
SUBJECT: SUMMARY OF STAKEHOLDERS' SUBMISSIONS ON MARINUS LINK'S
INITIAL FEASIBILITY REPORT

1. Background

In February 2019, TasNetworks published its Initial Feasibility Report for Project Marinus, which considers the feasibility of Marinus Link in relation to the technical, environmental, planning and economic elements of the project.

The purpose of this paper is to summarise stakeholders' submissions to the Initial Feasibility Report. TasNetworks received 9 submissions from the following companies and organisations:

- Aurora Energy
- Clean Energy Council
- Clean Energy Regulator
- Energy Users Association of Australia
- Epuron submission
- Hydro Tasmania
- Meridian Energy Australia
- Origin Energy
- UPC Renewables

All submissions generally support the extent of the analysis conducted so far and encourage further work, including additional modelling. Hydro Tasmania and Epuron are the most positive in their support for Marinus Link. UPC Renewables considers the

assumptions in the modelling to be overly conservative, meaning that the net benefits of Marinus Link are understated. A number of other submissions, including Meridian Energy Australia, question whether the project is justified and emphasise the need for further modelling through the RIT-T process.

The key points raised by stakeholders are summarised in section 2. A more detailed summary of each of the submissions is provided as an attachment.

2. Key points raised by stakeholders

We have grouped together consistent themes in stakeholder submissions under particular topic headings below. A summary of each submission is provided as an attachment.

2.1 Transparency and the importance of robust analysis

- The Initial Feasibility Report is comprehensive and transparent. (Clean Energy Council; Energy Users Association of Australia)
- It is important to maintain a high degree of transparency throughout the project and in future modelling. (Clean Energy Council; Meridian Energy Australia; Origin Energy)
- It is vital to maintain important consumer safeguards through robust cost benefit analysis. (Clean Energy Council; Energy Users Association of Australia; Meridian Energy Australia)

2.2 Potential benefits of Marinus Link

- We can see the potential for Project Marinus to deliver long-term, NEM wide benefits. (Clean Energy Council; Energy Users Association of Australia; Epuron; Hydro Tasmania; Meridian Energy Australia; UPC Renewables)
- Strengthened interconnection between regions can ensure efficient use and development of diverse regional resources, including Tasmania's storage opportunities and flexible generation (Clean Energy Council; Epuron; Hydro Tasmania)

- The potential benefits of a 1200MW link should be explored in more detail. (Epuron, Hydro Tasmania)
- Given the long lead times for significant transmission augmentations, it is important to recognise the benefit of bringing the project forward. (Clean Energy Council, Hydro Tasmania)

2.3 Modelling assumptions

- Coal plant closure have a significant impact on the economics of the project and should be subject to more detailed scenario analysis (Clean Energy Council; Hydro Tasmania, Meridian Energy Australia)
- It is important to ensure that the modelling assumptions, particularly in relation to wind generation, are up to date and recognise regional differences. (Epuron, Hydro Tasmania, UPC Renewables)
- New Tasmanian wind farms benefit from a high capacity factor (~50-55%), low curtailment (up to 5% in mainland states), and strong MLF (likely 5-15% higher than mainland states). (Epuron, UPC Renewables)

2.4 Future analysis

- The costs of the network upgrades should be included in the costs of Marinus Link. (Aurora Energy, Origin)
- The location of the link needs to be carefully considered, as it will affect the cost benefit assessment. (Epuron; Hydro Tasmania)
- It is important to consider the other ISP projects that may proceed and the extent to which they affect the viability of Marinus Link. (Clean Energy Council, Meridian Energy Australia)

2.5 Project funding and pricing arrangements

- The transmission pricing arrangements should ensure that those that benefit from the project pay for it. (Aurora Energy; Clean Energy Council; Energy Users Association of Australia; Meridian Energy Australia)
- The Tasmanian Government's position that the project will not proceed unless costs can be allocated to the beneficiaries is supported. (Aurora Energy; Hydro Tasmania)

Summary of submissions to the Initial Feasibility Report

Key points	
Aurora Energy	<ul style="list-style-type: none">• Aurora Energy supports TasNetworks exploring the merits of a second interconnector.• Aurora Energy's primary concern is that the pricing framework may inappropriately allocate costs with material negative impacts on commercial and residential customers. The costs should be allocated according to those who benefit from the service.• Aurora Energy supports TasNetworks' commitment to seek modifications to the existing pricing arrangements. The Tasmanian Government's position that the project will not proceed unless costs can be allocated to the beneficiaries is also supported.• The costs of the upgrades from Palmerston to Sheffield should be included in the estimated costs of Marinus Link until such time as the need for this investment is independently triggered.• In its Final Feasibility Study, in addition to the points above, TasNetwork should undertake a full and transparent assessment of the costs (if any) that should be recovered from Tasmanian customers, as well as their ability to pay.

