

PROJECT 
MARINUS

Second Bass Strait
interconnector

TasNetworks Revised Revenue Proposal 2019-24



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1 Introduction

The second Bass Strait interconnector referred to as “Marinus Link” could potentially proceed as a regulated service or a merchant service, or a hybrid of the two. Should the project proceed, it will be important that the framework to recover the costs for interconnector services fairly allocates costs to those who benefit from the services. The present regulated service pricing arrangements are unlikely to achieve this outcome. Therefore, TasNetworks considers that the link should only proceed as a regulated service if the present pricing framework is modified and/or appropriate financial contributions to support the project are secured, recognising that Marinus Link benefits are principally to mainland National Electricity Market (**NEM**) customers. TasNetworks will actively work with policy makers, regulators and market bodies to seek this outcome. In the interim, in recognition of the NEM wide benefits enabled by Marinus Link, it is prudent to include Marinus Link as a contingent project that may provide regulated transmission services. This approach will maximise flexibility in the options to advance the project, creating option value for NEM in the event that additional interconnection is required ahead of the current estimates included in the first Integrated System Plan (**ISP**).

1.1 Purpose of this document

In January 2018, TasNetworks submitted our combined Revenue Proposal for transmission and distribution for the regulatory period commencing on 1 July 2019 and ending on 30 June 2024. On 27 September 2018, the Australian Energy Regulator (**AER**) released its draft decision. This document responds to the AER’s draft decision in relation to one of TasNetworks’ proposed contingent projects – that is Marinus Link.

1.2 Overview of AER’s draft decision

Contingent projects are significant network augmentation projects that are uncertain to proceed in the forthcoming regulatory period. In its draft decision, the AER rejected our contingent project proposal on the basis that we had not established the need for each project during the forthcoming regulatory period nor the probability of occurrence. In relation to the timing of our proposed contingent projects within the 2019–24 regulatory control period, the AER noted that in its modelling for the 2018 ISP, the Australian Energy Market Operator (**AEMO**) has assumed the following indicative timing for relevant network upgrades:

- approximately 2033 for the second Bass Strait interconnector, dependent on project commitments and timing for the Snowy 2.0 and Battery of the Nation projects; and
- approximately 2035 for network augmentation to support a Renewable Energy Zone in North West Tasmania.

The AER has requested further explanation to support the Marinus Link project timing demonstrating that its proposed contingent project triggers are probable to occur during the 2019–24 regulatory control period.

To address the AER's draft decision, for the Marinus Link contingent project, we have prepared this paper as well as submit our Project Specification Consultation Report¹, which was publicly released in July 2018 and is provided alongside this paper. Combined, these papers address the matters raised in the draft decision.

The inclusion of Marinus Link as a contingent project in our revised Regulatory Proposal ensures that provisions are made to allow this significant infrastructure project to proceed if it is demonstrated to deliver a net economic benefit. Furthermore, we will take steps to ensure that Tasmanian customers pay no more than their 'fair share' of the costs of Marinus Link. As such, the AER's acceptance of this contingent project in TasNetworks revised Regulatory Proposal is unequivocally in our customers' interests. We therefore expect the AER to approve Marinus Link as a contingent project and the updated trigger events, as submitted in this document.

2 Background

Australia, and the world, is quickly transitioning to cleaner energy sources. New generation is increasingly from variable, renewable sources such as wind and solar. Australia's large fleet of synchronous coal-fired generators is starting to retire as plant reaches end of life. Many solutions are emerging to ensure customer energy needs are met into the future, ranging from local generation and battery storage to large-scale renewables and pumped storage. Greater interconnection between Australia's energy resources is part of the solution – to allow the best use of available energy resources across the NEM.

In July 2018, the **AEMO** released its inaugural **ISP**, recognising the magnitude of the change that is already underway and the need for an integrated plan to guide future investments. Thermal coal and gas-fired generators are starting to retire across the NEM, with coal generators expected to retire by 2040 producing around one-third of total energy consumed in the NEM. In addition to providing critical energy production and dispatchable power, conventional generators have been relied upon to provide essential grid security services to the NEM, such as inertia, system strength, and frequency control².

