15th October 2023

Save Our Macleay River Inc.
C/- Milnegunya, 174 Mungay Creek Road,
Willawarrin NSW 2440

Attention: The Honourable Paul Scully MP, Minister for Planning and Public Spaces.
C/- Anthony Ko, Project Contact Planner, DPE
Department of Planning and Environment
Locked Bag 5022
Parramatta NSW 2124
By email: Anthony.Ko@planning.nsw.gov.au and by DPE Portal (if able).

Dear Hon. Paul Scully, Minister for Planning (and Public Spaces)

Re: Submission of Objection by Save Our Macleay River Inc. to the Proposed Oven Mountain Pumped Hydro Storage Proposal: Application Number SSI-12422997, EPBC ID Number 2020/8850, Assessment Type; Critical State Significant Infrastructure. Exhibited as: (EXH-62250958).

Save Our Macleay River Inc. (SOMR) a community group working with all levels of Government and industry, with the objective: 'To work towards ensuring clean water and healthy environment throughout the Macleay River catchment.' Its Committee and Members comprise and represent the community in all parts of the large Macleay catchment.

We thank you and appreciate your making available and exhibiting the DA, EIS and accompanying documents, as well as the opportunity to provide a 'Submission of Objection' to the proposed Oven Mountain Pumped Hydro Storage CSSI Development Application. (Refer Detail Issues, 1. Page 4.)

From review of the Development Application, EIS and the 27 Appendices our concerns include:

Summary of broad issues:

1. Strategic Policy issues: It appears the proposed Project, in a few instances, has influenced Government policies, rather than the Project complying with established Government policies and strategies. Two significant examples include; the extension of the New England Renewable Energy Zone extension and incorporation into the North Coast Water Strategy to accommodate the Proposal, well before the Scoping Study and SEARs were issued. - This appears like 'the Project is steering Govt. Strategies and Policies and Approval is perhaps a foregone conclusion?
2. Deferral of matters for Assessment: The Proposal's DA/EIS defers address of many important issues requested in the SEARs to the 'detail design stage' or later: Many of which should at least be resolved at this DA stage to ensure all matters are addressed for over-all feasibility and holistic cost/benefit analysis in the Assessment process for Determination. *(E.g., Construction Traffic Management Plan; Aboriginal Cultural Heritage Management Plan; additional Geology/Geochemical testing; Erosion and Sediment Control Plan, River level/flow to permit uptake, Social Impacts (Medical, Policing, School zones), Worker Accommodation Strategy, Waste Management Plan, Project costings, Decommissioning Plan at end of construction and 'End of Life.' Etc...)*

3. The Project is extremely large scale; with environmentally intrusive large foot-print engineering works, involving; massive earth-works for roading, tunnels, reservoirs with 70m high walls, bridge(s) across the Macleay and transmission lines: This in such an isolated, steep and erosive and significant natural 'Gorge Country' area with high 'experience values,' 100km from Kempsey via public road with major access issues. - This is not acceptable, due to Alternative options being more cost and environmentally beneficial – as relayed below.
4. Social Impact: The main areas of concern for further address include Accommodation during Preconstruction (site establishment) and Construction for the 600 & up to some 820 workers and overloading the Kempsey & Armidale infrastructure of housing, medical and hospital facilities and roads. These need further assessment, management plans to understand the impacts prior to DA Assessment and Determination. – Social impacts on the community are significant, are discussed more fully below in Detail Issues and need address prior to Determination, as per the SEARs.
5. Antimony and Arsenic and heavy metals; are naturally present in the geology of the area and the Macleay River already has high concentrations. Should even in small quantities be disturbed and exposed to weathering, such as used for the reservoir walls, extensive roading and site disturbance; the scale of the Antimony & Arsenic etc. exposure could further contaminate the river increasing adverse impact on all downstream water users, including Kempsey Shire's town/villages river water supplies. Expert independent assessment of the Geo chemistry tests, relay there is very low concentrations in most samples. – Testing has been limited and needs more. If these health damaging elements are present; this should be a 'Show-Stopper' and immediate DA Refusal.
6. Land, soils and erosion: The EIS and our consulted experts agree the soils are highly erosive and due to soil type and slope, have a high potential to discharge turbid (muddy) run-off into the Macleay which would seriously impact the Macleay River. Further soil assessments essential to investigate the extent of dispersive clays and other erodible soils and whether soil stability constraints are a major issue for the proposal. The potential impact is so great that this issue needs address before Assessment/Approval; not later. - Also a 'Show-Stopper' for Refusal.

   Also, if approved; and as the works proposed is 24/7, 365 days a year for 4-5 years, who monitors the erosion and rectification. – This needs address before Approval or commencing earthworks.
7. Water uptake from the Macleay River: Is a significant concern both for initial filling of the lower reservoir and for top-up in an increasingly unreliable river flow. The EIS states uptake will only be at "high flows" but makes no measurement of this, say in megalitres/hour. - Clear definition of this is needed to assess feasibility and impacts on the Macleay, and included in any licences and Approval requirements.

   Prolonged dry periods, expected with climate change and Armidale Regional Council's Water Strategy will impact on available water and thus water storage/ energy generation. Or alternatively the lower dam may need to be even larger to buffer for extended low-flow periods. A resolve of this and ARC Water Strategy is needed for Assessment prior to Determination to avoid cumulative water scarcity impacts.
8. 'The Project Costing; is preliminarily stated as $1.8 billion; with unknown amounts works Off-Site for public road and transmission upgrades perhaps, at least in part, funded by the Taxpayer.

