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**Submission in relation to Shoalhaven Hydro Expansion Project  
Main Works - State Significant Infrastructure**

The Kangaroo Valley Environment Group (KVEG) requested an extension of the submission period to allow our members to discuss and comment on the EIS. Thank you for offering that extension.

KVEG supports measures to achieve power generation from sources that are non-variable, non-fossil fuel based. However, the Origin Energy proposal to expand the Shoalhaven Power Station, as explained through the EIS submitted to the NSW Planning Minister, raises a number of concerns which has led us to oppose the proposal as currently conceived.

Issues of concern include the following: the speed in which the application is being processed without the usual checks and balances; use of offset credits which fail to compensate for impacts on a fragile ecosystem; inadequate consideration of spoil management including routing of heavy vehicles and sites for spoil dumping; lack of consideration of impacts on water quality and aquatic biodiversity; lack of consideration of the ramifications of increased traffic and heavy vehicles during construction; an inadequate EIS; and failure to fully consider other options for effective sources of renewable energy.

Our concerns are detailed as follows:

1. The **speed at which this development application is being processed** does not allow for full consideration of its merit or the range of impacts that it will cause. This is important, as State Significant Infrastructure classification effectively bypasses the usual checks and balances required to assess and modify a project to make it appropriate for local conditions. In this case, the Shoalhaven City Council and Wingecarribee Shire Council have been sidelined and may be unable to contribute to the assessment of the project or ensure that it meets the requirements of local conditions<sup>1</sup>.
2. The use of **offset credits** to replace loss of wildlife and habitat will, most likely, be totally ineffective in protecting endangered species in the Valley. There will be no *local offset* to compensate for destroyed habitat and lost species. The surveys reported in the EIS identify likely impacts on several threatened flora: *Rhodamnia rubescens* (Scrub Turpentine), *Hibbertia puberula*, and *Genoplesium baueri* (Bauer's Midge Orchid); and threatened fauna: the Gang-gang Cockatoo, Greater Glider, Eastern Pygmy Possum, Southern Myotis, Large-eared Pied Bat, Giant Burrowing Frog, Littlejohn's Tree Frog, and Fitzroy Falls Spiny

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<sup>1</sup> We understand that briefing of Shoalhaven City Council will occur at a time beyond the submission date.

Crayfish. Offsetting will provide no protection for species lost locally, rendering the Valley worse off by irreparably damaging our unique environment<sup>2</sup>.

3. **Spoil management** is an issue of major concern regarding access routes and sites for spoil dumping. Regarding **access routes**, WaterNSW has stated that it will “not accept any construction vehicle/ haul route access around Bendeela pondage (prescribed dam)”. Alternative routes to remove spoil should to be specified. However, existing roads in Kangaroo Valley do not have the capacity to sustain high-volume heavy-vehicle traffic. The State Road network has been subjected to major land slips which made entry and exit difficult for extended periods of time in 2022. Heavy traffic on unsealed roads would generate dust and noise that would impact both humans and wildlife.
4. Furthermore, Kangaroo Valley has no suitable sites for **spoil dumping**. Perhaps the easements under the Ausgrid/Endeavour Energy transmission stanchions offer already cleared land that could accept non-toxic (non-PAF) spoil but this option has not been explored in the EIS. Mitigation measures regarding extraction of spoil from the tunnel, identification of acidity levels, spoil treatment, and the construction of a concrete batching plant in areas proposed for development are all woefully inadequate.
5. Impacts on **water quality and aquatic biodiversity** are also of major concern. As stated by WaterNSW and NSW Fisheries, the project will disturb sensitive terrestrial ecology, land uses, recreation, visual resources, and cultural resources in both the Fitzroy Falls reservoir and Lake Yarrunga. The proposal to dredge part of Lake Yarrunga lacks sufficient detail, for example, there is no detail on placement of dredged material.
6. **Transport issues**
  - a. **Oversize and overmass vehicles:** The project proposes two routes for oversize and overmass vehicles (OSOM), which impact a number of State Roads between Port Kembla and the project location, ultimately both using Moss Vale Road/Nowra Road. Traffic will include significant construction traffic, including truck movements and 450 oversize overmass vehicle movements - that is, 1.7 OSOM truck movements a week for 5 years. Transport for NSW has concerns about the viability of either proposed route (Cambewarra or Barrengarry) for OSOM vehicles, particularly with respect to the 160 tonne generator step up transformer. No assessment of road infrastructure has been undertaken since the road collapses in 2022. Importantly, the long term viability of **Hampden Bridge** when burdened by constant heavy vehicle traffic is unknown. Hampden Bridge is a vital link for the KV community, its safety and economy. Damage or closure for a short or long period would have a significant negative impact on the community.
  - b. **Roadkill:** The extent of roadkill across Kangaroo Valley is an everyday grisly reminder of the disastrous impact of road traffic on our wildlife<sup>3</sup>. Increased heavy traffic on Moss Vale Road/Nowra Road has to be planned to protect wildlife (and residents). Moss Vale Road is already a major road for roadkill, and this is likely to expand significantly with the increase of construction and workforce vehicles for the

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<sup>2</sup> Indeed, the value and benefit of offsets is highly questionable. Professor Andrew McIntosh from ANU has described how regrowing native forests as carbon offsets in cleared areas has led to no actual increase in forest in Australia. An analysis of 59 of projects in NSW and Queensland shows the amount of forest to have reduced.