The ISP highlights that increased investment in an interconnected grid provides the flexibility, security, and economic efficiency associated with a power system designed to take maximum advantage of existing resource. Interconnection also contributes to the management of climate related risks, such as bushfires, droughts (both water and wind) and heatwaves.

¹ <https://www.tasnetworks.com.au/TasNetworks/media/pdf/our-network/Project-Marinus-Project-Specification-Consultation-Report.pdf>

² AEMO, "Integrated System Plan for the National Electricity Market", July 2018 p. 4

AEMO's ISP recognises the work currently underway to progress the Battery of the Nation initiative, which would provide additional pumped hydro storage in Tasmania for use across the NEM. AEMO undertook to work with the project proponents, including TasNetworks and Hydro Tasmania, to refine the timing of the commissioning of these projects and supporting transmission investments, including Marinus Link. The ISP also recognised that Marinus Link could facilitate development of Tasmania as either one or multiple renewable energy zones (REZs).

In transforming the NEM, greater interconnection between Victoria and Tasmania could play an important role in delivering cleaner energy that is affordable, reliable and secure. Analysis undertaken subsequent to the ISP, reinforces that a second Bass Strait interconnector could provide a number of benefits in transforming the NEM and could proceed in TasNetworks 2019-24 regulatory control period.

3 Project specification and cost

3.1 Project specification

Based on the work done to date, our initial assessment has found that Marinus Link will be technically feasible for a capacity of 600 megawatts (MW) or 1200 MW.

The preferred capacity for Marinus Link depends on the results of the cost-benefit analysis. Based on the current estimates of pumped hydro storage and other renewable energy development in Tasmania and the rest of the NEM, an option of developing the link in two 600 MW stages preserves the capacity options and provides timing flexibility. In particular, it would allow either a 1200 MW interconnector to be developed in two planned stages, or for the additional capacity to be factored in and implemented over a more extended timeframe.

Our analysis shows that assuming smooth project progression, it is feasible to assume the delivery of 600 MW of interconnector capacity being undertaken during the 2019-24 regulatory control period, with an expected commissioning date in the mid-2020s, noting an additional 600 MW of interconnector capacity may be developed in the subsequent regulatory control period. Assuming progression of a total 1200 MW of interconnector capacity, the high level project timeline has been outlined in Figure 1. For the purposes of this contingent project definition, we are referring to the delivery of 600 MW of interconnector capacity, either relating to the development of a 600 MW link or the first 600 MW stage of 1200 MW link.

Figure 1: Overview of Project Marinus timeline



3.2 Project cost

An initial project cost estimate of \$1.1 billion, expressed in 2016 dollars, for the 600 MW link was produced in June 2016 as part of Dr Tamblyn’s feasibility study. In our original Regulatory Proposal, we noted that it was unclear how the project costs would be shared between TasNetworks and AEMO in its role as the Victorian Network Planner. Therefore, for the purpose of defining the contingent project in our original Regulatory Proposal, we considered it reasonable to utilise Dr Tamblyn’s report to estimate the Tasmanian network contribution to the project to be \$550 million, which is 50 per cent of the \$1.1 billion cost estimate.

In July 2018, TasNetworks released a PSCR for Marinus Link, revising both the scope and cost estimate. As explained in the PSCR, we revisited Dr Tamblyn’s cost estimates in light of better information regarding HVDC cable costs. In addition, we included the costs of electricity network upgrades in Victoria and Tasmania to support increased electricity flows and updated the cost estimates for inflation, expressing costs in 2018 dollars.

Since July 2018, the cost estimate and project timeline has been further refined. The latest cost estimate for an initial 600 MW of interconnector capacity ranges from \$1.3 to \$1.6 billion, inclusive of contingency and accuracy allowance.

