds, fish and pathogens; and the impact on the Macquarie Perch. The Biosecurity Risk Management Plan must include:
- a. development of systems to prevent spills from the Tantangara Reservoir;
 - b. disease surveillance and eradication/management measures to protect the Macquarie Perch in the Mid-Upper Murrumbidgee catchment;
 - c. detailed plans for the installation and use of the fish screens; and
 - d. a program to monitor, evaluate and publicly report on the plans, including carrying out monitoring using epidemiologically designed surveys and conducting fish, disease and eDNA surveys.
135. In addition to these conditions, the Department has recommended additional conditions which require the proponent to:
- a. Investigate measures, including the installation of secondary fish barriers, to protect tributaries identified as priority receiving sites during the captive breeding program for Macquarie Perch (discussed below) and if proven to be effective, install the barriers;
 - b. have the Biosecurity Management Plan and Threatened Fish Management Plan (discussed below) peer reviewed by independent expert(s) approved by the Department; and
 - c. make monitoring data available to the Department or public, if requested.

136. The Department considers that these measures are suitable and necessary to reduce the likelihood of pest fish and disease from entering the Mid Murrumbidgee River and potentially becoming established, and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval and attach the additional conditions.
137. However, the measures relate to reducing the likelihood of occurrence, rather than preventing pest fish and disease from entering Tantangara Reservoir. As a result, the Department considers that there is still a possibility that pest fish and disease could become established in Tantangara Reservoir and the Mid Murrumbidgee River, which could lead to significant impacts on the Macquarie Perch.

Offsets

138. To compensate for the potential impacts on the Macquarie Perch, the NSW conditions require the proponent to prepare a Threatened Fish Management Plan to the satisfaction of the Director-General of NSW DPI, and in consultation with DPIE and the Department, which must include:
- a. establishment and use of an expert advisory committee to provide advice on implementation of the plan;
 - b. a detailed captive breeding program for the Macquarie Perch (and Stocky Galaxias – discussed in the whole of environment section below), involving the spend of \$5 million over 5 years that provides for:
 - i. population monitoring, surveillance and research on these species in the Mid to Upper Murrumbidgee catchment;
 - ii. habitat surveys to identify suitable receiving sites for stocking insurance populations;
 - iii. captive breeding, stocking and monitoring of these species with the aim of achieving self-sustaining populations; and
 - iv. habitat enhancement for the Macquarie Perch in the Mid Murrumbidgee catchment in accordance with the National Recovery Plan.
 - c. a review of the captive breeding program after 5 years, detailing the trigger, action and response plan for the extension of the program.

Conclusion

139. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Macquarie Perch. The Department also recommends that you attach additional conditions as described in paragraph 135. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Macquarie Perch.

Relevant statutory documents

140. The conservation advice for the Macquarie Perch was approved in December 2013 and the recovery plan came into force in May 2018.
141. The conservation advice and recovery plan identify the main threats to the Macquarie Perch as:
- a. human activity-induced sedimentation increases;
 - b. competition and predation by alien fish species including carp, gambusia, redfin perch and trout;
 - c. barriers to fish movement;

- d. altered flow regimes;
- e. alien diseases such as Epizootic Haematopoietic Necrosis Virus (EHNV);
- f. cold water pollution from water releases;
- g. water quality pollution; and
- h. illegal and incidental capture by recreational fishing of wild populations.

142. The conservation advice and recovery plan identify priority actions to assist in the recovery of the species, including:

- a. identify populations of high conservation priority;
- b. conserve existing Macquarie Perch populations;
- c. protect and restore Macquarie Perch habitat, including modifying structures currently blocking movements, to allow passage of Macquarie perch, wherever possible (e.g. fishways on weirs);
- d. understand and address threats to Macquarie Perch populations and habitats;
- e. improve understanding of the biology and ecology of the Macquarie Perch and its distribution and abundance;
- f. enable recovery of additional sites and populations;
- g. establish additional Macquarie Perch populations within the species' natural range;
- h. develop and implement suitable hygiene protocols to protect known sites from further outbreaks of EHNV;
- i. manage any changes to hydrology that may result in increased cold-water pollution, salinity, algal blooms, sedimentation or pollution; and
- j. manage alien fish species that affect Macquarie Perch, including Carp, Gambusia, Redfin Perch and Trout.

143. The Department has had regard to the conservation advice and recovery plan in making this recommendation and considers that the recommended conditions require the proponent to undertake mitigation measures in accordance with the conservation advice and recovery plan. The conditions also require a captive breeding program and monitoring for invasive fish and disease, which are in accordance with the conservation advice.

Alpine Bogs and Fens (endangered)

Ecological community information

144. The Alpine Bogs and Fens ecological community has a limited distribution and is scattered across a wide range. Although the ecological community can form extensive interconnected networks across large plains, it is considered naturally discontinuous, and occurs in gullies, depressions and cold air drainage areas. The ecological community is found in permanently wet sites in high rainfall alpine, sub-alpine and montane areas of NSW, ACT, Victoria and Tasmania.

145. Although it is not always the dominant genus, the bogs component of the ecological community can usually be defined by the visual presence of Sphagnum, although it is often absent or less obvious in fens and degraded wetlands. The fens are shallow, open water pools with or without emergent aquatic plants and are often near to or surrounded by bogs.

146. The ecological community is groundwater dependent and requires an impeded drainage system that keeps the water table at or near the surface. Under these conditions, the decomposition of organic materials is incomplete, eventually forming the peat that typically underlies the ecological community.

Impacts

147. The RTS states that 86 ha of Alpine Bogs and Fens was mapped within the survey area, mostly across the Plateau and around Tantangara Reservoir (see Figure 22 at [Attachment D](#)). The RTS considered that only NSW Plant Community Type (PCT) 637 contained the characteristics to be the Commonwealth-listed ecological community.

148. The RTS states that key project elements were removed from the Plateau during design refinement to avoid impacts on species and communities in this area, including the Alpine Bogs and Fens. As a result, only 1.03 ha of the ecological community will be directly cleared. However, the RTS states that an additional 4.41 ha of the ecological community could be indirectly impacted as a result of an increase and weeds, pathogens and feral animals (particularly hooved animals).

149. The RTS also states that a further 6.93 ha of Alpine Bogs and Fens is within the mapped groundwater drawdown area and will experience drawdown of between 0.5 m and 5 m. These changes in hydrology have the capacity to impact on abiotic factors necessary for the ecological community's survival, particularly through changing the anaerobic processes that assist formation of organic matter (peat).

150. While groundwater modelling was undertaken by the proponent, the Department considers there is uncertainty around the severity of impacts from groundwater drawdown on Alpine Bogs and Fens, which will only become known once construction of the tunnel commences.

151. In accordance with the significant impact guidelines 1.1, the Department considers that the clearance of Alpine Bogs and Fens and potential drawdown is likely to modify or destroy abiotic factors necessary for the ecological community's survival, and the proposed action is therefore likely to have a significant impact on the Alpine Bogs and Fens.

152. DPIE's report on MNES ([Attachment F1](#)) indicates that the 2019/20 bushfires have severely impacted 56 percent of the 86 ha of Alpine Bogs and Fens mapped in the survey area.

Mitigation measures

153. To mitigate indirect impacts from weeds, pathogens and feral animals, the NSW conditions require the proponent to prepare and implement a biodiversity management plan that includes mitigation and management measures to:

- a. control spread of weeds, pests and pathogens entering the site; and
- b. minimise clearance of native vegetation and habitat within the site.

154. The entire impact area will also be rehabilitated post construction, but this may take 20 years or more to be completed.

