Brookfield

A GLOBAL ASSET MANAGEMENT COMPANY
Focused on Property and Infrastructure Assets

DBCT Management

2016 DAU Submission

09 October 2015

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1 Introduction

On 23 June 2015 the Queensland Competition Authority (QCA) presented DBCT Management Pty Ltd (DBCTM) with an Initial Undertaking Notice, which requires DBCTM to submit a Draft Access Undertaking (DAU) for the coal handling service at the Dalrymple Bay Coal Terminal (DBCT or the Terminal) within 90 days of the receipt of that notice. On 18 September 2015 the QCA granted DBCTM a four week extension to the submission date. In response to these notices, DBCTM therefore submits this DAU (the 2016 DAU) to the QCA.

DBCT is a deepwater coal loading terminal situated in the Port of Hay Point, 40 kilometres south of Mackay in Queensland. DBCT was developed by the Queensland Government and commenced operations in 1983, with an annual throughput capacity of 14.55 million tonnes per annum (mtpa).

The Terminal has operated as a 'common user' coal export facility servicing mines in the Goonyella system of the Bowen Basin coal fields. The Terminal has expanded in stages in response to the growth in demand for coal from the region. Following the completion of the Stage 7X expansion in June 2009, the Terminal is currently one of the largest coal terminals in the world, with a capacity of 85 mtpa.

The Terminal is owned by the Queensland Government (the State) and leased to DBCT Trustee, as trustee of the DBCT Trust, and DBCTM under a long term lease. In 2001, the Queensland Government, through its wholly owned entity DBCT Holdings, awarded a 50 year lease (with an option to extend for a further 49 years) to DBCT Trustee and DBCTM. Operational management of the Terminal is undertaken by Dalrymple Bay Coal Terminal Pty Ltd (DBCT Pty Ltd, or the Operator), a company owned by the majority of the existing users of the Terminal, under an Operations and Maintenance Contract (OMC). DBCTM is controlled by Brookfield Infrastructure Partners, which is part of the Brookfield group (Brookfield).

Prior to granting the lease, the Queensland Government declared the coal handling service at the Terminal for third party access under Part 5 of the *Queensland Competition Authority Act 1997* (the QCA Act). It was a requirement of one of the lease documents – the Port Services Agreement (PSA) – that DBCTM prepares and submits a DAU on behalf of DBCT Holdings (which as owner of the Terminal was formally responsible for submitting the DAU) to the QCA for approval. This 2016 DAU, if approved by the QCA, will replace the 2010 Access Undertaking (2010 AU).

This submission explains DBCTM's revenue and pricing proposal for the 2016-21 period and the changes that it proposes to make to the 2010 AU. It is structured as follows:

- section 2 reviews the environment underpinning the development of the 2016 DAU
- section 3 examines revenue and pricing
- section 4 summarises certain of the proposed amendments to the 2010 AU. More detail regarding the proposed amendments is contained in the annotated version of the 2016 DAU which accompanies this submission.

2 Environment for the 2016 DAU

Key Points

- DBCT's operating and market environment has changed dramatically since the 2010 AU was reviewed and finalised. The most significant change is that DBCT is now exposed to real competition from a number of alternative ports, none of which are constrained by heavy handed regulation. The retention of adequate commercial flexibility is not only essential for DBCTM's ability to maintain its competitive position in such a dynamic environment, but to also maximise the competitiveness of its supply chain, which DBCTM clearly has a vested interest in promoting.
- As a single commodity terminal with no alternative use, DBCTM's performance is inextricably linked to the Queensland export coal export industry. Following the end of the 'supercycle', the industry is now facing more difficult conditions and the outlook is uncertain.
- The financial market outlook is also very uncertain, with the risk free rate remaining at historical lows. Despite this, evidence suggests that investors expect returns to remain relatively high.

2.1 Overview

The environment in which DBCT operates has fundamentally changed since the current 2010 AU was reviewed and approved by the QCA.

The most significant change, which reflects the investment in infrastructure triggered by the coal boom in the latter part of the last decade, is that DBCT is now clearly exposed to competition from alternative ports and supply chains, including the Adani Abbot Point Terminal (AAPT) and Wiggins Island Coal Export Terminal (WICET). This intensifies the competition for new and existing tonnage, which could become even more aggressive if the unregulated terminals price to maximise capacity utilisation in order to avoid stranded capacity. Both AAPT and WICET are operating at rates significantly below their nameplate capacity at a time when DBCTM has 75% of its contracted capacity due for renewal during the next regulatory period. Considering that 24 mtpa of AAPT's contracted capacity comes from mines previously considered to be within DBCT's catchment, it is clear that competition between coal chains is real and present.

In 2010, the market for seaborne coal, and therefore the demand for terminal capacity, was substantially different. The emphasis of industry at that time was on creating the right regulatory framework to allow for further long term growth of the infrastructure servicing the needs of the mining industry. This included an increased focus on improving supply chain performance via the Dalrymple Bay Coal Chain Long Term Solution (a number of aspects of which were written into the 2010 AU), which was subsequently not implemented.

Financial markets were still in the midst of the Global Financial Crisis (GFC). At the time the Weighted Average Cost of Capital (WACC) was set, the risk free rate remained around the historical average while debt margins were higher than the historical average, reflecting the nervousness of lenders at the time. There was also growing uncertainty about the impact of the GFC on investors' return expectations.

This contrasts with the current environment, where the short to medium term demand outlook is considerably more subdued. The domestic and global financial market outlook remains uncertain, highlighted by the current level of volatility in global stock markets. With the risk free rate remaining at historical lows, this raises questions as to whether the current environment is the 'new normal', although as explored further below, there is evidence to

suggest that investors' return expectations have remained comparatively stable through time.

These key themes are explored further below. Before reviewing the current environment and its implications, it is important to consider the relevant requirements under the legislation.

2.2 Legislative framework

In preparing its revenue and pricing proposal as part of the 2016 DAU, DBCTM has referred to the Pricing Principles in the QCA Act. The QCA is also required to have regard to these Pricing Principles when it decides whether to approve a DAU.

Central to this is Section 168A(a), which provides that the price of access should:

> *…generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks involved…*

Apart from the fact that DBCTM is entitled to this under the QCA Act, achieving this outcome is of fundamental importance to DBCTM's investors. Brookfield's strategy is based on maintaining investments in high quality assets that meet its rate of return targets for its growing global portfolio of infrastructure assets.

This also directly supports the Object of Part 5 of the QCA Act (the Objects Clause), which is to:

> *…promote the economically efficient operation of, use of and investment in, significant infrastructure by which services are provided, with the effect of promoting effective competition in upstream and downstream markets…*

Ensuring that DBCTM is adequately compensated for its efficient costs, including an appropriate return on capital, is not only necessary to meet the requirements of its investors but is also essential to its ongoing incentives to invest, recognising the need for future replacement and growth expenditure at the Terminal.

It is relevant to highlight that the legislation entitles DBCTM to "at least" be compensated for its efficient costs, including a return that is commensurate with its commercial and regulatory risks.

This is particularly important in estimating the forward-looking rate of return. The assessment of the WACC remains one of the most controversial issues in economic regulation and is the most significant revenue component for a capital-intensive infrastructure provider. This is largely because regulatory processes invariably end up ascribing a degree of precision that belies the theoretical and empirical uncertainty surrounding the estimation of WACC. However, the regulator will determine an outcome, typically to two decimal places, that is assumed to reflect the return that the firm's investors will require each and every year for the duration of the regulatory period.

It is not disputed that a point estimate for WACC needs to be arrived at for pricing purposes. However, DBCTM has two main concerns. The first is that insufficient regard is given to this uncertainty and therefore the risk that the regulated outcome is not "at least" sufficient to compensate it for its efficient costs, including a reasonable return on capital. In practice, the regulated outcome sets the revenue that DBCTM can earn "at most", not "at least", and it will bear the full consequences of regulatory error.

The second (and related issue) is that in relation to the WACC, the prescriptive, formulaic approach that is applied can see material variations in outcomes across regulatory periods.

As will be outlined further below, there is clear evidence to suggest that investors' return expectations are more stable through time.

It is unreasonable for the QCA to assume that DBCTM and its investors should bear the volatility in regulated return outcomes over time. DBCTM's performance relative to other assets is constantly assessed by the market. Further, when it does need to raise additional capital to fund investments, the prevailing regulated rate of return at that point in time will be a key factor determining the availability of that capital.

It is also highly relevant to note that DBCTM bears these consequences in its prices as the only Australian port that is subject to heavy-handed regulation. As will be outlined further below, DBCTM's competitive environment has fundamentally altered and it is now exposed to real competition from other export coal terminals (existing and prospective) and other coal supply chains.

In what is an intensely competitive and now more difficult market environment, any market power DBCTM may have had has dissipated and it would make no commercial or economic sense for it to attempt to set prices with a view to extracting monopoly rents. At the same time, its competitors have considerably more flexibility in how they set prices and manage the terms and conditions of access.

2.3 Competitive environment

DBCT was declared for third party access back in 2001 as part of the restructuring process leading up to the long-term lease of the Terminal by the Queensland Government. This was seen as addressing the concerns of industry regarding the potential for the privatised entity to misuse its market power in the negotiation and provision of access to third parties. At that time the Central Queensland Coal Network (CQCN) operated as four clearly separate systems and export coal producers had limited (and in many cases no) alternative choice of port.

Particularly following the emergence of the coal 'supercycle' towards the end of the last decade, significant capacity constraints emerged. This was followed by substantial investment in rail and port infrastructure. One of the most significant developments for DBCT was the completion of the Goonyella to Abbot Point Extension, which linked producers in the northern Bowen Basin (via the Goonyella system) to the Newlands system and AAPT. It is noted that this development was underwritten by customers who previously would have been considered 'captive' customers of DBCT. While there is currently only one terminal in operation at Abbot Point, a number of other development sites remain in the planning stages.

WICET will also have the potential to secure tonnage from users in DBCT's catchment in the Southern Bowen Basin. The first stage delivers capacity of 27 mtpa but has the potential to provide up to 120 mtpa if and when the site is fully developed. The demand environment has materially changed since the commitment was made to construct WICET. Some of the users are greenfield developments and at least one customer is already in default. It therefore remains highly possible that surplus capacity will exist at some point in the near future. Given the significant cost of installing this capacity and the uncertainty associated with the future demand environment, the terminal owners will be incentivised to price access competitively in order to maximise revenue recovery.

The Port of Gladstone is also a competitor to DBCT for Southern Bowen Basin volumes.

Another major development that could have a significant impact on DBCT is Dudgeon Point, which has a planned capacity of up to 90 million tonnes. This project was put on hold by

North Queensland Bulk Ports in 2013 based on the weakened market conditions. However, it is possible that it will look to re-progress this development in the future. While related Brookfield parties have a development interest at Dudgeon Point, independent parties also have development rights which, if they were to progress, would put further competitive pressure on DBCT.

The following tables summarise existing and future coal export terminal capacity in Queensland. "Total planned capacity" reflects current expectations of potential expansions over the medium to longer term, noting that subsequent expansions could occur depending on market conditions and terminal characteristics. DBCT's total planned capacity reflects the current assessment in its Master Plan.

Table 1 Existing Queensland Coal Export Terminal Capacity (mtpa)

Terminal	Nominal capacity	2014-15 throughput	Latent capacity 2014-15	Total planned capacity
AAPT	50	28.7	21.3	70
DBCT	85	72	13	136
HPCT	55	43.4	11.6	70
Port of Gladstone	77	68.5	8.5	90
WICET	27	Commenced shipments in May 2015	n/a	84

Table 2 Potential New Queensland Coal Export Terminals

Terminal	Planned capacity (mtpa)	Status
Abbot Point T0	70	Development progressing
Abbot Point T2	30	On hold
Abbot Point T3	60	Development progressing
Balaclava Island	35	On hold
Dudgeon Point	90	On hold
Fitzroy Terminal (Port Alma)	25	On hold
Yarwun Coal Terminal	50	On hold

While a number of the new projects are currently on hold, investigations can be expected to re-commence as market conditions improve.

Table 1 highlights the volume of latent capacity that already exists within the Queensland coal supply chains. If this situation persists, rather than risk stranding capacity, a terminal owner could be expected to price capacity more aggressively in an effort to maximise its revenue recovery. As noted above, this would be more likely to occur at the newer (relatively expensive) developments that have only recently been installed, such as WICET.

This could even occur in the case of the Hay Point Coal Terminal (HPCT), which is adjacent to DBCT. There is nothing to prevent BMA from opening its terminal up to third party access. With the HPX3 project completed earlier this year, bringing the capacity of the terminal to 55 mtpa, BMA could always make a commercial decision to contract any capacity that is surplus to its own needs to third parties.

Regardless of the potential future emergence of other alternatives, DBCT is already exposed to competition for new and existing tonnages. However, it is the only port currently subject to heavy-handed regulation. The commercial reality for DBCTM is that this regulation places it on a different competitive footing to other ports.

It may initially be assumed that from a Terminal owner's perspective, the main (and probably only) advantage that regulation could be seen to provide is the certainty provided by the revenue cap. However, DBCT's revenue cap is achieved via the take-or-pay requirement, which is a contractual mechanism. At the current time, take-or-pay is a standard feature of the pricing arrangements for coal terminal capacity. AAPT, for example, has take-or-pay agreements for the entire terminal capacity (and for a ten year term, not five years as applies to DBCTM)[1]. This is also understood to be the standard requirement at other terminals, including NCIG[2] and WICET, as this will be important to financiers in agreeing to fund terminal expansions.

Accordingly, the level of revenue certainty currently experienced by DBCTM is not because it is subject to regulation – instead, it reflects the current commercial practice for investors and financiers of major infrastructure solely developed to service the mining industry.

In any case, as noted above, take-or-pay only provides protection for the term of the relevant contract, with DBCTM having a shorter contract term (standard is currently five years) than other ports, including AAPT, WICET and NCIG (ten years). Indeed, it is understood that WICET and NCIG both operate on a rolling ten year basis (i.e. each year the contracts are extended by a year to retain a ten year term). The implications of some of these differences are explored in more detail in this submission, but it clearly demonstrates that DBCTM is actually in a riskier position than its other major industry counterparts.

From DBCTM's perspective, regulation exacerbates, rather than reduces, its risk position and places it at a competitive disadvantage relative to its competitors, including AAPT, WICET, the Port of Gladstone and (potentially) HPCT. Regulation constrains DBCTM's ability to compete with unregulated terminals, by denying it the ability to flexibly respond to the changing demands of its dynamic market environment.

The application of differential pricing is a case in point. DBCTM's competitors have the ability to set prices for existing and new expansion capacity having regard to not only their actual costs, but the costs of competing terminal (or supply chain) options. The recent Final Decision released on differential pricing by the QCA, on the other hand, requires DBCTM to adopt an 'incremental up/average down' approach to the pricing of expansion capacity. This not only has the potential to force an unreasonable distinction between users of the same infrastructure, but could make it more difficult for DBCTM to compete for growth tonnage. This is explored in more detail in section 4.1.

Regulatory risk therefore remains a significant issue for DBCTM and overwhelmingly serves as more of a constraint than a benefit in the changing market environment. Moody's Investors Service (Moody's) has already flagged that the revenue outcome that DBCTM could achieve in its next reset due to "lower regulatory returns – as a result of prevailing low risk free rates" could weaken its credit metrics below a level that is appropriate to support its current Baa2[3] rating[4].

[1] Moody's Investors Service (2014a). Credit Opinion, Adani Abbot Point Coal Terminal Pty Ltd, 23 November.
[2] Moody's Investors Service (2014b). Credit Opinion, NCIG Holdings Pty Ltd, 14 August.
[3] This is equivalent to Standard and Poor's BBB.
[4] Moody's Investors Service (2015a). Credit Opinion, DBCT Finance Pty Ltd, 26 August.

It is again relevant to contrast DBCTM's situation to its competitors, who are not bound to a prescriptive, formulaic methodology to set their cost of capital. In particular, they have more flexibility in ensuring that their WACC aligns with investors' return expectations.

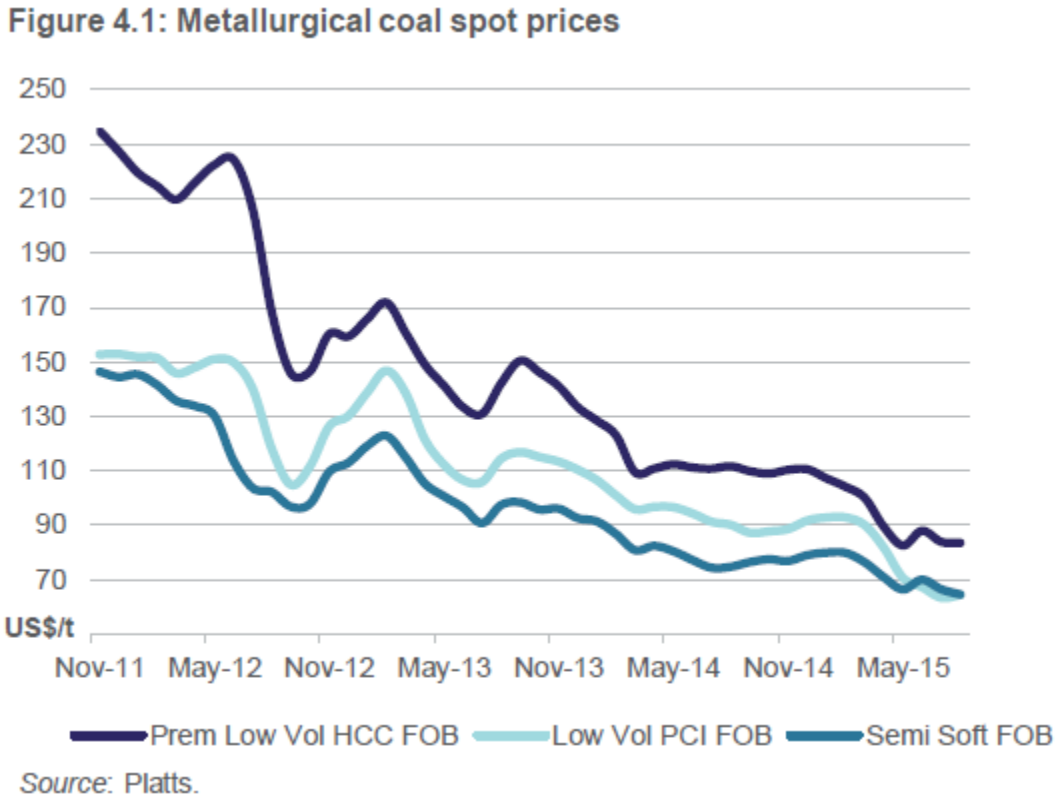
Overall, as the Queensland coal export industry looks for ways to improve efficiency and recapture competitive advantage in global markets, the regulatory environment needs to encourage and facilitate innovation, investment and commercially driven solutions, rather than constrain them.

2.4 Industry environment

2.4.1 The industry outlook is considerably more uncertain

Coal prices have fallen materially since the previous access undertaking review, as shown in the following chart.

Figure 1 Australian metallurgical coal spot prices



Note: http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/req/Resource-and-Energy-Quarterly-September-2015.pdf,p.39.

This decline in prices has already seen a number of mines scale back production or cease operations. For example, in 2015 Glencore announced that it was reducing output at its Collinsville mine (thermal and metallurgical coal) by 2 mtpa, while Peabody Energy, one of DBCT's largest customers, has sought to scale back operations at its North Goonyella mine

by 1.5 mtpa and Coppabella by 1.2 mtpa to improve cash flow and preserve higher grade resources until market conditions improve.[5]

The issues facing the industry were highlighted in a 2012 report by Port Jackson Partners, commissioned by the Minerals Council of Australia.[6] This report details the significant challenges that have been facing Australian coal producers as their position on the global cost curve deteriorates. The increase in prices illustrated in the above chart sparked the emergence of new, lower cost competitors in what has now become an intensely competitive market characterised by oversupply.

This changing competitive landscape highlights that the difficulty facing the industry is not just another downturn in the cycle. Instead, as market conditions improve and coal prices begin to rise, Australian producers could emerge from this downturn with considerably lower market share. Port Jackson described this as a 'structural competitiveness' problem. It states that:[7]

> *Our existing resource operations have become high cost. Ranked against competing producers in the thermal coal, coking coal, copper and nickel markets, more than half of Australia's mines have costs above global averages. For example, only six years ago, 63% of Australia's thermal coal production fell within the first two quartiles of the global cost curve. In 2012, this has fallen to 28%. The picture is similar in coking coal.*

For new coking coal projects, it considered that given the firm price outlook, the greatest threat to Australia's coking coal projects are infrastructure constraints, along with protracted approval processes.[8] These challenges have resulted in a widespread focus on reducing costs. DBCTM notes that since this report was published, producers have been pursuing aggressive strategies aimed at reducing costs. As noted in the accompanying report by Wood Mackenzie (refer Attachment A), Australian producers have been very effective in reducing costs by increasing output. This reflects the willingness and ability of the industry to decisively respond to changes in market conditions.

The industry environment facing DBCTM is therefore highly uncertain. Capacity at the Terminal is contracted for a maximum five year term, with a current weighted average term of four and a half years (shortening to two and a half years as contracts move into the option period). Contracts for approximately 75% of total contracted capacity are maturing in the next regulatory period. As will be noted below, this is a materially shorter profile than DBCTM's industry counterparts.

