An analysis of the economics of Marinus Link: 2026 update

A report prepared for the Bob Brown Foundation

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Executive Summary

This report revisits the economic case for Marinus Link and the broader Battery of the Nation strategy in light of changed market conditions, updated project costs and rapid developments in storage technology. It builds on our original 2020 report and subsequent 2021 update.

The main conclusion of this report is that the original case for Marinus Link – which was not compelling when it was announced - has weakened even further as technology and market developments predicted in our first (2020) report for the Bob Brown Foundation and confirmed in our 2021 report, have come to pass. The Australian, Tasmanian and Victorian governments' recent decision to proceed with Marinus Link will impose very large needless costs on electricity consumers and taxpayers.

Key findings

- Analysis of Basslink flows suggests Tasmania has small exportable surplus beyond Basslink's existing capability, for less than 1 per cent of the time.
- The report argues that current Victorian midday low prices are unlikely to persist once coal closures reshape that market.
- Tasmania is not shown to have a durable comparative advantage in either renewable generation or electricity storage.
- Rapid deployment of electrochemical batteries across the NEM – as predicted in our initial report for the Bob Brown Foundation - has proven earlier arguments on the absence of an economic rationale for long-duration pumped hydro in Tasmania.
- Marinus Link would not have proceeded without AEMO's endorsement. The report contends that AEMO's analysis has overstated Marinus Link's benefits and understated its contingent costs.

The most predictable consumer impact of Marinus Link is a large increase in network charges, particularly in Tasmania, while offsets from inter-regional settlement residues

are expected to be modest. Such large increases will occur despite very substantial taxpayer subsidy of Marinus Link and of Tasmanian transmission and hydro development.

1. Flawed foundations

The report places the origins of Battery of the Nation in the 2015–16 Tasmanian energy-security shock, when low rainfall coincided with the Basslink outage. In that context Hydro Tasmania, supported by government and ARENA-funded studies, advanced a vision in which Tasmania would become a strategic provider of renewable energy and deep storage to the mainland through greater interconnection. Early studies identified thousands of possible pumped-hydro sites and suggested that Tasmania could play a significantly larger balancing role in the future National Electricity Market.

That early vision has contracted sharply over time. The field of potential pumped-hydro opportunities was progressively narrowed from more than 2,000 sites to a handful of serious candidates, and ultimately to a single flagship pumped-hydro proposal at Cethana, alongside the possible redevelopment of the Tarraleah hydro generator. Both projects remain uncertain. Tarraleah has not yet reached a final investment decision and still faces market testing, planning approvals and parliamentary approval. Cethana, meanwhile, is explicitly tied by Hydro Tasmania to the possible development of a second Marinus cable.

This matters because the report sees the historical case for Marinus Link as deeply intertwined with this narrowing project pipeline. What was originally presented as a broad and resilient strategic vision is now reduced to two high-cost, late-stage and still uncertain developments, both of which are already out-competed by electrochemical storage on the mainland and in Tasmania. At the same time, Marinus Link's own costs have more than tripled from initial claims.

This report has not examined the Tasmanian Government's "Whole of Government Business Case". That report has not been released without redaction of all relevant assumptions and analysis and so it remains unscrutinised.

2. Does Tasmania have spare capacity that Marinus Link would unlock?

A central question in the report is whether Tasmania already has significant generation or storage capability that could be profitably exported if the interconnection limit were

relaxed. If this was the case, the argument for Marinus Link would be much stronger since Marinus Link would be able to make use of latent potential. To examine this, the report analyses actual Basslink power flows and the associated Tasmania–Victoria price differences. Its conclusion is that only for a very small share of the year does Tasmania appear to have a small amount of exportable production more than what can already be carried on Basslink.

The report extends the analysis by examining rolling one-, two-, four-, eight-, twelve- and twenty-four-hour export periods. This is intended to test the stronger claim that Tasmania can operate as a provider of deep storage to Victoria. The conclusion again is negative: even over sustained durations, the data do not show that Tasmania frequently has valuable continuous export capability that is being trapped by Basslink's existing transfer limit.

This report finds that Marinus Link would therefore not simply unlock a latent strategic asset already sitting inside the Tasmanian hydro system. Rather, it would require a substantial prior expansion of the Tasmanian power system before the new interconnector could be used in the way its proponents envisage. In that sense, the report argues that Marinus Link and the generation build-out are not separable: the cable depends on new generation and storage development in Tasmania, and that new development is costly.

It might be suggested that declining demand in Tasmania frees up generation that can then be exported to Victoria. For example, average grid demand in Tasmania was 1 GW in the first quarter of 2026 and was 1.08 GW in the first quarter of 2025. We also note Hydro Tasmania's expectation of declining hydro production, of 21 GWh per year on average, in the period to 2050.[1] TEMCO, one of Hydro Tasmania's biggest customers is currently in administration and if it closes that will also reduce demand by a further 100 MW (about 10% of Tasmania's average demand). It has also recently been speculated that Nyrstar will not continue operation in Tasmania unless significantly supported by the Government. More than half of Tasmania's electrical consumption is accounted for by

[1] https://www.parliament.tas.gov.au/__data/assets/pdf_file/0026/102878/Hydro-Tasmania-Climate-and-system-modelling-summary.pdf

just four large industrial customers[2]. On the other hand Tasmania's electricity retailer, Aurora, claims that it has agreed a contract for more than 100 MW of supply to AI data centre company Firmus.

3. Comparative economics: generation, prices and storage

The report next considers whether either Tasmania or Victoria has a clear comparative advantage in future renewable generation or storage that could justify the cost of Marinus Link. On the frequently repeated claim that Tasmania could import cheap Victorian solar in the middle of the day and export hydro power back at night, the report argues that the underlying market pattern is likely to change before Marinus Link is commissioned.

In the report's view, today's low midday prices in Victoria are largely a product of strong solar output interacting with the inflexibility of the remaining coal fleet, Yallourn and Loy Yang A and B. Once any of those stations close (Yallourn is expected to close in 2028), the economics of the daytime market are expected to change materially. The report therefore argues that the current price spread between Tasmania and Victoria cannot be assumed to persist into the 2030s, and that it would be imprudent to justify a multi-billion-dollar transmission investment based on market conditions that are temporary.

The report also challenges the idea that Tasmania has any comparative advantage in renewable generation itself. Victoria has somewhat better solar conditions, but the gap is much too small to justify interconnection.

The report suggests that part of the apparent advantage of Tasmanian wind simply reflects less economic curtailment of wind generation in Tasmania than Victoria: both states have comparable wind resources. Marinus Link causes prices in the two regions to converge and so Tasmanian wind is likely to face the same market prices that Victorian wind already experiences, and so the small relative advantage of Tasmanian wind will dissipate. The

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2 https://www.economicregulator.tas.gov.au/Documents/25%204379%20Annual%20Energy%20Security%20Review%202024-25.PDF

relative difference in underlying wind resources in Tasmania and Victoria is much too small to small to justify a claim of comparative advantage in either state or so provide a rationale for the huge costs of interconnection.

On storage, the report's argument is that the original Battery of the Nation concept assumed Tasmania would hold a durable advantage in long-duration storage because pumped hydro would remain much cheaper than batteries. That proposition, the report argues, no longer holds. Across the NEM, utility-scale electrochemical batteries have expanded rapidly and the pipeline of committed, under-construction and anticipated electrochemical storage is now substantial. Tasmania itself also has a growing pipeline of private sector battery proposals that in total promise 23 times more power capacity (and 8 times more energy, assuming cycled once each day) than that offered by Tarraleah repowering, the only "battery of the nation" project that may actually proceed.

Using Hydro Tasmania's earlier public claims, AEMO assumptions, and CSIRO battery-cost projections, the report concludes that by the earliest time the Cethana pumped hydro power station could possibly enter service (noting it remains far from certain it will proceed at all) 24-hour batteries are likely to be at least competitive with, and probably cheaper than, pumped hydro. Once lower round-trip losses and much quicker battery construction periods (so avoiding interest during construction) are considered, the report argues that electrochemical batteries are likely to be clearly preferable. The implication is that Marinus Link cannot credibly be justified on the basis that Tasmania has a unique or durable comparative advantage in long duration electricity storage.

4. Critique of AEMO's role and cost-benefit modelling

The report is strongly critical of AEMO's role in making Marinus Link an actionable project through the Integrated System Plan (ISP). AEMO has played a critical role in the approval of Marinus Link and the federal Minister for Climate Change and Energy and has justified Government support for Marinus Link on AEMO's advice. The report's central claim is that AEMO's modelling structure materially understates the costs that are contingent on Marinus Link and overstates the benefits attributed to it.

First, the report argues that AEMO's 2022 ISP assumed major wind expansion in Tasmania would proceed even if Marinus Link were not built. On the report's

interpretation, that assumption is inconsistent with both the legal structure of the Tasmanian Renewable Electricity Target and ministerial statements indicating that large-scale renewable expansion depends on Marinus. If the new generation would not in fact be built without the cable, then the report says the cost of that generation should have been treated as part of the Marinus pathway rather than excluded from it. By excluding such costs, AEMO has distorted the comparison of Marinus Link's benefits with its contingent costs.