155. In regard to potential impacts on the ecological community from groundwater drawdown, the Department notes that tunnel pre-grouting and lining will reduce water loss, but there is still some uncertainty as to the amount of water loss and its extent. Therefore, the NSW conditions require the proponent to ensure the proposed action does not exceed certain trigger levels for Alpine Bogs and Fens (PCT 637), including negligible changes to the:
- a. ecosystem functionality of the PCT; and
 - b. shallow groundwater regime supporting the PCT.
156. The Department considers that these mitigation measures are suitable and necessary to minimise indirect impacts to the community and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.
157. The Department notes that the condition relating to trigger levels is included as part of the Biodiversity Management Plan, which is likely to only be in force during construction. The Department considers there is a chance that impacts may not occur until after the construction period has ended. Therefore, the Department has recommended an additional condition to ensure monitoring of impacts to Alpine Bogs and Fens is undertaken for a minimum of 20 years to account for any groundwater or ecological changes that may occur because of the proposed action after the construction period.

Offsets

158. The RTS states that the 5.44 ha of Alpine Bogs and Fens to be directly and indirectly impacted will be offset, as required by NSW. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction. This money will be spent on conservation actions for impacted biodiversity, including \$1.4 million for the conservation and protection of Alpine Bogs and Fens.
159. The NSW conditions indicate that NPWS will prepare and implement a conservation program which will include holistic landscape-scale targeted weed and predator control across Kosciuszko National Park. NPWS will also prepare a specific program for the conservation of Alpine Bogs and Fens, which must be prepared in consultation with the Department. DPIE's report on MNES includes actions that are proposed to be included in the specific program for Alpine Bogs and Fens, including (see [Attachment F1](#) for full list):
- a. Investigate fencing of habitat at key sites including the Gulf Plain area, creating a feral horse exclusion area; and
 - b. Intensive feral herbivore control and rehabilitation (with potential exclusion fencing) at key sites, including surveys to identify key sites for protection.
160. In addition, if trigger levels for Alpine Bogs and Fens are exceeded and the ecological community is impacted as a result of groundwater drawdown associated with the proposed action, the proponent must pay an additional sum to NPWS to offset the residual impacts. If this occurs, the NSW conditions require that the Department will be consulted to determine a suitable offset payment to compensate for the impacts.

Conclusion

161. In addition to additional monitoring of impacts to Alpine Bogs and Fens as discussed at paragraph 157, the Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Alpine Bogs and Fens, and also recommends that you apply a clearance limit in your approval, to ensure no more than 1.03 ha of Alpine Bogs and Fens is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Alpine Bogs and Fens ecological community.

Relevant statutory documents

162. The conservation advice for Alpine Bogs and Fens was approved in December 2008 and the recovery plan came into force in November 2015.

163. The conservation advice and recovery plan identify the main threats to the ecological community, which includes:

- a. fire;
- b. exotic weed invasions;
- c. grazing and trampling by non-native animals;
- d. tourism and increased human infrastructure; and
- e. climate change.

164. The recovery plan identifies priority actions to assist in the recovery of the ecological community, including:

- a. develop and implement appropriate management regimes to prevent further loss of functionally important species and community integrity;
- b. where the community has been damaged or degraded as a result of wildfire or the impact of grazing and trampling, monitor recovery and reflect such activities in relevant management and planning documents;
- c. ensure that any development or maintenance activities in areas where the community is known to occur do not result in adverse impacts;
- d. prevent or minimise any changes or disruptions to hydrology and water flows which may result in changes to the water table levels, increased run off or sediment;
- e. eradicate or control weed infestations within the ecological community using appropriate methods;
- f. prevent grazing pressure at known occurrences community;
- g. implement existing management plans for the control and eradication of feral non-native animals in alpine and subalpine regions;
- h. develop and implement suitable fire management strategies to prevent further loss of functionally important species and community integrity; and
- i. when implementing measures to manage and reduce threats to the ecological community, undertake broader efforts across the Alps/Tasmanian highland catchments. The health of the broader catchments is crucial to maintaining and restoring the hydrological processes relevant to the ecological community (and vice versa).

165. The Department has had regard to the conservation advice and recovery plan in making this recommendation and considers that the recommended conditions require the proponent to undertake mitigation measures in accordance with the conservation advice and recovery plan. Therefore, the Department considers that approval of the proposed action is not inconsistent with the recovery plan.

Other listed species

166. An assessment of other Commonwealth-listed species was undertaken by NSW. DPIE's report on MNES concluded, and the Department agrees, that the proposed action would not have a significant impact on the following Commonwealth-listed species that were observed during surveys:

Booroolong Frog (Litoria booroolongensis) – endangered

167. The RTS states that 137 individuals of the Booroolong Frog were observed along the entire length of the Yarrangobilly River within the survey area and the population is likely to extend upstream to at least Blue Creek Firetrail (see Figure 19 at [Attachment D](#) and Figures 5.11.2-5.11.23 at [Attachment G67](#)). Infrastructure and construction works have been located to largely avoid Yarrangobilly River, associated tributaries and fringing vegetation which contain their preferred habitats. Some minor vegetation works are required for two bridge upgrades, resulting in impacts to 1.56 ha of Booroolong Frog habitat.

168. Information from an external stakeholder indicated that amphibians could be impacted by the introduction of viruses, e.g. ranavirus from the transfer of water between reservoirs. However, Departmental guidance (see footnote on page 13) states that amphibian ranavirus has not been detected in Australia outside of Queensland and the Northern Territory (NT). Given this, the Department considers the risk of the Booroolong Frog being infected as a result of the transfer of water between reservoirs is low.

Clover Glycine (Glycine latrobeana) – vulnerable

169. The RTS states that 975 individuals were recorded across the survey area, including a large population of approximately 600 individuals to the east of Tantangara Road (see Figure 23 at [Attachment D](#) and Figures 5.4.2-5.4.30 at [Attachment G67](#)). The disturbance area was subsequently revised to avoid this large population as well as other individuals. The RTS states that 10 individuals of the Clover Glycine will be directly removed as a result of the proposed action.

Hoary Sunray (Leucochrysum albicans var. tricolor) – endangered

170. The RTS states that the Hoary Sunray was recorded within Rock Forest and along the Snowy Highway (see Figure 23 at [Attachment D](#)). Over 900 individuals were recorded from 41 locations. No records were found within the disturbance area.

Mauve Burr-daisy (Calotis glandulosa) – vulnerable

171. The Mauve Burr-daisy was found to occur extensively across the survey area, with the species recorded colonising edges of management tracks. Over 44,000 individuals were estimated to occur within the survey area across 779 locations, including across the Plateau (see Figure 23 at [Attachment D](#) and Figures 5.4.2-5.4.30 at [Attachment G67](#)). The disturbance area was subsequently revised to avoid impacts to a substantial part of the population. The RTS states that 3,714 individuals will be directly impacted as a result of the proposed action, representing approximately 8 percent of the recorded population in Kosciuszko National Park.

Spot-tailed Quoll (Dasyurus maculatus maculatus (SE mainland population)) – endangered

172. No Spot-tailed Quolls were recorded during targeted surveys within the disturbance area; however, an incidental record of a Spot-tailed Quoll scat was recorded off Wallace's Creek Firetrail (see Figure 24 of Attachment D). The Spot-tail Quoll is known to have home ranges of several hundred to several thousand hectares and occurs at low densities.

Conclusion

173. Substantial effort has been taken during the design refinement process to avoid impacts to the above species where possible, such that direct impacts on the above-listed species are minimal and unlikely to reduce the area of occupancy of these species, or lead to long-term declines in the size of populations.

