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Rail



# Discussion paper

## Tarcoola to Darwin rail infrastructure: Review of asset valuation methodologies for periodic revenue reviews

November 2022

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## Request for submissions

The Essential Services Commission (**Commission**) invites written submissions from stakeholders on this paper. Written comments should be provided by **23 December 2022**.

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The Commission may also exercise its discretion not to publish any submission based on length or content (for example containing material that is defamatory, offensive or in breach of any law).

Responses to this paper should be directed to: **Tarcoola to Darwin rail infrastructure: Review of asset valuation methodologies for periodic revenue reviews**

It is preferred that submissions are sent electronically to: [escosa@escosa.sa.gov.au](mailto:escosa@escosa.sa.gov.au)

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## Introduction

The purpose of this discussion paper is to seek stakeholder input on asset valuation methodologies that could be adopted for the purposes of reviewing the revenues earned by the access provider of rail infrastructure (below-rail) services between Tarcoola and Darwin. Other methodological factors impacting on the revenues earned are not intended to be assessed, but will form part of the periodic review.

By way of background, Clause 50 of the AustralAsia Railway (Third Party Access) Code (**Code**) requires the Commission to review, in five-year intervals, below-rail freight revenues where no sustainable competitive prices exist (that is, where potential alternative transport services do not provide an effective constraint on below-rail prices on the Tarcoola to Darwin rail infrastructure). It is common when regulating monopolies to assess the revenues earned. The Commission's periodic reviews of revenues involve a comparison of the relevant revenues earned for below-rail services against an estimated maximum revenue limit for those same below-rail services. The purpose of a Clause 50 review is to determine whether the relevant revenues earned by the access provider have been excessive having regard to factors outlined in Clause 50 of the Code.

A key component of those Clause 50 periodic reviews of revenues is the value attributed to the rail infrastructure. That asset value is used for the purpose of determining an efficient return on, and of, capital for the period. The depreciated optimised replacement cost (**DORC**) methodology is specified for the purposes of arbitration, and the Commission has adopted DORC in previous Clause 50 reviews of revenues.

Stakeholders have previously expressed divergent views regarding the topic of asset valuation of the Tarcoola to Darwin rail infrastructure. Some have expressed a view about the DORC asset valuation methodology and the potential for high ceiling prices and returns to be earned on contributed financial capital.<sup>1</sup> Other stakeholders, however, have expressed the view that any departure from a DORC methodology for the purposes of the Clause 50 review would be inconsistent with the powers and functions of the Commission.<sup>2</sup>

This review will allow all stakeholders the opportunity to submit to the Commission evidence and views on the topic of asset valuation methodologies and their application in future reviews of revenues. This may include input from access seekers and end users as well from the current access provider of below-rail services, Aurizon – who recently completed its purchase of One Rail Australia on 29 July 2022. The review is not intended to evaluate methodological factors other than those relating to asset valuation.<sup>3</sup>

The Commission's current position – which has been formed having considered the relevant statutory frameworks, relevant factual matters and external advice – is that it may adopt an asset valuation methodology other than DORC if, on a review, it considers that no longer to be a valid methodology for determining efficient costs.

Notwithstanding that current position, the Commission is yet to determine whether or not it will or should take any action on this matter. To assist stakeholders in providing inputs to inform its deliberations, this discussion paper documents why the Commission considers that it could adopt an alternative and outlines what it sees

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<sup>1</sup> For example, see OzMinerals, *Submission to the South Australian Rail Access Regime Review*, March 2020, pp. 1-2, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21481/20200507-Rail-AccessRegimeReview-IssuesPaperSubmission-OzMinerals.pdf.aspx?Embed=Y>, and Mineral Council of Australia (NT), *Submission on the 2017 ESCOSA Review of Guidelines for the Access Regime for the Tarcoola-Darwin Railway*, February 2017, p. 25, available at [https://www.escosa.sa.gov.au/ArticleDocuments/1065/20170307-ReviewOfRailGuidelinesAccessRegime\\_2017Submission-MineralsCouncil.pdf.aspx?Embed=Y](https://www.escosa.sa.gov.au/ArticleDocuments/1065/20170307-ReviewOfRailGuidelinesAccessRegime_2017Submission-MineralsCouncil.pdf.aspx?Embed=Y).

<sup>2</sup> One Rail Australia, *ESCOSA's Tarcoola to Darwin Railway – 5-year review of revenues 2013-14 to 2017-18*, pp. 12-13, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21806/20211015-Rail-Tarcoola-Darwin-RailwayRevenueReview-DraftReport-Submission-OneRailAustralia.pdf.aspx?Embed=Y>.

<sup>3</sup> While stakeholders may express the view that the rate of return is entwined with the choice of asset base, Clause 50(5)(c) of the Code sets out that a commercial return must be determined having regard to risk premiums associated with the expected risks prevailing at the commencement of construction of the railway. Risk premiums were already calculated by the Commission in 2003 for the purposes of arbitration guidelines.

are key advantages and disadvantages of methodologies that could be adopted. The discussion paper has made use of a range of information, including:

- ▶ **Attachment A:** A report prepared for the Commission by Mr Richard Dennis AM PSM, and
- ▶ **Attachment B:** A background discussion paper prepared for the Commission by NERA Economic Consulting.