   The Economics assessment (Appendix Z) focuses on benefits to the region. It does not give details of the Project costs, citing 'commercial in confidence' reasons. It does not include costings, tangible or loss of amenity. – This assessment is considered at best, biased 'economic spin' and does not provide a holistic economic assessment of pros and cons for DA Assessment and Determination. Surely this is needed to be able to assess holistic cost/benefit of the Project.
9. Power: The project is stated to generate 900MW worth of electricity from water stored the upper reservoir before needing to pump it back up, using 20-25% more power than generated. This is significantly less efficient than many large-scale battery or other kinetic storage Alternatives.

10. Alternatives to this Project: There are several alternatives including: 1) A large battery storage in Armidale (near the sub-station?) 2) Gravity & green hydrogen or 3) Less sensitive and isolated/ accessible Sites for pumped hydro in less damaging and costly 'Brown-field' (already disturbed) sites *(such as the existing Hunter Valley coal mine infrastructure)* which are closer to workforce, transmission lines and distribution sub-stations for greater efficiency. - *Refer Power Efficiency.*

    The assessment of alternative technologies/projects is left to State Govt. as this is not part of the Proposal or SEARs. This needs to be included in any Assessment, to holistically investigate and evaluate alternative economic and viability options as a matter of Govt Renewables Strategy.

11. Roads and Bridge(s) for Site Access: To access the Site for construction there is proposed to be one low-level bridge across the Macleay River off-site, at Carrolls Creek and over 11km of new road on the south side of the Macleay River as well as stated upgrades of the Kempsey to Armidale Road *(100km from Kempsey to the Site)* and Carrai Road. These will need to be able to cater for transport of massive turbines, concrete batching plants on Over-Size Over-Mass (OSOM) vehicles as well as many smaller more frequent traffic of workers, machinery, delivery of fuel and explosives, daily provisions and materials for the 600 workers during construction. – This significant impost on the community with many varied impacts, more is stated in the Detail issues section of this submission below and OMPS/Taxpayer cost apportionments being not adequately addressed nor acceptable.

    Main traffic issues and impacts from the average increase in traffic of 250 vehicles/day on most sections, highlighted in the EIS include: 1) Urban areas of Frederickton & Kempsey, school zone, intersections, railway crossing etc. 2) The Armidale Rd between Greenhill and Pee Dee, sealed section with 2 villages and school zones and 3) the 40km of unsealed section from Pee Dee to Carrolls Creek is narrow, winding, prone to slips, has low-weight limited bridges and will require significant upgrade beyond the current improvement works by Councils & funded by the taxpayer. The further upgrades needed above that, are stated as 'being done by Councils and paid for by 'the Project,' and relays these costs have not been included in the budget $1.8billion (or $1.96b elsewhere). – Thus; the cost/benefit of the project cannot be fully/holistically assessed, nor impost on Councils' work-forces for routine works.

    The EIS defers address of these impacts to a Construction Traffic Management Plan (CTMP) to be developed at detail design stage. – The CTMP needs to be prepared & submitted now, before Assessment for Approval to consider Project impacts holistically.

12. Armidale Kempsey Road; potential alternative route for part of the public road: The Project's access feasibility studies and now 'Proposed;' is the 11 km Eastern Access Road (EAR) to the Site on the south side of the Macleay, mostly along 'stock-routes'. This avoids the difficult to travel and costly to maintain land slips of Flying Fox and Jobs cuttings both sides of Lower Creek. As a public road; it involves the construction of two bridges across the Macleay River. This, independently of the OMPS Project, is possible a cost benefit. As relayed below… (Except that the landslip stabilisation works has been commenced!)

    Recently, there has been $227 million allocated by the State to upgrade 46km of the Kempsey Armidale Road. (Not including OMPS requirements.) It is estimated the 12km of Flying Fox and Jobs Cuttings will cost about $129 million of this but likely still have less-frequent serious slips.

    Using RMS 2017 figures for new Class 3 road, the 11 km of OMPS proposed access route construction and estimates for the cost of 2 bridges; it is estimated a new Kempsey Armidale Road on this alignment south of the Macleay River would cost about $45 to $50 million; saving $80+m!

    This; with or without (and independent of) the OMPHS Project, may be one of the few real positives in cost/benefit analysis to come out of the Project's feasibility studies - in the long term!

Detail Issues:

Below are some detail issues / concerns, with some overlap with the Summary issues above. They are arranged in sequence of; 1) Planning DA/EIS Document; 2) Construction; 3) Post Construction Operation and Maintenance; 4) Decommissioning and 5) Submission Conclusions.

1 Planning DA/EIS Document:

1. Dept of Planning and Environment EIS Public Exhibition for comment/submissions: The DA and EIS were lodged at the end of March 2023, while it was advised more works/information was requested, the DA and EIS (a massive 9000+ page document) was finally placed on Public Exhibition by DPE for review & comment 19th September until 16th October, a 28day period.

   Not only were there problems down-loading the large documents from the Portal by several; the period coincided with School holidays, the October long-week-end and the distraction of the Voice referendum. – Requests for an extension of time were denied, though submissions can be added-to for another 28days. Additionally, advice that documents were available at Kempsey and Armidale Libraries, was only received (by two known people) the last 8 days. - This, intentionally or not, has restricted the review, liaison with experts, coordination and preparation of well-considered submissions. It is trusted DPE advice of 'additions to existing submissions will be accepted up to 4 weeks after closing' will be permitted?

