Basslink Conversion Application

Consultation Paper

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AUSTRALIAN ENERGY REGULATOR

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Summary

On 19 May 2023 Basslink lodged an application with us to convert Basslink's network services from market network services (that is, unregulated services) to prescribed transmission services (that is, regulated services). In response to the Issues Paper that we published in November 2023, a number of stakeholders sought assurance that any benefits of conversion demonstrably exceed any costs. The purpose of this consultation paper is to set out our initial consideration of the costs and benefits of converting Basslink's transmission services and seek stakeholder views on our analysis, and in particular, views on the key forecasts and assumptions that are most material to the size of any estimated net benefits from conversion.

If Basslink is converted consumers will face new regulated transmission charges relating to Basslink's services. Over the life of the Basslink asset, these regulated transmission charges will equate to Basslink's opening asset value and the present value of ongoing operating costs. Basslink proposed an opening asset value of $813 million and ongoing operating costs of $589 million (present value), which would mean a total cost of $1.402 billion. In this consultation paper we have considered the benefits of conversion relative to these costs as submitted by Basslink. Should the asset value and ongoing operating costs be lower than these submitted values, then the assessment of benefits relative to costs may be different.

These regulated transmission charges may be offset by any inter-regional settlement residues that can be auctioned if Basslink is regulated (if Basslink is not regulated then these residues are the merchant trading revenue). The size of any inter-regional settlement residues is highly uncertain, but they could be significant.

To better understand the benefits of conversion, we engaged ACIL Allen to undertake modelling of the National Electricity Market (NEM) under scenarios where Basslink is converted and others where it is not. Modelling was undertaken under a range of different scenarios to test the impact of the following factors:

- Counterfactuals

  ACIL Allen modelled two counterfactuals to conversion, one where Basslink operates as an unhedged merchant interconnector, and another where Basslink contracts its capacity to Hydro Tasmania.

- Contract cover

  ACIL Allen modelled two different levels (lower and higher) of Hydro Tasmania's contract cover (that is, Hydro Tasmania's contractual obligations to provide energy to retail customers at a fixed price).

- Marinus Link investment
  ACIL Allen modelled three Marinus Link assumptions: the first without any Marinus Link at all, the second where only the first Marinus Link cable is constructed in July 2029; and the third where a subsequent Marinus Link cable is also constructed in July 2036.

Using these scenarios, ACIL Allen has estimated net market benefits in each scenario. This assessment of market benefits is akin to the approach taken to assessing benefits in the RIT-T. The market benefits found by ACIL Allen are driven by changes in market dispatch costs across the NEM. Since changes in greenhouse gas emissions are also now counted as

an additional class of market benefits, ACIL Allen has also investigated whether significant changes to emissions in the NEM are likely. ACIL Allen also reports on estimated impacts on wholesale prices in each region, and the extent to which customers may face wholesale price reductions as a result of conversion. ACIL Allen states, however, that these results should be used with caution, as they are highly sensitive to projected wholesale electricity prices and the ability of Hydro Tasmania to exercise market power.

Modelling suggests changes in market costs may be small

On the measure of market costs, the modelling estimated that conversion could result in a reduction in market costs but that this reduction is likely to be small (relative to total market cost).

The possibility of an agreement between Basslink and Hydro Tasmania is the key variable determining the size of market benefits

The market benefits of conversion are higher under the merchant Basslink counterfactual than under the counterfactual where Basslink enters into an agreement with Hydro Tasmania. If the counterfactual to conversion is an unhedged merchant Basslink the estimated market benefits range from $146 million to $210 million ($2024). If the counterfactual is an agreement with Hydro Tasmania the estimated market benefits range from -$8 million to $3 million ($2024).

Increased levels of Hydro Tasmania's contract cover also tend to decrease the market benefits of conversion. However, the impact of this variable on modelled market benefits appears relatively less significant and more varied than other modelled variables.

Impacts on wholesale prices

ACIL Allen also estimated impacts on wholesale prices. ACIL Allen concludes that the extent to which consumers might be expected to face lower wholesale prices as a result of conversion is highly uncertain.

The modelling estimated the impact of conversion on wholesale prices to be more highly varied, depending on the scenario modelled, than the measure of market costs. Overall, estimated price effects range from $3,500 million to -$164 million ($2024).

The size of the estimated price effects is different to the size of the estimated benefits from reductions to market costs. This arises because prices in the NEM are determined through a generator-bid process coordinated by the Australian Energy Market Operator. Prices are determined by the marginal bidder. While costs may reduce, if the marginal bid does not also fall then prices will not reduce. In other words, benefits from market costs reductions may not immediately manifest in lower prices. However, these market benefits should promote efficient investment in the long term interests of consumers.

We note that the modelled price effects of conversion are highly sensitive to wholesale price levels and volatility as well as the behaviour of market participants. This will inform our assessment as to the balance of costs and benefits in different cases and will inform what weight we apply to modelled outcomes in our final decision.

Conclusion

ACIL Allen's report states that the level of wholesale price benefits is highly uncertain, and should be considered in the context of the highly certain prescribed services costs

consumers will be required to pay should Basslink be converted. It also states that "Basslink's conversion may also have long term market benefits, and model outcomes suggest a more certain level of these benefits, but these are unlikely to exceed the costs of the prescribed services, should Basslink be converted.

Given that the net benefits of conversion are highly sensitive to assumptions, particularly regarding future states of the world we are seeking stakeholder views and evidence to support our consideration of the costs and benefits relating to the conversion of Basslink to a prescribed transmission service.

1 Introduction

On 19 May 2023 Basslink[1] lodged an application[2] with us to:

- convert Basslink's network services from market network services (that is, unregulated services) to prescribed transmission services (that is, regulated services) – with conversion proposed to take effect from 1 July 2025; and
- commence the process of making a revenue determination for Basslink's regulated transmission services, which would apply if Basslink's conversion application is approved.[3]

On 15 September 2023, Basslink submitted its revenue proposal, providing detail in support of its conversion application.[4]

In November 2023 we published an Issues Paper which highlighted some of the key issues with the conversion application and sought views from stakeholders.[5]

Submissions on the issues paper focussed on the merits of converting Basslink to a Transmission Network Service Provider (TNSP), with some supporting the proposal, some expressing reservations and some opposing the proposal. A number of stakeholders sought assurance that any benefits of conversion demonstrably exceed any costs.[6] Given the divergent views expressed by stakeholders, and the importance stakeholders expressed for weighing the costs and benefits of conversion, we amended our assessment process to include this consultation paper.

The purpose of this consultation paper is to set out our initial consideration of the costs and benefits of converting Basslink's transmission services. This paper also seeks stakeholder views on our estimation of the costs and benefits of conversion, and in particular, views on

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1 APA Group is the owner of Basslink Pty Ltd, the company that owns and operates the Basslink interconnector. For consistency and clarity, we refer to 'Basslink' throughout this Consultation Paper.

2 APA Group, *Basslink: Application for conversion and request to commence the process for making a transmission determination*, 19 May 2023. Available at: Basslink - Determination 2025–30: Initiation

3 In July 2023, we published a Commencement and Process Paper that set out our process for considering both Basslink's conversion application and (if converted) its revenue determination. In this paper we decided to concurrently consider both decisions. On 17 May 2024 we released a consultation paper on amendments to the commencement and process paper to include this consultation paper in the determination process.

AER. *Basslink Decision: Commencement and Process Paper*, July 2023. Available at: Basslink - Determination 2025–30: Decision

AER. *Basslink Consultation Paper: Commencement and Process Paper Amendment*, May 2024. Available at: Basslink - Determination 2025–30: Update

4 APA Group, *Basslink Transmission Revenue Proposal,* 15 September 2023. Available at: Basslink – Determination 2025-30: Proposal

5 AER. *Issues Paper: Basslink conversion and electricity transmission determination 2025-30*, 10 November 2023. Available at: Basslink - Determination 2025–30: Proposal

6 TasNetworks, Submission on Basslink issues paper, 9 February 2024, p.1. Tasmanian Government, Submission on Basslink issues paper, February 2024, p.8. Aurora Energy, Submission on Basslink issues paper, 19 February 2024, p.2. Tasmanian Minerals Manufacturing & Energy Council, Submission on Basslink issues paper, 15 February 2024, p. 2. Victorian Government, Submission on Basslink issues paper, 29 February 2024, p.1.

the key forecasts and assumptions that are most material to the size of any estimated net benefits from conversion.

This consultation paper is an important step in our assessment process because any revenue determination for Basslink will not take effect if conversion is not accepted.

If it is converted, Basslink will be regulated as a transmission business under Chapter 6A of the National Electricity Rules (the Rules). The Rules require us to publish a transmission determination for each regulated transmission business. A transmission determination consists of a revenue determination and a pricing methodology.

In a revenue determination, we must set the maximum allowed revenue a transmission business can recover from electricity consumers during a regulatory control period (typically five years). The maximum allowed revenue is typically set at a level to cover the transmission business's efficient costs and a rate of return for the owner.

The pricing methodology sets out how regulated transmission charges are determined consistent with the maximum allowed revenue, including in this case the allocation of interconnector costs between the Tasmanian and Victorian regions. Consumers pay for regulated transmission services through their electricity bills.[7]

This paper focusses on the net benefits of conversion - it does not address other matters of Basslink's revenue determination or pricing methodology. We will address all matters relevant to Basslink's conversion application, revenue determination, and pricing methodology in our draft decision.

1.1 How you can get involved

Stakeholder engagement is a valuable input to our assessment of the conversion application and determination. When we receive stakeholder submissions that articulate consumer preferences, address issues in a revenue proposal, and provide evidence and analysis, our decision-making process is strengthened.

You can contribute to our assessment by:

- Making a written submission on this Consultation Paper to ResetCoord@aer.gov.au by 20 September 2024.[8]
- Writing to us at ResetCoord@aer.gov.au to express your interest in meeting with the AER's Basslink team prior to the close of submissions.

As our assessment progresses – with the indicative process shown in Table 1 – there will be further opportunities to contribute.

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7 Transmission businesses recover most of their costs from distribution network businesses, who in turn recover their costs from retailers and retail customers. Some large commercial energy consumers are directly connected to the transmission network, rather than a distribution network. They also contribute to recovery of transmission costs.

8 For further information regarding the AER's use and disclosure of information provided to it, see the ACCC/AER Information Policy.

Table 1 Key dates for Basslink conversion and 2025-30 revenue determination

Milestone	Date
AER publishes Issues Paper on Basslink's proposal	10 November 2023
AER holds public forum on Issues Paper and Basslink's proposal	22 November 2023
Submissions on Basslink's proposals and Issues Paper	16 February 2024
AER publishes Consultation Paper	30 August 2024
Submissions due on Consultation Paper	20 September 2024
AER publishes Draft Decision	8 November 2024
Basslink submits revised proposal to AER	3 January 2025
AER publishes final decision	28 February 2025

Note: Timelines are indicative and subject to change.

2 Framework for considering conversion

We must make our determination on Basslink's conversion application in accordance with the National Electricity Law and Rules.

In section 2.1 we set out how this legislative framework addresses relevant considerations for the costs and benefits of conversion. In section 2.3 we discuss different types of potential costs and benefits of conversion.

Considering the costs and benefits of conversion requires comparison of the conversion case to the counterfactual of no conversion. In section 2.4 we consider what the counterfactual to conversion may be.

In section 2.5 we discuss the relationship between our conversion cost-benefit assessment and our determination of Basslink's opening asset value.

2.1 The conversion cost-benefit test

Under clause 11.6.20(c) of the Rules, Basslink may apply to us to determine that the network services it provides should be classified as prescribed transmission services (in other words, to convert Basslink to being regulated). Specifically, that clause provides:

> *If, after the commencement date, a network service provided by means of, or in connection with, the Basslink transmission system ceases to be classified as a market network service, it may at the discretion of the AER be determined to be a prescribed transmission service, in which case the relevant total revenue cap may be adjusted in accordance with Chapter 6A and this clause 11.6.20 to include to an appropriate extent the relevant network elements which provide those network services.*

The National Electricity Law also provides a NEO that guides our decisions.[9]

The National Electricity Objective is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:

(a) price, quality, safety, reliability and security of supply of electricity; and

(b) the reliability, safety and security of the national electricity system; and

(c) the achievement of targets set by a participating jurisdiction—

(i) for reducing Australia's greenhouse gas emissions; or

(ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

We can then consider how the conversion of Basslink's transmission service may contribute to the achievement of the NEO greater than the alternative.