Second, after Marinus Link's cost estimate increased sharply, the report argues that AEMO changed its 2024 counterfactual in a way that preserved a positive result by making the no-Marinus scenario look implausibly expensive. In particular, the report points to assumptions involving offshore wind in Tasmania and gas generation with carbon capture and storage in Victoria. The report says these technologies were included not because they were credible investment expectations (there never was a proposal for wind development off the Tasmanian coast and gas generation with carbon capture storage has not ever been proposed and neither does it exist as a technology for electricity production), but because the choice of such implausible technologies inflated the costs avoided by building Marinus Link and so conferred advantage on Marinus Link.

The report therefore concludes that AEMO's modelling should not be taken as a neutral demonstration that Marinus Link delivers net benefits. Instead, it presents the Integrated System Plan treatment of Marinus as a sequence of assumptions that produce the desired result. More broadly, the report questions AEMO's claimed independence by noting that the relevant Tasmanian public entities are among AEMO's members, to which it is answerable.

5. Consumer impacts: networks, inter-regional settlement residues and prices

The report notes that the Australian Energy Regulator has already set or signalled substantial regulated expenditure for NWTD, Marinus Link and the regulatory conversion of Basslink. On the report's estimates, Tasmanian transmission regulated revenue rise from about $192 million to about $460 million per year by 2030 once these projects are considered. That implies a rise in network charges of just under 140 per cent in Tasmania, before concessional funding and grants. The comparable increase in Victoria is estimated at about 90 per cent. These increases may be offset to some degree through taxpayer

subsidies provided by the Australian Government through the Clean Energy Finance Corporation.

The report is sceptical that concessional finance from the Clean Energy Finance Corporation (CEFC) will reduce these impacts on the scale claimed by project proponents (Marinus Link claims reductions of 60-90%). The CEFC has obliquely suggested that the value of their concession would be to reduce bill impacts by 45% from what they otherwise would be. If this is correct it would mean that Marinus Link and NWTD can be expected to increase transmission charges by 70% in Tasmania and 45% in Victoria. This is despite Australian Government grants of $85m for Marinus Link and $346m for NWTD as well as what the CEFC said will be $900m of benefit from its concessional funding of Marinus Link over the next five years.

Quite what the actual effect of CEFC concessional financing of Marinus Link will be on Marinus-driven price increases, remains to be seen. It is notable in this regard that the AER has recently determined that the effect of CEFC concessional finance for NWTD will be to reduce typical residential prices by $6 per year (from what they otherwise would have been). This is a (relative) reduction of just 0.27%.

As for inter-regional settlement residues, the report argues that these are unlikely to provide a material offset once Tasmania and Victoria become heavily interconnected. The closer the two regions move toward operating as a single market, the smaller the price differences between them are likely to be, and therefore the smaller the residues available to offset network costs. For that reason, the report expects Inter-regional Settlement Residues on Tasmania–Victoria trade after Marinus Link is commissioned to be relatively modest — likely only in the low tens of millions. This will not meaningfully affect the impact of Marinus Link on network costs.

On wholesale prices, the report does not conclude that Marinus Link will necessarily push Tasmanian annual average prices higher or lower. Instead, it argues that Tasmania will become much more exposed to developments in the much larger Victorian market. The likely effect is therefore not a clear and durable bill benefit, but a convergence of hourly price profiles and greater dependence on Victorian market conditions.

Overall conclusion

The absence of an economic case for Marinus Link has now been proved by technology changes and cost increases predicted in VEPC's first report for the Bob Brown Foundation. In addition, Tasmania is shown not to currently have significant spare exportable generation or storage beyond what Basslink is able to ship. Nor does the report accept that Tasmania will ever have a durable comparative advantage in renewable generation or storage. The most cost-effective storage (which is electrochemical) and renewable generation can be built for comparable cost in Tasmania and Victoria. Consequently, the decision to expand interconnection between two, regions neither of which have a comparative advantage in storage or electricity generation, is to needlessly impose large burdens on consumers and taxpayers.

1 Introduction

The Australian, Victorian and Tasmanian governments have recently made a final investment decision to proceed with the development of a Marinus Link (Stage 1) a 750 MW cable between Tasmania and Victoria, and on-shore transmission development – "North West Transmission Development" (NWTD) – in Tasmania.

This report has been prepared for the Bob Brown Foundation, as an update on two earlier reports (in 2020 and 2021) that examined the economic merit of Marinus Link. Those earlier reports[3] drew attention to the evidence that Tasmania did not have a comparative advantage in renewable electricity production or in storage and predicted that electrochemical storage would outcompete pumped-hydro development in Tasmania and was likely to dominate future storage development. Tasmania also does not have a comparative advantage in the development of electrochemical storage.

Since those reports, Marinus Link costs have more than doubled, 2,000 potential pumped hydro sites identified by Hydro Tasmania a decade ago have been whittled down to one – Cethana – that Hydro Tasmania has said it will only (possibly) develop if the second Marinus Link is developed. Hydro Tasmania is yet to decide whether to re-develop the 180 MW Tarraleah, the only (possible) hydro development under consideration. Yet over the last few years 5 GW/ 11 GWh of electrochemical storage has been brought into operation in the NEM (most of it in the last year) and a further 8.7 GW/22.9 GWh is under development. In Tasmania, seven large scale electrochemical batteries have been proposed by private entities in three stand-alone sites (700 MW/1400 MW) and four wind/solar backed projects (1400 MW/4467 MWh).

[3] Available here: https://243b2ed8-6648-49fe-80f0-f281c11c3917.filesusr.com/ugd/cb01c4_a7e32d421b0244418408be0ff6e425ce.pdf and here: https://243b2ed8-6648-49fe-80f0-f281c11c3917.filesusr.com/ugd/cb01c4_eb85523842b94754bf8599ea013463ba.pdf

This report, building on our previous reports for the Bob Brown Foundation, our critique of AEMO's assessment of Marinus Link and our submission[4] to the Tasmanian Joint Select Committee on Energy Matters, is asked to cover the following ground:

1. Historic critique of the case for Marinus and Battery of the Nation
2. The comparative economics of electricity generation and storage in Tasmania and Victoria
3. Critique of AEMO's role in facilitating/enabling Marinus Link
4. The impact of Basslink regulatory conversion and Marinus Link on electricity consumers in Victoria and Tasmania

The report responds to each of these in turn.

[4] Available here: https://www.parliament.tas.gov.au/__data/assets/pdf_file/0026/88631/48.-Prof-Bruce-Mountain-attaching-Rooftop-Solar-on-Factory-Roofs-Report.pdf

2 Historic critique of the case for Marinus and Battery of the Nation

The origin of the "Battery of the Nation" proposal might be traced to the 2015–16 Tasmanian energy-security shock. Hydro Tasmania was dealing with record low rainfall at the same time that the Basslink interconnector failed. The Tasmanian Energy Security Taskforce was asked to future-proof Tasmania against a repeat, including looking at more renewables and the possibility of a second interconnector. In that setting, Hydro Tasmania's CEO publicly pitched Tasmania as "the battery of the nation" in April 2017, tying the idea to pumped hydro, more interconnection and more wind.

The proposal became formal in 2017 through several ARENA-backed studies. One[5] looked at repurposing existing hydro assets at Tarraleah and Gordon; another started on 28 August 2017 as a concept study of Tasmanian pumped hydro options; and a third, launched on 1 November 2017, modelled Tasmania's role in a future NEM. Those studies concluded that Tasmania-as-Battery-of-the-Nation was a viable, cost-effective pathway, that Tarraleah redevelopment looked potentially feasible, and that Gordon had a technically/commercially feasible improvement option.

Hydro Tasmania's concept study[6] cut more than 2,000 pumped-hydro possibilities down to 14 sites representing more than 4,800 MW of potential storage. By March 2019 that field had narrowed further to three leading sites - Lake Cethana, Lake Rowallan and the Lake Burbury (Tribute power station) - and by the end of the 2018–19 prefeasibility program, Hydro Tasmania said six sites totalling 3,400 MW were suitable to move on to feasibility studies.

From about 2019 onward, the history of Battery of the Nation became inseparable from Marinus Link. The Marinus initial feasibility report[7] was released in early 2019, and Hydro later repeatedly described Marinus as the "critical enabler" of Battery of the Nation.

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[5] https://arena.gov.au/projects/augmenting-tasmanian-hydropower-system/
[6] https://arena.gov.au/assets/2018/06/battery-of-the-nation%E2%80%93-tasmanian-pumped-hydro-in-australias-future-electricity-market.pdf
[7] https://www.marinuslink.com.au/wp-content/uploads/2019/02/Initial-Feasibility-Report-Project-Marinus-Feb-2019.pdf

Over time, the very broad early vision narrowed into two flagship Hydro Tasmania projects: redeveloping the ageing Tarraleah scheme and building a new pumped-hydro project at Cethana.

Government backing deepened in 2022. Hydro welcomed[8] a Tasmanian–Commonwealth partnership that year and described Battery of the Nation as eventually bringing 1,500 MW of on-demand capacity to market: the first 750 MW Marinus cable would unlock more flexibility from the existing hydro fleet and upgrades like Tarraleah, while a second 750 MW cable would create the opportunity for a 750 MW, 20-hour Cethana pumped-hydro project. Hydro also said in late 2022 that it had completed the technical feasibility assessment for Cethana, and in 2023 it published a preliminary business case for Tarraleah, at that point expecting a final investment decision in late 2024.