2. Public Consultation and Community engagement, including and specifically First Nations. – SOMR has observed; nearly all the 'Consultations' have been 'drop-in sessions' and 'you come to us and we will answer your questions' as with the shop-front. OMPS have never instigated a physical "Presentation of the Project" to the broader community to enable asking relevant questions, apart from a Forum hosted by SOMR. Importantly; formal written and emailed questions from this Forum, where OMPS personnel left early, were twice sent to OMPHS but never responded to. The only 'Project presentations' hosted by OMPS has been to engage 'Contractor'/'Worker' support and this before DA/EIS Lodgement or Approval. - This has not been effective or appropriate Consultation for such a project nor as required in the SEARs. *(The recent successful EDO challenge to Woodside Hub decision supports this.)*

3. Project Site Sensitivity: The Project aims to disturb a large (440Ha) of the very steep Site in a highly culturally and environmentally significant areas? – Surrounded by National Park, Gondwana world heritage area, State Forests and adjacent to the Macleay River. Additionally; the site has a fault and fractures (Geo- assessments) and dispersive soils. – The Assessments and mitigation measures are not adequately addressed in the DA/EIS, to ensure minimal impact. *(Some of these concerning issues are relayed more fully under topics.)*

4. Alternatives: *(Augmenting 'Summary' above)* Alternatives addressed in the EIS are confined to 'Site selection' and 'alternative design' options. The only alternative offered is a "Do nothing" option. It does not address 'Alternative' technologies or sites for power storage, such as;

   a) Large-scale batteries; *(e.g., the proposed 'Rangebank' project by Shell and Mornington BESS battery by Maoneng which can store 200MW (400MWh) for some $200 - $400 million. These, switchable in series & parallel, would require 4 units to provide 800MW over 8 hours (4 hours short of OMPS' proposal) at a cost of $1.2 billion.)* Batteries can be located close to substations and green energy supplies anywhere, with minimal environmental disturbance, less hydraulic, mechanical and transmission losses; and can be recycled and upgraded as technology improves. *(They have shorter (20-30year) life-span, but with the rate of battery technology advance this is likely a benefit.* Or:

   b) Use of 'Brown-field' sites for Pumped Hydro, such as, coal mines in the Hunter Valley, would not require massive disturbance in this natural area and be closer to existing Grid infrastructure.

NOTE: The assessment of alternative technologies/projects is likely not the responsibility of 'the Proposal' DA. - This Renewables Strategy is a State Govt. responsibility but needed to assess broader strategic alternative economic opportunity costs and the 'NEED' for this Project.

5. New England Renewable Energy Zone (REZ) This Project area was later and specifically included in an 'arm' of the New England REZ. It is of concern that this DA is leading Govt policy and may pave the way for other PHS projects in the environmentally sensitive and difficult to access escarpment/Gorge Country area. – Leading to cumulative impacts. - The DA/EIS does not address this sufficiently. Perhaps, like review of 'Need' and Alternatives, this is a State strategic matter?
6. Social Impacts: are generally well recognised and stated in the EIS, though two issues stand out.
   i) Accommodation: is a significant issue pre- and during construction: The EIS states that >70% of the required workforce will be recruited from outside the local and regional areas and require accommodation even before the onsite accommodation is constructed; also, for long term local housing for some of the workforce and their families. And that this workforce will be accommodated in existing houses, tourist accommodation and short-term accommodation.

   For many reasons *(e.g., Renewables developments in New England and emergency housing and jail in Kempsey)* there is already a dire shortage of, short or longer term, rental housing and tourist accommodation in Kempsey and Armidale, both about 1.5 and 1.0hours drive from the site. In such a rural area, there's very limited supply closer to the site. - A Strategy to address the worker Accommodation issue needs address before DA Assessment and Determination, not after.

   ii) Health and Medical Services: are also in very short supply and distant from the isolated site. Doctors and Kempsey District Hospital (especially ED) are already under pressure for many reasons *(e.g., lack of doctors, low socio-economic area and servicing rapidly growing coastal townships.)* General health issues and serious construction site accidents would likely over-load the towns' medical and hospital services combined with the distance time-frame from the site makes this a serious issue to satisfactorily address, prior to Assessment; or Condition that general health and medical emergencies be provided on Site by the Project and included in their budget.
7. The Business Case and cost/benefit evaluation: The cost of The Project is relayed as $1.8billion and has already been granted more than $12million by State & Federal Government, *(taxpayer funds, with some conditions)* for feasibility, assessments and DA preparation.

   The example of Snowy 2 Pumped Hydro *(EIS prepared by the same EMM)* and other PH projects indicates this is very over-conservative, as with the technologies of tunnelling. - Many of the EIS assessments require further investigation so real-costs could increase to cater for works needed. Adequate costing assurances are needed to ensure technical cost blow-outs will not occur like Snowy 2.0 and other PH projects elsewhere, and this before DA assessment & Determination.

   The Economic Assessment (Appendix Z) focuses on benefits to the region, LGAs, towns - not costs. It declines to give details of the Project costs, citing 'commercial in confidence' reasons and it does not include costings of public road upgrades needed, inconvenience costs or loss of amenity for the region, towns and more local community. – This assessment appears at best 'pro-biased economic spin' and does not provide data for a holistic economic cost/benefit assessment. - This could likely leave the Project either unviable and possibly a greater cost to the taxpayer and/or incomplete - leaving the disturbance only. This makes any Approval without full cost/benefit analysis a potential cost and embarrassment for the State.
8. Ownership: The Proponent is Oven Mountain Pumped Hydro Storage Pty Ltd; a development company. The prime backer/owner 'Alinta,' a foreign (Hong Kong/Chinese) Company and EY are financing the project, along with some Govt. grants and costs. - The Project, cost and returns/profits will transfer to Alinta at some stage. *(At this point this is unknown, perhaps before or after construction. But this should be relayed in the DA and EIS.)* Additionally, Alinta owns many

of the renewables' energy facilities in Australia and this could add to their market dominance. - The value to NSW and our Community vs profit and liability to foreign 'Corporate Businesses' needs adequate assessment/address by the corporate regulator prior to any DA Approval.