Whether Basslink should be converted is therefore a 'with or without' conversion question. That is, we must consider whether the benefits of conversion outweigh the costs, when compared to a future without conversion.

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9 We may also take into account the revenue and pricing principles, set out in section 7 of the National Electricity Law.

In considering the NEO, the benefits of conversion would be improvements to the achievement of the NEO provided by a regulated Basslink compared to an unregulated Basslink. Similarly, costs of conversion would be impediments or detriments to the achievement of the NEO provided by a regulated Basslink compared to an unregulated Basslink.

Questions for stakeholders

1. What are your views on the types of potential costs and benefits that conversion may provide?
2. If the range of outcomes across scenarios remains wide or subject to significant uncertainty, would you support a decision to convert or a decision not to convert? What is the rationale for this position?

2.2 How the conversion cost-benefit test is different to the regulatory investment test

Regulated electricity network businesses must apply a cost-benefit test before undertaking significant new investment in their networks.[10] This cost-benefit test is called the Regulatory Investment Test (or 'RIT') and has two versions – the RIT-T that applies to electricity transmission businesses and the RIT-D that applies to electricity distribution businesses. The Rules requires us to develop and maintain the RIT-T and RIT-D, as well as guidelines for applying these tests.

These tests start out by identifying a possible investment need, then proceed by investigating the costs and benefits of different options to address that need. Often, to estimate the benefits of a particular investment option, the network business undertaking the cost-benefit test will compare two states of the world: one with the investment and one without the investment.

Our conversion cost-benefit test requires a similar comparison of different states of the world. However, the conversion cost-benefit test compares states of the world with and without conversion. That is, the variable changing between the two states of the world is whether or not Basslink is converted to a regulated prescribed transmission service. The investment – the Basslink interconnector itself – does not change between the states of the world. The Basslink investment has already been made and the asset is currently in operation, and this situation may continue in the absence of conversion (different counterfactuals – what would happen if Basslink is not converted – are discussed further in section 2.4 below).[11]

The key difference between our conversion cost-benefit test and the RIT cost-benefit test is that the conversion test is a with-and-without conversion test while the RIT is a with-and-without investment test.

There may also be other differences between our conversion cost-benefit test and our regulatory investment test (such as guidance on developing scenarios and estimating

[10] National Electricity Rules clauses 5.16.3(a), 5.16A.3(a), and 5.17.3(a).

[11] As discussed in section 2.4, there may be a risk of insufficient revenue to cover stay-in-business costs if both Marinus Link cables are constructed, which may lead to a risk of Basslink ceasing operation.

benefits). While the guidance in the RIT may be informative to our conversion assessment, we note that we are not applying the RIT when considering the costs and benefits of conversion.

Basslink engaged Ernst & Young (EY) to undertake a RIT-style cost-benefit test.[12] This was used to estimate the benefits of the Basslink interconnector, as the benefits of the asset may be one method of valuing the asset. EY's cost-benefit test was for the purposes of asset valuation, not for considering the costs and benefits of conversion, and as such adopted a with-and-without investment test not a with-and-without conversion test.

We have had regard to EY's analysis when considering Basslink's asset valuation. We have also considered how EY's analysis may inform our consideration of Basslink's conversion. Because EY's analysis is a with-and-without asset comparison, it would only be relevant if the counterfactual to conversion is that the Basslink interconnector permanently ceases to operate.

To estimate benefits of conversion we engaged ACIL Allen to undertake modelling of the NEM under scenarios where Basslink is converted and others where it is not. While ACIL Allen's modelling involved techniques similar to those employed in EY's analysis, the two are not directly comparable – ACIL Allen modelled the NEM with-and-without conversion while EY modelled the NEM with-and-without the Basslink asset.

ACIL Allen modelled both market cost benefits and consumer price benefits. In this analysis market benefits were estimated as changes in the cost of producing electricity in the NEM – including changes to fuel costs and variable operating and maintenance costs. In this analysis consumer price benefits were estimated as the change in price multiplied by the amount of energy consumed.

2.3 Types of conversion costs and benefits

In identifying types of benefits and costs, the NEO identifies the following factors relevant to the long-term interest of consumers:

- Price
- Greenhouse gas emissions
- Other aspects that are not prices or emissions, such as quality of supply and the reliability, safety, and security of both electricity supply and the national electricity system.

Basslink's conversion may affect wholesale electricity prices and prices for transmission services. On transmission prices, if Basslink is converted then consumers will be required to fund Basslink's regulated transmission charges.[13] Regulated transmission charges over the life of the asset are based on the repayment of the regulatory asset base (RAB) (via the

12 EY, *Gross market benefit assessment of Basslink,* 15 September 2023.

13 These regulated transmission charges would not otherwise exist. If Basslink is not converted it would earn revenue through wholesale price differentials between Victoria and Tasmania.

return on capital and return of capital (depreciation) building blocks) plus ongoing operating costs.[14]

Offsetting these regulated transmission charges are proceeds from settlement residue auctions. If Basslink is converted then revenue from interregional price differences between Tasmania and Victoria will no longer be retained by Basslink but will instead result in inter-regional settlement residues. AEMO distributes these residues through settlement residue auctions. The proceeds of these auctions (less AEMO's auction costs) are deducted from transmission charges.

2.4 Counterfactuals to conversion

We must consider whether the benefits of conversion outweigh the costs compared to a future without conversion. Therefore, we must consider what might be the counterfactuals to conversion - what would happen if Basslink is not converted.

Basslink is currently registered with AEMO as a Market Network Service Provider (MNSP) – that is, an unregulated, merchant interconnector.

The MNSP framework enables the interconnector operator to bid transport capacities (much like a generator bids its generation capability) that makes flows across the interconnector conditional on price difference being at least as much as those bids. Therefore, the principal income stream to Basslink as a MNSP is the interregional price differences that can be obtained from flows across the interconnector.

However, for most of its life Basslink derived its revenues from contracts with Hydro Tasmania.[15] Under these agreements Hydro Tasmania pays Basslink an annual interconnector facility fee in return for access to the interconnector's revenue stream from interregional price differences.

The current agreement between Basslink and Hydro Tasmania expires on the earlier of 30 June 2025 or the day Basslink is regulated (unless extended by mutual agreement).

If Basslink is not converted, it may either remain as an MNSP or it may cease operating.

Though it is open to Basslink to cease operating if it is not converted, we have not at this stage received any indication that this would be the case and note that revenues exceeding stay-in-business costs may be a relevant consideration.

If it remains as an MNSP it may seek to enter into a new agreement with Hydro Tasmania or extend the current agreement. Alternatively, Basslink may seek to enter into a similar agreement with another party. An agreement is a possible, but not guaranteed, outcome.

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[14] Ongoing operating costs may by operating expenditure (or 'opex' – costs that are expensed in full the year in which the cost is incurred) or capital expenditure (or 'capex' – costs that are capitalised and added to the RAB). For our conversion assessment, relevant ongoing operating costs are those necessary to maintain the existing Basslink service through to the expected end of its asset life. Capital expenditure that extends the life of the asset (eg. asset replacement or 'repex') or increases the scope of services provided by the asset (eg. network augmentation or 'augex') will also affect the benefit side of the conversion cost-benefit test. We can presume that this type of capex (repex and augex) for a converted Basslink will provide benefits greater than its cost, as it will be subject to regulatory oversight.

[15] In 2006 Basslink entered a 25-year contract with Hydro Tasmania (the Basslink Services Agreement). In December 2015, a fault on the cable caused a six-month outage. The outage contributed to Basslink incurring financial losses and in 2021 the company went into receivership. In February 2022 the Basslink Services Agreement was terminated. Later in 2022 APA Group acquired Basslink from its administrator for $773 million and entered a new contract with Hydro Tasmania and Basslink (the Network Services Agreement). The new Network Services Agreement commenced on 21 October 2022.

Stakeholders expressed differing views on what the unregulated counterfactual should be in written submissions. Basslink proposed that the counterfactual is Basslink operating as an MNSP, earning revenues from price differentials between Victoria and Tasmania.[16] Hydro Tasmania submitted that any agreement with Basslink in the absence of conversion is not certain:[17]

> *If conversion does not occur the agreement may be extended, but any such extension will be subject to agreement being reached by both parties (and therefore also subject to any relevant approvals the parties determine are necessary). Accordingly, we confirm this cannot be considered a certain counterfactual.*

By contrast, the Victorian Government submitted that Basslink operating as a merchant without an agreement with Hydro Tasmania is not an appropriate counterfactual for this assessment as there is a "compelling financial case for both parties to sign a service agreement". Further, the Victorian Government stated:[18]

> *Any opposition to a future agreement between Basslink Pty Ltd and Hydro Tasmania is likely to be transient. APA's views on a future contract, expressed in its submission, may reflect its preferred way of managing risk, and a negotiating strategy, designed to encourage its preferred regulatory outcome. However, APA may not be the owner of the link for the remainder of its service life.*
>
> *Past behaviour confirms that both parties are likely to maintain an agreement akin to the current one. Since April 2006 Basslink Pty Ltd has been subject to a service agreement with Hydro Tasmania for all but ten months in 2022. This ten-month period was the result of a disruption to Basslink's service and a subsequent legal dispute between the parties. Both events are anomalies and should not be the basis of a business-as usual case. It is noted that the current contract between Hydro Tasmania and Basslink Pty Ltd provides Basslink Pty Ltd the option for 3 by 3-year extensions, subject to mutual agreement between the parties regarding adjustment to the fee arrangements.*
>
> *Barring some fundamental change to the dual monopoly situation described previously, Victoria expects both parties will continue to be incentivised to employ such service agreements as an effective way to reduce market risk and smooth revenue. Victoria expects consumers in both Victoria and Tasmania will continue to benefit from this scenario.*[19]

The possibility of an agreement between Basslink and Hydro Tasmania is a highly relevant consideration due to Hydro Tasmania's large share of generation capacity in the Tasmanian region and consequent ability to set the price for the region. The extent to which Hydro Tasmania may have access to:

- revenues derived from price differentials between Victoria and Tasmania; and/or
- control of the flows across the Basslink interconnector;
- may affect Hydro Tasmania's bidding profile and therefore dispatch patterns and prices.

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16 APA Group, *Basslink Transmission Revenue Proposal,* 15 September 2023, p. 78-79; APA Group, Submission in response to AER issues paper, 21 February 2024, p. 1.

17 Hydro Tasmania, Submission in response to AER issues paper, 16 February 2024, p. 2.

18 Victorian Minister for Energy and Resources, Submission in response to AER issues paper, 29 February 2024, p. 3.

19 Victorian Government Submission, page 3.

The possibility, if Basslink remains a MNSP, of an agreement between Basslink and another party may be less likely than agreement with Hydro Tasmania. Other contract counterparties in the Victorian or Tasmanian regions (the regions connected by Basslink) are unlikely to have the same degree of market power as Hydro Tasmania.[20] As such, the incentives of other counterparties will likely align with those of an uncontracted merchant Basslink – that is, to maximise revenue from interregional prices differentials.

For this reason, the range of possible effects on the benefits of conversion of Basslink remaining as a MNSP may be represented by the following two counterfactuals:

- Merchant Basslink

  Basslink network capacity is bid dynamically with Basslink revenues determined by electricity flowing in either direction and price differentials between the Victorian and Tasmanian regions.

- Basslink agreement with Hydro Tas (HT Agreement)

  Basslink contracts its capacity to Hydro Tasmania such that Hydro Tasmania has the right to dynamically price and offer Basslink's capacity in each dispatch period. Hydro Tasmania would then earn the revenues from electricity price differentials between Victoria and Tasmania, as well as control the flows on the interconnector in such a way that may benefit Hydro Tasmania's position in the Tasmanian market.

We note that there is a wide range of different types of arrangements that Basslink could enter into with Hydro Tasmania (or another counterparty). We also note that any agreement between Basslink and Hydro Tasmania[21] may also be subject to regulation under the Competition and Consumer Act.

However, for the purposes of considering Basslink's conversion, we will consider that under the 'Basslink agreement with Hydro Tas' counterfactual, Hydro Tasmania has the right to dynamically trade Basslink's capacity (in a manner authorised by the ACCC). We have considered this type of agreement as the counterfactual to reflect the widest range of possible benefit outcomes – as Hydro Tasmania's control of flows over Basslink would likely increase Hydro Tasmania's ability to set prices in Tasmania.

Our consideration of Basslink's conversion by reference to this counterfactual does not reflect our views on:

- which type of arrangement, if any, is likely to be agreed between Basslink and its counterparty if Basslink is not converted; or
- the likelihood of any arrangement being authorised by the ACCC.