174. However, the proposed action has the potential to introduce invasive weeds, pests and pathogens that are harmful to some of these species, including *Phytophthora cinnamomi* and Chytrid fungus.

175. The Department notes that although NSW determined these species would not be significantly impacted, the NSW conditions require the preparation of a Biodiversity Management Plan that includes measures to reduce any indirect impacts on these species, including weed, pest and pathogen control measures.

176. The Department considers that these mitigation measures are suitable and necessary to minimise indirect impacts to these species and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.

177. With implementation of the recommended conditions, the Department considers that the proposed action is unlikely to result in a residual significant impact on any of these species and therefore will not have an unacceptable impact on any other Commonwealth-listed species.

Relevant statutory documents

178. The following statutory documents are relevant for these species:

- a. Recovery plans for Hoary Sunray, Clover Glycine and Spotted-tailed Quoll;
- b. Threat Abatement Plan for infection of amphibians with chytrid fungus resulting in chytridiomycosis (2016) – Booroolong Frog;
- c. Threat abatement plan for predation by feral cats (2015) – Spot-tailed Quoll;
- d. Threat abatement plan for predation by the European red fox (2008) – Spot-tailed Quoll;
- e. Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*) (2017) – Mauve Burr-daisy;
- f. Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* (2018) – Clover Glycine; and
- g. Threat abatement plan for competition and land degradation by rabbits (2016) – Clover Glycine.

179. The relevant recovery plans identify that these species are under threat from habitat loss, modification and fragmentation. Similarly, these species are under threat from introduced pests, pathogens or predators, including cats, foxes, horses, pigs and *Phytophthora cinnamomi*. The Booroolong Frog is specifically at risk from invasive fish and Chytrid fungus, and the introduction and spread of weeds are major threats for the Clover Glycine, Hoary Sunray and Mauve Burr-daisy.

180. The NSW conditions require the proponent to implement a biodiversity management plan for all impacted terrestrial species and communities, which includes measures to reduce the introduction and spread of weeds, pests, pathogens and predators. The Department considers these measures are in accordance with the relevant statutory documents.
181. The Department has had regard to the recovery plans and relevant threat abatement plans in making this recommendation and considers that approval of the proposed action is not inconsistent with a recovery plan or a threat abatement plan.

Listed migratory species (sections 20 and 20A)

182. Three migratory species were observed in the study area during surveys, being Satin Flycatcher (*Myiagra cyanoleuca*), White-throated Needletail (*Hirundapus caudacutus*) and Latham's Snipe (*Gallinago hardwickii*) (see Figure 25 of Attachment D and Figure 5.6.2-5.6.44 of Attachment G67). DPIE's report on MNES provides a summary of impacts on migratory species but does not include an assessment against the significant impact guidelines 1.1. The Department has therefore undertaken an assessment of impacts on migratory species, as discussed below.

Satin Flycatcher

Species information

183. The Satin Flycatcher is a small bird that is widespread in eastern Australia and vagrant to New Zealand, as well as occurring at many scattered sites in New Guinea and offshore islands.
184. The species inhabits heavily vegetated gullies in eucalypt-dominated forests and taller woodlands. During migration they occur in coastal forests, woodlands, mangroves and drier woodlands and open forests. The species are often found near wetlands or watercourses.

Impacts

185. The RTS states that a total of 9 individuals of the Satin Flycatcher were recorded on 5 separate occasions across the survey area. The Department's *Referral guideline for 14 birds listed as migratory under the EPBC Act* states that an ecologically significant proportion of the Satin Flycatcher population is 1,700 individuals.

Conclusion

186. The RTS states, and the Department agrees, that the habitat in the construction envelope does not constitute 'important habitat' for the Satin Flycatcher or support an ecologically significant proportion of the population of the Satin Flycatcher. Therefore, the Satin Flycatcher is unlikely to be significantly impacted as a result of the proposed action.

White-throated Needletail

Species information

187. The White-throated Needletail is an almost exclusively aerial species that is widespread in eastern and south-eastern Australia, occurring in coastal areas of Queensland and NSW, to western slopes of the Great Dividing Range and occasionally on adjacent inland plains. The species breeds in Asia and spends the non-breeding season in Australia, but occasionally in New Guinea and New Zealand.

Impacts and conclusion

188. The RTS states that the White-throated Needletail was recorded flying on 3 separate occasions.

189. The Department's *Referral guideline for 14 birds listed as migratory under the EPBC Act* states that an ecologically significant proportion of the White-throated Needletail population is 10 individuals.
190. The Department's Species Profile and Threats Database (SPRAT) states that the species is a mostly aerial species but has occasionally been observed roosting. The Department considers that given the proponent only recorded the species flying on 3 occasions, and it was not recorded roosting or foraging, the species is unlikely to be significantly impacted as a result of the proposed action.
191. The Department notes that the White-throated Needletail was listed as migratory at the time of the controlled action decision, and was subsequently listed as vulnerable in July 2019, after the controlled action decision. In accordance with section 158A of the EPBC Act, as the listing event occurred after the controlled action decision was made under section 75, the vulnerable listing status of the species is to be disregarded and does not affect subsequent approval process decisions.

Latham's Snipe

Species information

192. The Latham's Snipe is a non-breeding migrant to the south east of Australia including Tasmania, passing through the north and New Guinea on passage. The species breeds in Japan and far eastern Russia. The entire global population of 25,000 to 100,000 birds is thought to migrate to Australia.
193. The species is typically found on wet soft ground or shallow water with good cover of tussocks and is often found in wet paddocks or seepage areas below dams. Alpine bogs and fens and sub-alpine wet grasslands provide suitable habitat for this species in Kosciuszko National Park.

Impacts

194. The RTS states that 58 records consisting of 107 individuals of the Latham's Snipe were recorded adjacent to Tantangara Reservoir and across the Plateau, within and adjacent to the disturbance area. The Department notes that the majority of records were in close proximity to records of the Alpine She-oak Skink, Alpine Tree Frog and Broad-toothed Rat.
195. The Department's *Referral guideline for 14 birds listed as migratory under the EPBC Act* states that an ecologically significant proportion of the Latham's Snipe population is 18 individuals, therefore this population is an important population. The significant impact guidelines 1.1 state that habitat that is utilised by migratory species within a region that supports an ecologically significant proportion of the population is important habitat.
196. The Department notes that key project elements were removed from the Plateau during design refinement to avoid impacts on species and communities in this area, including the Latham's Snipe.
197. The RTS states that 81.86 ha of suitable habitat for the Latham's Snipe will be cleared as a result of the proposed action. The Department notes that there is no consideration in the RTS or DPIE's report on MNES of whether there will be indirect impacts on the Latham's Snipe or its habitat. The Department considers that there is potential for additional indirect impacts to occur on surrounding habitat as a result of weeds, pests and pathogens.

Mitigation measures

198. While the NSW conditions do not include mitigation measures specifically relating to the Latham's Snipe, the Department notes that the NSW conditions require the proponent to prepare and implement a biodiversity management plan that includes mitigation and management measures to:
- a. ensure pre-clearance surveys are undertaken;
 - b. control the spread of weeds, pests and pathogens entering the site; and
 - c. minimise clearance of native vegetation and habitat within the site, including Alpine Bogs and Fens, which is habitat for the Latham's Snipe.
199. The entire impact area will also be rehabilitated post construction, but this may take 20 years or more to be completed.
200. The Department considers that these mitigation measures are suitable and necessary to minimise indirect impacts to the species and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.

