PROJECT MARINUS

Business Case Assessment

Summary Document

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Executive summary

*By 2035 at least 12,000 megawatts (**MW**) of coal-fired generation is forecast to retire in the National Electricity Market (**NEM**). Replacing this will require a combination of resources, including variable renewable generation, storage and dispatchable 'on demand' generation.*

Marinus Link and supporting transmission unlock Tasmania's clean, cost-competitive generation and storage resources. Together they are part of the lowest cost solution to provide dispatchable energy to the NEM where and when it's needed.

The Business Case Assessment shows that a 1500 MW Marinus Link and supporting transmission are feasible and provide greater benefits than costs under all modelled scenarios.

Work will continue to progress this to a 'shovel ready' national infrastructure project, able to be in service from 2027.

TasNetworks' analysis shows that Marinus Link and the associated supporting transmission will support Australia's transition to a low emissions future by delivering the low cost, reliable, and clean energy that customers expect. The investment will provide additional dispatchable capacity across Bass Strait to support a transforming NEM.

The Business Case Assessment is that Marinus Link and supporting transmission provide substantially greater benefits than costs under all scenarios modelled and can provide a commercial rate of return to owners as a regulated service. The analysis shows that the optimal interconnection capacity is 1500 MW, built in two physically separate links of 750 MW each. This capacity provides energy market and broader economic benefits.

TasNetworks has undertaken an assessment of the scope and timing of the project, considering requirements of the NEM regulatory investment test for transmission (**RIT-T**). The RIT-T is applied to large investments proposed in the 'shared' transmission network, which moves energy between electricity generators and customers in the NEM. The test includes economic analysis and consultation to ensure that customers only pay for transmission investments that provide greater benefits than costs.

TasNetworks' analysis is that the optimal timing for Marinus Link and supporting transmission under the RIT-T is for the first 750 MW of capacity to be in service in 2028. Depending on the scenario used, the timing of the second 750 MW of capacity is between 2030 and 2032. TasNetworks continues to work with the Australian Energy Market Operator (**AEMO**) as it prepares its draft and final 2019-20 Integrated System Plan (**ISP**), which considers future transmission investment needs for the NEM.[1] Recognising that differences in modelling assumptions may result in different timings between TasNetworks and AEMO analysis, work undertaken by AEMO and TasNetworks makes it clear that Marinus Link will play a role in the future NEM, and that the project should proceed through the Design and Approvals phase.

The project is therefore being progressed in a manner that provides the option to deliver the first stage in 2027 and the second stage in 2028. This reflects the expected time to complete the project Design and Approvals phase activities, in addition to manufacturing, construction, and commissioning activities.

2027 is referred to as the 'target date' from which the link could start providing services to the NEM. Bringing the in-service date forward from the RIT-T timing provides options if external factors change in the NEM when compared to the scenarios modelled. While a 2027 target date does not presently optimise benefits under the RIT-T, this timing would still provide net benefits to the NEM over the project's life under all scenarios modelled. This is indicated in Figure 1 below.

[1] AEMO is the power system operator and national planner for the NEM, and jurisdictional planner for Victoria. Material produced to date relating to the 2019-20 ISP is available here: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Integrated-System-Plan/2019-Integrated-System-Plan .

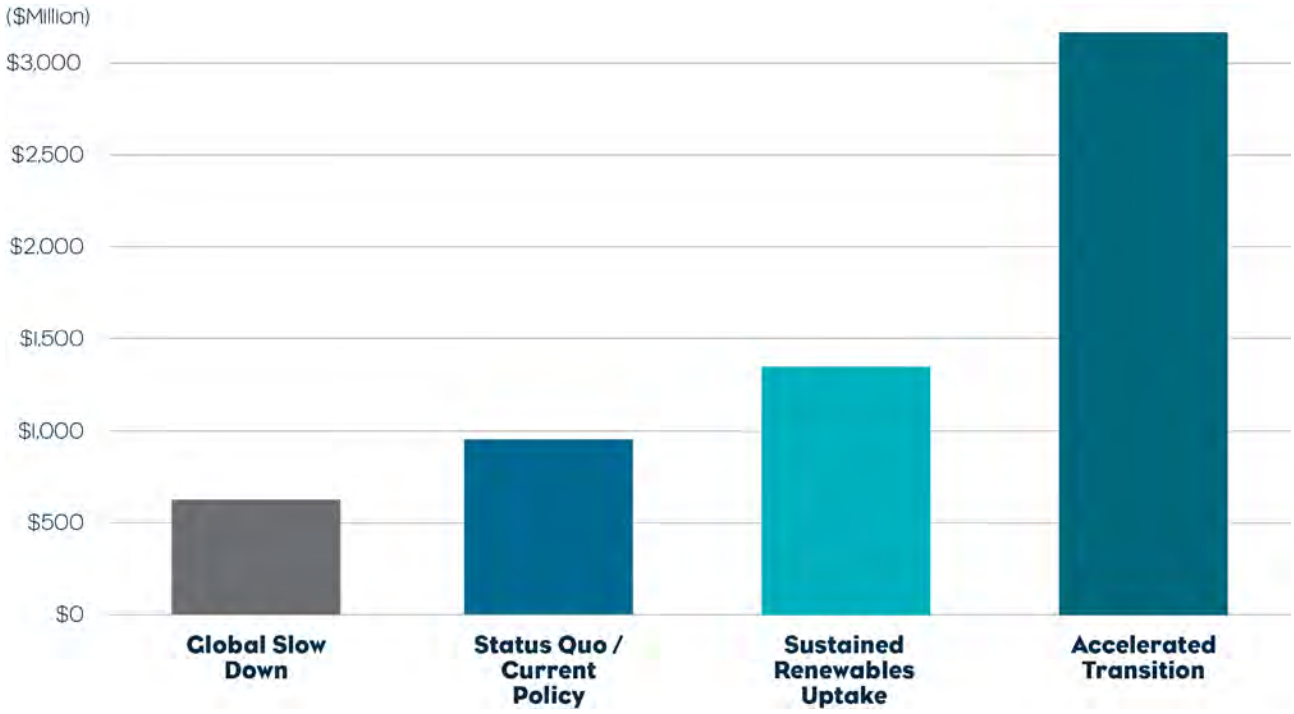

Figure 1 Net market benefits with Marinus Link and supporting transmission in service in 2027 and 2028 across scenarios[2]

TasNetworks' analysis shows Marinus Link and supporting transmission will provide significant benefits to the energy market in excess of the estimated cost, both capital and operating, over the study period.[3] The net energy market benefits are estimated to be between $600 million and potentially up to $3.1 billion depending on the scenario considered.[4] From a practical perspective, these benefits mean the cost of electricity supply in the NEM would be relatively lower with Marinus Link in service. In a competitive energy market, this should translate to relatively lower electricity prices for customers in the NEM than prices otherwise would have been without Marinus Link and supporting transmission.