While we have not directly estimated the benefits of conversion under the counterfactual that Basslink ceases operating, we have examined the expected revenue under the 'merchant Basslink' and 'Basslink agreement with Hydro Tas' counterfactuals. This analysis then provides an indication of the extent to which revenue will sustainably exceed stay-in-business costs which is necessary for Basslink to stay in operation.

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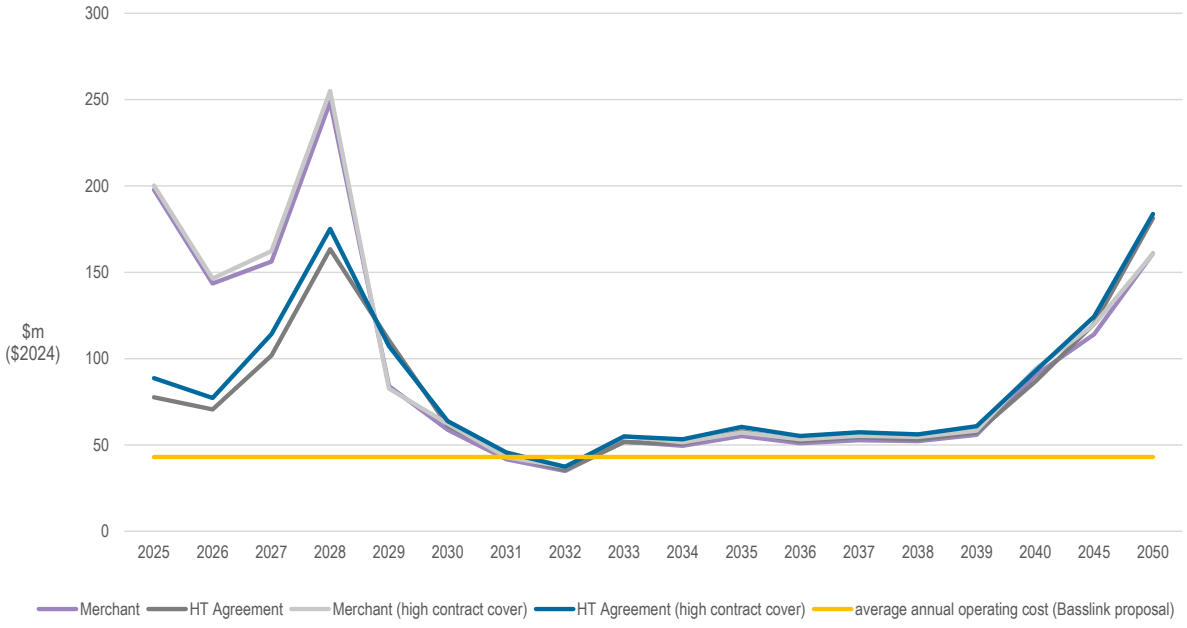
20 There currently is no other market participant in the Victorian region with the same degree of market power as Hydro Tasmania, and we consider that this situation is likely to remain.

21 Or any other counterparty, though regulation under the Competition and Consumer Act may be more relevant to an agreement with Hydro Tasmania due to Hydro Tasmania's degree of market power within the Tasmanian region.

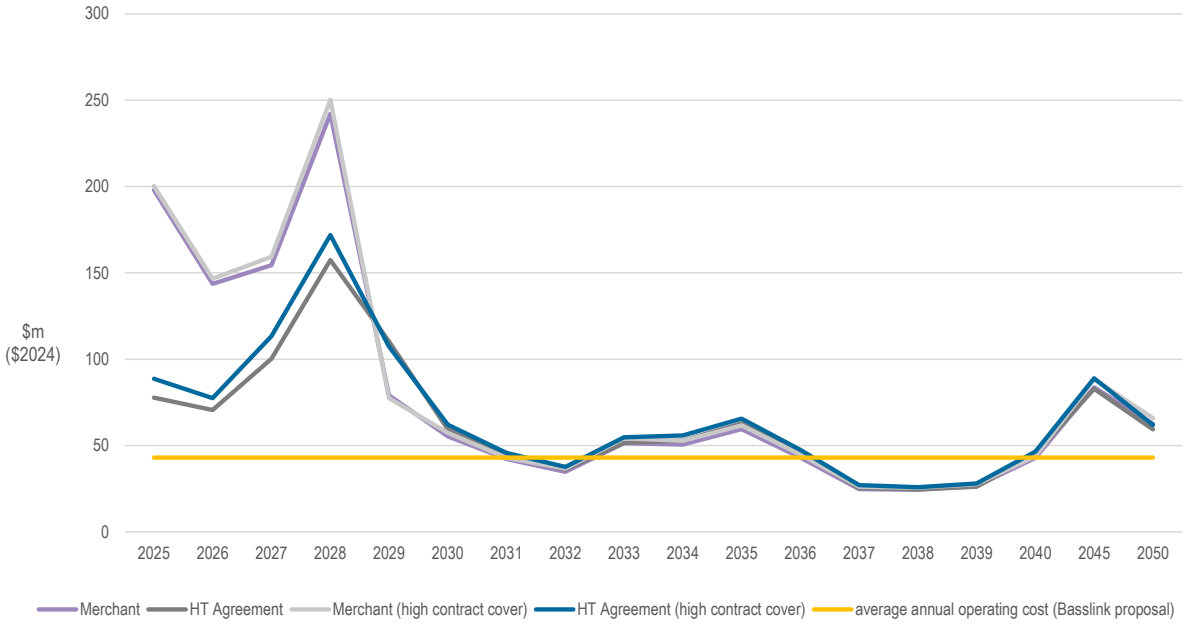
The modelled revenue for Basslink in the absence of conversion is presented in Figure 1 and Figure 2 below. The modelling results indicate that Marinus Link is likely to have a significant impact on the revenues of an unregulated Basslink interconnector. The results also indicate that there may be a risk of insufficient revenue to cover stay-in-business costs if both Marinus Link cables are constructed.

Figure 1 Basslink modelled revenue under different counterfactuals (if only the first Marinus Link cable is constructed)



Notes: Data source: ACIL Allen (revenue); APA (forecast operating cost).

Figure 2 Basslink modelled revenue under different counterfactuals (if both Marinus Link cables are constructed)

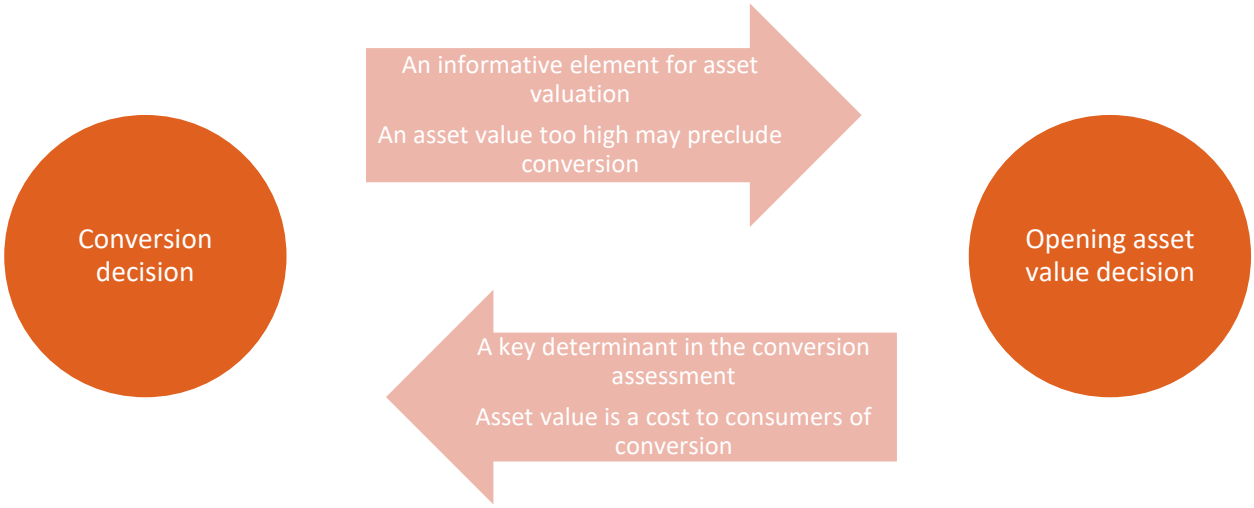


Notes: Data source: ACIL Allen (revenue); APA (forecast operating cost).

2.5 Interrelationship between asset value and conversion decision

The opening value of Basslink's asset base is a key determinant of the cost of conversion. However, we may take the net benefits of conversion into account when determining Basslink's opening asset value. This introduces a close relationship between our decisions on conversion and on Basslink's opening asset value, as shown in Figure 3 below.

Figure 3 Inter-relationship between asset valuation and the conversion assessment



We consider that the opening asset value could be adjusted to a level that would result in the conversion cost-benefit test breaking even or resulting in positive net benefits. The Tasmanian Government agreed, submitting that we should convert Basslink and reduce the value of the opening RAB if the costs of conversion are higher than the benefits: [22]

> *(the RAB) should be set such that the incremental benefits to customers from regulation (over the status quo) are greater than the costs that they will face arising from conversion.*

However, we are not considering adjustments to the opening asset value in this consultation paper. In the first instance, we are seeking to test if conversion is expected to produce positive net benefits if the opening asset value is set without reference to the results of the cost-benefit test. Only after we are satisfied of the robustness of this initial cost-benefit assessment will we then consider if any adjustments to the opening asset value are necessary or appropriate.

22 Tasmanian Government, Submission in response to AER issues paper, February 2024, p. 9.

3 Costs of conversion

In section 2 we set out how our consideration of Basslink's conversion application requires a consideration of the costs and benefits of conversion. We also set out how the costs of conversion to consumers may include the regulated transmission charges for Basslink's services that consumers will face, over the life of the interconnector, if Basslink is converted.[23] These regulated transmission charges would be set at a level to fund cost recovery of Basslink's RAB and ongoing operating costs. How this would flow through to consumer in Tasmania and Victoria is heavily dependent upon the final cost allocation model.

This section sets out our consideration of:

- The approach to valuing Basslink's asset base (in section 3.1)
- Estimating Basslink's opening asset value (in section 3.2)
- Estimating Basslink's ongoing operating costs (in section 3.3)

Basslink proposed an opening asset value of $813 million[24] and ongoing operating costs of $589 million (in present value terms), therefore resulting in a total cost of conversion of $1.402 billion.

For the purposes of considering the costs and benefits of conversion in this consultation paper, we have used Basslink's proposed values for its opening asset value and ongoing operating costs. Our assessment of these values is still ongoing and will be further detailed in our draft decision. We note that if we determine Basslink's opening asset value or ongoing operating costs to be lower than proposed by Basslink, then a lower amount of estimated benefits (considered in section 4) may be appropriate for conversion to be approved.

3.1 Approach to valuing Basslink's asset base

Clause 11.6.20(e) of the Rules provides that we must determine the opening value of Basslink's RAB "by applying the previous regulatory approach to the circumstances of that transmission system".

Clause 11.6.20(a) of the Rules defines previous regulatory approach to mean the methodologies, objectives and principles for determination of a RAB applied in the previous regulatory determinations. This clause also defines previous regulatory determinations to be the ACCC's 2003 Murraylink determination and our 2006 Directlink determination. Clause

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23 In section 4 we consider how conversion of Basslink may affect electricity prices in the National Electricity Market, emissions, and other non-price aspects of electricity services (eg. supply outage frequency, supply outage duration, voltage fluctuations). Changes to these variables may be positive (benefits) or negative (costs), but for the purposes of our analysis we will assess those variables as categories of benefits (noting they may potentially result in negative benefits).

24 Basslink initially proposed an opening asset value of $831 million ($2024-25) based on depreciated actual cost. On 12 April 2024 Basslink submitted an amended depreciated actual cost estimate of $792 million ($2024-25), reflecting revisions to on the day cost of debt instead of a trailing average cost of debt, estimates of forecast and actual inflation, and removal of the ambient temperature cooling project from forecast capital expenditure. On 10 July 2024 Basslink submitted a further amended depreciated actual cost estimate of $813 million ($2024-25), updated to include additional forecast expenditure in 2024-25 for cable spares and repair vessel fit out costs.

11.6.20(f) of the Rules provides that in the event of an inconsistency between the regulatory approaches adopted in Murraylink and Directlink, the Directlink approach will prevail.