## Next steps

There is neither a statutory requirement nor statutory timeframe for a review of asset valuation methodologies relating to Clause 50(4) reviews of revenues. This review into asset valuation methodologies was foreshadowed in October 2021. In March 2022, the Commission confirmed that it would proceed with its intended discussion paper.<sup>4</sup> This discussion paper does not presuppose any outcome of the review. As part of this review, the timing of any potential change to asset valuation methodology for reviews of revenues will be considered.

The Commission is seeking responses to this discussion paper until **23 December 2022**. Questions for stakeholders are included throughout the paper. The Commission plans to publish a final paper by March 2023.

# The Tarcoola to Darwin rail infrastructure

## Legal structure, ownership and operation

The Tarcoola to Darwin line comprises approximately 824 kilometres of rail infrastructure (including track and signalling systems) from Tarcoola to Alice Springs that opened in 1980, and approximately 1,415 kilometres of infrastructure (including track and signalling systems) from Alice Springs to Darwin that opened in 2004.

The current access provider of below-rail services (Aurizon) leases the right to operate the rail infrastructure under the 50-year AustralAsia Railway Project Concession Deed. Parties to the deed are Aurizon, the AustralAsia Railway Corporation (**AARC**) and the Governments of both South Australia and the Northern Territory. The deed specifies the rights, responsibilities and obligations of the parties involved.<sup>5</sup>

The Commission was appointed as the regulator at commencement of the Code. The access regime was certified by the Commonwealth Treasurer in 2000 as an effective state-based access regime until 31 December 2030.<sup>6</sup>

Bulk and intermodal freight as well as passenger services are transported on Tarcoola to Darwin rail infrastructure. To provide context, below-rail services transporting bulk freight accounted for around two-fifths

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<sup>4</sup> Commission, *5-year review of revenues 2013-14 to 2017-18 – Draft report*, October 2021, pp. 1-2, 18, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21778/20211015-Rail-Tarcoola-Darwin-RailwayRevenueReview-DraftReport.pdf.aspx?Embed=Y>, and Commission, *5-year review of revenues 2013-14 to 2017-18 – Final report*, March 2022, pp. 2, 24-25, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21839/20220325-Rail-Tarcoola-DarwinRailwayRevenueReview%20-Final.pdf.aspx?Embed=Y>.

<sup>5</sup> For example, see background details in AustralAsia Railway Corporation, *AustralAsia Railway Corporation – annual report 2020-2021*, 10 November 2021, p. 10, available at <https://www.aarail.com.au/>, and in Commission, *10-year review of revenues – Final report*, August 2015, pp. 5-8, available at <https://www.escosa.sa.gov.au/ArticleDocuments/365/20150828-Rail-Tarcoola-Darwin-TenYearReviewOfRevenues-FinalReport.pdf.aspx?Embed=Y>.

<sup>6</sup> The Hon. Peter Costello MP, *Certification of Access Regime for Tarcoola-Darwin Railway*, available at <https://ministers.treasury.gov.au/ministers/peter-costello-1996/media-releases/certification-access-regime-tarcoola-darwin-railway>. For a discussion of certification issues, see National Competition Council, *AustralAsia Railway Access Regime – Application for Certification under Section 44M(2) of the Trade Practices Act*, Final Recommendation, February 2000, pp. 1-105.

of revenues over the five-year period between 2013-14 and 2017-18; most other revenue was accounted for by intermodal freight (around half). Passenger services accounted for the remainder of revenues.<sup>7</sup>

## Access regime under the Code

The Code sets out a negotiate-arbitrate framework for access to below-rail services, where parties first attempt to agree on commercial terms, with dispute resolution processes and arbitration available if negotiations should fail. The Code includes a schedule that outlines pricing principles for the purposes of arbitration, which explicitly references the use of a DORC asset value.

In accordance with the Code, the Commission has issued guidelines, including for floor and ceiling pricing purposes for arbitration, for the calculation of arbitrated outcomes, and for the roll-forward of the DORC value for arbitration. When there is not a sustainable competitive price, the DORC value is applied in determining the theoretical upper bound price. The floor price is determined based on the avoidable costs of the service. It is noted that under arbitration the methodology to calculate the floor and ceiling prices involves taking into account contributions to fixed costs by existing users of the rail infrastructure. Once an upper and lower pricing bound has been established, an arbitrator may determine prices within this range subject to various factors.<sup>8</sup>

## Clause 50 review of the revenues earned

As mentioned earlier, the Commission must periodically review the revenues earned by the access provider of below-rail services on the Tarcoola to Darwin rail infrastructure where no sustainable competitive prices exist. The Commission has previously assessed revenues earned for the financial-years 2013-2014 to 2017-2018 and for financial-years 2003-2004 to 2012-2013.<sup>9</sup>

The purpose of the Clause 50(4) review is to determine whether or not the revenues earned by the access provider have been excessive, having regard to the factors specified in Clause 50(4) to 50(9) of the Code. Those factors require that actual revenues must be measured against efficient costs and that, in determining those costs, investment in all railway infrastructure be considered, an appropriate commercial return be applied (having regard to the risks at the time of construction, development and operation of the railway infrastructure), and avoidable costs and a reasonable contribution to fixed costs be subtracted.<sup>10</sup>

