

17 February 2023

Submitted via email: forecasting.planning@aemo.com.au

Dear AEMO

AEMO's Draft 2023 Inputs, Assumptions and Scenarios Report

Hydro Tasmania welcomes the opportunity to provide a response to the Australian Energy Market Operator's (AEMO) *Draft 2023 Inputs, Assumptions and Scenarios Report* (IASR).

We strongly support robust and strategic system planning to assist with setting a pathway for future investment and to ensure security and reliability of supply in Australia for the long term. Hydro Tasmania has been an active participant in consultations and industry discussions regarding power system planning, including the implementation and iterative refinements to the Integrated System Plan (ISP). This planning initiative is critical to the smooth and least-cost transition of our power system to a low-carbon future.

Recent volatility in global markets has driven substantial inflationary pressures in the Australian energy sector. These changing market dynamics highlight the importance of regularly updating modelling inputs, assumptions and scenarios to reflect our changing market context. AEMO's consistent and transparent consultation with industry, and subsequent adjustments to key modelling inputs ensures stakeholders retain a high degree of confidence in modelling processes.

We are broadly supportive of the amendments as expressed in the *Draft 2023 IASR*. We are particularly supportive of the proposed scenarios (and their explicit links to climate outcomes) in the *Draft 2023 IASR*, as well as the cessation of the 2022 ISP's '*Slow Growth*' scenario. We also note the use of multi-sectoral modelling to inform the development of the 2023 scenarios. This approach appropriately recognises carbon abatement as an economy-wide challenge, which will ultimately facilitate more robust modelling outputs to inform the market on a range of potential futures.

We have provided some additional comments for AEMO's consideration in **Attachment 1**. These comments relate to:

1. Tasmanian Energy Opportunities;

2. Coordination of distributed energy resources (DER) storage;
3. Blending targets for biomethane/synthetic methane;
4. Round-trip efficiency assumptions for batteries; and
5. Input selection from CSIRO and GEM.

If you wish to discuss any aspect of this submission, please do not hesitate to contact Jonathan Myrtle, Head of Market Modelling (0422 5350 92 or Jonathan.Myrtle@hydro.com.au).

Yours sincerely,



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Manager Policy Development

Attachment 1 – HT Comments on the Draft 2023 IASR

1. Tasmanian Energy Opportunities

The inclusion of all ‘*Rewiring the Nation*’ projects across scenarios is reflective of the significant momentum behind these developments. We are particularly pleased to see the IASR continue to recognise the substantial opportunities provided through Tasmanian energy projects (including *Marinus Link* and *Battery of the Nation* projects) to support the NEM’s transition to a low carbon future. Hydro Tasmania’s analysis continues to indicate that Tasmania’s pumped hydro energy storage (PHES) costs will be substantially lower than equivalent projects on mainland Australia. This is driven by a range of factors including significant pre-existing infrastructure, highly desirable topography, and favourable geology.

2. Coordination of DER storage

AEMO’s 2022 *ISP Step Change* scenario forecast significant growth in DER storage, and a very high degree of coordinated operation of these assets. Significant market-based, technical and behavioural challenges must be overcome to achieve the degree of coordination as envisioned. This is a critical and primary difference between the *1.8°C Diverse Step Change* and the *1.8°C Orchestrated Step Change* scenarios, with the latter assuming a much lower degree of coordinated DER storage deployment. We query whether it may be prudent to retain a level of uniformity in all other inputs across these scenarios (that is, application of carbon budgets and biomethane assumptions), and bookend the extent of DER storage coordination. This will enable a clearer comparison of the two step change scenarios.

3. Blending targets for biomethane/synthetic methane

We recommend AEMO to reconsider the inclusion of blending targets for biomethane/synthetic methane under the *1.8°C Diverse Step Change* scenario. We note that there are substitutes for the role of biomethane/synthetic gas in the reticulated gas network including electrification and blending of hydrogen. We have not observed any specific focus on biomethane/synthetic gas relative to these other substitutes in government policy. Rather, we observe growing support for more technology-neutral approaches to meeting emission targets. We suggest that AEMO should allow for the uptake of biomethane/synthetic methane in all scenarios, but not stipulate a specific target for its uptake.

4. Round-trip efficiency assumptions for batteries

We note that AEMO accounts for battery storage degradation in large-scale batteries through a reduction in storage capacity by 16%. We would like to clarify whether AEMO also accounts for the decline in round trip efficiency of large-scale batteries and DER batteries. We consider that a further discount to storage capacity (similar to the approach to reflect battery storage degradation) is a reasonable approach to reflect declining efficiency of batteries in the modelling.

5. Input selection from CSIRO and GEM

We support AEMO’s approach to using CSIRO’s GenCost publication as a key input into capital cost assumptions. We also broadly support AEMO’s approach to using forecasts from both CSIRO and GEM to inform DER uptake. We note that in Table 14 of the Draft IASR (see below), AEMO has proposed to use only GEM’s forecast for distributed PV under the *1.5°C Green Energy Exports* scenario. In our view, CSIRO has also accounted for the assumptions underpinning the scenario in developing its forecasts.

Given the significant uncertainty around this scenario and stakeholder interest, we recommend AEMO to use the average of GEM and CSIRO forecasts for distributed PV under the *1.5°C Green Energy Exports* scenario (consistent with the approach for Battery and VPP forecasts mapping).

Table 14 Consultant scenario mapping for CER

Scenario	<i>1.5°C Green Energy Exports</i>	<i>1.8°C Orchestrated Step Change</i>	<i>1.8°C Diverse Step Change</i>	<i>2.6°C Progressive Change</i>
PV forecast mapping	GEM	Average	Average	CSIRO
PVNSG forecast mapping	GEM	GEM	GEM	CSIRO
Battery and VPP forecasts mapping	Average	Average	Average	CSIRO

Source: AEMO, Draft IASR 2023, Table 14