Queensland Competition Authority

Draft determination

DBIM's application for a price ruling—the 8X expansion

August 2021

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SUBMISSIONS

Closing date for submissions: 29 September 2021

This document represents the Queensland Competition Authority's (QCA's) preliminary views and is intended to give stakeholders an insight into these views to encourage further contributions. The QCA's application of the statutory assessment criteria and its thinking may change towards its final decision, which will be informed by submissions, including those made in response to this document. This document is not a draft version of a final decision, and it has no force of itself. There should be no expectation that it presents views and recommendations which will prevail to the end of the decision-making process.

Public involvement is an important element of the decision-making processes of the QCA. Therefore submissions are invited from interested parties concerning its assessment of DBIM's application to make a ruling on the appropriate pricing method to apply to the proposed 8X expansion. The QCA will take account of all submissions received within the stated timeframes.

Submissions, comments or inquiries regarding this paper should be directed to:

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Confidentiality

In the interests of transparency and to promote informed discussion and consultation, the QCA intends to make all submissions publicly available. However, if a person making a submission believes that information in the submission is confidential, that person should claim confidentiality in respect of the document (or the relevant part of the document) at the time the submission is given to the QCA and state the basis for the confidentiality claim.

The assessment of confidentiality claims will be made by the QCA in accordance with the *Queensland Competition Authority Act 1997*, including an assessment of whether disclosure of the information would damage the person's commercial activities and considerations of the public interest.

Claims for confidentiality should be clearly noted on the front page of the submission. The relevant sections of the submission should also be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two versions of the submission (i.e. a complete version and another excising confidential information) could be provided.

A confidentiality claim template is available on request. We encourage stakeholders to use this template when making confidentiality claims. The confidentiality claim template provides guidance on the type of information that would assist our assessment of claims for confidentiality.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at our Brisbane office, or on our website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact us on (07) 3222 0555.

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DRAFT DETERMINATION

On 16 March 2021, we received an application from Dalrymple Bay Infrastructure Management Pty Limited (DBIM)[1] seeking a ruling on the pricing method applicable to the 8X expansion.

Based on the information and submissions currently before us, and having regard to our obligations under s. 150F of the Queensland Competition Authority Act 1997 (QCA Act), our preliminary view is that socialisation is the appropriate pricing method for the proposed 8X expansion. While we consider that socialisation of the 8X expansion will increase the terminal infrastructure charge (TIC) for users of the existing terminal[2], we are of the view that circumstances exist that justify socialisation.

This draft determination is intended to provide stakeholders with an insight into our preliminary views and encourage further contributions by way of submissions.

Status of our investigation

DBIM submitted its application seeking a ruling in accordance with s. 150D of the QCA Act that the applicable pricing method for the 8X expansion is socialisation.[3]

On 29 March 2021, we commenced our investigation into DBIM's application under part 5, division 7A of the QCA Act.[4]

In accordance with the requirements of s. 150F of the QCA Act, in making a ruling, we must:

- be satisfied that we would not be prevented from making an access determination, or approving a draft access undertaking, consistent with the ruling[5]
- comply with natural justice[6]
- have regard to the criteria in ss. 120(1) and 138(2) of the QCA Act.[7]

Since commencing our investigation, DBIM's 2017 access undertaking (2017 AU) has been replaced by the 2021 access undertaking (2021 AU), which we approved on 1 July 2021.[8] Importantly, we have not identified any inconsistencies with the 2021 AU that may arise from us making a ruling on this matter which would impact an access determination made under the 2021 AU.

Next steps

We invite written submissions from interested parties by 29 September 2021. We will take all submissions made by this date into consideration before we make our determination on DBIM's application.

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[1] Dalrymple Bay Infrastructure Management Pty Limited (DBIM) was previously named DBCT Management Pty Limited (DBCTM). Effective 8 December 2020, DBCTM changed its name to DBIM. The name DBIM is used throughout this draft determination.

[2] Users of the existing terminal are referred to as existing users in this draft determination.

[3] Section 5.12(a)(2)(A) of the 2017 AU provides that DBIM must make an application to the QCA under s. 150D of the QCA Act after the completion of a FEL 2 feasibility study.

[4] QCA Act, s. 150H.

[5] QCA Act, ss. 150F(2)(a), (b).

[6] QCA Act, s. 150F(3)(a).

[7] QCA Act, s. 150F(3)(b).

[8] While DBIM's application was made pursuant to provisions contained in the 2017 AU, we consider this investigation to be a separate regulatory process under part 5, division 7A of the QCA Act.

Stakeholders are encouraged to provide focused, detailed responses to our preliminary views. Where possible, information and evidence should be provided in support of arguments advanced in submissions.

In reaching a final determination on whether to make a ruling that the applicable pricing method for the 8X expansion is socialisation, our views may change having regard to issues raised by stakeholders, including issues raised in response to this draft determination, and any other matters we may or are required to consider.

1 INTRODUCTION

1.1 Background

The Dalrymple Bay Coal Terminal (DBCT or the terminal) is a common-user coal export terminal servicing mines in the Goonyella system of the Bowen Basin coal fields. The terminal is owned by the Queensland Government through a wholly government-controlled entity, DBCT Holdings Pty Ltd (DBCT Holdings). DBCT Holdings leases the terminal to Dalrymple Bay Terminal Trust (DBT Trust) who in turn subleases the terminal to DBIM.

Since its commissioning in 1983, the terminal has provided coal handling services to the coal industry in central Queensland, enabling the transfer of coal delivered from trains operating on the Central Queensland Coal Network to ships servicing a range of international markets. The current system capacity is 84.2 million tonnes per annum (mtpa).

In recent years, DBIM considered that demand for access to the terminal indicated that further expansion of the terminal may be warranted.

The DBCT Master Plan 2019 identified a potential expansion pathway for DBCT based on preliminary studies. The expansion pathway is sequenced to prioritise the works that are expected to yield the greatest capacity gain for the lowest cost. The 8X expansion is the next incremental expansion proposed for the terminal. The 8X expansion is proposed to be constructed in four phases, with detail on the scope of work included in Appendix A.

In considering whether to proceed with the 8X expansion, DBIM, as the provider of a declared service,[9] is subject to various obligations under the QCA Act and its access undertaking.

The 2017 AU expansion framework requires DBIM to follow a stage-gate process to clarify the scope, standard, cost estimate and deliverables for the proposed expansion in front-end loading (FEL) feasibility studies (FEL 1, FEL 2 and FEL 3).[10]

DBIM initially assessed the capacity and costs of each phase of the 8X expansion in accordance with the requirements of a FEL 1 feasibility study.[11]

During 2019, DBIM then proceeded to:

- execute conditional access agreements for the capacity to be made available by the 8X expansion phases
- concurrently execute relevant standard underwriting agreements (SUAs)

[9] The handling of coal at Dalrymple Bay Coal Terminal was previously declared under s. 250 of the QCA Act and was re-declared under s. 84 of the QCA Act by order of the Queensland Treasurer on 1 June 2020 (see Queensland Government, *Gazette: Extraordinary*, no. 31, vol. 384, 1 June 2020, p. 267). At the time of us making this draft determination, the Treasurer's decision to declare the service is subject to judicial review by the Supreme Court of Queensland.

[10] See schedule G of the 2017 AU for the requirements associated with each front-end loading feasibility study. Each feasbility study builds on the previous study's requirements. The requirements specified in the 2017 AU are consistent with the requirements in the 2021 AU, which is now in effect.

[11] The FEL 1 feasibility study must, among other things, identify possible terminal expansion components that will create additional terminal capacity and consider the associated costs, risks and timeframes for development, as well as the additional capacity that will be created.

- commence the FEL 2 feasibility study[12] (FEL 2 study).[13]

On 26 February 2021, DBIM completed the FEL 2 study for the 8X expansion.[14] The FEL 2 study confirmed the feasibility of the 8X expansion in the current circumstances, and supported proceeding to a FEL 3 feasibility study, conditional on the pricing method for the 8X expansion being socialisation.[15]

Following the completion of the FEL 2 study, DBIM submitted its application for a ruling on the pricing method applicable to the 8X expansion, as required by the 2017 AU.

1.2 DBIM's price ruling application

DBIM's application seeks a ruling that the applicable pricing method for the 8X expansion is socialisation. Socialisation means that the 8X expansion will be treated as forming part of the existing terminal for the purpose of determining access charges. If the 8X expansion is not socialised, then it will be differentiated, meaning that it will be treated as a separate terminal component to the existing terminal for the purposes of determining access charges.

The access charges for coal handling services at DBCT are comprised of the terminal infrastructure charge (TIC) and the operation and maintenance charge (handling charge). In 2020–21, the TIC accounted for less than half of existing users' total access charges for coal handling services at DBCT. In addition to DBCT access charges, users of the terminal will also incur other supply chain costs in transporting coal from the mine to the coal export market—including below-rail costs, above rail costs and other port and shipping costs.

DBIM considered that the 8X expansion is a cost sensitive expansion[16] (where socialisation of the 8X expansion increases the TIC[17] for users of the existing terminal, see Table 1). The access undertaking provides that an expansion of this kind would typically be treated as a differentiated expansion component. However, it may be treated as a socialised expansion where circumstances exist that justify socialisation.

Table 1 DBIM estimate of the existing users' TIC resulting from a socialised 8X expansion ($/t)

	26-27	***27-28***	***28-29***	***29-30***	***30-31***	***31-32***	***32-33***	***33-34***	***34-35***	***35-36***
Without 8X	2.67	2.92	2.98	3.07	3.16	3.25	3.34	3.31	3.33	3.35
With socialised 8X	2.93	3.20	3.50	3.54	3.67	3.68	3.71	3.71	3.78	3.80

Source: DBIM, sub. 1, p. 37.

[12] The FEL 2 feasibility study builds on the FEL 1 study. See schedule G of the 2017 AU for the requirements of the study.
[13] DBIM, sub. 1, p. 10.
[14] DBIM, sub. 1, p. 4.
[15] DBIM, sub. 1, appendix 1, p. 3.
[16] 'Cost sensitive expansion' is defined in section 11.13(a) of the 2017 AU.
[17] DBIM's application refers to both the reference tariff and the TIC. While the effective access undertaking at the time DBIM submitted its application (the 2017 AU) referred to changes in the reference tariff, the approach applied to calculate the reference tariff under the 2017 AU is consistent with the approach applied by DBIM to calculate the TIC.

DBIM considered that circumstances exist that justify socialisation of the whole of the 8X expansion; consequently, DBIM submitted that the 8X expansion should be socialised—and treated as forming part of the existing terminal.[18]

The circumstances identified by DBIM in support of this outcome include that:

- the 8X expansion provides benefits to existing users, including reduced handling charges, reduced non-expansion capital expenditure (NECAP) and reduced throughput losses
- the 8X expansion is fully integrated with existing facilities, with no separable components
- the TIC increases associated with the 8X expansion being socialised are not material
- there is minimal increase in risks to existing users associated with the 8X expansion being socialised—the terminal operates in the same way, throughput losses are minimised and the impact of default is reduced with an increased number of users
- combined capital and operating charges are similar, and overall total access charges as a result of the 8X expansion being socialised are reduced.[19]

1.3 Our investigation

Our task is to decide whether to make the ruling sought in DBIM's application—that the applicable pricing method to be applied for the 8X expansion is socialisation.[20]

We have assessed DBIM's application in accordance with our statutory requirements set out under s. 150F of the QCA Act, which include having regard to the criteria stated in ss. 120(1) and 138(2) of the QCA Act.

Framework applied to establish the pricing method for the 8X expansion

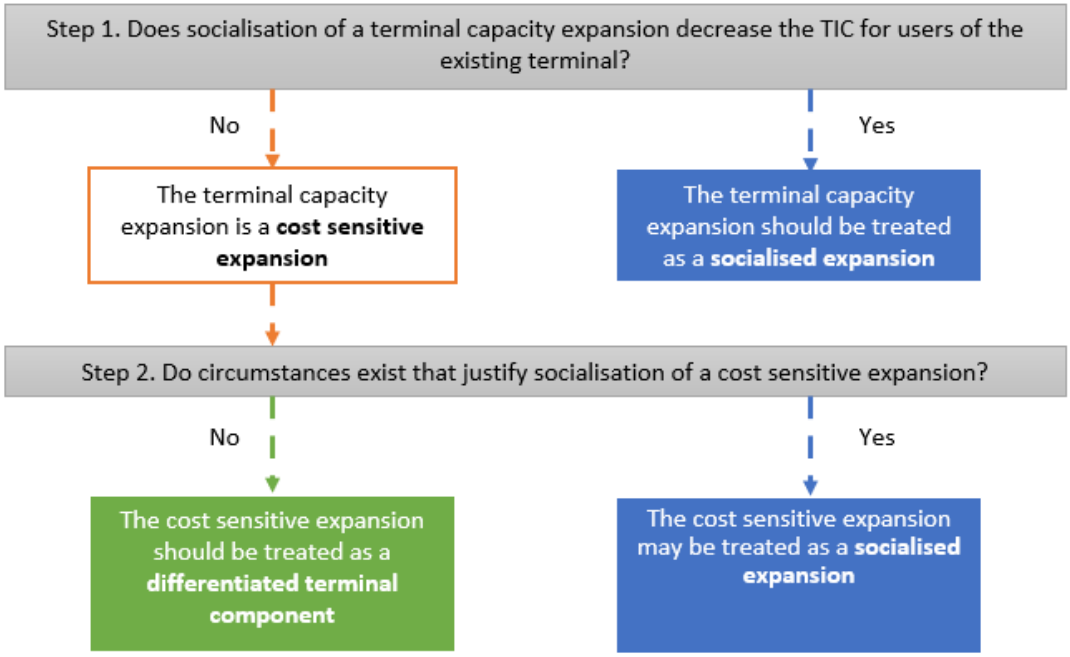
We consider that the expansion pricing principles[21] provide a reasonable framework for us to consider whether the proposed 8X expansion should be socialised, having regard to ss. 120(1) and 138(2) of the QCA Act.

The expansion pricing principles state that:

- where socialisation of the 8X expansion is expected to decrease the TIC for users of the existing terminal, the applicable pricing method for the 8X expansion is socialisation
- where socialisation of the 8X expansion is expected to increase the TIC for users of the existing terminal (a cost sensitive expansion), the applicable pricing method for the 8X expansion is differentiated, except where circumstances exist that justify socialisation.

[18] DBIM, sub. 1, p. 4.
[19] DBIM, sub. 1, pp. 23–24.
[20] DBIM's access undertaking also provides for us to make a ruling on how we intend to treat any different terms for an access agreement in respect of the 8X expansion. We have not considered this matter as part of our investigation. DBIM stated that different terms do not apply to any access agreements for the 8X expansion capacity. The access agreements will be in the form of the approved standard access agreement (SAA) at the time of the shipping commencement date—in accordance with clause 3.2 of the conditional access agreements entered into between DBIM and the expansion parties. See DBIM, sub. 1, p. 13.
[21] See section 11.13(a) of the 2017 AU. For completeness, we consider the expansion pricing principles specified in the 2017 AU are consistent with section 11.8(a) of the 2021 AU, which is now in effect.

Figure 1 Pricing pathways associated with the application of the expansion pricing principles



In applying the expansion pricing principles, we consider it relevant to first assess whether socialisation of the expansion would increase the TIC for users of the existing terminal, to establish whether the proposed 8X expansion is a cost sensitive expansion.

If the proposed 8X expansion is deemed a cost sensitive expansion, we then consider whether circumstances exist that justify socialisation. In determining whether such circumstances exist, we consider it reasonable and appropriate to consider:

- the materiality of the increase in the existing users' TIC as a result of socialising the cost sensitive expansion
- the extent to which assets or infrastructure, the subject of the cost sensitive expansion, will operate wholly or partly, in an integrated way with the existing terminal or as a standalone development
- the extent to which the cost sensitive expansion is likely to benefit users of the existing terminal
- any differences in the risks of providing access to users of the existing terminal in respect of additional terminal capacity created by the cost sensitive expansion
- any other factor that we consider relevant.

In considering whether circumstances exist that justify socialisation, we acknowledge there may be circumstances in which parts and not the whole of the 8X expansion may be socialised.

Our application of the expansion pricing principles aligns with the framework for establishing the pricing method for future expansions outlined in DBIM's access undertaking.[22]

[22] While the expansion pricing principles contained in the 2021 AU refer to changes in unit costs, rather than the TIC, this reflects that the 2021 AU does not outline an approach for establishing the TIC, with the TIC to be negotiated between the relevant parties. We consider that the approach applied to calculate the TIC in this draft determination will allow us to determine the impact of the socialised 8X expansion on unit costs for existing users.

Consideration of assumptions

Section 150F(4) of the QCA Act states that in making a ruling, we may make assumptions about future events or matters.

DBIM's application draws from the estimated capital expenditure forecast and increase in terminal capacity assessed as part of the FEL 2 study for the 8X expansion.

The proposed 8X expansion is estimated to increase the system capacity of DBCT from 84.2 mtpa to 99.1 mtpa, through four incremental expansion phases to be commissioned between 2024 and 2028, at a cost of $1,276 million in $2020 terms. The gain in system capacity and the cost estimate for each of the four expansion phases are outlined in Table 2.

The cost and capacity estimates for the 8X expansion phases are based on the circumstances and assumptions adopted for the FEL 2 study.