In the more buoyant market conditions that prevailed prior to the recent price slump, DBCTM had more confidence that expiring contracts would be renewed. However, given the current level of uncertainty for the industry, especially in the short to medium term, it cannot be assumed that all contracts maturing in the 2016-20 period will be renewed. Alternatively, if they are renewed, it could be for a lower tonnage, noting the ability and willingness of producers to scale back production until market conditions improve, as evidenced above.

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[5] Office of the Chief Economist, Department of Industry and Science (2015). Resources and Energy Quarterly, September 2015, Commonwealth of Australia, p.43.

[6] Port Jackson Partners (2012). Opportunity at Risk, Regaining our Competitive Edge in Minerals Resources, Report Commissioned by and Prepared for the Minerals Council of Australia.

[7] Port Jackson Partners (2012). p.25.

[8] Port Jackson Partners (2012). pp.34-35.

2.4.2 DBCTM's financial performance is inextricably linked to the coal industry

Ultimately, DBCT is a single commodity terminal with no alternative use. Its performance solely depends on the performance of the Queensland coal export industry and the ongoing viability of its customers, many of whom who are either wholly or highly exposed to the coal industry.

This dependence was highlighted in the decision by the Standard and Poor's (S&P) rating service to lower DBCT Finance's (DBCTM's financing entity) credit rating from BBB+ to BBB[9]. The rating action was based on the weakened credit quality of its customers in the challenging industry environment, including the downgrading of Peabody Energy to BB-. Peabody is one of the Terminal's largest customers, accounting for over 25% of contracted volumes. S&P states:[10]

> *Overall, we now assess the combined credit quality of all the customers to be commensurate with a 'BBB' rating, which resulted in a lowering of our revenue counterparty dependency assessment (CDA) for DBCT to 'BBB'. The cap created by the revenue CDA means that DBCT's issue credit ratings can no longer be higher than 'BBB'.*

DBCTM notes that Peabody was recently downgraded by Moody's to Caa1,[11] which is considered to be "speculative and of poor standing and are subject to very high credit risk."[12]The rating has been placed on review for further downgrade.

In making the decision to downgrade DBCT Finance's credit rating, while S&P assessed the outlook as stable, it identified the key sources of downside risk as being:

- a material and continued deterioration in the creditworthiness of DBCT's customers;
- a weakening of the Terminal's competitive position (including if it is unable to remain close to fully contracted at 85 mtpa or if the reserve life is not extended beyond mid-2030);
- a weakening of DBCT's forecast financial metrics, including an unfavourable revenue determination in 2016.

In its most recent ratings opinion for DBCT Finance, Moody's similarly highlighted the continued weakening coal market conditions, which could lead to counterparty stress, as one of the key rating drivers.[13] This was seen as a key factor driving the change in its rating outlook from Baa2 stable to negative, along with "the likelihood that DBCT will receive lower regulatory returns from the next regulatory reset scheduled for mid-2016 as a result of prevailing low risk-free rates, thereby potentially leading to lower revenues."[14]

It is erroneous to assume that the regulatory framework, including the existence of take-or-pay, provides DBCTM with long term revenue certainty. At most, it only provides DBCTM with protection for the (short) term of these contracts. In any case, DBCTM notes the

[9] Standard and Poor's (2014). DBCT Finance Pty Ltd. Lowered to 'BBB' on Weakening of Customers' Credit Quality; Outlook Remains Stable.
[10] Standard and Poor's (2014). p.2.
[11] Moody's Investors Service (2015b). Rating Action: Moody's downgrades Peabody to Caa1, leaves ratings on review for further downgrade, 27 August.
[12] Moody's Investors Service (2015c). Ratings Symbols and Definitions, March, p.5.
[13] Moody's Investors Service (2015a).
[14] Moody's Investors Service (2015d). Rating Action, Moody's Revises DBCT's Ratings Outlook to Negative from Stable, 18 August.

following comment made by the Minerals Council of Australia in the context of the systematic risk faced by Aurizon Network:[15]

> *MCA-NTDs view is that the systematic risk of a single commodity railroad is expected to be closely correlated to the systematic risk of the industry it serves. For example, the Central Queensland Coal Network ('CQCN') owned and maintained by AN, a rail transport business whose revenue is nearly wholly derived from the haulage of coal primarily bound for export markets. If international coal markets stagnated, or prices fell even further than they are today, many coal producers who have been experiencing operating margin pressures could potentially cease operations altogether. As a result, even though AN has entered into take-or-pay contracts to mitigate against such risks, take-or-pay arrangements do little to protect AN if coal producers face insolvency.*

S&P also observes that any revenues previously earned from a defaulting customer will be socialised amongst the remaining customers, however this "would be of greater value if the weakening of a given customer was driven by specific company factors rather than the performance of the coal sector in Queensland as a whole."[16] Significantly, it concludes that:[17]

> *Ultimately, **the terminal's long-term financial viability is inextricably linked to the long-term sustainability of the Bowen Basin and global metallurgical coal demand**. Should either or both decline, this would likely affect the coal reserve life and trigger an early cash sweep amortisation that would significantly disincentive the project's sponsors as all available cash would be redirected toward debt payment. {emphasis added}*

2.4.3 Medium to long term outlook is positive

DBCTM still considers that the longer term growth fundamentals for the industry remain solid, particularly given the relative scarcity of coking coal. The timing and extent of future growth, however, could depend on the industry's ability to realise necessary productivity improvements and prevent any further erosion in global market share. In its June 2015 *State of the Sector*, the Queensland Resources Council (QRC) states:[18]

> *Queensland production of commodities is continuing to expand incrementally despite the environment of lower prices. The widespread fall in commodity prices through 2014 and early 2015 have led producers to shift focus from step-change production expansion to managing costs and productivity. As a result exploration expenditure, employment and capital spending are all down in Queensland, and more broadly in Australia. In the short term, market conditions are likely to be challenging for many producers. However, in the longer term the continued rise of highly populated emerging economies will continue to drive growth in consumption of both mineral and energy resources.*

This positive outlook is also supported by the accompanying report from Wood Mackenzie (refer Attachment A), which sees future metallurgical coal demand underpinned by an increasing demand for steel. It considers that Australia will remain the dominant supplier of seaborne metallurgical coal through 2035.[19]

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[15] Minerals Council of Australia (NT Division) (2015). Submission to the 2015 Draft Report of the Tarcoola-Darwin Railway: Ten Year Review, June, p.32.

[16] Standard and Poor's (2014). pp.2-3.

[17] Standard and Poor's (2014). p.3.

[18] Queensland Resources Council (2015). State of the Sector, June Quarter 2015, p.2.

[19] Wood Mackenzie (2015). Shipper Mine Life Analysis, September, p.9.

2.5 Financial market environment

While the global economy is recovering, the financial market environment remains highly uncertain, driven by issues such as the European debt crisis and declining growth in China. As outlined previously, having regard to the requirements under the QCA Act, one of the key issues for this review is how to address the uncertainty associated with WACC estimation, which is only exacerbated in more uncertain and volatile financial market conditions.

These difficulties have become particularly evident in estimating the return on equity, which unlike the return on debt, is not readily observable. Historically, Australian regulators (including the QCA) have relied on the Sharpe-Lintner Capital Asset Pricing Model (SL CAPM), which has been estimated by combining a prevailing estimate of the risk free rate with a long term historical average market risk premium (MRP). With the risk free rate remaining at historical lows, as shown in the figure below, this approach results in a very low return on equity. This in turn implies that the average return required by investors has also (materially) fallen, which is considered neither reasonable nor plausible.

Figure 2 Ten year Commonwealth Government Bond Yield (monthly), July 1993[20] to September 2015

Source: Reserve Bank of Australia

The QCA considered this as part of its industry-wide WACC review. However, DBCTM does not consider that the QCA's review went far enough to addressing the challenges presented by the current market environment. In particular, the QCA combines the prevailing risk free rate with a (6.5%) MRP that still largely reflects long run historical averages. This results in a return on equity that varies materially with changes in the risk free rate.

In a speech made in April 2015, the Reserve Bank Governor commented that the legacy of the 2008 crisis is not yet behind us, stating that:[21]

> *From the vantage point of most central banks, the world could hardly, in some respects, look more unusual.*

Importantly, he also observed that:[22]

[20] Mid-1993 was chosen as the start date as this is when the RBA commenced actively targeting inflation based on its 2% to 3% band.

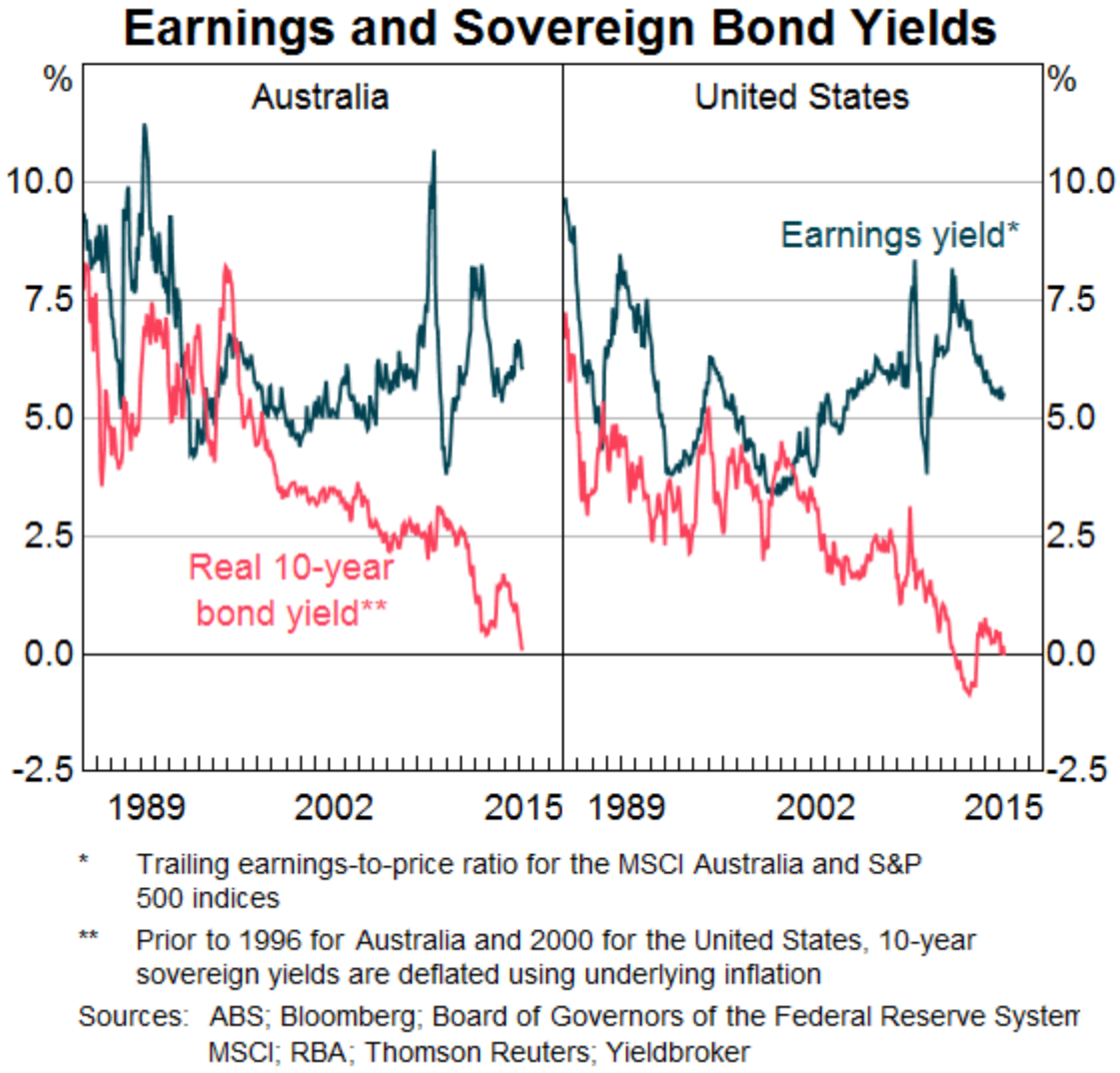
[21] Stevens, G. (2015). The World Economy and Australia, Address to the American Australian Industry Association Luncheon, New York, 21 April, http://www.rba.gov.au/speeches/2015/sp-gov-2015-04-21.html.

…another feature that catches one's eye is that, post-crisis, the earnings yield on listed companies seems to have remained where it has historically been for a long time, even as the return on safe assets has collapsed to be close to zero (Graph 2). This seems to imply that the equity risk premium observed ex post has risen even as the risk-free rate has fallen and by about an offsetting amount. Perhaps this is partly explained by more sense of risk attached to future earnings, and/or a lower expected growth rate of future earnings.

Or it might be explained simply by stickiness in the sorts of 'hurdle rates' that decision makers expect investments to clear. I cannot speak about US corporates, but this would seem to be consistent with the observation that we tend to hear from Australian liaison contacts that the hurdle rates of return that boards of directors apply to investment propositions have not shifted, despite the exceptionally low returns available on low-risk assets.

This is highlighted in the following chart.

Figure 3 Relationship between earnings and bond yields as highlighted by the RBA



Source: Stevens, G. (2015). The World Economy and Australia, Address to the American Australian Industry Association Luncheon, New York, 21 April, http://www.rba.gov.au/speeches/2015/sp-gov-2015-04-21.html.

It was acknowledged that the full implications of this will still take some time to emerge. What is particularly unclear is whether the current conditions, characterised by low risk free rates

[22] Stevens, G. (2015).

and an elevated equity risk premium, is 'the new normal' or whether at some point, conditions will revert to what was observed prior to the GFC.

The issues with the QCA's current approach are addressed in more detail in the accompanying report prepared by Frontier Economics (Frontier), who states:[23]

> *The QCA's revised approach continues to imply that since the onset of the GFC the required return on equity has been lower than at any time since World War II. Our view is that it is unreasonable to suggest that the GFC and European debt crises served to lower the required return on equity capital to levels never before seen in the post-war period. In our view, the QCA should:*
>
> a. *Acknowledge that if the QCA's proposed approach had been applied in every year since World War II, it would never have produced estimates of the required return on equity that are as low as the present estimates; and*
>
> b. *Explain why the QCA considers that the current required return on equity actually is lower than at any time since World War II, such that its current estimate is appropriate.*

DBCTM's submission regarding the approach to estimate the required return on equity (and debt) for the next access undertaking period is discussed in section 0.

2.6 The asymmetric consequences of error

As noted above, the requirement that DBCTM be "at least" compensated for its efficient costs becomes particularly significant if regard is given to the asymmetric consequences of error. The Productivity Commission has stated:[24]

> - *Over-compensation may sometimes result in inefficiencies in timing of new investment in essential infrastructure (with flow-ons to investment in related markets), and occasionally lead to inefficient investment to by-pass parts of the network. However, it will never preclude socially worthwhile investments from proceeding.*
>
> - *On the other hand, if the truncation of balancing upside profits is expected to be substantial, major investments of considerable benefit to the community could be forgone, again with flow-on effects for investment in related markets.*
>
> *In the Commission's view, the latter is likely to be a worse outcome.*

In other words, the consequences of setting WACC too low, and discouraging efficient investment in essential infrastructure, is considered worse than setting it too high. Given the imprecise nature of WACC estimation, the probability of regulatory error is likely to be high.

The New Zealand Commerce Commission (the Commission) continues to formally acknowledge this issue by setting the WACC above the mid-point of the range. It recently reviewed this practice and confirmed that it will continue to do this, although at the 67th, not 75th percentile.[25] It reiterated that its main reason for setting the WACC above the mid-point is:[26]

> *…to mitigate against the risk of under-investment relating to service quality generally, and contributing to major supply outages in particular. However, compared to setting the WACC at*

[23] Frontier Economics (2015a). The Required Return on Equity for DBCT, August, para.79.

[24] Productivity Commission (2001). Review of the National Access Regime, Report no. 17, AusInfo, Canberra, p.83.

[25] Commerce Commission (2014). Amendment to the WACC Percentile for Price-Quality Regulation for Electricity Lines Services and Gas Pipeline Services, Reasons Paper, 30 October.

[26] Commerce Commission (2014). p.11.

the mid-point, a WACC uplift should also reduce the risk of under-investment in other types of investment as well.

The more significant implication of this review is the analytical and empirical evidence that the Commission gathered as part of its investigation. The Commission acknowledged that its previous practice of setting the WACC at the 75th percentile was largely guided by judgment, noting that it was consistent with earlier advice provided to it by Martin Lally[27]. After this practice was challenged at the High Court as part of a merits appeal, the Commission embarked on a more detailed review, examining relevant academic literature and commissioning a number of new independent expert reports.

This included new opinions from Julian Franks and Martin Lally, both of whom continue to support selecting the WACC from above the mid-point of the range. Lally observed that:[28]

...if costs are certain, the regulated price should just cover those costs including the cost of capital except to the extent that a higher price provides the incentive to innovate. However the issue here is how a regulator should react to WACC uncertainty…

He noted that the legislation gave no guidance as to how this uncertainty should be addressed, which is similarly the case under the QCA Act. He considered that "WACC margins for uncertainty enhance dynamic efficiency"[29] and "the merits of the margin for uncertainty are invariant to the degree of uncertainty about equity returns but the size of that margin shrinks to zero as the degree of uncertainty about equity returns shrinks to zero."[30]

Lally concluded that "the uniform WACC percentile currently used by the Commission (the 75th percentile) is likely to be too low."[31] Indeed, all of the expert opinions commissioned supported the continued selection of the WACC above the mid-point of the range, although several questioned whether it should be as high as the 75th percentile. Experts also consistently highlighted the lack of precision in this area.

One of the reports received by the Commission was from Oxera[32], who applied a social welfare approach to determining the WACC percentile. This in turn was based on a paper by Dobbs,[33] which was also referred to by Lally. Dobbs examined the extent of welfare loss asymmetry and concluded that this supports setting the allowed rate of return above the mean or mid-point value. Dobbs suggested that the rate of return on new investments should be set a significantly higher percentile value (80th or 90th). He recognised that the rate of return would apply to both new and sunk investment but that this still justifies an uplift in the allowed rate of return if new investment is small.

Oxera highlighted that while the framework cannot guide what the correct percentile is, it can provide more evidence to support the Commission in its decision-making. Applying the social loss function identified by Dobbs, Oxera noted that the downside risk from the difference between the actual and allowed WACC is likely to be skewed and increases sharply as this gap increases, reducing the incentive to invest.

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[27] Lally, M. (2014). The Appropriate Percentile for the WACC Estimate, 19 June.
[28] Lally. M. (2014). p.4.
[29] Lally, M. (2014). p.18.
[30] Lally, M. (2014). p.17.
[31] Lally, M. (2014). p.3.
[32] Oxera (2014). Input Methodologies, Review of the '75th Percentile' approach, Prepared for New Zealand Commerce Commission, 23 June.
[33] Dobbs, I. (2011). Modelling Welfare Loss Asymmetries Arising from Uncertainty in the Regulatory Cost of Finance, Journal of Regulatory Finance 39, pp. 1-28.

Choosing a higher WACC from the distribution of possible WACC estimates is seen as insurance against the under-investment problem. It estimated that a shortfall of 0.5% to 1% is more likely to trigger a rebalancing of medium-term investment plans and the deferral of investment. Oxera noted the limitations of this form of economic analysis but some of these issues relate to the fundamental uncertainty underpinning WACC (that is, they could not be readily addressed with further analysis).

DBCTM therefore submits that it is essential that regard is given to the considerable uncertainty associated with the estimation of WACC, especially when the outcome that is set in the current challenging market conditions must remain fixed for the next five years. This contrasts with DBCTM's competitors – including its competitors for scarce equity capital (who are not just terminal owners but investors in infrastructure more broadly) – who are not constrained by what remains a highly prescriptive and formulaic regulatory approach. WACC is therefore one of the most important issues for DBCTM going into this next review and is accordingly a key area of focus for this submission.

3 Revenue and pricing

Key Points

- DBCTM has rolled forward the Regulated Asset Base (RAB) to 1 July 2016 in accordance with the approach applied and approved by the QCA in its previous access undertaking periods.
- DBCTM proposes to change the asset lives applied for depreciation purposes to be based on a Weighted Average Mine Life (WAML) approach. This approach, which is applied in the Hunter Valley, recognises that the risk profile of a dedicated coal export terminal, which has no alternative use, is clearly dependent on the remaining lives of the mines it services. DBCTM currently has no other mechanism to mitigate the asset stranding risk it faces, nor is this compensated in either the WACC or the other elements of the building blocks approach.
- DBCTM proposes a post-tax nominal (vanilla) WACC of 7.46%. Having regard to the challenging financial market environment, this WACC provides DBCTM with a return that 'at least' compensates investors for the risks commensurate with investment in a stand-alone coal export terminal.
- DBCTM does not accept the methodology and assumptions preferred by the QCA following its recent cross-industry WACC review and considers that this these will result in an outcome that is well below the requirements of investors in the current environment and hence will fail the requirements of the QCA Act.
- DBCTM also proposes a notional credit rating of BBB. This is strongly supported by evidence from the ratings agencies that shows the creditworthiness of a stand-alone coal terminal is limited by the credit quality of its customers, which has recently deteriorated.
- DBCTM has reviewed its corporate overhead cost allowance, which has not been examined in detail since it was first approved in 2006. Based on independent expert advice, the annual efficient benchmark corporate costs for a stand-alone, Brisbane-based coal export terminal of a similar scale and operation to DBCTM is $8.2 million (2015-16).
- DBCTM has also reviewed its approach to calculating the remediation allowance, noting that the current approved allowance is only based on the estimated costs of remediating Stages 1 to 6 of the Terminal. While it is virtually certain that this remediation obligation under the PSA will eventually be triggered, there is considerable uncertainty as to the amount and timing of the required works. DBCTM therefore considers that this is best managed using a self-insurance type methodology, which is a probability-based approach to assessing the annual remediation amount.