The Australian Government has so far provided $85 million for Marinus Link, of which $10 million was provided through ARENA and the remainder through a federal government grant. The Australian Government has also provided $65 million for the Tarraleah hydropower scheme / redevelopment and has said it will provide up to A$1 billion of low-cost debt for Battery of the Nation projects including Tarraleah and Lake Cethana Pumped Hydro. In February 2026 Hydro Tasmania said that it is seeking an EPC contractor for Tarraleah. Hydro Tasmania's expansion of Tarraleah will, it is claimed, add 100 MW and roughly 200 GWh per year. But Tarraleah is not yet committed. Hydro Tasmania said that it is seeking proposals for construction and generation equipment and says that market testing is meant to firm up costs before Final Investment Decision. Hydro also says the project still needs environmental and planning approvals plus approval by the Tasmanian Parliament. Its current timetable shows a July 2025 EPBC referral, late-2025 EIS preparation, procurement starting in February 2026, and EIS/development-application exhibition scheduled for April 2026.

Marinus Link's three shareholders made a final investment decision on 1 August 2025 to proceed with the 750 MW Stage 1 interconnector and the Clean Energy Finance Corporation announced it would allocate $3.8bn of the concessional finance under the Australian Government's "Rewiring the Nation" fund, to Marinus Link. The terms of this

[8] https://www.hydro.com.au/articles/media-releases/energising-tasmanias-renewable-energy-ambitions

concessional finance are not known, but the CEFC said it be worth $900m over five years, and that "will reduce the impact of transmission-related consumer costs by 45 per cent"[9] (we assume that what the CEFC means is that this is relative to what the increases otherwise would have been). In addition, the Australian Government has committed to provide $65m in grants to Hydro Tasmania for the re-development of Tarraleah, it has already provided $85m for Marinus Link and has committed to provide $346m for the North West Transmission Developments in Tasmania.

[9] https://www.cefc.com.au/media/media-release/cefc-to-invest-in-visionary-marinus-link-project-in-largest-ever-transaction/#:~:text=3%20September%202025,final%20determination%20on%20project%20costs

3 The comparative economics of electricity generation and storage in Tasmania and Victoria

The Australian Energy Regulator recently decided the regulatory asset values of Marinus Link Stage 1 and the North West Transmission Developments (NWTD) in Tasmania associated with Marinus Link. In total, by 2030, the regulated value of transmission is expected to increase by $6bn for these two projects. This can be compared to the 2024 regulated asset value of transmission assets in Victoria and Tasmania of $6.5bn. Marinus Link and the consequent NWTD will therefore almost double the regulated value of transmission in Victoria and Tasmania.

Is this additional cost likely to be worthwhile? This depends on whether Tasmania or Victoria has such a large comparative advantage relative to the other in electricity production / storage that the cost of Marinus Link will be more than offset by that comparative advantage. Does such comparative advantage exist? We break the question down into two parts:

- Does Tasmania or Victoria have surplus production capacity that could justify the construction of Marinus Link?
- Does Victoria or Tasmania have a comparative advantage in yet-to-be-developed storage or renewable generation that could justify the construction of Marinus Link?

3.1 Does Tasmania or Victoria have surplus production capacity that could justify the construction of Marinus Link?

Is there available surplus capacity in Tasmania that will be unlocked by the additional interconnection capacity of Marinus Link? It is difficult to know the extent of the spare capacity in Tasmania since the peak production of its hydro system depends on the capacity of its generators and the availability of water to power them. To answer the question, we developed a statistical analysis of the power flows over Basslink, the existing interconnector, as set out in Appendix A.

The conclusion from this statistical analysis of Basslink flows and corresponding Victoria/Tasmania price differences at the times of these flows, is that only for a very small part of the year (less than 1% of the time) does Tasmania have production available to export to Victoria, in excess of the capacity of what can already be carried on Basslink.

The statistical analysis then examines the extent to which Tasmania's hydro system is currently able to provide "deep storage" (i.e. continuous supply for sustained periods) to Victoria, beyond what is currently available on Basslink. The conclusion that follows from this further analysis is that Tasmania very rarely has surplus production capacity available to sell to Victoria, beyond what Basslink is already able to carry, even for periods as short as an hour.

Evidently the "battery of the nation" proposition requires major expansion of the Tasmanian power system to provide the energy export potential that Marinus Link will offer.

It might be suggested that declining demand in Tasmania frees up generation that can then be exported to Victoria. For example, average grid demand in Tasmania was 1 GW in the first quarter of 2026 and was 1.08 GW in the first quarter of 2025. We also note Hydro Tasmania's expectation of declining hydro production, of 21 GWh per year on average, in the period to 2050.[10] TEMCO, one of Hydro Tasmania's biggest customers is currently in administration and if it closes that will also reduce demand by a further 100 MW (about 10% of Tasmania's average demand). It has also recently been speculated that Nyrstar will not continue operation in Tasmania unless significantly supported by the Government. More than half of Tasmania's electrical consumption is accounted for by just four large industrial customers[11]. On the other hand Tasmania's electricity retailer,

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[10] https://www.parliament.tas.gov.au/__data/assets/pdf_file/0026/102878/Hydro-Tasmania-Climate-and-system-modelling-summary.pdf

[11] https://www.economicregulator.tas.gov.au/Documents/25%204379%20Annual%20Energy%20Security%20Review%202024-25.PDF

Aurora, claims that it has agreed a contract for more than 100 MW of supply to AI data centre company Firmus.

Since Marinus Link is so large (750 MW) the conclusions of our supply-side analysis stand unless there is a catastrophic collapse in Tasmanian electrical demand (far bigger than the loss of TEMCO). If there is a catastrophic contraction of demand in Tasmania (such as the closure of both Temco and Nyrstar) this would present the opportunity to serious consideration of the opportunity to quickly electrify transport and agriculture in Tasmania and to expand data centre development.

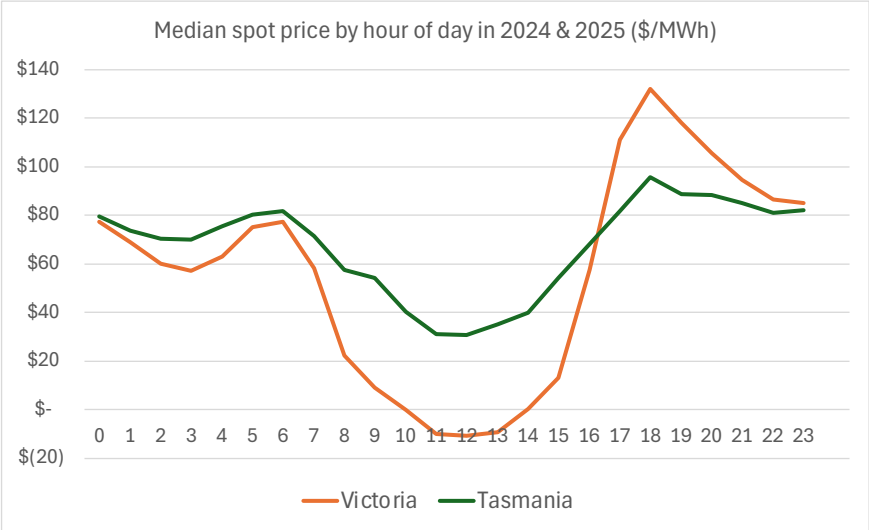
3.2 Does Victoria or Tasmania have a comparative advantage in *yet-to-be-developed* storage / renewable generation, that would justify the construction of Marinus Link?

What about northward power flows from Victoria, does Victoria currently have a surplus that Marinus Link could provide to Tasmania? In this regard it is notable that in the 3 September 2025 joint media release[12] from the Commonwealth, Victoria and Tasmania Governments announcing the decision to proceed with Marinus, the text says that Marinus Link will provide certainty to Tasmanian industry by **"*utilising the mainland's cheap solar during the day and powering homes with Tasmanian hydro power at night.*"**

It is true that spot market electricity prices in Victoria are lower than in Tasmania, mainly during the middle of the day. This is shown in Figure 1 which shows the average spot market prices in Tasmania and Victoria by hour of day using the actual five-minute data in 2024 and 2025.