Table 2 DBIM's estimate of system capacity gain and capital cost ($2020 terms) associated with the 8X expansion

8X expansion phase	*Scope*	*System capacity gain (mtpa)*	*Cost ($m)*
Phase 1	New SL4 on Berth 3 plus outloading debottlenecking	3.1	246
Phase 2	Stockyard Augmentation plus upgrade ST2, S5-S6-S6A, R1-R2	3.9	229
Phase 3	New RRP4 & IL4 plus upgrades to IL2 & OL2 systems	5.5	461
Phase 4	Complete Row 8 with new wall, RL2A, ST5 & S9	2.4	340
Total		**14.9**	**1,276**

Note: An assessment of the engineering and design works and cost estimates for the 8X expansion were completed by the Aurecon Group. The capacity assessments were completed by the Integrated Logistics Company (ILC), the coordinator of the Dalrymple Bay Coal Chain (DBCC). [23]

Source: DBIM, sub. 1, p. 12.

Our ruling is applicable to the proposed 8X expansion, as outlined in DBIM's application, including the circumstances and assumptions underpinning the proposed expansion.

The assumptions underpinning our ruling are outlined in Appendix A.

Subject to the circumstances and assumptions underpinning the ruling remaining valid, our ruling on the pricing method for the 8X expansion will bind our decision-making, including where we are required to make an access determination on a related matter. In accordance with s. 150K of the QCA Act, if the events or circumstances to which our assumptions relate do not happen as assumed, our ruling no longer applies for the purpose of any access determination decision in the future.

We have calculated the TIC with reference to the unit costs (per tonne) DBIM incurs in providing access to the relevant coal handling services.

[23] DBIM, sub. 1, appendix 1, p. 3.

If there is a change in circumstances associated with the project that means that the assumptions underpinning the ruling are no longer applicable, DBIM, as the prescribed person[24], may lodge an application for a further ruling,[25] including as part of a future terminal expansion application.[26]

Before the 8X expansion commences, DBIM is to complete the FEL 3 feasibility study, followed by a terminal expansion application for our consideration—including consideration of the prudency and reasonableness of the costs of a capacity expansion.

Consideration of stakeholder submissions

In assessing DBIM's application, we have considered submissions received from stakeholders.

As part of our investigation, we received four stakeholder submissions; from Whitehaven Coal, BMC, AFII and Synergies (on behalf of six existing users[27]— referred to as the non-expanding user group throughout our draft determination).

A list of the submissions is provided at Appendix B.

Stakeholders held differing views on whether it is appropriate to socialise the 8X expansion. While Whitehaven Coal and BMC supported socialisation of the expansion, the non-expanding user group considered that socialisation would:

- materially and disproportionally increase both the cost and risk to existing DBCT users
- result in expanding users not bearing the true costs imposed by the 8X expansion, thus promoting the expansion to occur in circumstances where it may not be economically efficient and potentially leading to distortions in other related markets.[28]

AFII did not express a view as to whether the expansion should be socialised but considered that we should investigate governance issues with DBIM. However, we consider that these issues likely extend beyond our task of deciding whether to make a ruling that the 8X expansion be socialised. We have and will continue to inform ourselves as we see appropriate in order to make our ruling.

Costs

Section 150L of the QCA Act states that in making a ruling, we are able to make any order we consider appropriate about the payment, by the prescribed person who applied for the ruling, of costs (or part of the costs) incurred in making the ruling.

Our preliminary view is that DBIM, as the prescribed person[29], should be ordered to pay our incurred costs in the amount assessed at the time of the final determination. In negotiating terms of access, the relevant parties may take into consideration costs associated with the provision of regulatory services related to DBCT.

[24] See s. 150C of the QCA Act for the definition of a prescribed person.
[25] QCA Act, s. 150D(1).
[26] See section 12.5(c) of the 2021 AU.
[27] Anglo American Metallurgical Coal Pty Ltd; BHP Mitsubishi Alliance (BMA); Glencore Coal Assets Australia Pty Ltd representing Clermont Access Pty Ltd, Oaky Creek Holdings Pty Ltd and Hail Creek Coal Holdings Pty Ltd; Peabody Energy Australia Pty Ltd; Pembroke Olive Downs Pty Ltd; and Stanmore Resources Ltd.
[28] Synergies, sub. 5, p. 2.
[29] QCA Act, s. 150C.

1.4 Our analysis

The remainder of this draft determination sets out our analysis of the expansion pricing principles outlined in section 1.3.

In summary, while our analysis shows that socialisation of the 8X expansion will increase the TIC for users of the existing terminal (see Chapter 2), in considering whether circumstances exist to justify socialisation, we have formed the view that:

- this increase is unlikely to lead to changes in the use of coal handling services at DBCT by existing users, noting the nature of the 8X expansion and the characteristics of DBCT's existing users. We also consider that socialisation of the 8X expansion will maintain cost-reflective price signals to access seekers and access holders (see Chapter 3)
- the 8X expansion will operate in an integrated way with the existing terminal, in light of the characteristics of the 8X expansion and the existing terminal (see Chapter 4)
- the 8X expansion will provide benefits to existing users, through cost savings and reduced risk of throughput losses associated with the NECAP program, greater opportunity for trading of short-term capacity, improved reliability and flexibility of terminal operations and reduced handling charges (see Chapter 5)
- socialisation of the 8X expansion will not materially affect the allocation of risk to existing users, with the existing regulatory arrangements and the characteristics of related seaborne coal markets working to mitigate existing users' exposure to risk resulting from the socialised expansion (see Chapter 6).

Preliminary view

Our preliminary view, having regard to the matters set out in s. 150F of the QCA Act, is that it is appropriate to socialise the proposed 8X expansion.

Our analysis of the expansion pricing principles, among other things, support socialisation of the 8X expansion, having regard to ss. 120(1) and 138(2) of the QCA Act. We are satisfied that we would not be prevented from making an arbitration determination or approving an access undertaking consistent with a ruling that the proposed 8X expansion should be socialised.

We consider that socialisation of the 8X expansion will promote the economically efficient operation of, use of and investment in the terminal.[30] Socialising the cost and risk of the 8X expansion will promote the efficient use of the expanded terminal component. Additionally, we consider that socialisation will not adversely impact the efficient use of coal handling services by existing users. We consider that socialisation of the 8X expansion will maintain cost-reflective price signals to access seekers and access holders, thereby promoting economically efficient investment in, and use of, the terminal.[31]

Given our preliminary view that the 8X expansion should be socialised, we have not sought to determine the TIC that would apply if the 8X expansion was treated as a differentiated expansion[32], nor the outcomes from partial socialisation. It is not clear that differentiated access

[30] In accordance with ss. 120(1)(a) and 138(2)(a) of the QCA Act.
[31] In this regard, we note that the 8X expansion will operate in an integrated way with the existing terminal.
[32] DBIM has not submitted an application for a ruling on a differentiated TIC for the 8X expansion or proposed any differential access terms that may apply to a differentiated 8X expansion.

charges would be as high as suggested in DBIM's application or would have efficiency implications for the use of the terminal.

We consider that socialisation of the 8X expansion appropriately balances the legitimate business interests of DBIM with the interests of access seekers, access holders (expansion parties and existing users) and the public interest.[33] Socialisation of the 8X expansion:

- allows DBIM to recover expected revenue that covers the efficient costs of providing access to the expanded terminal. Socialisation also provides for DBIM to share the volume risk, associated with terminal utilisation, amongst both new and existing users
- reduces the costs and risks of expansion parties and access seekers obtaining access to coal handling services through the expanded terminal component
- may increase the TIC for users of the existing terminal; however, as noted above, we consider that the expansion will also provide benefits to existing users. Additionally, socialisation of the 8X expansion will not materially affect the allocation of risk to existing users.

Our preliminary view is that socialisation is the appropriate pricing method for the proposed 8X expansion. While we consider that socialisation of the 8X expansion will increase the TIC for users of the existing terminal, we are of the view that circumstances exist that justify socialisation.

We invite written submissions from interested parties by 29 September 2021. All submissions made by this date will be taken into consideration before we make our determination on DBIM's application.

[33] In accordance with ss. 120(1)(b), (c), (d) and 138(2)(b), (d), (e) and (h) of the QCA Act.

2 COST SENSITIVE EXPANSION

In assessing whether the 8X expansion should be socialised, we have considered whether the expansion is cost sensitive—that is, whether socialisation increases the TIC for users of the existing terminal.

DBIM considered that the 8X expansion will be a cost sensitive expansion, with socialisation increasing the TIC for users of the existing terminal by around $0.42/t (13 per cent) on average.[34]

Other stakeholders also considered that socialisation of the 8X expansion would increase the existing users' TIC, meaning the 8X expansion should be considered a cost sensitive expansion.[35] However, the non-expanding user group stated that DBIM had not provided sufficient information to assess the expected outcomes of alternate pricing models.[36]

> We consider the 8X expansion to be a cost sensitive expansion. We are of the view that the 8X expansion will increase the existing users' TIC.
>
> This finding has informed our view of whether socialisation is appropriate, having regard to ss. 120(1) and 138(2) of the QCA Act.

2.1 Assessment of the 8X expansion being a cost sensitive expansion

We have assessed that socialisation of the 8X expansion, as proposed in DBIM's application, will increase the existing users' TIC. This constitutes a cost sensitive expansion.

In forming this view, we have estimated the extent to which a socialised 8X expansion will increase the existing users' TIC, noting that in applying the expansion pricing principles, we are to give consideration to the materiality of the increase to the TIC (see section 3).

Table 3 provides our estimates of the existing users' TIC, with and without the socialised 8X expansion. While we have considered the impact on the existing users' TIC over the remaining economic life of the terminal, our TIC estimates are presented up to 2035–36 for presentational purposes.[37]

Table 3 Our estimates of the existing users' TIC resulting from a socialised 8X expansion ($/t)

TIC	*26-27*	*27-28*	*28-29*	*29-30*	*30-31*	*31-32*	*32-33*	*33-34*	*34-35*	*35-36*
Without 8X	2.55	2.76	2.87	2.91	3.04	3.13	3.19	3.19	3.22	3.24
With socialised 8X	2.86	3.13	3.43	3.47	3.59	3.59	3.63	3.63	3.70	3.72

Note: Estimated TICs are only presented up to 2035–36 for the purpose of presentation.

Source: QCA analysis.

Our view that the 8X expansion is a cost sensitive expansion is consistent with the position of DBIM and other stakeholders. While there are some differences between our estimates of the

[34] This average is over a period of ten years, from 2026–27 to 2035–36. DBIM, sub. 1, p. 36.
[35] Whitehaven Coal, sub. 2, p. 4; BMC, sub. 3, p. 2; Synergies, sub. 5, p. 17.
[36] Synergies, sub. 5, pp. 19–20.
[37] Our analysis indicates that the biggest increase in the TIC occurs in 2028–29 ($0.56/t).

existing users' TIC and DBIM's estimates, these are immaterial, reflecting minor differences in the modelling approach applied.[38]

While BMC stated that a report commissioned by users of the terminal was largely able to replicate DBIM's estimates, it considered there may be some differences among stakeholders about how to model the price impacts.[39] The non-expanding user group considered that DBIM had not provided sufficient information to allow stakeholders to understand whether the costing parameters used are appropriate.[40]

We have sought to provide stakeholders with transparency as to the approach and assumptions adopted for our assessment of the TIC, having regard to the approach applied by DBIM. This includes both the modelling approach applied by DBIM and the assumptions applied to forecast costing parameters.

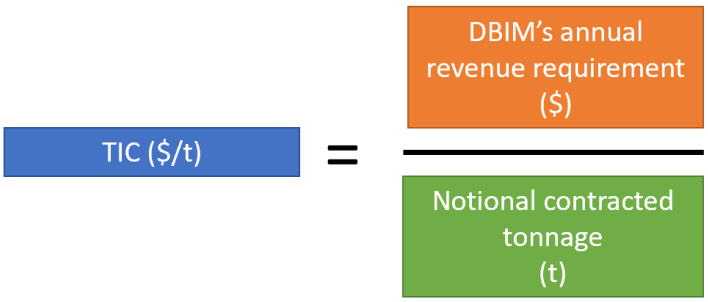
2.2 Estimating the existing users' TIC, with and without the socialised 8X expansion

We consider the approach applied by DBIM to estimate the existing users' TIC, with and without the socialised 8X expansion, is appropriate for establishing whether the 8X expansion is a cost sensitive expansion.

The approach applied is consistent with schedule C, Part A of the 2017 AU. An approach for establishing the TIC has not been outlined in the 2021 AU, with the TIC to be agreed between the relevant parties. However, we consider that DBIM's approach will allow us to establish whether socialisation of the 8X expansion will increase the unit costs for existing users (see section 11.8(a)(2) of the 2021 AU).

DBIM estimated the existing users' TIC with reference to the notional contracted tonnage and annual revenue requirement associated with the respective scenarios.

Figure 2 DBIM's approach for estimating the TIC



The notional contracted tonnage is the aggregate annual contract tonnage for that financial year.

The annual revenue requirement represents the amount of revenue that we determine DBIM is entitled to earn in that financial year to fully recover the costs it incurs in providing access to the relevant coal handling services, which includes an adequate rate of return on the value of assets employed.

[38] DBIM confirmed there were minor errors and inconsistencies in the modelling submitted as part of its application, which we have corrected for in our modelling of the existing users' TIC, with and without the socialised 8X expansion.
[39] BMC, sub. 3, pp. 1–2.
[40] Synergies, sub. 5, pp. 19–20.

2.2.1 Notional contract tonnage

DBIM's estimates of notional contracted tonnage for the life of the asset align with the independent expert's assessment of system capacity for the existing terminal (84.2 mtpa) and the expanded terminal (see Table 4).

Table 4 Estimated system capacity associated with the proposed 8X expansion

8X expansion phase	*Incremental capacity expansion (mtpa)*	*Total system capacity (mtpa)*	*Commissioning date*
Existing	–	84.2	–
Phase 1	3.1	87.3	2027
Phase 2	3.9	91.2	2027
Phase 3	5.5	96.7	2028
Phase 4	2.4	99.1	2029

Source: DBIM, sub. 1, p. 13.

We consider DBIM's estimates of notional contract tonnage to be reasonable, having regard to the long-term demand for access to DBCT.

The non-expanding user group considered that DBIM's socialised pricing application must be based on credible forecasts, including a long-term demand profile for the terminal. This included providing an estimate of terminal demand beyond the initial 10-year contract term for expansion parties. The non-expanding user group submitted that DBIM has simply assumed that all existing contracts will be renewed beyond 2028.[41]

We have examined a range of information, including recent independent advice from RMI, to form a view on the long-term demand for access to DBCT (see Section 6.1). We consider that the market outlook supports the ongoing utilisation of the expanded terminal capacity for the life of the asset (until 2054). Additionally, DBCT is currently fully contracted, as is the capacity associated with the proposed 8X expansion (through conditional access agreements). The current access queue also shows that there is likely demand for further terminal capacity, should it become available. We therefore consider it reasonable to assume that the terminal's system capacity will remain fully contracted for the life of the asset—that is, notional contracted tonnage aligns with system capacity.

We recognise that the independent expert's assessment of system capacity for the expanded terminal is based on the 8X expansion, as proposed in DBIM's application. On this basis, we consider it appropriate to adopt DBIM's estimates of system capacity associated with the 8X expansion as an assumption underpinning our assessment of the appropriate pricing method to apply to the 8X expansion.

2.2.2 Annual revenue requirement

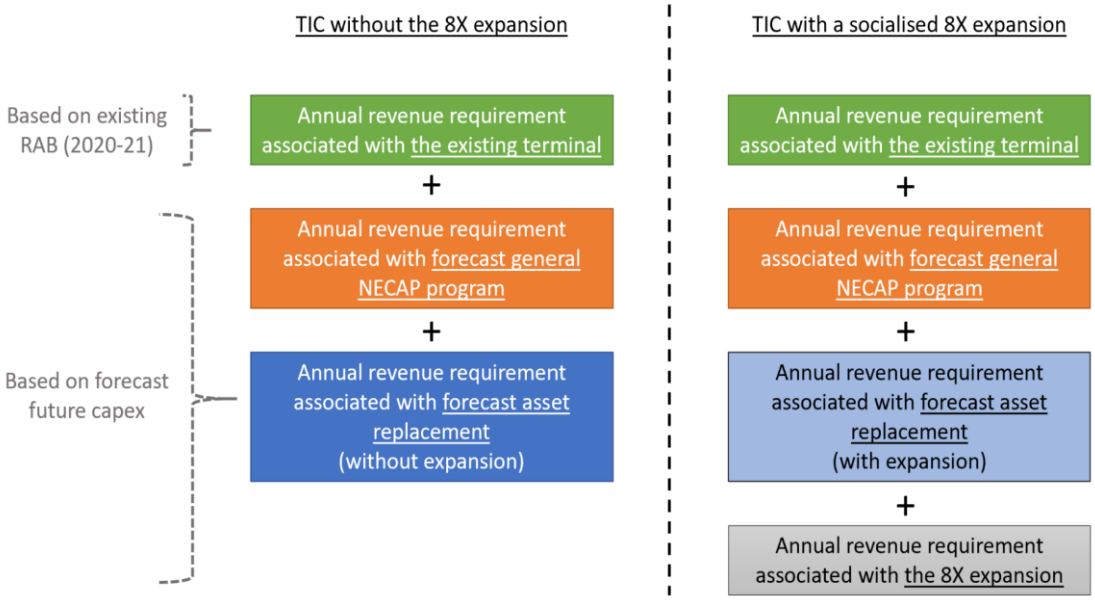
DBIM estimated annual revenue requirements with respect to:

- the existing terminal, which is based on the existing regulatory asset base (RAB)

[41] Synergies, sub. 5, pp. 19–21.