Offsets

201. The RTS states that the clearance is unlikely to result in a significant impact on the species for the purposes of the EPBC Act, as the breeding cycle of the species will not be disrupted (because it breeds overseas), and there will be large areas of high-quality habitat remaining in the region, therefore offsets are not required.
202. However, the Department considers that the proposed action will substantially modify, fragment or destroy an area of important habitat for the Latham's Snipe. Therefore, the proposed action will result in a residual significant impact on the Latham's Snipe and offsets are required.
203. The Department notes that the species' habitat closely aligns with several Commonwealth-listed species and communities that require offsets, including the Alpine She-oak Skink, Alpine Tree Frog, Broad-toothed Rat and Alpine Bogs and Fens.
204. Additionally, the proponent is required to offset any impacts to vegetation under NSW legislation. The Department therefore considers that the offsets required by the NSW conditions and detailed above will also benefit the Latham's Snipe and additional offsets are not required.

Conclusion

205. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for species that would also benefit the Latham's Snipe, and also recommends that you apply a clearance limit to Latham's Snipe habitat in your approval, to ensure no more than 81.86 ha is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Latham's Snipe.

Migratory species conclusion

206. The Department considers that the project will not have an unacceptable impact on the Latham's Snipe if undertaken in accordance with the recommended conditions of approval. In addition, the Department considers that the project will not have an unacceptable impact on the Satin Flycatcher or White-Throated Needletail.
207. Approval of the proposed action would not be inconsistent with Australia's obligations under the Bonn Convention, CAMBA, JAMBA or ROKAMBA under section 140 of the EPBC Act (see Attachment A1 for more details).

Whole of the environment (Commonwealth action – section 28)

Background

208. In accordance with section 528 of the EPBC Act, a Commonwealth agency includes: a company in which the whole of the shares or stock, or shares or stock carrying more than one-half of the voting power, is or are owned by or on behalf of the Commonwealth.
209. The proposed action is being undertaken by Snowy Hydro Limited (SHL). In July 2018, the Commonwealth acquired all remaining shares of SHL so it is now wholly-owned by the Commonwealth. Therefore, for the purposes of the EPBC Act, SHL is considered to be a Commonwealth agency and the proposed action will be an action by a Commonwealth agency inside Australian jurisdiction for the purposes of s 28 of the EPBC Act. Accordingly, an assessment of the impact of the proposed action on the environment is required.
210. 'Environment' is defined in the EPBC Act as including:
- a. ecosystems and their constituent parts including people and communities; and
 - b. natural and physical resources; and
 - c. the qualities and characteristics of locations, places and areas; and
 - d. heritage values of places; and
 - e. the social, economic and cultural aspects of a thing mentioned in paragraph a, b, c or d.
211. The NSW assessment report did not include an assessment of impacts against the Department's *significant impact guidelines 1.2 for actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* (significant impact guidelines 1.2).
212. The Department has therefore undertaken a separate assessment of these impacts and considers that in addition to the MNES assessed throughout this report, the following aspects of the environment have the potential to be impacted as a result of the proposed action:
- a. native vegetation communities and non-Commonwealth listed species, including the Eastern Pygmy-possum (*Cercartetus nanus*), Murray Crayfish (*Eaustacus armatus*) and Stocky Galaxias (*Galaxias tantangara*);
 - b. the safety and quality of life of members of the community;
 - c. natural landscape of Kosciuszko National Park and its resources, including water and soil;
 - d. amenity and recreational value of Kosciuszko National Park; and
 - e. Aboriginal heritage.
213. Impacts on these aspects of the environment have the potential to arise as a result of:
- a. clearance of vegetation and habitat;
 - b. introduction of weeds, pests, pathogens and predators, including the transfer of the Climbing Galaxias into Tantangara Reservoir and ultimately Tantangara Creek;
 - c. increased traffic movements, including an increase in large trucks and traffic congestion;
 - d. excavation and emplacement of spoil;

- e. changes to quality, quantity and availability of water resources;
- f. restrictions to entry to parts of Kosciuszko National Park impacting recreational value and Park amenity for users; and
- g. removal of Aboriginal artefacts and access restrictions to Aboriginal sites.

Native vegetation communities

214. The RTS states that 18 NSW plant community types (PCT - native vegetation communities) will be directly and indirectly impacted as a result of the proposed action. Approximately 425 ha of native vegetation will be cleared, with indirect impacts on a further 691 ha of native vegetation (based on potential weed incursion and edge effects within 20 m of the disturbance area) (see Table 9 of Attachment F2 for list of PCTs to be cleared).
215. The significant impact guidelines 1.2 state that an action will have a significant impact on the environment if it involves medium or large-scale native vegetation clearance, or clearance of any vegetation containing a listed threatened species which threatens the viability of the species.
216. The Department notes that the native vegetation forms habitat for several listed threatened species that will be significantly impacted (discussed in paragraphs 34-165 above).
217. The Department notes that mitigation measures will be implemented to minimise indirect impacts on native vegetation, and all impacted areas will be rehabilitated post construction to restore the ecosystem structure and function. However, as discussed in paragraphs 34-165 above, clearance of habitat for these species is likely to result in a residual significant impact and offsets are required.
218. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction. This money will be spent on conservation actions for impacted biodiversity, including up to \$45.8 million for holistic landscape-scale ecosystem management that would benefit native vegetation, and \$28 million for conservation and management of the listed species that use the native vegetation as habitat.
219. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for species habitat and native vegetation, and also recommends that you apply a clearance limit to native vegetation in your approval, to ensure no more than 425 ha is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on native vegetation communities.

Eastern Pygmy-possum

220. The Eastern Pygmy-possum is a very small mammal, listed as vulnerable under NSW legislation. It occurs from southern Queensland to eastern South Australia, and in Tasmania. In NSW, it is found from the coast to inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Habitat includes rainforest and sclerophyll forest, although woodland and heath are preferred, where they shelter in tree hollows, rotten stumps and holes in the ground.
221. The RTS states that the Eastern Pygmy-possum was recorded at numerous locations within and adjacent to the disturbance area, within the upper reaches of Lobs Hole Ravine Road to Lobs Hole and spanning across to Marica.

222. Approximately 197.95 ha of habitat will be directly cleared for the Eastern Pygmy-possum, and an additional 249.01 ha is likely to be indirectly impacted from the introduction of weeds, pests, pathogens and predators. The RTS states that the species may also be at risk of vehicle strike due to movement of trucks on Lobs Hole Ravine Road at night.
223. The NSW assessment report does not include an assessment of impacts on the Eastern Pygmy-possum. However, the significant impact guidelines 1.2 state that a significant impact on the environment is likely if an action will substantially reduce or fragment available habitat for a native species. The Department notes that mitigation measures will be implemented to reduce indirect impacts from weeds, pests and predators, and potential injury or death from vehicle strike. The entire disturbance area will also be rehabilitated post construction, but this may take 20 years or more to be completed.
224. Even with the mitigation measures, the Department considers that the clearance of 197.95 ha of habitat for the Eastern Pygmy-possum is likely to result in a residual significant impact and offsets are required.
225. The NSW conditions require the proponent to pay a minimum of \$59 million, and up to \$73.8 million (depending on the final disturbance area) to NPWS within the first 4 years of construction. This money will be spent on conservation actions for impacted biodiversity, including \$1.5 million for the conservation and management of the Eastern Pygmy-possum.
226. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Eastern Pygmy-possum, and also recommends that you apply a clearance limit to native vegetation in your approval, to ensure no more than 197.95 ha of habitat is cleared. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on the Eastern Pygmy-possum.