Figure 1. Median spot price ($/MWh), by hour of day in 2024 and 2025 in Tasmania and Victoria

[12] https://minister.dcceew.gov.au/bowen/media-releases/joint-media-release-marinus-link-reaches-financial-close-connecting-tasmanias-renewables-world

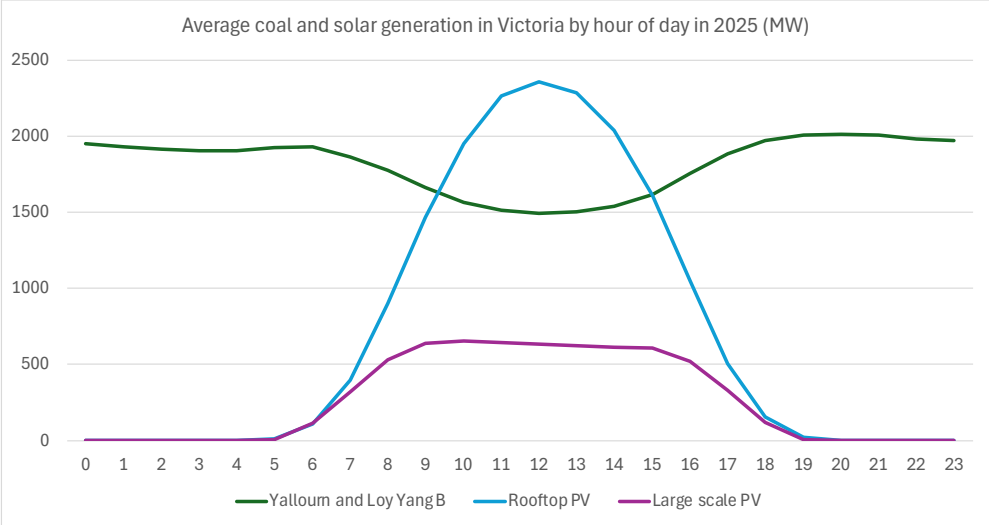


Source: Data from AEMO NEMweb, processed in www.v-nem.org and analysed by author

It is understandable that ministers seeking to make the case for Marinus Link might point to these price differences. However, the argument does not withstand scrutiny. In particular, the low Victorian prices in the middle of the day are explained by the combination of solar generation in the context of the inflexibility of Victoria's three coal generators, Yallourn and Loy Yang A and B. These generators make their production available (or even negative) prices so as to avoid having to de-synchronise from the power system and thus incurring much higher costs and more rapid ageing in order to restart to meet the evening peak demands when their full capacity is again needed.

Of these three generators, Yallourn's owner has committed to close the 1000 MW power station by 2028. The Australian Government's 2030 renewable energy target will not be achieved if Loy Yang B is not also closed by then. So, by the time that Marinus Link is proposed to be commissioned, 2000 MW of coal generation capacity in Victoria will have been taken out of the system. To put this into context, Figure 2 below shows the average hourly production of large-scale solar, small scale solar and the sum of Yallourn and Loy Yang B power stations.

Figure 2. Average generation (MW) by hour of day from coal and solar sources in Victoria in 2025



Source: Data from AEMO NEMweb, processed in www.v-nem.org and analysed by author

It is clear from this that taking Yallourn and Loy Yang B off the system will reduce supply in the middle of the day by 1500 MW, and by around 2000 MW when solar is not dispatched. Such supply reduction will mean that the remaining Loy Yang A coal generator will be setting marginal prices in Victoria during the daytime, even at the time of peak solar generation. Only if solar generation grows by around 1500 MW (i.e. 50%) between now and 2030, to replace the closing coal generation, will the balance between supply and demand again reflect the present situation (leaving all other factors the same). There is no prospect of such rapid expansion. In addition, electricity storage, electrification and AI demand is expected to continue to grow rapidly, further increasing the solar expansion needed to ensure the price patterns currently evident in the market will continue to be the case by the time that Marinus Link is commissioned.

The conclusion is that median hourly price differences during the middle of the day that are currently seen in the wholesale market in Victoria and Tasmania will not still apply by the time that Marinus is built. If Tasmania is seeking cheaper electricity in the middle of the day it should develop solar generation in Tasmania. This is only slightly less productive than in Victoria and so can be developed for a comparable price.

3.3 Does Victoria or Tasmania have a comparative advantage in renewable electricity generation?

Victoria, being at a lower latitude than Tasmania, has a comparative advantage in the production of solar electricity but the gap between Tasmania as a whole relative to Victoria as a whole, considering population location, is not large. For example, the Clean Energy Regulator assumes a yield of 1.185 MWh per annum per kW of rooftop solar in both Hobart and Melbourne.

What about wind generation? In wind generation, the average capacity of wind generation from 2012 to the end of 2025 has been 37%. In Victoria the comparable number is 30%. With small differences in the underlying wind resource in Victoria and Tasmania, the main reason for this difference is economic curtailment (i.e. the operators of wind generators in Victoria curtailing their production when spot prices go negative between 10am and 2pm in Victoria – note Figure 1 earlier showed the median price in Victoria in 2024 and 2025 was negative between 10am and 2pm). Observing these yield differences, it might therefore be argued that Marinus Link would be justified. But the effect of such large additional interconnection in addition to the existing Marinus (interconnector capacity will exceed Tasmania's average electricity demand) will be to equalise prices between Tasmania and Victoria, dominated by Victoria's (it is by far the bigger market). This will bring the same economic curtailment to Tasmanian wind as already exists for Victorian wind.

Minister Duigan may have accepted this reality, as reflected in his comments to The Advocate[13] and the Tasmanian Parliament[14] where he sought to justify Marinus Link on the basis of its ability to increase the import of electricity from Victoria during the day when solar generation peaks, and the later resale of that electricity back to Victoria in the evening – in other words for Marinus Link not to be the "battery of the nation" as envisaged by Hydro Tasmania but more like Basslink.

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[13] "Duigan all for first, cautious on second", The Advocate, 8 October 2024. https://www.theadvocate.com.au/story/8775402/tasmanias-energy-minister-defends-marinus-link-project/

[14] https://tasgreensmps.org/parliament/energy-and-renewables-marinus-link-3/

3.4 Does Victoria or Tasmania have a comparative advantage in electricity storage?

Section 2 described how the "battery of the nation" proposal, originating a decade ago, was built on the idea that Tasmania had a comparative advantage in electricity storage that justified expanding interconnection to Victoria. From a list of 4000 potential pumped hydro sites, a series of ARENA-funded studies undertaken by Hydro Tasmania has now arrived at the proposition of the Cethana pumped hydro generator, possibly to be developed if ever the second Marinus Link is to be developed.

The repowering of Tarraleah, which is yet to be committed to, is said to add (net) around 100 MW of capacity and 200 GWh per year of production. It is, essentially, the only proposition of expanded hydro storage in Tasmania after a decade of study and despite bipartisan political will to deliver the "battery of the nation" vision.

Over this time electrochemical (battery) storage has expanded significantly in the NEM. There is now just over 5 GW of operational grid-scale battery capacity, with more than 11 GWh of energy storage[15]. The rate of expansion is increasing. Between the end of 2024 and the end of 2025 3,796 MW / 8,602 MWh of new large-scale battery capacity had been added to the NEM.[16]

In addition, by the end of 2025 there were more than 145,000 household battery installations in the NEM with 3,398 MWh of storage capacity.[17] AEMO's January 2026 Generation Information workbook shows that there is about 8.7 GW / 22.9 GWh of electrochemical battery that is committed or under construction and a further 11.6 GW / 42.5 GWh that is anticipated.

Large-scale batteries have yet to be commissioned in Tasmania, but various proposals are at various stages of development. This includes standalone proposals such as the Great Lakes Battery (280 MW / 560 MWh), Palmerstone BESS (100 MW/200 MWh), the Nook

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[15] https://modoenergy.com/research/en/australia-nem-q4-2025-battery-energy-storage-buildout-record-deployment-four-hour-bess?utm_source=chatgpt.com
[16] https://www.aemo.com.au/-/media/files/major-publications/qed/2025/qed-q4-2025.pdf?rev=b29ae0bd014c48f59a259009d246280f&sc_lang=en&utm_source=chatgpt.com
[17] https://www.aemo.com.au/-/media/files/major-publications/qed/2025/qed-q4-2025.pdf?rev=b29ae0bd014c48f59a259009d246280f&sc_lang=en&utm_source=chatgpt.com

BESS (280 MW / 560 MWh), the Derby BESS (40 MW/80 MWh) and six wind/solar battery proposals that claim to offer 500 MW/1267 MWh (solar-battery) and 900 MW/3200 MWh (wind-battery).

It is now plain to see that electrochemical (lithium) storage dominates electricity storage development on the mainland and now also in Tasmania. This is not surprising: we foretold this in our initial 2020 report for the Bob Brown Foundation and again in the 2021 update report. Hydro Tasmania has asserted that Cethana has a competitive advantage in long duration storage. Our analysis submitted to the Tasmanian Parliamentary Inquiry and included in Appendix B disputes this assertion. But Hydro Tasmania's decision to link Cethana development to a possible second Marinus Link cable means this is not a point of contention in considering the justification for the first Marinus Link cable.

Neither Tasmania nor the mainland have a clear comparative advantage in electrochemical storage development. Perhaps it might be a little cheaper on the mainland on account of better-established supply chains, but the gap is likely to be small: all the equipment is imported. It is plainly evident that Marinus Link can't be justified on the basis of differences in storage costs since in both Tasmania and on the mainland, storage will be dominated by the same electrochemical technologies, and they will be developed and operated at comparable cost in both places.

4 Critique of AEMO's role in facilitating/enabling Marinus Link

AEMO's involvement in deciding that Marinus Link is an "actionable" transmission project has been essential in the regulatory approval of Marinus. AEMO concluded that the benefits of Marinus Link exceed its costs. This section critiques AEMO's analysis.