On its own, the project will provide a broader economic contribution to regional communities in Tasmania and Victoria; forecast to be potentially up to $2.9 billion.[5] This contribution includes increased employment and

[2] Data reflects an in-service date of 2027-28. Data sourced from TasNetworks, *Project Marinus Regulatory Investment Test for Transmission Project Assessment Draft Report*, December 2019, Section 6.1, Table 11. Hereafter referred to as *PADR*.

[3] The study period is from is 1 July 2020 to 30 June 2050. The net market benefits of Marinus Link and supporting transmission accrue from the in-service date (2027-28), through to the end of the study period (2050).

[4] Unless otherwise specified, all dollar amounts are expressed in 2019 dollars. Estimated net energy market benefits are sourced from *PADR*, Section 6.1, Table 11, and reflect an in-service date of 2027-28.

[5] Ernst & Young, *The Economic Contribution of Marinus Link and Supporting Transmission*, November 2019. Ernst & Young's economic contribution modelling takes into account the years following an in-service date of 2027-2028 through to 2050, whereas the assets are expected to have a 40-plus year life expectancy. Given this, the overall economic contribution from Marinus Link and supporting transmission is expected to be even greater than the numbers quoted here. The full report is published here:

economic value added to regional communities. In addition, Marinus Link and supporting transmission will unlock wider added value to the Tasmanian economy estimated to be up to $5.7 billion through renewable energy developments, including new wind farms and pumped hydro energy storage enabled by the additional 1500 MW capacity across Bass Strait.[6]

A range of possible ownership, funding, and commercial options are open to the project. New pricing arrangements will need to be agreed to achieve fair pricing outcomes. In November 2019, this issue was recognised by the Council of Australian Governments (**COAG**) Energy Council, which requested the Energy Security Board (**ESB**) to provide advice on a fair cost allocation methodology for interconnectors. TasNetworks has prepared a discussion paper to seek stakeholders' views, which will inform a submission to the ESB's anticipated consultation on this issue. Further government infrastructure contributions to underwrite the project, such as those recently announced to support timely development of the Queensland to New South Wales interconnector upgrade, can also ensure that the national benefits from Marinus Link and supporting transmission are delivered in a timely way.

Marinus Link and supporting transmission are national infrastructure that provide cost-competitive, dispatchable energy for customers in a transforming market, and support lower emissions. Alternative solutions to provide similar reliability in the NEM would come at a higher cost. The Business Case Assessment is to progress Marinus Link and supporting transmission to be 'shovel ready' and in service from 2027.

Background

TasNetworks established Project Marinus to undertake a detailed Feasibility and Business Case Assessment into further Bass Strait interconnection. The analysis considers Marinus Link, a new high voltage direct current (**HVDC**) transmission interconnector between Tasmania and Victoria and the associated supporting alternating current (**AC**) transmission network development required to support an efficient interconnection capacity. The Feasibility and Business Case Assessment is jointly funded by the Tasmanian Government through TasNetworks and the Australian Government through the Australian Renewable Energy Agency (**ARENA**).

Momentum is growing for Marinus Link and the supporting transmission:

- In 2018 and 2019, Infrastructure Australia listed Marinus Link as a 'high priority initiative' as part of a more interconnected NEM.

https://www.marinuslink.com.au/wp-content/uploads/2019/12/the-economic-contribution-of-marinus-link-and-supporting-transmission.pdf.

6 Ernst & Young, *The Economic Contribution of Marinus Link and Supporting Transmission*, November 2019.

- The Australian Government provided additional funding of $56 million in February 2019 to fast track the Design and Approvals phase, recognising the strategic benefits that the project can provide to the nation.
- AEMO released an Insights Paper in July 2019, which highlighted the important role for Marinus Link and Tasmania's long-duration (**deep**[7]) pumped hydro energy storage resources in Australia's future electricity grid.

TasNetworks has undertaken extensive analysis of Marinus Link and the supporting transmission. The *Initial Feasibility Report* for Marinus Link and supporting transmission was prepared in December 2018, and released in February 2019. The Business Case Assessment updates this analysis and focuses on the business case for Marinus Link and supporting transmission. The Business Case Assessment includes deeper consideration, planning, and steps forward across the technical, economic, commercial, financial, environmental, and engagement activities needed to achieve a 'shovel ready' project, able to be in service when required. This document summarises key findings from the Business Case Assessment and its supporting analysis.

[7] In referring to energy storage systems, 'depth' often refers to the energy to capacity ratio, where a 'deep' storage system has a high energy to capacity ratio. This means that it can operate for long periods at high output before exhausting its energy storages. Storage 'depth' is a reference to how long that storage would last. It is independent of the peak capacity of the system.