An important aspect of the Clause 50 review of revenues is that it can adapt as circumstances change (subject to the requirements of the review imposed under the Code). There are certain aspects of the review that allow for discretion on the part of the regulator, having regard to relevant matters or circumstances, when undertaking the Clause 50(4) review of revenues. These aspects, among others, relate to asset valuation.<sup>11</sup>

## Discretion to adopt an asset valuation methodology other than DORC

The Commission's current position has been formed having considered the relevant statutory frameworks, relevant factual matters and external advice and its position is that a Clause 50(4) review of revenues must be meaningful in all respects, including of the asset valuation methodology used to determine efficient costs. The essential features and focus of a Clause 50 review of revenues are outlined below.

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<sup>7</sup> Commission, *5-year review of revenues 2013-14 to 2017-18 – Final report*, p. 10.

<sup>8</sup> Commission, *Review of rail guidelines for the Tarcoola-Darwin railway - Final decision*, October 2019, pp. 1-21, available at <https://www.escosa.sa.gov.au/ArticleDocuments/1061/20191029-Rail-ReviewRailGuidelines-Tarcoola-Darwin-FinalDecision.pdf.aspx?Embed=Y>.

<sup>9</sup> Commission, *5-year review of revenues 2013-14 to 2017-18 – Final report*, pp. 2, 24-25, and Commission, *10-year review of revenues – Final report*, pp. 1-43.

<sup>10</sup> Clauses 50(4) to 50(9).

<sup>11</sup> Other methodological factors that utilise regulator discretion include, but are not limited to, determining the expected risks prevailing at the commencement of the construction of the rail infrastructure. Commission, *5-year review of revenues 2013-14 to 2017-18 – Final report*, pp. 7-8.

- ▶ While a DORC methodology applies in arbitration, a Clause 50(4) review of revenues is broader than just assessing how the regime has performed when prices have been determined through arbitration; it is to determine whether prices have been excessive considering all cases where no sustainable competitive prices exist.
- ▶ Unlike the arbitration provisions, there is no clear statement in the Code about the asset valuation methodology to be used when undertaking a review of revenues under Clause 50(4) of the Code. By not prescribing the use of DORC where prices are commercially negotiated, this appears to indicate that the DORC methodology does not necessarily need to be a factor in determining price.
- ▶ It would appear to unduly restrain a Clause 50(4) review of revenues to take the view that the Commission is unable to adopt the, on balance, preferable value of assets because of a methodology that is only referred to for arbitration.
- ▶ The revenue review relates to revenues derived from either: (1) awards by arbitrators; or (2) access contracts commercially negotiated between parties. It is possible that a Clause 50(4) review of revenues may determine that one or more awards made as a result of arbitration are excessive. This may indicate that the application of the DORC methodology has in fact been a contributing factor to such an outcome.
- ▶ Several matters referred to in Clause 50(5) are similar to, but not identical to, factors and pricing principles that must be applied by an arbitrator under the pricing principles to determine a ceiling price and a floor price. This may contribute to a divergence between the outcome of a Clause 50(4) revenue review and the prices determined as a result of arbitration.
- ▶ Several concepts in Clause 50(5) are not included in the pricing principles. This may further contribute to a divergence between the outcome of a Clause 50(4) revenue review and the prices determined as a result of arbitration.
- ▶ The Clause 50(4) review is intended to be a comprehensive review capturing the effect of all elements of the access regime on the prices and revenues earned by the access provider. Accordingly, if excessive revenues were found to have been earned, including if the DORC methodology were a contributing factor to that outcome, steps must be taken by the Commission under Clauses 50(8) and 50(9) of the Code. In proceeding with those steps, the Commission may determine the best possible approaches and methodologies to avoid excessive revenues and prices in the regulatory period going forward, including in connection with pricing principles and arbitrations, and there is no suggestion in the Code that the Commission is constrained as to the asset valuation methodology that could be adopted in this situation.
- ▶ Clause 50(6) requires that the costs to be applied under Clause 50(5) must be efficient costs. Efficient costs are influenced by the asset value. For the purposes of a Clause 50(4) review of revenues, this must be an objective determination and must use the most appropriate methodology in the circumstances.

A report prepared for the Commission by Mr Richard Dennis AM PSM is included as Attachment A.

## Asset valuation and access

### Different methods of asset valuation

There are a range of asset valuation methodologies that could be adopted for a Clause 50 review of revenues. The methodologies that could be adopted include DORC, depreciated historic cost (**DHC**), market transaction value, and hybrid methodological options (including a combined market value-DORC approach in which the market value is adopted for the return on capital and DORC is adopted for the return of capital).<sup>12</sup> In addition

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<sup>12</sup> Deprival value is typically known as the lower of either economic value or DORC. Deprival value is not discussed in this discussion paper, as it is unlikely to be implemented as economic value would be difficult to estimate – see Attachment B. The opportunity cost principle for asset valuation has also not been discussed in this discussion paper, as the line is a sunk asset with limited salvage value.

to the choice of asset valuation methodology, there is a related question regarding the treatment of assets: should the methodology involve drawing a line-in-the-sand, which differentiates past investment decisions and new investment decisions, or should there be an allowance for periodic or one-off revaluations of assets?