In its inaugural ISP (Integrated System Plan) in 2018, AEMO did not include Marinus Link as a recommended project but said that it would undertake further work "*to better understand how this project may best be incorporated into next year's ISP*".

In the 2020 ISP, Marinus Link was included as an approved transmission project, conditional on the Tasmanian Government legislating the Tasmanian Renewable Electricity Target (TRET). The Tasmanian Parliament passed TRET laws at the end of 2020. Marinus Link was then included in the 2022 ISP as an actionable project, since AEMO said that its cost/benefit analysis found that the benefits of Marinus Link exceeded its costs.

We have argued that this cost/benefit analysis was flawed in that it assumed major renewable generation expansion in Tasmania would occur even if Marinus Link was not built. In this way, AEMO excluded a large part of the additional costs that were contingent on Marinus Link being built, producing a flawed cost-benefit analysis. If this error was corrected, AEMO analysis would not have concluded that the benefits of Marinus Link exceeded its costs.

The details of this flawed analysis are explained here. In its 2022 ISP AEMO assumed around 1,900 MW of additional wind generation (relative to the capacity installed in 2023/24) would be developed in Tasmania even if Marinus Link is not built. This wind generation expansion assumption is consistent with the TRET target of 15 TWh per annum of additional renewable generation in Tasmania by 2030 and 20 TWh by 2040. But the TRET does not establish an unconditional commitment to double renewable electricity generation in Tasmania. Indeed, the Tasmanian Energy Minister told the Tasmanian Parliament that wind generation would not be expanded in Tasmania unless Marinus Link is built.

The effect of AEMO assuming that 1,900 MW of additional wind generation would be built in Tasmania even if Marinus Link was not built is that the cost of this additional capacity was then excluded in the calculation of the net benefit of Marinus Link.

VEPC pointed to this error in AEMO's analysis in a submission to AEMO on the Draft 2022 ISP. In response AEMO said that its ISP is required to take account of government policies. But the Tasmanian Government had not established an unconditional policy to double renewable generation in Tasmania. This is clear from the TRET legislation and Ministerial statements to the Parliament on it: the policy to double renewable generation in Tasmania was contingent on the construction of Marinus Link.

In 2024, Marinus Pty Ltd admitted that Marinus Link would cost at least twice as much as what they had previously said. AEMO therefore needed to find ways in the 2024 ISP to ensure that the benefits of Marinus Link were still calculated to exceed its now much higher cost.

To do this, AEMO's 2024 ISP changed the "counter-factual" (i.e. what would happen if Marinus Link was not built) in order to raise the cost of the counter-factual. Increasing the cost of the counter-factual offsets the cost of adding Marinus Link and hence increases the net benefit of[18]. AEMO's counter-factual was implausible in two ways:

- First, in its counter-factual AEMO persisted with its assumption that significant (1,758 MW) of additional wind generation would be built in Tasmania even if Marinus Link is not built. In its 2024 ISP it then split this into 419 MW of much more expensive offshore wind and 1,342 MW of additional onshore wind. By comparison, if Marinus Link is built, AEMO said that no offshore wind would be built. Since AEMO assumes that offshore wind will be more than double the cost of onshore wind (almost triple if the offshore wind is floating) this creates a bigger benefit booked to Marinus, by replacing the more expensive offshore wind (if Marinus Link is not built) with much cheaper onshore wind (if Marinus Link is built).

[18] The benefit arises by avoiding the higher expenditure in the counter-factual that would arise if Marinus Link was not built.

- Second, in the counter-factual AEMO assumed that 400 MW of gas generation with carbon capture and storage (CCS) will be operational in five years' time in Victoria. This rises to 3,300 MW by 2040. Gas with CCS is assumed to be very expensive to build ($4655.33/kW according to AEMO) and operate. AEMO then assumes that gas with CCS is not built in Victoria if Marinus Link is built (it is replaced by much cheaper gas generation without CCS) and so this creates another large source of benefits booked to Marinus. Gas generation with CCS has never been proposed in Australia and does not exist anywhere in the world. It is implausible to have included it in the counter-factual. It is obviously assumed solely for the purpose of driving up the estimate of the benefits of Marinus Link.

In summary, AEMO has produced an analysis of the net benefit of Marinus Link that relies on a specification of energy policy in Tasmania that is inconsistent with the legislated policy. The effect of this is to understate the cost of Marinus Link. AEMO also relies on technology assumptions (offshore wind and gas with CCS) in its counter-factual that are not credible. The effect of this is to overstate the benefits of building Marinus Link (which are claimed to arise by avoiding expensive offshore wind and gas generation with CCS). The combination of excluding costs and over-stating benefits gives AEMO the result they were seeking to demonstrate: that building Marinus Link presents a net benefit.

AEMO describes itself as an expert "independent" planner.[19] How can an independent planner have delivered such a biased and technically unsounded analysis, even after the errors were made clear? In fact, AEMO is a private company limited by guarantee and answerable to its members. Its members include the State of Tasmania, TasNetworks and Hydro Tasmania.

[19] "*AEMO provides the detailed, independent planning, forecasting and modelling information and advice that drives effective and strategic decision-making, regulatory changes and investment.*" https://www.aemo.com.au/about/what-we-do. To be fair however our word search for "independent" in the five ISPs that AEMO has completed reveals that AEMO has not made the claim that it is independent in its development of the ISP.

5 The impact of Basslink regulatory conversion and Marinus Link on electricity consumers in Victoria and Tasmania

Many factors make it impossible to accurately predict the effect of Basslink regulatory conversion and Marinus Link on electricity consumers. The highest certainty can be found in the impact of regulated charges for network services. Less certainty pertains to the effect of Inter-regional Settlement Residues and wholesale (spot) market price effects.

5.1 Network charges

The Australian Energy Regulator has set charges and regulated expenditure allowances for the North West Transmission Development in Tasmania, for Marinus Link (for the period before it is commissioned) and Basslink once it becomes regulated on 1 July this year. The first line of Table 1 below shows the transmission regulated revenue in 2029 set by the AER in its last regulatory determination[20]. The second line shows the AER's determination of allowed revenue in 2030 in respect of the North West Transmission Development[21]. The third line shows our estimate of Tasmania's share of the regulated revenue for Marinus.[22] The fourth line shows Tasmania's share of the regulated revenue for Basslink.[23]

[20] Table 1.1 of Final Decision TasNetworks Electricity Transmission Determination 2024 to 2029 (1 July 2024 to 30 June 2029) Attachment 1 Maximum allowed revenue, March 2026.
[21] In its contingent project decision, the AER set capital allowances of $921.4m in 2023 dollars. It also set revenues allowances of $51.5m for the three years of the existing period which the AER said would be an average annual increase of $15.50 in residential bills. The AER also said that they expect that once completed, NWTD will increase residential bills by $49 per year. The AER did not work out the increase in the regulated asset base for NWTD. We estimate the regulated asset base based on $921.4 in 2023$ will be $1.3bn (nominal) in 2030. Turning this into an annual charge at the AER's nominal vanilla WACC of 5.87% over 50 years and allowing 2% of the RAB for operating costs results in an annual regulated revenues of $123m.
[22] This is calculated as Tasmania's share of the annual charge using the AER's RAB for Marinus Link of $4930m in 2030, depreciated over 40 years at the AER's vanilla WACC of 5.36% and allowing annual opex of 2.5% of the opening RAB.
[23] This is based on 25% (Tasmania's share) of the Basslink regulated revenue as determined by the AER and set out in Table 1 of its decision.

Table 1. Tasmanian transmission regulated revenues in 2029/30 and expected increases by 2030 from NWTD, Marinus Link and Basslink regulation

Tas Networks regulated revenue (2029/30, $m)	$ 192
NWTD regulated revenue (2030, $m)	$ 123
Marinus regulated revenue (Tas share) (2030, $m)	$ 115
Basslink regulated revenue (2030, $m)	$ 29

Source: AER decisions

The comparable data for Victoria are shown in Table 2 below.

Table 2. Victoria transmission regulated revenues in 2026/27 and expected increases by 2030 from Marinus Link and Basslink regulation

Ausnet Services allowed revenues (2027)	$	450
Marinus revenue (Vic) (2030)	$	310
Basslink regulated revenue (Vic) (2030)	$	88

Source: AER decisions

Table 1 shows that the regulated revenue in 2030 (once Marinus Link and NWTD is expected to be commissioned) will almost triple from $192m per year to $460m per year, before consideration of IRSR offsets (discussed below). Leaving other factors unchanged, this will mean transmission charges in customer bills will increase by just under 140%. The comparable increase in Victoria, as shown in Table 2, is 90%.[24]

The AER noted in its determination of the regulated revenues for Marinus Link and NWTD that TasNetworks had claimed that loans from the Clean Energy Finance Corporation will mean that the effect of CEFC funding will mean that price effects of NWTD and Marinus Link will be 60-90% below those estimated by the AER. This is not credible. Even if the CEFC loaned money to TasNetworks at no interest, the effect would fall well short of the 60% reduction they claim.