Additionally, when implementing the previous regulatory approach, we must have regard to the prudent and efficient value of Basslink's assets (having regard to the matters set out in Schedule 6A.2.2 of the Rules).

The application of relevant objectives and principles in both the Murraylink and Directlink determinations resulted in a cost-benefit test, the Regulatory Test,[25] as the method for determining the opening RAB value. The Regulatory Test – or its successor, the Regulatory Investment Test (RIT) – was used as a method for revealing information about the converting asset's costs and benefits – which can be used as options for valuing the RAB.

The Regulatory Test was adopted as the method to determining the opening RAB value because it could encapsulate the following principles and objectives – that the opening RAB should:

- Not be above actual cost
- Not be above efficient cost[26]
- Not be above benefits that consumers receive from the asset[27]
- Not be below scrap value[28]

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25 The Regulatory Test was a precursor to our Regulatory Investment Test (RIT), and is in substance very similar to the RIT-T. The Regulatory Test was, and the RIT is, a cost-benefit test that regulated network businesses must perform and consult on before making major investments in their networks.

26 "The AER notes that both the ODV method of asset valuation and the regulatory test framework seek to identify and evaluate the optimal configuration and sizing of the asset to achieve a particular level of service. The asset value is set by reference to the cost of the optimal project under both approaches and both discourage inefficient investment through inefficient assets being revalued down to their optimised replacement cost. The main difference between the two approaches is that the regulatory test may consider a wider range of alternatives that provide similar, but not identical levels of service, and a number of market scenarios."

AER, *Directlink Joint Venture application for conversion and revenue cap, Draft Decision*, 8 November 2005, p. 40.

27 "As long as Directlink can provide a value to users (as defined by the estimated market benefits) which exceeds its disposal value, EV would capture this market benefit. Accordingly, if Directlink was removed (or 'deprived') from the market, it would not be replaced with any project unless the capital cost was such that it was equal to the total market benefit that it provides—that is, the capital cost of Directlink is optimised to the level of its market benefits."

AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, p. 128.

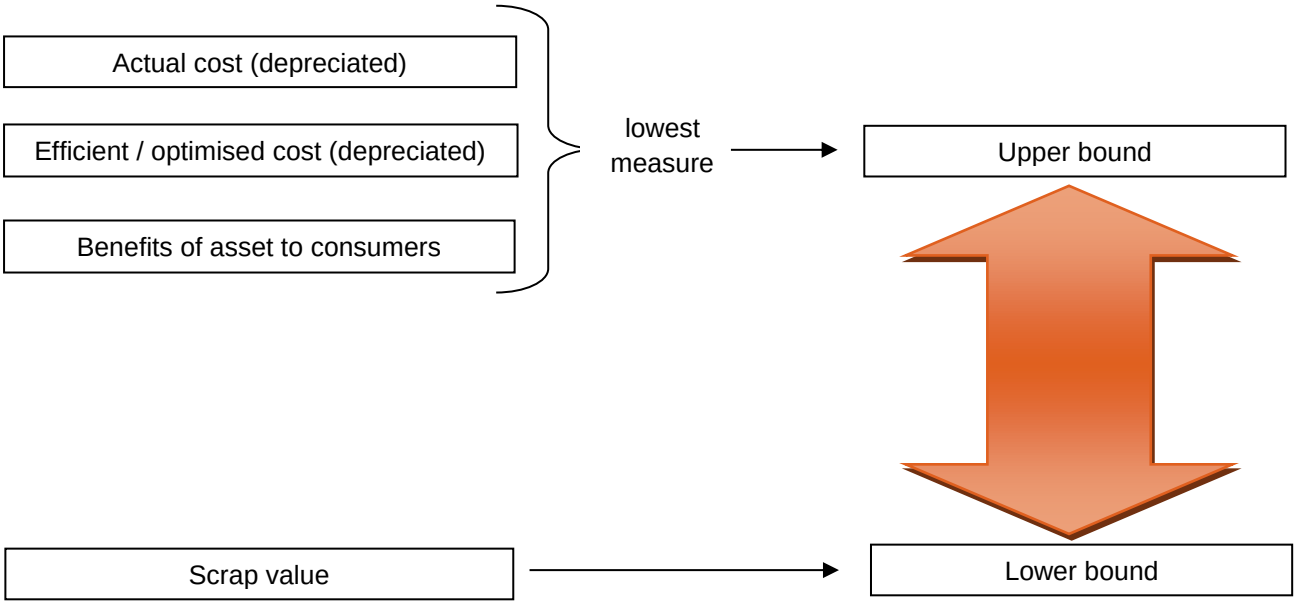
28 "The AER agrees that scrap value provides a useful lower limit to asset valuation. However, caution should be exercised, so as not to value the asset such that the return on the investment is below the opportunity cost of capital."

AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, p.41.

- Not allow bypass of regulatory oversight or inconsistency with regulated electricity transmission businesses[29]
- Promote efficient use of existing infrastructure[30]

These principles and objectives provide a range for possible opening asset values,[31] as shown in Figure 4 below.

Figure 4 Approach to determining the range of possible asset values



29 "The application of the regulatory test to Directlink would help ensure consistency between the AER's consideration of DJV's application and the approval of other forms of regulated investments. That is, applying the regulatory test to converting network services would prevent an MNSP from being able to bypass the provisions in chapter 5 of the code."

AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, p. 40.

30 "The regulatory test assessment indicated that no project is optimal and that Directlink would not be constructed. One option for the AER, therefore, would be to allow conversion of Directlink with a zero asset value. The AER, however, is of the view that allowing Directlink to convert but providing DJV with a zero asset value would not encourage the efficient use of existing infrastructure … The regulator's treatment of existing assets in such a manner could also be perceived as creating an environment of uncertainty which may have an adverse effect on transmission investment incentives in the future."

AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, p. 127.

31 "The AER agrees that scrap value provides a useful lower limit to asset valuation…The AER also considers that the replacement cost of the least cost option provides a useful upper limit to asset valuation. It measures the cost of replicating the assets in the most efficient way, thus discouraging inefficient investment that is not in the interests of network users and the public. In summary, the AER considers that a reasonable balance is to adopt a valuation method that provides a value for the asset somewhere between the two bounds."

AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, p. 41.

In the Murraylink and Directlink determinations the opening asset value was set at the top of this range, on the basis that:

- Doing so facilitates efficient investment (in the long-term interests of consumers) by maximising cost recovery to the limit of benefits provided by the asset.[32]
- The legislative framework applicable at the time required the AER to consider the optimised deprival value method of asset valuation.[33] Under the optimised deprival method, assets are valued as the lower of replacement amount and recoverable amount, where:
    - Replacement amount is the lower of the asset's historical cost or its optimised replacement cost (depreciated where necessary), and
    - Recoverable amount is the greater of scrap value or the value in use (also called economic value, or the benefits provided to users)

Basslink proposed determining the opening asset value by selecting the lower of depreciated actual cost, deprecated optimised replacement cost, and the benefits provided by the asset. This approach is largely consistent with the outcomes of the principles and objectives from the previous regulatory approach (as shown in Figure 4).

In response to our issues paper, Aurora Energy and the Tasmanian Minerals, Manufacturing and Energy Council submitted that Basslink's proposed opening asset value is greater than the price APA paid to acquire the Basslink interconnector.[34]

While we have had regard to Basslink's acquisition value, we note the following:

- The Rules require us to apply our previous regulatory approach to asset valuation, which did not include setting asset values by reference to acquisition values.
- Acquisition values may not necessarily reflect efficient asset values, for reasons such as 'winner's curse' and its corollary 'seller's remorse',[35] or distressed selling.
- Basslink's proposed depreciated actual cost includes forecast capex and inflation indexation occurring after the acquisition date and up to the start of the proposed regulatory period (1 July 2025).

Aurora Energy also submitted that Basslink's proposed revenue if converted (noting that the opening asset value is a significant determinant of regulated revenue) would be higher than the revenue that the previous owner of Basslink earned when operating the interconnector as a MNSP.[36]

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32 AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, pp. 127-128.

33 AER, Directlink Joint Venture application for conversion and revenue cap, Draft Decision, 8 November 2005, pp. 127-133.

34 Aurora Energy, Submission on Basslink Issues Paper, 19 February 2024, p. 1.

35 The notion that a winning party in an auction or tender process may have over-paid as a result of the competitive nature of the acquisition process. Conversely, seller's remorse may occur as a result of an uncompetitive but binding auction or tender process.

36 Aurora Energy, Submission on Basslink Issues Paper, 19 February 2024, p. 1-2.

For our assessment of Basslink's conversion application the appropriate consideration is the counterfactual operation of Basslink into the future, rather than past performance.[37] Further, our conversion assessment will consider if the long-term interests of consumers – rather than the asset owners – is best promoted by converting Basslink. If we conclude that conversion will promote the long-term interests of consumers, then we expect consumers will receive benefits from conversion of greater value than the asset base they fund through regulated transmission charges.

3.2 Estimating Basslink's opening asset value

In section 3.1 we noted that we are required to determine Basslink's opening asset value by applying the valuation approach adopted in our previous Directlink and Murraylink conversion determinations.

For the purposes of considering the costs and benefits of conversion in this consultation paper, we have used Basslink's proposed values for its opening asset value and ongoing operating costs. Our assessment of these values is still ongoing and will be further detailed in our draft decision.

Basslink estimated:

- Depreciated actual cost of its assets at $813 million.[38] Further detail of this estimate is in Appendix B.1.
- Depreciated cost of the best alternative replacement option (the depreciated optimised replacement cost, or 'DORC') at $1.079 billion. Further detail of this estimate is in Appendix B.3.
- The benefits provided by the interconnector to be in the range of $3.102 billion to $4.190 billion. Further detail of this estimate is in Appendix B.2.

Therefore, Basslink proposed an opening asset value of $813 million ($2024-25) in line with the depreciated actual cost which is the lowest of the three values.

3.3 Estimating Basslink's ongoing operating costs

In present value terms ($2024-25) the total value of ongoing operating costs proposed by Basslink is $589 million, as set out in Table 2 below.

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37 Historically, Basslink's owners have earned revenue predominately from fees agreed under the arrangements reached with Hydro Tasmania (there was a ten-month period in 2022 during which time there was no Basslink agreement in place and Basslink's revenue was derived from interregional price differences). The current agreement expires on the earlier of 30 June 2025 or the day Basslink is regulated. We also note that Basslink entered voluntary administration in November 2021. There is no reason to believe that if Basslink is not converted that its revenue would reflect previous agreements or previous merchant trading revenue.

38 APA, Marine Disaster Recovery Plan – Information Update, 10 July 2024.

Table 2 Present value of Basslink's proposed ongoing operating costs

Ongoing operating costs for 2025-46 period	Present value ($2024-25)
Operating expenditure (opex)	$375.76 million
Capital expenditure (capex)	$213.49 million
Total	$589.25 million

Notes: Present value based on a 7 per cent discount rate.
Data source: APA

As outlined previously, for the purposes of this consultation paper we are intending to use the submitted costs of $813 million for the regulated asset base and $589.25 million in ongoing operating costs in present value terms as the costs against which the benefits of conversion are assessed.

4 Benefits of conversion

In section 2 we set out how our consideration of Basslink's conversion application requires a consideration of the costs and benefits of conversion. We also set out how the benefits of conversion to consumers could be driven by reductions in costs, reductions in prices, reductions in greenhouse gas emissions, or improvements to quality-of-service measures (for example, reliability).[39]

To consider these different sources of benefits we compare how converting Basslink may change these factors relative to counterfactuals that would occur if Basslink was not converted – see section 2.4 for a discussion of counterfactuals.

Basslink contends that conversion of the Basslink interconnector would result in more efficient use of the interconnector, improved reliability, support system security, contribute to achieving greenhouse emissions targets and have potential price benefits for consumers.[40] However, Basslink did not quantify conversion benefits.

We engaged ACIL Allen to undertake modelling of the NEM to estimate the level of possible benefits from converting Basslink.

4.1 Market modelling

If Basslink is converted it would operate as a fully available interconnector. Flows across the interconnector would be determined by AEMO's central dispatch without constraint.[41] In this circumstance we expect flows across the Basslink interconnector to be maximised.[42]

If Basslink is not converted it would remain as a MNSP (subject to earning sufficient revenue to cover stay-in-business costs). As discussed in section 2.4, Basslink as a MNSP would earn revenue from price differentials between Tasmania and Victoria. In doing so, we expect that Basslink must constrain flows over the interconnector at times by either:

- bidding substantial costs on the transfer of power, or
- economically withdrawing capacity, or pricing capacity at or close to the market price cap.

