

NSW Department of Planning, Industry and Environment
Major Projects Team
Attention: Anthony Ko

6 November 2019

Submission on Snowy 2.0 Main Works Environmental Impact Statement (SSI-9687)

We, Gippsland Environment Group Inc, wish to indicate our strong opposition to the Snowy 2.0 project as described in the Main Works Environmental Impact Statement (EIS). The scale and level of environmental impact as described in the EIS should never be permitted in such a sensitive sub alpine region and in such a significant location as the National Heritage listed Kosciuszko National Park.

The multi-staged assessment process prevents any real overview of the total extent of the environmental impacts and there has been no credible consideration of other potential pumped hydro sites elsewhere outside national park boundaries. The EIS overstates the energy storage potential of the project, and the excessive cost, already many times greater than the original \$2 billion, will ultimately be borne by the Australian taxpayer.

These failures clearly demonstrate that the Snowy 2.0 project does not meet the standards required of Environmentally Sustainable Development and accordingly the project should be refused by the Minister for Planning.

Environmental Impacts

I am particularly concerned that the EIS understates the environmental impacts on Kosciuszko National Park (KNP). The EIS repeatedly asserts that the Snowy 2.0 project will have a minor impact on KNP as the development footprint represents approximately 0.25% of the total areas of the park.

I consider this assessment to be completely incorrect for the following reasons:

- The “Project Area”, as depicted in the EIS, covers approximately 50km by 50 km (250,000 hectares), which is a third of KNP.
- While KNP is one of the largest National Parks in NSW the portion containing sub-alpine habitats, the areas to be destroyed by Snowy 2.0, is much smaller. The sub-alpine area has some of the rarest habitat in Australia and will be vitally important refuge areas for alpine species increasingly affected by the heating climate.
- The proposed construction will result in the largest ever loss of critically important habitat in a NSW National Park. According to the EIS the construction footprint will ‘disturb’ 1,680 hectares, clear 1,053 hectares of native vegetation and destroy 992 ha of threatened species habitat (threatened fauna, threatened flora and Threatened Ecological Communities). This construction will destroy habitat of fourteen threatened species: Clover Glycine, Kiandra Leek orchid, Leafy Anchor Plant, Mauve Burr-daisy, Raleigh Sedge; Slender Greenhood, Thelmitra alpicola, Broad-toothed rat, Eastern Pygmy Possum, Smoky Mouse, Booroolong Frog, Alpine Tree

Frog, and the breeding habitat of the Gang-gang Cockatoo. It will also impact 17.51 hectares of nationally endangered threatened ecological community Alpine Sphagnum Bogs and Associated Fens; habitat of migratory bird species the Satin Flycatcher and Latham's snipe; and on groundwater dependent ecosystems.

Threatened species losses of this magnitude are completely unacceptable and unprecedented, and "offsetting" will not mitigate such a tragic net loss of biodiversity. The construction footprint identified in the EIS understates the permanent damage outside the heavy construction zones, including Talbingo and Tantangara dams, 100kms of new and upgraded roads, 10kms of transmission lines with a 120 metre-wide easement, groundwater depleted areas above the tunnels, construction camps for more than 2000 workers and multiple works areas. In all Snowy 2.0 will permanently damage more than 10,000 hectares of KNP, a much greater area than the 1680 ha claimed in the EIS.

The project involves tunnelling through 27 kms of rock, large scale quarrying, road building and widening and the establishment of large accommodation and construction sites. The EIS does not provide a credible account of how 14million cubic metres of spoil (EIS Appendix F) including contaminated excavated rock that has naturally occurring asbestos (NOA) or is potentially acid forming (PAF) can be disposed of in KNP without further significant environmental impacts. Over 8 million cubic metres is to be dumped in the active storage areas of Talbingo and Tantangara Reservoirs, depleting their capacity. PAF rock must remain covered by a minimum of 2 metres of water to prevent an acid chain reaction occurring. However Tantangara Dam as the top reservoir of the proposed Snowy 2.0 pumped hydro project may be pumped to nearly empty to supply the required volume of water through to Talbingo. It seems absurd that Snowy Hydro Corporation would consider reducing the active storage capacity of any Snowy Scheme dam, much less risk contaminating water it is required to release to Murray-Darling Basin irrigators.