If CEFC "Rewiring the Grid" concessional loans are to reduce the price effect of NWTD or Marinus Link at all, it will need to lend at rates below those determined by the AER in its revenue determination. The AER used a risk-free rate of 4.2% in its calculation of allowed returns for NWTD. The three-month Bank Bill Swap (BBSW) rate is 4.35% and

[24] The regulated revenue for Ausnet Services is for the last year of the current regulatory period (the allowances after that are yet to be determined). The Marinus Link and Basslink numbers are calculated as for Table 1, but reflecting Victoria's share (72.4% and 75% respectively).

Australian Government 10 years bonds yields are currently at 4.97%. This means that if CEFC loans are to be made to TasNetworks at rates lower than the AER has determined, they will need to be at rates lower than those paid by the Australian Government. The terms of CEFC loans remain to be seen. The CEFC has announced that $3.8bn has been committed by it to Marinus Link and CEFC has said[25] that the effect of its concessional loans will be to deliver $900m in benefits to Tasmanian and Victorian and that this "*will reduce the impact of transmission-related consumer costs by 45 per cent*" (presumably relative to what the increases otherwise would have been).

However, we note in an AER press release[26] on 17 March 2026, that the AER said it had calculated the effect of the CEFC's concessional finance of the NWTD on TasNetworks' regulated revenues would be a reduction in typical residential customer's bills over the 2024-29 period of $6 per year [from what they otherwise would be]. This is a price reduction (relative to what prices otherwise would have been) of just 0.27%.

5.2 Inter-regional Settlement Residues (IRSR)

As regulated interconnectors, flows between Tasmania and Victoria on Marinus Link and Basslink will give rise to inter-regional residues which are, approximately, the flows multiplied by the difference in regional spot prices. These residues (or the amount paid for them in residue auctions) offset regulated revenues. They therefore matter in predicting the effect of Basslink regulation and Marinus Link, on the prices consumers pay.

Appendix C shows the inter-regional flows on Basslink for the last six years. These have averaged $59m per year for southward flows and $52m per year for northward flows. The operator of Basslink had a commercial incentive to maximise the value of the residues including by withholding capacity on the interconnector so as to maximise the residue. Basslink will be a regulated interconnector from 1 July 2026. What might be the value of the IRSR from this date and after Marinus Link is built?

[25] https://www.cefc.com.au/media/media-release/cefc-to-invest-in-visionary-marinus-link-project-in-largest-ever-transaction/
[26] https://www.aer.gov.au/news/articles/communications/TasNetworks-share-concessional-financing-benefits-consumers

After Marinus Link is commissioned, Victoria and Tasmania will be the most strongly interconnected regions of the NEM, with transfer capacity (assuming no binding intra-regional constraints) equal to more than Tasmanian demand. Since, as regulated interconnectors, Basslink and Marinus Link will operate unrestricted, this is likely to mean that Victoria and Tasmania will come to be considered, in market terms, as essentially a single region. Since Victorian demand and supply is five times that of Tasmania, conditions in Victoria will dominate. With reference to Figure 1, we expect that, leaving all other things the same, Tasmanian prices will reduce in the middle of the day on account of the supply/demand balance in Victoria (they may rise in Victoria) and they will reduce in Victoria at the time of the evening peak (but they may rise in Tasmania at these times). It is impossible to predict wholesale price outcomes in this market with any certainty, since it depends on changes in demand and supply in Victoria and Tasmania all of which is highly uncertain. However, it is nonetheless possible to expect, with a high level of certainty, that there will be small inter-regional residues on Victoria-Tasmania trade, on account of the very high degree of interconnection in relation to Tasmanian demand/supply.

Perhaps the closest parallel to the relationship between Victoria and Tasmania is that between South Australia and Victoria where strong interconnection in relation to South Australian demand results in small IRSR on transfers into Victoria from South Australia. If the Tasmanian power system expands as the Tasmanian Government and AEMO predict it will, the relationship between Tasmania and Victoria will come to resemble, to some degree, the relationship between South Australia and Victoria. As shown in Appendix C, the IRSR on South Australia to Victoria flows are small (averaging just $19m per year for the last five years). If AEMO and Tasmanian predictions of generation development in Tasmania are to be believed we expect similar small (i.e. low tens of millions) IRSR between Tasmania and Victoria, after Marinus Link is commissioned. This is not enough to have a meaningful impact on the 140% network charge increases identified in Table 1.

5.3 Wholesale price effects

A point made in the previous sub-section is that with Basslink and Marinus Link as regulated, unconstrained, interconnectors, Tasmania and Victoria will effectively become a single market with very similar prices for almost all of the time. Tasmania will become very highly exposed to the development of the Victorian market including the effects of its coal generation closure outcomes. We see no compelling reason to imagine that Marinus Link will necessarily mean lower or higher wholesale prices in Tasmania than in Victoria, measured as annual average. It is likely that the hourly average price profile in Tasmania will come to look much more like the profile of such prices in Victoria than is currently the case.

5.4 Summary

The dominant (and most forecastable) effect of Marinus Link and the regulation of Basslink will be to increase network charges in Tasmania by around 140% (before the uncertain effect of taxpayer subsidy through loan concessions). We do not expect that inter-regional settlement residues will have much effect in offsetting this increase, because Tasmania and Victoria will become the most strongly interconnected regions in the NEM meaning there will be very little price difference between Tasmania and Victoria for almost all of the time. Tasmania's electricity prices will come to be dominated by outcomes in the much larger Victorian market, but we see no reason to imagine that much stronger interconnection will mean average annual wholesale price increases or decreases compared to now. We do however foresee that the profile of hourly prices in Tasmania will come to resemble much more closely the profile of such prices in Victoria.

Appendix A. Does Tasmania have spare production / storage capacity that Marinus Link will unlock?

Marinus Link will add 750 MW of transfer capacity between Tasmania and Victoria[27]. Is there available surplus capacity in Tasmania that will be unlocked by the additional interconnection capacity of Marinus Link?

A starting point in answering this question is to determine the utilisation (capacity factor) of Basslink when exporting to Victoria. High utilisation does not mean that there are generation surpluses in Tasmania, but it might be suggestive of this and so the prospect that there may be unused capacity in Tasmania that could be economically deployed if interconnector capacity was expanded.

Over the last two calendar years, our analysis of Basslink's flows indicates that its average capacity factor over this period was 54% based on average flows of 322 MW and peak flows of 596 MW.

A percentile analysis of Basslink when exporting and importing provides additional insight. Table 1 below shows the average and maximum of the first percentile (2,105 five-minute trading periods) of Basslink's export (northwards) flows in 2024 and 2025. For interest, the table also shows other variables of interest (corresponding prices in Victoria and Tasmania, export and import income, Tasmanian demand, hydro and wind generation). The average flow of 545 MW and difference in Vic/Tas prices ($850/MWh and $518/MWh) suggests that for the highest percentile of those trading periods that Basslink was exporting to Victoria, it was highly used. It might be suggested that for some intervals in this top percentile, the constraint was not the capacity of the Tasmanian power system but rather the capacity of the interconnector.

[27] Assuming the transmission system in Tasmania is developed so that the Tasmanian transmission system is able to accommodate such additional capacity

Table 3. Average and maximum of the first percentile (2,105 five-minute trading intervals) of Basslink's export flows in 2024 and 2025

Variable	Obs	Mean	Max
Basslink export to Vic (MW)	2,105	545	596
Tas price when exporting to Vic ($/MWh)	2,105	$ 518	$ 16,071
Vic price when importing from Tas ($/MWh)	2,105	$ 850	$ 17,500
Basslink export income ($)	2,105	$ 15,689	$ 811,824
Basslink import to Tas (MW)	0		
Tas price when importing from Vic ($/MWh)	0		
Vic price when exporting to Tas ($/MWh)	0		
Basslink import income ($)	0		
Tas demand (MW)	2,105	1,372	1,697
Tas hydro (MW)	2,105	1,598	2,023
Tas wind (MW)	2,105	222	535

How does Basslink flow drop away beyond the first percentile? Table 2 presents the average and maximum of the flows in the second to fifth percentile (8,395 five-minute trading periods) of Basslink's export flows in 2024 and 2025. In this table we see the average flow has dropped to 443 MW, suggesting around 20% spare unused capacity in the second with fifth percentile of Basslink's highest export flows. In these percentiles, the average price difference between regions had dropped to $110/MWh ($235/MWh minus $225/MWh).

Table 4. Average and maximum of the second to fifth percentile of Basslink's export flows in 2024 and 2025

Variable	Obs	Mean	Max
Basslink export to Vic (MW)	8,395	443	512
Tas price when exporting to Vic ($/MWh)	8,395	$ 125	$ 16,600
Vic price when importing from Tas ($/MWh)	8,395	$ 235	$ 17,377
Basslink export income ($)	8,395	$ 4,162	$ 646,717
Basslink import to Tas (MW)	0		
Tas price when importing from Vic ($/MWh)	0		
Vic price when exporting to Tas ($/MWh)	0		
Basslink import income ($)	0		
Tas demand (MW)	8,395	1,337	1,757
Tas hydro (MW)	8,395	1,483	2,006
Tas wind (MW)	8,395	226	541

Moving further down the distribution, the sixth to 100th percentile of Basslink flows shows average export flows as shown in

Table 5 below.