Table 1 shows the total project costs and the Tasmanian specific forecast cost range.

Table 1: Total project costs by phase

Project Phases	600 MW interconnection stage 1	Tasmanian Proportion (5%-50%)
Definition and Approvals Phase Includes project definition and development works such as environmental approvals, land access arrangements, technical design and undertaking financing arrangements.	\$120 M Total	\$6 – 60 M
Delivery Phase Includes costs related to procurement and installation of the HVDC cable, converter stations as well as efficient project management costs	\$1200 M	\$60 – 600 M
Contingency and Accuracy Allowance The contingency allowance is to provision for risks that might occur and the accuracy allowance is a measure of the certainty around a projects cost estimate.	\$300 M	\$15 – 150 M
Total	\$1,620 M	\$81 – 810 M

The overall project costs set out above reflect our current best estimate, based on our initial project scope. It has been developed to support the project concept stage, performing feasibility and comparison of various technical options.

As explained in further detail in the next section, we understand and accept our customers' concerns that the costs of Marinus Link should not be borne by Tasmanian electricity customers. While the project may deliver a positive net economic benefit across the whole NEM, the question of 'who pays' is highly relevant to the investment decision, particularly given the affordability concerns raised by customers and stakeholders. In response to these concerns, TasNetworks will take steps to ensure that Tasmanian customers only incur costs that are commensurate with the benefits they receive.

Our current modelling indicates that Tasmanian customers are likely to receive a small proportion of the total benefits from Marinus Link. While the benefit estimate at this stage is highly provisional, it provides a broad indication of the cost share that should fall to Tasmanian customers, if Marinus Link satisfies the RIT-T. Ideally, changes should be made to the current interconnector pricing arrangements to ensure that Tasmanian customers only pay costs that are commensurate with the benefits they receive. However, if changes to the relevant National Electricity Rules provisions cannot be achieved within the required timeframes, the project

should only proceed if arrangements are put in place that protect Tasmanian customers from unacceptable price increases.

In light of the above discussion, the most prudent and realistic approach is to outline the contingent project cost as a range noting that under the current pricing framework, we would seek to only include in TasNetworks Regulated Asset Base (**RAB**) the proportion of costs which are commensurate with the benefits Tasmanian customers receive. Therefore, at this early stage of the project, noting that there is further modelling and cost refinement work to be undertaken, TasNetworks nominates a range from 5 to 50 per cent of the estimated cost, that is between \$81 to \$810 million (as outlined Table 1). We therefore propose a contingent capital expenditure of \$445 million being the midpoint in this range and our best estimate in the circumstances. Based on initial modelling we understand Tasmanian customer benefit will fall somewhere within this range, and potentially towards the lower end. Regardless of any amount added to TasNetworks' RAB, the pricing arrangements, including inter-regional pricing arrangements, will need to ensure that Tasmanian customers only pay an amount that is commensurate with the benefits they receive. As our analysis of Marinus Link continues and we progress further through the RIT-T process, the cost estimate, and therefore the RAB inclusion amount, will be further refined.

4 Consideration of ISP investment timing recommendations

AEMO's analysis as outlined in the ISP has consistently found strong signals for development of a combination of interconnector upgrades. The development pathway, inclusive of Marinus Link, outlined in the ISP is recommended as delivering economic benefits under all scenarios.

While indicative timings for Marinus Link are provided in the ISP modelling, the optimal timing will depend on future events in the NEM, particularly when and where coal-fired generation withdraws and new generation and storage resources are built³. Our initial economic modelling shows that Marinus Link has positive economic worth – with benefits greater than costs – from the mid-2020s under some scenarios. The timing variation largely relates to retirement of coal-fired generation, which at this point remains largely uncertain and dependent on a number of differing factors, which will be further detailed as we progress through the RIT-T process.