Currently water levels in Tantangara are relatively stable and vary on a seasonal basis. If Snowy 2.0 proceeds Tantangara water levels will fluctuate on an hourly basis. Whenever Snowy 2.0 operates at full capacity, Tantangara will rise and fall as much as 5 metres in 24 hours at full generation or 3 metres at full pumping. Potentially Tantangara could drop from full to empty in a week. Due to the reservoir's flat topography every 1 metre change in level will cause significant movement in the shoreline – possibly up to 50 m. This will have a devastating impact on the aquatic environment and could result in fish kills. Repeated large water level changes will also exacerbate sedimentation. Tantangara at near minimum operational level is only 6% full and will appear as a small puddle surrounded by an extensive mud shoreline and will be an eyesore in KNP.

There is a very real risk of aquatic pest species such as the Class 1 noxious Pest Redfin Perch being translocated from Talbingo Reservoir to Tantangara which is currently Redfin-free. Redfin is a voracious predator of other fish and invertebrates

and can devastate native fish populations by carrying the epizootic haematopoietic necrosis (EHN) virus. Other non-native fish species such as eastern gambusia and wild goldfish as well as the noxious weed Elodea which occur in Talbingo could also be transferred to Tantangara and the upper Murrumbidgee catchment where they currently don't occur. There has been *no feasible control measures identified to prevent the transfer of fish, larvae or eggs between the reservoirs.*

Once these species are in Tantangara they can be transferred via Murrumbidgee – Eucumbene tunnel to Eucumbene Dam and thence via the Snowy-Eucumbene tunnel to the Snowy system. The introduction of the pest fish species could be catastrophic for native fish as well as the trout population. The transfer of Redfin between waterways is illegal in NSW.

Impacts on Snowy Scheme storage volumes and delivery of Snowy Montane Rivers Increased Flows

The data provided in the EIS indicates that whenever Tantangara were emptied it would require several months (at least 45 days) of pumping to be returned to full supply.

This scenario puts at risk Snowy Hydro's obligation under the Snowy Water Licence to deliver the annual allocation of Snowy Montane Rivers Increased Flows to the upper Murrumbidgee. Snowy Montane Rivers Increased Flows (SMRIF) are delivered to five Snowy Scheme rivers including two sections of the upper Snowy above Jindabyne Dam as well as the Geehi, Goodradigbee and Upper Murrumbidgee as part of the intergovernmental Snowy River environmental flows agreements (2002). During drought when storage volumes in the Snowy scheme are depleted but Snowy 2.0 is pumping from Tantangara there is no certainty that environmental releases will be available for the upper Murrumbidgee at the most environmentally beneficial time.

If Tantangara were emptied it will involve losing at least one third of the water from the Snowy 2.0 scheme (to Blowering). According to the Feasibility Study Tantangara has an active storage volume of 239 gegalitres and Talbingo has an active storage of 160 gegalitres. Therefore Tantangara's active storage volume cannot be fully contained within Talbingo. So if Tantangara was full and Snowy 2.0 was run until Tantangara was empty about 33% of the water from Tantangara couldn't be accommodated within Talbingo even if Talbingo started at minimal operation level. Water from Tantangara that couldn't be accommodated in Talbingo would be discharged to Jounama which only has small capacity (28 gegalitres) so it would end up in Blowering, where it is 'lost' to the Snowy Scheme. (This may mean that generation capacity at existing Tumut power stations would have to be curtailed to avoid discharging into Blowering, especially during flood times when Tumut 3 is not permitted to generate if Blowering is spilling.) At present a significant proportion of the SMRIF 'bucket' is released via Tantangara to the upper Murrumbidgee. There is no mandatory requirement for Snowy Hydro Ltd to deliver SMRIF to the five designated rivers in the specific proportions detailed in the Snowy Water Licence.

If Tantangara has been emptied by Snowy 2.0 there is a risk particularly in times of drought that an increased proportion of SMRIF scheduled for delivery to two sections of the upper Snowy River (although still not delivered in full 17 years after Snowy agreements came into effect) will instead be diverted to Tantangara to make up a shortfall of SMRIF scheduled for release to the Upper Murrumbidgee.

Snowy 2.0 should not proceed. It will destroy critical habitat of rare and threatened species and ecological communities in Kosciuszko National Park, and jeopardise water quality in Tantangara and Talbingo Dams, and the delivery of the Snowy Montane Rivers Increased flows to the Upper Murrumbidgee and Snowy River funded as part of the restoration of the Snowy River at a cost of almost half a billion dollars by the three shareholder governments of Snowy Hydro Ltd under the Snowy Water Inquiry Outcomes Implementation Deed (2002).

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