Key points	
Clean Energy Council	<ul style="list-style-type: none"> • The report is comprehensive and has sufficient information to understand the costs and benefits. • The level of transparency and on-going consultation should be maintained throughout the consultation process. • Any economic cost-benefit assessment needs to be robust and clearly demonstrate a net benefit to end users and consumers. • There is a need for consistency and congruency with AEMO's ISP and the development of Renewable Energy Zones. • Given the long lead times for significant transmission augmentations, early work to progress options is prudent to ensure these projects can be constructed when needed, particularly should that need be brought forward. • Strengthened interconnection between regions can ensure efficient use and development of diverse regional resources, including Tasmania's storage opportunities and flexible generation. • A 'beneficiary pays' regime should be one of the key options examined for funding this and other key NEM infrastructure projects. This issue is best progressed by the AEMC, but it is appropriate for TasNetworks to establish principles in progressing this core aspect of the project. • It is likely that AEMO's inaugural ISP and the retirement of generators on the mainland will have a significant impact on the viability and optimal timing of Marinus Link. • We understand that some scenarios with Snowy 2.0 in place have already been undertaken by TasNetworks in the Initial Feasibility Report, but it is critical that TasNetworks is cognisant of any milestone announcements by the Federal Government and AEMO. • The establishment of REZs; significant changes to state-based energy targets; and the issue of gas as a generation source for the Australian east coast are also worthy of further monitoring and potentially closer examination.
Clean Energy Regulator	<ul style="list-style-type: none"> • A simple analysis would suggest that around 29,000 MW of additional renewable generation would be required to replace 7,000 MW of coal capacity (which is assumed to close in the Initial Feasibility Report). This degree of additional renewable energy capacity would require 'firming' of the kind that could be provided by Marinus Link. • The major drivers of new capacity announcements has shifted from the 2020 Large-scale Renewable Energy Target (which will be met and exceeded) to commercial factors. Were these trends to continue, 18,000 MW or more of renewable energy capacity would be added from 2019 to 2021. • Predictions regarding renewable capacity beyond 2021 are more uncertain, but it is plausible that the growth will be sufficient to replace the 7000 MW of coal-fired generation retirements, as indicated in the Initial Feasibility Report.

Key points

Energy Users Association of Australia

- Our members are highly exposed to movements in both gas and electricity prices and have been under increasing stress due to escalating energy costs.
- We commend TasNetworks on the pragmatic approach taken in clearly identifying the risks and challenges of the project and recognising that consumers alone should not necessarily bear the entire cost.
- We can certainly see the potential for Project Marinus to deliver long-term, NEM wide benefits.
- To date the transition of our energy system has not been well managed, for a variety of reasons, which has resulted in a chaotic period for the energy industry, increased risk for investors and higher prices for consumers. We are concerned that the rapid rate of change in technology, fundamental changes in end user behaviour and significant political and regulatory uncertainty make the benefits from future investments such as Project Marinus difficult to assess from a consumer perspective.
- Exposing more network costs to open markets and competition will drive better outcomes for consumers compared to a regulated environment that, despite good intentions, has not always replicated competitive market outcomes.
- It is vital to maintain important consumer safeguards such as a robust RIT-T, rational reliability standards and strong, independent oversight by economic regulators. We are pleased that the Initial Feasibility Report does not seek or suggest that Project Marinus avoid robust assessment and independent oversight.
- The following parties would benefit from Project Marinus: Hydro Tasmania, TasNetworks, Tasmanian Wind Developers, Tasmanian Government, Victorian Government, Federal Government and Energy Consumers. Energy consumers should not carry the entire cost and volume risk of the project.
- We must move away from the consumer pays approach to a co-contribution model where those who stand to benefit from assets such as Project Marinus, pay a fair and reasonable amount of the cost. The EUAA has identified different options for recovery of costs from generators, optional firm access and locational marginal pricing with deep connection charges.
- Regardless of the method of co-contribution, the aim must be to reduce the amount of capital expenditure of the project that accrues to the participating TNSP's RAB and allocate risks appropriately such that those who have the most to gain and who are in the best position to manage volume risk are making a fair and equitable contribution to the project.