A range of asset valuation methodologies have been adopted by regulators locally and internationally. Methodologies have typically been selected on a case-by-case basis to account for specific state and national legal frameworks and any particular financial and economic factors. Once an initial asset value has been set, the asset value has usually been rolled forward with new assets added based on actual costs (tested for efficiency) and the value of existing assets depreciated. Where a line-in-the-sand approach has not been adopted, periodic asset revaluations may have occurred in order to account for changes in market conditions.

In outlining methodological options as part of this discussion paper, four criteria have been considered.<sup>13</sup>

- ▶ **Criteria 1:** Does the methodology measure contributed capital or the value of the assets in providing services to consumers (Box 1)?
- ▶ **Criteria 2:** Does the methodology promote efficient, forward-looking costs of access?
- ▶ **Criteria 3:** Can the methodology be practically implemented by the Commission and be understood by stakeholders?
- ▶ **Criteria 4:** Does the methodology achieve valuation objectives for regulatory purposes at lowest cost?

#### Box 1. Criteria 1

Stakeholders have previously highlighted the difference between the market transaction value and the replacement cost of the Tarcoola to Darwin rail infrastructure. Criteria 1, therefore, distinguishes cost recoupment (compensation for investors) from the current value of the corporation's assets devoted to the infrastructure service being provided. This is similar to the accounting theory of income maintenance; this distinguishes operating capital maintenance (which accounts for changes in the cost of providing a level of service potential and is based on an enterprise view of capital maintenance that is broadly defined as the amount left over once the firm has put aside enough to replace its current service potential) from that of financial capital maintenance (which accounts for changes in the value of the funds owners have made available to the entity and is based on investor's financial resources).<sup>14</sup> It is noted that Attachment B describes the issue in slightly different terms; it explains the issue as distinguishing between returns earned by the asset and those returns earned by the owner.

Key asset valuation methodologies are summarised below. Further background details about asset valuation methodologies, including a survey of the methodologies adopted in states, territories and industries in Australia and in regulatory jurisdictions in New Zealand and the United Kingdom, can be found in Attachment B.

Each of the asset valuation methodologies outlined below has theoretical and practical limitations. This section compares and contrasts these alternatives and discusses the circumstances when these may or may not be applicable. The summary below (of methodologies and assessments of them) is not intended to be exhaustive.

#### Depreciated optimised replacement cost (DORC)

A DORC methodology intends to be the current costs that will be incurred if a new entrant were to construct a modern equivalent asset from scratch. This total cost is then depreciated to match the remaining useful life of the existing asset. The DORC value is intended to reflect the theoretical replacement costs associated with

<sup>13</sup> These criteria have been informed by the framework adopted by NERA Economic Consulting (see Attachment B).

<sup>14</sup> For example, see concepts discussed in Bonbright J, 'Principles of Public Utility Rates', *Columbia University Press*, 1961, pp. 161-162, and Ergas H, *Error and Design: Economics in (and some Economics of) the Australian Competition Tribunal*, Agenda, Volume 16, No. 3, 2009, pp. 76-77.

new assets that are optimised and adjusted for depreciation, to provide services that are equivalent to those provided by the existing assets at the valuation date. In this respect, a replacement cost methodology, such as DORC, provides a value-of-service measure of the assets, rather than a measure of the contributed capital of the asset's owner.

DORC asset valuation methodologies have played a somewhat common role in regulatory decisions in Australia (see Attachment B). It is therefore a methodology well understood by stakeholders. A DORC methodology aligns with the methodology to be applied under the Code for the purposes of arbitration and has been adopted by the Commission in previous reviews of revenues. In particular, in 2015 the Commission adopted the DORC value in its review of the revenues earned for financial-years 2003-2004 to 2012-2013.<sup>15</sup> While the Commission adopted a DORC value in 2022 for the review of revenues for financial years 2013-2014 to 2017-2018, it highlighted to stakeholders that it intended to explore alternative asset valuation methodologies in the form of a discussion paper.<sup>16</sup>

The methodology, however, is not without limitations. A DORC value may not align to the owner's contributed capital. Also, a DORC methodology involves subjective assumptions in regard to technological change, depreciation and expected demand, prices and costs. An example of a limitation is that a new entrant would generally have to buy new rail infrastructure assets (rather than depreciated assets). This means that the access provider could potentially price up to optimised replacement cost (rather than DORC) without attracting entry.<sup>17</sup>

#### *Should a revaluation be considered?*

The current DORC value was calculated in 2005, around the time of the construction of the Alice Springs to Darwin rail infrastructure (Box 2). The current valuation has characteristics that make it somewhat similar to a measure of DHC. This is because the DORC value was calculated at the time of original construction costs of the Alice Springs to Darwin line. A disadvantage is that the current DORC valuation may be out of line with current market conditions and may not signal efficient access costs.