We expect that if Basslink remained as a MNSP it would result in different dispatch and pricing outcomes compared to a converted Basslink.

To estimate these pricing effects, we engaged ACIL Allen to undertake modelling of the NEM under scenarios where Basslink is converted and others where it is not.

Modelling of the NEM aims to replicate the market dynamics between participants in the NEM and generate realistic simulated market prices. Details of ACIL Allen's modelling framework are set out in Appendix A of its report.[43]

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39 Changes to these variables may be positive (benefits) or negative (costs), but for the purposes of our analysis we will assess those variables as categories of benefits (noting they may potentially result in negative benefits).

40 APA Group, *Basslink Transmission Revenue Proposal*, Chapter 3 - Conversion Application, 15 September 2023, pp. 16-21.

41 Subject to losses and other system constraints, and outages for planned or unplanned maintenance.

42 To the limit of efficiency, taking into account regional prices and transmission losses.

43 ACIL Allen, Basslink conversion: modelling and analysis of benefits, Report to Australian Energy Regulator, June 2024.

As set out in section 2.4, we modelled two counterfactuals to conversion:

- Merchant Basslink
- Basslink agreement with Hydro Tasmania

Each of these counterfactuals was modelled under two different levels of Hydro Tasmania's contract cover (lower and higher[44]) to test the impact of contract cover on Hydro Tasmania's bidding behaviour, dispatch patterns, and prices. Contract cover refers to the amount of energy that Hydro Tasmania has agreed to provide to retail customers at fixed prices. When spot prices are high Hydro Tasmania will have an incentive to ensure it is dispatched to avoid fulfilling its contract obligations by purchasing energy at this high spot price. Therefore, a higher level of contract cover will likely flatten the schedule of prices that Hydro Tasmania offers into the NEM (to ensure it is dispatched when prices are high).

Each of the four combinations[45] of counterfactual and contract cover were also modelled under the following Marinus Link assumptions:

- Only the first Marinus Link cable constructed, completed in July 2029
- Both Marinus Link cables constructed, the first in July 2029 and the second in July 2036

Therefore, we have eight sets of modelling results (relative to the conversion case). For each of these eight scenarios ACIL Allen modelled market costs of production and prices. Changes to market costs may be informative of changes to prices and benefits to the long-term interests of consumers.

Questions for stakeholders

3. What degree of significance should we place on outcomes from market modelling when considering possible benefits of conversion? What other inputs should feature in our decision making?
4. In modelling possible outcomes, we have modelled a range of different scenarios encompassing the future role of Marinus Link. What are your views on the likelihood of Marinus Link being constructed, the number of Marinus Link cables that will ultimately be constructed, and the timing of any construction? What weights would you place on these different possible outcomes for Marinus Link?
5. In modelling possible outcomes, we have modelled a range of scenarios for the likelihood of Basslink entering into agreements with Hydro Tasmania and the level of contract cover. What are the most likely future states of the world with respect to these issues and what is the reasoning for your position?

[44] Contract cover in the higher scenarios was set at 5% greater than the lower contract cover scenarios.

[45] Merchant (lower cover), Merchant (higher cover), Basslink agreement with Hydro Tas (lower cover), and Basslink agreement with Hydro Tas (higher cover).

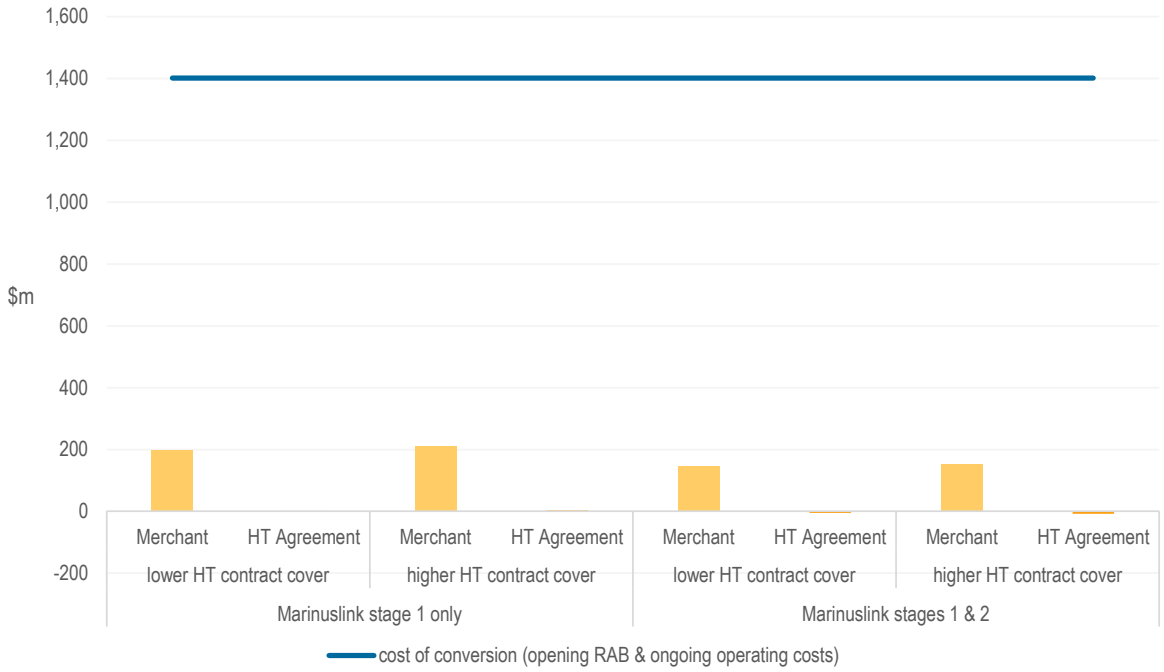
4.1.1 Results of market cost modelling

In the long term, consumers are the beneficiary of more efficient investment in, operation and use of electricity services. In this case what this means is that there are benefits to enabling better access to lower cost sources of generation.

ACIL Allen's modelling estimates there are market benefits to converting Basslink to a regulated asset. These market benefits are derived from differences in variable operating costs and differences in the cost of fuel consumed. These benefits are gross benefits – that is, the costs of regulation have not been factored into benefit estimates.

ACIL Allen estimated benefits in the range of -$8 million to $210 million, depending on whether Basslink has agreement with Hydro Tasmania, the level of Hydro Tasmania's contract cover, and the number of Marinus Link cables constructed.

Figure 5 Benefits of conversion from changes in market costs under different counterfactuals (present value of benefits from 2025 to 2050)



Notes: Present value based on a 7 per cent discount rate.
Data source: ACIL Allen.

These benefits are much smaller than the estimated price effects discussed below. The estimated benefits are also small when considered as a proportion of the market's total cost of production – the change in costs ranging from 0.6 per cent to 0.003 per cent of total market costs.

The key variable affecting the estimated market benefits is the counterfactual operation of Basslink in the absence of conversion. If the counterfactual to conversion is Basslink entering into an agreement with Hydro Tasmania, the estimated benefits of conversion are minor, ranging from -$8 million to $3 million ($2024). If the counterfactual to conversion is Basslink operating as an unhedged merchant, the estimated benefits of conversion range from $146 million to $210 million ($2024).

The market benefits from changes in market costs arise because Basslink is more intensively utilised if regulated than if it operates as an unhedged MNSP or is contracted to Hydro Tasmania. The more intensive utilisation allows:

- Additional dispatch of Hydro Tasmania for export to provide cost effective firming services in Victoria.
- Improved access to the interconnector for new wind farms in Tasmania, allowing dispatch of more wind to displace more costly generation across the NEM.
- Improved access for Victorian generators to Tasmania, and greater ability for Hydro Tasmania to reduce generation and manage its storage levels when prices for imports are relatively low.

4.1.2 Results of price modelling

The aggregate results of the estimated price effects of conversion (i.e. the size of any estimated wholesale price reductions) across the modelled scenarios is shown in Figure 6 below.[46] Overall, the results of any price effects from conversion are mixed:

- Price effects of conversion are significant in four of the eight modelled states of the world. Price effects of conversion are insignificant or negative in two of the modelled states of the world. In the remaining two modelled states of the world price effects of conversion are positive, but likely materially less than the cost of conversion.[47]
- An equal weighted average of all eight modelled states of the world results in price effects of conversion approximately on par with the cost of conversion.
- The commissioning of Marinus Link appears the most significant variable affecting the results.
- In all cases the price effects of conversion are more significant under the merchant Basslink counterfactual than under the counterfactual where Basslink enters into an agreement with Hydro Tasmania.
- Increased levels of Hydro Tasmania's contract cover reduce the price effects of conversion, compared to lower levels of cover, in three of the four modelled states of the world.

The modelling indicates that conversion of Basslink is likely to have long-term consumer price effects (excluding the costs of regulation), but the potential range of effects is extensive and highly uncertain. The estimates of consumer price effects are small in the context of total consumer costs, ranging from -0.1% to 1.68% of total consumer costs.

The modelling also indicates that it is unlikely excessive price rises and price volatility will result from Basslink's conversion. The exceptions – scenarios in which there may be material price volatility – are where Hydro Tasmania gains access to Basslink trading rights, especially in the time before Marinus Link becomes available or if it does not proceeds at all.

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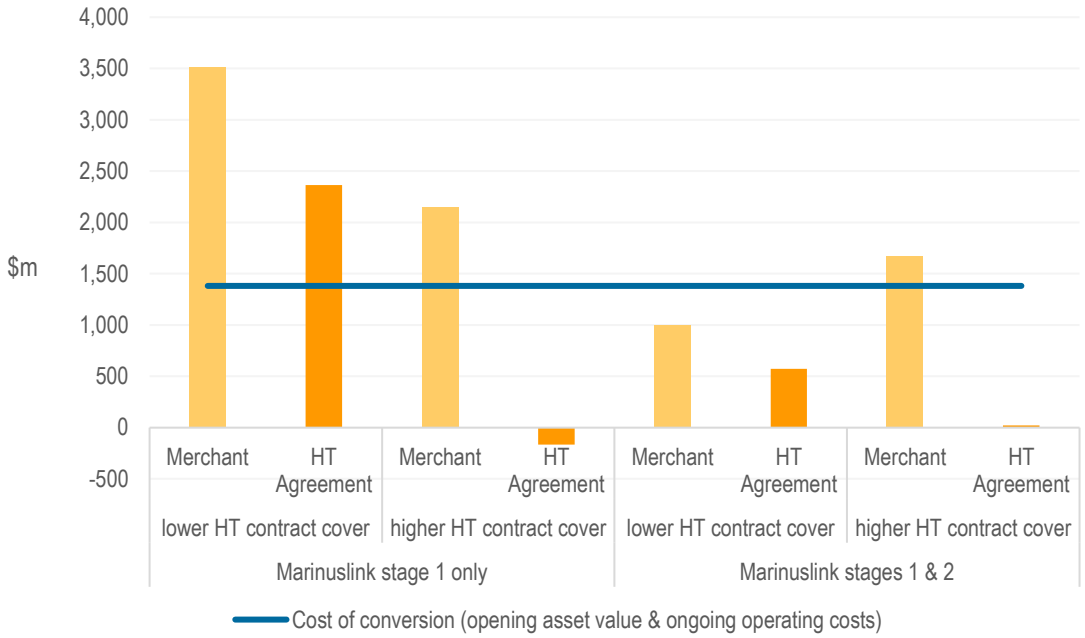
46 ACIL Allen also modelled the aforementioned counterfactuals and contract cover combinations under a scenario where no Marinus Link cables are constructed. This provides further information on the impact of Marinus Link on the price effects of converting Basslink.

