Submission on Snowy 2.0 Main Works EIS

I wish to object to Snowy 2.0:

i) it will permanently damage vast areas of Kosciuszko National Park
ii) its claimed benefits are overstated or false
iii) it is uneconomic, and
iv) there are better alternatives

i) Permanent damage to vast areas of Kosciuszko National Park

The Main Works EIS starkly documents the substantial, permanent environmental damage to be wrought on one of Australia's premier National Parks, including:

- physical disturbance to 1,680 ha, with a total loss of 1,053 ha of native vegetation including 992 ha of habitat for fourteen threatened species

- broader impacts on 10,000 ha (100 square kms) of the Park through depressed water tables and stream flows, new or expanded roads and tracks, altered aquatic environments in the two reservoirs, transmission lines, spread of pest species (even beyond Snowy 2.0 and the Snowy Scheme) etc

- 14,000,000 cubic metres of excavated rock dumped in the Park:
    - approximately half having naturally occurring asbestos and/or being acidic
    - unbelievably, dumping 8,000,000 m3 in Talbingo and Tantangara Reservoirs, decreasing their storage capacities
    - 6,000,000 m3 dumped on Park land (minor amount for roadworks and structures)

- major infrastructure at Tantangara, Marica, Lob's Hole and Talbingo, involving land clearing and reforming, accommodation camps (over 2,000 workers), rock dumps, electricity substations, works areas and permanent infrastructure

- two side-by-side high voltage transmission lines traversing 10 km of the Park and associated access tracks

- depressed water table above the 27 km tunnel:
    - in some sections by over 50 m and up to 2 km either side of the tunnel
    - drying up streams and bogs, killing off habitat and native species (some threatened)
    - reducing inflows to Snowy reservoirs and downstream rivers

- pests spread throughout the Snowy Scheme and downstream

- visual blight of transmission lines, roads and tracks, infrastructure and landscape scars over tens of thousands of hectares.

This acknowledged damage is proposed to be compensated by an 'offsets strategy'. Such a 'strategy' is flawed from the outset, given that all the comparable alpine and subalpine areas of NSW are already included in Kosciuszko National Park.

The amount of compensation hasn't been stated but it could be over $100 million, demonstrating a scale of damage far exceeding anything ever previously proposed for a National Park.

ii) Claimed benefits are overstated or false

Environmental damage on the scale outlined in the EIS should never be acceptable, even if the claimed benefits of Snowy 2.0 were true. But many of the claimed benefits are overstated or false:

- Snowy 2.0 will not make a significant contribution to the decarbonisation of the economy:
  - Snowy 2.0 will consume 40% more energy than it generates
  - Snowy 2.0 also incurs transmission losses of 10%
  - for the next decade or so most of Snowy 2.0's pumping electricity will come from coal-fired generators
  - perversely, Snowy 2.0 will increase coal-fired generation and emissions and extend the life of coal-fired generators

- Snowy 2.0 will not improve the overall efficiency of the National Electricity Market (NEM):
  - Snowy 2.0 is one of the least efficient forms of energy storage (e.g. batteries are over 90% efficient, incurring one-third the losses of Snowy 2.0)
  - Snowy 2.0 is not ideally located (i.e. not close to a load centre for energy storage)

- Snowy 2.0's role in the NEM is overstated:
  - prior to 2040, Snowy 2.0 will operate at full capacity (2,000 MW) for less than 87 hours/year (Feasibility Study)
  - Snowy 2.0 adds just 4% to the NEM's capacity (but only for limited periods)
  - Snowy 2.0 will generate energy equivalent to only 1% of the NEM, but is a net consumer incurring losses of 600 GWh/year

- Snowy 2.0, is not a closed system, and the amount of water that can cycle up-and-down its reservoirs generates considerably less than its claimed 350 GWh:
  - Snowy 2.0's capacity, based on the volume of water that can be cycled up-and-down between its two reservoirs, is between 40 and 200 GWh (not 350 GWh). This is due to the smaller active volume of Talbingo and its use as the upper reservoir for Tumut 3 pumped hydro station.
  - this equates to between 20 and 100 hours of operation at 2000 MW (not 173 hours as claimed)

- Snowy 2.0 could run for 7 days at 2,000 MW (provided Tantangara Reservoir started full), but:
  - most water would be 'lost' downstream from the Snowy 2.0 cycle
  - it would take many months to recharge
  - and require 500 GWh of pumping energy, incurring a loss of 150 GWh