Under the 2006 Access Undertaking (2006 AU), the Annual Revenue Requirement (ARR) for DBCTM was established using the building blocks methodology applied by Australian economic regulators. The approved ARR for DBCTM is the sum of the following building block components:

- the return on capital, calculated by applying the cost of capital to the RAB; plus

- the return of capital (regulatory depreciation); plus
- the recovery of corporate overhead costs and remediation charges; plus
- tax; minus
- the return received via inflation of the RAB.

The previous section has outlined the challenging and uncertain market conditions that DBCTM is facing. This market environment has particular implications for the rate of return (return on capital) and return of capital (depreciation). This, along with the other building block components underpinning DBCTM's proposed ARR for the 2016-21 regulatory period, is discussed below.

3.1 Opening RAB Value as at 1 July 2016

3.1.1 Inputs

DBCTM has rolled forward the value of its RAB for the period from 1 January 2011 to 30 June 2016 based on the methodology applied in the last two access undertaking periods.

DBCTM has applied the opening asset value approved as at 1 January 2011, which was $2,371.7 million.[34] The rolled forward RAB includes capital expenditure approved by the QCA, including Non-Expansion Capital Expenditure (NECap). The most significant approved NECap expenditure was $53.7 million for the SR1 Replacement Project, which was included in the 2014-15 year. DBCTM has also included forecast expenditure for the 2015-16 year associated with WQIP Phase 2 (subject to approval by the QCA).

In 2011-12, the value of the RAB was reduced by the insurance proceeds from the Reclaimer RL1. The reduction approved by the QCA was $12.3 million.

For the period from 1 January 2011 to 30 June 2015, the RAB has been indexed each year based on actual outturn inflation as reported by the Australian Bureau of Statistics, Consumer Price Index (6401.0) All Groups (March to March), noting that when finalised, this will be based on the June to June measure. For the 2015-16 year, a forecast of 2.69% has been applied.

Table 3 CPI Assumptions

2010-11 (H2)	2011-12	2012-13	2013-14	2014-15	2015-16
1.96%	1.58%	2.45%	2.94%	1.32%	2.69% (f)

Depreciation has been calculated on a straight line basis using the asset lives approved for the 2010 AU for existing assets and the relevant economic lives for the new assets.

There have been no asset disposals or transfers.

[34] This reflects some adjustments made following the release of the QCA's Final Decision. For example, the Final Decision reflected September to September outturn inflation, whereas December to December was finally applied.

3.1.2 RAB roll-forward summary

The roll-forward to arrive at the Opening RAB value as of 1 July 2016 is summarised in the following table.

Table 4 RAB Roll-Forward: 1 January 2011 to 30 June 2016 ($m)

	2010-11 (H2)	2011-12	2012-13	2013-14	2014-15	2015-16
Prior period closing RAB	2,371.7	2,379.6	2,366.7	2,370.5	2,429.3	2,417.7
Opening RAB adjustment	0.0	(4.9)	19.7	17.1	62.9	33.8
Opening RAB	2,371.7	2,379.6	2,366.7	2,370.5	2,429.3	2,417.7
Indexation	46.5	37.7	58.0	69.6	32.1	60.5
Nominal depreciation	33.8	70.3	71.3	73.7	77.5	79.4
Closing RAB	2,384.5	2,347.0	2,353.4	2,366.4	2,383.9	2,398.8

3.2 Depreciation

3.2.1 Overview

The RAB's depreciation profile uses a straight line approach and an economic life of 50 years from 2004 (to 30 June 2054).

The increase in DBCTM's risk profile as a consequence of the changing industry and competitive environment has prompted a review of the economic life assumption and consequent depreciation profile of the RAB. As highlighted in comments made by the ratings agencies, DBCTM's risk profile is inextricably linked to its customer base. The current economic life is aligned to the lease term, noting that DBCTM has an option to renew at that point. If and when this point is reached, the decision as to whether to extend the lease will be solely dependent on the coal export industry outlook at that time.

The material changes in DBCTM's industry environment, discussed in section 2.4, only serves to highlight the need for an economic life assumption that correctly represents the risks of investment in long-term coal export infrastructure. This is not the lease term. The most appropriate approach that directly aligns with DBCT's underlying risk profile is a Weighted Average Mine Life (WAML) methodology, which matches the depreciation profile of the RAB with the weighted average life of the mines that DBCT services.

The assessment of WAML will change through time as market conditions change. The WAML assumption that is used to set the depreciation profile will therefore also be varied at each regulatory reset. This also reflects the fact that mine developers do not seek to fully prove reserves upfront (as there are significant costs involved in doing so) and instead tend to operate on a 10 to 15 year horizon. A WAML-based depreciation profile for the terminal, that is updated every five years, directly complements this approach and will ultimately ensure that DBCTM can recover its capital over the actual economic life of the Terminal. DBCTM's debt covenants link its required amortisation period to the life of coal reserves of its customers in the Bowen Basin.

The WAML approach will provide DBCTM with a stable depreciation profile that assists in reducing its stranding risk. This makes inherent sense for a large infrastructure facility that is dedicated to the export of a single, non-renewable resource, with no alternative use. Updating the WAML at each reset also ensures that DBCT's users will fund the depreciation element of the revenue cap over a period no shorter than the actual economic life of the asset.

The change in the industry environment discussed in section 2.4 highlights the nature and extent of stranding risk faced by DBCTM and other dedicated coal export terminal owners and developers. Even though it underscores DBCTM's current risks, the proposal to apply a WAML approach is made independent of the current market environment. Indeed, this must remain the case as it is too late to apply a shorter depreciation profile if and when demand conditions deteriorate to the point where asset stranding becomes a real prospect, as the consequent increase in prices is only likely to compound that risk.

Stranding risk is asymmetric in nature given there is downside, but no upside. That is, DBCTM can only ever recover an amount equivalent to the RAB value of the asset via regulated prices, but there is no limit to its downside exposure. As the QCA has previously acknowledged, the Capital Asset Pricing Model (CAPM) does not compensate the firm for asymmetric risk.[35] DBCTM is not otherwise compensated for this risk in its cashflows.

The immediate impact of moving to a WAML approach will be to shorten the economic life of the Terminal assets on the basis that the current WAML is less than the remaining term of the lease (see below). However, once this methodology is in place, it should not be presumed that the application of WAML will always imply a shortening of the economic life of the assets. For example, in an improving market the WAML may well be extended as new reserves are proven. DBCTM's intent in submitting this proposed change is to ensure that its depreciation profile complements the economic life of the mines that are the sole source of demand for its services, which will also mitigate its stranding risk.

3.2.2 Regulatory precedent

The WAML methodology is already a standard feature of ARTC's Hunter Valley Coal Network (HVCN) Access Undertaking (the HVAU), accepted by the Independent Pricing and Regulatory Tribunal (IPART) and the Australian Competition and Consumer Commission (ACCC). There is no evidence to suggest it has been contentious in this context.

In UT3, the QCA accepted the application of accelerated depreciation for Aurizon Network, which is currently applied to assets commissioned from 2009 onwards. This is based on a rolling twenty year cap on the economic life of these assets. This precedent is reviewed below.

ARTC

ARTC's HVAU has utilised WAML as the method to set asset lives for depreciation purposes since the inception of the NSW Rail Access Regime, which was developed by IPART in 1998/1999. In deciding on the method of depreciation, IPART also considered the use of a cost-weighted average useful life.

The then owner of the rail network, Rail Access Corporation, had submitted that it intended to maintain the asset in working condition indefinitely based on a regime of major periodic

[35] Queensland Competition Authority (2010). Draft Decision: QR Network's 2010 DAU - Tariffs and Schedule F, June, p.48 (footnote 13).

maintenance (MPM), with the implicit assumption that this would be tapered off at the end of the life of the mines as most of the rail lines used in the HVCN would be redundant without coal traffic. For the MPM, the expenditure was capitalised only where the "assets increase the net present value of future cash flows"[36], for example where timber sleepers were replaced with concrete sleepers, which in turn increases the capacity of the infrastructure. Given this, the depreciation methodology would represent the decrease in the economic value of the asset, otherwise known as economic depreciation, a core concept of economic regulation.

In the decision on depreciation, it was concluded:[37]

> *…depreciation should be based upon the remaining useful life of the Hunter Valley coal mines rather than the useful life of RAC assets. The basis for this preference is that the RAC Network is maintained in perpetuity until mine closure is foreseeable, when the mines do finally close, the majority of the Hunter Valley coal rail network would also close.*

This methodology has been retained since the lease of the HVCN to ARTC and is currently the depreciation method used under the HVAU. Clause 4.7(b) provides:

> *The useful life of a Segment or group of Segments is to be determined having regard to:*
>
> *(i) the average remaining mine life of coal mines utilising the Pricing Zone of which that Segment or group of Segments forms part;*
>
> *(ii) average mine production levels anticipated during the Term having regard to Coal Chain Capacity at any time; and*
>
> *(iii) marketable coal reserves estimated for each mine existing at the time of the determination or expected to commence during the 5 year period following the time of the determination.*

IPART was previously responsible for the regulation of the HVCN. This responsibility has now been assumed by the ACCC. In the ACCC's first review, no issues were raised regarding the ongoing appropriateness of a WAML approach for the purpose of setting asset lives under the HVAU. In the last estimate of the WAML that was applied in the 2011 HVAU, the ACCC adopted a WAML of 22 years and commented:[38]

> *Although the depreciation periods are somewhat shorter than those previously used by IPART, the ACCC notes this should not increase the expected return on ARTC's investments above a return commensurate with the regulatory and commercial risks associated with ARTC's rail network investments in the Hunter Valley. In addition, to the extent that the shorter depreciation period transfers asset stranding risk to the access seekers, this is likely to be appropriate to help ensure ARTC expects to earn a return commensurate with the risk it faces. The shorter depreciation periods should also lead to a relatively efficient allocation of risk and contribute towards efficient use of and investment in rail infrastructure and efficient complimentary upstream and downstream competition and investment.*

There was some discussion around the application of the approach, such as the treatment of new developments that were scheduled to commence production in the future. The ACCC directed that these mines be excluded:[39]

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[36] RAC Annual Report 1997/98, p 72.

[37] Independent Pricing and Regulatory Tribunal (1999). Final Report – Aspects of NSW Rail Access Regime, p.47.

[38] Australian Competition and Consumer Commission (2010). Australian Rail Track Corporation Limited, Hunter Valley Coal Network Access Undertaking, Draft Decision, 5 March, p.479.

[39] Australian Competition and Consumer Commission (2010). p. 588.

> *In relation to new mines that are not yet in production and are highly uncertain, it does not seem inappropriate to exclude these mines from the mine life calculation as there is no guarantee these will ever come into production. To the extent these do come on line in future years, these could be considered in future mine life estimates.*

The implication of the above approach is that the mine life assumption will be reviewed as part of each access undertaking review. This could see the mine life assumption revised upwards or downwards depending on the weighted average life of the relevant mines at the time. As noted above, DBCTM is proposing to re-assess the WAML applying to the Terminal at each revenue reset.

IPART

IPART originally established the economic lives to apply to the HVCN under the NSW Rail Access Regime based on a WAML approach. IPART reviews and updates the weighted average mine life to apply to the HVCN once every five years.

In its decisions in 2004 and 2009 it did not update the depreciation profile despite updating the remaining life of the relevant mines. Instead, it has used the WAML methodology to sense-check the continuation of the original estimate derived using the WAML approach. Each time, the WAML estimate has provided evidence to continue to apply this economic depreciation profile.

In its 2014 review, IPART changed the methodology to the longest-lived substantial mine (LLSM) methodology, which bases the mine life on the group of mines that is able to provide enough traffic to keep the system open, weighting the remaining lives of those mines to arrive at the mine life estimate.

Aurizon Network

As part of the UT3 decision the QCA approved the application of a rolling twenty year economic life cap to assets commissioned from 2009 onwards. This was adopted to ensure that the asset stranding risk for the capital expenditure to be invested over the UT3 period was minimised. The capital expenditure profile at the time included replacement expenditure plus allowances for the Goonyella to Abbot Point Expansion (GAPE), the Wiggins Island Rail Project and Surat Basin projects. The forecast capex over the period was equal to 43% of the opening asset base.[40]

As part of its 2013 Draft Access Undertaking (2013 DAU), Aurizon Network submitted a proposal to change its approach to assessing economic life to the WAML methodology and apply this economic life assumption to its entire asset base. In its submission to the QCA, it stated:[41]

> *The weighted average mine life approach has been a feature of the NSW Rail Access Regime since its inception. The main objective of this approach to determining economic life is to more closely align the recovery of the capital invested in rail infrastructure to the period where it is expected that the service provider has a reasonable prospect of fully recovering this capital.*

It is clear from this submission that Aurizon Network sought to match its depreciation profile to that of its customer base given that there is a homogenous traffic on the network and those network assets are of limited use in the event of production slowing.

[40] Queensland Competition Authority (2009). QR Network 2009 Draft Access Undertaking – Draft Decision, pp. 36

[41] Aurizon Network (2013). 2013 Draft Access Undertaking, Supporting Documents, Volume 3: Maximum Allowable Revenue and Reference Tariffs, pp. 95

Consistent with the ACCC approach approved for ARTC, Aurizon Network proposed two weighting approaches: one by marketable reserves (as assessed by Wood Mackenzie) and the other by production. It also excluded any mines that were scheduled or planned to come into production in the future as this was seen to be too speculative to include. The proposed economic life resulting from this analysis was 25 years.

The proposal for WAML by Aurizon Network was rejected by the QCA in its 2014 Draft Decision on Maximum Allowable Revenue. It came to the conclusion that there had been no significant increase in the amount of stranding risk facing Aurizon Network's assets and as such, there should be no change in the depreciation profile. The main basis for this was that the current 20 year rolling economic life cap was seen as sufficiently addressing the stranding risk faced on new assets. The QCA proposes to maintain Aurizon Network's current accelerated depreciation profile for post-UT3 commissioned assets.

3.2.3 Implications for DBCTM

The assets involved in a supply chain for a non-renewable resource should be depreciated on a timeline that matches the timeline of the non-renewable resource to which it is dedicated. This provides the infrastructure owner with the opportunity to recover the capital invested over a period of time that the industry is currently expected to operate, meaning that the depreciation period is no longer than the current forecast useful life for the asset, assuming there is no alternative use. This methodology is already applied in the HVCN and has remained uncontentious.

As discussed in this submission, the environment has changed in a way that highlights DBCTM's dependence on the life of the operations of the mines that the Terminal has been purpose-built to service. DBCTM's existing depreciation profile is already based on economic (not physical) lives. However, that economic life was previously linked to the lease term. For the reasons outlined above, DBCTM no longer considers that the lease term is the most appropriate basis to measure economic life as this has no direct relationship with the lives of the mine operations the Terminal is servicing. The consequence of moving to an economic life based on WAML will be a shortening of the economic life, noting that it could increase, or decrease, in subsequent reviews depending on the industry outlook.

As noted above, in UT3 the QCA agreed to shorten the depreciation profile for new investments made by Aurizon Network based on a rolling twenty year cap. The QCA had previously changed the asset lives applied to QR Network's existing assets as part of its UT2 determination, where it had applied physical lives. In that decision, it agreed to cap the economic life at 50 years for assets with remaining lives that exceeded this.[42] The QCA has also formerly made a distinction between the stranding risk faced by Aurizon Network and DBCTM, stating:[43]

> *The Authority considers that QR's risk of asset stranding is likely to be lower than for DBCT, as QR's proposed expansions are not as significant and QR relies upon a broader portfolio of mines and transports to a portfolio of ports. Therefore, while an expansion to accommodate substantially increased coal volumes exposes QR to increased risk, at this time, such risk is less than that facing DBCT.*

Initial investments in sunk network infrastructure are made on the basis of the demand outlook forecast at the time. However, in the case of dedicated coal infrastructure, there is considerable risk in committing capital over a long timeframe based on a demand outlook

[42] Queensland Competition Authority (2005a). Decision, QR's 2005 Draft Access Undertaking, December

[43] Queensland Competition Authority (2005a). p.32.

that is inherently uncertain. As a regulated business subject to a CAPM-derived WACC, DBCTM is not compensated for this risk. Currently, it has no other way of mitigating its risk if the demand outlook materially alters, noting that it services a comparatively small portfolio of mines. As noted above, mining companies do not tend to make investments based on fully proven reserves. Instead, they will make their investment based on a 10 to 15 year reserve outlook and continue to review this through time based on a rolling 10 to 15 year horizon.

If DBCTM was unregulated, it would be free to adjust prices for changes in cost or risk, provided it is commercially sustainable. Importantly, as noted above, it is too late to do this once it looks like asset stranding is likely to materialise, as it is unlikely that such price increases could be supported by customers if demand conditions had deteriorated to such an extent (as it could require depreciating the remaining capital base over a very short period). DBCTM notes that for the new mining-dependent port investments that have been undertaken, it is now common for this to be underwritten by customers assuming a shorter depreciation profile.

The only mechanism that DBCTM has available to mitigate the impact of stranding risk is to adjust its depreciation profile. In any case, as stated previously, DBCTM is not proposing to change from the current approach of applying straight-line depreciation based on the assumed economic life of the terminal. Instead, the dramatic changes in market conditions observed over the last two access undertaking periods highlight that the lease term is not an appropriate measure of economic life.

WAML is a more appropriate measure of economic life for DBCT as it directly reflects the underlying risk profile of a dedicated coal export facility. Reviewing the assumption each regulatory reset not only adjusts for ongoing changes in market conditions, but also complements the fact that mining companies only assess their own reserves based on a rolling 10 to 15 year horizon. This will ensure that DBCTM ultimately recovers its capital based on the actual economic life of the terminal.

3.2.4 DBCTM's proposal

DBCTM is therefore proposing to change its economic life assumption to one that is based on a WAML approach. It has procured a report from Wood Mackenzie (refer Attachment A) to undertake this assessment.

The Wood Mackenzie report reviews the outlook for the metallurgical and thermal coal markets and the competitiveness of producers in the Hay Point catchment. Of the 48 mines in the catchment, 26 were used. Wood Mackenzie excluded nine mines that have closed and 13 that are not due to open in the next regulatory period. It incorporated BMA mines as production levels are expected to exceed the capacity of HPCT, at which point it is assumed they would look to ship through DBCT.

Estimates of WAML are produced using four scenarios:

1. weighted average mine life by average marketable production
2. weighted average mine life by marketable reserves
3. weighted average implied mine life by average production
4. weighted average implied mine life by company reported reserves.

The first two scenarios use data from its Coal Supply Service, while the second two are adjusted using company reserves derived from publicly available information. Its resulting estimates are summarised in the following table.

Table 5 Estimates of WAML by Wood Mackenzie

Scenario	Method	WAML estimate
1	Weighted average mine life by average marketable production	20
2	Weighted average mine life by marketable reserves	25
3	Weighted average implied mine life by average production	26
4	Weighted average implied mine life by company reported reserves	35

The approaches allowed for under Section 4.7(b) of ARTC's approved HVAU are relatively broad (see above). All of the above methodologies are potentially consistent with these approaches. To date, the ACCC has not provided any definitive guidance as to whether either of those approaches is preferred.

From the above scenarios DBCTM proposes that the Wood Mackenzie marketable reserves weighted estimate (scenario 2) is the most appropriate to use for the Terminal's economic life. There are two main reasons for this.

First, DBCTM favours the estimates that use data from Wood Mackenzie's Coal Supply Service (scenarios 1 and 2), as this is seen to be the most up-to-date data and it is provided by an independent third party. Second, it proposes to use the marketable reserves estimate, not the shorter production-based estimate, as it considers this provides for an appropriate balance between the high prices that may be experienced with a production-weighted average and the current (essentially arbitrary) economic life that is based on the lease term. Production levels are also likely to be more volatile in the short term.

It is DBCTM's view that at the current time, an economic life of 25 years results in a reasonable depreciation profile that reflects the risk of the industry it services and provides it with some mitigation against asset stranding risk in an inherently volatile and increasingly competitive market. This estimate will be reviewed every five years as part of its revenue reset, noting that basing WAML on marketable reserves rather than production should result in a less volatile estimate through time.

DBCTM is not otherwise compensated for asset stranding risk. If DBCTM's proposal is rejected, it will need to look at other mechanisms that can be used to give it some ability to either mitigate, or be adequately compensated for, this risk. This includes circumstances where it is forced to apply differential pricing for expansions.

3.3 Other depreciation issues

3.3.1 Residual value of terminal assets

The original DORC valuation of the Terminal concluded in 2005 assigned a residual value to some Terminal assets at DBCT. At the time, the QCA recognised that this residual value could include scrap value[44].

The effect of a residual value is that the relevant assets are not fully depreciated over the assumed regulatory life to reflect the expectation that DBCTM will be able to sell these assets for the assumed scrap value. The 2005 DORC study assigned a residual value of

[44] Queensland Competition Authority (2005b). DORC Valuation for Dalrymple Bay Coal Terminal, April, pp.3,55.

2.5% of the optimised replacement cost of non-land Terminal infrastructure, which means that DBCTM does not earn a return of capital on this amount on the assumption that this will be recovered by realising the scrap value.