³ AEMO 2018, Integrated System Plan, page 80

It should also be noted that AEMO's analysis in the ISP did not consider the full range of benefits suggested in the recent study by Hydro Tasmania⁴ from its Battery of the Nation project⁵. To this end, AEMO is undertaking further work to better understand how this project may be best incorporated into the next ISP. We expect that this further work may bring forward the suggested timing of Marinus Link compared to the indicative timeframes in AEMO's inaugural ISP.

Uncertainties around timing of coal-fired generation retirements are likely to be better managed by advancing the timing of longer-term grid developments, such as Marinus Link. To this end, given the long lead time to implement Marinus Link, it is prudent to progress the project as a risk mitigation measure for a transforming NEM. As a minimum, this further progression of the project is likely to occur in the 2019-24 regulatory control period.

5 Customer Feedback

In broad terms, the feedback received since the publication of our original Regulatory Proposal reinforce the key themes from our earlier engagement program. Table 2 summarises the feedback raised by stakeholders in response to questions posed in the AER's Issues Paper on TasNetworks Regulatory Proposal 2019-24, which was released for public comment on 10 March 2018. We have also received valuable customer feedback in response to the Project Specification Consultation Report released as part of the RIT-T process for Marinus Link. These submissions are available on the Project Marinus website⁶; we are currently considering the feedback received.

⁴ HydroTas, Battery of the Nation – Analysis of the future National Electricity Market, April 2018, available at <http://www.hydro.com.au/clean-energy/battery-of-the-nation/future-state>.

⁵ AEMO 2018, Integrated System Plan, page 88

⁶ <https://projectmarinus.tasnetworks.com.au/>

Table 2: Customer feedback and our response

Customer feedback	Our response
<p>Customers told us that they want to understand the potential impact of contingent projects on TasNetworks' RAB and consumer prices if the contingent projects proceed</p>	<p>Our customers have told us that they are concerned about affordability, and in particular the impact on electricity prices as a result of the development of a second Bass Strait interconnector. Our customers want TasNetworks to continue to deliver on our strategy of lowest sustainable network prices.</p> <p>Where the project is forecast to deliver a positive net economic benefit, the question of 'who pays' will be highly relevant to the investment decision. Therefore, TasNetworks considers that the link should only proceed as a regulated service if the present pricing framework is modified and/or appropriate financial contributions to support the project are secured, recognising that Marinus Link benefits are principally to mainland National Electricity Market (NEM) customers. TasNetworks will actively work with policy makers, regulators and market bodies to seek this outcome. We recognise that Tasmanian customers should not pay more than their fair share for Marinus Link.</p>
<p>A common theme amongst the customer and consumer groups' feedback was concern around the funding model and perceived lack of benefits to Tasmanian consumers of the second Bass Strait interconnector and related project.</p>	<p>Our customers have told us that they want to know how Marinus Link will benefit Tasmania and Tasmanian electricity customers. Our initial assessment of Marinus Link shows there is an economic case as coal exits the NEM. There is significant economic value unlocked and delivered by Marinus Link; without it, there would be limited additional growth in wind, solar or pumped hydro storage in Tasmania. Jobs creation, investment attraction and regional economic activity in Tasmania as well as Victoria stimulated by Marinus Link strengthens the economic case. As we continue to explore the feasibility and business case</p>

Customer feedback

Our response

A common theme amongst feedback received from customers has been the need for greater transparency and consultation with consumers around the project.

assessment for Marius Link, including funding options and RIT-T economic benefit assessment, we will continue to engage with our customers and stakeholders.

The Project Marinus engagement plan is underpinned by the International Association for Public Participation (IAP2) spectrum for public participation. This spectrum helps us to guide choices about the type of engagement undertaken so that it is “fit for purpose”. We understand that significant engagement will be required to manage our stakeholders’ expectations. It is important to note that our engagement does not have an end point, but is rather a continuous conversation and level of involvement that has peaks and troughs commensurate with the project lifecycle. Our engagement activities in the Feasibility and Business Case assessment project phase are aimed at ‘Knowledge Building’ and ‘Involving the Community’ as described below.