#### **Box 2. The current DORC value**

The current DORC valuation, including for both line segments, was completed in 2005 by BOOZ Allen Hamilton on behalf of Asia Pacific Transport (APT). By way of background, APT was the holder of the initial concession deed (prior to Genesee & Wyoming Australia (North) and Aurizon). The Tarcoola to Darwin rail infrastructure was valued on a DORC basis at approximately \$2.3 billion including government contributed assets for financial year 2003-04 (or approximately \$1 billion excluding government contributed assets). The asset value in real terms was, for the purposes of the 2013-2014 to 2017-2018 revenue review, approximately \$1.7 billion in 2017-18 including government contributed assets (or approximately \$0.8 billion excluding government contributed assets).<sup>18</sup>

A revaluation could address any perceived limitations in the original valuation and the risk of overcapitalisation. An option is for either a one-off revaluation (and then continuing with a line-in-the-sand approach) or commitment to periodic revaluations. Revaluation (either once-off or periodic) may bring current valuation estimates up to date with market conditions. This is not necessarily uncommon in regulatory

<sup>15</sup> Commission, *10-year review of revenues – Final report*, pp. 33-37.

<sup>16</sup> Commission, *5-year review of revenues 2013-14 to 2017-18 – Final report*, pp. 2.

<sup>17</sup> For example, see Menezes F, *A preliminary view: Regulatory economics assessment of the proposed Western System asset valuation approaches*, p. 17, available at [https://www.qca.org.au/wp-content/uploads/2019/05/27756\\_A-preliminary-view-Regulatory-economics-assessment-of-the-proposed-Western-System-asset-valuation-approaches-1.pdf](https://www.qca.org.au/wp-content/uploads/2019/05/27756_A-preliminary-view-Regulatory-economics-assessment-of-the-proposed-Western-System-asset-valuation-approaches-1.pdf), and Johnstone DJ, 'Replacement Cost Asset Valuation and Regulation of Energy Infrastructure Tariffs.' *Abacus*, Vol. 39(1), 2003, pp. 1-41. A similar point was made by the Australian Competition Tribunal; see Application by Telstra Corporation Limited [2010] ACompT 1 at paragraph 232.

<sup>18</sup> Numbers in Box 2 are in December 2014 dollars and are as reported in Commission, *5-year review of revenues 2013-14 to 2017-18 – Final report*, pp. 51-52.

contexts, especially for industries subject to technology change.<sup>19</sup> Periodic revaluation could also allow price flexibility in response to market conditions.

However, a revaluation can bring its own set of risks. The technical complexities involved in a DORC valuation, and the necessary stakeholder input, could lead to a lengthy process, with the risk of stakeholder disagreement on revaluation elements or outcomes.<sup>20</sup> In addition, under a revaluation the treatment of gains or losses from upward or downward asset values may have to be accounted for in any Clause 50 review of revenues.<sup>21</sup>

The Commission is interested in stakeholder input on whether revaluation would bring more clarity and net benefits relative to use of the current DORC value.

### Depreciated historic cost (DHC)<sup>22</sup>

Depreciating the historic (or original) cost incurred to build the asset is a commonly accepted method of asset valuation.<sup>23</sup> DHC measures the original costs of constructing the asset. An advantage of the DHC methodology is that, in principle, it can rely on objective data that can be audited by independent parties. Accordingly, it is seen as robust to manipulation and having low informational requirements once an initial asset base is set.

But there are limitations. For instance, the original cost of construction does not necessarily measure forward-looking, efficient costs (if costs and technologies have materially changed since the time of construction or if an asset was over-designed). If an asset is over-designed or includes redundant assets, it can allow a return on, and of, this capital (which could lead to potential windfall gains to a new owner of the asset). By way of comparison, in competitive markets historic investments bear limited relevance to competitive prices; prices are known to be determined by current and forward-looking market conditions.

In addition to these limitations, there can be practical constraints to this asset valuation methodology. For instance, historic records for cost data for the Tarcoola to Alice Springs line (built in 1980) may be difficult to obtain, collate and verify.

There are some instances in which a DHC methodology has been adopted in regulatory contexts locally and internationally (see Attachment B). It tends to be most applicable for infrastructure assets that have been established under existing regulatory regimes.<sup>24</sup>

### Market transaction value

There could be an option to adopt the market transaction value (purchase price) from a recent transaction for the same asset or an otherwise comparable asset. A market valuation eschews subjective judgement and instead can reflect market conditions including expectations of future demand, prices and costs. It allows a return to the owner's contributed capital and can promote efficient, forward-looking costs of access.<sup>25</sup> There

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<sup>19</sup> Menezes F, p. 11.

<sup>20</sup> For example, to give a sense of the possible timeframe, the Australian Competition & Consumer Commission (ACCC) engaged a consultant to undertake a DORC valuation of the interstate rail network in April 2020 and the final report, including taking into account stakeholder submissions, was published in October 2021.

<sup>21</sup> For example, an upward revaluation might be treated as a holding gain based on a financial capital maintenance approach to asset valuation, but would be required to be treated as requiring an increase in provisions under an operating capital maintenance approach. These differences change how revaluation in asset values might flow through to being treated as income or as solely affecting balance sheets. For example, see Ergas, pp. 76-78.

<sup>22</sup> This methodology is sometimes referred to as depreciated actual cost.