- forecast capital expenditure over the assessment period, which includes non-expansion capital expenditure (NECAP) and, where relevant, capital expenditure incurred as part of the 8X expansion (8X capital expenditure).

Figure 3 Annual revenue requirement components to estimate future TICs



For clarity, DBIM has applied a consistent approach to identify the existing users' TIC both without the 8X expansion and with the socialised expansion. The annual revenue requirements associated with the existing terminal and the general NECAP program are the same for these two scenarios. Differences between the two scenarios reflect:

- differences in capital expenditure associated with changes to the asset replacement program resulting from the 8X expansion[42]
- the inclusion of capital expenditure associated with the 8X expansion.

To estimate the annual revenue requirement, DBIM applied the building block method, consisting of:

- a return on the regulatory asset base
- a return of the regulatory asset base
- corporate overheads
- a regulatory levy
- a remediation allowance
- indexation of the regulatory asset base
- net tax allowance.

This approach is consistent with the methodology used for estimating the TIC in the 2017 AU regulatory period.

[42] This includes the removal of the reclaimer RL2 and refurbishment (instead of replacement) of the existing shiploader (SL1–3), where the 8X expansion occurs.

The annual revenue requirement associated with the existing terminal

We are of the view that DBIM's approach for estimating its annual revenue requirement associated with the existing terminal is reasonable, as it produces an annual revenue requirement that is consistent with the annual revenue requirement we approved as part of DBIM's 2020–21 RAB roll-forward under the 2017 AU (approved on 18 June 2020).[43]

DBIM applied the 2017 AU regulatory pricing parameters. In this regard, we note:

- The WACC, taxation, forecast inflation and annual remediation allowance assumptions and methods from the 2017 AU have been applied.
- The existing assets in the RAB are depreciated in line with their remaining asset lives.
- Corporate overheads are escalated annually by forecast inflation.
- No line item for the regulatory levy has been forecast after 2021–22, reflecting the fact that it is a cost pass-through.

The non-expanding user group was concerned that DBIM's forecasts were based on outdated 'placeholders' and that DBIM had not had regard to the material changes that have occurred since the 2017 AU. The non-expanding user group considered that the building block elements assumed in the assessment of the TIC should be clearly disclosed, as well as any changes to this information as a result of 8X expansion.[44]

Estimating the existing users' future TIC is inherently uncertain and requires assumptions to be made about the future pricing parameters that will apply. While in practice these inputs and assumptions will change over time[45], we consider it reasonable to apply the 2017 AU parameters to forecast DBIM's future annual revenue requirement.

These parameters reflected the approved regulatory arrangements at the time of DBIM's application. We note that the 2021 AU does not establish pricing parameters—with the TIC to be negotiated between the relevant parties.

Importantly, DBIM has used a consistent approach for estimating the annual revenue requirement for the provision of access, with and without the socialised 8X expansion—differences between the two scenarios reflect differences in forecast capital expenditure. This provides a reasonable approach for assessing the extent to which a socialised 8X expansion is likely to increase the unit costs for existing users.

Moreover, it is not clear that the 8X expansion itself will materially affect the calculation of these pricing parameters over time. We note that future rehabilitation costs may change as a direct result of the expansion. However, we do not consider that the 8X expansion is likely to have a material effect on future rehabilitation cost estimates, noting that:

- rehabilitation costs account for between 2 and 4 per cent of the annual revenue requirement used to estimate the TIC
- the 8X expansion is developed within the existing footprint of DBCT

[43] QCA, *DBCT Management 2020–21 annual revenue requirement, reference tonnage, terminal infrastructure charge and 2019–20 NECAP*, letter to DBCT Management Pty Ltd, 18 June 2020. DBIM has also made minor amendments to reflect recent updates to outturn inflation and the regulatory levy.

[44] Synergies, sub. 5, pp. 20–21.

[45] For instance, our final decision on DBIM's 2020 DAU has reviewed the remediation allowance. The model applies an annual allowance of $7,020,000, consistent with the 2017 AU model.

- the 8X expansion entails substantial replacement or refurbishment of existing assets
- the existing stackers, stacker/reclaimers, reclaimers, rail receival pits and shiploaders form about 6 per cent of the total direct costs for remediation in recent expert advice obtained from Advisian[46]. These costs have not been estimated for each asset. Therefore, an estimate of the additional direct remediation costs associated with new assets integrated as part of the 8X expansion would likely be much lower.

The annual revenue requirement associated with forecast capital expenditure

While we acknowledge the inherent uncertainty in forecasting future capital expenditure, we consider that changes to capital expenditure resulting from the 8X expansion are relevant for our assessment of the pricing method to apply to the 8X expansion. On this basis, we consider DBIM's approach of making adjustments to the RAB to account for forecast capital expenditure in future years is appropriate.

The non-expanding user group submitted that a reliable indicator of the likely TIC increase relies upon the costs and related pricing analysis being sufficiently robust. It considered that DBIM's socialised pricing application must be based on credible forecasts and required that the long-term NECAP profile—together with supporting information demonstrating how this has been optimised to the long-term demand profile—be provided.[47]

We consider that a reasonable forecast of the NECAP program, based on the best information available, is sufficient for our consideration of the appropriate pricing method to apply for the 8X expansion. We do not consider it reasonable, or practical, to require DBIM to produce detailed forecasts of the future NECAP program at this time, because of:

- the inherent uncertainty associated with forecasting the future NECAP program
- the role of the operator in determining future NECAP programs.[48]

Additionally, any NECAP expenditure included in the RAB will be subject to the approval processes outlined in the relevant regulatory framework. On this basis, we have not sought to conduct a detailed prudency and efficiency assessment of DBIM's future NECAP at this time. Rather, for the purpose of our price ruling investigation, we have sought to test the reasonableness of the assumptions applied to forecast future NECAP.

We have given consideration to the reasonableness of DBIM's approach for forecasting future capital expenditure, including future NECAP programs and the 8X expansion. This is outlined in section 2.3.

To estimate the existing users' TICs in its application, DBIM applied an asset life of 20 years to its forecast of the future NECAP programs. DBIM later confirmed that the asset lives associated with the forecast NECAP program should be 50 years, truncated to the end of the economic life of the terminal in 2054.[49] DBIM's forecast of the capital expenditure associated with the proposed 8X expansion is also depreciated over the remaining economic life of the terminal (until 2054).

DBIM also appears to have estimated capital expenditure forecasts in $2020 real terms to model the existing users' TICs. For the purpose of our assessment, we consider DBIM's approach is

[46] Advisian, *Dalrymple Bay Coal Terminal Rehabilitation Cost Review (Revision 1)*, February 2021.
[47] Synergies, sub. 5, pp. 20–22.
[48] The day-to-day operational management of the terminal is subcontracted to DBCT Pty Ltd as the 'operator' under an operations and maintenance contract. DBCT Pty Ltd is an independent service provider owned by most of the existing users of the terminal.
[49] DBIM, response to information requested, 14 May 2021.

reasonable. It is not clear that escalating capital expenditure forecasts by a forecast inflation rate necessarily provides for a more robust consideration of how the socialised 8X expansion will affect existing users' TIC. DBIM has applied the same approach for forecasting capital expenditure in both scenarios.

2.3 Forecasting future capital expenditure

2.3.1 Future NECAP for the existing terminal

We have reviewed DBIM's forecast future NECAP program for the existing terminal. In doing so, we have considered the reasonableness of:

- the general NECAP program forecasts, which include smaller, one-off projects and studies, and ongoing phased maintenance capex programs, such as safety guards and offshore pile wrapping
- the forecast asset replacement program, which incorporates larger standalone NECAP projects, such as machine replacements, in accordance with the operator's asset replacement program.

General NECAP program

For the existing terminal, DBIM adopted general NECAP program estimates between 2021–22 and 2025–26 that reflect forecast NECAP work plans provided in the annual and five-year operations, maintenance and capital Plans (OMCPs).

We consider the NECAP work plans in the annual and five-year OMCP provide a reasonable basis for forecasting the general NECAP program. These work plans are ultimately recommended for implementation by the independent operator of the terminal.

DBIM noted that NECAP work plans had not yet been determined from 2026–27 to 2044–45.[50] DBIM applied an assumed annual forecast of $30 million for the general NECAP program over this period.[51] We consider this is a reasonable basis for forecasting general NECAP work programs for this period, as:

- a general expenditure assumption reflects the fact that a recommended NECAP program has yet to be established
- DBIM's estimate is consistent with forecast NECAP expenditure to be included in the RAB (average of $30 million per year from 2021–22 to 2026–2027), which reflects the NECAP work plans
- DBIM's estimate is not inconsistent with the approved historical NECAP expenditure included in the RAB (average of $28 million per year from 2017–18 to 2020–21[52]).

Importantly, DBIM has applied the same expenditure forecasts for the general NECAP program expenditure with the socialised 8X expansion.

[50] DBIM, response to information requested, 14 May 2021. We note that DBIM has not sought to forecast future NECAP beyond 2044–45.
[51] This does not include interest during construction (IDC) or financing costs.
[52] Adjustments have been made to remove IDC and financing costs, as well as costs associated with construction of the RL3 in 2017, which we consider would be captured under the asset replacement program.

DBIM stated that the expansion includes a significant component of NECAP-type work, which would need to be provided for in the ongoing NECAP program if the expansion did not proceed.[53] However, it has not sought to capture any cost savings to the general NECAP program as a result of the 8X expansion in its estimates of the TIC.

We consider this approach appropriate, noting it is currently unclear the extent to which NECAP-type work will be included in the general NECAP program, given the inherent uncertainty in forecasting the future NECAP program at this stage.

Asset replacement program

DBIM identified an asset replacement program for the existing terminal over the forecast period (Table 5).

Table 5 DBIM's forecast asset replacement works

Machine	*Type*	*Current age*	*Replacement age*	*NECAP program ($m)*
SR2	Stacker-reclaimer	38	42	60
B1	Berth 1 (repairs only)	38	42	15
SL1	Shiploader	38	42	100
SR6	Stacker-reclaimer	26	33	60
SL2	Shiploader	23	32	100
SR5	Stacker-reclaimer	22	31	60
RL2	Reclaimer	26	34	54
ST2	Stacker	19	31	41
SL3	Shiploader	18	31	100
RL1	Reclaimer	17	33	54
SR3A	Stacker-reclaimer	13	30	60
SR4A	Stacker-reclaimer	13	31	60
ST3	Stacker	13	32	41
ST4	Stacker	13	33	41
RL3	Reclaimer	7	30	54
Total	–	–	–	**900**

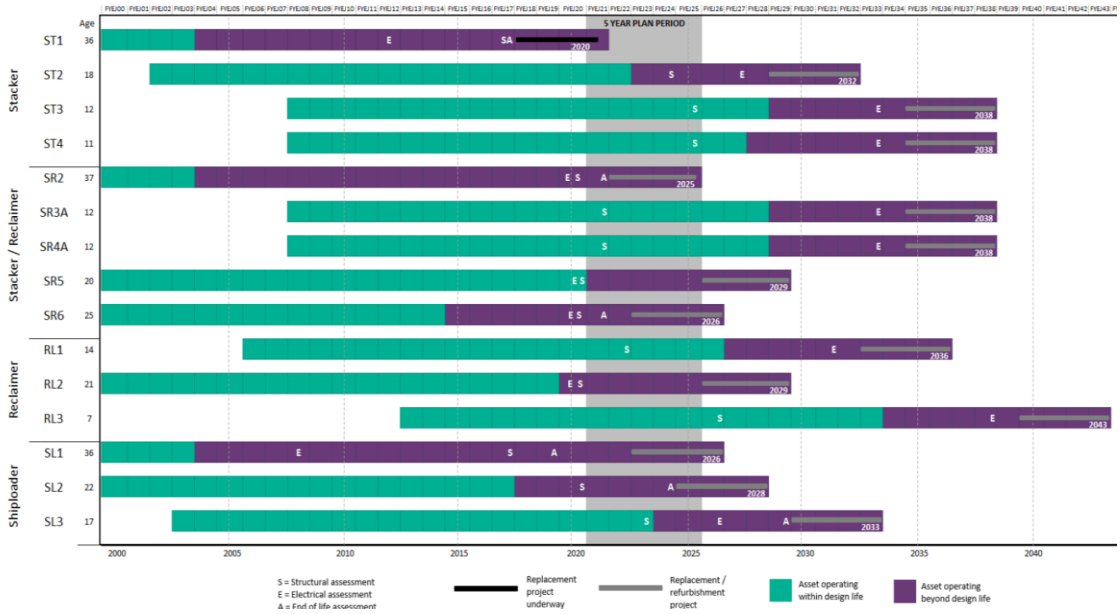
Source: DBIM, sub. 1, p. 33.

These assets are intended to be refurbished or replaced with similar facilities as part of the NECAP program.

We consider DBIM's forecast asset replacement program for the existing terminal is reasonable, on the basis that it reflects the operator's long-term asset management program. The operator's responsibilities include maintaining long-term asset plans and monitoring end-of-life triggers on

assets.[54] Its long-term asset management plan (Figure 4) is based on the design life of the relevant facilities, amended to take account of their condition and any expected maintenance.[55]

Figure 4 Key decision points and design life for DBCT assets



Source: DBIM, sub. 1, p. 32.

The non-expanding user group raised concerns with the level of confidence in the timing and cost of the major NECAP program. It noted that the major NECAP program was only specified at a high level and considered that the operator's long term asset management plan does not reflect a firm capital program based on maximising availability. It stated that detailed analysis will be undertaken to ensure the optimal investment decision is made as the timing for expected major equipment replacement approaches.[56]

The non-expanding user group considered that with the expected remaining economic life of the terminal being 33 years[57], it would be expected that options to extend the life of existing assets will be closely examined, and there will be a preference to avoid investment in major asset replacement as the economic life of the terminal approaches.[58] It also stated that where there is uncertainty about long-term usage of the terminal, this will significantly reduce the attractiveness of bringing forward NECAP in order to reduce ongoing operating costs.[59]

We consider that the operator's long-term asset management plan reflects the best available information at this time. As noted above, this plan takes into account a range of factors, including the condition of the asset and any expected maintenance. Additionally, the operator, being user owned, has an incentive to operate the terminal efficiently, including with respect to its asset replacement decisions over time, to the benefit of all users.

[54] DBIM, response to information requested, 14 May 2021.
[55] DBIM, sub. 1, p. 32.
[56] Synergies, sub. 5, p. 29.
[57] As currently assessed through recent regulatory processes.
[58] Synergies, sub. 5, p. 29.
[59] Synergies, sub. 5, p. 23.

As outlined in section 6.1, we consider the long-term demand for access to DBCT supports the ongoing utilisation of the expanded terminal capacity for the life of the asset (until 2054), with the terminal's system capacity remaining fully contracted.

While major assets will continue to be assessed by the operator over the coming years, the five-year OMCP indicates that for the initial major assets reaching 'end of life' (i.e. the SL1, SR6, SR2 and ST1 assets), the likely outcome is replacement. The five-year OMCP also indicates that capital intervention will be required for the shiploader SL2, stacker-reclaimer SR5 and reclaimer RL2 assets in the coming years.[60]

We consider the adoption of a replacement strategy, rather than refurbishment, reflects the recent experience at the terminal, where approaches that limit throughput losses have been approved. For example, DBIM noted decisions to replace the stacker-reclaimer SR1 with the reclaimer RL3 (in 2013), and replacement of stacker ST1 with a new stacker ST1A (currently in progress).[61] We also note that DBIM's recent[62] concept screening study report for shiploader SL1 determined that the throughput loss to refurbish the shiploader was unacceptable, with replacement being the only feasible option.[63] We are of the view that throughput impacts are particularly relevant in the current climate, where contracted tonnage aligns closely with system capacity.

Assets associated with the asset replacement program have been depreciated over the remaining economic life of the terminal (over 33 years, to 2054). Having regard to the expected replacement age of these assets (see Table 5), we consider this approach is reasonable.

DBIM provided cost estimates associated with its asset replacement program. DBIM acknowledged that the cost estimates were conceptual at this stage—noting the cost estimates did not have the same level of accuracy as the capital expenditure estimates outlined in the FEL 2 study for the 8X expansion.

We have considered the reasonableness of these cost estimates, having regard to the forecasting approaches applied by DBIM (see Box 1).[64] Although the costs associated with the asset replacement program are likely to change over time, we consider these estimates are reasonable for the purpose of determining whether the 8X expansion will be a cost sensitive expansion.

[60] DBIM, sub. 1, appendix 4, p. 38.
[61] DBIM, sub. 1, p. 32.
[62] Issued for use in March 2020.
[63] Where a new fourth shiploader is not in place and assuming contracted demand remains at or near its current level—DBIM, response to information requested, 18 June 2021.
[64] DBIM provided information on its forecasting approach in response to information requests throughout our investigation.

Box 1 Reasonableness of asset replacement works cost estimates

The estimated cost of replacing a stacker is $41 million. This is based on the stacker ST1 replacement project, which was approved by the users for implementation and is currently in progress.[65] Further, contract pricing for the ST1 replacement project is consistent with the FEL 2 study budget pricing for the new stacker ST5, included in the 8X project.[66] We consider the forecasting approach and associated costs are reasonable.