Murray Crayfish

227. The Murray Crayfish is listed as vulnerable under NSW legislation and is endemic to the southern tributaries of the Murray-Darling Basin. It occurs within Talbingo Reservoir and in all proximal catchments upstream and downstream of Talbingo Reservoir, including the Yarrangobilly River.
228. The EIS states that the species has been detected in low abundance within the construction footprint in Talbingo Reservoir. The RTS states that the placement of excavated rock spoil within Ravine Bay and the construction of the Talbingo intake, which will include blasting and dredging within the reservoir, are predicted to change water quality and reduce the availability of suitable habitat for the Murray Crayfish.
229. The NSW conditions require the proponent to prepare a Threatened Fish Management Plan to the satisfaction of the Director-General of NSW DPI, which must include:
- a. a specific program to minimise the impacts of the development on the Murray Crayfish in Talbingo Reservoir, including:
 - i. population monitoring and surveillance for Murray Crayfish;
 - ii. relocating any Murray Crayfish from the disturbance area prior to disturbance; and
 - iii. habitat enhancement for Murray Crayfish habitat in the vicinity of the disturbance area at Talbingo Reservoir, including the use of woody debris salvaged during construction.

230. The Department considers that these mitigation measures are suitable and necessary to minimise impacts on the Murray Crayfish and recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval.
231. If approved subject to these conditions, the Department considers the proposed action is unlikely to result in a residual significant impact on the Murray Crayfish, and will therefore not have an unacceptable impact on the species.

Stocky Galaxias

232. The Stocky Galaxias is a small fish listed as critically endangered under NSW legislation. It is not currently listed under the EPBC Act. While future listings cannot be taking into consideration in recommending this decision, the Department notes that the species is on the Department's Final Priority Assessment List to be listed as critically endangered under the EPBC Act in October 2020.
233. The only known population of the Stocky Galaxias occurs upstream of the project area in the headwaters of Tantangara Creek, a tributary of the Murrumbidgee River upstream of Tantangara Reservoir (see 'weir' at Figure 7 of [Attachment D](#) for population location). The population occurs above a waterfall, along a 3 km stretch, where the average stream size is 1 m wide by 0.1 m deep.
234. A known threat to the species is invasion by other fish, specifically salmonids (including trout). The population is naturally protected from trout by being located above the waterfall. Another species of threat is Climbing Galaxias, which currently occurs in Talbingo Reservoir. The Climbing Galaxias is a native species but considered exotic in the project area as it was transferred from its native coastal catchments to the upper Murray Catchment (and Talbingo Reservoir) via transfer through the original Snowy Mountains Scheme. The species' range has since expanded to occupy a diversity of stream types and sizes. Tantangara Reservoir currently has no records of the Climbing Galaxias.
235. While the EIS and RTS considered it unlikely to occur, the NSW assessment report indicated, and the Department agrees, that transfer of the Climbing Galaxias from Talbingo Reservoir to Tantangara Reservoir through the tunnel represents a major risk to the population of Stocky Galaxias, due to the extreme consequences, i.e. extinction, with the potential to lead to a significant impact. The RTS states that the Climbing Galaxias has the ability to climb the waterfall that currently separates the Stocky Galaxias from Tantangara Reservoir, and outcompete them for food, space and resources, potentially leading to extinction of the population. The significant impact guidelines 1.2 state that a significant impact on the environment is likely if an action will introduce exotic species which will substantially reduce habitat or resources for native species.
236. The NSW conditions require the proponent to install a fish barrier on Tantangara Creek to prevent, so far as is reasonably practicable, the Climbing Galaxias reaching the existing population of Stocky Galaxias in the upper reaches of the creek.
237. In addition, the NSW conditions require the proponent to prepare a Biosecurity Risk Management Plan to the satisfaction of the Director General of NSW DPI, which must be prepared in consultation with DPIE, NPWS and the Department. The plan must include:
- a. measures for minimising ongoing biosecurity risks including pest fish surveillance and eradication/management measures to protect the Stocky Galaxias in the Mid to Upper Murrumbidgee catchment; and
 - b. detailed plans for the installation of the fish barrier including minimising the environmental impacts of installation, testing the effectiveness prior to use and maintaining and improving the effectiveness over time.

238. In addition to these conditions, the Department has recommended additional conditions which require the proponent to:

- a. investigate measures, including the installation of secondary fish barriers, to protect tributaries identified as priority receiving sites during the captive breeding program for Stocky Galaxias (discussed below), and if proven to be effective, install the barriers;
- b. have the Biosecurity Management Plan and Threatened Fish Management Plan peer reviewed by independent expert(s) approved by the Department; and
- c. make monitoring data available to the public, if requested.

239. The Department considers that these mitigation measures are suitable and necessary to reduce the likelihood of the Climbing Galaxias from entering Tantangara Creek and potentially becoming established recommends you adopt the relevant NSW conditions relating to these measures in your EPBC Act approval, as well as include the additional conditions recommended above. However, the measures are designed to reduce the likelihood, rather than prevent pest fish from entering Tantangara Reservoir. As a result, the Department considers that there is still a real possibility that pest fish could become established in Tantangara Reservoir and consequently the Murrumbidgee River. If so, this could lead to residual significant impacts on the Stocky Galaxias and offsets are therefore required.

240. To compensate for the potential impacts on the Stocky Galaxias, the NSW conditions require the proponent to prepare a Threatened Fish Management Plan to the satisfaction of the Director-General of NSW DPI, and in consultation with DPIE and the Department. The plan must include:

- a. the establishment and use of an expert advisory committee to provide advice on the implementation of the plan;
- b. detailed measures that would be implemented to reduce impacts on the Stocky Galaxias and its habitat;
- c. a detailed captive breeding program for the Stocky Galaxias (and Macquarie Perch – discussed above) involving the spending of \$5 million over the first 5 years that provides for:
 - i. population monitoring, surveillance and research on the species in the Mid to Upper Murrumbidgee catchment;
 - ii. habitat surveys to identify suitable receiving sites for stocking insurance populations; and
 - iii. captive breeding, stocking and monitoring of the species with the aim of achieving self-sustaining populations; and
- d. review after 5 years detailing the trigger, action, response plan for extension of the program.

241. The Department recommends you adopt the relevant NSW conditions relating to mitigation and offsets for the Stocky Galaxias and add the additional recommended conditions as discussed at paragraph 238. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on Stocky Galaxias.

Other native species

242. The RTS states that other native species were recorded in the disturbance area and will be impacted (directly and indirectly) as a result of the proposed action, including:

- a. 1.6 ha of habitat for *Caladenia montana*;
- b. 4.89 ha of breeding habitat for Gang-gang Cockatoo (*Callocephalon fimbriatum*);
- c. 6.04 ha of habitat for Kiandra Leek Orchid (*Prasophyllum retroflexum*);
- d. 45 individuals of Leafy Anchor Plant (*Discaria nitida*);
- e. 2.59 ha of habitat for Max Mueller's Burr-daisy (*Calotis pubescens*);
- f. 0.8 ha of habitat for Raleigh Sedge (*Carex raleighii*);
- g. 0.28 ha of habitat for Slender Greenhood (*Pterostylis foliata*);
- h. 4.01 ha of habitat for Southern Myotis (*Myotis macropus*); and
- i. 23.13 ha of breeding habitat for White-bellied Sea Eagle (*Haliaeetus leucogaster*).

243. In accordance with the significant impact guidelines 1.2, the Department considers it unlikely that the proposed action will substantially reduce or fragment available habitat for these native species or cause a long-term decrease in a native population. Therefore, the proposed action is unlikely to result in a significant impact on any of these species.