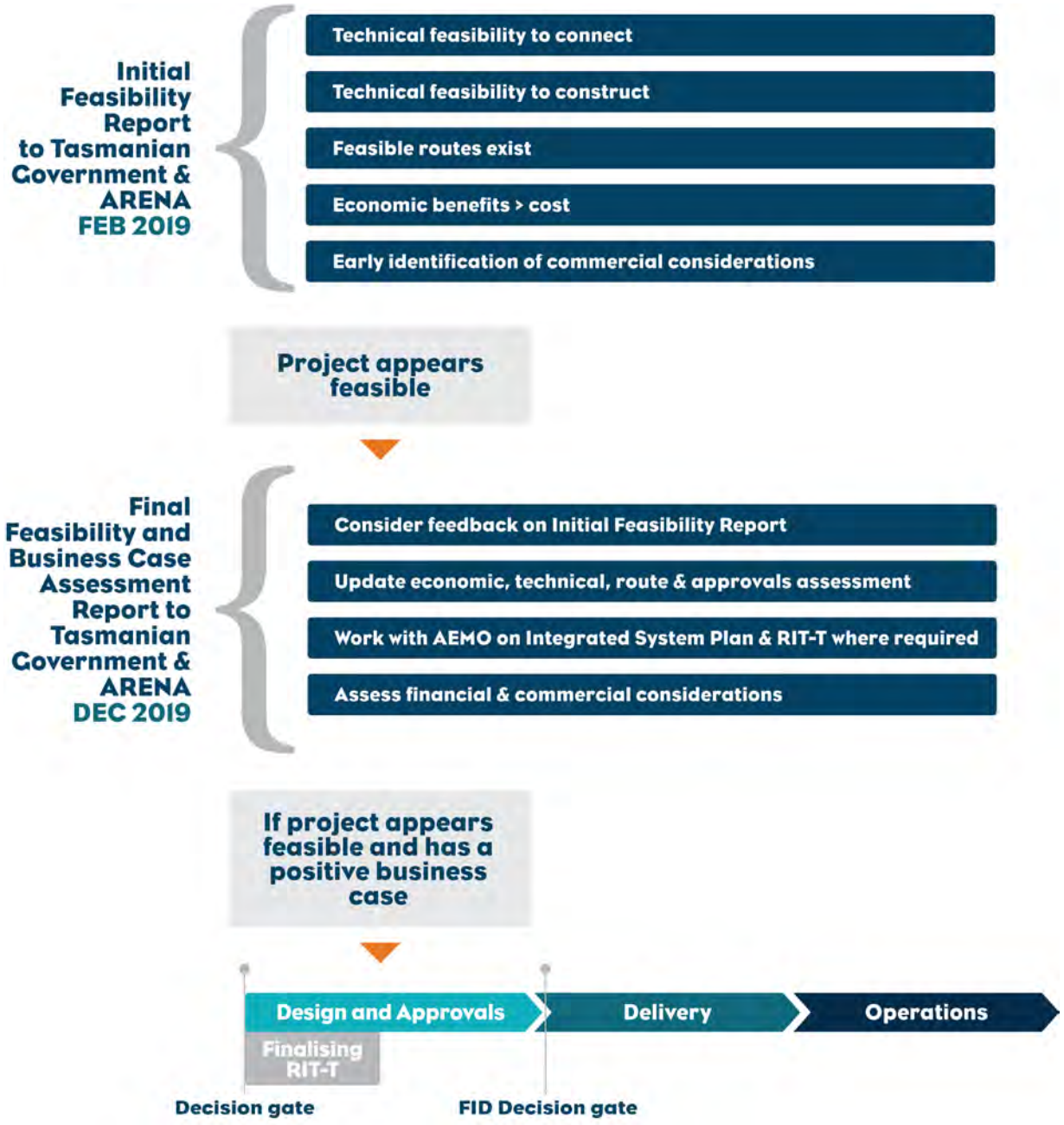

Figure 2 Project feasibility and Business Case Assessment flowchart

Transition to cleaner energy

The NEM is experiencing unprecedented and rapid change. By 2035, at least 12,000 MW of coal generation is expected to reach its end-of-life and retire. Modelling shows that the NEM will need 40,000 MW of variable renewables, such as wind and solar generation, and at least 8,000 MW of dispatchable generation, such as hydroelectric and gas generation, together with deep storage capacity from pumped hydro resources, to meet customer energy requirements and replace the dispatchable energy capacity that is expected to retire by 2035.

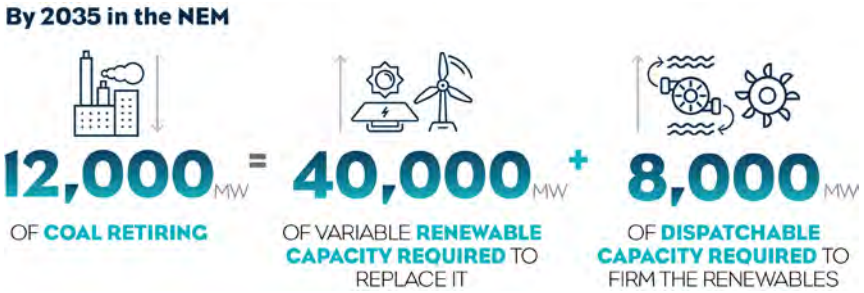

Figure 3 Requirements of the NEM by 2035

New generation and storage capacity will predominantly come from large-scale energy developments that are significantly supplemented by customer demand response, and small-scale generation and storage, including residential solar panels, batteries and smart converter technologies. New transmission, generation, and storage developments will need to be connected and coordinated in a manner that maintains energy security and reliability within the NEM, while also ensuring that the most cost-effective outcomes are delivered for end-use customers.

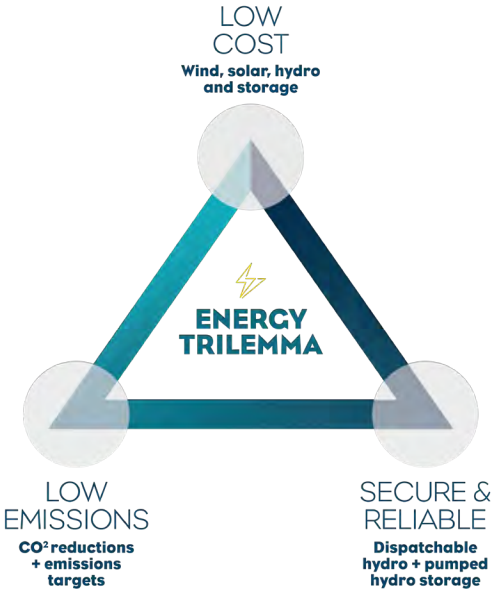

Figure 4 The Energy Trilemma

Tasmania has enormous potential to support the transformation that is underway, with its access to some of Australia's most cost-competitive renewable energy and storage resources. A number of studies have highlighted Tasmania's wealth in renewable energy resources. These resources include existing hydroelectric generators that have capacity available at times of peak demand in the NEM, cost-competitive deep pumped hydro energy storage potential, and an abundance of world-class wind resources.

Victoria's customers would benefit from accessing Tasmania's dispatchable energy and firming capacity as wind and solar generation increases. Furthermore, Tasmania would become an additional customer for excess

generation, efficiently using and storing surplus Victorian renewable energy. Customers in New South Wales, South Australia, and Queensland would also benefit from greater access to Tasmania's cost-competitive energy and storage resources. New transmission investment between Tasmania and Victoria is required to unlock these potential benefits for the NEM.

By unlocking clean, dispatchable energy capacity, Marinus Link and supporting transmission can play a critical role in Australia's energy transition.