Key points

Epuron

- Epuron has been developing solar and wind energy projects in Australia since 2003. Epuron's primary focus is as an independent developer where completed development projects are transferred to various utilities, suppliers or financial partners at the capital investment stage. Epuron's current developments in Tasmania include two solar farms and four wind farms.
- While solar resources have only modest geographic diversity, the diversity between different wind energy regions is far more significant. It is essential that interconnector capacity is significantly increased to take advantage of the additional diversity which Tasmania has to offer.
- Hydro Tasmania's generation system is inherently low on energy availability which is limited by water inflows. The delivery of hydro power to the mainland would be at increased cost if higher cost energy is bought from mainland states during non-peak times to refill or hold back water in the Tasmanian water storages.
- We anticipate that the benefits of the link would be greatest with the greatest link capacity. We also support the co-development of additional pumped storage capacity, and investigation of deeper connection impacts within the Tasmanian system.
- We support the connection of Marinus towards the centre of the Tasmanian system at either Burnie or Sheffield. These locations equally support all future generation regions (north west wind; central wind; north east wind; and various pumped hydro regions). It is essential that the preferred location and proposed upgrades are determined as soon as practical to allow joint development of generation assets in appropriate locations.
- It is essential that Marinus is developed as a regulated link to provide true cost pricing and provide certainty to new market entrants in the Tasmanian market. Epuron considers that TasNetworks is ideally situated to own and manage that link, and to support that link through investment to relieve deeper network constraints.
- The Regional Reference Node (RRN) is currently located at George Town. However, the proposed Marinus connection routes places Sheffield at the centre of the Tasmanian system, both from a load and from a generation perspective. Consideration should be given to relocating the RRN to Sheffield as a reasonable reference location.
- Tasmania has relatively low generator contingency limited of 144MW. This limit was set before new technologies (such as fast response battery storage) were readily available. All three interconnectors are proposed to be significantly in excess of this limit. This limit has the potential to material increase costs of new generation development and the connection of Marinus should act as a trigger to review whether the limits remain appropriate.
- The RIT-T analysis should recognise the locational differences in generation. New Tasmanian wind farms would benefit from a high capacity factor (~50-55%), low curtailment (up to 5% in mainland states), and strong MLF (likely 5-15% higher than mainland states). Providing greater access to market for these lower cost generators provide very strong benefits in reducing power costs for consumers.

Key points

Hydro Tasmania

- Hydro Tasmania strongly support TasNetworks continuing to evaluate the prospects for increased interconnection with Victoria. We strongly support the continuation of Project Marinus through to the Definition and Approvals phase.
- Australian electricity sector will shift towards zero and low emissions generation at a faster rate than had previously been assumed. Using updated assumptions where available is likely to result in a more positive cost-benefit analysis for the project.
- Hydro Tasmania supports AEMO's further work on coal plant closures, which is one of the most significant influences on the power system development needs. Scenarios where ageing emissions-intensive generation close only at the end of their design life (often assumed to be 50 years) are looking less credible as plant are closing for a range of economic reasons.
- Hydro Tasmania believes there is significantly greater wind development potential than the 4000 MW limit used in AEMO's model. TasNetworks should not impose constraints on Tasmanian development except where there is clear evidence to do so.
- The ongoing feasibility work must fully examine the constraint and MLF implications of different connection points. Hydro Tasmania encourages TasNetworks to undertake thorough consultation on this issue to ensure the costs and benefits of different routes are fully understood.
- Hydro Tasmania believes that exploring the benefits of a 1200MW link can provide effective, efficient and proactive power system planning as well as insurance for NEM energy consumers against future system risks.
- The 1200MW connection option will make a more substantial contribution to Victorian energy security and provides significantly greater opportunity for renewable energy development in Tasmania. Hydro Tasmania notes that the 2018 Electricity Statement of Opportunities (ESOO) showed a tightening in Victoria's future supply-demand balance against previous forecasts.
- A 1200MW DC MarinusLink would provide additional system support benefits to the National Electricity Market, including Frequency Control Ancillary Services. Hydro Tasmania can provide further information these benefits, if that would be helpful.
- The construction and commissioning of MarinusLink itself would provide significant economic stimulus both in Victoria (>\$1Bn) and Tasmania (at least \$600M). In addition to this, a 1200MW MarinusLink would act as the catalyst for Hydro Tasmania to develop on island pumped hydro that will generate significant investment and employment in Tasmania as well as creating opportunities for further Tasmanian wind farm and solar development by other parties.
- Maintaining the option for a 1200MW link to be commissioned in 2025 will offer the maximum flexibility to meet future NEM needs and mitigate the market risk of early plant retirement. While some options may have a more favourable cost-benefit analysis at this time, ensuring that the 1200MW at 2025 option is progressed will be important for future system planning particularly in light of the AEMO's ongoing Integrated System Plan work (and upcoming insights report).
- Hydro Tasmania supports the Tasmanian Government's position outlined in its Current Situation Assessment paper that "Market and regulatory arrangements are required that facilitate the optimal combination of investments and allocating the cost of those investments to the beneficiaries".