The estimated cost of replacing a reclaimer is $54 million. This is based on escalated costs associated with the installation of reclaimer RL3, which replaced stacker-reclaimer SR1 (the SR1 replacement project).[67] The reclaimer RL3 costs were approved for inclusion in the RAB after we conducted a thorough assessment of the project, engaging Flagstaff as an independent expert. Noting that reclaimer RL3 was commissioned in 2014, we accept that escalation of these costs may be warranted and note DBIM has applied a simple escalation approach, adopting an annual increase of 2.5 per cent.[68] DBIM also demonstrated that its estimated cost of replacing a reclaimer is consistent with the budget pricing in the FEL 2 study for installing reclaimer RL2 (as part of the 8X expansion), plus estimated ancillary costs (reflecting 25 per cent of the budget pricing, consistent with installation of RL3).[69] We consider the estimated cost reasonable at this stage, noting the consistent outcomes between the two forecasting approaches.

The estimated cost of replacing a stacker-reclaimer is $60 million. This is based on the estimated cost to replace a reclaimer ($54 million) plus $6 million to account for the additional complexity and weight of the machine.[70] In Flagstaff's 2014 assessment of the SR1 replacement project, it was acknowledged that a difference in weight would impact costs. The operator has indicated that stacker-reclaimer SR3A is approximately 10 per cent heavier than reclaimer RL3.[71] However, it is not clear why the increase in weight is associated with an increase in costs to the scale of $6 million. Despite this, we have adopted DBIM's estimated costs, noting that no cost savings have been identified to the stacker-reclaimers as a result of the 8X expansion. The estimated cost of $60 million has also been adopted by the operator in its five-year OMCP.

The estimated cost of replacing a shiploader is $100 million. This is based on estimated costs to replace shiploader SL1 in the recent[72] concept screening study report.[73] As part of this report, Aurecon provided a conceptual-level cost estimate for the construction of a replacement shiploader SL1 of $97 million. It stated that recent budget pricing of similar machines for other clients provided a good level of confidence in the estimate. We consider this provides a reasonable estimate. DBIM rounded Aurecon's cost estimate up to $100 million.[74] We consider this reasonable noting that the cost estimates for the shiploaders have also been rounded up where the 8X expansion occurs. The estimated cost of $100 million has been adopted by the operator in its five-year OMCP.

The estimated cost for Berth 1 works is $15 million. This is based on estimates provided by the operator, as the independent service provider.[75] Therefore, we consider the estimated cost is reasonable. DBIM has clarified that Berth 1 works are related to structural repairs to the girder supporting the rail for shiploader SL1.

Despite expenditure occurring over an extended period of time, DBIM has provided all cost estimates in 2020-dollar terms ($2020) and has not sought to escalate these costs. Importantly, this approach has been consistently applied to determine the existing users' TIC, both with and without the socialised 8X expansion.

2.3.2 Future NECAP for the expanded terminal

We have reviewed DBIM's forecast future NECAP program for the expanded terminal and found:

- the general NECAP program is consistent with that applied for the existing terminal

[65] Expenditure related to the ST1 replacement project was first incurred in 2018—DBIM, response to information requested, 14 May 2021.
[66] DBIM, response to information requested, 18 June 2021.
[67] DBIM, response to information requested, 14 May 2021.
[68] DBIM, response to information requested, 18 June 2021.
[69] DBIM, response to information requested, 18 June 2021.
[70] DBIM, response to information requested, 14 May 2021.
[71] DBIM, response to information requested, 18 June 2021.
[72] Issued for use in March 2020.
[73] DBIM, response to information requested, 18 June 2021.
[74] DBIM, response to information requested, 18 June 2021.
[75] DBIM, response to information requested, 18 June 2021.

- the asset replacement program differs to that applied for the existing terminal to reflect changes resulting from the 8X expansion.

Differences in the asset replacement program

Compared to the asset replacement program for the existing terminal, DBIM's forecast asset replacement program for the expanded terminal:

- removes the replacement of the reclaimer RL2
- provides for refurbishment (instead of replacement) of the existing shiploaders (SL1–3)
- delays the refurbishment of both shiploader SL2 and shiploader SL3 by three years.[76]

Table 6 DBIM's forecast asset replacement works for the SL1, SL2, SL3 and RL2 assets

Machine	*Type*	*No expansion NECAP program ($m)*	*8X expansion NECAP program ($m)*
SL1	Shiploader	100	50
SL2	Shiploader	100	50
RL2	Reclaimer	54	0
SL3	Shiploader	100	50

Source: DBIM, sub. 1, p. 33.

We consider DBIM's proposed adjustments to the asset replacement program are reasonable.

With regard to the removal of reclaimer RL2 from the asset replacement program, DBIM's proposed 8X expansion (and the associated capital expenditure) includes the replacement of RL2 as part of phase 4 of the 8X expansion.

In terms of the shiploaders, DBIM considered that installation of the new shiploader SL4 would allow for refurbishment of the existing shiploaders, rather than replacement. As noted previously, while refurbishment has typically provided the cheaper alternative, the associated throughput losses have meant replacement of assets is the preferred option. However, DBIM considered that installation of the SL4 would enable the existing shiploaders (SL1–3) to be refurbished with no consequential throughput loss (see Table 7), as SL4 would effectively serve as a spare shiploader.[77]

[76] DBIM's initial application included variances in commissioning dates across several other assets, with and without the socialised 8X expansion. However, DBIM has since confirmed that the asset replacement program is forecast to be the same across both scenarios, except with regard to the existing shiploaders and reclaimer RL2. Variances in commissioning dates were due to the different cash flows that DBIM has since aligned. DBIM, response to information requested, 14 May 2021.

[77] DBIM, sub. 1, p. 14.

Table 7 DBIM's estimates of the cost and throughput losses associated with replacement and refurbishment of SL1–3

	Cost ($m)	*Throughput loss (mt)*
Replacement of SL1–3, no 8X expansion	300	10
Refurbishment of SL1–3, with 8X expansion	150	0[78]

Source: DBIM, sub. 1, pp. 14, 33.

The non-expanding user group questioned the adoption of refurbishment where the 8X expansion occurs. It stated that given the increased system capacity from the higher utilisation of the outloading systems will have been committed to new users, the acceptability of then removing a shiploader for the extended period of time required for refurbishment needs to be further substantiated based on expected demand. It stated detailed modelling of system capacity impacts, including assumptions, is required to confirm the reasonableness of DBIM's assumptions, including consideration of the risks of unplanned outages over a longer outage period that may come with refurbishment compared to replacement.[79]

We have given consideration to the reasonableness of DBIM's cost and throughput estimates associated with replacement and refurbishment of shiploaders SL1–3 (see Box 2).

Based on the 8X expansion proposed in DBIM's application, our understanding is that expansion capacity will not be available until return of the refurbished shiploader SL1.[80] The new shiploader SL4 will serve as a spare shiploader at the terminal, allowing for all three outloading strings to be utilised, even where one of the shiploaders cannot be operated for an extended period. As noted by DBIM, the terminal will have the ability to schedule maintenance around major shutdowns.[81] We consider this would include shutdowns associated with refurbishment, allowing continued operation of three outloading strings to achieve throughput requirements associated with forecast demand.

Where refurbishment provides a cheaper alternative to replacement, with minimal impact on throughput, we consider refurbishment of the existing shiploaders a reasonable approach.

We consider DBIM's approach of delaying refurbishment of both shiploader SL2 and shiploader SL3 by three years reasonable, noting that DBIM considers having a spare shiploader at the terminal will allow for additional outages and extended maintenance of these assets, extending their useful lives.[82]

[78] Assuming that outloader OL2 and shiploader SL2 upgrades occur before the refurbishment of shiploader SL 1— DBIM, sub. 1, p. 16.
[79] Synergies, sub. 5, p. 29.
[80] DBIM, response to information requested, attachment 1, 18 June 2021.
[81] DBIM, response to information requested, 18 June 2021.
[82] DBIM, response to information requested, 14 May 2021.

Box 2 Reasonableness of throughput and cost estimates for shiploaders SL1–3

DBIM's estimated cost to replace the existing shiploaders ($100 million per shiploader) is based on estimates provided by Aurecon in the recent[83] concept screening study report for shiploader SL1, which we consider reasonable.

The associated throughput loss is also based on analysis in the recent concept screening study report. Throughput losses equivalent to 3.4 mt for replacement of shiploader SL1 reflect the replacement strategy proposed by Aurecon.[84] We consider this report provides a reasonable indication of throughput losses expected with replacement.

DBIM assumed that a similar replacement strategy will be applied for SL2 and SL3, resulting in total throughput losses for replacing the three shiploaders of 10 mt[85]. We consider this approach appropriate, noting no detailed modelling has taken place for SL2 and SL3 at this time.

If the 8X expansion proceeds, DBIM considered refurbishment of the existing shiploaders will be the preferred option, costing $50 million per shiploader. This is also based on analysis conducted in the recent concept screening study report for shiploader SL1. Here it was determined that the low-cost refurbishment option for SL1 would cost $48.3 million.[86] We consider this provides a reasonable reflection of the costs associated with refurbishment. While DBIM has rounded costs to $50 million, a similar approach was adopted for the replacement of shiploaders where the 8X expansion does not occur.

Refurbishment was considered the preferred option, as it provides a cheaper alternative to replacement, and where the 8X expansion occurs, throughput impacts are forecast to be minimal. DBIM considered that throughput losses associated with refurbishment of SL1 could be as low as 0 mt, based on analysis by Aurecon as part of the FEL 2 study, which assumes outloader OL2 and shiploader SL2 upgrades occur before the refurbishment of shiploader SL1, and the new shiploader SL4 is operational before refurbishment of shiploader SL1. DBIM also noted that shiploader SL3 must be available for operation, and all three existing outloading strings must be available for operation to achieve a throughput loss of 0 mt.[87]

There are a number of assumptions on the sequencing of construction and shutdowns that must hold in order for there to be no throughput losses associated with refurbishment of SL1. However, we consider that DBIM and the operator, acting reasonably, would seek to achieve refurbishment of SL1 in a manner that has minimal impact on throughput at the terminal.

In terms of shiploaders SL2 and SL3, DBIM stated that there will be no throughput losses, as refurbishment will commence after the expansion is completed and SL1 is refurbished. It considered it reasonable to assume that with a new SL4 and a refurbished SL1, the overall maintenance load will be reduced for a period of time, and the terminal will have the ability to schedule maintenance around major shutdowns. This would allow all three outloading systems to be available and in use where one shiploader cannot be operated for an extended period—for example, due to refurbishment of the machine.[88]

On this basis, we consider it reasonable to assume that refurbishment of the existing shiploaders where the 8X expansion occurs (and the new SL4 is commissioned) will have minimal impact on throughput.

Except for the identified changes to the reclaimer RL2 and existing shiploaders, it is not clear that the 8X expansion will impact the asset replacement program in a material way over the remaining economic life of the terminal (to 2054). While the 8X expansion does include new assets, after considering the expected replacement age of similar existing assets (see Table 5), we do not expect these to be included in the asset replacement program prior to 2054.

2.3.3 8X capital expenditure

In estimating the socialised TIC, DBIM has applied capital expenditure that aligns with the forecast 8X expansion costs, as outlined in DBIM's application and the accompanying FEL 2 study (see Table 8).

[83] Issued for use in March 2020.
[84] DBIM, response to information requested, 18 June 2021.
[85] Rounded down from 10.2 mt—DBIM, response to information requested, 18 June 2021.
[86] DBIM, response to information requested, 18 June 2021.
[87] DBIM, response to information requested, 18 June 2021.
[88] DBIM, response to information requested, 18 June 2021.

Table 8 Forecast capital expenditure of the proposed 8X expansion, in $2020 terms

Expansion phase	*Cost ($m)*
Phase 1	246
Phase 2	229
Phase 3	461
Phase 4	340
Total	**1,276**

Source: DBIM, sub. 1, p. 12.

DBIM has also allocated the forecast costs associated with the FEL studies to its phase 1 expansion cost estimate.

The non-expanding user group submitted that the FEL 2 study scope and costs are not yet sufficiently robust, with some elements not yet determined to be within or out of scope. For example, it is understood that in phase 1, an outloading optimisation scope has been generated for further study in FEL 3, including reclaim bucketwheel upgrades, surge bin control system modifications and hatch change automation software.[89]

We recognise that the capital expenditure estimates reflect the expansion, as proposed in DBIM's application, which is based on the circumstances and assumptions adopted for the FEL 2 study. We accept that the scope of the expansion may change as further studies are carried out. On this basis, we consider it appropriate to adopt DBIM's capital expenditure estimates for the 8X expansion as an assumption underpinning our assessment of the appropriate pricing method to apply to the 8X expansion.

[89] Synergies, sub. 5, p. 20.

3 MATERIALITY OF THE INCREASE TO THE TIC

In determining whether circumstances exist that justify socialisation of the 8X expansion, we have considered the materiality of the increase in the existing terminal's TIC from socialising the 8X expansion.

DBIM estimated that the socialisation of the 8X expansion would increase the TIC for existing users by an average of $0.42/t (13 per cent) between 2026–27 and 2035–36. It did not consider this increase to be sufficiently material for existing users.

BMC considered that any increase in the TIC will not be material, and the total access charges payable by access holders will decrease by a marginal amount.[90] Whitehaven Coal also considered that the 8X expansion will result in only a modest increase in existing users' TIC, and that the total access charge will likely decrease.[91]

The non-expanding user group considered that DBIM's estimated increase in the existing users' TIC is a material increase. It also considered that DBIM's estimated TIC misrepresents the true long-term impact of socialisation.[92]

We estimate that socialisation of the 8X expansion may increase existing users' TIC by up to $0.56/t (19.7 per cent).

Given the nature of the 8X expansion and the characteristics of DBCT's existing users, in this particular instance, we do not consider that such an increase will have an impact on the use of coal handling services at DBCT by existing users, as:

- the TIC is only a small proportion of total mine production and supply chain costs
- mines that are serviced by DBCT are characterised as having comparatively higher profit margins, compared to mines in other metallurgical coal producing regions
- despite high levels of volatility in traded coal prices, the Queensland coal industry has been fairly resilient to coal price cycles
- a reduction in handling charges will likely offset much of the increase in existing users' access charges as a result of a socialised 8X expansion.

We also consider that socialisation of the 8X expansion will maintain cost-reflective price signals to access seekers and access holders.

These findings have informed our view of whether socialisation is appropriate, having regard to ss. 120(1) and 138(2) of the QCA Act.

3.1 Estimating the increase to the TIC

Based on our estimate of the TIC, with and without the socialised 8X expansion, we consider that the TIC for existing users would increase on average by $0.47/t (15 per cent) between 2026–27

[90] BMC, sub. 2, p. 2.
[91] Whitehaven Coal, sub. 3, p. 1.
[92] Synergies, sub. 5, p. 25.

and 2035–36 (Table 9).[93] We have given consideration to the estimated change in the TIC over the life of DBCT (up until 2054), with the biggest increase in the TIC occurring in 2028–29 ($0.56/t).

Table 9 Estimated change in existing users' TIC resulting from a socialised 8X expansion ($/t)

TIC ($/t)	*26-27*	*27-28*	*28-29*	*29-30*	*30-31*	*31-32*	*32-33*	*33-34*	*34-35*	*35-36*
Without 8X	2.55	2.76	2.87	2.91	3.04	3.13	3.19	3.19	3.22	3.24
With socialised 8X	2.86	3.13	3.43	3.47	3.59	3.59	3.63	3.63	3.70	3.72
Difference	0.31	0.37	0.56	0.56	0.55	0.46	0.43	0.44	0.48	0.48
Change (%)	12.2	13.4	19.7	19.2	18.0	14.9	13.6	13.8	14.9	14.8

Note: Estimated TICs are only presented up to 2035–36 for the purpose of presentation.

Source: QCA analysis.

The non-expanding user group considered that DBIM's TIC estimates misrepresent the true long-term impact of socialisation, as DBIM implicitly assumes that the terminal's system capacity is fully contracted over the full economic life of the terminal.[94] We consider it reasonable to assume that the terminal's system capacity is fully contracted over the full economic life of the terminal (as outlined in section 2.2.1).

3.2 Consideration of the materiality of the TIC increase

There is no specific threshold, in terms of the size in dollar terms, that applies in considering the materiality of the increase to the TIC. The effect of an increase to the TIC will vary, depending on the varying characteristics of the expansion and the circumstances of existing users.

In considering the materiality of the TIC increase, we consider it appropriate to have regard to expected size of the increase as well as the broader impact on existing users. In considering the impact on existing users, we have had regard to whether:

- the estimated increase to the TIC affects the use of coal handling services at DBCT by existing users
- socialisation of the 8X expansion would maintain cost-reflective price signals to access seekers and access holders.

In assessing materiality, we consider that changes to handling charges resulting from the 8X expansion are a relevant consideration for our assessment of the pricing method to apply to the 8X expansion. These charges provide for the recovery of operating and maintenance costs incurred at the terminal and are paid by existing users on a per tonne basis. Handling charges, combined with the TIC, make up the total access charges paid by existing users.

DBIM noted that the operating and maintenance costs associated with the terminal are not part of its revenue requirement. It stated that this is due to the nature of the operation of the terminal, in which the terminal operator is owned by terminal users rather than the terminal owner.[95] DBIM submitted that the revenue requirement for regulated entities typically includes the operating

[93] In its application, DBIM estimated that the socialisation of the 8X expansion would increase the TIC for existing users by an average by $0.42/t (13 per cent) between 2026–27 and 2035–36. DBIM confirmed there were minor errors and inconsistencies in the modelling submitted as part of its application, which we have corrected for in our modelling of the existing users' TIC, with and without the socialised 8X expansion.