47 Cost of conversion as proposed by Basslink.

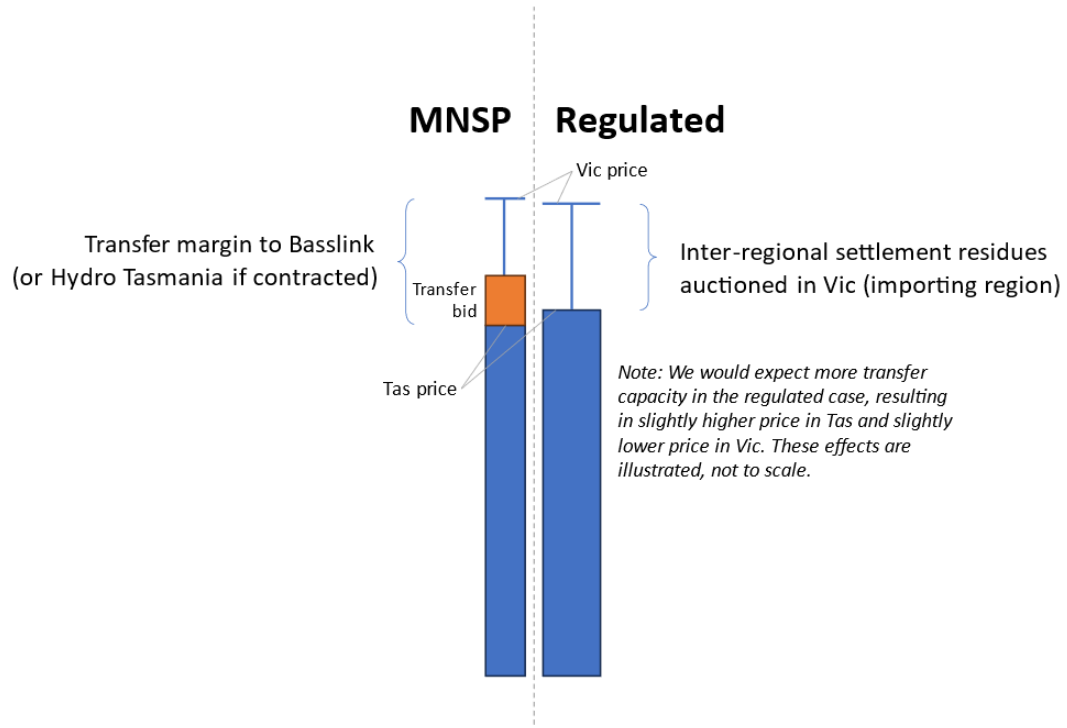
Figure 6 Price effects of conversion under different counterfactuals (present value of benefits from 2025 to 2050)



Notes: Price effects estimated as the modelled load-weighted price multiplied by regional energy demand.
Present value based on a 7 per cent discount rate.
Data source: ACIL Allen.

Price effects from conversion arise because prices are estimated to be higher without conversion. Wholesale electricity prices are higher in the absence of conversion because an unregulated Basslink must earn revenue through transfer margins – that is, buying energy in one region and selling into another region after adding a margin over the cost of the purchased and transferred energy. If Basslink is regulated, it will be available at full continuous capacity in both directions without any margin over the cost of the transferred energy.

Figure 7 Illustration of price effects in the regulated and merchant counterfactuals



Price effects of conversion are higher if the counterfactual to conversion is an unhedged merchant Basslink, rather than a counterfactual of an agreement between Basslink and Hydro Tasmania. This is because in the agreement counterfactual Hydro Tasmania has the right to dynamically price and offer Basslink's capacity in each dispatch period. As a generator with a significant degree of market power within Tasmania, Hydro Tasmania would get the same outcome by either adding a margin onto the transferred energy or increasing the base cost of the transferred energy by the same amount as the margin. However, if the Victorian price is not high enough to afford the interconnector transfer margin, Hydro Tasmania may choose to forego the margin as it will still benefit from selling the additional exported generation (as shown in Table 3 below). This is the main difference between the Merchant (unhedged) and HT Agreement counterfactuals, and why estimated price effects of conversion are higher under the Merchant counterfactual.

Table 3 Hypothetical example – Hydro Tasmania agreement with Basslink counterfactual – pricing and transfer margins for a hypothetical one-hour period

	Scenario 1 Vic price supports Basslink transfer margin	Scenario 2 Vic price does not support Basslink transfer margin	
		Scenario 2a – same transfer margin	Scenario 2b – foregoing the transfer margin
Tasmanian price / Hydro Tasmania's generation bid in Tasmanian region Note 1	$300 / MW	$300 / MW	$300 / MW
Bid / price of Victorian generation to meet the last 500 MW of Victorian demand (in absence of imports via Basslink)	$351 / MW	$301 / MW	$301 / MW
Basslink transfer margin	$50 / MW	$50 / MW	$0 / MW
Basslink bid in Victorian region (price of energy exported to Victoria)	$350 / MW	$350 / MW	$300 / MW
Basslink capacity	500 MW	500 MW	500 MW
Amount of Basslink capacity utilised for exports to Victoria Note 2	500 MW	0 MW	500 MW
Resulting price in Victorian region	$350 / MW	$301 / MW	$300 / MW
Hydro Tasmania revenue from exports to Victoria Note 3	500 x $350 = $175,000	0 x $301 = $0	500 x $300 = $150,000

Notes:

1. *Hydro Tasmania's bid price is assumed constant across scenarios and based on Hydro Tasmania's opportunity cost (value of water that could be used to generate at other times).*
2. *Based on a comparison of Basslink's bid price into Victoria with the bid price of other generation in Victoria that would be displaced.*
3. *It is assumed that Hydro Tasmania, through agreement with Basslink, has access to Basslink's transfer revenues.*

The ability of Basslink to add a transfer margin is eroded where large volumes can flow across a regulated Marinus Link without any margin. Therefore, the scenarios that include both Marinus Link cables generally see fewer periods of time where Basslink (under either merchant or under HT Agreement) is able to constrain flows and increase prices than the single Marinus Link cable scenarios.

We note that the estimated price effects of conversion are the result of relatively small estimated changes in dispatch and prices. The difference in prices, particularly in the mainland regions, between the regulated and counterfactual scenarios is relatively small. ACIL Allen noted that:[48]

> *these benefits are highly sensitive to projected wholesale electricity prices because small differences in projected prices are multiplied across large volumes of electricity consumption in some cases to generate large projected consumer benefits. Some of these small differences in projected prices are likely to be associated with the assumptions made and model simplifications.*

ACIL Allen stated that greater weight should be placed on the modelled assessment of market benefits rather than consumer price effects because the market benefits results showed greater consistency (than consumer price effects results) across each of the scenarios modelled.

4.1.3 Differences in consumer price effects between Tasmania and Victoria

Clause 6A.29.1(b) of the NER provides that "each TNSP must determine the 'aggregate annual revenue requirement' for its own transmission system assets which are used to provide prescribed transmission services within each region."

APA proposed to allocate the cost of Basslink in proportion to the total customer connections in Tasmania and Victoria under their methodology in determining 'use'. This was sourced from the 2022 annual reports of each DNSP report operating within Tasmania and Victoria. This results in an allocation of 9% of costs to Tasmania and 91% to Victoria (based on 295,000 customer connections reported by TasNetworks and a combined 3.1 million reported by Ausnet Services, CitiPower, Jemena, Powercor, and United Energy). APA's proposed cost allocation methodology pertaining to total customer connections is consistent with the interpretation of 'use' and is permissible under the NER.

The AEMC is currently in the process of introducing a Rule change to introduce greater flexibility and clarity in allocating costs for interconnector projects. A draft Rule determination was published on 20 June 2024 providing a mechanism that allows for two or more Ministers to make an agreement on the cost allocation. It has been indicated that the final rule, if made, would take effect from 18 September 2025. The rule would apply for interconnectors currently providing market network services that convert, so would be applicable to Basslink.

4.2 Proceeds from settlement residue auctions

If Basslink is regulated the interregional price differences between Tasmania and Victoria will no longer be captured as revenue by Basslink but will instead result in inter-regional settlement residues. AEMO distributes these residues through settlement residue auctions. The proceeds of these auctions (less AEMO's auction costs) are deducted from transmission

[48] ACIL Allen, p. 34.

charges. Proceeds from settlement residue auctions, while not a market benefit, can be considered in addition to the price effects in assessing the impact of conversion on users of the transmission network.

The size of any auction proceeds will depend on the size of the inter-regional settlement residues, which in turn will depend on the relative demand and prices in Victoria and Tasmania.

We engaged ACIL Allen to undertake modelling of the NEM to estimate pricing outcomes and inter-regional settlement residues.

Preliminary analysis of other settlement residue auctions across the NEM indicates that auction proceeds may be about 75 per cent of the value of the inter-regional settlement residues. However, this analysis is based on only six quarters of settlement residue data, the fourth quarter of 2022 through to the first quarter of 2024. We will continue assessing the estimated level of auction proceeds as a proportion of total inter-regional settlement residues but present the figures below for stakeholder consideration.

Based on the inter-regional settlement residues modelled by ACIL Allen, and an auction proceeds ratio of 75 per cent, proceeds from auctions of Basslink settlement residues are estimated to range from $690 million to $867 million, as shown in Table 4 below.

We note that the market modelling indicated very small changes in spot electricity prices are estimated to result from Basslink's conversion. Therefore, as these estimated auction proceeds are the result of very small changes in prices, they are highly sensitive to variations to future prices.

Table 4 Estimated benefits from settlement residue auctions (present value of auction proceeds over period 2025-2050)

Scenario	Auction proceeds
First Marinus Link cable only, Hydro Tasmania with lower level of contract cover	$815.68 million
First Marinus Link cable only, Hydro Tasmania with higher level of contract cover	$865.99 million
Both Marinus Link cables, Hydro Tasmania with lower level of contract cover	$690.63 million
Both Marinus Link cables, Hydro Tasmania with higher level of contract cover	$729.58 million

Notes: Present value based on a 7 per cent discount rate. Auction proceeds estimated as 75 per cent of the value of inter-regional settlement residues.
Data source: ACIL Allen

4.3 Emissions benefits

Conversion of Basslink may result in different dispatch patterns for generators in the NEM, compared to a world where Basslink is not converted. If that is the case, then these different dispatch patterns may also affect greenhouse gas emissions. If conversion of Basslink results in dispatch patterns that reduce greenhouse gas emissions, this would present an additional benefit of conversion.

Based on the dispatch patterns modelled in section 4.1, we have estimated emissions patterns as shown in Table 5 below. The benefit of changes in greenhouse gas emissions was estimated using the Value of Emissions Reduction ($/tonne of CO_2-e)[49] and present values calculated using a 7% discount rate.

Overall, the results of any emissions reductions benefits from conversion are mixed:

- Conversion results in positive emissions benefits under the merchant Basslink counterfactual, but negative emissions benefits under the agreement with Hydro Tasmania counterfactual.
- Emissions benefits are lower (or more negative) under the counterfactuals where Hydro Tasmania has higher levels of contract cover.
- Emissions benefits are lower (or more negative) if both Marinus Link cables are constructed compared to the scenario where only the first Marinus Link cable is constructed.
- Dispatch patterns and emissions were only modelled for the merchant Basslink and agreement with Hydro Tasmania counterfactuals. Dispatch patterns and emissions would likely be significantly different under the counterfactual of Basslink ceasing operating.

Most importantly, we note that the modelled emissions benefits do not appear to contribute significantly to overall benefits.

[49] AER, *Valuing emissions reduction - Final guidance and explanatory statement,* May 2024

Table 5 Modelled emissions reduction benefits from 2025 to 2050

Modelled scenario		Emissions (MT CO_2-e)	Emissions benefit of conversion (MT CO_2-e)	Present value of emissions ($m)	Present value of emissions benefit of conversion ($m)
Marinus Link stage 1 only	Converted Basslink	712	-	52,631	-
	Merchant Basslink	714	2	52,773	141
	Basslink agreement with Hydro Tasmania	711	-1	52,527	-104
	Merchant Basslink (higher HT contract cover)	713	1	52,735	104
	Basslink agreement with Hydro Tasmania (higher HT contract cover)	710	-2	52,481	-150
Marinus Link stages 1 and 2	Converted Basslink	711	-	52,582	-
	Merchant Basslink	713	2	52,665	83
	Basslink agreement with Hydro Tasmania	709	-2	52,432	-150
	Merchant Basslink (higher HT contract cover)	712	1	52,627	45
	Basslink agreement with Hydro Tasmania (higher HT contract cover)	709	-2	52,388	-194

Notes: Value of emissions reductions ($/Tonne of CO2-e) sourced from our final guidance on valuing emissions reduction. Present value based on a 7 per cent discount rate.

4.4 Benefits to reliability and other non-price aspects of electricity consumption

In addition to price, consumers also value other aspects of their electricity supply, for example, reduced frequency and duration of supply outages.[50] It is possible that conversion of Basslink may affect these non-price aspects of service quality.

The main way that Basslink may affect end user service quality is through reduced availability of the interconnector. We therefore need to consider possible differences in the availability of the interconnector if it was converted compared to if it was not converted.

The availability of the Basslink interconnector may be reduced at times in the following ways:

50 The frequency and/or duration of outages is often referred to as reliability. The ability of the system to quickly respond and remain stable when unexpected events occur (such as transmission lines failing or generators breaking down), thereby preventing these events from resulting in outages, is often referred to as system security. Increased system security is likely to result in improved reliability.