In February 2004, Reclaimer RL1 collapsed at DBCT. The replacement of RL1, together with some additional expenditure, was commissioned as the Short Gain expansion in September 2006. DBCTM's experience with the Short Gain expansion indicated that the DORC assumption that RL1 would have a residual value of approximately $232,000, or 2.5 % of the replacement costs, was incorrect. Instead, after a competitive tender process DBCTM received a zero scrap value for RL1. Given this new information all new terminal equipment included in the subsequent capacity expansions have been assigned a zero residual value. This approach has been accepted by the QCA and its consultants.

In June 2014, DBCTM commissioned the SR1 Replacement Project, which replaced Reclaimer SR1 with new Reclaimer RL3. DBCTM incurred $1.9m in costs to dismantle and remove the machine from service, indicating the market for scrap metal had deteriorated dramatically, and that not only is a zero scrap value assumption incorrect, but a significant cost to scrap the machine would be incurred.

However, a legacy issue is the appropriate treatment of the existing assets included in the original asset base based on an assumed 2.5% residual value. The implications of continuing to calculate depreciation with positive residual values will mean that at the end of the asset's useful life either:

- the residual value is removed from the RAB without compensation to DBCTM; or
- the residual value would be recovered from users after the asset has completed its useful life.

In the first scenario, assets with a positive residual value would be removed from DBCTM's RAB at the end of its useful life. If the scrap value of the Terminal asset is less than the assumed residual value then DBCTM would face a loss. In other words, DBCTM would not fully recover the DORC value of its Terminal assets. In effect, this would represent a revaluation or write down of the original 2004 RAB, which is contrary to DBCTM's understanding that the RAB value has been locked in.

In the second scenario, DBCTM is able to fully depreciate all its regulatory assets and consequently no revaluation has occurred. However, in this scenario, Terminal Infrastructure Charges paid by users would not reflect the current costs of providing Terminal services and would instead include the write down costs of assets that are no longer used.

DBCTM is therefore proposing to update the regulatory depreciation profiles at the beginning of the 2016-21 undertaking period to incorporate the new information on the residual values of Terminal assets. Adjusting the depreciation profile to reflect the zero salvage value means that the full cost of the assets will now be borne by users over the useful life of the Terminal assets. This means that Terminal Infrastructure Charges will reflect the full cost of providing the Terminal services.

The objective of the new depreciation profiles is to ensure that DBCTM has a reasonable prospect of recovering the full regulatory value of its Terminal assets, as it is entitled to under the QCA Act.

3.3.2 Depreciation of spares

A prudent terminal operator holds spare terminal assets to ensure that unforeseen breakdowns do not result in long periods of reduced export capacity.

Spares are currently indexed over time for actual inflation. This inflationary gain is deducted from the ARR. Over the current regulatory period, the indexation of spares has lowered DBCTM's ARR by approximately $600,000 per annum.

DBCTM's Terminal assets in the original DORC identified as spares have an expected value of $30.5 million at 30 June 2016, having been indexed from a starting value of $22.32 million in 2004. This value will continue to grow through time with inflation.

Under the Australian Accounting Standards[45], spares purchased for a particular asset or asset class are treated as part of the cost of the relevant asset or asset class. Spares that can only be used in a connection with a particular asset do not have a useful life of their own and accordingly it is recommended that they be depreciated over the useful life of the asset.

Currently, DBCTM is not recovering a return of capital for these assets and it will have no way of recovering the capital that has been invested in spares when Terminal operations cease. However, while it does not receive a return of capital, the relevant inflationary gain applying to spares is deducted from the ARR. DBCTM proposes that these spares should be depreciated to ensure a consistent treatment, as well as ensure that it can recover this capital.

DBCTM does not maintain and assign spares to each individual asset or asset class. Instead, it maintains a reasonably constant inventory of spares through time and will continue to do so as long as the Terminal remains in operation. It considers that an amortisation period of 15 years for spares is appropriate for assets of this nature.

From 1 July 2016, DBCTM therefore proposes to depreciate the spares forming part of its original DORC over a fifteen year period.

3.4 Rate of return

3.4.1 Overview

The rate of return is calculated using the WACC methodology. As outlined above, according to the Pricing Principles in the QCA Act, DBCTM is entitled to set prices to enable it to:

> *…generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks involved…*

Section 2 outlined how the rate of return is one of the most contentious and difficult issues in the application of the building blocks methodology in Australian regulation, which largely emanates from the inherent uncertainty associated with its estimation. This is especially the case for the expected return on equity, which is not readily observable.

The WACC for the 2010 AU was set in a very different environment, with a bullish coal demand outlook and markets still experiencing the full effects of the GFC. DBCTM negotiated and agreed with its customers a WACC of 9.86% to apply for the 2010-16 period. This agreed WACC was based on a roll-forward of the parameters that applied under the

[45] AASB116

2006 AU, updated for the then prevailing risk free rate (5.08%) and debt risk premium (3.96%).

During the current undertaking period, the QCA reviewed its WACC methodology (the WACC Methodology Review), publishing Final Decisions on the approach it will use to estimate the return on debt and equity in August 2014 (this did not include the industry-specific parameters of beta and gearing). Key features of the updated methodology include:

- continuing to set the risk free rate over the length of the relevant regulatory period;
- a review of the evidence relied upon to estimate the MRP, resulting in a current estimate of 6.5%;
- the adoption of an in-house approach to estimate the debt risk premium using econometric techniques;
- a review of the approach used to estimate gamma, resulting in it being reduced from 0.5 to 0.47.

While this was subject to a consultation process, stakeholders have no recourse if they disagree with any aspects of the QCA's Final Decisions.

DBCTM has significant concerns with the outcomes of the WACC Methodology Review. Overall, it considers that application of the QCA's approach will result in a rate of return that will not provide investors with adequate compensation for the regulatory and commercial risks involved with the delivery of the declared services (noting that the QCA has never acknowledged, nor therefore considered the implications of, regulatory risk in setting the rate of return despite this requirement under the legislation). These concerns are set out below, along with DBCTM's proposed approach to setting the WACC to apply for the 2016-21 period.

3.4.2 Term to maturity

Noting that this has already been subject to considerable debate, DBCTM does not accept that it is appropriate to set the term to maturity for the risk free rate to align with the length of the regulatory period. Instead, it should be set based on a ten year term to maturity, aligning with the horizon of investors, which is also consistent with wider commercial practice and is the approach adopted by most other Australian regulators.

DBCTM commissioned an expert report from Frontier to examine this issue (refer Attachment B). This is one of three reports prepared by Frontier for DBCTM for this review and they are all authored by Professor Stephen Gray (formerly SFG Consulting).

The QCA's approach is founded on the application of its 'NPV=0' principle, based on the advice of its preferred consultant, Martin Lally. As highlighted by Frontier, the 'NPV=0' principle is not a legislative requirement. Further, the way in which it has been applied by the QCA implies that it is tasked with setting the rate of return DBCTM could earn "at most". This is despite the Pricing Principles in the legislation establishing the opposite, that is, a requirement to set a rate of return that "at least" compensates DBCTM for its regulatory and commercial risks (despite the regulatory risk component being ignored).

In any case, Frontier has established that the principle can only hold where the market value of the asset at the end of the regulatory period is known with certainty. In other words, even if there are cashflows continuing beyond the term of the regulatory period, those cashflows must be known with certainty. If this holds, investors can limit their horizon to the current

regulatory period and the asset can be valued based on the present value of the cashflows occurring over the regulatory period, including the certain end of period 'terminal' value.

On the other hand, if the market value of the asset at the end of the regulatory period is not known with certainty, the asset is valued based on the present value of the cashflows that will be generated over the life of that asset using a discount rate that reflects this long horizon. Not surprisingly, this is the standard approach that is used to value most assets in the market. Clearly, this also holds in the case of assets subject to heavy-handed regulation, where the building block components of the revenue allowance - including rate of return - tend to be re-examined in forensic detail at each regulatory review. Indeed, regulatory risk is one of the key long term sources of uncertainty for investors in regulated assets.

Frontier also cites evidence to support the claim that the adoption of a ten year term to maturity is consistent with standard commercial practice, including evidence that market practitioners apply this assumption when valuing regulated assets. A ten year term to maturity is consistent with the practice applied by the majority of Australian regulators, some of whom have previously given explicit consideration to the QCA's 'term matching' principle.

For example, Frontier cites the Australian Energy Regulator's (AER's) consideration of this issue in its most recent Rate of Return Guideline review, where it was also advised by Lally. The AER commented that the NPV=0 principle is satisfied where the regulated cashflows have the same characteristics as a five year bond (five years being the length of the regulatory period in energy). It concluded that this was not the case here because while a bondholder receives a known payment (being a fixed face value amount) at the end of the period, the infrastructure owner does not. Incenta also advised the AER that the term for the risk free rate should not be set to match the length of the regulatory period unless the end of period market value of the asset is known with certainty. The AER concluded that it will continue to apply a ten year term to maturity.

IPART also recently reverted from applying a five year term to maturity to ten years, concluding that:[46]

> *We agree with stakeholder views that increasing the TTM [term to maturity] from 5 years to 10 years for all industries is more consistent with our objective for setting a WACC that reflects the efficient financing costs of a benchmark entity operating in a competitive market.*

The pricing principles governing Australian regulatory regimes are broadly similar, given that all emanated from the *Competition Principles Agreement*. This includes a requirement to provide a return on capital that is commensurate with the relevant regulatory and commercial risks.[47] Regulators are also clearly tasked with the responsibility of preventing the regulated business from extracting monopoly rents. It is therefore relevant to question why other Australian regulators would continue to apply a ten year term to maturity for the risk free rate if they considered that to be a violation of the 'NPV=0' principle and in effect, allowed the businesses to be over-compensated.

Ultimately, whether or not the "return on investment [is] commensurate with the regulatory and commercial risks involved" must ultimately be assessed by investors, as it is investors who decide whether or not they will provide capital to the firm. DBCTM competes against other regulated and unregulated infrastructure assets for capital. The evidence provided by Frontier supports the presumption that those assets are likely to be offering returns that reflect a ten year term to maturity.

[46] Independent Pricing and Regulatory Tribunal (2013). Review of WACC Methodology, December, p. 12.
[47] Cl. 6(f)(2)(1)

For the purpose of this regulatory proposal, DBCTM is proposing an estimate of the risk free rate based on the prevailing ten year Commonwealth Government bond yield, which was 2.8%.

3.4.3 Gearing

The benchmark gearing level that has been applied since the 2006 AU was approved is 60%. While there are questions as to whether this level of gearing will remain sustainable into the future if the industry outlook does not improve, DBCTM is not proposing to revise this assumption for the 2016-21 period.

3.4.4 Return on equity: market parameters

Issues with the QCA's approach

As discussed in section 2, DBCTM has particular concerns with the methodology and assumptions applied in setting the return on equity. In effect, the QCA's approach to setting the market parameters continues to combine a spot estimate of the risk free rate with a static long run average MRP. In the current low risk free rate environment, this will produce a similarly low expected return on equity, which implies that investors' return expectations have similarly fallen.

Indeed, as detailed in an accompanying report from Frontier, the QCA's approach implies that "since the onset of the GFC the required return on equity has been lower than at any time since World War II."[48] As Frontier highlights, during its WACC Methodology Review the QCA observed that market conditions are sufficiently different from previous conditions to warrant a "significant alteration" to its WACC methodology. However, those changes result in a return on equity that is materially lower than ever before. To suggest that the required return on equity has materially fallen following the GFC – to a level that is lower than at any time since World War II – is considered neither reasonable nor plausible.

DBCTM also notes the comments made by Moody's cited in section 2, where expectations of lower regulatory returns (from the lower risk free rate) in the next access undertaking review has been identified as one of two key factors (in addition to the industry environment) prompting it to put a negative credit watch on DBCT Finance's Baa2 rating.

The more likely situation, as supported by the evidence presented by the Reserve Bank Governor cited in section 2, is that required equity returns have remained more stable. This in turn implies that as the risk free rate has fallen, the implied MRP has risen. This does not necessarily imply that there has to be a one-for-one (inverse) relationship between the risk free rate and the MRP. However, the practical reality is that investors are not materially adjusting their return expectations in response to reductions in the yields on Commonwealth Government bonds, which tend to be influenced by a number of factors, including the flight to quality that occurs in more volatile market conditions.

This also highlights one of the issues with the general approach applied by the QCA, which is the examination of individual parameters without giving proper consideration as to whether the overall outcome that is produced by combining those parameters is reasonable. Indeed there is a threshold question for the QCA to consider in determining the WACC to apply for the next regulatory period. Given the market circumstances described in section 2, is it appropriate that the level of compensation that DBCTM is receiving for the risk it is taking by putting capital into DBCT be reduced by circa 30%?

[48] Frontier Economics (2015a). para.75.

Response to date by other Australian regulators

A number of Australian regulators have at least some extent acknowledged these difficulties having regard to the prevailing financial market environment.

One of the more significant regulatory developments in WACC in recent times has been in energy. In 2012, the Australian Energy Market Commission (AEMC) approved changes to the framework used to regulate energy network businesses (the National Gas Rules and National Electricity Rules), including the assessment of the rate of return. While the limitations of the SL CAPM have always been known, the AEMC's review focussed on some of these limitations and the outcomes it has been producing when applied in a prescriptive, formulaic way, as has been the practice of most Australian regulators:[49]

> *The Commission also expressed concern that the provisions create the potential for the regulator and/ or appeal body to interpret that the best way to estimate the allowed rate of return is by using a relatively formulaic approach. This may result in it not considering the relevance of a broad range of evidence, and may lead to an undue focus on individual parameter values rather than the overall rate of return estimate.*

The AEMC therefore concluded that a broader range of relevant estimation methods, models, financial market data and other evidence should be taken into account by the AER in assessing the allowed rate of return. This more flexible approach is now reflected in the revised energy regulatory framework, which formerly prescribed the SL CAPM.

However, the AER's Rate of Return Guideline that was produced following these changes still retains Sharpe CAPM as its core 'foundation model'. While the AER has specified that it will have regard to other models and evidence, in populating the SL CAPM it gives little practical weight to these alternative models. For example, the AER determined that it will give more weight to the Dividend Growth Model (DGM) in estimating the MRP. In practice, however, DGM estimates have had limited influence on the AER's MRP estimate, which is currently at 6.5% and largely based on historical excess returns.

The general view expressed by network businesses in their regulatory proposals is that the approach the AER applies under the Rate of Return Guideline does not adequately reflect the intent of the AEMC's 2012 rule changes. The AER's approach to estimating the return on equity is currently one of a number of matters that are being appealed under merits review by the NSW network businesses.

IPART has also undertaken a detailed review of its WACC methodology. It has revised its approach to rate of return based on an acknowledgement of the issues associated with application of the SL CAPM post the GFC, in particular, combining a long run MRP with a prevailing or spot risk free rate. In initiating this review, IPART observed:[50]

> *We use an expected MRP based on long-term historic averages. Very long-term measures of the MRP may provide a guide to long-term future returns assuming that the MRP is mean reverting. But, if market conditions are volatile, the current expected MRP may vary from the long-term average for significant periods. For example, since the GFC there have been extended periods of time where the actual MRP has moved significantly in the opposite direction to the risk free rate. When using a short-term estimate of the risk free rate and a historic-based MRP this movement in prices is not captured in the CAPM cost of equity.*

[49] Australian Energy Market Commission (2012). Final Position Paper, National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, p.23.

[50] Independent Pricing and Regulatory Tribunal (2012). Review of Method for Determining the WACC, Dealing with Uncertainty and Changing Market Conditions, Other Industries – Discussion Paper, p.46.

It also states:[51]

> *The rationale for using long-term average data to estimate the MRP is that such an estimate provides a proxy for current expectations about this premium. This approach served well from early 2000 to 2008, when interest rates were fairly stable in Australia. But since the GFC we have witnessed substantial dislocations in financial markets that have affected interest rates and investor perceptions of risk and required returns on equity...*
>
> *It suggests that the GFC may have altered investors' perceptions of the risk of equity investment, and hence they require a higher return on equity. Since its initial spike, the MRP has fallen but it does not appear to have returned to pre-GFC levels in Australia.*

It now estimates the feasible WACC range using two ranges, one of which is based on long run averages and the other based on current market data. It will still use long run historical averages of the MRP, which it values at between 5.5% and 6.5%, to estimate its long term average WACC range. It will estimate the current MRP using DGM estimates. Importantly, it said:[52]

> *Estimating the expected MRP using current market data is not conditional on an inverse relationship between the MRP and the risk-free rate. It is sufficient that the expected MRP is variable. The expected MRP changes over time since investors' risk aversions and perceptions about the average-risk investment change. On this ground, we expect that using current market data reflecting these dynamics will enable us to more accurately estimate the extra returns that would be required by investors for shifting their money from a riskless investment to an average-risk investment.*

IPART also now publishes semi-annual updates (in February and August) of its market parameters. In the most recent update published in August 2015, its mid-point MRP was 7%.[53]

WA's Economic Regulation Authority (ERA) has recently completed a review of the methodology it applies to estimate the WACC for rail networks. In its first Draft Determination for this review released in June 2014, the ERA's assessment of the MRP was primarily informed by historical averages and the DGM.[54]

In a further turn of events the ERA fundamentally changed its approach to estimating the MRP for rail networks. In a revised Draft Decision for rail networks issued in November 2014, it proposed to solely rely on the Wright approach.[55] This was based on a review of a variety of methods having regard to its requirement to estimate a long term forward-looking return on equity. The Wright approach assumes that the required return on the market remains constant or stable through time. The MRP is derived by deducting the current risk free rate from the long term average (real) return on the market. Applying this approach, the revised MRP estimate published in the November 2014 Draft Decision was 7.9%.

The ERA also reviewed the range it will apply for the MRP in its Final Decision for ATCO Gas Australia.[56] Similar to the approach applied by the AER (and the QCA), the ERA

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[51] Independent Pricing and Regulatory Tribunal (2012). p.15.

[52] Independent Pricing and Regulatory Tribunal (2013). Review of WACC Methodology – Research, Final Report, December, p.28.

[53] Independent Pricing and Regulatory Tribunal (2015). WACC Biannual Update, August.

[54] Economic Regulation Authority (2014a). Review of the Method for Estimating the Weighted Average Cost of Capital for the Freight and Urban Rail Networks, Draft Determination, 5 June.

[55] Economic Regulation Authority (2014b). Review of the Method for Estimating the Weighted Average Cost of Capital for Regulated Railway Networks, Revised Draft Decision, 28 November.

[56] Economic Regulation Authority (2015a). Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Distribution Systems, 1 July.

established a range from a variety of methods, including the Ibbotson approach, Wright approach and DGM. It arrived at a range of 5.5 to 9.9%, which spans:

- the range from historical estimates (Ibbotson and Wright), which is 5.5 to 8.9%
- the range implied by DGM estimates, which is 5.6 to 9.7%.

It arrived at a point estimate of 7.6%, which is also consistent with what was proposed by ATCO.

In its Final Decision on the WACC to apply to rail networks, the ERA reverted from solely relying on the Wright approach to have regard to the above methods. The point estimate from that determination was 7.3%.[57]

DBCTM's proposed approach

Given the significant reduction in the risk free rate, DBCTM considers that the implied return on the market that is produced by combining the current low risk free rate with a 6.5% MRP is too low. It proposes to address this via the MRP.

DBCTM has procured an expert report on the required return on equity from Frontier (refer Attachment C) and reference is made to this report for more detail regarding DBCTM's proposed approach.

Frontier examines the QCA's current approach and demonstrates why there is no basis for its point estimate of 6.5%. Its assessment of the QCA's approach is that it has applied the same mechanistic approach that was previously adopted, except that it has rounded the resulting MRP estimate to the nearest half a percent rather than the nearest full percent. It also highlights that while the QCA states that it has had regard to other evidence, including the Wright approach, this does not appear to have been given any real weight. While the QCA states that it has not applied any rounding, Frontier questions:[58]

> *If the QCA has not simply rounded the mean to the nearest 0.5%, it should explain in its Final Decision how it arrived at the same 6.5% estimate in its Market Parameters and UT4 decisions, even though the evidence differed across these two cases. That is, even though the evidence changed, the QCA's point estimate did not.*

Frontier raised a number of other questions regarding how the QCA arrived at its final range and point estimate. Recognising that the QCA has to apply judgement, from the perspective of DBCTM and stakeholders it is desirable to have some transparency through to how that judgement was applied. At least at the current time, it is highly uncertain as to how the QCA will apply this judgement in assessing DBCTM's 2016 DAU, or any other regulatory proposal.

Frontier identify a number of specific issues with the approach the QCA has applied, including:

- The QCA's use of the Siegel approach: Frontier details why this approach should be given no material weight.

[57] Economic Regulation Authority (2015b). Review of the Method for Estimating the Weighted Average Cost of Capital for Regulated Railway Networks, Final Decision, 18 September.

[58] Frontier Economics (2015a). para.66.

- The QCA's reliance on surveys: survey evidence is highly unreliable and this is highlighted by Frontier when compared against criteria previously set out by the Australian Competition Tribunal.
- The way in which the QCA has interpreted and applied estimates from independent expert reports: Frontier considers that the reports that were considered by the QCA support an ex-imputation MRP of at least 6.4% and a with-imputation MRP of at least 7.39%.
- Reference to the Wright approach: while the QCA suggests it has had some regard to the Wright approach, it is not evident that this is the case at all. The QCA should give proper regard to this approach.
- DGM estimates: Frontier does not agree with the adjustments the QCA has made to arrive at its DGM estimates and sets out the approach that it considers should be applied.

Frontier recommends the use of four estimates to inform the MRP. It arrives at a point estimate from this range using a transparent process. Its estimates are summarised in the following table.