[94] Synergies, sub. 5, pp. 5, 21.

[95] DBIM stated that the operation and maintenance contract was grandfathered from the previous ownership structure at the time the terminal was privatised, which entrenched DBCT P/L as the operator of the facility.

cost of the facilities. It considered that the expansion pricing principles would likely have been based on access charges, if the operator was not owned by users.[96]

In contrast, the non-expanding user group considered that the merits of socialisation should not simply be considered through an assessment of the anticipated impact on the total access charge. In this regard, the non-expanding user group noted our position outlined in our investigation on DBIM's 2015 DAU that using TIC as an initial basis for assessment may be preferable, because the use of total access charges can place more emphasis on cost allocation issues (introducing greater forecasting risk and potential error).[97]

While we acknowledge there will be inherent uncertainty in forecasting handling charges, we are of the view that the 8X expansion will likely decrease the handling charges paid by existing users. Moreover, we consider that changes to total access charges, not just the TIC, will influence the extent socialisation of the 8X expansion will affect the use of coal handling services at DBCT by existing users.

3.2.1 The use of coal handling services at DBCT by existing users

Given the nature of the 8X expansion and the characteristics of DBCT's existing users, in this particular instance, we consider that an increase to the TIC of up to $0.56/t (and on average $0.47/t between 2026–27 to 2035–36) is unlikely to have an impact on the use of coal handling services at DBCT by existing users, or negatively affect the economic viability of already operating investments.

DBIM said the expected increase in TIC did not appear to be material for existing users, including having regard to reference points that indicate the considerations of an investor in determining whether to continue operating or investing in the Hay Point catchment. DBIM also observed that major NECAP work scheduled in the 10-year averaging period from 2026–27 to 2035–36 is estimated to increase the TIC by $0.68/t—and that users have not objected to TIC increases that have been triggered by NECAP alone.[98]

The TIC accounts for a much smaller proportion of the total cost of producing and delivering coal to DBCT that is incurred by existing users of DBCT.

In relation to mine operating costs, DBIM's June 2018 submission to our declaration review contained annual forecasts of production costs per tonne for individual mines in Queensland—as prepared by AME. Based on the information provided at the time, the forecast unit production cost of existing coal mines in Queensland that produce predominantly metallurgical coal is $95.1/t in 2021 (average cost based on 24 coal mines).[99]

The supply chain cost for existing users will also incorporate below-rail, above-rail, coal handling and other port and shipping costs. As part of our declaration review, we estimated an average supply chain cost of $12.80/t for Goonyella system users accessing DBCT. The cost of railing the coal to port accounted for over half of the supply chain cost estimate.[100]

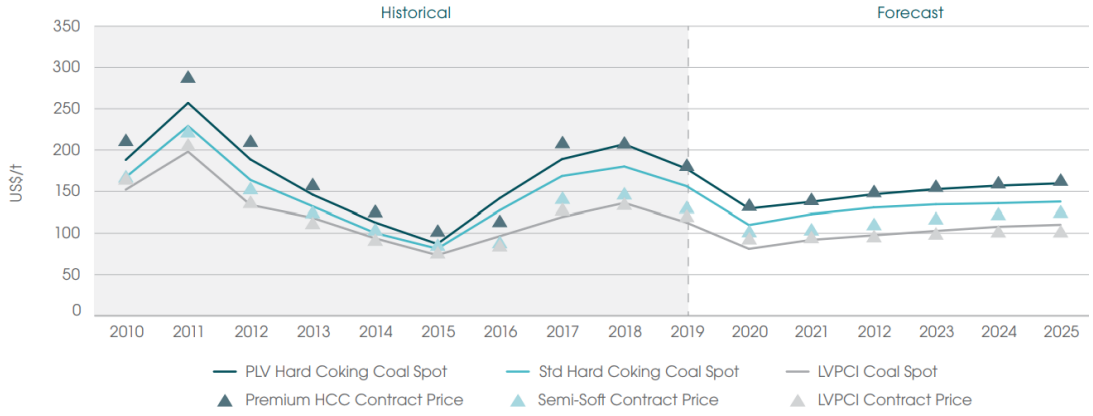
[96] DBIM, sub. 1, p. 59. DBIM noted that this would be comparable to the expansion pricing principles outlined in Aurizon Network's 2019 DAU.
[97] Synergies, sub. 5, p. 22. See QCA, *DBCT Management's 2015 draft access undertaking*, final decision, November 2016, p. 242.
[98] DBIM, sub. 1, p. 25.
[99] QCA, *Part C: DBCT declaration review*, final recommendation, March 2020, p. 161.
[100] QCA, *Part C: DBCT declaration review*, final recommendation, March 2020, p. 21.

Moreover, the mines that are serviced by DBCT are characterised as having comparatively higher profit margins, compared to other mines in metallurgical coal producing regions. Based on information provided by AME, the DBI prospectus stated that Bowen Basin metallurgical coal mines generally have favourable margins relative to mines from other regions globally. Contributing factors are:

- the high-quality metallurgical coal products from the Bowen Basin, which realise strong prices
- the favourable and well understood geology, which supports low operating costs via high-productivity underground longwall and low strip ratio open-cut mining
- the relatively low port and rail transportation costs.[101]

While strong coal prices have driven stable demand for coal handling services at DBCT in recent years, coal markets are cyclical in nature. High levels of volatility in traded coal prices have been a feature of global coal markets.

Figure 5 Historical and forecast metallurgical coal prices

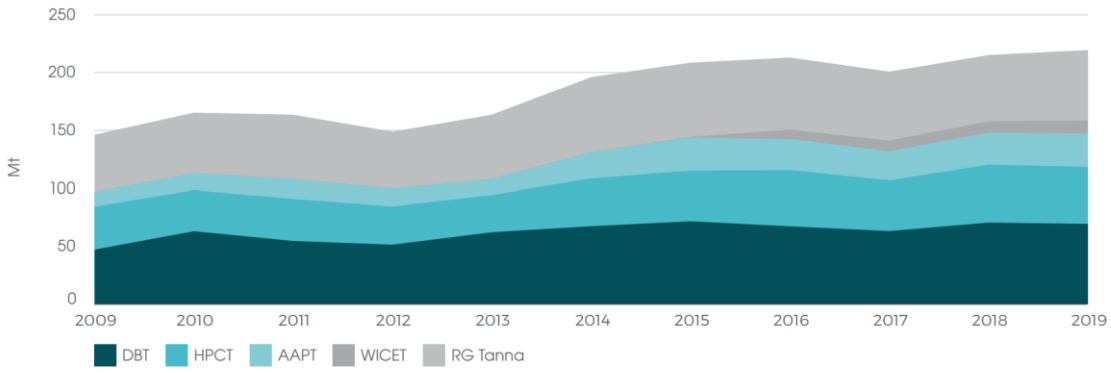


Note: Metallurgical spot and contract prices are real ($2020).

Source: DBI 2020, Prospectus, November, p. 39. Based on AME analysis.

In this regard, the Queensland coal industry has been fairly resilient to coal price cycles, performing very well in terms of annual coal exports during periods of severe volatility in both coking and thermal coal prices.

Figure 6 Queensland coal terminal's throughput over the past 10 years



Source: DBI 2020, Prospectus, November, p. 49. Based on AME analysis.

[101] DBI, *Prospectus*, November 2020, p. 43.

Additionally, while we acknowledge the inherent uncertainty in forecasting handling charges, we consider that a reduction in handling charges will likely offset much of the increase in existing users' access charges as a result of a socialised 8X expansion. As noted above, we consider that changes to the total access charges resulting from the 8X expansion are relevant in considering the impact of socialisation on the use of coal handling services at DBCT by existing users.

Reduction in handling charges

We are of the view that the 8X expansion will decrease the handling charges paid by existing users on a per tonne basis, given the nature of the expansion.

DBIM estimated that the 8X expansion will reduce ongoing handling charges for existing users by about 11 per cent on average after the completion of the expansion. This is because:

- the bulk of the additional system capacity provided by the 8X expansion is derived from the additional stockyard storage space (which incurs no additional handling charges) and replacing lower capacity equipment with new higher capacity equipment (which generally requires no additional operators or maintainers compared to the equipment being replaced)
- new equipment with improved design, materials and technology requires less maintenance. For example, the IL1 and SL1 were designed for a higher level of in situ maintenance, which was appropriate at the time when labour was a less significant component of maintenance costs. The IL4 and SL4 instead provide for a high level of modularity, which facilitates quick and safe replacement of larger modular components, reducing downtime and the related throughput losses—which result in reduced maintenance labour costs
- new equipment is designed to be operated more easily and safely, with minimal risk of damage, and with improved performance and improved material handling requiring less cleaning; accordingly, the cost of labour for operations is lower
- components for new equipment are more energy efficient, which reduces the cost of electricity per tonne of capacity compared with the older systems being replaced.[102]

The non-expanding user group also acknowledged that the 8X expansion could lead to a reduction in the average handling charges, given:

- the extent to which existing equipment is being replaced by new, higher capacity equipment with commensurately lower operating and maintenance costs
- a spreading of fixed/overhead costs among greater contracted tonnes.[103]

However, the non-expanding user group considered that there is significant uncertainty around future operations and maintenance costs, given both the uncertainty around future demand and inherent uncertainty in operating a coal terminal.[104]

We acknowledge there will be inherent uncertainty in forecasting handling charges. We have given consideration to the reasonableness of DBIM's approach for forecasting handling charges for the existing terminal (see Box 3). We consider that the operator's forecasts provide a reasonable estimate of future handling charges, noting the independent user-owned terminal operator oversees the day-to-day operations and maintenance of the terminal and is responsible for some long-term asset management and maintenance planning.

[102] DBIM, sub. 1, p. 14.
[103] Synergies, sub. 5, pp. 26–27.
[104] Synergies, sub. 5, p. 27.

In considering the forecast handling charges for existing users, the operator's estimate of handling charges for the existing terminal is forecast to be between $3.22/t and $3.26/t, for the period of 2021–22 to 2024–25.[105] In comparison, the incremental handling charge for the additional capacity of the 8X expansion is forecast by the operator to be $0.62/t (Table 10).

Table 10 Additional handling charges due to the 8X expansion

8X expansion phase	*Estimated handling costs ($'000)*	*Incremental capacity of expansion (mtpa)*	*Incremental handling charge ($/t)*
Phase 1	5,283	3.1	1.70
Phase 2	259	3.9	0.07
Phase 3	3,110	5.5	0.57
Phase 4	604	2.4	0.25
Total	**9,254**	**14.9**	**0.62**

Source: DBIM, sub. 1, p. 60.

The incremental handling charges associated with the 8X expansion component are forecast to be around one-fifth (on a per tonne basis) of the handling charges associated with the existing terminal. We consider that the socialised 8X expansion will result in a reduction to handling charges for existing users where handling charges for the expanded terminal are socialised amongst all users.

[105] Based on QCA analysis and the annual and five-year OMCP.

Box 3 Forecasting future handling charges for DBCT

Forecasts determined by the operator

To estimate the handling charges for the existing terminal, DBIM submitted that it had adopted the operator's forecast of handling charges up to 2023–24, as outlined in the annual and five-year OMCP. DBIM later confirmed that its estimate of handling charges for 2023–24 was inadvertently retained from a previous iteration of the OMCP, and that it did not incorporate the handling charges estimate for 2024–25 as reported in the OMCP.[106]

In relation to the 8X expansion, the operator estimated the additional handling charges that would apply due to the proposed additional infrastructure (see Table 10).[107]

We acknowledge there will be inherent uncertainty in forecasting handling charges. We also acknowledge that the operator may revise its forecasts, and handling charges may vary from year to year.[108]

The non-expanding users were not satisfied with the level of information provided by DBIM to support its estimated handling charges and suggested that any robust assessment of the extent of the impact of 8X on handling costs requires disclosure of more detailed information by DBIM.[109]

DBIM's application redacted the operator's annual and five-year OMCP.[110] However, we have reviewed the operator's annual and five-year OMCP, and we are satisfied that it provides a reasonable forecast of handling charges for the existing terminal. We consider these forecasts provide the best estimate of future handling charges available at this time. In this regard, we note the independent user-owned terminal operator oversees the day-to-day operations and maintenance of the terminal and is responsible for some long-term asset management and maintenance planning.

The operator's forecast of future handling charges for the existing terminal from 2022–23 is based on system capacity for the existing terminal. Its estimate of the incremental increase to future handling charges associated with the 8X expansion reflects the additional capacity forecast to be created by the 8X expansion. We consider this is reasonable, based on our view that the long-term demand for access to DBCT supports the ongoing utilisation of the expanded terminal capacity for the life of the asset (until 2054). This is discussed in section 6.1.

Escalation of the operator's forecasts

The uncertainty becomes greater the further into the future we forecast these handling charges.

DBIM has escalated the operator's forecast future handling charges by 3 per cent per annum to estimate:

- future handling charges for the existing terminal from 2025–26, as the operator has not provided forecasts beyond 2024–25
- the incremental increase to future handling charges associated with the 8X expansion from 2021, noting the operator's estimate was provided in 2020 dollar terms.

In considering the reasonableness of this escalation approach, we acknowledge the predicted cumulative annual growth over the last 10 years is over 3 per cent—DBIM noted that during this time, around $250 million has been expended on NECAP works.[111] However, there is considerable variability in the extent to which handling charges vary from year to year. Comparatively, the operator's predicted cumulative annual growth in handling charges over the five-year period from 2019–20 to 2024–25 is around 0.5 per cent. Additionally, handling charges are likely to correspond to the level of terminal utilisation in these years.

Given this uncertainty, it is not clear that it is appropriate to apply an escalation rate of 3 per cent to forecast future handling charges. We have therefore considered various escalation rates to forecast future handling charges in considering the potential impact of the socialised 8X expansion on existing users' access charges (see Table 12).

[106] DBIM, sub. 1, p. 60; DBIM, response to information requested, 14 May 2021.
[107] DBIM, sub. 1, p. 60.
[108] The non-expanding users submitted that there is no certainty regarding future movements in the handling charge; handling charges vary from year to year and are subject to significant forecasting risk—Synergies, sub. 5, p. 27.
[109] Synergies, sub. 5, p. 27.
[110] Non-expanding users considered this removes the ability of non-expanding users to understand how this estimate has been developed and the degree of rigour that has been applied—Synergies, sub. 5, p. 27.
[111] DBIM, sub. 1, p. 60.

Implications for total access charges

A reduction in average handling charges for existing users resulting from the socialised 8X expansion will have implications for existing users' total access charges.

DBIM estimated that after accounting for the handling charges associated with the 8X expansion, total access charges for existing users would reduce by $0.06/t (1 per cent) between 2026–27 and 2035–36, if the 8X expansion is socialised (see Table 11).[112]

Table 11: DBIM's estimated change in existing users' total access charges resulting from a socialised 8X expansion ($/t)

TIC ($/t)	*26-27*	*27-28*	*28-29*	*29-30*	*30-31*	*31-32*	*32-33*	*33-34*	*34-35*	*35-36*
Without 8X	6.34	6.70	6.88	7.08	7.29	7.50	7.73	7.82	7.98	8.14
With socialised 8X	6.39	6.60	6.93	7.07	7.30	7.42	7.57	7.68	7.87	8.01
Change (%)	0.9	–1.5	0.8	–0.1	0.2	–1.1	–2.1	–1.8	–1.4	–1.5

Source: DBIM, sub. 1, p. 37.

As indicated above, we consider the operator's forecasts provide a reasonable estimate of future handling costs. However, it is not clear what escalation rate is appropriate to apply to these estimates, in order to forecast handling charges into the future.

Therefore, we have compared the difference between the total access charges for existing users, with and without the socialised 8X expansion, when different escalation rates are applied to forecast future handling charges (see Table 12). Our analysis is based on our estimate of existing users' TIC (see section 2.1) and the operator's forecasts of handling charges.

Table 12 Estimated change in existing users' total access charges resulting from a socialised 8X expansion, when different escalation rates are applied to forecast handling charges

	Average difference ($/t)		*Average change (%)*	
Escalation rate (%)	*26–27 to 35–36*	*26–27 to 45–46*	*26–27 to 35–36*	*26–27 to 45–46*
0	0.10	0.05	1.5	0.9
1	0.07	0.01	1.2	0.2
2	0.05	–0.04	0.8	–0.4
3	0.03	– 0.10	0.4	–1.0
4	0.00	–0.16	0.1	– 1.5

We estimated no more than a $0.10/t increase in total access charges from the scenarios we considered, and we assessed total access charges may in fact decline as a result of the 8X expansion. We are of the view that such a change in total access charges is unlikely to negatively affect the economic viability of already operating investments.

3.2.2 Prices that reflect marginal cost of access

We consider that socialisation of the 8X expansion would maintain cost-reflective price signals to access seekers and holders and promote economically efficient investment in, and use of, the

[112] DBIM, sub. 1, p. 37.

terminal. A socialised TIC that is estimated with reference to a user covering its proportion of the annual revenue requirement for its contracted tonnage ensures the user will cover its share of incremental costs associated with obtaining access to DBCT.