Table 5. Average and maximum of the sixth to hundredth percentile of Basslink's export flows in 2024 and 2025

Variable	Obs	Mean	Max
Basslink export to Vic (MW)	35,656	193	403
Tas price when exporting to Vic ($/MWh)	62,543	$ 91	$ 16,600
Vic price when importing from Tas ($/MWh)	62,543	$ 105	$ 16,600
Basslink export income ($)	35,656	$ 585	$ 478,405
Basslink import to Tas (MW)	137,452	$ 345	$ 482
Tas price when importing from Vic ($/MWh)	137452	$ 90	$ 17,500
Vic price when exporting to Tas ($/MWh)	137452	$ 48	$ 1,393
Basslink import income ($)	137452	$ 1,325	$ 642,682
Tas demand (MW)	199,995	1,181	1,871
Tas hydro (MW)	199,995	729	1,991
Tas wind (MW)	199,995	217	547

Table 3 shows average flows of just 193 MW and average price differences when Basslink was exporting of just $11/MWh ($105/MWh minus $91/MWh) which is evidence of plenty of excess capacity. The table also shows that for the 6th to 100th percentile of Basslink's export (northward) flows, Basslink was importing from Vic at an average of 345 MW for about 60% of the time (137,452 trading periods out of 199,995 periods).

The conclusion from this statistical analysis of Basslink flows and corresponding Victoria/Tasmania price differences at the times of these flows, is that only for a very small part of the year (less than 1% of the time) does Tasmania have production available to export to Victoria, in excess of the capacity of what can already be carried on Basslink.

Battery of the nation?

The analysis to this point has focused on the five-minute Basslink flows but has not had regard to the continuous flows over Basslink. The case for expanding interconnection through Marinus Link was made by its proponents (the Tasmanian Government, Hydro Tasmania and TasNetworks) on the basis that Tasmania would be the "battery of the nation". Specifically, their claim was that Tasmania's hydro system could provide the "deep storage" needed for continuous reliable supply. To understand this claim, and building on the prior analysis, we seek here to understand whether the Tasmanian power system is currently able to provide continuous supply for sustained periods to Victoria beyond what is currently available on Basslink.

We assemble a data set by calculating the rolling average power flows over Basslink for various durations, using the data of the actual flows on Basslink from the start of 2024 to the end of 2025. The durations we examined are one, two, four, eight, 12 or 24 hours. Does such analysis provide evidence to substantiate a conclusion that the Tasmanian power system has the capacity to provide reliable continuous supply to Victoria, that Marinus Link will be able to deliver?

The methodology is to work out the value of the average flow over Basslink for the specific duration (one, two, four, eight, 12 or 24 hours), store this value in the first five minute interval and then roll the calculation forward to the next five minute interval and repeat this calculation and so on from the start of 2024 to the end of 2025. This establishes the rolling average Basslink power flow. These data are then ranked from the highest export (northward flow) to lowest. The data in the top percentile (2,105 five-minute trading intervals) is then examined. In addition to the Basslink export values, the corresponding values of various variables in each of these 2105 five-minute trading intervals is examined to establish the average and maximum value. The additional variables are:

- Tas price when exporting to Vic ($/MWh)
- Vic price when importing from Tas ($/MWh)
- Basslink export income ($)
- Basslink import to Tas (MW)
- Tas price when importing from Vic ($/MWh)
- Vic price when exporting to Tas ($/MWh)
- Basslink import income ($)
- Tas demand (MW)
- Tas hydro (MW)
- Tas wind (MW)

The results of this analysis for the one-, two-, four-, eight-, 12- and 24-hour periods are shown in Table 6 below.

Table 6. Average and maximum of the top percentile of rolling average Basslink's export flows for one, two, four, eight 12 and 24-hour durations

Variable	Obs	Mean	Max	Variable	Obs	Mean	Max
One-hour				**Eight-hour**			
Basslink export to Vic (MW)	2,105	515	595	Basslink export to Vic (MW)	2,016	393	585
Tas price when exporting to Vic ($/MWh)	$ 2,105	$ 498	$ 16,071	Tas price when exporting to Vic ($/MWh)	$ 2,045	$ 97	$ 12,910
Vic price when importing from Tas ($/MWh)	$ 2,105	$ 903	$ 17,500	Vic price when importing from Tas ($/MWh)	$ 2,045	$ 179	$ 15,974
Basslink export income ($)	$ 2,105	$ 18,529	$ 811,824	Basslink export income ($)	$ 2,016	$ 3,142	$ 646,717
Basslink import to Tas (MW)	0			Basslink import to Tas (MW)	60	149	390
Tas price when importing from Vic ($/MWh)	$ -			Tas price when importing from Vic ($/MWh)	$ 60	$ 85	$ 253
Vic price when exporting to Tas ($/MWh)	$ -			Vic price when exporting to Tas ($/MWh)	$ 60	$ 83	$ 256
Basslink import income ($)	$ -			Basslink import income ($)	$ 60	$ 27	$ 537
Tas demand (MW)	2,105	1,371	1,692	Tas demand (MW)	2,105	1,212	1,549
Tas hydro (MW)	2,105	1,574	2,023	Tas hydro (MW)	2,105	1,296	1,863
Tas wind (MW)	2,105	235	535	Tas wind (MW)	2,105	265	540
Two-hour				**Twelve-hour**			
Basslink export to Vic (MW)	2,105	490	595	Basslink export to Vic (MW)	1,735	342	593
Tas price when exporting to Vic ($/MWh)	$ 2,105	$ 438	$ 16,071	Tas price when exporting to Vic ($/MWh)	$ 2,105	$ 92	$ 12,910
Vic price when importing from Tas ($/MWh)	$ 2,105	$ 835	$ 17,500	Vic price when importing from Tas ($/MWh)	$ 2,105	$ 203	$ 15,974
Basslink export income ($)	$ 2,105	$ 17,679	$ 811,824	Basslink export income ($)	$ 1,735	$ 5,480	$ 646,717
Basslink import to Tas (MW)	0			Basslink import to Tas (MW)	310	-245	-48
Tas price when importing from Vic ($/MWh)	$ -			Tas price when importing from Vic ($/MWh)	$ 310	$ 59	$ 600
Vic price when exporting to Tas ($/MWh)	$ -			Vic price when exporting to Tas ($/MWh)	$ 310	$ 48	$ 315
Basslink import income ($)	$ -			Basslink import income ($)	$ 310	$ 321	$ 18,663
Tas demand (MW)	2,105	1,353	1,692	Tas demand (MW)	2,105	1,254	1,613
Tas hydro (MW)	2,105	1,531	2,017	Tas hydro (MW)	2,105	1,225	1,944
Tas wind (MW)	2,105	239	535	Tas wind (MW)	2,105	273	540
Four-hour				**24-hour**			
Basslink export to Vic (MW)	2,071	444	595	Basslink export to Vic (MW)	1,357	299	589
Tas price when exporting to Vic ($/MWh)	$ 2,101	$ 222	$ 16,071	Tas price when exporting to Vic ($/MWh)	$ 1,671	$ 168	$ 9,250
Vic price when importing from Tas ($/MWh)	$ 2,101	$ 497	$ 17,500	Vic price when importing from Tas ($/MWh)	$ 1,671	$ 244	$ 10,486
Basslink export income ($)	$ 2,071	$ 12,017	$ 646,717	Basslink export income ($)	$ 1,357	$ 3,370	$ 148,319
Basslink import to Tas (MW)	4	95	129	Basslink import to Tas (MW)	434	(262)	(49)
Tas price when importing from Vic ($/MWh)	$ 4	$ 65	$ 142	Tas price when importing from Vic ($/MWh)	$ 434	$ 203	$ 7,206
Vic price when exporting to Tas ($/MWh)	$ 4	$ 62	$ 139	Vic price when exporting to Tas ($/MWh)	$ 434	$ 127	$ 337
Basslink import income ($)	$ 4	$ 19	$ 444	Basslink import income ($)	$ 434	$ 1,838	$ 248,599
Tas demand (MW)	2,105	1,292	1,663	Tas demand (MW)	2,105	1,269	1,744
Tas hydro (MW)	2,105	1,417	1,964	Tas hydro (MW)	2,105	1,140	1,951
Tas wind (MW)	2,105	248	535	Tas wind (MW)	2,105	210	539

The "One-hour" results show that in the top decile of one-hour rolling average periods, Basslink was heavily used (average use of 515 MW compared to maximum usage of 595 MW) and in this percentile the average price in Victoria was $903/MWh compared to $498/MWh in Tasmania. Prima facie, this suggests surplus capacity within Tasmania able to support higher one-hour continuous Tasmania to Victoria power flows, than Basslink is able to carry. However closer inspection of prices in this top percentile shows the median price in Victoria was $188/MWh and the median price in Tasmania was $140/MWh, a difference of just $48/MWh. This suggests that for rare events in the top percentile of Basslink flows, large price difference occurred, and that typically Tas/ Victoria price differences were small even in the top percentile of Basslink flows.

Table 4 also shows, as might be expected, that over long durations Basslink's average export declines so that for the 24-hour flows, the average of the top percentile of Basslink exports is just 299 MW and the average price in Victoria was $219/MWh compared to $175/MWh in Tasmania. The difference in the median prices in Victoria and Tasmania was just $40 during the top percentile of Basslink 24-hour export flows. This small price

difference combined with evidence of ample spare transfer capacity is compelling evidence that Tasmania does not currently have sufficient storage capacity to provide a useful 24-hour supply to Victoria.