9. Power Efficiency: The Project claims to be able to produce 600 - 900MW over 12 hours when the top reservoir is full and released to the bottom one through the turbines. Power losses are expected to be 20 to 25%; through hydraulic and mechanical friction and transmission losses. This means that there will need to be a price differential of 20-25% to reach a 'break-even point' of cost/profit.

   Batteries e.g., at the Armidale substation would be more efficient and arguably cheaper and recyclable. Many 'Alternative' batteries have greater efficiency, with much less cost, disturbance & infrastructure needs. Refer Alternatives above.

   The Economic assessment states that the project will save the State some $1billion; but not how and with no time-period - a year or over the life of project? - This needs clarification for holistic cost/benefit evaluation.

10. Water uptake from the Macleay River: Is a significant concern both for initial filling of the lower reservoir and for top-up in an increasingly unreliable river flow. The EIS states uptake will only be at 'high flows' - but makes no measurement of this, say in megalitres/hour. Prolonged dry periods, expected with climate change and ARC's Water Strategy, which will impact on available water and thus energy storage/generation. Or alternatively the lower dam may need to be even larger to buffer for extended low-flow periods. The EIS addresses some impacts of climate change, but are these precautionary enough? – If approved, a conservative fixed flow volume for uptake from the river needs to be clearly defined, with adequate monitoring included in any water licences with adequate funds to EPA/NRAR. And a review period nominated to cater for flow changes caused by Armidale's Water Strategy, Climate change or cumulative other water use impacts.

11. Existing Hydrology: The EIS concurs there needs to be further research and analysis of impacts on both surface and ground water. This has resulted in the erosion control, stormwater run-off, geochemistry and geology mitigation measures being deferred to the detail design stage, but will very likely have impacts on Carrai and other water tables and water quality run-off, both on and off-site. These studies and mitigation plans should be finalised before assessment for Approval and Conditions. - These matters, admitted in the EIS, are important and need to be fully assessed and properly addressed prior to Assessment and Determination.

12. Land and Soil Stability: The Land, soils and erosion assessment states, and experts agree, there is "Very High'' or ''Extremely High" erosivity risk, including tunnel erosion, due to the slope and the 'highly dispersive' clay soils. The EIS and experts agree 'Proper, careful, best practice, high quality soil erosion and sediment control works is needed' throughout the project with the Macleay River immediately below the project site, to prevent polluting run-off & turbidity. Further soil assessments are essential to investigate the extent of dispersive clays and other erodible soils and whether soil stability constraints are a major issue for the proposal. - This is so important that it needs to be fully, properly assessed and convincingly addressed prior to Assessment and Determination.

    Also: If approved, who monitors and rectifies impacts. Sedimentation and undermining reservoirs and threats to other infrastructure from these processes require assessment or the costs of construction and follow up work could lead to project viability issues. - This also needs assessment, and address with the above, prior to Determination.

13. Geological stability: From the Geo- components in the EIS there are faults and fissures leading to instability in the upper and lower reservoir wall areas. There will be significant site disturbance with massive cut and fill batters and reservoir walls, as well as tunnelling through the granite and likely (at least in parts) needing to be 'blasted' with explosives. Thus, raising the potential for further fissures, water penetration and major slips on the very steep slopes, which occur naturally in the area. (e.g., Flying Fox cutting near Georges Junction on the Kempsey Armidale Road). – It is

vital, for the Project and Community and State, the stability of the geology and site be fully properly assessed and convincingly addressed in the DA/EIS to 100% ensure stability and prevent dangerous slips etc prior to Assessment and Determination.

14. Antimony (Sb) and Arsenic (As) etc occurs naturally in the geology of the area as well as having significant input from historic mining activities at Hillgrove. Associate Prof Sue Wilson UNE (arguably best qualified to advise) relays: Baseline data on local water quality for the site (groundwater and surface water including As & Sb) is limited (no more than 4 results are reported for many monitoring locations), and only presented between Aug. 2021 to July 2022. River sediment appears NOT to have been studied in the EIS. Generally; As is greater in sediment, whereas Sb is more mobile in the river system. Groundwater and Surface water quality testing data needs to be in greater detail over a longer period to assess effective analyte concentrations and project impacts. - This needs further assessment for base-line data and impact, prior to DA Assessment & Determination.

    It was also relayed: The Geochemistry leachate test used for As & Sb and analytes was appropriate for this catchment, but was limited to 9 boreholes and found some exceedances. Three analytes, (Al, Fe, Sb) exceeded 95% percentile. If present even in small amounts, disturbed rock and spoil will weather and infiltrate the run-off water and River. - SOMR is concerned this has potential to further contaminate water supplies to all downstream uptakes including KSC and any Macleay River users. This needs further address and re-exhibition for assessment prior to Determination.

    Mindful that the tunnelled rock for reservoir walls (2million cubic metres approx.) and hydrology can never be fully restored/rehabilitated on decommissioning: any potential for contamination will be perpetual. - SOMR is very concerned that this potential contamination could be in perpetuity.