244. Given the above information, the Department considers the proposed action will not have an unacceptable impact on any other native species.

People and communities

245. The Department considers that the proposed action has the potential to impact on people and communities through:

- a. an increase in traffic through Cooma and in and around Kosciuszko National Park, proposed road upgrades; and
- b. impacts on amenity and recreational values as a result of restricted access to areas of Kosciuszko National Park during construction.

Traffic

246. The RTS states that the key traffic and transport impacts include the generation of traffic and pressure on existing intersections within the Kosciuszko National Park and in Cooma township. Two new intersections will be established for construction access from the Snowy Mountains Highway (Marica Track and Rock Forest) with potential improvements carried out in Cooma to address existing peak traffic conditions in the winter period to accommodate traffic associated with the proposed action.

247. In regard to traffic generation, the RTS states that the number of heavy vehicle movements for both the Main Works and segment factory projects peak at 410 (205 movements in each direction) per day for several months in 2022 through Cooma. There will be an average of 208 heavy vehicle movements per day at this location for the duration of the construction of Snowy 2.0. For light vehicles, a peak of 150 project related movements (total in both directions) per day are anticipated on Link Road (between Kings Cross Road and Snowy Mountains Highway).

248. The RTS indicates that this level of daily increase of light and heavy vehicles as a result of the proposed action and the segment factory – approximately 650 total vehicles in a day – would not substantially reduce traffic flow or create congestion outside of winter periods. The traffic increase is less than the peak winter daily increase of 1,000 vehicles travelling in both directions. However, the cumulative increase of peak construction traffic as well as winter period traffic may cause localised congestion.
249. Given the temporary nature of impacts from traffic, which are mainly restricted to the construction period, the Department considers that the increase in traffic is unlikely to significantly impact people and communities, as peak periods will mostly occur outside of busy winter periods, and even during winter periods, congestion is expected to be localised.
250. The Department notes that, to reduce the impacts on people and communities from traffic, the NSW conditions require the proponent to, in consultation with relevant Councils and Transport for NSW:
- a. upgrade roads and intersections to improve line of sight and safety;
 - b. undertake road dilapidation surveys and repair of damage; and
 - c. manage peak construction traffic by:
 - i. scheduling heavy vehicle movements
 - ii. using buses to transfer workers to accommodation camps;
 - iii. maintaining an incident response vehicle for the project; and
 - iv. restricting vehicle speeds and volumes on specific routes.

Recreation and amenity

251. The Department considers that people and communities have the potential to be impacted through restricted access to areas of Kosciuszko National Park. Specifically:
- a. public access to Tantangara reservoir, via Tantangara Road would be restricted whilst the road is upgraded (9 months);
 - b. Lobs Hole Ravine Road and campground would be closed for the entire construction period;
 - c. Recreational fishing at Tantangara and Talbingo would be impacted during construction with temporary disruptions to boat ramp access and a potential for water quality impacts;
 - d. during operation, there is potential for impacts on recreational fishing in Tantangara reservoir and Lake Eucumbene due to changes in water quality or if pest fish are transferred from Talbingo and establish viable populations to compete with salmonid fish; and
 - e. impacts to the amenity of Kosciuszko National Park from construction noise, dust and lighting.
252. As the majority of impacts are temporary and restricted to the construction period, the Department considers the impacts to recreational values and amenity are unlikely to result in a significant impact on people and communities.

253. However, the Department notes that the NSW conditions require the proponent to implement strict environmental controls for noise, dust, lighting and water quality impacts. Similarly, impacts around Tantangara Reservoir will be minimised by scheduling works to avoid the peak summer camping period, and Lobs Hole campground will be rehabilitated, and access roads will be upgraded. Both recreational areas will also benefit from new facilities.
254. The proponent must also pay \$1.9 million to NPWS to offset the recreational impacts on Kosciuszko National Park, which must be spent on enhancement of recreational facilities in the Park, particularly around Talbingo Reservoir, Tantangara Reservoir and Lobs Hole.

Conclusion

255. Given the above information, the Department considers that the proposed action is unlikely to result in an unacceptable impact on people and communities.

Natural and physical resources

Spoil emplacement

256. The significant impact guidelines 1.2 state that a significant impact on the environment is likely if an action involves medium or large-scale excavation of soil or minerals. The Department considers a significant impact is likely, as the proposed action will involve the excavation and emplacement of approximately 8.9 million m³ of soil and rock spoil.
257. The EIS (Attachment G) indicated that approximately 12 million m³ of spoil would be excavated and require management. However, the project design and tunnelling method was amended, and this figure subsequently was reduced. The emplacement strategy also changed, with the EIS originally proposing to place the majority of spoil into the Talbingo and Tantangara Reservoirs. This was later considered a risk as some material would contain naturally occurring contaminants including potentially acid forming material and naturally occurring asbestos, which have the potential to impact water quality.
258. The NSW conditions require the proponent to:
- a. minimise spoil disposal in the reservoirs and place spoil in five emplacement areas within the disturbance area; four inside Kosciuszko National Park and one at Rock Forest;
 - b. not place any spoil from the tunnel boring machines in the active storages, or below the full supply level of either the Talbingo or Tantangara Reservoir; and
 - c. not place any spoil from dredging, channel excavation or underwater blasting in temporary emplacement areas or in the active storages, or below the full supply level of either the Talbingo or Tantangara Reservoir.
259. The NSW conditions also require all spoil material (except for 685,000 m³ which will be removed off-site after 5 years) to be permanently emplaced and fully rehabilitated to create natural, free-draining landforms that mimic the existing topography and support rehabilitation (see emplacement areas at Figures 10-13 of Attachment D).
260. The Department considers that as the spoil is to be permanently emplaced and rehabilitated to mimic the existing topography and blend in with the surrounding landscape, a relatively natural landscape form will be created, and a residual significant impact is therefore unlikely.
261. The Department has endorsed the NSW conditions relating to spoil management and rehabilitation and considers that if approved subject to these conditions, the proposed action will not have an unacceptable impact on natural resources.

Water resources

262. The significant impact guidelines 1.2 state that a significant impact on the environment is likely if an action will measurably reduce the quantity, quality or availability of surface or ground water, or channelise, divert or impound rivers or creeks. The Department considers a significant impact is likely, as the proposed action involves:
- a. water quality and quantity impacts from large scale transfer of water between two currently unlinked reservoirs;
 - b. water quality impacts from sub-surface construction of intake structures and fish screens;
 - c. surface water impacts from surface clearance and construction; and
 - d. groundwater drawdown impacts from construction of an underground tunnel and power station.
263. To manage the impacts of the proposed action on water resources, the NSW conditions require the proponent to:
- a. Ensure adequate water supply for the development and obtain water licences;
 - b. Maximise reuse of water on site during construction;
 - c. Implement erosion and sediment controls in accordance with specified guidelines;
 - d. Treat all process water and wastewater prior to discharge;
 - e. Minimise groundwater take from the Gooandra and Kelly's Plains Volcanics by pre and post grouting the tunnel in these areas;
 - f. Minimise loss of streamflows from Gooandra Creek and the upper Eucumbene River; and
 - g. Minimise groundwater quality impacts through design of temporary and permanent spoil emplacements and onsite water storages.
264. The proponent must also prepare a Water Management Plan (containing surface water and groundwater plans). It must include detailed baseline data and criteria for determining impacts, a monitoring program, and criteria for triggering remedial action (if necessary).
265. To improve transparency and minimise impacts on water, the Department has recommended an additional condition that requires consultation with the Department on the Water Management Plan.
266. The Department considers that these measures will measurably reduce impacts to water resources, and residual significant impacts are therefore unlikely.
267. The Department has endorsed the relevant NSW conditions and considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on water resources.