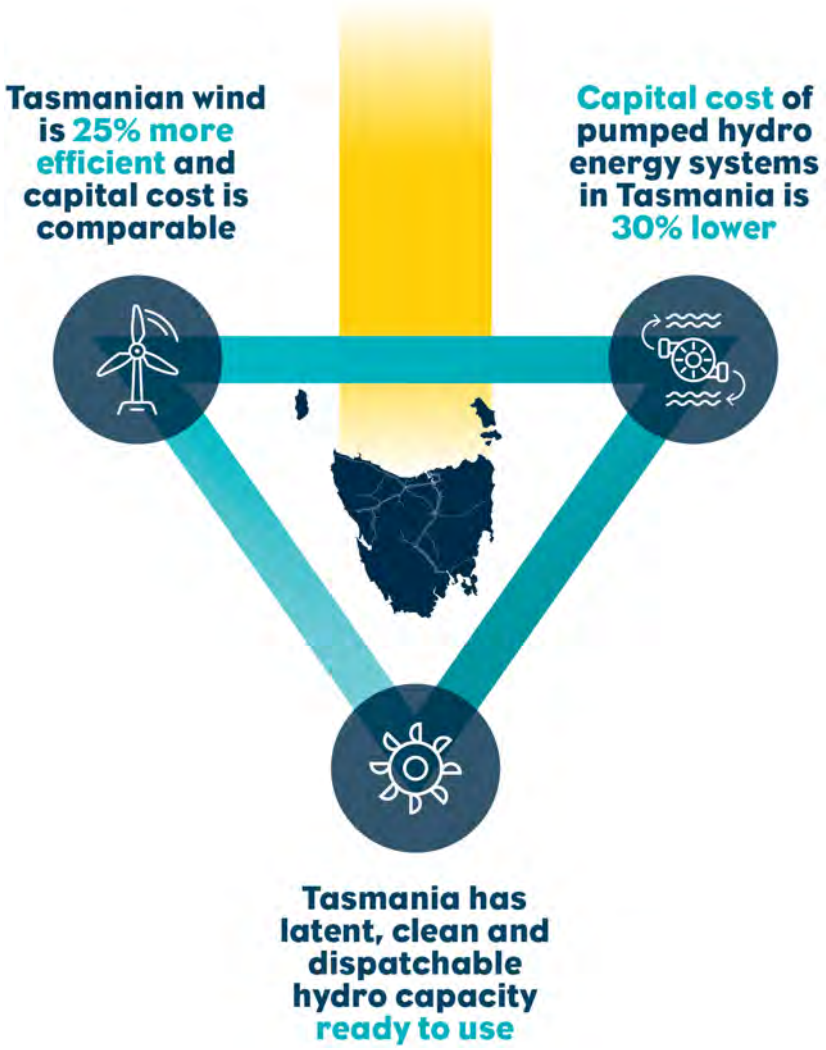

Figure 5 A least cost solution for the NEM

Economic analysis and timing considerations

Economic analysis for the project has considered the economic benefits of Marinus Link and supporting transmission to customers in the NEM, as measured under the RIT-T[8], and also the broader economic contribution that the project will bring.[9] The analysis demonstrates that Marinus Link and supporting transmission will provide an economic advantage to Australia with benefits significantly outweighing costs in all modelled scenarios. TasNetworks' analysis has also considered a range of factors that influence the appropriate timing for the interconnector to be in service.

RIT-T analysis and timing

Over the life of Marinus Link and supporting transmission, benefits to the NEM include:

- Enabling untapped and cost-competitive renewable wind, solar, and deep pumped hydro energy storage;
- Increasing supply security and firming renewables by providing clean, dispatchable energy;
- Harnessing a diversity of load and generation;
- Managing the risks of relying on a single interconnector across Bass Strait;
- Complementarity with existing and future interconnectors on mainland Australia; and
- Utilising robust and flexible converter technology to provide services to support the power system.

The RIT-T for Marinus Link and supporting transmission considers the quantifiable economic benefits to the NEM that would arise from an increase of transmission capacity between Victoria and Tasmania, with that increased capacity assessed from 600 MW to 1500 MW. It determines if Marinus Link and supporting transmission provide more market benefits than costs and meet the requirements to become a regulated service. The second stage of the RIT-T – the Project Assessment Draft Report (***PADR***) – has been completed and supports the business case assessment, showing that benefits to the NEM exceed costs in all modelled scenarios.

Public consultation on the RIT-T analysis and findings is a critical component of the RIT-T process; TasNetworks will hold information sessions to further explain the RIT-T analysis and welcomes submissions on the *PADR*.

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8 The RIT-T is a cost-benefit analysis of all major network investments in the NEM. It assesses the need, economic and technical impact of, and preferred timing for, a network investment. Projects can only pass the RIT-T and then be built as a regulated asset if the overall energy market benefits they provide outweigh the costs of investment.

9 The broader economic contribution includes the direct and indirect economic contribution to gross state product and employment that would arise from the development, construction, and operation of Marinus Link and supporting transmission, including from other energy projects that Marinus Link and supporting transmission would enable.

The modelling for the RIT-T process involves a comparative analysis of a future NEM with and without Marinus Link and supporting transmission. The analysis considers a range of possible future scenarios affecting the energy market (a global slow down, a continuation of the status quo and current policies, a sustained renewables uptake, and an accelerated transition scenario), and further considers a range of sensitivities that may affect these scenarios (such as the early retirement of coal or an extended Basslink outage). These scenarios are used to model the potential economic benefits that an investment in Marinus Link and supporting transmission can deliver to the NEM, compared to the network, generation, and storage investments, and reliability outcomes expected without Marinus Link and supporting transmission. The assumptions used for this analysis have been updated since the *Initial Feasibility Report* to reflect the assumptions published in February 2019 by AEMO.[10]

The RIT-T modelling shows that the optimal timing for Marinus Link and supporting transmission is for the transmission capacity to be provided in two stages: the first stage in 2028 and the second stage in 2032. This staging reflects the RIT-T requirement to select the optimal timing that delivers the greatest net benefits across the scenarios, which effectively involves an averaging of outcomes under the four scenarios. However, it is also necessary to take into account variations in the timing for the second stage under the four scenarios. With the first stage in service from 2028, the timing for the second stage is 2030, rather than 2032, under two of the four scenarios (see Figure 6 Timing of Marinus Link under different scenarios). Therefore, the economic analysis suggests that the second stage could either be in 2030 or 2032, depending on future developments in the NEM.

[10] AEMO, *2019 Input and Assumptions Workbook*, Version 1.0, released on 5 February 2019. AEMO revised these assumptions in August 2019 and then again in September 2019. At this time the modelling was nearing completion and substantial delays would have resulted if all input assumptions had been updated to match AEMO's latest dataset. The sensitivity analysis has been used to understand the impacts of key changes in AEMO's most recent assumptions.