Table 6 MRP Estimates Recommended by Frontier

Method	MRP (per cent)	Required return on the market (per cent)
Historical excess returns (Ibbotson)	6.6	9.4
Historical real returns (Wright)	8.8	11.6
Dividend Growth Model	8.6	11.4
Independent expert reports	7.4	10.2

Having regard to the above evidence Frontier recommends a point estimate for the MRP of 8.1%. This reflects the following weights:

- a 50% weight on DGM estimates, because they are forward-looking estimates that reflect prevailing conditions in the market for funds and are therefore better suited to this purpose;
- a 40% weight on historical averages (Ibbotson and Wright) on the basis that while these methods have the advantage of statistical reliability, they reflect average conditions over the historical measurement period, which could be different from current conditions; and
- a 10% weight on estimates from independent expert reports, because they are less timely and do not necessarily reflect a mechanistic application of the CAPM.

DBCTM concurs with this assessment. It has proposed a MRP of 8% in this regulatory proposal.

3.4.5 Return on equity: beta

In the approval of the 2006 AU, the QCA accepted an equity beta of 1 as proposed by DBCTM. With major expansions to the Terminal under consideration at the time, in what was a stronger demand environment compared to today, the QCA acknowledged that it was

necessary to provide DBCTM with adequate incentive to undertake this investment, stating that:[59]

> *Even though the economics of expansion appear fundamentally sound given the currently buoyant coal market, the Authority notes that coal prices have been volatile in the past, and therefore, the volume risk for significant new capacity is real.*

DBCTM subsequently undertook this investment and did so based on an expectation that (at least) an equity beta of 1 would continue to be applied. In the 2010 review, DBCTM and industry agreed to roll forward the approved equity beta of 1 from the 2006 AU.

Given it is nearly ten years since DBCTM's first access undertaking was approved, and its risk profile has changed materially over this time, DBCTM has undertaken a more detailed review of beta. Analysis was undertaken by Frontier as part of its expert report on the return on equity, as submitted in Attachment C.

First principles review

The starting point for this analysis is a conceptual or 'first principles' analysis. While this does not provide an estimate for beta, it provides a qualitative assessment of systematic risk. The Frontier report identifies some of the key changes in the risk profile of the Terminal and assesses it based on the 'first principles' factors that have previously been assessed by Lally. This includes contrasting DBCTM's risk profile with energy network businesses on the basis that the QCA has considered these to be relevant comparators for Aurizon Network. The key features that are relevant to this assessment are summarised below.

Change in the industry environment

As noted above, in assessing DBCT's equity beta at the first review, the QCA identified coal prices as a relevant factor that influences its systematic risk.

The significant fall in benchmark coal prices and the consequent challenges currently facing the industry were discussed in section 2.4. This has also led to credit rating downgrades for DBCT Finance Pty Ltd (discussed in more detail in section 3.4.7 below). In adjusting DBCT Finance's credit rating based on the deteriorating credit quality of DBCT's major customers, the ratings agencies consider there to be a clear and direct link between DBCT's risk profile and the risk of its customer base.

This is not surprising for a single commodity terminal with no alternative use. Even if the industry recovers, the conditions that the industry is currently experiencing – and the risks that DBCTM is exposed to – highlight its inherent volatility. As previous reviews have occurred in more buoyant market conditions it is questioned whether the full nature and extent of this volatility was appreciated.

Change in competitive environment

As discussed in section 2.3, DBCTM's competitive environment has also fundamentally altered over the last ten years. The threat of real competition for DBCT's services substantially reduces its market power, which is one of the factors considered by Lally as part of the first principles analysis.[60]

[59] Queensland Competition Authority (2005c). Final Decision, Dalrymple Bay Coal Terminal Draft Access Undertaking, April, p.148.

[60] M. Lally (2004). The Cost of Capital for Regulated Entities, Report Prepared for the Queensland Competition Authority.

Take-or-pay contract terms

As previously demonstrated, take-or-pay is a standard feature in pricing access to export coal ports in Australia. This is a contractual mechanism, not a regulatory mechanism. While DBCTM's revenue cap is managed via the take-or-pay obligation attached to the payment of Terminal Infrastructure Charges, this feature would apply regardless of whether DBCTM was regulated (provided it remained a standard industry characteristic).

Since the 2006 AU was approved, DBCTM's standard contract term has been reduced from ten years to five. On the one hand, Lally has considered that the existence of term contracts can increase risk if it means that the infrastructure owner cannot increase prices in response to cost shocks. Noting that DBCTM's allowable revenues are reviewed every five years, for DBCTM the key issue is what it means for its exposure to volume risk.

As noted above, around 75% of DBCTM's contracts are due to expire in the next regulatory period, in what could be expected to be a continued low price environment. There is a very real possibility that some of these volumes will not be renewed or recontracted. This contrasts with the position of its competitors, such as AAPT, which has a much longer average contract term (being assessed at twelve years by Moody's in 2014[61]). Ten year take-or-pay agreements is the current industry standard with both NCIG and WICET requiring customers to extend their contracts every twelve months to maintain a rolling ten year term.

The other important feature to consider is the socialisation of losses. This is also a contractual feature that is now common amongst export coal ports, rather than a regulatory mechanism. DBCTM's ability to socialise losses could be seen as an important mitigant against revenue risk. However, its provisions are not as strong as some of the other ports.

For example, one of the particularly attractive features of NCIG's take-or-pay arrangements that is noted by Moody's is the nine years' notice that a shipper must provide in order to terminate its contract (which as observed above, operate on a ten year rolling basis).[62] Further, if this occurs, that shipper's charges are increased to amortise its pro rata share of the debt over that nine year notice period, contrasting with an amortisation period to 2054 for DBCT. This take-or-pay arrangement provides far more protection than DBCTM's. In contrast, DBCTM is at a relative disadvantage, as noted by Moody's:[63]

> *Whilst DBCT has the contractual right to socialize lost revenue due to a user default, such socialization only occurs from the earlier of (i) the user's scheduled contract termination date, (ii) the assignment of the user's capacity allocation to another party and (iii) the next regulatory reset. We consider this lag to be a potential cause of cash flow volatility.*

S&P also expressed the view that the level of protection provided by socialisation "would be of greater value if the weakening of a given customer was driven by specific company factors rather than the performance of the coal sector in Queensland as a whole."[64]

Implications

The implications of the above are significant in the context of beta. First, DBCTM's risk profile has materially increased since its equity beta of 1 was established in the 2006 AU. This is a function of the changing industry environment, which as noted above, highlights its

[61] Moody's Investors Service (2014a).
[62] Moody's Investors Service (2014b).
[63] Moody's Investors Service (2015a).p.2
[64] Standard and Poor's (2014). p.2.

inherently volatile nature. It is also driven by the change in its competitive environment, which has substantially reduced any market power it may previously have held.

Second, the contractual take-or-pay mechanism only provides short term protection. Take-or-pay only provides protection for contracts in place, and then only while the counterparty remains solvent (noting DBCTM's comparatively less attractive socialisation provisions). For DBCTM, this protection currently extends over an average contract term of four and a half years (shortening to two and a half years as contracts move into the option period), which is materially below its industry counterparts, including direct competitors.

Indeed, the industry evidence provided above suggests that the 'efficient benchmark coal terminal' could actually be less risky than DBCT, to the extent that the efficient benchmark coal terminal could be assumed to have rolling ten year take-or-pay contracts and provisions that allow losses to be socialised over shorter timeframes.

Frontier's analysis also highlights the stark contrast between DBCTM and energy network businesses. From the perspective of an energy network business, the differences include:

- the essential nature of energy services (resulting in a low income elasticity of demand), which results in considerably less exposure to volume risk;
- a fundamentally different customer base, dominated by a large number of small residential and commercial customers (not a small number of large industrial customers);
- a different commercial pricing structure and regulatory framework, which immunises these businesses against customer default; and
- much greater market power.

DBCTM is firmly of the view that energy network businesses, as well as other regulated essential services firms such as water utilities, are of no relevance whatsoever to assessing the beta of an export coal terminal. This view is confirmed by Frontier.

Empirical estimates of beta

An examination of DBCTM's risk profile since its equity beta of 1 was set in 2006 presumes that this was an appropriate equity beta estimate. Frontier highlights the dearth of suitable comparator firms, with three relied upon in the first access undertaking review, only one of which (the Port of Tauranga) remains in existence today.

It also refers to a report Grant Samuel prepared in 2010, which only identified one relevant comparator for DBCT, being Asciano. Frontier has reviewed the applicability of this analysis to DBCT and has identified some significant concerns, concluding that:[65]

> *…we would place negligible weight on Grant Samuel's final equity beta estimate as every piece of market evidence considered by Grant Samuel supports an equity beta materially above 1.0. Grant Samuel are unable to point to a single piece of market evidence to support their final equity beta estimate.*
>
> *We also note that the Grant Samuel estimate is now more than five years out of date and consequently of no relevance for that reason alone.*

[65] Frontier Economics (2015a). paras.29-30.

Frontier has provided updated estimates of the firms that have previously been referred to, including Port of Tauranga, Asciano and other port businesses examined, but not ultimately relied upon, by Grant Samuel. As nearly all of these businesses have much lower leverage than DBCT, the estimates needed to be regeared based on the 60% benchmark gearing assumption. Frontier arrived at the following updated equity beta estimates:

- 2.92 for Asciano (the only firm relied upon by Grant Samuel)
- 1.24 for the Port of Tauranga (the only firm surviving from the QCA's sample)
- a mean of 1.08 (raw) for the entire sample.

This clearly shows that based on this evidence, DBCT's equity beta can be no less than 1.

Conclusion: proposed equity beta for DBCTM

In conclusion, the preceding analysis supports the case that DBCT's equity beta is at least 1. This of course presumes that an equity beta of 1 is an appropriate starting point. As highlighted above, only a small number of comparators of highly questionable reliance were referred to when the equity beta was assessed in the first access undertaking review. It is also not clear if the full extent of the industry risk that DBCTM is exposed to was acknowledged at the time, given this has really only become evident following the end of the coal supercycle.

As discussed above, the QCA originally approved an equity beta of 1 having regard to the expansions that were contemplated at the time and the inherent risks in undertaking this investment in what was a more buoyant market. These expansions have been undertaken. DBCTM committed to these investments based on the expectation that an equity beta of 1 would continue to be applied and its risk profile would not materially increase. It did not contemplate that this beta might subsequently be lowered after the capital had been committed and the investment becomes a sunk cost.

In any case, there is certainly no evidence to suggest that DBCT's equity beta has fallen. Indeed, the theory and evidence is strongly to the contrary. The more likely situation is that DBCT's equity beta has increased, given the change in DBCTM's market environment and competitive circumstances. As summarised by Frontier, this is driven by a number of factors, including:

- the deteriorating financial position of Peabody, who accounts for around 25% of contracted volumes;
- the concerns expressed by the ratings agencies regarding the general credit quality of DBCTM's customers, reflecting a direct linkage between the risk profile of these customers and DBCT. This has already been reflected in credit rating downgrades for export coal ports, including DBCT Finance;
- the change in DBCTM's competitive environment, with DBCT now exposed to competition from a number of different facilities which could intensify if market conditions do not materially improve;
- the fact that DBCTM is likely to face more systematic risk than comparator terminals, given it has substantially weaker take-or-pay and less attractive socialisation provisions;

- the fact that the equity betas of the two remaining comparators used to establish DBCT's beta in its first access undertaking review are above 1. Indeed, the (re-levered) equity beta of Asciano Limited, which was identified as the only relevant comparator by Grant Samuel, is now close to 3.

At this point, DBCTM is prepared to roll forward its existing equity beta of 1 for the 2016 DAU to provide some level of stability to customers. However, it will have to review this further going forward depending on how its industry and market outlook evolves. This also needs to be assessed having regard to the reasonableness of the return on equity this provides, having regard to current market conditions.

It is emphasised that DBCT's equity beta must at least be 1. There is no theory or evidence to support a reduction and indeed to do so would lead to error, as DBCTM's revenues will not be sufficient to cover its efficient costs, including a rate of return that is commensurate with its regulatory and commercial risks.

3.4.6 Return on equity: proposed estimate

To summarise, based on the above analysis DBCTM proposes the following estimate of the return on equity:

r_e = 2.8% + 1.0 * 8%

= 10.8%

The evidence and analysis submitted by DBCTM supports the proposition that the average required return on the market has not fallen materially since the approval of the 2010 AU. Instead, investors' required returns are likely to be more stable through time. As acknowledged by IPART, this is not conditional on an inverse relationship between the risk free rate and the MRP. It is reasonable to expect that the investor expectations of the MRP do vary through time. Most importantly, it is neither reasonable nor plausible to assume that because the risk free rate has fallen materially, investors have similarly revised their return expectations downwards.

In terms of beta, DBCTM's analysis clearly demonstrates that an equity beta of 1 is likely to be a lower bound.

Accordingly, DBCTM submits that the above estimate is what it at least requires to offer investors a return that will compensate them for the commercial risks associated with investment in a terminal with a similar risk profile. DBCTM must continue to achieve this for its existing investors, as well as to be able to attract sufficient capital to fund future growth and asset replacement.

3.4.7 Return on debt: notional credit rating

Factors influencing creditworthiness

The current notional credit rating applied to DBCT is BBB+.

For regulatory purposes, the credit rating is assessed with reference to the notional credit rating that would be applied to an efficient benchmark firm (being a stand-alone coal terminal), rather than its actual credit rating. However, ratings agencies' assessments of the credit rating applied to DBCT Finance is still direct and relevant evidence in understanding how they would assess the efficient benchmark terminal, including how they view the outlook for the industry in the current environment.

DBCT Finance is currently rated BBB by S&P (with a stable outlook) and Baa2 by Moody's (with a negative outlook). DBCT Finance's S&P rating was downgraded from BBB+ in July 2014, while it was placed on negative credit watch by Moody's in August 2015.

The significant implication of this for the purpose of this review is that the recent changes are largely reflective of the industry environment that DBCT operates in and the reality that as a single commodity terminal, its risk profile is inextricably linked to the risk profile of its customer base. As noted previously, the two key drivers of Moody's placing DBCT Finance on negative credit watch are the industry outlook and the prospect of it being subject to lower regulatory returns in the next period. In relation to the industry outlook, Moody's states:[66]

> *The negative outlook reflects the increasing downside risk for DBCT's credit profile, given the rising counterparty risk emanating from the continued weakness in the coal market. Consequently, DBCT's counterparty risk exposure has increased, which mainly arises from mines owned by Peabody Energy Corporation (B3, negative) shipping through DBCT's terminal. Declining coal demand from China – as one of the world's largest coal importers - is exacerbating the pressure on global coal prices and financial pressure on Australia's coal mining industry.*

S&P rationalised its downgrade of DBCT Finance from BBB+ to BBB as follows:[67]

> *The rating action reflects the weakened credit quality of DBCT's customers, which was greatly influenced by the recent lowering of the issuer credit ratings on Peabody to 'BB-'. Peabody has contracts for about 25% of DBCT's overall capacity. Also impacting the reassessment of the customers' creditworthiness was the recent sale by Rio Tinto of the Clermont mine to a Glencore-led joint venture, resulting in the contractual payments to DBCT relating to that mine coming from parties with a weaker credit quality.* ***Overall, we now assess the combined credit quality of all the customers to be commensurate with a 'BBB' rating, which resulted in a lowering of our revenue counterparty dependency assessment (CDA) for DBCT to 'BBB'. The cap created by the revenue CDA means that DBCT's issue credit ratings can no longer be higher than 'BBB'.*** *{emphasis added}*

It is clear that from the perspective of the ratings agencies, DBCT's credit rating is directly linked to the creditworthiness of its customers. Indeed, S&P caps DBCT's credit rating based on the combined credit quality of its customer base, which it currently assesses at BBB. While firm-specific factors will influence the ratings agencies' overall assessment, it is clear that the deterioration in coal market conditions has been the dominant factor underpinning the recent downgrades. That is, they cannot be attributed to factors that are highly specific to DBCT Finance.

Reference can also be made to ratings opinions for other (unregulated) coal terminals. For example, in reaffirming its Baa3 rating (equivalent to BBB-) for AAPT (which is highly leveraged), Moody's observed:[68]

> *AAPT's ability to rollover existing contracts upon maturity or replace the contracts with new user agreements on consistent terms with creditworthy counterparties will become increasingly important to the rating over time.*

It did consider that AAPT's average contract term of twelve years provided it with some protection, which DBCTM contrasts with its average maturity profile of four and a half years.

[66] Moody's Investors Service (2015a). p.1.
[67] Standard and Poor's (2014). p.2.
[68] Moody's Investors Service (2014a). p.2.

NCIG Holdings Pty Ltd is currently rated Ba2 by Moody's (equivalent to BB) on its senior unsecured debt and Baa2 (equivalent to BBB) on its bank credit and senior secured facilities.[69]

Implications

The ratings agencies' assessments for DBCT Finance are highly relevant to the efficient benchmark firm. It is reasonable to expect that the efficient benchmark firm, which is a stand-alone coal terminal of a similar scale of operation to DBCT, would be assessed in a similar way. That is, its credit rating will be directly linked to the overall credit quality of its customer base. At the current time, this supports a credit rating of no more than BBB. Evidence from other rated stand-alone coal terminals provides further support for this, noting that AAPT is currently rated BBB-.

This has direct implications for assessment of the return on debt. If a notional credit rating is assumed to be BBB+, where the efficient benchmark firm could support a credit rating of no higher than BBB, the return on debt will be set too low. This would therefore fail to satisfy the Pricing Principles under the QCA Act, which entitles DBCTM to "at least" a return on capital that provides compensation for its regulatory and commercial risks.

As noted above, Moody's has already flagged the possibility of a further downgrade if the next regulatory reset results in lower regulatory returns, as this will weaken its credit metrics. This expectation is linked to the lower risk free rate, not the further prospect that DBCTM will only be compensated for a cost of debt that reflects a BBB+ rating, not BBB. If DBCTM's return on debt is set too low, this will place further pressure on these credit metrics that does not appear to have currently been contemplated by the ratings agencies. As highlighted in section 2.6, this regulatory error has asymmetric consequences as it could ultimately deter future investment.

DBCTM therefore submits that there is a strong and compelling case to set the notional credit rating at BBB and has assumed this for the purpose of this regulatory proposal.

3.4.8 Return on debt: estimating the DRP

The QCA's preferred approach to estimating the DRP is now based on an in-house econometric approach that was originally developed by PWC (and has subsequently been maintained by Incenta). The only other Australian regulator to use its own in-house approach is the ERA. It also constructs its own sample of bonds, although it only uses Bloomberg data and also includes bonds issued by Australian corporates in other countries (including USD, Euros and British pounds).

There are two independent data sources for ten year BBB bond estimates in Australia, being Bloomberg (who recommenced publishing ten year BBB estimates as part of its BVAL series earlier this year) and the Reserve Bank of Australia. With the exception of the QCA and ERA, other Australian regulators rely on one or both of these methods.

QCA's methodology

The QCA's in-house econometric methodology combines data from Bloomberg and UBS into a dataset of bonds that are utilised in a linear regression model to estimate the DRP as a function of the time to maturity. DBCTM has some issues with the methodology and its implementation, especially in regard to data availability and the sample composition. These issues are explored below.

[69] Moody's Investors Service (2014b).

UBS Data

DBCTM's understanding is that UBS data is only available to institutional customers of UBS. Accordingly, even if DBCTM, the QCA and/or its consultant, Incenta, are able to access the data, it may not be available to all stakeholders that are part of the undertaking assessment process. Where the information is available, it is necessary for it to have been collected on a daily basis for at least the six months prior to the averaging period that is used for the assessment, due to the need to perform a Quandt-Andrews breakpoint test to investigate whether any of the data is 'stale'. While DBCTM has established that it has access to the data, it cannot obtain this historical data and hence cannot fully replicate the QCA's methodology at this time.

DBCTM notes that as part of the ERA's review of its WACC guidelines to apply to gas network businesses[70], some stakeholders submitted that UBS data should be included as it would increase the sample of bonds available. The ERA concluded that only Bloomberg data would be relied upon, having regard to its reputation as a "world leading service provider of financial data".

Swap Rate Data

One of the benefits that is seen with the use of the UBS data is that it includes floating rate bonds. In order to calculate the fixed rate equivalent yield on floating rate bonds, the use of long-term interest rate swap data must be used along with the traded spread of the bond, which when added together give the no-arbitrage "coupon" rate required to match the current estimated cashflows to the price observed in the market. This coupon value and the current traded price are then priced using the traditional method for fixed coupon bonds in order to arrive at an estimate of the yield at maturity.

This is a sound methodology to calculate yields for floating rate bonds however it would appear that there are some issues with the availability and quality of the swap information. Interest rate swap information is currently publicly available through the Australian Financial Markets Association (AFMA), which publishes the data on a daily basis with a one day delay (no historical data is available). AFMA also makes the information available in real time through financial data services providers such as DataStream and Bloomberg. However, the interest rate swap data series is flagged for discontinuation from 31 December 2015.

DBCTM has made enquiries with AFMA as to why this series will be discontinued and it has advised that it has to do with the reliability of the inputs. The swap rates are received from banking institutions that deal in the inter-bank swap markets, which in the past have numbered as high as 15 participating institutions. However, currently there are only four contributors to the inputs for the data series, which are the big four banks (NAB, Westpac, CBA and ANZ). Due to this contraction in the number of contributors to the data series, AFMA currently intends to discontinue publishing the data series.

Real-time interest rate swap data is also available through swap dealer screens such as Bloomberg, but the same data issuance problem would still arise as there is data available from less than ten providers. In most cases, the data is still only provided by the big four banks, with the remainder of the estimates being compiled datasets from institutional banks.