Knowledge Building activities (July – December 2018)

The purpose of this phase is to improve stakeholder knowledge and understanding of the project, this will enable a greater degree of stakeholder engagement in subsequent project phases.

We have achieved this through the following actions:

Creation of a new website, which aims to inform stakeholders of the relevant project information including:

- What is an interconnector
- Why are we looking into further interconnection
- The benefits of further interconnection to Tasmania and the National Electricity Market

Customer feedback

Our response

- Information about our upcoming community engagement events
- Links to our RIT-T project specification consultation report (which describes the "identified need" that further interconnection would address, the project's underpinning assumptions, and the high-level cost estimates and construction timetable for a second interconnector)
- How to contact us with any questions

A common theme amongst feedback received from customers has been the need for greater transparency and consultation with consumers around the project.

Regular meetings and briefings with key stakeholders including:

- Government Ministers and departments
- Regulatory bodies
- Major industrial customers
- Local councils
- The electrical industry and other utilities

These meetings have provided the opportunity to ask more detailed questions about Marinus Link.

Public community engagement forums, held in Melbourne, Hobart and Burnie. We sought to maximise forum attendance and utilised a range of communication channels to inform stakeholders and customers of the opportunity to attend. These forums provided an overview of the Project Marinus, an outline of our approach and assumptions in relation to the RIT-T process while providing the opportunity for stakeholders and customers to ask questions of an expert panel.

Presentations at Industry Forums and Conferences, including for example, the Energy Users Association of Australia (EUAA) National Conference in May 2018, Australian Financial Review Infrastructure Summit in October 2018 and Tasmanian Chamber of Commerce and Industry Tasmania wide roadshows held in October 2018.

Customer feedback

Our response

Involving the Community (January – December 2019)

Our aim for this period is to involve our customers more in our decision making. The purpose of this engagement phase is to understand, consider and respond to potential impacts the project could have on people, land owners, and the local community.

We will do through a range of initiatives, including:

- Community engagement forums (including areas adjacent to the identified favourable routes)
- Presentations to and engagement with TasNetworks Customer Council and Generators Forum and other key groups
- Website updates
- Regular newsletters to all stakeholders
- Continued roadshows within Tasmania and Victoria

As the project continues to evolve, we will continue to listen to the concerns of our customers and tailor our approach to engagement according to their needs and concerns.

Customers expressed the need for project triggers which ensure that projects do not proceed without a rigorous cost benefit analysis, including completion of the RIT-T as a mandatory project trigger.

The AER in its draft decision rejected the proposed triggers for Marinus Link. Section 6 of this document outlines our revised triggers which include mandatory completion of a RIT-T, unless there is a change to the investment framework requirements for regulated investments.

6 Triggers

The second interconnector should be treated as a contingent project for the 2019–24 regulatory control period. It is plausible for the project to proceed in the 2019–24 period, although it is not certain to do so. It is exactly for this type of circumstance that the contingent project provisions in the Rules were introduced.

As already noted, the AER's draft decision did not accept our proposed trigger events for the Marinus Project. We have therefore proposed alternative trigger events, as set out below:

The proposed trigger events for this contingent project are:

1. Successful completion of a RIT-T demonstrating an overall network investment by all parties involved in the interconnector construction that maximises the positive net economic benefits from establishing a new high voltage interconnection between Tasmania and Victoria, and/or that addresses a reliability corrective action.
2. Determination by the AER that the proposed investment satisfies the RIT-T.
3. TasNetworks Board commitment to proceed with the project subject to the AER amending the revenue determination pursuant to the Rules.

Clauses 1 and 2 do not apply if a change occurs that allows the inclusion of the proposed investment in TasNetworks' maximum allowed revenue even if a RIT-T is not carried out.

The proposed triggers are specific and capable of objective verification, and although probable during the 2019–24 period, the project is still too uncertain to include in the forecast capital expenditure in the revised TasNetworks Revenue Proposal.