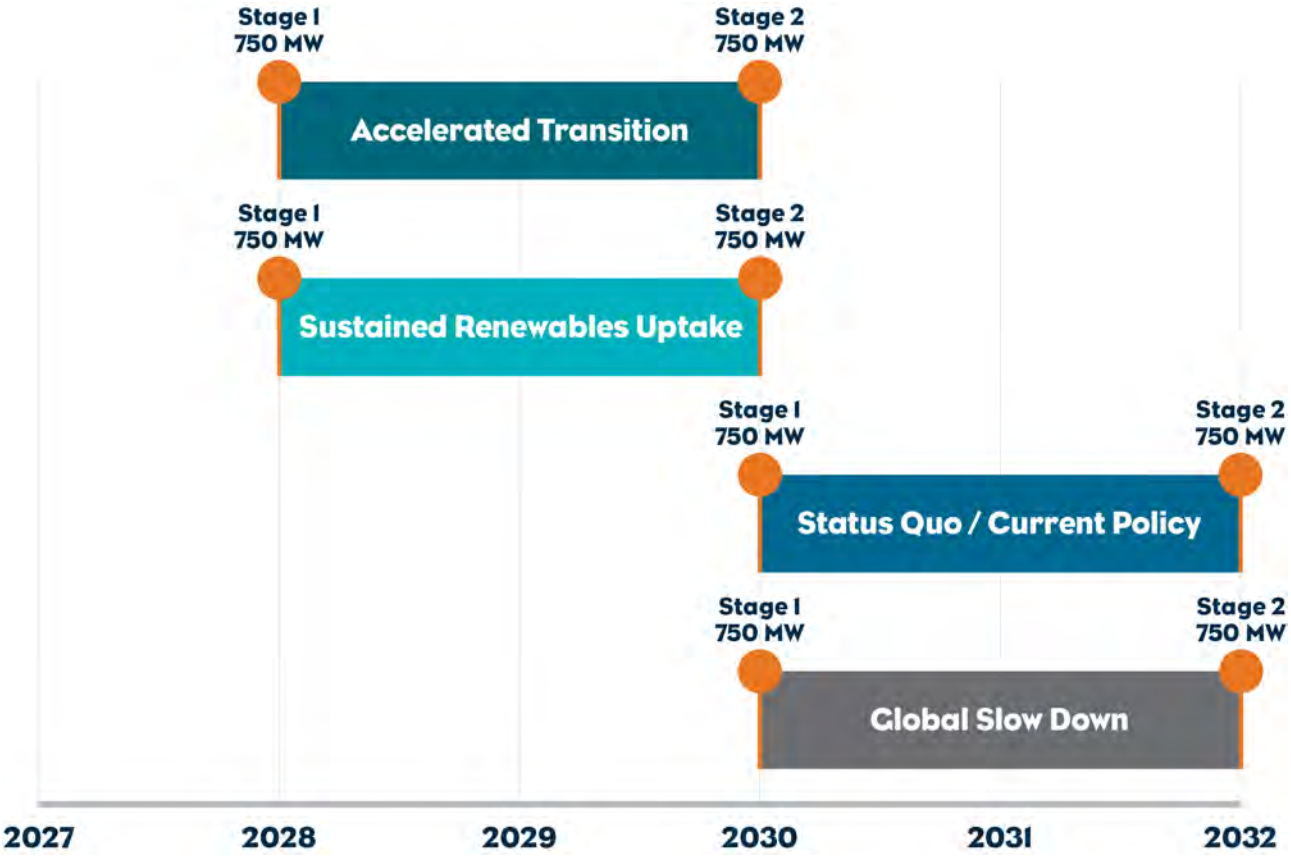

Figure 6 Timing of Marinus Link under different scenarios

In addition to progressing the RIT-T analysis, TasNetworks continues to work with AEMO as it prepares its draft and final 2019-20 Integrated System Plan, presently expected in December 2019 and March 2020. The ISP considers future transmission investment needs for the NEM under a range of scenarios. Differences in modelling assumptions may result in different timings between TasNetworks and AEMO analysis, however work undertaken by AEMO and TasNetworks makes it clear that Marinus Link is one of a number of new transmission interconnectors that will play a role in the future NEM, and that work to progress Marinus Link through the Design and Approvals phase to a final investment decision (**FID**) should proceed.

Broader Economic Contribution

TasNetworks has undertaken an assessment of the broader economic contribution that will be generated from the development, construction, and operation of Marinus Link and supporting transmission. This assessment shows significant economic value added in regional Tasmania and Victoria from the initial investment, the multi-year construction phase, and the ongoing operation and maintenance of the assets. The broader economic contribution to regional communities in Tasmania and Victoria is forecast to be potentially up to $2.9

billion and 2,800 jobs. Marinus Link and supporting transmission also unlock a pipeline of investment in renewable energy and storage development, with an estimated value of up to $5.7 billion and 2,350 jobs.[11]

The benefits to the NEM and broader economic contribution of Marinus Link and supporting transmission are summarised in Figure 7 below.

Figure 7 Marinus Link and supporting transmission benefits

In addition to the energy market and economic benefits arising from the project, development of Marinus Link and supporting transmission will unlock cleaner energy solutions for Australia; the development is estimated to reduce at least 45 million tonnes of carbon dioxide (**CO2**) emissions from the NEM by 2050.[12]

[11] Job figures reflect direct and indirect employment. Ernst & Young, *The Economic Contribution of Marinus Link and Supporting Transmission*, November 2019.

[12] Figures are based on Ernst & Young's analysis of generation profiles with and without Marinus Link, undertaken for the Marinus Link and supporting transmission market modelling. See Ernst & Young, *Project Marinus PADR Economic Modelling Report*, November 2019, published as Attachment 1 of the *PADR*.

Target date

In addition to considering the optimal timing assessed under the RIT-T, TasNetworks has considered the expected timing to complete Design and Approvals activities, and to manufacture, construct, and commission the assets. This planning indicates that the first stage of Marinus Link could be in service in 2027 and the second stage in 2028.

Transmission projects, especially undersea and land cables, require long lead times. The NEM is also undergoing rapid and significant change. Progressing a 'shovel ready' project able to be in service from 2027 provides options to address the possibility of external factors changing in the NEM when compared to the scenarios modelled, such as delays in other renewable energy developments and transmission interconnection in mainland Australia, or the earlier retirement of coal-fired generation. 2027 is therefore referred to as the 'target date' from which Marinus Link and supporting transmission could start providing services to the NEM. The target date is indicated in Figure 8, together with the timing under the RIT-T scenarios modelled.