15. Climate Change and Greenhouse emissions: While the purpose of the project is to store 'Green Energy' there will be very large amounts of diesel, concrete and potentially explosives used in the extensive roading, Siteworks, tunnelling, construction and bridges. All high contributors to Greenhouse emissions and exacerbated by the isolated site's distance from major transport routes and service towns. The EIS (sec 10) claims some 64,523 tons of CO^2 / year emissions in the 4–5-year construction and some 15,922 tons of CO^2 / year in operation. SOMR has tried to compare this with Battery storage, but was not available in time-frame. We are concerned the issue of 'Emissions' is not adequately accounted for and addressed in the Proposal and if these are holistically less-emitting alternatives?

16. Environment; vegetation and wild-life: The Development Site will be 'Construction Site' fence annexed from the surrounding areas; though the access roads and transmission lines are outside this. This will remove habitat and exclude wildlife from using past corridors or crossing to get between habitats.

    The project proposes the destruction and disturbance of some 4.5 square km of land and vegetation; a significant negative impact on the environmental and cultural assets.

    While concerned about these matters, SOMR has left address of this issue to more qualified submitters. - *Armidale NPA are investigating this matter and better to respond than SOMR.*

17. Visual and noise/vibration: The project EIS relays assessments of these elements. While it is true much of the project is not greatly visible and distant from 'receptors': It omits several impacts such as views of the 70m high reservoir walls from the National Trail and The Macleay. Both 'high experience value' recreational features. The visual assessment, for example shows images of the reservoirs from Marys View above, but not from below, where the lower dam wall will be some 250m from the river! Additionally; the adverse visual, noise/vibration & light impacts on the adjacent historic East Kunderang Station, a significant 'high experience value' tourist accommodation facility (sometimes used by politicians) requires closer address for mitigation. – This 'minimal impact' is grossly under-stated in the EIS.

Additionally; Photographs and montages, used in the visual assessment, by their nature, are smaller and can never show the scale of impact of real on-country experience.

18. The Bicentennial National/Macleay Trail: Parts of this trail are located within the Development Site. The EIS claims there will be no impact. Yet the mapping shows it goes beside the proposed concrete batching plant, mechanical workshop sites and site office! Not as stated, a low visual and noise experience for trail and river users. - An alternative route and costs in a more suitable (more natural landscape) location has not been proposed. SOMR is concerned the 'high experience values' from these recreation areas routes will be diminished to an 'industrial infrastructue' landscape and needs further resolve.
19. Aboriginal Cultural Heritage: The EIS recognises the project area and surrounds are rich in both pre-colonial and post-colonial cultural and historical sites; and that the health of the river, and its environments are key to the physical, cultural, and spiritual health of the Traditional Owners, the Thunggutti/Dhunggutti nation. And, it frequently points out there are several significant pre-colonial cultural and ceremonial sites; but they are not within the project/disturbance area.

    The ACHA outlines the range of impacts of contact with Europeans including; Cedar cutters; land 'take-up' by pastoralists, legislation which encouraged squatters to take up large runs along the Macleay River; thus, Traditional Owners "were forcefully disconnected from their food and water sources, sacred places, travel routes, and other members of their community." This 'Falls Country' was the last stand of Frontier Guerrilla warfare on the East Coast of NSW. The Thunggutti/ Dhunggutti people survived and now, through the Thunggutti Local Aboriginal Land Council (TLALC), own Long Flat Station, which is an integral part of developing appropriate access to the project site and providing access for transmission infrastructure.

    In Nov 2021 the proponents recognised the issue of the "Who speaks for country?" Discussions lead to contention around the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*. The Proponents, congratulated for taking advice of the TLALC and Traditional Owners, in identifying the RAPS to be involved in 'on country' cultural investigation; leading to:

    a. A local Liaison Officer being employed, and a question over how an apparent conflict of interest was managed. The Liaison Officer was also the Chairperson of TLALC, and a Registered Aboriginal Party. This unresolved conflict of interest caused some concern in the Thunggutti/Dhunggutti community. And
    b. A First Nations Engagement Manager was engaged In Dec 2022 by OMPS, who is not of Thunggutti/Dhunggutti heritage, but from Queensland.

    This raises concerns regarding the efficacy of 'Community Engagement & Consultation' processes.

    The ACHA describes how the field investigation documented 108 objects, sites and/or places, and identified the need for further investigations, with descriptions and methods of assessment 'to be determined'. These to: Validate 40 of the above objects, sites and/or places; Gain more information on past economic and social behaviour from high density artifact scatters; Assess visual impacts on significant cultural and heritage sites and; Test excavations as they are incomplete, with an assumption that further excavations would not significantly change interpretations.

    The ACHA outlines the need to develop an Aboriginal Cultural Heritage Management Plan, and potentially develop a Cultural Flow Management Plan for the river, in recognition of the cultural importance of the river. There is concern that these plans have not been developed prior to exhibition of the EIS, and strongly recommend completion prior to DA Assessment and Determination. Additionally; there have been questions raised about the removal and storage of Artifacts found and their current location; this needs resolve through consultation.
20. Decommissioning: - The EIS covers 'Decommissioning' by deferring the issue to a 'Decommissioning Plan' to be developed at detail design stage. This is inadequate to base Development Approval on to ensure the area, environment and Community is not left with such

a potentially dangerous 'stranded asset.' (Read 'liability.') *Project Decommissioning matters are more fully addressed toward the end (23) of this submission.*