- Strategic withholding aimed at increasing price differentials between Victoria and Tasmania
- Planned outages for maintenance
- Unplanned outages, such as cable failure from mechanical trauma, earth tremors, manufacturing defect, thermal overstressing.

On strategic withholding, we consider that the effect of this behaviour is likely reflected in our market modelling. The model dispatches generation where and when it is needed to avoid unserved energy demand. The cost of any change in generation dispatch patterns resulting from strategic withholding are reflected in the modelling results. Therefore, the cost of any strategic withholding is likely already captured in the price benefits category.

Beyond any increased cost of alternative dispatch to replace Basslink flows at times of strategic withholding, strategic withholding may also change system security risk levels. That is, although there may be no increase in outages (unserved energy) the unavailability of Basslink may reduce the strength of the overall electricity system to handle an unexpected shock at that time, increasing the risk of outages should any such shock eventuate.

Our market modelling results do not indicate a material difference in unserved energy or system security risks between conversion and the two modelled counterfactuals ('merchant Basslink' and 'Basslink agreement with Hydro Tasmania').

On unplanned outages, we note that there may be different degrees to which these are possibly avoidable or mitigated. For example, enhanced maintenance or increased inspections may increase the detection of manufacturing defects or mitigate risks of thermal overstressing. Conversely, for example, damage from earth tremors may be largely unpredictable and unavoidable.

Clearly, unavoidable outages are unlikely to be affected by conversion of Basslink. Conversion may affect other avoidable or mitigable unplanned outages, or planned outages, if conversion affects incentives for Basslink to undertake expenditure to prevent or mitigate the deterioration of the asset condition.

However, we consider that if Basslink is not converted it will have incentives to ensure the asset is available – to maximise revenue by taking advantage of interregional price differentials when they arise. We consider that this incentive is likely to persist in both the 'merchant Basslink' and 'Basslink agreement with HydroTas' counterfactuals.

If Basslink is converted, then we may apply a service target performance incentive scheme to Basslink. This scheme provides rewards and penalties for improved and deteriorating reliability performance, respectively. This recognises that businesses of a regulated service do not bear the risks of service performance and so do not face the consequences of poor service performance compared to a business that operates commercially. This is because a regulated business receives a regulated revenue allowance providing revenue certainty associated with the recovery of its costs. The scheme is intended to balance the incentive for a regulated business to reduce expenditure at the expense of reliability performance.

Overall, we consider that there are unlikely to be material differences in reliability benefits if Basslink is converted compared to Basslink remaining as a MNSP.

An additional consideration is that the modelling results show Basslink's revenue in the absence of conversion may be quite weak from time to time, which could raise a reliability issue. This is particularly the case if both Marinus Link cables are constructed. If Basslink's revenue in the absence of conversion is not likely to exceed stay-in-business costs, then we

may also need to consider the counterfactual of Basslink ceasing operations. In such a situation there may be significantly higher risks to reliability and system security – and therefore potentially significant reliability benefits to conversion.

Questions for stakeholders

6. To what degree do you consider that reliability and/or security of supply risks may be different if Basslink is converted, relative to Basslink operating as a MNSP?

5 Summary of questions for stakeholders

Questions for stakeholders

1. What are your views on the types of potential costs and benefits that conversion may provide?
2. If the range of outcomes across scenarios remains wide or subject to significant uncertainty, would you support a decision to convert or a decision not to convert? What is the rationale for this position?
3. What degree of significance should we place on outcomes from market modelling when considering possible benefits of conversion? What other inputs should feature in our decision making?
4. In modelling possible outcomes, we have modelled a range of different scenarios encompassing the future role of Marinus Link. What are your views on the likelihood of Marinus Link being constructed, the number of Marinus Link cables that will ultimately be constructed, and the timing of any construction? What weights would you place on these different possible outcomes for Marinus Link?
5. In modelling possible outcomes, we have modelled a range of scenarios for the likelihood of Basslink entering into agreements with Hydro Tasmania and the level of contract cover. What are the most likely future states of the world with respect to these issues and what is the reasoning for your position?
6. To what degree do you consider that reliability and/or security of supply risks may be different if Basslink is converted, relative to Basslink operating as a MNSP?
7. Are there any additional, material factors that we should consider in the analysis?

A Submissions in response to AER issues paper

We received eight submissions from stakeholders in response to our Issues Paper. Namely from:

- Australian Energy Market Operator (AEMO)
- Basslink
- Aurora Energy
- Hydro Tasmania
- TasNetworks
- Tasmanian Government
- Tasmanian Minerals, Manufacturing and Energy Council (TMEC)
- Victorian Government.

Submissions focused on whether to convert Basslink to a regulated interconnector.

Some stakeholders expressed concern about the impact of conversion on transmission charges.[51]

The Victorian Government opposed conversion on the basis there are few if any offsetting benefits for consumers. Conversely, the Tasmanian Government supported conversion, provided the value of the opening RAB is reduced if the benefits of conversion are less than the costs.

Aurora Energy, TasNetworks and TMEC encouraged us to model the benefits of conversion so that stakeholders can see if the benefits to consumers offset the higher transmission charges proposed.

This section only discusses conversion. Some submissions also raised concerns about the revenue and cost allocation proposals.[52] These issues will be addressed in the draft and final decisions if we proceed with conversion.

A.1 Submissions on conversion framework

Our Issues Paper presented the conversion test as a 'with or without' regulation question. That is, conversion promotes the NEO if the benefits of regulation to consumers outweigh the costs.

The Tasmanian Government, TasNetworks and APA all agreed with how we framed the conversion test. None of the other stakeholders disagreed.

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51 Aurora Energy, TasNetworks, TMEC, Victorian Government.

52 Aurora Energy, Victorian Government and AEMO.

In this case, the costs to consumers of conversion are the additional transmission charges. As noted by the Tasmanian Government, conversion results in the costs of Basslink being transferred from Hydro Tasmania to electricity consumers:

> *… should the AER determine there is a case for Basslink to shift from being a MNSP to becoming a regulated link, then its cost burden will be redistributed – from Hydro Tasmania to Tasmanian and Victorian electricity customers.*[53]

Similarly, TasNetworks stated:

> *Should Basslink be converted to a regulated asset, it will result in increased network charges for Tasmanian and Victorian customers. Network costs will be both significant and tangible whereas benefits of regulation may not be as apparent – particularly with how Basslink has operated to date, essentially as a regulated interconnector but without network costs being borne by customers.*

TMEC queried whether, and how, the savings to Hydro Tasmania will be passed on to consumers:

> *Under the current and former arrangements between Basslink and Hydro Tasmania, it is believed that Hydro Tasmania are the consumer so pay for the use of Basslink. How that cost of use and at what cost is not known how that gets passed onto Hydro Tasmania customers. …. Is it in the wholesale electricity price from Hydro Tasmania? If it was, how will a reduction in wholesale charges be realised to consumers, to net off the additional charges (that result from conversion)?*

Modelling is required to quantitatively assess whether the benefits of regulation outweigh the costs. Such modelling would need to estimate the benefits of conversion by comparing the benefits of Basslink with or without regulation.

Stakeholders expressed differing views on what the unregulated counterfactual should be. Basslink proposed that the counterfactual is Basslink operating as an MNSP, earning revenues from price differentials between Victoria and Tasmania. Hydro Tasmania agreed:

> *We also note the term of the current services agreement between Basslink Pty Ltd and Hydro Tasmania is until the earlier of the date Basslink is converted to a TNSP and 30 June 2025. If conversion does not occur the agreement may be extended, but any such extension will be subject to agreement being reached by both parties (and therefore also subject to any relevant approvals the parties determine are necessary). Accordingly, we confirm this cannot be considered a certain counterfactual.*

By contrast, the Victorian Government submitted that Basslink operating as an MNSP is not an appropriate counterfactual for this assessment as there is a "compelling financial case for both parties to sign a service agreement". Further, the Victorian Government stated:

> *Any opposition to a future agreement between Basslink Pty Ltd and Hydro Tasmania is likely to be transient. APA's views on a future contract, expressed in its submission, may reflect its preferred way of managing risk, and a negotiating strategy, designed to encourage its preferred regulatory outcome. However, APA may not be the owner of the link for the remainder of its service life.*

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53 Tasmanian Government Submission, page 3.

> *Past behaviour confirms that both parties are likely to maintain an agreement akin to the current one. Since April 2006 Basslink Pty Ltd has been subject to a service agreement with Hydro Tasmania for all but ten months in 2022. This ten-month period was the result of a disruption to Basslink's service and a subsequent legal dispute between the parties. Both events are anomalies and should not be the basis of a business-as usual case. It is noted that the current contract between Hydro Tasmania and Basslink Pty Ltd provides Basslink Pty Ltd the option for 3 by 3-year extensions, subject to mutual agreement between the parties regarding adjustment to the fee arrangements.*
>
> *Barring some fundamental change to the dual monopoly situation described previously, Victoria expects both parties will continue to be incentivised to employ such service agreements as an effective way to reduce market risk and smooth revenue. Victoria expects consumers in both Victoria and Tasmania will continue to benefit from this scenario.*[54]

Stakeholders also expressed differing views on the implications of modelling. The Victorian Government submitted that the costs of regulation are higher than the benefits, and accordingly that we should not approve conversion. Conversely, the Tasmanian Government submitted that we should convert Basslink and reduce the value of the opening RAB if the costs of conversion are higher than the benefits:

> *(the RAB) should be set such that the incremental benefits to customers from regulation (over the status quo) are greater than the costs that they will face arising from conversion.* [55]

A.2 Submissions on modelling costs and benefits

Most stakeholders encouraged us to undertake modelling of the benefits of conversion. Several stakeholders also commented on the RIT-T modelling provided by Basslink in its conversion application.

Ernst and Young's RIT-T modelling

Basslink engaged Erst and Young (EY) to undertake RIT-T modelling to identify the benefits of Basslink compared to not having the interconnector. The results show gross benefits in the range of $3.2 billion to $4.4 billion depending on the scenario modelled, and net benefits of $1.8 billion to $3.0 billion, again depending on the scenario modelled.[56]

AEMO submitted that elements of the modelling may need to be revisited:

> *There are a number of inputs into the modelling undertaken as part of this application which AEMO considers warrant further consideration.*
>
> - *The completion date for VNI West from the 2022 ISP has been used, whilst the most recent in-service date for VNI West is now 2028.*
> - *Load forecasts were taken from the 2021 ESOO, which has since been updated twice.*
> - *The above outdated information was included, however the updated Federal renewable energy target of 82% by 2030 was used.*

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54 Victorian Government Submission, page 3.

55 Tasmanian Government Submission, page 9.

56 APA submission, page 3.

> *Given the majority of gross benefits accumulate within the first 5 years post conversion, we consider that variations in the inputs mentioned above may have material impact.*

TMEC, Aurora Energy and the Victorian Government commented on the Tasmanian Renewable Energy Target (TRET) assumptions. The Tasmanian Government introduced a 200 per cent TRET in 2023. This can only be achieved if substantial renewable investments are made in Tasmania with substantial electricity exported to the mainland.

Aurora Energy submitted that the market benefits modelled by EY primarily depend on the TRET, and more generally, the contribution of Tasmanian generation to decarbonising the NEM. Aurora Energy encourages us to scrutinise those assumptions in light of the Commonwealth Government's Capacity Investment Scheme (CIS) and the lack of a carbon pricing regime.

TMEC noted that no new renewable projects for Tasmania have been approved so no additional renewable generation exports will be possible before 2030.

The Victorian Government queried the TRET assumptions used in RIT-T the modelling, noting:

> *The business case for TRET projects is questionable … and is dependent on some combination of the following:*
>
> - *Increased interconnector capacity between Tasmania and Victoria (i.e. Marinus Link Stages 1 and 2)*
> - *The Battery of the Nation project (specifically the 20hr storage component of the Cethana pumped hydro scheme)*
> - *Increased demand in Tasmania.*
>
> *Currently there is a lack of certainty around all the above. Therefore, including TRET projects in the base case for a benefits test for Basslink serves to exaggerate the benefits estimate.*[57]

Modelling benefits of regulation

EY's RIT-T modelling did not include modelling of the benefits of regulating Basslink as compared to a without regulation counterfactual. As noted in submissions, Basslink is likely to continue to operate even if it is not regulated (refer to section x). Consumers will continue to benefit from Basslink even if it operates as an MNSP.