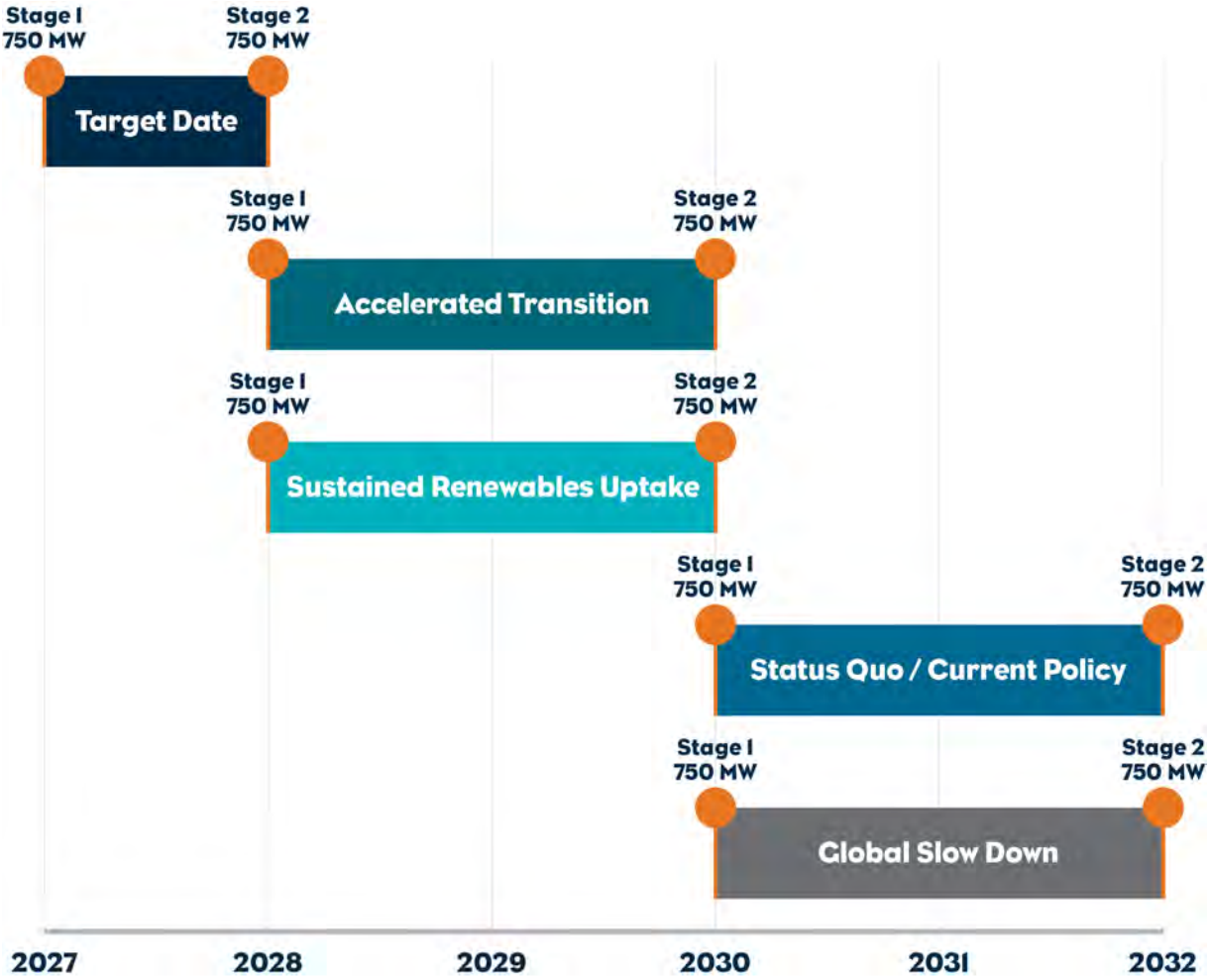

Figure 8 Timing of Marinus Link under different scenarios, including target date

While a 2027 target date does not presently optimise benefits under the RIT-T, this timing still provides net benefits to the NEM over the project's life under all scenarios modelled. The dynamic nature of the NEM and the significant benefits of the project reinforce the assessment that it is prudent to progress Marinus Link and supporting transmission through the Design and Approvals phase so they are able to be in service from 2027.

Technical design

The favoured technical design ensures that a 'credible contingency' is able to be managed, to ensure that the power system remains in a satisfactory operating state if there is a fault in Tasmania, in Bass Strait, or in Victoria that affects the operation of Marinus Link.[13] A 750 MW credible contingency level has been reviewed by AEMO and is considered reasonable. Based on the economic analysis, the optimal capacity is 1500 MW built in two 750 MW links to manage the credible contingency level.

Central to the business case for this project is the ability to provide access to Tasmania's cost-competitive hydro, pumped hydro, and wind resources, thereby increasing dispatchable capacity in the NEM. To deliver on this, the project has identified the optimal technical solution that will connect 1500 MW HVDC converter stations in Tasmania and Victoria, enable 1500 MW of capacity across Marinus Link, and support the efficient transport of energy from additional generation developments forecast in the North West Renewable Energy Zone (**REZ**) and Central Tasmanian REZ identified by both AEMO and TasNetworks.

The technical feasibility of Marinus Link and supporting transmission have been considered with respect to the interconnector's design and how it will integrate with the existing power system. These studies have taken into account integration with the existing Basslink interconnector, the Tasmanian and Victorian power systems, and new generation and load profiles forecast in the NEM. A range of technical issues will continue to be worked through as the requirements of the NEM evolve, to ensure successful technical operation and a secure, reliable power system.

[13] A satisfactory operating state is one where key power system parameters such as voltage and frequency remain within prescribed limits.

Figure 9 Schematic representation of Marinus Link

The proposed route will include approximately 220 kilometres of supporting AC transmission network augmentations in North West Tasmania. These have been determined in conjunction with TasNetworks' North West Tasmania strategic transmission plan. This plan includes technical studies that identify the optimal transmission configuration to support Marinus Link and provide best access to the Tasmanian REZs. There is potential for some aspects of the supporting transmission for Marinus Link to be accelerated to meet earlier connection requirements for customers. Any such acceleration costs would be funded directly by those customers as unregulated transmission services.

On the Victorian side, the proposed route connects to the existing AC transmission network at Hazelwood Substation in the Latrobe Valley where there are no REZs identified by AEMO. There is sufficient connection capacity in the AC transmission network to accommodate Marinus Link, following the closure of the Hazelwood power station.