As noted by the non-expanding user group, our capacity expansion and access pricing discussion paper outlined a position on cost-reflective access prices[113]:

> Allocative efficiency requires prices to reflect marginal costs. If an entity's use of a service causes costs to increase at the margin, then for allocative efficiency to be achieved, the entity needs to face a price that reflects the marginal contribution of its use to costs. This principle is sometimes referred to as the 'user pays' or 'impactor pays' principle. The costs that are caused should include the cost of imposing any adverse externalities or reduced to reflect the value of positive externalities.[114]

The non-expanding users considered that socialisation will result in the TIC for expanding users being set at a level below that required to recover the incremental cost of the expansion, with the balance being met by existing users. The non-expanding users considered that economic efficiency relies on ensuring that the costs of the expansion are borne by the parties who will benefit from the works.[115]

The non-expanding users considered the assessment of materiality under a socialised pricing proposal should be narrowly applied. Except to the extent that existing users gain a clear benefit from the expansion, any increase in the TIC for existing users increases the risk that the expansion will proceed in circumstances where it is not efficient. The non-expanding users considered that this is consistent with our approach to assessing the acceptability of price increases for existing users under a socialised pricing model for Aurizon Network.[116]

For comparison, DBIM estimated that the 7X expansion, completed in 2009, increased the TIC by $1.15/t (or 77%).[117]

We consider economic efficiency relies on users' charges recovering at least the incremental cost associated with accessing DBCT. In this regard, DBCT provides a common service to all users, and individual segments of terminal infrastructure cannot be isolated and dedicated to a particular user or group of users.[118]

We do not consider that the socialisation of the 8X expansion will necessarily result in existing users cross-subsidising the expansion parties, noting that existing users will access and share costs associated with the expanded terminal.

In any case, we consider that the 8X expansion will provide clear benefits to existing users (outlined in section 5).

[113] Synergies, sub. 5, p. 40.
[114] QCA, *Capacity Expansion and Access Pricing for Rail and Ports*, discussion paper, April 2013, pp. 2–3.
[115] Synergies, sub. 5, pp. 23–24, 50.
[116] Synergies, sub. 5, pp. 23–24.
[117] DBIM, sub. 1, pp. 25–6, 36. DBIM estimated the TIC values by extracting actual costs associated with the 7X expansion from our previous decisions.
[118] The characteristics of Aurizon Network's CQCN mean that individual segments of network infrastructure may be dedicated to a particular user or group of users.

4 INTEGRATION OF THE 8X EXPANSION WITH THE EXISTING TERMINAL

In determining whether circumstances exist that justify socialisation of the 8X expansion, we have considered the extent to which the expansion will operate wholly or partly, in an integrated way with the existing terminal or as a standalone development.

DBIM considered that the 8X expansion is a fully integrated expansion within the footprint of the existing terminal, supporting socialisation of the expansion. DBIM stated that no components of the expansion are separable or capable of being operated standalone on behalf of a single user or group of users, or with a different operator.[119]

Both Whitehaven Coal and BMC considered that the expansion would be integrated with the existing terminal.[120]

While the non-expanding user group acknowledged integration of the 8X expansion, it did not consider that this justifies socialisation.[121]

> We consider that the 8X expansion will operate in an integrated way with the existing terminal. We have formed this view having regard to the characteristics of the 8X expansion and the existing terminal.
>
> Integration of the 8X expansion is one of a number of factors that we have considered in determining whether circumstances exist that justify socialisation.
>
> This finding has informed our view of whether socialisation is appropriate, having regard to ss. 120(1) and 138(2) of the QCA Act.

4.1 Characteristics of the 8X expansion and the existing terminal

We consider that the nature of the works included in the 8X expansion clearly indicates it will be integrated with the existing terminal.

Table 13 provides detail on the works proposed. We are of the view that these works are largely characterised by the replacement and upgrade of existing infrastructure. New assets commissioned as part of the 8X expansion, such as the new shiploader, will be integrated with existing infrastructure. We also note that the 8X expansion does not involve an additional stockyard or berth or require DBIM to obtain more land.

[119] DBIM, sub. 1, p. 26.
[120] Whitehaven Coal, sub. 2, p. 5; BMC, sub. 3, p. 3.
[121] Synergies, sub. 5, p. 25.

Table 13: The 8X expansion

8X expansion phase	*Works*
Phase 1	• Install a new shiploader SL4 to increase availability of the existing outloading systems. The new shiploader will be fed from the existing OL3.[122] • Undertake outloading optimisation works to upgrade the performance of existing equipment. This includes:[123] – reclaim bucketwheel upgrades – stockyard to surge bin string control software upgrades – drive upgrades to L3 and L4 conveyors – changes to hatch change automation through software upgrades.
Phase 2	• Undertake the stockyard augmentation project to increase storage volumes in existing rows 1–3 of the stockyard.[124] This project involves replacing the sloping earth banks of the related bunds with vertical concrete walls.[125] • Upgrade existing yard machines and conveyors to allow existing systems to operate at a higher rate. Machinery to be upgraded includes conveyor S5, stacker ST2 and associated conveyors S6 and S6A, reclaimer RL3 and conveyor R2.[126]
Phase 3	• Construct a new inloader and rail receival pit, IL4 and RRP4 to replace the existing IL1. The new inloader and rail receival pit will feed coal to the existing conveyor and stockyard system.[127] • Upgrade the existing inloader IL2 to allow all inloading systems operate at the same rate. The upgraded inloading systems are integrated into the existing stockyard.[128] • Upgrade the outloading systems OL1 and OL2, to increase outloading rates. This includes upgrades to conveyors and belt feeders.[129]
Phase 4	• Extend the operating length of row 8 of the existing stockyard to increase terminal storage volumes. The extended row 8 will operate in an integrated manner consistent with the existing terminal. [130] • Replace reclaimer RL2 because its geometry does not match row 8. Reclaimer RL2 will be replaced with a longer boom reclaimer.[131] • Install a new stacker ST5 to facilitate independent stacking into Row 8 of existing stockyard. The new high capacity stacker will be installed on the new Bund 7.[132]

Stakeholders recognised that the 8X expansion will be integrated with the existing terminal.

DBIM noted that the 2019 Master Plan describes the expansion as a fully integrated incremental expansion which is not purely focused on the terminal expansion but has a stronger focus on the entire coal chain's efficiency and the resulting system capacity improvement.[133]

[122] DBIM, sub. 1, p. 16; DBIM, sub. 1, appendix 1, p. 15.
[123] DBIM, sub. 1, p. 16; DBIM, sub. 1, appendix 1, p. 16.
[124] DBIM, sub. 1, p. 17.
[125] DBIM, sub. 1, p. 17.
[126] DBIM, sub. 1, appendix 1, p. 16.
[127] DBIM, sub. 1, appendix 1, p. 16.
[128] DBIM, sub. 1, appendix 1, p. 16.
[129] DBIM, sub. 1, appendix 1, p. 17.
[130] DBIM, sub. 1, appendix 1, p. 17.
[131] DBIM, sub. 1, p. 20.
[132] DBIM, sub. 1, p. 20.
[133] DBIM, sub. 1, p. 26.

DBIM also provided details of the proposed 9X expansion[134] as a comparison to highlight integration of the 8X expansion with the existing terminal.[135]

Whitehaven Coal and BMC stated that updated facilities will be used by both existing and future users and considered that integration of the expansion is supported by DBIM's estimate that about 46 per cent of the total costs of the 8X expansion is NECAP-type work.[136]

The non-expanding user group acknowledged that the 8X expansion is designed to be highly integrated with the existing terminal, largely due to the extent to which it is bringing forward NECAP or NECAP-type projects.[137]

Stakeholders have also previously noted that the nature of the infrastructure at DBCT more generally means expansions are likely to be integrated with the existing terminal.

The existing terminal at Dalrymple Bay is a common-user coal export terminal, providing coal-handling services delivered by common infrastructure that is operated in accordance with universally applied terminal regulations.

The DBCT User Group[138] has previously stated that compared to Aurizon Network, where the extent of common infrastructure will vary greatly depending on the expansion involved, the extent of common infrastructure involved in some possible DBCT expansions is likely to be higher.[139]

DBIM has stated that unlike Aurizon Network, there is no infrastructure that can be separately attributable to an individual user or group of users or their coal, and that all infrastructure that is part of the terminal services any user at that terminal.[140]

4.2 Integration as justification for socialisation

We consider that operational integration between the 8X expansion and the existing terminal does not, in itself, provide a sufficient basis to justify socialised pricing.[141] Integration is one of a number of factors we have considered to determine whether circumstances exist to justify socialisation (section 1.4).

[134] The 9X expansion is identified as the expansion pathway to follow 8X. The proposed expansion features a design that could be operated as a standalone terminal, two new berths and a new stockyard.
[135] DBIM, sub. 1, pp. 26–27.
[136] Whitehaven Coal, sub. 2, p. 5; BMC, sub. 3, p. 3.
[137] Synergies, sub. 5, p. 25.
[138] The DBCT User Group is the body that represented Anglo American, Peabody Energy, Glencore, Rio Tinto Coal Australia, Isaac Plains Coal Management, BHP Mitsui and Vale at the time.
[139] DBCT User Group, *Draft Amending Access Undertaking for Differential Pricing*, March 2015, pp. 7–8.
[140] DBCTM, *Differential Pricing DAAU Response to QCA Draft Decision*, June 2015, p. 10.
[141] This is consistent with the non-expanding user groups views. Synergies, sub. 5, p. 25.

5 BENEFITS TO EXISTING USERS OF THE TERMINAL

In determining whether circumstances exist that justify socialisation of the 8X expansion, we have considered the extent to which the expansion is likely to benefit users of the existing terminal.

DBIM stated that the 8X expansion will provide significant, long-term benefits to existing users. It was of the view that the identified benefits offset negative impacts, which are mostly short-term and relate to the construction of the new facilities.[142]

Whitehaven Coal and BMC also considered that the 8X expansion will deliver benefits to existing users.[143]

While the non-expanding user group accepted that the proposed 8X expansion may provide some benefit to existing users, it considered that there is significant uncertainty around the benefits that will be provided. The non-expanding user group stated that there was insufficient information to identify the extent of any benefit.[144]

We consider that the 8X expansion will provide benefits to existing users, in that it will:

- result in cost savings to the NECAP program through the refurbishment of existing shiploaders (SL1–3) and the removal of reclaimer RL2 replacement
- reduce the risk of throughput losses associated with the NECAP program, due to the new fourth shiploader included in the 8X expansion
- provide greater opportunity for trading of short-term capacity in DBCT's secondary market, due to the additional terminal capacity
- improve reliability and flexibility of terminal operations, due to reduced downtime where unplanned events occur
- reduce ongoing handling charges.

These findings have informed our view of whether socialisation is appropriate, having regard to ss. 120(1) and 138(2) of the QCA Act.

5.1 Cost savings associated with the NECAP program

We are of the view that the 8X expansion will benefit existing users through cost savings to the NECAP program.

Specifically, we consider that capital expenditure associated with the 8X expansion will result in cost savings to DBIM's forecast asset replacement program. The proposed 8X expansion includes:

- the replacement of reclaimer RL2, which would otherwise require replacement as part of the forecast asset replacement program (saving $54m)

[142] DBIM, sub. 1, p. 14.
[143] Whitehaven Coal, sub. 2, p. 6; BMC, sub. 3, p. 2.
[144] Synergies, sub. 5, pp. 3–4.

- the installation of a new shiploader (SL4), which will allow the existing shiploaders (SL1–SL3) to be refurbished, rather than the more expensive alternative of replacement (saving $150m).

Whitehaven Coal stated that the 8X expansion would reduce future NECAP costs.[145] The non-expanding user group acknowledged the 8X expansion may lead to some cost reductions but considered there remains substantial uncertainty about the extent of this benefit. It considered the level of confidence in the timing and cost of the major NECAP program is inevitably low, particularly as the timeframe extends.[146]

As outlined in section 2.3.1, we consider DBIM's forecast asset replacement program is reasonable, on the basis that it reflects the operator's long-term asset management program.

We also consider DBIM's proposed adjustments to the asset replacement program, resulting from the 8X expansion, to be reasonable (section 2.3.2). In this regard, we consider it appropriate to remove the replacement of reclaimer RL2 from the asset replacement program and consider that installation of the new shiploader (SL4) will enable the existing shiploaders (SL1–3) to be refurbished, providing a cheaper alternative to replacement, with minimal impact on throughput.

We have considered the reasonableness of DBIM's cost estimates associated with the asset replacement program, without the 8X expansion and with the socialised expansion (see Box 1 and Box 2). While we consider these estimates reasonable, we acknowledge that the costs associated with the asset replacement program are likely to change over time. In any case, we consider that the 8X expansion will result in some cost savings to the asset replacement program.

There will be cost savings to the NECAP program (as a reduction to the future asset replacement program), regardless of whether the 8X expansion is socialised. When considering socialisation of the 8X expansion, the cost savings to the NECAP program are accounted for in our estimate of the existing users' TIC with the socialised expansion (see section 2.1).

5.2 Reduced risk of throughput loss associated with the NECAP program

We consider that installation of the new shiploader (SL4), included in the 8X expansion, will reduce the risk of throughput losses associated with the NECAP program, which will benefit existing users.

If the 8X expansion proceeded, DBIM forecasts that the new shiploader (SL4) allows for refurbishment of the three existing shiploaders (SL1–3), with no throughput losses.[147]

Without the 8X expansion, DBIM forecast that refurbishment of the three existing shiploaders will result in throughput losses of up to 18.5 mt per shiploader.[148] However, it stated that if the 8X expansion did not proceed, it intends to replace the existing shiploaders instead, reducing throughput losses to approximately 3.4 mt per shiploader.[149]

BMC considered there will be a reduced risk of throughput loss due to the 8X expansion.[150]

[145] Whitehaven Coal, sub. 2, p. 1.
[146] Synergies, sub. 5, pp. 28–29.
[147] For shiploader SL1, this assumes that outloader OL2 and shiploader SL2 upgrades will occur before shiploader SL1 refurbishment, as identified in the FEL 2 study—DBIM, response to information requested, 14 May 2021.
[148] DBIM, response to information requested, 18 June 2021.
[149] DBIM, sub. 1, p. 16.
[150] BMC, sub. 3, p. 3.

The non-expanding user group questioned whether it would be acceptable to refurbish existing shiploaders where the 8X expansion occurs, noting this would require the shiploaders to be removed for an extended period of time.[151]

We consider DBIM's estimated throughput losses to be reasonable (see Box 2). Further, we have formed the view that DBIM's asset replacement program, including the adjustments resulting from the 8X expansion, is reasonable (see sections 2.3.1 and 2.3.2 respectively). Where the 8X expansion occurs, refurbishment of the existing shiploaders provides a cheaper alternative to replacement, with minimal impact on throughput. However, if the 8X expansion does not proceed, we expect that the existing shiploaders will be replaced to minimise throughput impacts. Therefore, the resulting impact of the 8X expansion is a reduction in throughput losses of approximately 10 mt.[152]

We acknowledge that various assumptions must hold for the reduction in throughput losses to equal 10 mt. However, we consider it reasonable to expect that there will be a reduced risk of throughput losses, as we expect DBIM and the operator, acting reasonably, will seek to conduct refurbishment of existing shiploaders in a manner that has minimal impact on throughput at the terminal.

5.3 Inclusion of NECAP-type work in the 8X expansion

While we consider that the 8X expansion includes works with features similar to typical NECAP works, the extent to which these works would otherwise be undertaken in the ongoing NECAP program, if the expansion did not proceed, is generally unclear. As a result, we have not determined whether there will be any associated benefits provided to existing users at this time.

DBIM stated that the 8X expansion includes a significant component of NECAP-type work, which if the expansion did not proceed, would need to be provided for in the ongoing NECAP program.[153]

It considered that the inclusion of NECAP-type work in the 8X expansion, representing approximately 46 per cent of forecast expansion costs,[154] provides for:[155]

- alignment of required shutdowns and minimisation of throughput losses for existing users
- use of the large skilled workforce already mobilised and established on the site, which minimises interfaces and thereby supports safe work practices and improved coordination of activities
- reduced whole-of-life costs of the terminal
- full ongoing engagement with the independent user-owned terminal operator for operability assessments, and training in maintenance and operating requirements of the new facilities.

[151] Synergies, sub. 5, p. 29.
[152] This reflects throughput losses of 3.4 mt per existing shiploader without the 8X expansion (replacement strategy) compared to no throughput losses per existing shiploader with the 8X expansion (refurbishment strategy).
[153] DBIM, sub. 1, p. 7.
[154] DBIM, sub. 1, pp. 34, 35. This includes 'definite NECAP', being works that do not increase capacity and would typically remain unchanged if transferred to a NECAP program, and 'likely NECAP', which includes works that do not directly increase capacity, but which provide significant benefits to users in risk mitigation, and would need to be adapted to new circumstances if it was transferred to the NECAP program.
[155] DBIM, sub. 1, p. 7.