2 Construction Phase:

21. The Project Construction is massive, and stated to take some 4-5 years, with works 24/7, 365 days a year; in staged order…

i. Site Establishment / Pre-Construction: All forms of infrastructure will be needed to set-up water, sewerage accommodation, materials etc to facilitate construction phase is mentioned but not really addressed in the DA EIS. The logistics to set up the site for construction are difficult; a 'chicken and egg' scenario; an explanation of how and its impacts need address prior to DA Assessment & Determination. *(Refer Social Impact: above.)*

ii. Access and Traffic: The 4-5year construction period *(where 600 to 820 workers are to be employed working 24/7 365 days a year)* will be the most impact; for which the EIS states 85% of the traffic for the project will be via Kempsey, the balance coming from the west (Armidale) and a small amount via Carrai. The main Kempsey-Armidale Road access extends from the highway to the start of the eastern access route, passing through Fredericton, Kempsey, Willawarrin, Bellbrook to Smiths Bluff - 11km east of Georges junction.

The traffic generated, estimated as an additional 250vpd on most sections, will be of all forms: from frequent light workers vehicles, worker bus transport, delivery vehicles, heavy vehicles, to infrequent low-loaders and Over-size Over-mass (OSOM) vehicles; needed to transport concrete batching plants and the biggest items, the turbines. Other items needed include: construction & worker accommodation items, supplies and food, tunnelling and other machinery, maintenance equipment, transmission line infrastructure, fuel and explosives.

Main traffic issues and impacts highlighted in the EIS include: 1) Urban areas of Frederickton & Kempsey, school zones, intersections, railway crossing etc. 2) The Armidale Rd between Greenhill and Pee Dee, sealed section with 2 villages and school zones and 3) the 40km of unsealed section which is narrow, winding, prone to slips, has low-weight bearing bridges and will require significant upgrade beyond the current improvement works by Councils and funded by the taxpayer. The further upgrades are stated as "*being done by Councils and paid for by the Project."* but relays 'the cost for this has not been budgeted for in the cost' ! This needs address before the cost/benefit and perhaps feasibility is fully or holistically assessed and the DA Determined; as well as impacts on Council's works programs.

The EIS defers address of a Construction Traffic Management Plan (CTMP) to be developed at start of Construction stage and places onus of responsibility on 'all' road users for safety; i.e., To drive responsibly. – It is felt that the 'fob-off' local communities being forced to endure the approximate additional 250vpd of varied traffic type impacts from this Project is not acceptable. *As stated elsewhere, the CTMP is needed to assess the impacts prior to Assessment & Determination.*

It is stated that there will be helicopter use; but the 'pad' for this cannot be found on the plans; neither is it accounted for in the Noise and Vibration assessment (Appendix Z) or the Traffic Impact assessment (Appendix R). Surely this is traffic by air; and will impact the local community and stock. – This needs address in a DA and EIS re-assessment.

iii. Site Earthworks and Preparation: Initial site earthworks will prepare the site for elements of construction. Off Site there will be the roading and connection to the grid for power and establish a water supply, 'facilities' etc. needed to run the many components of project construction. - On-Site: There will need to be perimeter Construction Site fencing, limiting access for public and wildlife. Earthworks will disturb some 400ha of land (for construction workers' camp; some 16km of on-site roads; some 60ha for the top and bottom reservoirs and

walls) and preparation for tunnelling for the water shafts, access tunnels and the turbine chamber.

The Geo-chemistry sections of the EIS and Appendices, backed up by experts, relay that there is minimal impact from the rock chemistry; being low in total sulphur/sulphides in most samples and metal leaching tests using water also yielded very low results, mostly below the limits of detection. The seismic tomography survey picked up a couple of zones of deeper weathering (both in the upper dam and lower dam zones) that they suggest may require further investigation, which is strongly supported; prior to DA Assessment and Determination.

This works will be greatly influenced by the Land and Soils section above; with "Very High'' or ''Extremely High" erosivity, including tunnel erosion, due to the slope and the clayey soils with high dispersivity; which needs further study. An erosion and sediment management plan is needed to fully assess and be convincingly addressed prior to Assessment and Determination.

The sediment and other environmental safeguards are not adequate to eliminate risk of unacceptable environmental damage and pollution from soil movement and 'spills' of say; fuel/oil/chemicals and waste in the DA/EIS. This needs full description in the EIS prior to Assessment and Determination.

iv. Development of Site/Project infrastructure: This will broadly include:
   a) 'Accommodation Camp for 600 workers, with parking for machines and vehicles and 'accommodation'; with resultant sewerage and waste collection and treatment.
   b) Tunnelling, with 'blasting,' of some many km though the rock to create the water shafts, access tunnels and the large underground turbine chamber.
   c) Construction of the two off-river reservoir walls with some estimated 2million cubic metres of rock (yet to be determined from the EIS) and sealing them water-tight concrete is proposed for the walls and spillways.
   d) The EIS claims (Table 4.2) there are six types of surface & ground water-use access licences required for 3 stages of the project. With pump and licence procedures to extract water for initial and top-up filling of the lower dam from the Macleay River.
   e) Construction of the transmission lines with roading access, both on and off site, to carry the power from & to the grid and Armidale Sub-station.