<sup>23</sup> Menezes F, p. 15, and King S, 'Asset valuation and access to essential infrastructure facilities under Part IIIA of the Trade Practices Act 1974', pp. 94-116 in *Deregulation of public utilities: current issues and perspectives*, ed. Megan Richardson, Centre for corporate law and securities regulation, The University of Melbourne, Melbourne, 1996.

<sup>24</sup> Several examples are evident in the telecommunications sector (see Attachment B).

<sup>25</sup> Market value can differ from replacement cost values if the allowed rate of return is not equal to the investors' cost of capital. In theory, if the allowed rate of return is equal to the cost of capital, market value should equal replacement cost. See Davis K, *Asset Pricing and Asset Valuation*, Agenda, Volume 9, No. 3, 2002, pp. 228-229.

are regulatory examples involving the adoption of market value; an example is various utilities in the United Kingdom during privatisation in the 1990s.<sup>26</sup>

A disadvantage of adopting a market value in a regulatory context is the valuation circularity problems which could arise. For example, for below-rail freight services where no sustainable competitive prices exist, a circularity problem could arise when a buyer values an asset based on the expected cash flows of the regulated asset base, which, in turn, are derived from the price paid for the asset.<sup>27</sup>

There can also be reasons for overbidding on the market value. A market value may be increased due to the presence of a control premium (i.e. a premium paid to gain a controlling interest), the 'winner's curse' (i.e. when a successful bidder pays too much in a first-price auction) and/or expectations of operational and cost synergies.<sup>28,29</sup> In contrast, in a competitive market, investors who over or underestimate the market value of an asset bear the associated risks.

There may also be some practical drawbacks in utilising the market value option for the purposes of the Clause 50 review of revenues. Aurizon's purchase of One Rail Australia for \$2.35 billion included a combination of above- and below-rail assets spread across multiple rail networks and states.<sup>30</sup> To extract an approximate market value would require accounting for the various types of below- and above-rail assets and, among other factors, expected operational synergies between them. This could raise complications that may not be easily overcome without imposing subjective judgments, which could diminish some of the advantages of using the market value.

#### *What are the options?*

Assuming a purchase price could be identified, one methodological option is to calculate the return on, and of, capital on the purchase price (net of acquisition related fees and costs). A second methodological option could involve a hybrid approach in which the purchase price (net of acquisition related fees and costs) is used for the return on capital, but DORC is used for the calculation of the return of capital. The latter option was adopted by water regulator, Ofwat, in the United Kingdom at the time of privatisation of water and sewerage utilities (Box 3).

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<sup>26</sup> Grout PA and A Jenkins, *Regulatory Opportunism and Asset Valuation: Evidence from the US Supreme Court and UK Regulation*, CMPO working paper series 01/38, pp. 26-44, Menezes F, pp. 18-22, and Armstrong M, Cowan S and J Vickers, 'Regulatory Reform: Economic Analysis and British Experience', MIT Press, 1994, pp. 324-354.

<sup>27</sup> See Commerce Commission, 'Review of Asset Valuation Methodologies: Electricity Lines Businesses' System Fixed Assets', *Discussion paper*, October 2002, pp. 44-46, and Armstrong M, Cowan S and J Vickers, p. 189. Similar to a market value transaction, a discounted cash flow methodology values a company on the basis of expected net cash flows, and this type of valuation approach raises circularity issues (the value can include monopoly rents).

<sup>28</sup> Davis K, pp. 228-229, and Gray S, *Why do regulated assets sell for more than the RAB*, presentation at IPART 25<sup>th</sup> Anniversary Conference, October 2017.

<sup>29</sup> There are cases in which the market value has exceeded replacement cost (e.g. the privatisation of a gas transmission company in Victoria in 1999 and several transactions of electricity line business assets in New Zealand in the late 1990s/2000s) (See Davis K, pp. 228-229 and Commerce Commission, pp. 44). And some have expressed the view that regulated businesses tend to sell for more than regulated asset values (see S Gray). On the other hand, there are cases in which the market value has been below replacement cost (i.e. various utilities in the United Kingdom at the time of privatisation in the 1990s) (see Menezes F, pp. 18-22 and Armstrong M, Cowan S and J Vickers, pp. 324-354).

<sup>30</sup> The purchase included the coal haulage business in New South Wales and Queensland, known as East Coast Rail, which is intended to be divested by Aurizon under the terms of an undertaking given to the ACCC. See Aurizon, *Aurizon completes acquisition of One Rail Australia*, ASX market announcement, 29 July 2022, available at <https://www.aurizon.com.au/investors/asx-announcements>.

### Box 3. The use of market values for water and sewerage utilities in the United Kingdom

The experience of water and sewerage utilities in the United Kingdom at the time of privatisation can provide an illustration of when market transaction values were adopted for the value of the regulatory asset base. The situation is an option to consider when an owner's contributed capital might be less than the theoretical replacement cost of the assets. For instance, the initial market values of water and sewerage utilities was estimated to be less than five percent of replacement cost. The regulator, Ofwat, determined the return on capital based on the initial market value, while the return of capital was determined based on replacement cost.<sup>31</sup> This approach allowed the owner a return on its contributed capital, while compensating for the risk to service levels. One possible implication could be that, to the extent that the market value of the Tarcoola to Darwin rail infrastructure were potentially below the DORC value, a combined market value-DORC approach could be a methodological consideration.