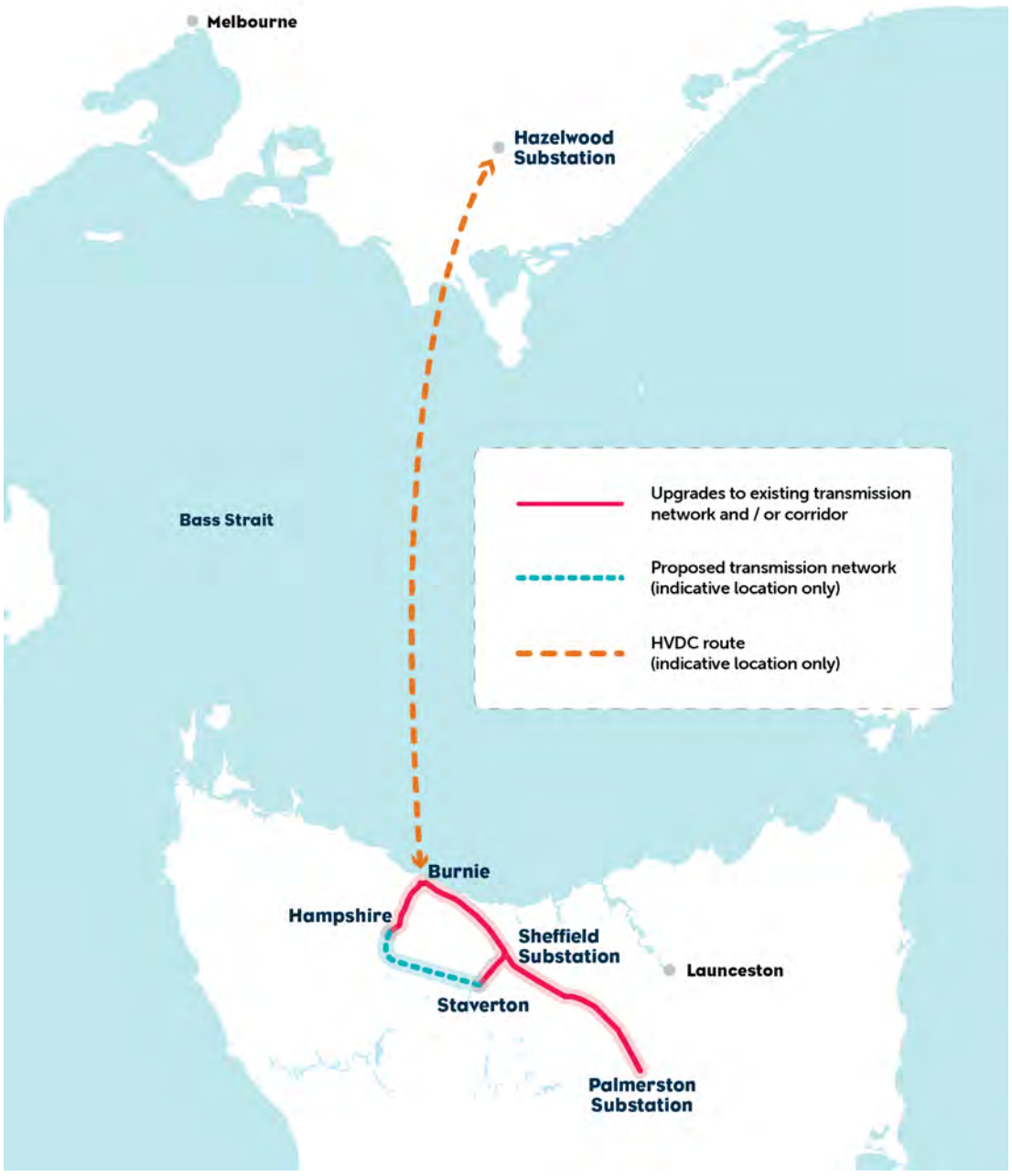

Figure 10 Indicative map of Marinus Link and supporting transmission[14]

Optical fibre cables will also be installed in each of the 750 MW components of Marinus Link. This will double the optical fibre telecommunications cable routes across Bass Strait and support greater telecommunications capacity, competition, and security between Tasmania and mainland Australia.

[14] Further detail on the favoured route will be released in early 2020 once the relevant landowner engagement has been undertaken.

Route selection and environmental approvals

The favoured route connects the Latrobe Valley in Victoria through to Burnie in North West Tasmania, using HVDC technology, with AC transmission network upgrades in North West Tasmania through to Palmerston Substation, south of Cressy.

The route selection process has sought to minimise local impact on communities and the environment whilst balancing key objectives of cost efficiency and constructability. It involved a process that balanced the benefits, constraints, and opportunities of each option. The process was thorough, involving a team of experts in fields of land-use planning, power system engineering, economics, environment, cultural heritage, and the law, to inform the selection.

The project is subject to a large and complex multi-jurisdictional approvals process including planning, environmental, and cultural heritage approvals.

Marinus Link would cross Tasmanian, Victorian, and Australian Government jurisdictions. Work is underway to secure access to land and to agree on the approvals processes and requirements across these three jurisdictions.

Marinus Link and the supporting transmission will be subject to Australian Government assessment under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**), while, at a State level, comprehensive assessment and approvals processes will cover land-use planning, cultural heritage, and environmental matters. Engagement with traditional owners and the broader Aboriginal community will be carried out, including matters relating to Native Title.

Given the multi-jurisdictional nature of the project, and to facilitate a coordinated and robust assessment and approvals process, the project is working with the Tasmanian, Victorian, and Australian Governments with the goal of aligning assessment processes where possible. A credible approvals pathway for each of Marinus Link and supporting transmission has been identified and the associated approvals timeframes identified.

The forecast timeline places the land-use, environment, and cultural heritage approvals on the critical path to reaching FID for the HVDC transmission link and associated AC transmission network investment. International experience suggests that such approvals and permits are commonly on the critical path to achieving FID for interconnector projects.

Revenue

The capital cost of Marinus Link and supporting transmission and telecommunications assets is estimated to be $3.5 billion, including accuracy and contingency allowances appropriate for this stage in the project lifecycle. A number of service models for earning and recovering revenue over the lifetime of the assets have been considered. The assessment is that a regulated services model achieves the appropriate confidence

required for both electricity customers and investors; customers can be confident that the regulatory process will include appropriate 'checks and balances' to achieve efficient customer outcomes and investors can be confident that the regulatory process will provide sufficient revenue certainty to invest in a long-life project of this scale. The revenue allowance should be structured to appropriately compensate investors for the specific risks associated with the investment and ensure fair risk sharing between investors and customers.

Once regulated, and with a modified pricing framework (discussed further below), there is confidence that equity and debt providers will be willing to invest in Marinus Link and receive returns consistent with the regulatory framework. Regulated electricity transmission services are generally attractive to debt and equity providers because they enjoy a revenue stream over the life of the asset that can be forecast with a reasonable degree of confidence.

Telecommunication services will also be provided from the optical fibre cables forming part of Marinus Link, generating unregulated revenue.

Pricing and funding reform

Analysis for the RIT-T shows that Marinus Link and supporting transmission will pass the RIT-T and will be able to earn a regulated revenue stream, including a regulated rate of return. This finding underpins the business case for Marinus Link and supporting transmission.

However, under the current NEM pricing framework, once Marinus Link becomes a regulated service, the ongoing costs would be recovered from electricity customers in Victoria and Tasmania but the benefits would be enjoyed by mainland NEM customers. To address this, the pricing framework needs to change. In November 2019, this issue was recognised by the COAG Energy Council, which requested the ESB to provide advice on a fair cost allocation methodology for interconnectors. TasNetworks has prepared a discussion paper to seek stakeholders' views, which will inform a submission to the ESB's anticipated consultation on this issue. The discussion paper is included for consultation as part of the RIT-T PADR and can be found as Attachment 3 to the PADR on our website. An appropriate customer pricing outcome is required for the project to proceed.