   Etc... - The potential implications of the above are high, many and varied: - These works are not adequately addressed in the DA/EIS and many of SOMR's concerns about them are relayed under topics.

v. Progressive Site stabilisation and restoration: As each area is disturbed, re-graded and development infrastructure is installed, the areas need to be rehabilitated, stabilised, restored and in many cases re-vegetated. - The proposed restoration methods are 'standard' practice but with the dispersive clay soils, this could present unforeseen problems. Additionally; compliance assurances in the DA/EIS that this will be done in a full and timely manner with contained impact are needed with independent monitoring.

vi. Waste and Rubbish removal & treatment: There will be many forms of waste and rubbish generated on and off Site, including but not limited to: sewerage, general rubbish, old oil from machinery, tyres, used/broken machines and their parts and consumables, wind and water run-off with dust/sediment and potentially pollutants etc. The Proposal's EIS defers the Waste Management Plan preparation to the detail design stage, and frequently states "to be removed to licenced disposal locations" and is the Contractors responsibility. – Potential impacts of these waste pollutants are brushed-off and not adequately addressed and safe-guarded from impact in the DA/EIS. A full Waste Management Plan is needed for assessment prior to DA Assessment and Determination.

vii. Emergencies: While never hoped for, events such as bushfires, explosions, accidents, general health and issues for the workers/contractors and community in this isolated area are

inevitable at some stage. There are minimal existing services for appropriate and rapid response in such an isolated site, with such a large scale and potential dangers. And how and who will be responsible for the protection of the community, contractors/workers, in what situations? These Emergency issues are not fully addressed in the DA/EIS and address is needed before Assessment and Determination to know the impacts for the Community and NSW Health.

viii. Health and medical services: is addressed in EIS table 6.47 only stating: *"It is proposed that the Project consult with NSW Health to confirm capacity of existing service provision and implement measures such as provision of on-site medical facilities to prevent competition for the GP services most proximal to the site."* With 600+ construction & admin workers, works 24/7 365 days a year, on a high-risk construction site; with earthworks, tunnelling etc; on a steep and isolated area. The site should have its own medical facilities of nurses, doctor and small hospital type facilities (not just first aid); to cater for the worker day to day GP issues and emergencies; to avoid impact on local and State health services. – This requires full address in the EIS prior to Assessment for Approval and inclusion in the Project budget/costing.

ix. Policing: (Allied to the above) is addressed in EIS and states: "the Project will liaise with NSW Police and NSW SES to ensure they are aware of potential resource requirements and negotiate provisional arrangements."

Considering the nearest Police station is 'one-person' part time and at Bellbrook, some hour away, 'liaising' as above resolves nothing. The Project, operating 24/7 365 days a year, should be responsible for policing criminal and/or anti-social behaviour amongst the '600' contractors/workers and factored into the Proposal and budget prior to approval. This also requires full address in the EIS prior to Assessment for Approval and inclusion in the Project budget/costing so as not to be a burden on the taxpayer and State services.

x. Approvals and Sign-offs on compliance: Should the DA be Approved; Works will be 24/7 365 days a week for the 4–5-year construction period. Obviously, those responsible for monitoring and construction compliance with any Conditions of Consent and Licencing will not work 24/7 etc. This means that construction activities will not be monitored for many work days & hours. Also; the relevant regulating 'Departments' need be sufficiently funded to ensure full assessment and compliance to protect the community and environment from adverse impacts. – The ability to effectively monitor for compliances needs address and funding by the State to ensure the works does not breach and impact the environment, community and taxpayers.

xi. Decommissioning of 'Construction' works: This will involve removal of much of the workers camp and associated infrastructure. These are not fully nominated (such as site fencing and sewerage treatment works etc.) nor addressed in the EIS. - Proposals for 'end of construction' Site rehabilitation are not nominated or adequately addressed in the DA/EIS. This needs address prior to DA Assessment and Determination, to know what will be left after construction.

3. Post Construction Operation and Maintenance

22. It is stated the development has a 70 to 100year life-span and some 30? employees/contractors will maintain the development with the switching etc. operations remotely. While this phase is less intensive, there will be need for top-ups of water; drainage/pumping of the tunnels and under-ground turbine chamber; monitoring and repair of the turbines, reservoir walls, electronics, substation, transmission lines and all the roading and infrastructure etc. – This appears not to be adequately addressed in the DA/EIS and, like other costs, not detailed in the costs/budget.

It appears likely that this could be time of transfer of the Project from OMPS Pty Ltd (the Developer) to Alinta Energy (the Hong Kong/Chinese 'backer' and stated ultimate owner).

The transfer to (Alinta) foreign ownership and its timing, is of concern and not addressed in the DA/EIS for corporate regulator or public consideration.

Monitoring: (Allied with x. above) There will need to be ongoing monitoring for compliance with the likely many safeguards of the operational Conditions of Approvals and Licences.

Given the potential many Licences, Conditions and requirements for compliance for the life of the project, combined with highly erosive soils, water uptake and quality leaving the site and into the Macleay, real-time continuous monitoring is essential.

Who is to carry this out and what agencies will be responsible for signing-off on 'compliance' – with adequate presence and funding? Self-monitoring for compliances is not acceptable.

The ability to effectively monitor and sign-off on ongoing licence etc compliances needs address, to ensure no breaches and impacts on the environment and community; along with need for State/taxpayer costs.

4 Decommissioning:

23. Decommissioning and Site Rehabilitation: at the 'end of viable life.' (70-100years stated.)

What is proposed in the 'Decommissioning' is for deferral to a 'Decommissioning Plan' to be developed at some later stage. Additionally; It is only proposed to remove the 'hardware,' it is verbally advised the proposal is to leave the reservoir walls, tunnels and earthworks in perpetuity: Thus, leaving the environment and Community with such a potentially dangerous 'stranded asset'/'liability.'