There are, however, some limitations in this methodological option. First, the adoption of market values in this circumstance overcame the risk of valuation circularity because the existing (pre-privatisation) regulatory settings, combined with the United Kingdom Government's principles at the time of privatisation (that existing owners should neither gain nor lose under the new regime), provided an anchor to market values. Second, the application of DORC for depreciation in this situation was conditional on broad equivalence to maintain service levels (that is, the owner would undertake capital expenditures to meet the DORC-based depreciation.). However, the Commission's Clause 50 review of revenues is ex post in nature and may not allow for enforcement of broad equivalence. Without broad equivalence, there could be a risk that the asset value quickly trends lower. The implication is that normal returns over the life of an asset might present as being low early in an asset's life and high late in an asset's life.<sup>32</sup>

*Should a line-in-the-sand or infrequent revaluations be considered?*

The infrequent nature of market purchases of the rail infrastructure suggests that a periodic revaluation approach could be adopted. Each purchase reveals updated forward-looking information. For each purchase a new line-in-the-sand could be utilised and then rolled forward by actual capital expenditure. The approach could allow a return to the owner's contributed capital and may promote efficient, forward-looking costs of access. By taking into account market conditions, it could send a stronger signal to investors to consider stranded asset risk (which can provide incentives to be efficient and forward-looking). Consistent with this, in competitive markets, asset values are known to vary in response to market conditions.<sup>33</sup> A drawback of the approach is that it may be limited by problems of valuation circularity, overbidding and measurement/identification (all of which were noted earlier).

An alternative could be to utilise a one-off, line-in-the-sand based on a single purchase price of the assets. If a purchase were made prior to the Commission signalling the use of the market value, it would not be affected by the risks of valuation circularity. A key disadvantage in this situation is that the purchase price cannot be updated at a later date to account for changes in market conditions and for any future owner's contributed capital. For example, the purchase price incurred by a former access provider may neither reflect the new purchaser's contributed capital nor the latest market conditions embedded in the price paid by the new purchaser.

<sup>31</sup> Menezes F, pp. 18-22, Grout PA and A Jenkins, *Regulatory Opportunism and Asset Valuation: Evidence from the US Supreme Court and UK Regulation*, pp. 26-44, Grout PA and A Jenkins, 'Privatisation of Utilities and the Asset Valuation Problem', *European Economic Review*, 48, 2014, pp. 927-941, and Armstrong M, Cowan S and J Vickers, pp. 182-189, 344-345.

<sup>32</sup> See Attachment B.

<sup>33</sup> For example, see Kerin P, *What would an efficient regulatory contract look like?*, Network, Issue 55, June 2015, pp. 1-6, available at <https://www.accc.gov.au/system/files/Network%20Issue%2055%20-%20June%202015.pdf>, and Garnaut R, *Australia After Paris: Will our potential to be an energy superpower of the low-carbon world?*, Public lecture hosted by the Young Energy Professionals, Perth, 21 January 2016, p. 8.

### Questions for stakeholders

For the purposes of a Clause 50(4) review of revenues:

- ▶ To what extent might a DORC methodology be appropriate?
- ▶ Would a revaluation of DORC bring more clarity and net benefits compared with the use of the current DORC value? Should a one-off revaluation be utilised, or should periodic revaluations be utilised?
- ▶ Are there factors that might allow for, or limit, the adoption of an asset valuation methodology other than DORC?
- ▶ To what extent might a DHC methodology be appropriate?
- ▶ To what extent might a market value methodology be appropriate? Should a line-in-the-sand be utilised and updated for each new market transaction, or should a line-in-the-sand be utilised with no further updates?

Please provide evidence and reasons to support your position.

## Issues of regulatory risk

The issue of regulatory risk is an important consideration for the Commission and stakeholders in the context of a possible change in asset valuation methodology. If a change in regulatory settings were to increase regulatory uncertainty, it might affect the access provider's incentives for investment. On the other hand, if stakeholders perceive a change is needed to meet requirements under the Code, but the Commission were not to do so, it could lead to concerns about monopoly rents and the asymmetric treatment of risk between the access provider and access seekers.

There are two key risk issues relevant to the Commission's review of asset valuation methodologies.

1. To distinguish between the extent of risk directly attributed to a particular asset valuation methodology versus the extent of risk relating to a change of methodology.
2. The timing of the choice of methodology and the period for which it might apply.

### Risk associated with a particular methodology versus risk of a change in methodology

It is difficult to assess perceptions of regulatory risk. For example, the application of DHC or market transaction value may, in some general infrastructure contexts, be perceived as a reasonable approach, given they can measure returns to the owners' contributed capital and are in line with certain regulatory practices elsewhere. Yet a change toward using either of them (and away from what might have previously been expected and understood by stakeholders) could raise concerns.

Ultimately, perceptions of regulatory risk can depend on various factors and there is a range of considerations. These considerations of risk depend on the extent to which a methodology and change in methodology is seen as credible and durable, the magnitude of any resulting changes in valuation, and the relationship between the methodology and the objectives, purpose and legislation in question. The Commission is interested in input from stakeholders on the issue of regulatory risk.