In addition to changes to pricing Rules, other funding options could be used to manage the cost to electricity customers that will arise from the NEM's rapid transition. In particular, national infrastructure funding could be used for transmission infrastructure, with priority given to projects identified by Infrastructure Australia and under AEMO's Integrated System Plan. Funding of this kind would recognise the national benefits of infrastructure such as Marinus Link and supporting transmission. Government infrastructure contributions to underwrite the project, such as those recently announced to support timely development of the Queensland to New South Wales interconnector upgrade, can also ensure that the national benefits from Marinus Link and supporting transmission are delivered in a timely way.

A framework for national transmission infrastructure funding would reduce the risk and cost of investment that the NEM is facing. It would also enable an efficient and interconnected national electricity transmission network that is vital to Australia's future economic prosperity and social welfare.

Ownership and equity

This project involves progressing two major and interdependent components in parallel: Marinus Link, as the HVDC component, and the supporting Tasmanian transmission development required in North West Tasmania to facilitate Marinus Link.

The Tasmanian transmission infrastructure supporting Marinus Link will form part of TasNetworks' existing shared transmission network and will ultimately be owned by TasNetworks, regardless of the ownership model adopted for Marinus Link. Some elements of the North West supporting transmission may initially be built to provide connection with new electricity generators as required, potentially as unregulated services. With a successful RIT-T and revenue allowance by the Australian Energy Regulator (**AER**), these assets will transition to regulated services with regulated pricing arrangements.

Marinus Link can be successfully developed and operated under a range of ownership models. One model is public ownership, which could support the timely development of Marinus Link. This model could include, for example, shared ownership of Marinus Link between the Australian Government and the Tasmanian Government.

Public ownership could take into account the interests of electricity customers, benefits to regional communities, and national infrastructure considerations. An investment by government/s would recognise the national benefits to be provided by the project. Government support would also increase confidence to suppliers in a competitive international equipment market. Once the project is established and risks appropriately managed, government owners would have the option to consider their ownership position.

Private investment in Marinus Link could also be considered throughout the project's lifecycle, subject to meeting broader policy objectives. Ownership decisions for Marinus Link will be a matter for government.

Project governance

Projects of this size and scale require a considerable investment of time and resources for successful delivery. The project timeline includes a series of stage gates and critical decision points to objectively review and assess the project's viability and readiness to progress. The critical decision points are also independently scrutinised to ensure investment decisions and progression to the next phase are prudent.

Figure 11 Target date indicative timeline

A project of this scale and complexity requires a comprehensive risk management framework to manage and mitigate risk, with an aim to de-risking the project to the extent that is prudent before reaching FID.

The ownership structure of Marinus Link and supporting transmission throughout the phases of the project is likely to have a strong bearing on the ongoing governance structure and requirements. Notably, the two project elements – the HVDC transmission link and the supporting AC transmission network – are interdependent, with both required to realise the overall business case. To ensure the objectives of the project as a whole are achieved, there will need to be a high level of cooperation and a commercial framework that recognises this interdependency. This framework will need further strengthening if there are different owners of the two project elements. In particular, the framework must ensure that the HVDC transmission link and the supporting AC transmission network are ready for FID before moving to manufacturing and construction.

The shareholders of Marinus Link and TasNetworks will make the final investment decision on the recommendation of the relevant Board(s).

Stakeholder and community engagement

Robust consideration of social and environmental impacts across a range of dimensions, and careful community consultation, are critical to the success of Marinus Link and supporting transmission. As for any large-scale development, there will be a level of trade-off required between local impacts and delivering a project that has positive outcomes for energy customers, communities, and the environment. A range of stakeholders, interest groups, and individuals across the NEM have been engaged to increase awareness and understanding of Marinus Link and the supporting transmission and their impacts, including route,

environmental and cultural matters, pricing challenges, economic benefits and costs, and the business case assessment process.

Opportunities for stakeholders to provide information and feedback on Marinus Link and supporting transmission continue to be promoted. The project has developed a comprehensive stakeholder and community engagement plan and, as Marinus Link and the supporting transmission progress, resourcing will increase to engage with community and stakeholders in Tasmania and Victoria, and at a broader national level. A program for landowner engagement is also being progressed to support the required access and easements.

The project is committed to communicating in a transparent, respectful, and timely manner with the broad range of stakeholders relevant to Marinus Link and the supporting transmission. These stakeholders include governments, energy sector participants and developers, regulators, peak bodies, community members, customer groups, traditional owners, and landowners.

Engagement will continue to ensure that the environmental, economic, cultural, and social impacts of Marinus Link and supporting transmission are carefully considered, communities are engaged, and the range of impacts from it are understood, including positive benefits that will arise from Marinus Link and supporting transmission and any negative impacts that need to be managed.

The project also aims to work with communities in Tasmania and Victoria to co-design economic development opportunities to make the most of the significant direct and indirect benefits generated by Marinus Link and supporting transmission. This includes working with industry, government, and skills bodies to maximise the social, economic, and employment opportunities for regional communities from further development of the energy sector.

In Tasmania, a working group led by the Cradle Coast Authority is partnering with the education sector, government, and energy businesses to realise the economic potential of Marinus Link and supporting transmission. In Victoria, TasNetworks is working with the Latrobe Valley Authority as it seeks to realise the benefits for the region as Australia's energy transition to cleaner energy continues. The economic development vision for these regions is taking shape around three key principles:

- Create and energise regional prosperity through a pipeline of jobs;
- Build on the legacy of energy expertise, with innovation in next generation renewable energy that is done well, with support from community; and
- Deliver a regionally driven, generous contribution to Australia.

Next steps

TasNetworks, supported by the Tasmanian and Australian Governments, is progressing Marinus Link and supporting transmission. Next steps include:

- Concluding the RIT-T process, including by working with AEMO on the 2019-20 Integrated System Plan analysis;
- Building the capacity and capability of the project's resources to successfully deliver the Design and Approvals phase;
- Continuing funded critical path Design and Approvals activities, such as landowner engagement and environmental and planning assessments;
- Ongoing stakeholder and community engagement in Tasmania, Victoria, and nationally;
- Working with the Tasmanian and Australian Governments to secure funding and agree upon an ownership model for Marinus Link; and
- Engaging with customer and industry bodies, rule makers, and regulators to explore a new cost allocation methodology for interconnectors to ensure fair pricing outcomes across the NEM.

A Positive business case

The Business Case Assessment shows that Marinus Link and supporting transmission provide greater benefits than costs under all modelled scenarios. The analysis shows that Marinus Link and supporting transmission will support Australia's transition to a low emissions future by delivering the low cost, reliable, and clean energy that customers expect.

Work continues to progress Marinus Link and supporting transmission to being a 'shovel ready' national infrastructure project, able to be in service from 2027.

TasNetworks thanks ARENA and the Tasmanian Government for the financial contributions that enabled this Business Case Assessment to be completed in a comprehensive and timely way.