TasNetworks, TMEC and the Tasmanian Government encouraged us to undertake modelling to compare and quantify the outcomes for consumers with and without regulation. Basslink support this.

TasNetworks sought assurance that benefits of conversion "demonstrably exceed (additional) network costs". Similarly, TMEC sought similar assurance:

> 1. *TMEC is seeking specific confirmation in the event a Regulated Asset becomes the preferred option, the AER validate the removal of the historical cost recovery model currently used by Hydro Tasmania to fund the operation of Basslink,*
>   *a) Will occur, and*

[57] Victorian Government submission, page 4.

b) Identify specifically where consumers will see the reduction.

2. *TMEC is seeking evidence, in the form of financial modelling from the AER what the impact on consumers are under the existing MNSP versus a Regulated Asset.*
3. *TMEC is requesting AER list the specific efficiencies as part of its determination process.*
4. *TMEC is requesting the AER include in its determination a demonstration of the benefits of conversion over an extended time frame – at least out to ten years to see what effects occur by anticipated further interconnection between Victoria and Tasmania.*[58]

The Victorian Government submitted that continuing the current contractual arrangements between Hydro Tasmania and Basslink may to lead to better outcomes for consumers, even if the impact on transmission charges is not factored in. Currently, Hydro Tasmania is fully exposed to Victorian spot market prices (the Regional Reference Price (RRP)), which provides signals to export electricity when Victorian prices are high and to import electricity when they are low.

If we convert Basslink, Hydro Tasmania must purchase Inter Regional Settlement Residues (IRSRs) to gain exposure to Victorian prices. These rights are auctioned by AEMO, and any registered participant can bid for them. The Victorian Government submitted that Hydro Tasmania may not secure IRSR rights in the auction process:

> *If Hydro Tasmania failed to secure full or majority rights to IRSRs at an SRA, it would only earn the Tasmanian RRP. This would not provide Hydro Tasmania with an incentive to maximise exports when the Victorian RRP peaks. This will, in turn, drive up wholesale prices in Victoria.*
>
> *As a consequence of losing exposure to the Victorian RRP, Hydro Tasmania would also lose the incentive to sell cap contracts into the Victorian market. Victorian retailers and consumers would lose a key source of cap contracts, at a time when firming capacity in the NEM is diminishing. Hydro Tasmania and its shareholders would lose revenue from the sale of cap contracts to Victorian retailers.*[59]

Modelling and the RAB

The Tasmanian Government submitted that we should model the benefits of conversion and use the results to determine the value of the opening RAB. More specifically, the Tasmanian Government submitted:

- we should convert Basslink
- if the modelled benefits of conversion are less than the costs, we should write down the RAB to the point where consumers are better off with conversion
- the RAB should be set so there is no windfall gain to APA, that is, the equity owner of Basslink should be no better off financially than it would be operating as an MNSP.

TMEC and Aurora also encouraged us to review the RAB, noting uncertainty about the net benefits to consumers of conversion and the price paid for Basslink.

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58 TMEC submission, page 3.

59 Victorian Government submission, page 2.

B Basslink's proposed asset value estimates

The section sets out how Basslink estimated opening asset values based on depreciated actual cost, depreciated optimised cost, and benefits of the interconnector.

B.1 Depreciated actual cost

Basslink estimated the depreciated actual cost of its assets at $813 million.[60] To estimate the depreciated actual cost Basslink:

1. Identified its earliest asset values from its fixed asset register at the time Basslink first came into operation (2006).
2. Allocated the initial asset values across the earlier construction period (2000 to 2006) based on a construction profile reported to ASIC.
3. Added financing costs during construction based on an assumed cost of capital raised and transaction cost for raising equity. Basslink submitted that as Basslink was a commercial service at the time and would have required capital at commercial rates, it is reasonable to consider the appropriate rate of return to be a commercial rate of return. Basslink submitted that its assumed cost of capital reflected the risks the service provider faces in providing services in a single-asset unregulated business, subject to the market and the market of its customers.[61]
4. Adjusted the asset values from year to year from 2006 to 2025, using the AER RAB Roll-Forward Model, to account for:
    - Actual capital expenditure and asset disposals as recorded in Basslink's accounts up to 2023
    - Capital expenditure and asset disposals forecast by Basslink to occur from 2023 to 2025
    - Straight-line depreciation based on assumed asset lives for each asset category (average asset life of 40 years)
    - Inflation indexation applied to capital costs based on historical CPI to 2023
    - Inflation indexation applied to capital costs based on Basslink's forecast of inflation from 2023 to 2025.

B.2 Benefits of the Basslink interconnector

Basslink estimated the benefits provided by the interconnector to be in the range of $3.102 billion to $4.190 billion.

Basslink commissioned Ernst & Young (EY) to undertake modelling of the NEM to determine the impact of the Basslink interconnector on the market, and therefore the benefits Basslink

60 APA, Marine Disaster Recovery Plan – Information Update, 10 July 2024.

61 APA, Basslink transmission revenue proposal, 15 September 2023, pp. 125, 141.

provides to the market. The approach involved computing the least-cost generation dispatch and capacity development plan for the NEM in a state of the world with Basslink and a state of the world without Basslink (that is, assuming Basslink is retired from 2025). The difference between the total system costs with Basslink less the total system costs without Basslink provides the value of the market benefits for a given scenario. This approach was undertaken over three scenarios: Step Change, Progressive Change and Hydrogen Superpower (all adopted from AEMO's 2022 Integrated System Plan).[62]

The benefits that Basslink is modelled to provide to the market are avoidance of costs associated with:[63]

- Generation (including capital costs, fixed operation and maintenance costs, variable operation and maintenance costs and fuel costs);
- Voluntary and involuntary load curtailment;
- Transmission expansion associated with development of Renewable Energy Zones; and
- Transmission and storage losses.

In all scenarios avoided capital expenditure in generation investment is found to be the largest source of benefits. EY considers this to be largely due to the requirement in the modelling to meet the federal 82% renewable energy target in 2029-30 and the requirement to meet the Tasmanian Renewable Energy Target (TRET). The latter target requires 150 per cent and 200% available renewable generation as a percentage of demand by 2025 and 2030, respectively. Without Basslink, renewable generation (primarily wind) is built in both Tasmania (to meet the TRET) and in Victoria because of the lack of ability for the mainland to access the Tasmanian wind generation. With Basslink, the mainland can access Tasmanian wind and avoid the need to build some renewable generation on the mainland.

The requirement to meet the federal target also contributes to the avoided capital cost benefit as Basslink enables more efficient use of existing Tasmanian renewable generation along with the new wind capacity built to meet the TRET (which is largely spilt in the without Basslink scenario).

Beyond 2030, Basslink provides access to Tasmanian hydro generation which substitutes some of the gas generation which occurs in the without Basslink scenarios.

B.3 Depreciated optimised cost

To consider if an alternative could more efficiently address the same energy needs as the Basslink interconnector at a lower cost, we need to consider both the costs and benefits of credible alternatives. Only alternatives that can provide greater net benefits than the current interconnector would represent a more efficient alternative.

The benefits of alternative options are estimated via the same methods of modelling the NEM as described in section B.2.

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62 EY, *Gross market benefit assessment of Basslink,* 15 September 2023, p.8.

63 EY, *Gross market benefit assessment of Basslink,* 15 September 2023, p.9.

Overall, Basslink estimated the alternative option with both the greatest net benefits and lowest cost to be the modern equivalent construction of Basslink (500MW HVDC with MMC VSC). Basslink estimated the depreciated cost of this best alternative replacement option (the depreciated optimised replacement cost, or 'DORC') at $1.079 billion.

Scoping of alternatives

In considering alternatives to the current interconnector, Basslink considered that non-network options do not provide credible solutions to the identified need serviced by the Basslink interconnector, submitting:[64]

> We consider it highly unlikely that any non-interconnector project would both fulfil the identified and provide similar net market benefits as the existing asset. Addressing the same identified need without building an interconnector would require a significant cost and a package of investments in Victoria and Tasmania including new generation plants, energy storage options, and ancillary services.
>
> …
>
> Our initial calculations found even when only considering the provision of a similar amount of firm renewable capacity for both states, costs were more than double the actual cost of the interconnector.

In considering alternative network options, Basslink submitted that alternative interconnector routes do not provide credible options, stating: [65]

> We consider the route taken by Basslink to be the only applicable route to consider, both because of construction constraints and how regulatory precedent has been set.
>
> …
>
> When developing the plans for Basslink, the route was carefully negotiated and was optimised around several constraints. The project's designers had to take into account the extensive environmental considerations set out by the Victorian, Tasmanian, and Federal governments. These included regulations on passing through residential and agricultural communities, protected areas such as Wilsons Promontory, coastal and sea floor habitats.

To consider alternative network options, Basslink considered the following technology options:

- Capacity – Basslink costed the interconnector's current 500MW capacity as well as two smaller 300MW and 150MW options
- Both HVDC and HVAC
- For HVDC, both MMC VSC and LLC converter stations
- Symmetric monopole converter station configuration assumed for all HVDC options
- 800mm2 aluminium core cables assumed for all options, with polymeric cable for MMC VSC and mass impregnated cable for LLC

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64 APA, Basslink transmission revenue proposal, 15 September 2023, pp. 130,131.

65 APA, Basslink transmission revenue proposal, 15 September 2023, p. 131.

As a result, Basslink estimated the costs and benefits of the following alternative asset configurations that address similar service needs to the current interconnector asset:

- A modern equivalent construction of Basslink (a 500MW HVDC interconnector with and modular multi-level voltage source converters (MMC VSC).
- A 500MW HVDC interconnector with line-commutated converters (LLC).
- A 500MW HVAC interconnector
- A 300MW HVDC interconnector
- A 150MW HVDC interconnector

Estimated costs and benefits of alternatives

Basslink engaged independent engineering experts, Amplitude Consultants, to estimate the appropriate alternative projects and cost them.[66]

The results of Basslink's estimated costs and benefits for the various asset options are presented in Table 6 below.

Basslink estimated that none of the alternative options would generate greater net benefits than the current asset (on a depreciated cost basis). As a result, that is, none of the alternative options would have been preferred over the current asset in a RIT-T assessment. The next best alternative to the current asset was found to be the modern equivalent construction of Basslink (500MW HVDC with MMC VSC), which Basslink estimated would cost $1.079 billion (on a depreciated basis to match the remaining life of the current interconnector).

[66] Basslink, Basslink Transmission Revenue Proposal, 15 September 2023, p. 129-135.

Table 6 Basslink's proposed asset valuation options

Option	Cost	Benefits	Net Benefits
Basslink current asset	$831m	$3,102m – $4,190m	$2,271m – $3,359m
Modern equivalent Basslink (500MW HVDC MMC VSC)	$1,079m		$2,023m – $3,111m
Alternative cable 500MW HVDC LLC	$1,138m		$1,964m – $3,052m
Alternative cable 500MW HVAC	$3,331m	Not modelled Likely less benefits than Basslink due to lack of directional power transfer control and, combined with higher cost, likely significantly less net benefits	
Alternative cable 300MW	$869m	$3,443m	$1,986m
Alternative cable 150MW	$603m	$1,713m	$521m

Note: Figures sourced from Attachment 5 of APA, Basslink transmission revenue proposal, 15 September 2023.
All values in $2025, escalated to July 2025 to align with APA's proposed start of its regulatory control period.
Costs are depreciated costs, reflecting Basslink's remaining asset life from July 2025, estimated by APA to be 250 months, or 52.1 per cent of a 40 year asset life.
Market benefits vary based on different modelling scenarios.
Market benefits for the 300MW cable and 150MW cable options estimated under the ISP step change scenario only.

Glossary

Term	Definition
ACCC	Australian Competition and Consumer Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulatory
capex	capital expenditure
CPI	Consumer Price Index
DORC	depreciated optimised replacement cost
GW	Giga-watts (one billion watts)
HVAC	High Voltage, Alternating Current
HVDC	High Voltage, Direct Current
ISP	Integrated System Plan, published by AEMO
LLC	LLC Resonant Converter
MMC VSC	Modular Multi-level Converter - Voltage Source Converter
MNSP	Market Network Service Provider
MT CO2-e	Million tonnes of carbon dioxide equivalent emissions
MW	Mega-watts (one million watts)
NEM	National Electricity Market
NEO	National Electricity Objective
NER, or “Rules”	National Electricity Rules
ODV	optimised deprival value
opex	operating expenditure
RAB	regulated asset base
RIT	Regulatory Investment Test
RIT-T	Regulatory Investment Test for Transmission
TNSP	Transmission Network Service Provider