<sup>3</sup> KVEG undertook a simple survey of animal deaths on KV roads from October 2021- November 2022 showing a total road toll of 303 animals in the KV catchment. This is likely to be only a fraction of the true picture due to the limited nature of the survey – limited volunteers counting bodies by the roadside. These deaths are extensive with ordinary local traffic, constituting a likelihood that wombats, for example, will not be able to maintain their existing population.

5 year period of the construction. The reference in the EIS to increased likelihood of vehicle strikes on wildlife does not detail proposed mitigation or management strategies. It states: “*potential impacts can be avoided and managed and will be addressed in the CEMP, and include examples such as on-site education, identifying and reporting hazards as they occur during construction, and setting appropriate working hours and vehicle speed limits.*” There is no mention of measures to counter vehicle strikes, such as, over-road ladders, under-road tunnels, and very restricted speed limits.

- c. **Context of a bushfire impacted area:** The Promised Land Trail at Fitzroy Falls is part of Morton National Park that was heavily impacted by the Currowan bushfire in 2020. This area is similar to Bendeela, as it is an intact fringe, and one of the only areas that survived the Currowan fire. Any loss of flora and fauna within the Morton National Park is of great concern, particularly as our National Parks are where habitat has been best preserved.
- d. **Private vehicle traffic:** Substantial private vehicle traffic is evident during weekend and holiday periods and industrial scale traffic could place human lives at risk. Moss Vale and Bendeela/Jacks Corner Roads are popular sites for cyclists and this usage would be inconsistent with 24/7 heavy vehicle traffic.

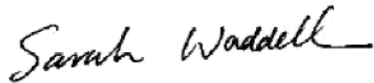
7. **Inadequacy of the EIS.** A non-expert read of the EIS has identified the following errors and inadequacies:

- a. The **soil analysis** in the EIS used soil profiles unconnected to Bendeela or Fitzroy Falls soils.
- b. Lack of analysis of the impact of quantities of **PAF** [potential acid forming] spoil. How will this be managed to avoid contamination of Bendeela Pondage and, therefore, Kangaroo Valley’s water supply?
- c. The identification of **faults within the sandstone escarpment** and the potential for tunnelling to impact on these is unexplored (“*faulting was encountered during the investigation and construction stage for the original Kangaroo Valley scheme*”).
- d. Proposal to use **outmoded technology** – use of blasting over a long period with consequent noise and vibration rather than a drilling machine is not explained.
- e. Lack of any analysis of the impact of **constantly changing river levels** on the aquatic environment in Lake Yarrunga or, for example, on platypus or water dragons that inhabit the riverine edges.
- f. Appendix D on **rainfall is based on 2016 rainfall patterns** even though rainfall since then has been very variable – from drought to flooding. There is no analysis of the likely effect of a repeat of the 2022 heavy rainfall in the Valley, its impact on infrastructure such as roads, or on the construction and operation of the scheme.
- g. The **traffic report** was undertaken through desk modelling and based on an assessment of roads prior to recent road closures and slippages. None of the roads photographed currently look like their photograph. Recent heavy rains have exposed roads instability. This assessment has not been updated to describe 2023 roads.
- h. Lack of any assessment of the impact of the construction and operation of this project on **groundwater** dependent features such as hanging swamps. Will Wildes Meadow Swamp on the upper reaches of Shoalhaven River be impacted by this development? Are there other smaller swamps on the lower slopes likely to be affected?

8. Finally, the **power generation benefits** do not appear to have been fully assessed. There will be negligible additional power generation (compared to, say, Snowy Hydro 2). Pumped hydro, by its nature, always uses more energy than it generates. The EIS does not detail Origin’s exploration of alternatives to the proposal, which is understood to be a requirement

of an EIS and which may provide more environmentally protective, cheaper or more efficient options. The EIS does not state that Origin will use non-fossil fuel sourced energy during construction or in the power station operation. It only states that the pump-up phase will occur when energy (extracted from the grid) is cheaper and water will be released when power is more expensive - an obvious economic benefit for Origin but not necessarily for the overall energy budget.

We trust that these submissions will be given due consideration.

A handwritten signature in black ink, reading "Sarah Waddell". The signature is written in a cursive, flowing style.

Dr Sarah Waddell  
Secretary  
On behalf of the Kangaroo Valley Environment Group