

**From:** Hydrostor

**Date:** 25 September 2024

**Re: Hydrostor submission to the AER's draft Application Guidelines – Regulatory Investment Test for Transmission**

Hydrostor welcomes the opportunity to engage with the AER on its Draft Application Guidelines for the RIT-T. The draft changes in valuing emission reductions, stakeholder engagement expectations and social license cost is positive step in bringing regulatory processes into alignment with the updated NEO. With the energy market in transition and Australia's net zero goals getting ever nearer, the ability of the regulatory framework to deliver innovative solutions to the energy transition are being tested. The potential for RIT-T processes to deliver these innovative solutions has expanded in scale and scope. Therefore, updating the RIT-T to facilitate innovations has come at a critical time.

### **About Hydrostor**

Hydrostor, a private company founded in 2010 in Canada, is a developer of proprietary Advanced Compressed Air Energy Storage technology (A-CAES). The company has operational facilities in Ontario, Canada, and is in late-stage development for projects in California, USA and NSW, Australia, with Australian operations based in Melbourne.

A-CAES is based on the proven (since the 1970s) compressed air technology but solves the two main constraints of traditional compressed air energy storage by storing and using heat, eliminating the need for natural gas, and constructing optimised sub-surface caverns instead of exclusively salt caverns. The resource is a 100% emission free solution that can be strategically and flexibly located where needed.

A-CAES has unique advantages as a long-duration energy storage solution. It can be constructed in places where other forms of large-scale synchronous generator-based storage cannot (like pumped hydro and traditional-CAES). Unlike battery storage technology, A-CAES is cost-effective at long durations (6 hours+), has an exceptionally long service life of over 50 years without degradation and without any requirements for augmentation. It also provides numerous grid benefits like synchronous inertia, frequency response, and managing minimum demand. These benefits could translate well into multiple NNOs in RIT-T processes from a single facility.

### **Hydrostor's Experience at Broken Hill and the Precedent it Sets for Australia**

As a proponent of a preferred NNO, Hydrostor is in a unique position to comment based on lived experience. Hydrostor's Silver City Energy Storage project was selected by Transgrid to provide reliability in Broken Hill through a RIT-T process. As set out in the process, it will be the first of many in Australia, as technologies develop to provide more services to the network, including additional A-CAES projects already under consideration in the country. A successful outcome for Silver City will set an important precedent for all non-network alternatives in Australia, including the broader pipeline of A-CAES projects, of which multiple are already identified as viable and cost-effective across New South Wales, Victoria, and South Australia, with additional potential across all states.

### **Addressing the RIT-T Process for NNOs to Ensure Lowest Cost Outcomes for Customers**

Hydrostor supports the drafting on valuing emissions reductions, guidance provided on how community engagement should inform option selection and how costs associated with social license activities are to be included in the RIT-T process. This will result in the lowest cost outcomes through assessment under the full context of the NEO as required by legislation. However, the changes proposed to account for concessional financing does bring up questions on the treatment of costs (cost to provide a credible option vs total capital cost) of NNOs.

### **Non-Network Solutions Need Consistent Treatment as Either Capital Assets or Operational Services Through Both the RIT-T and the Subsequent Cost Recovery Process**

The RIT-T guidelines are not clear on how costs of a non-network option (NNO) are defined and then applied in the assessment of net market benefit. Early in the guideline, costs are defined as “costs incurred in construction or providing the credible option”. This could be interpreted as the cost of a contract of a NNO would be the cost considered in the assessment of credible options. This interpretation does not hold in sections providing guidance on estimating cost, where the drafting suggests that TNSPs must estimate the capital cost of the preferred option based on the preferred standard or an alternative. This drafting is problematic as it contradicts that the costs considered in the net market benefit assessment are either the cost of construction (CAPEX) or the cost of providing a service (OPEX), depending on the scenario. The examples provided do not assist in understanding the interpretation.

The guidance on how concessional financing should be treated in a RIT-T is pragmatic. If concessional financing will reduce the cost a consumer must pay through regulated charges, it can be deducted from the capital cost of the credible option. This then calls into question the above intent and application of how costs of non-networks are considered in the RIT-T. The intent here aligns with the stated intent to minimise the cost recovered by consumers through regulated charges. The confusion with the guideline, centres on this logic. A non-network option is recovered through a TNSP’s OPEX allowance. This allowance is the pass through costs of the network support payments based on the network support agreement. If the intent of the guideline is to minimise cost to consumers through regulated charges while meeting the identified need, assessing a non-network option on its total capital cost, rather than the cost borne by consumers seems to contradict the intent of the RIT-T process.

NNOs are not all uniform, they come from generator, demand side and storage proponents. Some credible options are services from existing facilities, others are proposed which involve new builds of facilities. New builds are fundamentally capital assets and capital expenditures that require procedural clarity up front for the purpose of construction financing, analogous to the treatment of transmission assets as regulated assets that cannot be stranded.

### **Non-Network Options Serve Multiple Needs, and Enabling Them to do so Ensures Lowest Cost Outcomes**

A non-network proponent, submitting a credible option which would be a new facility, would likely not be constructed for the sole purpose of meeting the identified need. Rather, it would be a larger project, of which one of its value streams would come from a network support agreement. Using Hydrostor’s Broken Hill project as an example, only 50MW of the installed 200MW would be reserved for meeting reliability in the Broken Hill region. The cost, recovered by consumers through regulated tariffs, would only be the cost agreed to in the

network services agreement, an estimation of which would be submitted in the RIT-T process. The risk of full cost recovery for the asset, however, remains with Hydrostor and its investors. The commercial proposal would be to recover the costs through wholesale participation. To be clear, the consumer does not carry the risk of cost recovery. If the wholesale market fails to deliver cost recovery, the risk remains with equity investors. A network option does not have the same cost recovery risk.

This allocation of risk also therefore impacts triggers of a material change in circumstance. The current guidelines set out the change in cost thresholds for non-network options which would trigger MCC and therefore a reopening of the RIT-T. It is unclear how this applies if the capital cost of the non-network option increases, however the estimated cost of the network support agreement remains the same. This interpretation would make little sense given it could mean that a credible option which would provide customers with the same net benefits despite an increase in cost recovery risk to investors make no longer be the preferred option. Clarification on reopening triggers for NNOs would be helpful to proponents.

Finally, as the technology of non-network proponents evolves, so too do the solutions they can provide. It is likely going to become more commonplace, that a single non-network investment is able to respond to more than one identified need. In the case of a non-network proponent responding to multiple RIT-Ts, there is a risk of double counting the capital cost despite the total market benefit remaining the same.

### **Aligning the RIT-T to the Financing Needs of NNOs will Benefit Customers in the Long Run**

The change in the NEO to recognise emissions reductions as being a central pillar in energy regulation, the RIT-T process is in the unique position to promote innovation toward our net zero goals, while minimising cost to consumers. The recent AEMC rule change on cost recovery for NNOs acknowledged that in certain cases NNO's have the potential to be delivered at a lower cost than network solutions. NNOs like Hydrostor's A-CAES, offer clean and innovative solutions to enable the transition to net zero, what is required is a level playing field where consumers only pay for investments that are economically efficient and optimal overall for the NEM.

Thank you for the opportunity to contribute to the evolution of the RIT-T process to align with our net zero goals and the value of social license in the energy transition.

#### **For further information:**

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