[70] Economic Regulation Authority (2013). Explanatory Statement for the Rate of Return Guidelines, Meeting the Requirements of the National Gas Rules, 16 December.

Given that the only public provider of the interest rate swap information is no longer willing to provide this information due to concerns about the robustness of the estimate, DBCTM questions how the QCA intends to apply its methodology in its current form going forward.

Sample Composition

As part of the QCA's econometric methodology, the target credit rating is estimated by including the neighbouring credit ratings. For example, if the target credit rating is BBB+, then DRP values for the BBB and the A- credit ratings will be included. This is done to provide an increased number of observations in order to ensure that the statistical robustness of the regression is maximised. However, there are two sides of the coin when it comes to the administration of a linear regression, recognising that the aim is to find the best linear, unbiased estimator of the relationship between the time to maturity and the DRP which prevails at that point in time.

For instance, if only the target credit rating were included in the sample, the results should show a completely unbiased estimate of the DRP. However, if the sample size were small, then there would be doubt over whether or not the estimate was the best available. One would expect the standard error of the regression to be high. If this were the case, the estimate might not capture the relationship between time to maturity and the DRP in the most accurate way.

To overcome this, the QCA's methodology includes the two neighbouring credit ratings, as described above. This increases the sample size which, in theory, should provide for a more statistically accurate estimate of the DRP. However, this also will put the sample at risk of bias to one credit rating or another depending on the relative count of the number of bonds in each credit rating category.

This sample bias is brought about by the fact that credit ratings are ordinal ratings of a company's relative risk of default over the cycle of the debt instrument.[71] Based on this, any testing that is done to measure the bias or non-bias in the model cannot be based on a cardinal ranking of the credit ratings, especially if they are used as weightings.

In the past, for a notional rating of BBB+, Incenta has used the numbers 1, 2 and 3 to weight the A-, BBB+ and BBB rating respectively. This assumes that changes in bond spreads attributable to credit rating are equidistant over the range of credit ratings. However, this is not true in practice. As such, there is a need to test for sample bias in a more robust way, either by:

- using a statistical method to correctly weight the credit ratings, such as placing an indicator variable within the regression framework to allow for the different credit ratings to be taken into account when calculation takes place; or
- running the regression on only the target rating if there is sufficient sample size to do so.

DBCTM acknowledges that concerns have also been expressed with the two independent data sources available to estimate the ten year BBB DRP, being the RBA and Bloomberg's BVAL series.

[71] Moody's Investor Service (2006). Moody's Credit Rating Prediction Model, pp.1, accessed at: https://www.moodys.com/sites/products/DefaultResearch/2006200000425644.pdf

For example, the RBA's ten year estimates tend to reflect an effective term of less than ten years and are currently only published as at the end of each month (although it is understood that the RBA intends to commence publishing daily data at some point in the future). However, both of these issues can be overcome, including extrapolating the estimates to an effective ten year term and interpolating daily estimates (both of which have been done by the AER).

DBCTM also notes that Bloomberg only recently recommenced publishing ten year BBB BVAL estimates and hence there is not a long data history available to assess performance. While concerns have been expressed regarding the transparency of its methodology, Bloomberg is a highly reputable and independent provider of data.

The QCA has also preferred its methodology because it uses this to derive a BBB+ estimate. This is not considered relevant in DBCTM's case because as it has demonstrated above, the notional benchmark credit rating should be BBB. In any case, estimates for individual rating notches, such as BBB+, should only be applied if they can be considered to be reliable, noting that both the RBA and Bloomberg only publish estimates for the broader BBB rating band.

It is possible that the QCA's econometric method can provide an estimate of the prevailing DRP on corporate bonds for the target credit rating. However, unless the issues above are addressed, particularly the sample bias, DBCTM questions the benefit of using a complex econometric model that cannot be readily replicated over the publicly available third-party estimates from the RBA and Bloomberg.

DBCTM's proposal

As noted above, DBCTM is not currently able to fully replicate the QCA's methodology because while it can now access the UBS data, it does not have the necessary data history to apply the Quandt-Andrews breakpoint test. Based on a 20 day averaging period to 21 August 2015, its estimate based on the QCA's econometric approach is 2.32%.

Along with the risk free rate, this proposed DRP is a 'placeholder' estimate. Following the publication of the Draft Decision, DBCTM proposes to submit a proposed averaging period to the QCA for the purpose of setting the final ARR. Consistent with standard regulatory practice, this final averaging period will be nominated and agreed with the QCA on a confidential basis.

3.4.9 Interest rate swap allowance

DBCTM notes that the QCA typically applies an interest rate swap allowance where it sets the term to maturity to match the length of the regulatory period. Because DBCTM considers that a ten year term to maturity should be used to estimate the risk free rate and DRP, it has not proposed an interest rate swap allowance. However, if the QCA determines that it will apply its term matching approach, an interest rate swap allowance will need to be provided.

3.4.10 Debt raising costs

Following its recent WACC Methodology Review, the QCA revised its allowance for debt raising costs to 10.8 basis points per annum. DBCTM has applied this assumption for the purpose of this regulatory proposal.

3.4.11 Gamma

The QCA revised its value of gamma down from 0.5 to 0.47 in its recent WACC Methodology Review. DBCTM does not accept the methodology or assumptions applied in arriving at this estimate. Reference is made to the expert report from Frontier (contained in Attachment D), the key findings of which are summarised here.

Distribution rate

As submitted by a number of stakeholders in the QCA's WACC Methodology Review, the value for the distribution rate most commonly applied in Australia is 0.7 (indeed as cited by Frontier, this has even been supported by the QRC in the context of Aurizon Network's UT4 review). Based on the advice of Lally, the QCA has applied a value of 0.84. This reflects the distribution rate of a small sample of large listed multinational companies.

Frontier highlights some fundamental flaws in Lally's analysis. From the outset, Lally has estimated the wrong thing, being the value of distributed credits to created credits. This is quite different from the QCA's definition of the distribution rate, which is the ratio of distributed credits to corporate tax paid. The two measures will only be equivalent if the value of created credits equals corporate tax paid, which cannot be the case for a sample comprising large multinationals who pay tax to foreign governments. Frontier shows that if the QCA's definition of the distribution rate is applied to Lally's sample, the appropriate estimate of the distribution rate would be 50%.

Frontier also examine Lally's (and hence the QCA's) reliance on a small sample of the largest listed firms, which has also been considered in the context of the AER's Rate of Return Guideline. These multinational companies generate significant foreign-sourced profits, which enables them to distribute a higher proportion of imputation credits than they otherwise would be able to (as these credits can be attached to dividends paid out of foreign sourced profits). Noting that the AER has explicitly defined the 'efficient benchmark firm' as "a pure play, regulated energy network business operating within Australia"[72], a large multinational corporation is clearly directly incompatible with that definition. While the QCA has not specifically defined the efficient benchmark firm, DBCTM can see no reason why large multinational corporations could be seen as most compatible with the efficient benchmark firm in this context – instead, they should be excluded.

Frontier conclude that the most appropriate estimate for the distribution rate is 70% as this is consistent with:

- the distribution rate for all companies; and
- the distribution rate for all listed companies, other than the top 20%.

DBCTM has therefore applied a distribution rate of 70%.

Theta

In the estimation of gamma it is the value of theta that has proven the most contentious, as unlike the distribution rate, it is not observable. This issue is addressed in detail in the accompanying report by Frontier.

Frontier highlights that the QCA has followed the AER's 'conceptual' re-interpretation of theta, which was previously accepted to be the market value of franking credits in the hands

[72] Australian Energy Regulator (2013). Better Regulation, Rate of Return Guideline, December, p.9.

of investors. Essentially, it now defines theta as simply the redemption rate, or the proportion of distributed credits that are likely to be redeemed by investors.

This is very different from the value that those investors might actually ascribe to those credits (if indeed they are valued at all). Frontier sets out the evidence that clearly supports the proposition that this value is materially less than the redemption proportion. That is, investors do not value franking credits at their full face amount. At best, redemption rates can only provide an upper bound for theta, noting that adopting this upper bound will materially overstate the value that investors actually place on franking credits.

As noted previously, in order to satisfy the requirements of the Pricing Principles under the QCA Act, the rate of return must be assessed from the perspective of investors, as it is only investors (not DBCTM, the QCA or other stakeholders) who will ultimately determine whether the rate of return provides adequate compensation for the regulatory and commercial risks they are required to bear.

Investors derive these returns from dividends, capital gains and any value they ascribe to franking credits. To the extent that franking credits have some value, this reduces the return that the firm has to generate via dividends and capital gains. If the value of gamma that they are assumed to derive is overstated, the returns derived from dividends and capital gains will be insufficient to meet investors' return expectations. Frontier states:[73]

> *Thus, when estimating gamma, the appropriate question to consider is this: What is the quantum of dividends and capital gains that shareholders would be prepared to give up in order to receive imputation credits? It is precisely this question that is addressed by market value studies that seek to quantify the relative value (to investors in the market for equity funds) of dividends, capital gains, and imputation credits.*

Noting that the AER's approach has been quite persuasive on the QCA, Frontier critiques this in some detail. Lally's "conceptual goalposts" approach set out in his advice to the QCA is also reviewed, noting that both the AER and ERA have rejected this approach. While the QCA ultimately arrived at a value of theta that was well outside of Lally's conceptual goalposts, it states that it has given this approach "less weight". Frontier clearly sets out why Lally's test should be rejected outright.

Frontier concludes that the value of theta can only be estimated using market value studies. Its recommended estimate of 0.35 is based on an updated version of the SFG Consulting study, which was the 'state of the art' dividend drop off study commissioned as part of the Australian Competition Tribunal's (the Tribunal's) review of gamma, in response to appeals lodged by Energex, Ergon Energy and ETSA Utilities (the Gamma Case). In its final judgment in the Gamma Case, the Tribunal concluded:[74]

> *The Tribunal is satisfied that SFG's March 2011 report is the best dividend drop-off study currently available for the purpose of estimating gamma in terms of the Rules. Its estimate of a value of 0.35 for theta should be accepted as the best estimate using this approach.*

No other study has been subject to such intense scrutiny in Australia in the context of gamma.

DBCTM notes that nearly all energy network businesses lodging regulatory proposals under the AER's new Rate of Return Guideline have departed from that guideline and applied a gamma of 0.25 (reflecting a distribution rate of 0.7 and theta of 0.35, based on this same evidence). This matter is now subject to appeal with the Tribunal.

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[73] Frontier Economics (2015b). Estimating Gamma, para.73.

[74] Application by Energex Limited (Gamma) (No 5) [2011] ACompT 9, para.29.

Consistent with the conclusion reached by the AER, the QCA has determined that no weight should be given to dividend drop-off studies. Frontier notes that in reaching this conclusion, the QCA has re-raised a number of econometric issues that it (as SFG Consulting) previously addressed in submissions made to the QCA. It is not evident that the QCA has had any regard to those previous responses. This remains highly relevant here as these issues are fundamental in the QCA's continued rejection of dividend drop-off studies.

As noted above, at best, redemption rates can only provide an upper bound for theta. Frontier provides estimates of this redemption rate using tax statistics and the equity ownership approach. This results in estimates of:

- for tax statistics, 0.43 (Hathaway, 2014) and 0.45 (NERA, 2015)
- for equity ownership, 0.44 (listed equity) and 0.58 (all equity).

These estimates are above its recommended value of 0.35.

Conclusion

Consistent with the advice provided by Frontier, DBCTM considers that the best estimate of gamma is 0.25, which is the product of a distribution rate of 0.7 and theta of 0.35.

The 'value' of gamma determined by the QCA, reflects:

- a distribution rate that is based on a sample of small multinational companies that do not reflect the efficient benchmark firm;
- a theta that is based on a flawed conceptual definition of theta, which defines it as a redemption rate, rather than a value.

This results in the value of gamma being materially overstated. As noted above, this has significant and adverse consequences as it will understate the total return required by investors, which is inconsistent with the requirements of the QCA Act.

3.4.12 Summary: DBCTM's proposed WACC

DBCTM's proposed WACC is presented in the table below.

Table 7 Proposed WACC

Parameter	Value
Risk free rate	2.8%
Gearing	60%
DRP	2.32%
Debt raising costs	0.108%
MRP	8.0%
Equity beta	1.0
Corporate tax	30%
Gamma	0.25
Return on debt	5.23%
Return on equity	10.8%
Post tax nominal (vanilla) WACC	**7.46%**

This proposed WACC is still over 2% lower than the WACC agreed with industry for the current access undertaking period. This largely reflects the lower expected return on debt, comprising a lower risk free rate and DRP. For the reasons outlined above, the return required by equity investors is likely to be more stable over time.

As discussed in section 2.6, regulatory error has asymmetric consequences. Reference is made to the expert evidence considered by the New Zealand Commerce Commission in determining that it will continue to set the WACC above the mid-point of its range. This advice, including advice from the QCA's preferred consultant, Lally, advocated the need for a WACC premium or uplift to address the inherent uncertainty associated with WACC estimation.

As it is not consistent with the approach currently applied by the QCA, DBCTM has not proposed a WACC that has been derived from a range, nor has it proposed a premium or uplift. However, the findings in the Commerce Commission's review are directly relevant here.

DBCTM has proposed a WACC that has been derived using robust methodologies, assumptions and relevant market evidence. It considers that its proposed estimate should "at least" provide compensation for its commercial risks (noting that the recognition and assessment of regulatory risk is a much more difficult issue). In DBCTM's view, a lower value will fail this requirement and will have significant and adverse consequences for its incentives to invest.

3.5 Corporate costs

As noted previously, DBCT Pty Ltd is responsible for the management of the Terminal under the OMC. Operating and maintenance costs are levied under a pass-through arrangement. Given DBCT Pty Ltd is owned by a number of the Terminal users, the assessment of operating and maintenance costs is not contentious. The two key issues that do need to be addressed in this submission are:

- corporate overhead costs; and
- the remediation allowance.

3.5.1 Corporate overhead costs

DBCTM's allowance for corporate overhead costs has not been reviewed in detail since the 2006 AU was approved. The scale and complexity of activity has increased since this time, with the Terminal subject to major expansions. Further, the changing demand environment has continued to drive improvements in optimising the Terminal's performance within a complex logistics chain.

DBCTM therefore commissioned a detailed review of its corporate overhead costs, which has been undertaken by Stephen Meyrick. Stephen was formerly the CEO at Meyrick Consulting Group, who advised the QCA on DBCTM's corporate cost allowance as part of the first access undertaking review. Reference is made to his expert report, contained in Attachment E, which is summarised below. The analysis is exclusive of the QCA levy.

Consistent with the incentive-based regulatory framework that DBCTM is subject to, its corporate overhead cost allowance must be estimated from the perspective of the 'efficient benchmark firm', which could result in an allowance that differs from its actual costs. Mr

Meyrick has noted in his report that for the purpose of the first access undertaking review, the relevant corporate overhead costs were defined by the QCA as the costs that would be incurred by a Brisbane-based listed entity who had DBCT as its sole asset. It is reasonable to expect that the same approach would be applied today.

Mr Meyrick has used three methods to arrive at independent estimates of DBCTM's corporate costs. These are:

- high level benchmarking, which is based on a review of regulatory judgements of total corporate costs for a range of infrastructure providers;
- component benchmarking, which uses benchmarks derived from a cross-section of listed companies to develop estimates of the major components of corporate costs; and
- bottom-up benchmarking, which involves a build-up of corporate costs based on an assessment of individual cost items. The starting point for Mr Meyrick's analysis was the breakdown of costs approved by the QCA in 2006 AU.

He arrives at the following results.

Table 8 Summary of Results: Corporate Cost Analysis

Method	Estimated corporate costs (2016-17)
High level benchmarking	$11.6 million
Component benchmarking	$8.2 million
Bottom up approach	$7.8 million

Mr Meyrick concludes that the estimate of corporate costs for the efficient benchmark entity is the median value of $8.2 million.

Consistent with standard practice under incentive regulation in Australia, this estimate is based on an assessment of the corporate costs that would be incurred by the efficient benchmark entity. That is, the allowance is not based on DBCTM's actual costs. DBCTM considers that the definition of the efficient benchmark entity originally applied by the QCA, which is a Brisbane-based listed entity who has DBCT as its sole asset, remains appropriate.

DBCTM's corporate cost allowance has not been reviewed since the first access undertaking process. Over this time, the scale and complexity of terminal operations have increased markedly. It is therefore necessary to re-align the allowance with the efficient costs that would be incurred by a stand-alone entity for this scale of operation. DBCTM submits that the rigorous and independent analysis undertaken by Mr Meyrick provides a robust estimate of this allowance.

DBCTM has therefore proposed an allowance of $8.2 million (2016-17) in this regulatory proposal. This amount excludes the QCA levy.

3.5.2 Remediation costs

The nature of DBCTM's obligations

[redacted] As part of the 2006 AU, the QCA approved a $952,710 per annum (non-indexed) site remediation allowance as part of DBCTM's ARR. This recognises that once the remediation obligation is triggered, the Terminal will have ceased operations and DBCTM will have no capacity to raise funds or collect additional revenue to cover these costs.

This is a fixed annuity payment that is intended to accumulate to a future value that will fund DBCTM's future remediation obligations. The assumptions underpinning this amount were not published, however they were based on an estimate as at 2004 of the costs of remediating the Terminal, which only reflected Stages 1 to 6. The payment was calculated assuming a remediation cost of $30 million, a terminal life of forty years and an interest rate of 3.5% per annum. It has remained unchanged since this time.

The obligation that DBCTM could be required to incur is significant. [redacted]

- [redacted]
- [redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

As the original estimate was developed over ten years ago, with significant expansions to the Terminal undertaken since this time, DBCTM needs to review the current remediation charge as it is highly unlikely that it would be sufficient to fund the obligations it expects that it will incur.

Implications of DBCTM's obligations

DBCTM has a clear obligation to rehabilitate the site, which will be triggered at some point in the future. What is less clear is when this is likely to occur and to what extent. [redacted] This is clearly a significant task, requiring the dismantling and removal of all structures, fixtures, fittings and plant (including pylons in the seabed) and the restoration of land.

The other key risk area for DBCTM is the requirement to dispose of all materials in accordance with 'applicable laws'. Any cost estimates for this activity can only be based on current laws, however it will be the laws prevailing at the time of remediation that would determine the actual costs. While it is not possible to predict if changes in relevant laws would occur in the future, it would be reasonable to expect that any such change is likely to

be more, rather than less, onerous, given much of this will be driven by policy in relation to environmental standards.

This problem is no different to the situation faced in assessing premiums for insurance. However, a key difference here is that DBCTM can be reasonably certain that the insured event will occur, as it has an obligation to rehabilitate the site under the lease. What is uncertain is some of the key variables underpinning the future value of the expected costs, including at what point in time they are most likely to be incurred.

Application of self-insurance principles

At a minimum, DBCTM's existing remediation charge needs to be adjusted to reflect the additional costs of rehabilitating the stages that have been completed since the allowance was first approved. As noted above, the existing allowance was approved prior to any of the Stage 7 expansions.

DBCTM also sees this as an opportunity to put a more transparent and robust methodology in place to estimate its remediation allowance, which gives appropriate regard to the uncertainties surrounding the amount and timing of the expenditure. This can change through time, and at future regulatory resets, as more information becomes known.

DBCTM considers that this type of risk is better suited to a self-insurance type methodology. This involves identifying the key factors that could impact the timing and extent of its remediation obligations and attaching probabilities to them. There is limited, if any, relevant historical data to inform these probabilities and therefore a degree of judgement is required. However, this is a more transparent approach as DBCTM will need to disclose the variables underpinning its estimate and its rationale for the assumptions that have been made.

In the first instance, this requires identifying the key factors that will determine the amount of the estimate. The primary one is timing. In DBCTM's view, this can be directly and independently linked to its current assessment of the economic life of the terminal. As noted above, DBCTM is proposing to base this on a WAML approach. This makes inherent sense as the expiration or termination of the lease clearly depends on the ongoing demand from coal mines in the Bowen Basin.

The other key issue is the scope and standard of remediation that could be assumed to apply. At the current time, DBCTM has no information or evidence to suggest that anything other than full remediation would be required. Other factors that will influence the cost will be prevailing conditions in the construction and labour markets.

As noted above, assumptions and probabilities could change through time as market conditions change and more information becomes known. Once the model has been established, DBCTM proposes to review it on a periodic basis as part of each access undertaking review. If inputs and assumptions change materially, the amount of the remediation charge will be varied. This of course will need to take into account the total amount that users have contributed since the charge was first levied, which will be applied to reduce the future amount that needs to be funded.

Updated estimate of remediation costs

DBCTM engaged Hatch to provide an updated estimate of the current costs of remediating the terminal, [redacted] (refer Attachment F). The scope of the updated assessment includes:

- Stages 1 to 6

- additional Stage 6 items
- the Short Gain expansion and Stage 7X Phase 1, 2, and 3
- NECAP 2009-2015 and SR1 Replacement Project
- water quality improvement Phase 2 and Phase 3 works.

It assessed three rehabilitation options, being:

1. mothballing the facility
2. minimal rehabilitation
3. full rehabilitation.

The resulting remediation cost estimates are presented in the table below.

Table 9 Updated terminal remediation costs ($'000, June 2015)

Mothball	Minimal remediation	Full remediation
34,600	439,400	826,600

As noted above, the original remediation charge, which was only intended to cover the costs of remediating Stage 1 to 6 of the terminal, was based on an estimated total cost of $30 million (in 2004-05 dollars). If inflated to current dollars, it would only equate to an amount just above the estimated cost of mothballing the terminal.