Heritage

268. The Department has assessed impacts on National Heritage places above. In addition to National Heritage places, the proposed action area contains Aboriginal heritage and local historic heritage values that may be impacted as a result of vegetation clearance and construction, including:
- a. Lobs Hole Ravine mining settlement;
 - b. Washington Hotel in Lobs Hole;
 - c. Ravine Cemetery;

- d. Aboriginal rock shelter near Tantangara Reservoir; and
 - e. Aboriginal heritage artefacts.
269. The significant impact guidelines 1.2 state that a significant impact on the environment is likely if an action will permanently destroy, remove or substantially alter the fabric of a heritage place, or substantially diminish the heritage value of a heritage place for a community or group for which it is significant. The Department considers that removal or damage to any of these heritage places would likely constitute a significant impact.
270. The NSW conditions require the proponent to avoid impacts to the following heritage elements:
- a. any Aboriginal heritage items outside the construction envelope;
 - b. the Aboriginal rock shelter near Tantangara Reservoir, 200 m outside of the construction envelope;
 - c. any of the historic heritage items outside the construction envelope; and
 - d. specific heritage items within the construction envelope (listed in Appendix 4 of the NSW conditions).
271. The proponent must also undertake archival recording, test excavation or salvage of the Aboriginal and historic heritage items affected by the development (listed in Appendix 4 of the NSW conditions), as well as the mining settlement in the Lobs Hole Ravine area.
272. In addition, the NSW conditions require the proponent to prepare a Heritage Management Plan in consultation with NPWS, Heritage Council, Registered Aboriginal Parties, Yala Ngurumbang Yindymarra Executive Advisory Committee and Southern Snowy Mountains Aboriginal Community MOU Group. The plan must describe the measures that would be implemented to:
- a. protect the heritage items mentioned above;
 - b. relocate moveable historic heritage items within the disturbance area;
 - c. manage the discovery of human remains or previously unidentified heritage items;
 - d. allow Aboriginal stakeholders to visit significant cultural heritage sites on site (in a safe measure without compromising construction); and
 - e. ensure works receive suitable training and inductions on the heritage management requirements on site.
273. To ensure consultation is undertaken in a transparent and effective way, the Department has recommended additional conditions which require consultation with the Department on the Heritage Management Plan, and inclusion of a consultation plan that outlines key indigenous stakeholders and when they are to be consulted.
274. The Department considers that these mitigation and management measures are suitable to reduce the impacts on Aboriginal and local historic heritage values, such that residual significant impacts on heritage are unlikely to occur.
275. The Department has endorsed the relevant NSW conditions and included additional conditions for greater transparency around stakeholder consultation. The Department considers that, if approved subject to the recommended conditions, the proposed action will not have an unacceptable impact on heritage values.

Greenhouse gas emissions

276. The Department notes that the EIS included an air quality impact assessment (Attachment G59), including assessment of greenhouse gas (GHG) emissions resulting from the proposed action.
277. The NSW assessment report includes consideration of emissions, indicating that GHG emission estimates (direct and indirect) for construction total 154,281 tonnes of carbon dioxide equivalent per year (t CO₂-e/yr) and 515,789 t CO₂-e/yr for operation. This equates to 0.03% and 0.10% of total annual GHG emissions for Australia, respectively.
278. The Department notes that most of the emissions would be Scope 2 associated with the purchase of electricity when operating the scheme in pumping mode. These emissions would reduce over time as coal-fired power stations are retired and the National Energy Market transitions to renewable energy.
279. SHL would implement measures to minimise construction and operational emissions, including regular maintenance of plant and equipment and minimising construction waste and vegetation clearing.
280. The Department has considered the information provided by the proponent and NSW and considers that there is unlikely to be a significant impact on the environment as a result of GHG emissions.



**THE HON SUSSAN LEY MP
MINISTER FOR THE ENVIRONMENT
MEMBER FOR FARRER**

EPBC Ref: 2018/8322

s47F(1)

General Manager Water and Environment
Snowy Hydro Limited
PO Box 332
COOMA NSW 2630

12 JUN 2020

Dear **s47F(1) s47F(1)**

Invitation to comment on proposed approval decision - Snowy 2.0 Main Works, NSW

I am writing to you in relation to Snowy Hydro Limited's proposal to construct and operate the Snowy 2.0 Main Works project, which includes a pipeline between Tantangara and Talbingo reservoirs, an underground power station, and associated infrastructure.

The Main Works project was referred to the Department under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and determined to be a controlled action on 5 December 2018. It was assessed by the NSW Government on behalf of the Commonwealth under an accredited assessment process, for its impacts on:

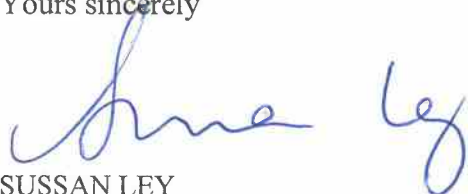
- National Heritage places (sections 15B & 15C)
- Listed threatened species and communities (sections 18 & 18A)
- Listed migratory species (sections 20 & 20A)
- Commonwealth action (section 28)

I have reviewed the relevant assessment documentation and now propose to approve the proposal under the EPBC Act, subject to conditions. I consider that a number of conditions are necessary to mitigate, manage and offset the impacts of the Main Works on nationally protected matters, including the environment generally as this is a Commonwealth action. I have decided to require the proponent to comply with the relevant NSW conditions of approval. I have added conditions only where I see these as necessary and convenient to protect matters protected under national environmental law, or to ensure enforceability under the EPBC Act. My proposed decision and conditions are attached for your information.

I now invite you to provide comments on my proposed decision within **10** business days of the date of this letter, to enable the Department to progress the proposal in a timely manner. I have also written to the NSW Government, Prime Minister, and other Commonwealth ministers who have administrative responsibilities, inviting their comments.

Please quote the title of the action and EPBC reference as shown at the beginning of this letter in any correspondence. Comments should be addressed to **s22(1)(a)(ii)**, Director, Southern NSW and ACT Assessments Section, and emailed to **s22(1)(a)(ii)** and epbc.nsw@awe.gov.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Susanna Ley". The signature is written in a cursive style with a large initial 'S' and a distinct 'Ley' at the end.

SUSSAN LEY



**THE HON SUSSAN LEY MP
MINISTER FOR THE ENVIRONMENT
MEMBER FOR FARRER**

EPBC Ref: 2018/8322

The Hon Angus Taylor MP
Minister for Energy and Emissions Reduction
Parliament House
CANBERRA ACT 2600

12 JUN 2020

Dear Minister 

Invitation to comment on proposed approval decision - Snowy 2.0 Main Works, NSW

I am writing to you in relation to Snowy Hydro Limited's proposal to construct and operate the Snowy 2.0 Main Works project. As you are aware, the Main Works project will increase the pumped hydro-electric capacity within the existing Snowy Hydro Scheme and includes the construction of a pipeline between Tantangara and Talbingo reservoirs, an underground power station, and associated infrastructure.