- Snowy 2.0 will lower NSW spot prices for only 3 of 22 years to 2047. Prices are predicted to be similar from 2028 to 2033, but higher for every year thereafter (Snowy Hydro report)

- Snowy 2.0 involves significant risks:
  - Snowy 2.0 is not needed till Tumut 3 pumped hydro station is at capacity - for the past decade T3 has pumped on average for 281 hours/year at a capacity factor of just 1.6%
  - Snowy 2.0 is not needed now, contrary to recent claims by Snowy Hydro
  - technological advances may evolve that render Snowy 2.0 redundant, especially with its poor efficiency and distance to major loads

- According to a Snowy Hydro consultant's report, the market benefit of Snowy 2.0 is estimated to be between $4.3 and $6.6 billion, which is now less than its cost

So, Snowy 2.0 will not provide a net financial benefit to the NEM or the community.

iii) Uneconomic

- the cost of Snowy 2.0 has increased considerably since its announcement, 2½ years ago:
  - original estimate was $2 billion
  - doubled to $3.8 - $4.5 billion (at lower end - Feasibility Study), but this estimate excluded certain costs ("*Land and development costs; Foreign exchange fluctuations or hedging costs; Funding or financing costs; Snowy Hydro Project Management and operational ramp-up costs; Validation of project uncertainty in association with risk profile; Operational spares; and GST")* and transmission
  - a single contract was awarded for $5.1 billion
  - the Main Works EIS estimate of $4.6 billion again excludes certain costs (*"exploratory works, segment factory, SHL, advisors, funding, approvals, GST, land acquisition and escalation costs"*) and transmission
  - unbelievably, Snowy Hydro continues to assert that the cost of Snowy 2.0 will be no more than $3.8 - $4.5 billion, despite overwhelming evidence to the contrary

- respected economists estimate the cost of the hydro component of the project to be $8 billion. When transmission is included the total cost of the project rises to approximately $10 billion

- Interest payments on an $8 - $10 billion loan would be more than double the annual profit of the whole of Snowy Hydro ($210 million)

- large, complex infrastructure projects rarely come in on budget. Snowy 2.0's blow outs of cost (500%) and completion time (>200%) do not bode well for further increases

- The Government has already kicked in $1.38 billion, with more likely to be necessary

Snowy 2.0 has been portrayed as the 'electricity game-changer' for the NEM. Whilst it would provide some energy storage capability, it would come with significant losses, higher electricity prices and a totally uneconomic cost.

iv) Better alternatives

There is no need to hastily proceed with Snowy 2.0 on the pretext it is urgently required and is the only available option for energy storage – there are better alternatives both within the Snowy Scheme and outside Kosciuszko National Park.

The cost of Snowy 2.0 appears to be significantly higher than typical pumped storage schemes and other means of energy storage.

No analysis of alternatives to Snowy 2.0 was included in the Feasibility Study, the Final Investment Decision, the Business Case nor the Exploratory Works EIS. Only cursory comments are provided in the Main Works EIS, despite the Environmental Planning and Assessment Regulation 2000 requiring *"an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure".* The Main Works EIS should be rejected on this basis alone, pending the submission of a comprehensive analysis of alternatives as required by the regulation.

How could the Business Case or EIS for a project with such enormous environmental damage (in this case to a National Park), let alone at a cost of $billions, be considered without a comprehensive analysis of alternatives, weighing up the balance of the financial, environmental and engineering aspects against its benefits?

Conclusion

When is the environmental impact of a project too much for it to be approved – if not in this case then it is unlikely to be ever. Any one of the above environmental impacts should be more than enough to stop a proposed development, let alone in Kosciuszko National Park.

Never has a project of such immense size and environmental destruction been proposed within a National Park.

Snowy 2.0's is uneconomic and its claimed energy storage benefits are overstated. Even if its benefits were valid, there are many other alternative projects that could deliver energy storage cheaper and with less environmental damage.

What would be the Government and community response if a private company proposed an industrial project of this scale within a National Park, permanently impacting 10,000 ha, destroying over 1,000 ha, killing off large areas of native habitat and species (some threatened), dumping millions of tonnes of spoil, much of it contaminated, and leaving behind a scarred landscape? Especially when there are better alternatives.

Snowy 2.0 is the wrong project in the wrong place.

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