What about four-hour flows, is there evidence of valuable storage capacity in Tasmania that Marinus Link would unlock for such duration flows? Table 4 shows the average of the top decile of Basslink exports was 444 MW on peak flows of 595 MW. This suggests that Basslink was nowhere near constrained even in the top percentile of four-hour flows. While the difference in the average prices of $275/MWh ($497/MWh - $222/MWh) would suggest constraints, this is not borne out in the difference in the median prices in the top decile of four-hour flows (just $17/MWh). This is consistent with a conclusion that Tasmania does not have surplus four-hour storage to sell to Victoria.

The conclusion that follows from this analysis is that Tasmania very rarely has surplus production capacity available to sell to Victoria, beyond what Basslink is already able to carry, and this is irrespective of storage duration. Evidently the “battery of the nation” proposition requires expansion of the Tasmanian power system to provide the energy export potential that Marinus Link will offer.

Appendix B. The relative economics of lithium storage and the proposed Cethana pumped hydro power station

In understanding the comparative advantage of Cethana relative to battery alternatives it is important to understand how battery costs have rapidly declined. In its 2018 "Battery of the Nation" report[28], Hydro Tasmania said[29] that by 2035 it would cost $1.8m per MW to build pumped hydro in Tasmania (in 2017 dollars). In that report it did not specify the storage (energy) capacity of the pumped hydro that it envisaged.

Hydro Tasmania's website now describes Cethana as "a 750 MW capacity project with up to 20 hours deep storage duration". So, this $1.8m per MW cost can be restated as a cost per kWh (if we assumed 20-hour storage capacity) of $90/kWh. [30]

In that same 2018 report, Hydro Tasmania said a 24-hour battery would cost $14m/MWh, so $583/kWh taking account of 24-hour energy storage capacity. In other words, per kWh of storage capacity, Hydro Tasmania said that 24-hour batteries would be 6.5 times more expensive than the 20-hour Cethana. Such a large difference between the cost of 24-hour batteries and Cethana might plausibly have lent support to a conclusion, in 2018, that the cost of Marinus could be justified in order for Victoria to access the much cheaper long duration storage in Tasmania[31].

But in its 2024 Gencost report (used in AEMO's 2024 ISP) CSIRO has said that 24-hour electro-chemical batteries will cost $132/kWh by 2035 and continuing to decline after that[32]. This can be compared to $120/kWh for Cethana (using AEMO's cost estimate) or

[28] Hydro Tasmania, 2018. "Battery of the Nation: Analysis of the future National Electricity Market. Exploring a vision where Tasmania plays a significantly expanded role in the NEM".
[29] Ibid, Figure 12.
[30] It should be noted however that in its 2019 "pre-feasibility" report, Hydro Tasmania identified several pumped hydro projects and the one with the lowest capital cost per MW was Cethana ($1.5m/MW) which it said would have an 11-hour storage capacity, so giving a cost of $136/kWh.
[31] In their report, Hydro Tasmania do not account for the fact that battery expenditure will be incurred much later than pumped hydro expenditure (because batteries can be built quickly while pumped hydro involves major civil and mechanical works and so takes long). This feature combined with steeply declining battery costs is the basis of the claim that Cethana no longer has a comparative advantage relative to electro-chemical storage.
[32] Table B6, page 87. "Global NZE by 2050"

$133/kWh (using Hydro Tasmania's cost estimate). It is appropriate to use as the point of comparison, the 2035 cost estimate for batteries since batteries can be developed in a year and AEMO only forecasts that Cethana will enter service in 2035 (and only reach close to its full capacity by 2048).

Taking account of much lower round-trip losses in batteries (circa 12%) versus pumped hydro (circa 25%) the conclusion is that 24-hour electrochemical storage will be much cheaper than Cethana.

These conclusions rely on AEMO's and Hydro Tasmania's claim of Cethana costs and CSIRO's claims of 24-hour battery costs, counted when the battery expenditure is likely to be incurred. Are these credible cost estimates? Dealing firstly with AEMO Cethana cost estimate, as explained earlier in this section AEMO has a long history of under-estimating the costs of projects that it promotes. In this case it has used a cost estimate for Cethana that is lower even than Hydro Tasmania's CEO reported 18 months ago.

What about Hydro Tasmania's estimate of the cost of Cethana? As the project developer, its cost estimate is likely to be more credible than AEMO's. But questions might be asked of Hydro Tasmania too. It is now seven years since Hydro Tasmania published its BoTN report recommending pumped hydro development in Tasmania and yet there is still no formal costing of Cethana available in the public domain. A web search of Cethana cost estimates and of Hydro Tasmania's website reveals only a private briefing by Hydro Tasmania's CEO to an Australian Financial Review journalist who then reported what she was told.

Perhaps Hydro Tasmania does, privately, have confidence in its ability to accurately estimate the cost of Cethana. Yet considering the incentives Hydro Tasmania has to demonstrate a comparative advantage, it would surely wish to publicise such cost estimates if it felt confident that they were below the estimates it has casually briefed a journalist on. That Hydro Tasmania has not done so, suggests it may be naïve to accept Hydro Tasmania's public claims of Cethana's cost as any more than an unlikely lower bound estimate of capital cost and an upper bound estimate on storage (energy) capacity. A realistic $/kWh storage cost for Cethana may therefore most likely be well above the estimate we have used here.

What about CSIRO, has it been unduly optimistic in its expectations of the evolution of battery costs in future? Statista publish a global Lithium-ion battery price index[33]. This estimated that lithium battery costs declined by 82% from USD780/kWh in 2013 to USD139/kWh, a compound annual reduction of 16%. By comparison, CSIRO predict 24-hour battery costs will reduce by 11% per annum on their most ambitious scenario or by 7% on their least ambitious scenario. In the absence of any plausible argument for a decline in the rate of reduction of battery costs in the coming decade compared to the previous decade, this suggests that CSIRO's projected battery price reductions are unlikely to be optimistic.

The logical conclusion for this is that, evidently, it is now very unlikely that Tasmania has a comparative advantage in the provision of long duration storage.

[33] https://www.statista.com/statistics/883118/global-lithium-ion-battery-pack-costs/

Appendix C. Inter-regional Settlement Residues in the NEM

Figure 3. Inter-regional residues ($m) on Basslink from 2020 to 2025

Year	Southward flows	Northward flows	Total
2020	$ 25	$ 56	$ 80
2021	$ 25	$ 72	$ 97
2022	$ 61	$ 29	$ 90
2023	$ 62	$ 65	$ 127
2024	$ 86	$ 47	$ 133
2025	$ 96	$ 42	$ 138
Average	$ 59	$ 52	$ 111

Source: Data from AEMO NEMweb, processed in www.v-nem.org and analysed by author

Figure 4. Inter-regional residues ($m) in NEM regions from 2021 to 2025

2021	NSW-QLD	QLD->NSW	$ 49	$ (18)	$ 31
2022	NSW-QLD	QLD->NSW	$ 88	$ (5)	$ 84
2023	NSW-QLD	QLD->NSW	$ 90	$ (4)	$ 87
2024	NSW-QLD	QLD->NSW	$ 226	$ (9)	$ 217
2025	NSW-QLD	QLD->NSW	$ 189	$ (2)	$ 188
2021	SA-VIC	SA->VIC	$ 16	$ (0)	$ 16
2022	SA-VIC	SA->VIC	$ 30	$ (2)	$ 28
2023	SA-VIC	SA->VIC	$ 14	$ (1)	$ 13
2024	SA-VIC	SA->VIC	$ 28	$ (3)	$ 25
2025	SA-VIC	SA->VIC	$ 14	$ (2)	$ 12
2021	SA-VIC	VIC->SA	$ 41	$ (1)	$ 40
2022	SA-VIC	VIC->SA	$ 77	$ (3)	$ 74
2023	SA-VIC	VIC->SA	$ 76	$ (1)	$ 75
2024	SA-VIC	VIC->SA	$ 78	$ (3)	$ 75
2025	SA-VIC	VIC->SA	$ 51	$ (11)	$ 39
2021	NSW-VIC	NSW->VIC	$ 4	$ (1)	$ 4
2022	NSW-VIC	NSW->VIC	$ 12	$ (8)	$ 4
2023	NSW-VIC	NSW->VIC	$ 8	$ (32)	$ (24)
2024	NSW-VIC	NSW->VIC	$ 42	$ (55)	$ (13)
2025	NSW-VIC	NSW->VIC	$ 27	$ (52)	$ (25)
2021	NSW-VIC	VIC->NSW	$ 147	$ (2)	$ 145
2022	NSW-VIC	VIC->NSW	$ 238	$ (3)	$ 235
2023	NSW-VIC	VIC->NSW	$ 165	$ (1)	$ 165
2024	NSW-VIC	VIC->NSW	$ 130	$ (6)	$ 124
2025	NSW-VIC	VIC->NSW	$ 109	$ (2)	$ 107

Source: Data from AEMO auction reports, data compilation by ChatGPT.