### Question for stakeholders

For the purposes of a Clause 50(4) review of revenues:

- ▶ To what extent might a change in asset valuation methodology impact stakeholders' perceptions of regulatory risk and fairness?
- ▶ To what extent might a particular type of methodology impact the asset valuation and hence results of a periodic review of revenues?

Please provide evidence and reasons to support your positions.

## Choice of the period for which the methodology should apply

The choice of asset valuation methodology can affect the return investors can earn into the future and the prices paid by consumers. Accordingly, it may seem reasonable to match the asset valuation methodology used by the Commission to assess excessive revenues with the ex ante methodology used by the access provider to set prices (i.e. in a regulatory setting, the owner should have an ex ante expectation of full cost recovery, subject to the investment being efficient).

The Commission's starting position is that, to the extent that a change in methodology were to take place, application of the methodology on a prospective basis would allow it to be taken into consideration in any price setting, commercial negotiations and investment decisions. The position recognises that the Commission previously (in 2015) supported the use of a DORC value for the purposes of the Clause 50(4) review of revenues.<sup>34</sup> The previous access provider has expressed the view that, if an asset valuation methodology change is allowed (which, to be clear, it considered was not the case under the Code), then any change should be prospective in nature and could only take effect after 2030 (once certification for the state-based regime expires).<sup>35</sup>

It is worth noting that there are some counterpoints to the positions above. For instance, application only on a prospective basis could risk extending a period for which monopoly rents were being earned and may result in a review of revenues for the preceding period that is not meaningful in all respects, including as it relates to the asset valuation methodology used to determine efficient costs. Further, the ex ante asset valuation methodology used by the access provider when commercially negotiating prices is non-transparent to the regulator, so it may not in practice align with the methodology used by the regulator to assess excessive revenues.<sup>36</sup>

### Question for stakeholders:

For the purposes of a Clause 50(4) review of revenues:

- ▶ To the extent a change in asset valuation methodology is found to be appropriate, should the methodology be applied on a prospective or retrospective basis?

Please provide evidence and reasons to support your positions.

<sup>34</sup> Commission, *10-year review of revenues – Final report*, pp. 33-37.

<sup>35</sup> One Rail Australia, p. 13.

<sup>36</sup> In addition, from a practical perspective, the Code requires application of the real risk-free rate observed at the time of the regulator's review. If a prospective approach was required by the Code, then it could be argued that the real risk-free rate would be required to be measured at the commencement of the five-year review period. However, Clause 50(5)(d) of the Code specifies that in determining an appropriate return the Commission must have regard to financial market rates '*prevailing at the time of the regulator's review*'. Also, for Clause 50(4) reviews, the assessments of whether sustainable competitive prices exist have taken place at the time of the regulator's review, not on an ex ante basis.

## Summary

The Commission's current position is that it may adopt an asset valuation methodology other than DORC, if, on a review, it considers that it is no longer a valid methodology to determine efficient costs. Ultimately, the most appropriate methodological option is that which best achieves the objectives of a Clause 50 review, which is to determine whether the relevant revenues earned by the access provider have been excessive having regard to factors outlined in Clause 50 of the Code.

Available information is not overwhelmingly supportive of any one particular asset valuation methodology. There are circumstances where each methodology may provide an appropriate means for reviewing whether excessive revenues have been earned by the access provider under a Clause 50(4) review of revenues.

- ▶ A DORC methodology is grounded in the theoretical cost of entry and provides both consistency with arbitration processes and stability in procedure over time. However, the continued use of the current DORC value has risks. These risks include if the current DORC value no longer reflects the cost of a new entrant; if there were grounds to doubt the accuracy of the original valuation; or if a return on assets were allowed to be calculated with respect to a DORC value that was in excess of the current owner's contributed capital.
- ▶ A DHC approach could be considered. However, past investments may not bear relevance to current and forward-looking market conditions, and, while the typical advantage of DHC is that of its administrative simplicity and transparency, historic records for cost data for the original rail infrastructure built in 1980 may be difficult to obtain, collate and verify. Furthermore, to the extent that historic costs greatly exceed (and are no longer in line with) the current owners' contributed capital, the approach may be unlikely to measure excess returns to the current owner.
- ▶ The use of a market value (or purchase price) can allow for an objective assessment of returns against the owner's contributed capital and eschews subjective judgments about current and forward-looking market conditions. However, the approach could lead to potential problems of valuation circularity and overbidding, and, in any case, the market transaction value for the Tarcoola to Darwin rail infrastructure may not be clearly identified from Aurizon's purchase value of One Rail Australia.

To the extent that a change in methodology were to take place, the Commission's starting position is to apply that methodology on a prospective basis. This approach could be complemented with practical steps to aid in any transition period.

## Next steps

The Commission is seeking responses to this discussion paper until **23 December 2022** and plans to publish a final paper by March 2023, refer to Table 1 below. For guidance on how to make a submission, please refer to the inside front cover of this discussion paper.

Table 1: Timetable of review

Stage	Timing
Discussion paper	November 2022
Public consultation	November 2022 to 23 December 2022
Final paper	March 2023