Whitehaven Coal and BMC both considered that the 8X expansion incorporates projects that would otherwise need to be undertaken as NECAP, benefiting existing users.[156]

The non-expanding user group submitted that it was unable to discern what elements of each phase the 8X project are genuinely brought forward NECAP and what is truly incremental expansion.[157]

The non-expanding user group stated that while works may involve replacing existing assets, and therefore be considered 'NECAP in nature', it is not clear whether it is necessary for all of these works to be brought forward into the 8X expansion program, or whether there is the option to exclude them from the 8X project and undertake them if, and when, required through the NECAP program.[158] It considered that 'NECAP in nature' works do not represent the actual expected NECAP requirements beyond 2028, with these requirements to be determined based on the asset condition, asset renewal options, forecast throughput and contracted capacity at the time.[159]

In terms of the associated benefits, the non-expanding user group considered that existing terminal users would only benefit if replacement of the relevant assets is expected to be required within a reasonable timeframe, in order to maintain sufficient terminal capacity.[160] Where there is uncertainty over future demand, the non-expanding user group stated that existing users will benefit in delaying NECAP works for as long as possible, as this allows them to maintain the option of more effectively optimising the future NECAP program as better information on the likely demand outlook becomes available. In this regard, they considered that a decision to avoid future NECAP through upfront investment in the 8X expansion imposes an additional cost on users, as this optionality is no longer available to them.[161]

We asked DBIM to clarify how it had identified NECAP-type work included in the 8X expansion. DBIM stated the FEL 2 study estimate was reviewed to identify scope with features similar to normal NECAP works.[162] DBIM stated it did not seek to determine how NECAP-type work would be reflected in its NECAP program if the 8X expansion did not proceed. It noted that the costs, timing, and scope of works would change, since the convenience and efficiencies associated with completing such work as part of the 8X expansion would not be available.[163]

We are of the view that the 8X expansion will include capital expenditure that has features similar to typical NECAP works, noting the 8X expansion is largely characterised by the replacement and upgrade of existing infrastructure.

However, it is generally not known the extent to which these works would be included in the ongoing NECAP program if the expansion did not proceed, nor how these works would differ if included in the ongoing NECAP program.

Where we are unable to understand how the 8X expansion works would otherwise be included in the ongoing NECAP program, we have not sought to form a view on whether associated

[156] Whitehaven Coal, sub. 2, pp. 5–6; BMC, sub. 3, p. 2.
[157] Synergies, sub. 5, pp. 19–20.
[158] Synergies, sub. 5, p. 30.
[159] Synergies, sub. 5, p. 30.
[160] Synergies, sub. 5, p. 30.
[161] Synergies, sub. 5, p. 30.
[162] DBIM, response to information requested, 14 May 2021.
[163] DBIM, response to information requested, 14 May 2021.

benefits will be provided to existing users.[164] It would be difficult to gain further clarity on the ongoing NECAP program at this time.[165]

DBIM has provided granular forecasts of its asset replacement program (which forms part of the NECAP program) and identified works in the asset replacement program that it will instead complete as part of the 8X expansion. This is the case for the replacement of reclaimer RL2. Here, we have considered whether there will be associated benefits (see section 5.1).

In considering the associated benefits, we note the non-expanding user group's concern that there will not be the option to avoid future NECAP, where upfront investment in the 8X expansion occurs. It is our understanding that the replacement of reclaimer RL2 as part of the 8X expansion is expected to occur within a similar timeframe to that outlined in the forecast asset replacement program.[166] As discussed in section 2.3.1, we consider DBIM's forecast asset replacement program is reasonable.

5.4 Efficiency, reliability and flexibility of the existing terminal

We consider that the 8X expansion, which is largely characterised by the replacement and upgrade of existing infrastructure, will provide benefits to existing users through improvements in efficiency, reliability and flexibility of terminal operations.

DBIM identified a number of examples of how the 8X expansion will improve the efficiency, reliability and flexibility of the terminal services (see Box 4).

[164] We consider that this uncertainty makes it difficult to assess whether there are conveniences and efficiencies associated with completing works as part of the 8X expansion. Further it would be difficult to appropriately consider issues raised by stakeholders, including the non-expanding user group's concern that the option of effectively optimising the future NECAP program to reflect better information will not be possible if NECAP works are included in the 8X expansion.

[165] We consider that DBIM and the operator are best placed to determine the NECAP program, at the relevant point in time.

[166] Where replacement of reclaimer RL2 occurs as part of the 8X expansion, we understand replacement is expected to occur around 2028 (based on engineering reports provided as part of DBIM's application). Under the forecast asset replacement program, replacement is expected to occur around 2029 (based on the five-year OMCP).

Box 4 Improving the efficiency, reliability and flexibility of the terminal services

- The new fourth shiploader will allow higher availability of the three outloading systems, increasing from 91 to 95 per cent. The SL4 will be able to sustain throughput while any other shiploader is undergoing short -term maintenance, minor upgrade or outage for other purposes. DBIM considered this an important benefit for existing users, because if 8X did not proceed, throughput (currently around 70 mtpa) is expected to reach 84.2 mtpa in the next few years, placing higher demand on shiploader availability. Consequently, outages for shiploaders will become more difficult to schedule and more disruptive to throughput.
- Outloading optimisation will improve throughput capability and outloading efficiency.
- The concrete bund walls will result in higher stockpile capacity, efficiency gains in the DBCC and reduced congestion at peak throughput. It will also reduce stockpile slumping in rain events, reducing downtime until the stockpile is restored to operations.
- Upgrades to existing yard machinery will allow machines to run more efficiently, providing faster train unloading and higher shiploading rates, and therefore increased throughput capability and reliability. It will also reduce maintenance downtime, providing benefits to existing users in terms of increased availability.
- The new inloader and upgrades to existing inloaders mean all trains can be unloaded at a consistently higher rate, thereby maximising the trains' efficiency and reducing the planning effort. The technology of the new inloader means there will be less disruption due to maintenance outages, and increased throughput capability.
- Additional stockpile volume will allow more parcels to be built simultaneously. In turn, this means that trains will source coal from more mine loadouts at any one time, thereby creating more system capacity.
- The replacement of reclaimer RL2 will reduce maintenance outages, as the new machine will require less maintenance than the machine it will replace.

Source: DBIM, sub. 1, pp. 15, 17–20.

DBIM also noted that the DBCT User Group have previously identified such benefits based on the 2019 Master Plan.[167]

Whitehaven Coal considered that existing users would experience significant improvements in terminal reliability, given the renewal, replacement and upgrades to many of the facilities relied on by existing users. It also considered that there would be a reduced risk of significant impacts to terminal capacity due to outages or delays, as a result of the increase in available capacity, as well as the improved reliability and efficiency of the DBCT assets from the 8X expansion.[168]

BMC also considered that existing users will likely benefit from increased reliability and efficiency as a result of the 8X expansion infrastructure and noted operating and maintenance improvements arising from the NECAP-type components of the 8X expansion.[169]

The non-expanding user group acknowledged that in some cases, improvements to terminal reliability may provide a benefit to existing users (for example, reduced outages for major equipment maintenance and therefore greater availability) but stated that there is insufficient information to allow an assessment of the extent of the claimed benefit to existing users, separate from any benefit of additional supply chain capacity contracted to new users.

It considered that there would be cases where improvements to terminal reliability and flexibility will serve to increase the reliability and flexibility of the supply chain—and ultimately increase system capacity, as has been modelled by the Integrated Logistics Company. However, it assumed that any such increase in system capacity will be contracted to, and absorbed by, the expanding users and will not result in any direct increase in capacity entitlement or contracted service

[167] DBIM, sub. 1, p. 57.
[168] Whitehaven Coal, sub. 2, p. 6.
[169] BMC, sub. 3, pp. 2, 3.

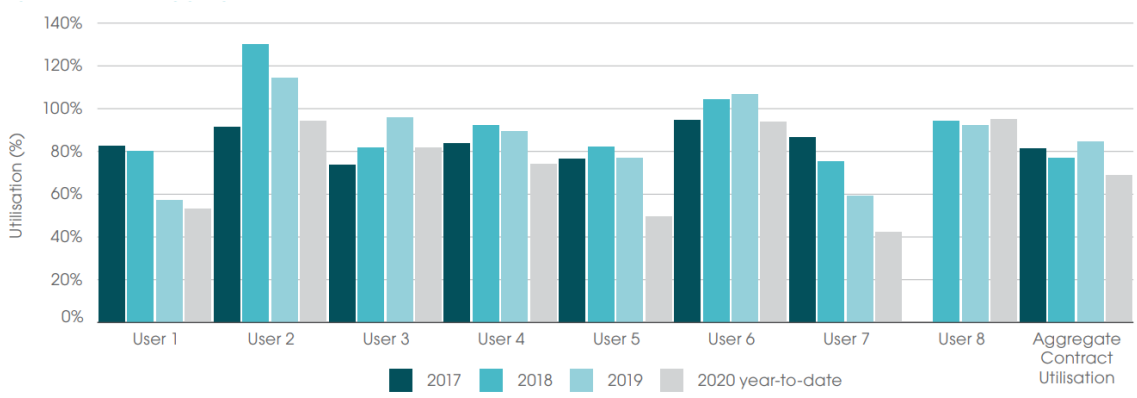
standard for existing users. Further, it suggested there may be cases where the expansion could have a detrimental impact on some users' service reliability and flexibility.[170]

Having considered the information provided, we are of the view that certain elements of the expansion will benefit existing users by reducing downtime where there are unplanned outages. For example, the stockpile augmentation project should allow stockpiles to be restored to operations quicker where rain events lead to stockpile slumping, and the new fourth shiploader will mitigate the risk of throughput loss if there is damage to any one shiploader or berth. We also consider that the replacement and upgrade of existing infrastructure should reduce maintenance requirements and outages.

We acknowledge that where improvements to terminal operations create additional capacity, this is likely to be captured by new users, given the demand for access to the terminal. However, we note that contract utilisation will vary. There may be cases where users do not utilise 100 per cent of their contracted capacity, and cases where users wish to ship above their contracted capacity. This has occurred in the past (see Figure 7).[171]

Short-term capacity at DBCT is traded in a secondary market. We consider that the increase in capacity at DBCT may provide additional available short-term capacity and greater opportunities for trading in DBCT's secondary market, which could be of benefit to existing users.

Figure 7 DBCT's contract utilisation



Source: DBI, Prospectus, November 2020, p. 77.

5.5 Reductions to handling charges

We are of the view that the 8X expansion will benefit existing users through a reduction in handling charges.

DBIM identified a reduction in ongoing handling charges as a benefit to existing users.[172] Both Whitehaven Coal and BMC considered there would be a reduction in operation and maintenance costs (which are recovered through the handling charges) as a result of the 8X expansion.[173]

The non-expanding user group acknowledged that the 8X expansion could lead to a reduction in the average handling charges. However, it considered that there is significant uncertainty around

[170] Synergies, sub. 5, pp. 31–32.
[171] DBI, *Prospectus*, November 2020, p. 77.
[172] DBIM, sub. 1, p. 28.
[173] Whitehaven Coal, sub. 2, p. 6; BMC, sub. 3, pp. 1, 2.

future operation and maintenance costs (and therefore handling charges). As a result, it stated caution must be applied in judging the extent of these benefits to existing users.[174]

Having regard to the nature of the 8X expansion, we do not expect that the costs to operate and maintain the expansion will result in a significant increase in total operation and maintenance costs (recovered through the handling charges). While some components of the 8X expansion may lead to additional operation and maintenance costs, this is unlikely to be the case with other components. This was acknowledged by stakeholders, who noted that the 8X expansion involves the replacement of existing equipment with new, higher capacity equipment, with commensurately lower operating and maintenance costs.[175] Additionally, DBIM stated that the additional stockyard storage space to be created by the expansion would not incur additional operating and maintenance costs.[176]

DBIM submitted estimates of future handling charges to be paid by users of the terminal, which are based on the operator's forecasts. The operator's forecasts show that the incremental handling charges associated with the 8X expansion component are forecast to be around one-fifth (on a per tonne basis) of the handling charges associated with the existing terminal. Where the handling charges for the expanded terminal are socialised amongst all users, the forecasts also show that there will be a reduction in handling charges[177] (see section 3.2.1).

We acknowledge the inherent uncertainty in estimating future handling charges. However, we consider that the operator's forecasts are reasonable, noting that the independent and user-owned operator is responsible for overseeing the day-to-day operations and maintenance of the terminal (see Box 3).

To the extent that the 8X expansion does reduce handling charges, the non-expanding user group suggested that price differentiation could be applied, with any benefit from reduced handling charges being directed to the expanding users through the cost allocation manual[178].[179] It is currently unclear what would be included in such a manual. The cost allocation manual must be consistent with the cost allocation principles set out in section 11.7(h) of the 2021 AU.

Separately, we note that any benefit in terms of reduced handling charges will impact the total access charges paid by existing terminal users.

As total access charges comprise of both the TIC and handling charges, any forecast increase in the existing users' TIC where the 8X expansion is socialised will be offset by the reduction in handling charges. We discuss the extent to which this will occur in section 3.2.1.

[174] Synergies, sub. 5, pp. 27–28.
[175] Synergies, sub. 5, pp. 26–27.
[176] DBIM, sub. 1, p. 14.
[177] Forecast handling costs associated with the existing terminal, plus the incremental costs associated with the 8X expansion.
[178] If the terminal was differentiated, DBIM would be required to prepare a cost allocation manual specifying how operating and maintenance costs would be allocated between different terminal components (see section 11.7 of the 2021 AU).
[179] Synergies, sub. 5, p. 28.

6 RISKS TO EXISTING USERS OF THE TERMINAL

In determining whether circumstances exist that justify socialisation of the 8X expansion, we have considered any differences in the risks of providing access to users of the existing terminal in respect of additional terminal capacity created by the 8X expansion.

DBIM assessed that if the 8X expansion is socialised, the risks of providing access to existing users are no different to the existing risks.[180]

BMC also considered there are no identifiable differences in risks in providing access to existing users in respect of additional terminal capacity created by the 8X expansion.[181]

In contrast, the non-expanding user group considered that the 8X expansion has the potential to affect risks to users of the existing terminal—amongst other things, it can increase users' exposure to volume and cross-default risk.[182]

> We do not consider that socialisation of the 8X expansion will materially affect the allocation of risk to the existing users of DBCT.
>
> We consider that existing users' exposure to risk resulting from the socialised expansion will be mitigated by the existing regulatory arrangements and the characteristics of related seaborne coal markets.
>
> This finding has informed our view of whether socialisation is appropriate, having regard to ss. 120(1) and 138(2) of the QCA Act.

6.1 Allocation of volume risk to DBCT's existing users

Demand for coal handling services at DBCT currently exceeds the expanded capacity of the terminal. DBIM noted:

- there is no available capacity at the existing terminal
- the additional capacity expected to be created by the 8X expansion has been contracted to the expansion parties
- there are access applications for a further 10.2 mtpa in the access queue.[183]

We do not consider that socialisation of the 8X expansion will materially increase the allocation of volume risk to DBCT's existing users. While there is a possibility that the 8X expansion will ultimately deliver additional capacity that may never be used or required, we consider:

- the market outlook for DBCT supports the ongoing utilisation of the expanded terminal for the life of the asset
- the possible risk of contract roll-off from existing users following the expiration of current access agreements is likely to be mitigated by the long-term demand

[180] DBIM, sub. 1, p. 31.
[181] BMC, sub. 3, p. 4.
[182] Synergies, sub. 5, pp. 5, 33–34.
[183] DBIM, sub. 1, pp. 5, 30.

- existing users appear to be taking a long-term, through-the-cycle view of their contracted position (where evergreen renewal rights are a feature of the regulatory framework)
- the regulatory framework enables DBIM to manage any additional risks associated with providing access to new users, by providing for DBIM to hold security.

Counterparty risk associated with contract roll-off from existing users

The non-expanding user group considered that a socialised pricing approach will result in higher counterparty risk being borne by existing users, with 8X delivering additional capacity that may never be used or required. It considered socialising the 8X expansion will significantly increase demand risk for existing users, given the longer-term coal market outlook and the possibility of terminal demand declining beyond the contracted pricing period.[184]

The non-expanding user group stated there is an expectation that contracted volume and throughput may peak and then decline from the time the 8X expansion is to be delivered, and beyond. It submitted that in the order of 70 per cent of existing terminal contracts are due for renewal around 2028—and that DBIM had not provided sufficient information on terminal demand expectations beyond 2028, when the 8X expansion will be completed.[185]

We consider the risk of contract roll-off from existing users following the expiration of current access agreements is mitigated by the long-term demand for access to DBCT, which is driven by the underlying market characteristics of metallurgical coal sourced from the Bowen Basin and the international demand for that coal.

BMC considered the strong pipeline of demand for capacity at DBCT means that a prudent operator of the terminal would pursue a capacity expansion.[186]

The Dalrymple Bay Infrastructure (DBI) prospectus assessed the future risk of non-renewal of access agreements or material uncontracted volumes beyond 2028 to be low. It considered the Bowen Basin's large reserves of high-quality metallurgical coal, growing export metallurgical coal demand and the Bowen Basin's position as the leading metallurgical coal export region will likely support an increase in production from the Bowen Basin. Furthermore, the prospectus expected DBCT to remain the terminal of choice for access seekers in the central Bowen Basin given its proximity to key export destinations, handling services offered, and freight advantages.[187]

This view is consistent with that of RMI, which we recently engaged to independently assess the economic life of DBCT as part of our investigation into DBIM's 2019 DAU. As part of its market outlook for DBCT, RMI concluded that demand growth for metallurgical coal may peak in 2035, and then gradually decline from 2060 as existing infrastructure is retired and possibly replaced by more carbon-neutral technologies.[188] Box 5 provides an overview of RMI's market outlook for DBCT.

We also note that evergreen renewal rights are a feature of the regulatory framework. DBIM stated that there was a 100 per cent take-up of renewal options for qualifying users during the contract extension process conducted in 2019. DBIM considered this is evidence of existing users taking a long-term, through-the-cycle view of their contracted position.[189]

[184] Synergies, sub.5, pp. 34, 36.
[185] Synergies, sub. 5, pp. 5, 23, 33.
[186] BMC, sub. 2, p. 4.
[187] DBI, *Prospectus*, November 2020, p. 78.
[188] RMI, *DBCT 2019 DAU—Review of the economic life of DBCT assets*, prepared for the QCA, February 2021, p. 3.
[189] DBI, *Prospectus*, November 2020, p. 78.