The Main Works project was referred to the Department under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and determined to be a controlled action on 5 December 2018. It was assessed by the NSW Government on behalf of the Commonwealth under an accredited assessment process, for its impacts on:

- National Heritage places (sections 15B & 15C)
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I have reviewed the relevant assessment documentation and now propose to approve the proposal under the EPBC Act, subject to conditions. I consider that a number of conditions are necessary to mitigate, manage and offset the impacts of the Main Works on nationally protected matters, including the environment generally as this is a Commonwealth action. I have decided to require the proponent to comply with the relevant NSW conditions of approval, which you can view under 'NSW Infrastructure Approval' at:
<https://www.planningportal.nsw.gov.au/major-projects/project/12891>.

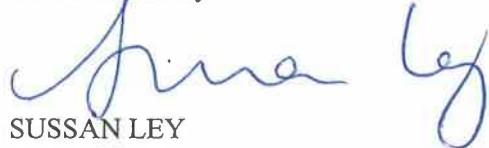
I have added conditions only where I see these as necessary and convenient to protect matters protected under national environmental law, or to ensure enforceability under the EPBC Act. My proposed decision and conditions are attached for your information.

As you have shareholder responsibilities relating to the proposal, I invite you to provide comments on my proposed decision within **10** business days of the date of this letter, to enable the Department to progress the proposal in a timely manner. This includes comments on any matters of economic or social concern that should be considered consistent with the principles of ecologically sustainable development.

I have also written to Snowy Hydro Limited, the Prime Minister, the NSW Government, and other Commonwealth ministers who have administrative responsibilities, inviting their comments.

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Yours sincerely

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SUSSAN LEY

Enc



**THE HON SUSSAN LEY MP
MINISTER FOR THE ENVIRONMENT
MEMBER FOR FARRER**

EPBC Ref: 2018/8322

Senator the Hon Mathias Cormann
Minister for Finance
Parliament House
CANBERRA ACT 2600

12 JUN 2020

Dear Senator

Mathias

Invitation to comment on proposed approval decision - Snowy 2.0 Main Works, NSW

I am writing to you in relation to Snowy Hydro Limited's proposal to construct and operate the Snowy 2.0 Main Works project. As you are aware, the Main Works project will increase the pumped hydro-electric capacity within the existing Snowy Hydro Scheme and includes the construction of a pipeline between Tantangara and Talbingo reservoirs, an underground power station, and associated infrastructure.

The Main Works project was referred to the Department under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and determined to be a controlled action on 5 December 2018. It was assessed by the NSW Government on behalf of the Commonwealth under an accredited assessment process, for its impacts on:

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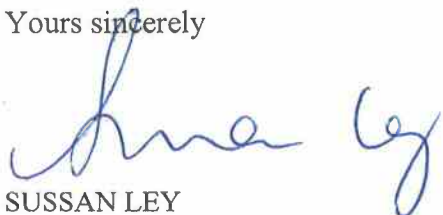
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matters of economic or social concern that should be considered consistent with the principles of ecologically sustainable development.

I have also written to Snowy Hydro Limited, the Prime Minister, the NSW Government, and other Commonwealth ministers who have administrative responsibilities, inviting their comments.

Please quote the title of the action and EPBC reference as shown at the beginning of this letter in any correspondence. Comments should be addressed to s22(1)(a)(ii), Director, Southern NSW and ACT Assessments Section, and emailed to s22(1)(a)(ii) and epbc.nsw@awe.gov.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Susanna Ley', is written over the typed name.

SUSSAN LEY



**THE HON SUSSAN LEY MP
MINISTER FOR THE ENVIRONMENT
MEMBER FOR FARRER**

EPBC Ref: 2018/8322

The Hon Ken Wyatt AM MP
Minister for Indigenous Australians
Parliament House
CANBERRA ACT 2600

12 JUN 2020

Dear Minister

A handwritten signature in blue ink that reads 'Ken'.

Invitation to comment on proposed approval decision - Snowy 2.0 Main Works, NSW

I am writing to you in relation to Snowy Hydro Limited's proposal to construct and operate the Snowy 2.0 Main Works project. The Main Works project will increase the pumped hydro-electric capacity within the existing Snowy Hydro Scheme and includes the construction of a pipeline between Tantangara and Talbingo reservoirs, an underground power station, and associated infrastructure.

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I have reviewed the relevant assessment documentation and now propose to approve the proposal under the EPBC Act, subject to conditions. I consider that a number of conditions are necessary to mitigate, manage and offset the impacts of the Main Works on nationally protected matters, including the environment generally as this is a Commonwealth action. I have decided to require the proponent to comply with the relevant NSW conditions of approval, which you can view under 'NSW Infrastructure Approval' at:
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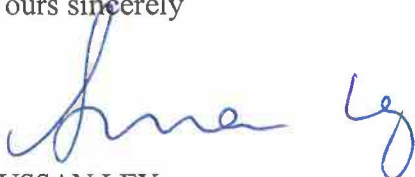
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Yours sincerely

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SUSSAN LEY



**THE HON SUSSAN LEY MP
MINISTER FOR THE ENVIRONMENT
MEMBER FOR FARRER**

EPBC Ref: 2018/8322

The Hon Karen Andrews MP
Minister for Industry, Science and Technology
Parliament House
CANBERRA ACT 2600

12 JUN 2020

Dear Minister *Karen*

Invitation to comment on proposed approval decision - Snowy 2.0 Main Works, NSW

I am writing to you in relation to Snowy Hydro Limited's proposal to construct and operate the Snowy 2.0 Main Works project. The Main Works project will increase the pumped hydro-electric capacity within the existing Snowy Hydro Scheme and includes the construction of a pipeline between Tantangara and Talbingo reservoirs, an underground power station, and associated infrastructure.

The Main Works project was referred to the Department under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and determined to be a controlled action on 5 December 2018. It was assessed by the NSW Government on behalf of the Commonwealth under an accredited assessment process, for its impacts on:

- National Heritage places (sections 15B & 15C)
- Listed threatened species and communities (sections 18 & 18A)
- Listed migratory species (sections 20 & 20A)
- Commonwealth action (section 28)

I have reviewed the relevant assessment documentation and now propose to approve the proposal under the EPBC Act, subject to conditions. I consider that a number of conditions are necessary to mitigate, manage and offset the impacts of the Main Works on nationally protected matters, including the environment generally as this is a Commonwealth action. I have decided to require the proponent to comply with the relevant NSW conditions of approval, which you can view under 'NSW Infrastructure Approval' at:
<https://www.planningportal.nsw.gov.au/major-projects/project/12891>.

I have added conditions only where I see these as necessary and convenient to protect matters protected under national environmental law, or to ensure enforceability under the EPBC Act. My proposed decision and conditions are attached for your information.

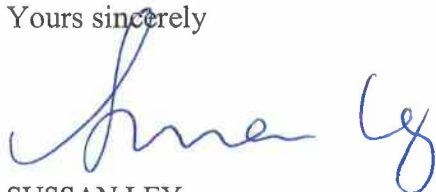
As you have administrative responsibilities relating to the proposal, and Geoscience Australia previously commented on the referral, I invite you to provide comments on my proposed decision within **10** business days of the date of this letter, to enable the Department to progress the proposal in a timely manner. This includes comments on any matters of economic or social

concern that should be considered consistent with the principles of ecologically sustainable development.

I have also written to Snowy Hydro Limited, the Prime Minister, the NSW Government, and other Commonwealth ministers who have administrative responsibilities, inviting their comments.

Please quote the title of the action and EPBC reference as shown at the beginning of this letter in any correspondence. Comments should be addressed to s22(1)(a)(ii), Director, Southern NSW and ACT Assessments Section, and emailed to s22(1)(a)(ii) and epbc.nsw@awe.gov.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Susanna Ley', with a large, stylized 'L' at the end.

SUSSAN LEY