Key points	
Meridian Energy Australia	<ul style="list-style-type: none"> • Project Marinus offers unique interconnection benefits and its value proposition needs to be understood. • Additional information would assist in understanding the project economics including: baseload coal retirement scenarios; costs and feasibility of pumped hydro project (and whether Tasmania has a cost advantage); impact of interconnection projects in other regions; NEM wide regional economic benefits and how these benefits should be allocated to NEM regions and customers. • All modelling assumptions should be made available. • Further explanation is required regarding the cost recovery options to protect NEM customers. • To determine whether the project is feasible, there should be further stress testing of the economic modelling using multiple generation and transmission regions. • TasNetworks is best placed to determine whether the project should proceed to the Definition and Approvals phase. • There are other numerous NEM projects identified in the ISP that compete with Marinus Link. TasNetworks has the best understanding of the risks and benefits of the project and should fund the project accordingly. • Two conditions are required – but have not been met - in order to justify Marinus Link and Battery of the Nation Projects: <ul style="list-style-type: none"> ○ A lack of opportunities to build dispatchable generation projects in the mainland NEM; and ○ Battery of the Nation shows significant cost advantages over mainland dispatchable generation projects.
Origin Energy	<ul style="list-style-type: none"> • The knowledge sharing plan outlined in the Initial Feasibility Report should be followed, irrespective of the funding approach that is ultimately chosen. • Given the importance of the project, TasNetworks should continue keeping the market informed of the future assessments and the timeline of any proposed actions. • Depending on the location chosen for Marinus Link, augmentation of the shared Victorian or Tasmanian network may be required to allow the full inter-regional flow across the interconnector. The next stage of assessment should specify whether such augmentations would be required and include the cost of these when evaluating the project.

Key points

UPC Renewables

- The cost-benefit analysis adopted very conservative in terms of using the highest cost estimates, including the most expensive route option, while the estimates of the benefits seem lower than realistically can be achieved.
- The capacity factor for Robbins Island/Jim's plain wind farm can achieve 47-50% capacity factor compared to the 40% assumed in the modelling. The modelling should be updated to recognise particular projects like Robbins Island/Jim's Plain, as they can offer materially greater benefits which will improve the case for Marinus Link.
- There are economies of scale in wind projects and cost savings that are not reflected in the modelling.
- The modelling does not properly reflect the cost differences for pumped storage across the different states. UPC Renewables has commissioned work which suggested that pumped storage costs in other NEM regions could range from \$1.6 million/MW to \$2.5 million/MW, compared to the model estimates of \$1.5 million/MW. Tasmania has lower cost pumped storage opportunities.
- Marginal loss factors should be used for specific projects.
- It is unclear why more black coal is used under the higher emission reduction target.
- It seems unusual that any time in the future large scale solar would be more cost effective than large scale wind in Tasmania.
- It would be helpful to understand the benefits and impacts to customers of different scenarios in terms of \$/MWh and typical customers' bills (similar to that included in the SA-NSW interconnector work by Electranet).
- Analysis should be provided on the network cost impact of the project in different regions, based on the allocation of the beneficiaries, for example on the basis of \$/MWh or \$/annum. This network cost impact could be compared with the lower wholesale costs that would result from Marinus Link.
- We think the lack of discussion on economic impact and rather a focus on NEM outcomes has seriously compromised the work undertaken. The jobs potential for Tasmania and Victoria is substantial and this should have been discussed and highlighted upfront. Such value could be drivers for Governments to underwrite such an investment and should be promoted.