Box 5 RMI's market outlook for DBCT

In the report RMI prepared for the QCA, RMI concluded the following:

- DBCT will remain a predominantly metallurgical coal export facility, with metallurgical coal throughput at DBCT currently in excess of 80% of throughput. (p. 3)
- The Bowen Basin has the largest and lowest cost resources of high-quality metallurgical coal. (p. 28)
- Supply from existing operations supplying coal to DBCT starts to decline during the period from 2025 to 2027, but DBCT supply and the proposed increase in DBCT capacity to 97.5 mtpa over that period, will be supported by market demand and new projects. (p. 5)
- Despite zero carbon emission targets, seaborne thermal and metallurgical coal demand into South East Asia, India, Pakistan and Bangladesh is likely to continue to grow for at least the next 10 years, possibly peaking around 2035. This is supported by the current programme for construction and approved construction of power stations and conventional steel mills over the next 10 years, including HELE coal fired technology in India, South East Asia and China. (p. 20)
- The demand growth for thermal and metallurgical coal will remain flat from 2035 to at least 2060 as most of this new infrastructure will have an operating life in excess of 30 years. Demand will then start to decline as existing infrastructure is retired and replaced by more carbon-neutral technologies. (p. 20)
- With the possible exception of Russia, there is limited metallurgical coal supply capacity that could compete with Bowen Basin coals in terms of product quality and cost of supply to meet the expected growth in metallurgical coal demand. (p. 31)
- The Bowen Basin, and in particular the Goonyella Rail System corridor, is in a very strong competitive position to maintain a dominant market share over the long term. Supply capacity from other areas (e.g. Indonesia, the USA, China and the NSW Southern Coalfield) is expected to reduce within a 30-year time frame, thus increasing demand from the Bowen Basin, which has ample high-quality, lower-cost metallurgical coal resources. (p. 32)

Source: RMI, DBCT 2019 DAU—Review of the economic life of DBCT assets, prepared for the QCA, February 2021.

Furthermore, volume risk will be shared amongst both new and existing users if the 8X expansion is socialised.

DBIM considered the risk of any spare capacity is unlikely to materially adversely affect existing users if the 8X expansion is socialised. Rather, DBIM considered that it is likely that the overall risk profiles of users would likely improve from the addition of the 8X expansion parties.[190]

Volume risk associated with expansion capacity

In relation to the additional 8X expansion capacity, the non-expanding user group considered that demand has only been considered over the initial 10-year period for which it has conditional contracts in place. It submitted that in reality, the demand outlook for the 8X expansion is far more uncertain.[191]

The non-expanding user group considered that existing users bear a significantly increased demand risk. The non-expanding user group noted that DBIM applied different depreciation profiles to calculate the socialised and differentiated prices.[192] It submitted that by adopting longer asset lives, socialisation passes a risk onto existing users that DBIM is not willing to accept itself.[193]

We recognise that there will always be some uncertainty as to the future demand for coal handling services at DBCT. However, we consider the continued competitiveness of Bowen Basin

[190] DBIM, sub. 1, pp. 30–31.
[191] Synergies, sub. 5, pp. 22, 33–34.
[192] In estimating the differentiated TIC, DBIM accelerated the depreciation of the 8X expansion costs to match the 10-year term of the expansion parties' access agreements, in order to mitigate asset stranding risk.
[193] Synergies, sub. 5, pp. 16, 34.

metallurgical coal producers will be a key determinant of continued demand for coal handling services at DBCT. As outlined above, RMI's market outlook for DBCT supports the ongoing utilisation of the expanded terminal for the life of the asset.

The non-expanding user group considered that there is much higher uncertainty associated with forecast coal production volumes from mine developments rather than from existing mines with access agreements. It submitted that:

- there can be significant variation from a new development's planned production schedule due to a range of technical and project risks
- financial risk can have an impact on a producer's ability to finance and deliver a new development, particularly in the event that changed conditions in the coal market require a material adjustment to the anticipated project cash flows.[194]

Furthermore, the non-expanding user group considered the project development risks associated with greenfield mine projects are significantly higher than brownfields expansions. Brownfield expansions can leverage off existing mine infrastructure and operational capability, and cashflow from existing production can reduce financial risk.[195]

The non-expanding user group submitted that risks associated with such developments cannot be completely addressed through counterparty screening, contracting arrangements and security provisions.[196]

In contrast, DBIM submitted that the expansion parties include both existing users and new users of DBCT, with large throughput requirements and risk profiles comparable with that of existing users.[197]

Fundamentally, the competitiveness of coal producers in the Bowen Basin will determine DBIM's exposure to volume risk in the longer term. While the mines that utilise DBCT may change overtime as a result of firm-specific factors, coal handling services at the terminal will be sustained as long as the output of mines continues to be in demand by end customers.

The DBI prospectus outlined that Bowen Basin mines provide higher product quality, resulting in a significant margin being achieved for their products—producing predominantly hard coking coal and low volatile pulverized coal for injection. Additionally, it considered that Bowen Basin producers have distinct comparative advantages over other producers, including logistics, a stable client base, and reserve composition within the basin.[198]

By providing for DBIM to hold security (including bank guarantees and parent company guarantees) from users that it considers less creditworthy, we consider that the regulatory framework enables DBIM to manage any additional risks associated with providing access to new users.[199] No user has ever defaulted on payments to DBIM.

In any case, if the 8X expansion is socialised, the pricing framework enables the costs associated with an access seeker defaulting to be shared across all the remaining users.

[194] Synergies, sub. 5, p. 35.
[195] Synergies, sub. 5, p. 35.
[196] Synergies, sub. 5, pp. 35–36.
[197] DBIM, sub. 1, p. 30.
[198] DBI, *Prospectus*, November 2020, p. 37.
[199] DBIM considered that these regulatory arrangements allow it to address default risk—DBIM, sub. 1, p. 30.

DBIM considered the financial impact of a defaulting user would not be onerous for existing users.[200] Additionally, DBIM also submitted that the 8X expansion may be scaled down in the event of a reduction in the capacity required by expansion parties.[201]

The non-expanding user group considered capacity resulting from a defaulting expansion party is unlikely to be taken up by another party in the queue in the event of a downturn in the coal market. It stated that while there had been strong demand for capacity at Wiggins Island Coal Export Terminal, in combination with Aurizon Network's WIRP project, this had dissipated as a result of the market downturn and surplus capacity remains uncontracted.[202]

We do not consider that the experience at WICET is a reflection of the extent that existing users at DBCT are exposed to the risk of an expansion party defaulting, noting:

- DBCT is estimated to be the lowest cost multi-user export pathway for central Bowen Basin mines on average due to, amongst other things, its position adjacent to these mines
- DBCT has consistently handled the greatest volume of coal exported from the Bowen Basin, which mitigates users' exposure to counterparty risk
- new capacity being created by the 8X expansion will only account for around 15 per cent of the capacity of the expanded DBCT.

6.2 Operational issues that could cause delays or losses for existing users

It is not apparent that the socialisation of the 8X expansion will have any material adverse implications for the coal handling services provided to existing users. In view of the integration of the expansion with the existing terminal (see section 4), the extent to which existing users are exposed to operational risk associated with the construction of the 8X expansion will be the same regardless of whether the 8X expansion is socialised.

BMC considered that delivery of 8X will necessarily give rise to an interface risk for all users during construction and commission, and that risk will be shared by existing users.[203] DBIM submitted that it plans to mitigate any major impacts to services for existing users during the construction phase.[204]

The non-expanding user group considered that processes for managing operational risk associated with the construction of the 8X expansion do not appear particularly relevant to a justification for a socialised pricing method—as the operational risk will need to be effectively managed regardless. The non-expanding user group expected that DBIM will analyse operational issues, both within the terminal and across the supply chain more broadly, and strategies to mitigate any operational risks associated with the delivery of 8X will be embedded into the project.[205]

Additionally, DBIM considered there are no risks to the operator in providing services to existing users after construction is completed, given the 8X expansion is operationally integrated with the

[200] DBIM, sub. 1, p. 30.
[201] DBIM, sub. 1, p. 22.
[202] Synergies, sub. 5, pp. 35–36.
[203] BMC, sub. 3, p. 3.
[204] DBIM, sub. 1, p. 29.
[205] Synergies, sub. 5, pp. 36–37.

existing terminal. DBIM stated that reliability and the flexibility of the terminal services are improved for all users, thereby reducing any risks of providing access to existing users.[206]

We discuss the benefits associated with the 8X expansion improving the reliability and flexibility of terminal operations for existing users in section 5.4.

6.3 Allocation of cost risk to existing users

The non-expanding user group considered that a further risk for existing users is cost risk associated with delivery of the 8X expansion. It considered that there remains significant uncertainty as to the scope and cost of the 8X expansion, which would expose existing users to significant cost risk—as variations to the scope and resulting cost of 8X will be borne by all users of the terminal.[207]

We acknowledge that there is potential for costs associated with the 8X expansion to vary from those outlined in DBIM's price ruling application. Before the commencement of the 8X expansion, DBIM is to complete a FEL 3 feasibility study followed by a terminal expansion application for our consideration. However, our price ruling is only applicable to the circumstances and assumptions underpinning the proposed 8X expansion. If the events or circumstances to which our assumptions relate do not happen as assumed, our ruling would no longer apply for the purpose of any access determination in the future.

We therefore do not consider that making a price ruling at this stage to socialise the proposed 8X expansion will expose existing users to significant cost risk.

[206] DBIM, sub. 1, p. 29.
[207] Synergies, sub. 5, p. 36.

APPENDIX A: ASSUMPTIONS UNDERPINNING OUR PRICE RULING

In accordance with ss. 150F(4) and 150F(6)(d) of the QCA Act, in making a ruling as to the appropriate pricing method to apply to the proposed 8X expansion, we have made the following assumptions about the scope, capacity, cost and schedule of the 8X expansion. These assumptions are based on the terminal capacity expansion for the Terminal identified in the FEL 2 study[208] and as set out in DBIM's price ruling application (as outlined below).

The engineering and design works and cost estimates for the 8X expansion were completed by the Aurecon Group. The capacity assessments were completed by the Integrated Logistics Company, the coordinator of the Dalrymple Bay Coal Chain.

Capacity gain and capital cost

Table 14 The capacity gain and capital cost associated with the proposed 8X expansion

8X expansion phase	*Capacity gain (mtpa)*	*Capital cost ($m)*
Phase 1	3.1	246
Phase 2	3.9	229
Phase 3	5.5	461
Phase 4	2.4	340
Total	**14.9**	**1,276**

Source: DBIM, sub. 1, p. 12.

Scope of works

Table 15 Summary scope of works for the proposed 8X expansion

8X expansion phase	*Major scope element*
Phase 1	• SL4 on Berth 3 and L18 conveyor at 8650 tph from OL3 • Outloading optimisation: – Reclaim bucketwheel upgrades (SR2 and SR5) to avoid carry-over – Stockyard to surge bin string control software upgrades across 3 surge bins – L3/L4 fluid coupling upgrades – Hatch change automation
Phase 2	• ST2, S6 and S6A upgrade to 8100 tph • Conveyor S5/ST1A upgrade to 8100 tph • Stockyard Augmentation Project (SAP) • R2 / RL3 upgrade • Zone to OL system (Zone 1 to OL3, Zone 3 to OL2, Zone 2 to OL1 as current)
Phase 3	• RRP4 & IL4 at 8100tph to S6A, S5, S7, S8, S9 (future), R7/R8, R2, R3, R5 • IL2 Upgrade (split system) at 8100 tph • R3 to suit SR2A + OL1 upgrade at 8650 tph

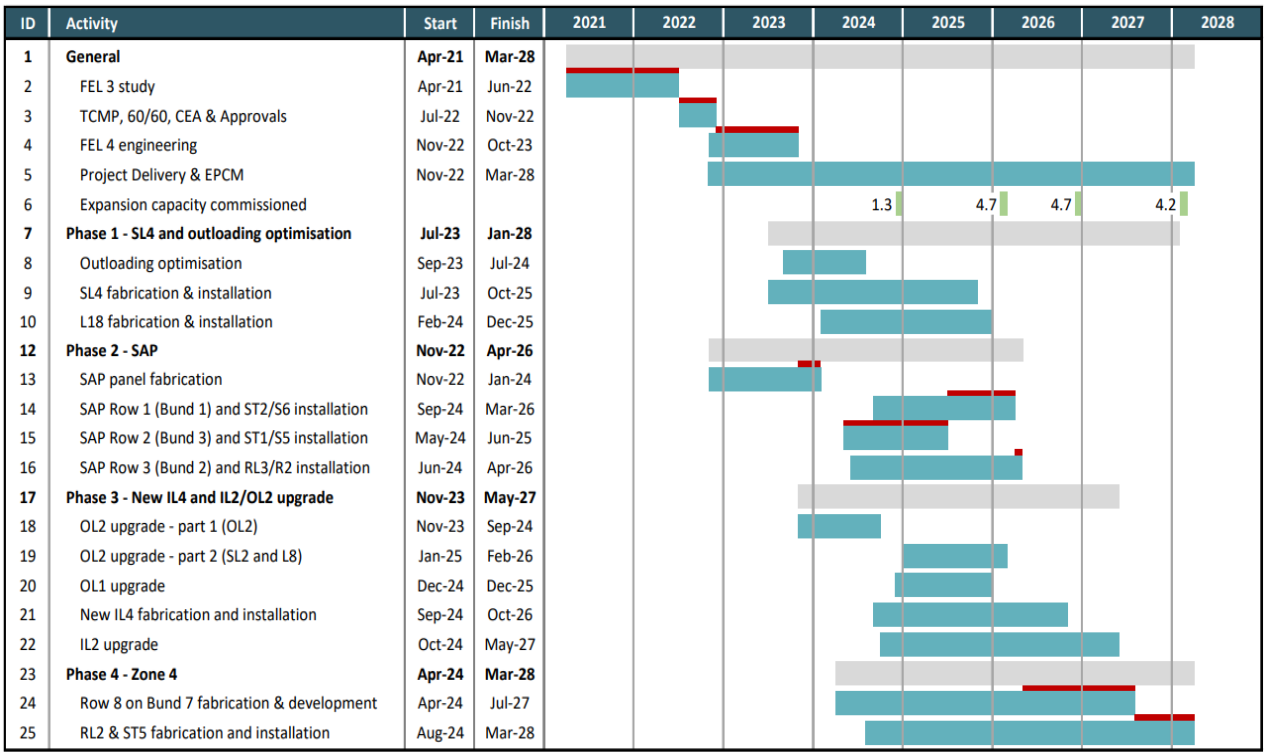
[208] DBIM, *DBCT 8X Expansion: FEL 2 Feasibility Study*, February 2021.

8X expansion phase	*Major scope element*
	• SL2 + OL2 Upgrade at 8650 tph • Zone to OL system swap (Zone 1 to OL3, Zone 2 to OL2, Zone 3 to OL1)
Phase 4	• Zone 4 – Completion of Row 8 with vertical western wall • S9 and ST5 at 8100 tph above western wall • Replacement of RL2 with a new reclaimer RL2A

Source: DBIM 2021, DBCT 8X Expansion: FEL 2 Feasibility Study, February, p. 19.

Delivery schedule

Figure 8 The 8X expansion delivery schedule



Source: DBIM, sub. 1, p. 12.

APPENDIX B: LIST OF SUBMISSIONS

We have received the following submissions during our investigation of DBIM's application for a ruling on the pricing method applicable to the 8X expansion. The submission numbers below are used in this draft determination for referencing purposes. The submissions are available on the QCA website unless otherwise indicated.

Stakeholder	***Sub. no.***	***Submission***	***Date***
DBIM	1	Application for a ruling on the pricing method for the 8X expansion	March 2021
Whitehaven Coal	2	Submission on DBIM's application	June 2021
BHP Billiton Mitsui Coal (BMC)	3	Submission on DBIM's application	June 2021
Anthropocene Fixed Income Institute	4	Submission on DBIM's application	June 2021
Synergies (on behalf of the non-expanding user group)	5	Submission on DBIM's application	June 2021

REFERENCES

Advisian, *Dalrymple Bay Coal Terminal Rehabilitation Cost Review (Revision 1)*, February 2021.

Dalrymple Bay Coal Terminal User Group, *submission to the QCA*, *DBCT Management Differential Pricing Draft Amending Access Undertaking*, 19 March 2015.

Dalrymple Bay Infrastructure Limited, *Prospectus—Dalrymple Bay Infrastructure Limited*, November 2020.

Dalrymple Bay Coal Terminal Management, submission to the QCA, *DBCT Management Differential Pricing Draft Amending Access Undertaking—draft decision*, 22 June 2015.

—— *DBCT Master Plan 2019*, August 2019.

Queensland Competition Authority (QCA), *Capacity Expansion and Access Pricing for Rail and Ports*, discussion paper, April 2013.

—— *DBCT Management's 2015 draft access undertaking*, final decision, November 2016.

—— *Part C: DBCT declaration review*, final recommendation, March 2020.

—— *DBCT Management 2020–21 annual revenue requirement, reference tonnage, terminal infrastructure charge and 2019–20 NECAP*, letter to DBCT Management Pty Ltd, June 2020.

Queensland Government, *Gazette: Extraordinary*, no. 31, vol. 384, 1 June 2020.

Resource Management International (RMI), *DBCT 2019 DAU—Review of the economic life of DBCT assets*, prepared for the QCA, February 2021.