DBCT is located near pristine coastal and marine environments, including the Great Barrier Reef. Given today's environmental standards and the general sensitivities around coal export activities, DBCTM considers it extremely unlikely that the terminal would be mothballed. Indeed, it has no information or evidence to suggest that anything less than full remediation is likely to be required, [redacted].

Development of the methodology and initial premium assessment

DBCTM engaged Finity to develop an actuarial-based methodology for determining its remediation 'premium' and assist it in assessing the current amount of the allowance (refer Attachment G).

Assumptions

Finity's methodology reflects the two key variables that are expected to determine the remediation allowance. The first of these is when remediation can be expected to be required. The scenarios considered here (all of which are measured from 2016) are:

1. at the end of the current economic life. As discussed in section 3.2, DBCTM considers that the Terminal's economic life reflects the weighted average life of the mines that it currently services, which has been assessed as 25 years;
2. early termination due to an environmental intervention (which in effect, means that operations are shut down due to environmental pressures). This is assumed to occur after 20 years;

3. termination occurs at the end of the 50 year economic life set by the QCA in 2004, which is 38 years from 2016;

4. the lease terminates at the end of the initial 50 year term, which is 35 years from 2016;

5. DBCTM exercises its option to extend the lease for another 49 years, which implies another 84 years from 2016.

Finity has then applied probabilities to each scenario occurring, which were arrived at in discussions with DBCTM. It is considered logical and consistent that the most likely scenario is that remediation will occur at the end of the terminal's economic life, which is currently assessed to be 25 years. This is assigned a 50% probability. The next most likely scenario is the QCA's original 50 year economic life assessment (scenario 3), which is given a 25% probability. The end of the current lease is assigned a 15% probability, with the remaining two scenarios (2 and 5) considered relatively unlikely and therefore assigned a 5% probability each. The resulting weighted average time to remediation from 2016 is 32 years.

The second key variable is the cost of remediation, which will be driven by the scope of works. This has been based on the scenarios and updated estimates contained in the Hatch report. [redacted].

The other two future sources of uncertainty that could impact the cost of remediation are:

- prevailing conditions in construction and labour markets;
- future changes in relevant laws, [redacted]

These are not taken into account in Hatch's assessment. It is not possible to anticipate either of these at the current time and will therefore remain a risk that will be borne by DBCTM. The assumption applied by Finity for the cost of full remediation is therefore based on the estimate determined by Hatch.

The other key assumption that will impact the remediation allowance is the assumed discount rate (which will also be the assumed earning rate). Two options here are the:

- approved WACC, which assumes the funds can be invested in the business; or
- risk free rate, which would be the appropriate assumption if it was assumed that the amounts recovered from the remediation charge need to be held in escrow.

To date, DBCTM has assumed the funds do not need to be held in escrow and can be invested in the business and earn the WACC. This will also result in a materially lower annual remediation charge than the charge that would apply if the risk free rate was used (particularly with the risk free rate at such low levels). DBCTM proposes to retain this approach going forward and has applied its proposed WACC of 7.46% for the purpose of assessing the remediation premium.

It is a relatively easy matter for it to track and report the amounts recovered to date, which can be assumed to be accumulating as a (notional) sinking fund balance. Finity has calculated the current sinking fund balance to be $21.3 million as at 30 June 2016. This amount is taken into account in determining the new remediation premium to apply from 1 July 2016.

Allowance estimate

Based on the above, the Base Case scenario applied by Finity to estimate the remediation allowance comprises the following assumptions:

- a time to remediation of 32 years (from 2016)
- an estimate of full remediation costs of $847 million
- a WACC of 7.46%.

The current sinking fund balance of $21.3 million as at 30 June 2016 has also been applied.

This results in an annual remediation allowance of $12.8 million.

Ongoing review

Apart from the need to review the charge to reflect the expansions that have occurred to the Terminal, the key rationale for applying this methodology is the uncertainty surrounding the timing and cost of remediation (while the obligation to remediate the site in some form, at some point, is certain). Accordingly, the amount that DBCTM needs to eventually accumulate in that sinking fund could change through time if there are material changes to the underlying assumptions.

DBCTM therefore proposes to review the amount of the remediation allowance every five years based on this methodology. For example, as DBCTM's assessment of the terminal's economic life continues to be reviewed and updated based on the WAML approach, the expected time to remediation will also change. The assumed earning rate will also change as the WACC changes. In terms of the cost of remediation, unless this is formally clarified by the State prior to the Terminal ceasing operations, DBCTM is only likely to know the full extent of its remediation obligations when the facility is at or close to its date of closure.

Proposed allowance for the 2016-21 period

Based on the above approach, DBCTM is proposing an annual remediation allowance of $12. 8 million.

This is a significant increase from the current allowance. However, as noted above, the current remediation allowance is only likely to fund an amount sufficient to mothball the Terminal. [redacted] DBCTM does not consider it in any way plausible that the State would allow the terminal to be mothballed once coal exports cease, particularly given the environmental sensitivities associated with coal production, which are only likely to increase in the future.

DBCTM considers that this revised charge will provide it with the opportunity to fully recover efficient costs that it must incur when Terminal operations finally cease, based on a more robust and transparent methodology that appropriately recognises the uncertainties attached to its final obligations.

3.6 Working capital

The allowance for working capital approved in the 2010 AU was consistent with the approach previously applied in the 2006 AU. This assumed a 30 day collection period for accounts receivable from the time when the revenue is assumed to have been earned.

DBCTM's actual working capital costs reflect the payment terms offered to users, which are structured so that terminal revenues are on average, received 45 days after DBCTM incurs the costs of providing the terminal services. This 45 days is based on the assumption that on average, revenue is earned in the middle of the month. Invoices are issued at the end of the month and customers then have 30 (calendar) days to pay that invoice. The 45 day assumption therefore comprises:

- 15 days, which is the number of days (on average) from when the revenue is assumed to be earned in a month until the end of that month; and
- 30 days, which is the assumed maximum number of days that customers are given to pay the invoice, which is issued at the beginning of the month following the month in which the services were received. It is realistic to assume that most customers will choose to pay an invoice as late as possible (if not on the due date) given the opportunity cost of capital.

These current payment terms provide a benefit to users, compared to a 30 day collection period. If DBCTM was to align its actual working capital costs with the 30 day assumption currently applied, it would need to shorten its payment terms contained in its contracts from 30 days to 15 days. This would require an amendment to its existing agreements. While this might reduce DBCTM's working capital costs, this will reduce the benefit to users. DBCTM does not expect that users would have any incentive to agree to a change that will be seen to make them worse off. Accordingly, DBCTM would only be able to apply these shorter terms to new customers, which also means that terminal services are being supplied to existing users on more favourable terms than new customers, in contravention of the PSA's requirements.

It is noted that the QCA applied a 45 days debtors assumption in its review of SEQ grid service charges,[75] which reflected the 15 days between service delivery (on average) and month end, and the 30 calendar days allowed for payment of the invoice. As noted above, this is consistent with DBCTM's experience and is therefore not industry specific.

DBCTM therefore proposes to apply an assumption of 45 (calendar) days receivable for the purpose of setting its working capital allowance.

3.7 Inflation

Under the current approach applied by DBCTM, at the beginning of each regulatory period the ARR for each year is set based on a forecast roll-forward of the RAB. This applies indexation to the RAB based on a forecast of the CPI. The return on and of capital components in the ARR are also set based on this forecast RAB.

The actual roll-forward of the RAB that occurs during the regulatory period indexes the RAB based on actual CPI. This is standard practice for the QCA and other Australian regulators.

[75] Queensland Competition Authority (2011). Final Report, SEQ Grid Service Charges 2011-12.

The return of capital (depreciation) is then based on this actual roll-forward. This ensures that the actual depreciation profile remains consistent with the actual RAB value.

However, the return on capital continues to be based on the forecast RAB set at the beginning of the regulatory period. This gives rise to an inconsistency in the RAB value that the return on and of capital is applied to. There is no clear reason why:

- the return of capital is calculated with reference to the actual indexed RAB value; while
- the return on capital is calculated with reference to the forecast RAB value, indexed at forecast inflation.

In effect, the return on capital will be overstated if the forecast CPI that was applied to index the RAB value is above actual CPI, and vice versa.

DBCTM therefore considers that the approach used to calculate the return on and of capital needs to be aligned. That is, for pricing purposes both should ultimately be calculated with reference to the RAB value indexed at actual CPI.

This is not an inflation risk issue – it is an inconsistency in the treatment of forecasting error. At the current time, for the purpose of calculating the return on capital, users bear the risk that the forecast CPI is above the actual CPI and DBCTM bears the risk if forecast CPI is below the actual. If the return on capital allowance is aligned with reference to the RAB value indexed by actual CPI, DBCTM will bear the impact if this actual CPI is below the forecast, with users bearing the impact where the actual CPI is above the forecast.

DBCTM's proposed change simply ensures that the return on and of capital that is ultimately recouped has been calculated using the same RAB value, which has been rolled forward at actual inflation. It is understood that this is consistent with approaches applied elsewhere, including for energy networks and ARTC.

3.8 Tax allowance

DBCTM has calculated its allowance for taxation consistent with the methodology and assumptions approved for the 2010 AU, including a corporate tax rate of 30%.

3.9 Summary: Revenue and prices

To summarise, DBCTM's proposed RAB, ARR and Terminal Infrastructure Charges for the 2016-21 period are set out in the following table.

Table 10 Forecast RAB ($ million)

	2016-17	2017-18	2018-19	2019-20	2020-21
Opening RAB	2,384.3	2,335.1	2,282.6	2,227.2	2,169.2
Indexation	59.6	58.4	57.1	55.7	54.2
Nominal depreciation	108.8	110.9	112.4	113.7	116.5
Closing RAB	2,335.1	2,282.6	2,227.2	2,169.2	2,106.9

Table 11 ARR ($ million) and Terminal Infrastructure Charges

	2016-17	2017-18	2018-19	2019-20	2020-21

	2016-17	2017-18	2018-19	2019-20	2020-21
Return on assets	173.9	170.4	166.6	162.6	158.4
Depreciation	104.9	107.0	108.5	109.7	112.4
Inflationary gain	(57.5)	(56.3)	(55.0)	(53.7)	(52.3)
Corporate overheads	8.2	8.4	8.6	8.8	9.1
QCA levy	(0.3)	0.4	0.4	0.4	2.0
Remediation premium	12.8	12.8	12.8	12.8	12.8
Net tax allowance	18.5	19.0	19.4	19.8	20.3
ARR	**260.6**	**261.6**	**261.2**	**260.4**	**262.7**
NCT and ART (mt)	85.000	85.000	85.000	85.000	85.000
TIC ($ per tonne)	**3.0653**	**3.0775**	**3.0732**	**3.0630**	**3.0906**

4 Access undertaking changes

Key Points

- One of the most significant issues for the 2016 DAU is the outcome of the QCA's Final Decision on DBCTM's Differential Pricing DAAU, lodged at the beginning of this year. While DBCTM is willing to consider the application of a form of differential pricing, it remains fundamentally opposed to the QCA's 'incremental up/average down' approach. It remains of the view that any differential pricing approach must be limited to expansions that are clearly separable from the integrated Terminal infrastructure.
- In anticipation of a successful merger between Brookfield and Asciano, DBCTM has already provided a draft amending access undertaking to the QCA which will implement appropriate ring-fencing and related arrangements. The amendments proposed in that draft amending access undertaking have been carried through to the 2016 DAU (on the assumption that they will be approved by the QCA prior to approval of the 2016 DAU).

This section identifies and describes the changes that DBCTM is proposing to the 2010 AU. The most significant issue is the change that the QCA has proposed for the differential pricing of expansions. This issue, along with other proposed changes, are discussed below. Consistent with its approach in the 2010 AU, DBCTM has also included comments explaining proposed changes in the annotated version of the 2016 DAU.

4.1 Differential pricing

4.1.1 Overview

In accordance with agreements reached with existing users during the 2010 AU consultation process, DBCTM lodged its initial differential pricing Draft Amending Access Undertaking (DAAU) in February 2015. DBCTM then lodged a Supplementary Submission in April 2015 and a submission in response to the QCA's Draft Decision in June 2015. The QCA released its Final Decision in August 2015.

DBCTM has been fundamentally opposed to the QCA's 'incremental up/average down' approach. Notwithstanding the material concerns DBCTM has expressed with the QCA's approach, the QCA's position has remained largely unchanged between its Draft and Final Decisions on the Differential Pricing DAAU.

As highlighted in its submissions, DBCTM remains willing to apply differential pricing in appropriate circumstances, namely where there is full separation between the expansion or the services that will be provided using it and the existing Terminal that services existing users. The 2016 DAU provides a clear and straightforward regime for assessing and determining whether differential pricing is to apply and, if it should apply, to then implementing differential pricing.

DBCTM has also highlighted that its PSA with the State requires the application of average cost or socialised pricing for common services. In DBCTM's view, this reflects a view by the State that socialised pricing is in the broader public interest. This also reinforced the clear intent regarding the future application of socialised pricing that existed at the time that the Terminal was privatised and the PSA entered.

4.1.2 The QCA's Final Decision

The QCA's Final Decision is largely unchanged from the Draft Decision. The only change it has made is to remove one of the factors that the QCA may have regard to in assessing whether differential pricing should be applied, which is 'the position that best reflects what would reasonably be expected to have occurred in a hypothetical negotiated contract entered prior to sunk costs being incurred'.

The rationale for the QCA's approach also remains unchanged. The QCA continues to be of the view that separability should not be the primary determinative factor in assessing whether differential pricing should be applied. It also maintains the view that DBCTM's DAAU "provides no guidance on the circumstances when differential pricing should apply"[76]. DBCTM continues to have difficulty understanding how its relatively straightforward proposal to consider the application of differential pricing to expansions that are separable to the existing terminal infrastructure "provides no guidance". Instead, it is clear that the QCA simply does not agree with DBCTM's proposed approach.

The QCA states that it is "not persuaded" that the competition-related concerns, which relate to the ability of new users to compete with existing users as well as DBCTM's ability to compete with other unregulated terminals, should prompt it to alter its approach. It considers that its approach is in the public interest, which in this context, is achieved "by promoting efficient investment in the coal supply chain."[77]

The QCA states that DBCTM "has not established that existing users have not previously contemplated the potential for differential expansion pricing"[78] and then cites the 2010 AU review process where DBCTM agreed to consider the application of differential pricing. On the contrary, DBCTM's submissions have clearly shown that users have previously explicitly *considered and rejected* the application of differential pricing when the first access undertaking was put in place (noting that many of those users would have been contemplating expansion at the time).[79]

In any case, DBCTM is not disputing that this has now become an important issue to existing users who have no plans to increase their terminal capacity requirements, at least at the current time. However, it needs to be fully acknowledged that such a change overturns a key principle that underpinned the development of the Terminal and supported the growth in volumes from these incumbent users. Existing users are now naturally concerned about protecting a source of competitive advantage.

The QCA states that promoting effective competition in upstream and downstream markets means that the expansion pricing arrangements should:[80]

- *enable users to confidently commit to long-term investments*
- *be underpinned by clear and transparent legal and regulatory frameworks, which all stakeholders can understand*
- *provide users with reasonable certainty about the level of infrastructure they will be expected to fund.*

[76] Queensland Competition Authority (2015a). Final Decision, DBCT Management Differential Pricing Draft Amending Access Undertaking, p.13.
[77] Queensland Competition Authority (2015a). p.iv.
[78] Queensland Competition Authority (2015a). p.v.
[79] Users' previous positions on this issue were discussed in DBCT Management's supplementary submission on the Differential Pricing DAAU, 31 March 2015, pp. 3 – 4.
[80] Queensland Competition Authority (2015a). p.11.

As DBCTM has previously submitted, the QCA's Final Decision includes a number of potentially conflicting factors that the QCA *may* consider in assessing whether or not to apply differential pricing. No further guidance has been provided in the Final Decision as to how this conflict might be reconciled. Instead, the QCA defends its right (and need) to be able to apply discretion.

DBCTM is not denying the discretion that the QCA has under the legislation. However, the reality that needs to be acknowledged is that having a number of different factors that *may* be applied, some of which are in direct conflict[81], creates uncertainty. All stakeholders, including DBCTM, need to know the conditions that will be applied if and when an expansion does occur. This certainty is required well in advance of developments being investigated.

The QCA has also rejected DBCTM's view that there are important distinctions between it and Aurizon Network that makes its approach to applying differential pricing to the latter irrelevant to DBCTM. The QCA has still not reconciled its suggestion that differentially priced expanding users may be permitted to make a zero contribution to common costs, which is not accommodated by DBCTM's pricing structure. Indeed, it even suggests that "it is not apparent that there is any reason why the access undertaking and SAA would not be able to be amended to accommodate multi-part tariffs, if required."[82]

There are very specific reasons why a multi-part tariff structure was implemented for Aurizon Network and they reflect the fundamental differences between a multi-system rail network with users travelling different distances on the rail network from different origins (and to different destinations) when compared to a single, integrated coal terminal. DBCTM is not supportive of introducing a more complex multi-part tariff structure unless there are clear and compelling reasons for doing so. It also expects that this is unlikely to be supported by users, who have previously argued against the application of multi-part pricing.[83]

Finally, the QCA acknowledges the issue that DBCTM has raised regarding the PSA, which currently prevents it from applying differential pricing in the manner set out in the QCA's Final Decision. Despite the fact that imposing an obligation to apply differential pricing could put DBCTM in clear breach of the PSA, the QCA considers that:[84]

> *Our view is that contractual arrangements, such as the PSA, cannot bind or constrain us in exercising our discretion to approve or refuse to approve the DAAU, in accordance with the QCA.*

It further states:[85]

> *…we are very limited in our ability to consider the issue. To the extent that DBCT Management can demonstrate the relevance of this issue, it may be a matter that we have regard to as one of DBCT Management's legitimate business interests…*

DBCTM is concerned by these statements. In its Final Decision, the QCA has stated that contractual arrangements "do not bind or constrain us in exercising our discretion to approve or refuse to approve the DAAU."[86] Accordingly, it has given this very low weight. DBCTM is alarmed that the QCA interprets the power it has to exercise its discretion as extending to

[81] For example, it is not clear what would happen in the quite conceivable scenario where the expansion directly benefits existing users but socialisation will also result in an increase in costs.

[82] Queensland Competition Authority (2015a). p.29.

[83] See for example DBCT User Group (2003). Submission on the QCA Request for Comments Paper, 3 September, section 7.4.3.

[84] Queensland Competition Authority (2015a). p.vi.

[85] Queensland Competition Authority (2015a). p.41.

[86] Queensland Competition Authority (2015a). p.41.

ignoring binding contractual obligations. This places DBCTM in a potentially untenable position as it could force it into an arrangement that is in effect, a breach of contract.

It is relevant to note that DBCTM made its original decision to invest in the long-term lease of the terminal based on the terms of the PSA, which included socialised pricing. DBCTM took some comfort from the continued application of socialised pricing as it provided a degree of assurance that future expansions of DBCT would be able to compete with potential competitors, whether they be regulated or otherwise. The QCA's proposed approach to the issue of differential pricing effectively seeks to overturn a provision of that contract. This is an extremely important issue for DBCTM.

It is DBCTM's position that any form of differential pricing will require consequential amendments to the PSA. Further, the amendments required affect key commercial terms of the PSA which could only be implemented by agreement between DBCTM and the State.

Having regard to the above, the next section assesses the application of differential pricing within the context of the requirements under the QCA Act.

4.1.3 Evaluation against the key requirements of the QCA Act

Section 138(2) of the QCA Act requires the QCA to have regard to the following:

a) the object of this part;
b) the legitimate business interests of the owner or operator of the service;
c) if the owner and operator of the service are different entities – the legitimate business interests of the operator of the service are protected;
d) the public interest, including the public interest in having competition in markets (whether or not in Australia);
e) the interests of persons who may seek access to the service, including whether adequate provision has been made for compensation if the rights of users of the service are adversely affected;
f) the effect of excluding assets for pricing purposes;
g) the pricing principles mentioned in section 168A;
h) any other issues the authority considers relevant.

Each of these factors is explored below.

The Objects of Part 5

As DBCTM has previously submitted, an overarching requirement must be satisfaction of the Objects Clause under the QCA Act, which is:

> *…to promote the economically efficient operation of, use of and investment in, significant infrastructure by which downstream services are provided, with the effect of promoting effective competition in upstream and downstream markets.*

DBCTM has already submitted at length as to why its proposed approach encourages entry and promotes effective competition between new and existing users. The QCA acknowledges that:[87]

> *…differences in the timing of investment may lead to existing users obtaining cost advantages over later entrants, which we note is appropriate and consistent with how competitive markets develop over time.*

In this case, the regulatory framework is being used to provide a protection to existing users that would not exist in a competitive market, unless it was negotiated with the infrastructure

[87] Queensland Competition Authority (2015a). p. 18.

provider. For example, benefits or future protections to foundation users may be able to be negotiated for a greenfield development, which tends to be in recognition that those users have underwritten the (often risky) development.

However, that is clearly not the case here. These benefits were not sought or contemplated when the terminal was constructed, nor when regulation was first invoked. Instead, when DBCTM's access undertaking was first approved, users supported socialised pricing. Other than in the context of a greenfield development, it is not possible to otherwise readily identify a situation where such protection would be provided in a workably competitive market.

DBCTM also does not agree with the QCA's assessment of what would constitute efficient investment. This can be illustrated by way of a simple example.

Suppose a user is only concerned about the sum of its supply-chain costs, namely:

- below-rail charges
- above-rail charges
- port handling charges
- port access charges.