It is believed there are three main ways this project could reach an 'End of Life':

1) It could soon, if not already, become economically unviable with advances of technology; political and economic changes both within Australia and internationally, thus causing an early unviability and/or
2) There could be a major event to irreparably damage the infrastructure and/or
3) It could reach its stated 70-100 year 'end of life.'

Either way: The Project Site is not proposed to be and can never be fully restored to its existing, prior to development, state. Tunnels cannot be filled-in to restore the hydrology reservoir walls removal is impractical and costly.
Leaving the environment and community with such a potentially dangerous 'stranded asset' (read 'liability') in perpetuity; in such an isolated, environmentally & visually high sensitivity area so close to the Macleay River is not acceptable.
The Fact that the Site can NEVER be fully rehabilitated/restored is one of SOMR's several reasons the DA should be Refused.

5 Conclusion:

SOMR's order of preferred options for the Project DA Assessment and Determination are:

1. Refused/Declined (not be Approved).
2. Deferred, until the many important further studies and plans required to inform the Assessment are completed satisfactorily and re-exhibited for comment/submissions. – *The EIS proposes these be done after Approval, which will not assist holistic assessment of the project's feasibility, cost or impacts.*

3. Conditional Approval, subject to satisfactory resolution of the many important further studies and plans required to inform the Assessment, and subject to review, comment concurrence from all submitters.

Reasons for DA Refusal/Decline include:

- The Project's scale in this isolated and inaccessible area and amount of disturbance proposed makes this expensive to develop and will adversely impact on such a natural area surrounded by such significant natural assets, Macleay River water quality as well as existing infrastructure.
- Decommissioning of the Site at 'end of life' (un-viability or long term) in such a natural area with high environmental, scenic and recreation values will not and can never be restored.
- There are already more efficient and cost-effective and less disturbing 'Alternative' methods of longer-term storage of electricity with less energy loss-factors. For example; Big Battery technologies; which develop a-pace and will be even more efficient by the estimated 5years timeframe for the Oven Mountain facility is estimated to come on-line and are largely recyclable.
- Alternative less disturbing and 'Brown-field' sites are available for Pumped Hydro are not investigated: and should be addressed in submissions to the NSW DPE Minister; as it is their job to assess alternatives strategically. Not the Proponent. – *But they should have, in their feasibility assessment.*
- 'The Need' for this project is greatly over-stated and over-estimated given the current and near future alternatives, with impacts being generally under-stated.
- The 'Business case' for the stated $1.8billion project is highly questionable; given Snowy 2 and other pumped hydro project examples have all had massive cost overruns, delays and 'unforeseen' problems. The cost estimate provided is likely only for 'The Site' and does not consider transmission costs. The Kempsey/Armidale Road upgrades needed are stated as being "paid for by the Project, but constructed by Council(s);" these costs are stated as not included in the Project costing. Off-site or associated public infrastructure maintenance costs to the tax-payer (i.e.: 'hidden' costs) are also not addressed in the EIS. If all these were included in the budget for cost/benefit and feasibility, the project would very likely not 'stack-up.' – *The Lendlease proposal for Pumped Hydro here, 20 odd years ago, was dropped because 'it did not stack-up' and this when alternatives did not provide so many other alternative electricity storage (battery) options.*

Reasons for DA Deferral include:

The Proposal defers address of many important matters to the 'detail design stage;' many of which should be resolved at this DA stage to ensure all matters are fully addressed for over-all feasibility and holistic cost/benefit analysis in the Assessment process for Determination. These matters/plans for address should be re-exhibited for comment/submissions and include but are not limited to:

- Construction Traffic Management Plan,
- Aboriginal Cultural Heritage Management Plan;
- Additional Geology/Geochemical testing;
- Erosion and Sediment Control Plan,
- River level/flow to permit uptake,
- Social Impacts (Medical, Policing, School zones),
- Waste Management Plan,
- Project costings, and
- Decommissioning Plan at end of construction and 'End of Life.' etc…

Reasons for DA Conditional Approval are similar to the above, but this is not SOMR's preferred option as; there is an increased likelihood of the project going ahead without thorough assessment of significant matters and less public consultation or scrutiny, due to no re-exhibition for comment by stakeholders and/or submitters.

It should be noted that SOMR is not objecting to the use of Pumped Hydro Storage as a battery to support the grid in a 'greener' and more sustainable way. It has its place as outlined in Alternatives. SOMR is objecting to this Proposal, in this location, for the reasons contained in the above.
SOMR's rationale for 2nd preference; Deferral of Assessment and Determination; is to enable the further investigations needed to resolve the important issues of concern, relayed above, so that the Project can be holistically assessed for all impacts and real cost/benefit; before Approval and developing Conditions of Consent.

The need for this is well demonstrated by the many well publicised technical and cost blow-out issues that have occurred with Snowy 2. And, the well stated 'Lessons Learned' in Kidston Pumped Hydro Storage Project (K2H) 'Knowledge Sharing' – Section 2, 'Lessons Learned' for ARENA. Link:
https://arena.gov.au/assets/2017/02/kidston-pumped-storage-hydro-project.pdf
While Kidston is a 'brown-field' (ex-mine) site, more favoured by SOMR, many of the stated 'Lessons Learned' also apply to this OMPHS Proposal.

SOMR may take the opportunity to add to this Submission, in the 4weeks period following the closing date for submissions, advised by DPE as permitted.

Thank you for the opportunity to provide this Submission of Objection and we look forward to working with all involved to achieve a good rational result for the Macleay, catchment, economy, environment and community in which we live and value.

Yours Sincerely

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