Suppose the user's mine is located in the Central Queensland Coal Region such that the sum of below-rail, above-rail and port handling charges is the same if using DBCT or Abbot Point. In this case, the deciding factor is the port access charge.

Suppose that expansions are required at DBCT or Abbot Point to meet that user's tonnage request. If the incremental[88] expansion cost at:

- DBCT is $8/tonne (e.g. $80 million for 10 mtpa)
- Abbot Point is $10/tonne (e.g. $100 million for 10 mtpa),

it is more efficient for the expansion to happen at DBCT.

Suppose the QCA decides that the user must bear incremental cost pricing under DBCTM's proposed expansion. DBCTM must therefore charge the user $8/tonne. However, Abbot Point, being unregulated, can charge whatever it wants to convince the user to choose its terminal over DBCT. For example, it could charge lower than $8/tonne, by smoothing the expansion capital costs over all users. DBCTM does not have this discretion as the QCA is requiring it to apply differential pricing. This results in an inefficient expansion occurring, as the terminal that is expanded is Abbot Point rather than DBCT.

Noting that there is now real competition between Queensland export coal terminals for Bowen Basin producers, the pricing strategy that is necessary to facilitate efficient expansions should be left to the market to determine. The last major expansion of AAPT was underwritten by 24 mtpa of contracts from customers previously considered to be captive of DBCT. This was a direct result of the construction of the GAPE. DBCTM's key concern here is it could be forced by the regulator to apply differential pricing when its competitors are free to price access to expansions as they consider appropriate, having regard to market conditions as well as the outcomes for existing users.

[88] By incremental expansion cost, DBCTM means the sum of: return of capital; depreciation net of inflation; DBCTM-related opex; and net tax payable, divided by the user's contracted tonnages. The example assumes DBCTM and APCT use comparable economic models to determine the expansions' relevant RABs, ARRs and Terminal Infrastructure Charges, including the relevant WACCs that should apply.

To be clear, DBCTM is not submitting that it should be free to determine whether an expansion should be subject to differential or socialised pricing at its discretion, at least to the same extent that its competitors can, because the terms of the PSA contemplate the continued application of socialised pricing. However, its main concern is that it could be forced by the QCA to apply differential pricing for an expansion, which not only is in conflict with the PSA but could also place DBCTM at a competitive disadvantage given other terminals have more commercial flexibility.

The legitimate business interests of the owner or operator of the service; If the owner and operators of the service are different entities – the legitimate business interests of the operator of the service are protected

The terminal is owned by the State, via its wholly owned subsidiary DBCT Holdings Pty Ltd (DBCT Holdings). As lessee, DBCTM manages the terminal on behalf of DBCT Holdings under the PSA.

From a commercial perspective, DBCT Holdings' interests can be expected to be aligned with DBCTM's, which is to maximise the value of the facility for its shareholders (which in the case of DBCT Holdings, are the Queensland taxpayers). Further, DBCT Holdings will be interested in ensuring that outcomes are in the public interest, which is discussed further below.

As DBCTM has already submitted, being forced into differential pricing for expansions increases the risk of asset stranding. In its Final Decision the QCA considered that DBCTM had not established that differential pricing would necessarily increase its asset stranding risk. DBCTM considers its position to be fairly logical. If DBCTM is restricted to recovering the costs of an expansion from a smaller number of new or expanding users (some of which could be new developments), it follows that this gives rise to higher asset stranding risk compared to spreading those costs amongst a larger group of users.

The likelihood of an expansion servicing a small number of new or expanding users is far higher under the conditions proposed in the QCA's Final Decision than would be the case under the differential pricing approach proposed in DBCTM's DAU. This is because the QCA's proposal makes it far more likely that an expansion would be differentially priced, even if it was substantially integrated with the existing Terminal.

The QCA also states:[89]

> *While we accept that differential pricing of expansion capacity may increase counterparty risk associated with expanding users, we think this is a matter for DBCT Management to consider in the context of making prudent investment decisions.*

As the only regulated terminal competing in the market, DBCTM is very constrained as to the measures that it can seek to implement to either mitigate, or compensate it for, its exposure to stranding risk. [redacted]. These provisions are reflected in the 2010 AU and in the 2016 DAU. The 2016 DAU (Section 12.7) proposes an amendment to these terms to address this risk based on the formulation of differential pricing submitted in the DAU. As this is a proposed amendment to the terms of the PSA, it will require agreement of the Queensland Government. This is only one measure that may be necessary to mitigate the asset stranding risk and to the extent that DBCTM is required to apply differential pricing, it will need to consider what other mechanisms may be necessary (although it then faces the risk that they will be disallowed by the QCA).

[89] Queensland Competition Authority (2015a). p.20.

This could also impact DBCTM's ability to raise funds for an expansion. Financiers could be reluctant to lend if only a small number of users (or one user) are backing the expansion and DBCTM is unable to socialise costs in the event of a user default. Again, this is more likely to be the case under the conditions proposed in the QCA's Final Decision than under the differential pricing approach proposed in DBCTM's 2016 DAU. While the QCA has stated that DBCTM has not demonstrated that "the introduction of potential differential pricing at DBCT would reduce its ability to attract future funding of efficient expansion"[90], the proposition has never been tested with potential providers of capital or the ratings agencies, nor does DBCTM consider it appropriate to do this at this point. The only time this really can be tested is in the context of an actual expansion.

DBCTM has also already submitted in detail the implications of the proposal on its ability to compete with other ports. Its fundamental concern is that as the only regulated competitor, it is being forced into a situation that could place it at a competitive disadvantage, when other terminals are free to employ any commercial and competitive pricing strategy that they consider would secure the new tonnages.

As noted above, the PSA currently requires the application of common charges for comparable services. This requires a socialised price, except to the extent that there are such differences in the access being provided to one user that it is no longer comparable to that being provided to another. For this agreement to be amended, consent would be required from both DBCTM and DBCT Holdings. Otherwise, if forced to apply differential pricing in the manner proposed in the QCA's Final Decision, DBCTM will be in breach of this agreement.

It is also important to highlight that DBCTM (then Prime Infrastructure) purchased the rights to the long term lease of the terminal based on the terms of the PSA, which included socialised pricing as a basic assumption of the terms of access to the Terminal. The QCA is now effectively requiring DBCTM to apply a different pricing approach. This is not a trivial change, and indeed if this was the basis on which it made its original investment decision to acquire the lease rights, it is likely to have valued this investment differently as it results in a very different risk profile being attached to the expected future cashflows.

What is of particular relevance to value is how the differential pricing review has highlighted the nature and extent of DBCTM's exposure to regulatory risk. Putting aside the specifics of the issue at hand, the QCA's Final Decision looks to impose a change to the regulatory framework that overturns a contractual agreement and would force DBCTM to apply a pricing approach that is different to the approach that was expected to apply when the investment was made.

As has previously been submitted, the approach proposed by the QCA is not only considered inefficient, but also unworkable. The reasons for this have already been set out at length in the submissions made to the QCA on this issue and will not be restated in detail here. The Final Decision provides no guidance as to how the myriad of factors that *may* be considered by the QCA will - or may - be taken into account, or how conflicting factors will be reconciled. The QCA's approach does not provide DBCTM the certainty it needs to commercially develop the port over the long term, as it is unclear which pricing approach will apply and under what circumstances.

DBCTM therefore considers that the QCA has given little, if any, regard to its legitimate business interests. In saying this, it has been, and still remains, willing to consider the

[90] Queensland Competition Authority (2015a). p.iv.

application of differential pricing in certain circumstances, which is where the expansion is clearly separable from the existing Terminal. DBCTM has refined its proposed approach to differential pricing in the 2016 DAU from that included in its differential pricing DAAU, to provide more clarity and certainty to all stakeholders as to how and when differential pricing may apply, as a departure from the existing key principle that all Terminal costs are socialised between users.

The public interest

Recent regulatory decisions by the QCA have hinged greatly on its interpretation of the matters listed in Section 138(2) of the QCA Act, which includes the public interest. These include the QCA's Final Decision on differential pricing, as well as decisions for Aurizon Network (including the DAU for Reference Tariffs for the Wiggins Island Rail Project Train Services and its 2014 DAU).

Firstly, DBCTM is concerned the QCA has applied inconsistent interpretations of the public interest in these decisions. In its Final Decision on differential pricing, the QCA interpreted the public interest to relate to the:

- economically efficient expansion in the Central Queensland Coal Region (p.11); and
- efficient and sustainable development of the Queensland coal industry (pp.iv, 21-22).

By contrast, the QCA's Draft Decision on WIRP pricing[91] interpreted the public interest to be consistent with the need for an efficient and *competitive* coal industry in Queensland. At the same time, the QCA's Draft Decision on Aurizon Network's UT4 MAR said "the need for costs to be *minimised* {emphasis added} is also particularly important in light of the current adverse economic climate in the Queensland mining industry"[92] and this was seen to be consistent with the public interest.

Efficiently developing the coal industry does not necessarily translate to having costs minimised. For example, pricing on an 'incremental up / averaging down' basis for efficiency objectives compromises expanding users' ability to compete with non-expanding users and minimise their infrastructure costs in an otherwise challenging market environment.

There is therefore some uncertainty as to how the public interest will be applied by the QCA in each decision. However, more importantly, DBCTM considers there are more dimensions to the public interest than those canvassed by the QCA.

DBCTM considers that the assessment of what is in the public interest, including the public interest of having competition in markets (whether or not in Australia), rests on:

- the economically efficient expansion of the Central Queensland Coal Region; and
- maximising the value of the State's coal resources.

Ensuring economically efficient expansions are undertaken is integral to satisfying the Objects clause and was addressed above. This is also closely associated with maximising the value of the State's coal resources.

The State of Queensland is endowed with an abundance of high quality coal resources. As has been highlighted so clearly in recent years, maximising the value of these resources is

[91] Queensland Competition Authority (2015b). Draft Decision on Aurizon Network's 2014 DAU – Reference Tariffs for Wiggins Island Rail Project Train Services, July, p.9.

[92] Queensland Competition Authority (2014). Draft Decision on Aurizon Network's 2014 DAU - Maximum Allowable Revenue, September, p.46.

essential to the Queensland economy, creating industries and employment, as well as providing revenue to the State via royalties, which can be used to fund other programs such as education and health. This value is maximised by creating the right settings for a competitive and productive export coal industry, including encouraging growth. As previously outlined, forcing differential pricing for expansions could impede growth of existing mines and discourage new entrants.

Ultimately, the State is best placed to assess what is in the public interest. DBCTM considers that the PSA's requirement that socialised pricing be applied (except to the extent that services are not comparable) reflects what the State considered to be in the public interest at the time that it decided to lease the terminal. If it considered that this could lead to outcomes that were inefficient, or were not in the public interest (including the interest of having competition in markets), it would not have required such a provision, or would at least have allowed DBCTM more flexibility. There is no information to suggest that it has changed this view.

The interests of new and existing users

Section 138(2) of the QCA Act requires the QCA to have regard to:

> *…the interests of persons who may seek access to the service, including whether adequate provision has been made for compensation if the rights of the users of the service are adversely affected…*

DBCTM is concerned that the interests of future access seekers have not been adequately represented. Instead, the interests of existing users overwhelmingly dominate, including in preference to DBCTM's legitimate business interests. As DBCTM has previously submitted, the views expressed by existing users reflect their own expectations regarding future expansions. They, like DBCTM, must act in the best interests of their own shareholders. However, it is entirely possible that these users may have arrived at a different view on differential pricing if they were seeking to expand. This certainly appears to have been the case when users considered the issue in 2003,[93] when expansions of the Terminal were planned to accommodate increased capacity requests from users (and which subsequently proceeded). As previously submitted, at the time, the DBCT User Group stated that differential pricing for new capacity would:[94]

> *…result in multi-user charges and introduce a range of new and complicated issues. Marginal costing, whilst economically attractive, would be unworkable in the Terminal situation where all physical capacity facilities are undifferentiated in their utilisation for terminal services. Multi-tier charges at the Terminal would be unworkable. In addition, higher cost expansions can provide a foundation for subsequent cheaper expansions, leading to the issue of equity between Users depending on the timing of their Access Agreements, if multi-tier tariffs were applied.*

The effect of excluding certain assets for pricing purposes

As DBCTM has already submitted, the application of differential pricing to shared infrastructure could result in the situation where a user's coal is being handled by infrastructure that it is not paying for. The integrated nature of Terminal operations is fundamental to its proposed approach (and a key difference between it and Aurizon

[93] See DBCT Management's supplementary submission on the Differential Pricing DAAU, 31 March 2015, p. 3 – 4.

[94] DBCT User Group, cited in Queensland Competition Authority (2010). Final Decision, Dalrymple Bay Coal Terminal 2010 Draft Access Undertaking, September p.13.

Network), which is to only consider the application of differential pricing to expansions that are clearly separable from the existing Terminal.

The pricing principles

The pricing principles contained in Section 168A provide that prices should:

> *(a) generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks involved; and*
>
> *(b) allow for multi-part pricing and price discrimination when it aids efficiency; and*
>
> *(c) not allow a related access provider to set terms and conditions that discriminate in favour of the downstream operations of the access provider or a related body corporate of the access provider, except to the extent the cost of providing access to other operators is higher; and*
>
> *(d) provide incentives to reduce costs or otherwise improve productivity*

As outlined above, DBCTM is concerned that in being required to apply differential pricing to expansions, in particular (but not only) in the terms proposed in the QCA's Final Decision, it increases the risk that it will be unable to recover the costs of that expansion, including a return on, and of, capital. Currently, there are no adequate mechanisms within the regulatory framework that would allow it to mitigate, or be compensated for, this additional risk.

Even if the QCA approves the application of a WAML approach to set the economic life of the new assets for depreciation purposes, to the extent that the expansion is to be funded by new mines, this is more likely to result in a longer, rather than shorter, economic life compared to the WAML underpinning the existing infrastructure (noting that existing mines are effectively stating that they have no interest in expanding their own volumes). While DBCTM is proposing to require a minimum access agreement term of 15 years where a Terminal Capacity Expansion is required, this only protects DBCTM while that counterparty remains solvent and then only for the term of the access agreement. Unless DBCTM proposed to accelerate depreciation further, the term of the access agreements will still be shorter than its capital recovery period.

DBCTM has commented further on the mechanisms which it sees as appropriate to compensate for this additional risk at Section 12.6 of its 2016 DAU.

DBCTM has also submitted its reasons as to why requiring differential pricing for infrastructure that will be shared by new and existing users will not aid efficiency and instead, will result in different users being serviced by infrastructure they are not paying for. Where it may be efficient is where the new infrastructure is clearly separable from the existing terminal facilities. It is on this basis that DBCTM has developed the approach to differential pricing which is included in the 2016 DAU.

4.1.4 DBCTM's proposal

Conclusions

DBCTM remains firmly of the view that the threshold test for the application of differential pricing should be the separability of the expansion, from both a physical and service delivery perspective. As set out at length in its previous submissions, its proposed approach will:

- promote competition in the relevant markets;
- provide regulatory certainty by providing participants with confidence in the stability of the regime and how it will be applied through time;

- maintain a workable and predictable pricing approach, as this will underpin future investment decisions by both new and existing terminal users and DBCTM.

Overall, DBCTM remains concerned that the QCA's assessment has a strong bias towards protecting the interests of incumbent producers. It relies heavily on what it considers to be the concept of 'fairness' (noting that future users are not typically parties to regulatory consultation processes) and interprets efficiency in a narrow sense, having regard to cost causation, rather than the opportunity costs that will be incurred if new entrants are deterred from entering the market.

Ultimately, DBCTM considers that determining what might be in the public interest should be a role for the State. The regulator is not well placed to undertake this task to the extent that it is primarily relying on input from the infrastructure provider and incumbent users. This assessment has a much broader scope and the State is naturally better placed to identify and assess the potential trade-offs from a public interest perspective. As DBCTM has previously submitted, socialisation has underpinned the growth and development of the Central Queensland Coal Region, as well as the Terminal.

As acknowledged by the ratings agencies, the socialisation of demand risk is a key feature of the regulatory framework and quite onerous provisions are standard features for other export coal terminals. The application of differential pricing for expansions to integrated terminal infrastructure will undermine this.

DBCTM (as Prime Infrastructure) originally made its decision to acquire the rights to the long-term lease of DBCT on the basis of the terms set out in the PSA, which only contemplates the application of non-discriminatory pricing. This presents a very different risk profile to differentially priced expansions, with a modification to the QCA's proposed approach only permitted if it would lower the costs for existing users or the QCA determines in its discretion to allow a different approach. If the PSA had allowed for this, or more relevantly in this case, contemplated the regulator being able to overturn the terms of this agreement at some future point in time, this would have resulted in a different risk profile underpinning the terminal's expected cashflows and hence a very different valuation.

Proposed amendments

DBCTM has included amendments in the 2016 DAU that reflect the position it has maintained in the differential pricing review. New Section 11.10 sets out DBCTM's proposed differential pricing approach. This provides that differential pricing will be applied to an 'Expansion Component', which can be where any of the following applies:

- the Terminal Capacity Expansion will not be substantially physically integrated with the Base Terminal or another Expansion Component; or
- the Terminal Capacity Expansion will be operated separately from the Base Terminal and any other Expansion Component, and will not be available to provide Services to Access Holders who are not Differentially Priced Access Holders in respect of the Expansion Component that will be provided by the Terminal Capacity Expansion; or
- the Services to be provided by the Terminal Capacity Expansion will not be materially the same as those provided to other Access Holders at the Terminal.

If none of these factors apply, then the cost of the expansion will be socialised among all Terminal users, as is presently the case for all expansions.

Section 5.4(i)(4) makes it clear that access holders that are not Differentially Priced Access Holders will have no entitlement to have their tonnages handled by the capacity provided by the Expansion Component.

Section 5.10(k) requires DBCTM to make a determination on whether differential pricing is to apply at the feasibility study stage of planning for an expansion, which is binding except in limited circumstances. This provides all stakeholders with clarity as to the terms of an expansion before it proceeds. Section 12.5(h) sets out the process for the QCA's approval and provides that the QCA will accept DBCTM's assessment of whether differential pricing should apply to an expansion if DBCTM has demonstrated that it meets the requirements set out above.

Section 11.10(c) provides that where more than one Expansion Component are substantially physically integrated, are operated together and/or are providing services that are materially the same, those Expansion Components may be differentially priced together (that is, a single ARR, Revenue Cap and Reference Tariff will apply to these components). This is consistent with the test for whether a single expansion should be differentially priced (as set out at Section 11.10(b)).

Section 11.9 addresses the implications for the allocation of terminal operating costs. The principle contained in this clause is that costs will be allocated by the Operator based on its assessment of whether costs are incurred in providing services utilising the Base Terminal or the Expansion Component. This should be a relatively straightforward exercise given the Base Terminal and Expansion Component will be separate facilities.

There are a number of other consequential amendments to be made to the 2015 AU, including, but not limited to:

- the determination of Reference Tariffs (Section 11.3);
- determining Terminal and System Capacity (Section 12.1);
- the processes for consulting on (Section 12.2) and undertaking (Section 12.3, 12.5) terminal capacity expansions;
- the 60/60 approval requirement, and how this will work for existing access holders who will become Differentially Priced Access Holders in respect of an expansion (Section 12.5(i));
- the return on capital applicable to expansions (Section 12.6), where DBCTM currently proposes to retain the same treatment as the 2010 AU;
- recognising that differentially priced expansions may be unreasonable and uneconomic, which as discussed above is an amendment that is contingent on the PSA being amended in the same way(Section 12.7);
- the revenue cap and pricing structure (Schedule C).

DBCTM reiterates that its approach better meets the requirements of the QCA Act, including the Objects clause. It better balances the interests of existing access holders, new or expanding access seekers, DBCTM and the State. DBCTM's proposal will promote competition and growth in the export coal industry, which is in the public interest.

4.2 Ring-fencing

4.2.1 Background

On 17 August 2015, a consortium assembled by Brookfield Asset Management announced its intention to acquire 100% of the issued capital of Asciano Limited. Pacific National, one of two rail operators currently transporting coal to DBCT, is a division of Asciano. If the merger proceeds, shareholders in DBCTM will have an interest in a party competing in the market for above-rail services in the Central Queensland Coal Region. At the time of lodging this 2016 DAU, this is still subject to informal merger clearance by the ACCC.

Although the QCA has not required it to do so, DBCTM has proposed amendments to the 2010 AU to address any actual or potential concerns for stakeholders that may arise as a result of the proposed merger. The proposed amendments also address the secondary capacity trading which has been undertaken by a related entity of DBCTM since 2012, in accordance with arrangements that the QCA has previously confirmed as acceptable to it.

These amendments have been submitted separately to the QCA in a draft amending access undertaking on or about the date of this submission (2015 DAAU). The 2015 DAAU has been prepared having regard to DBCTM's overarching obligations in the QCA Act, which include, but are not limited to, not engaging in conduct that could prevent or hinder access to the Terminal services (Section 125). The 2016 DAU incorporates all of the provisions proposed in the 2015 DAAU, on the assumption that they will be approved by the QCA prior to approval of the 2016 DAU.

The background to and rationale for the amendments proposed in the 2015 DAAU is explained in DBCTM's submission to the QCA with the DAAU. That submission includes a review of DBCTM's proposed provisions against the QCA's framework for assessment of Aurizon Network's proposed ring-fencing regime under its 2014 DAU. DBCTM refers the QCA to its submission on the 2015 DAAU when considering the 2016 DAU.

4.2.2 Overview of proposed provisions

The key features of DBCTM's proposed ring-fencing arrangements are as follows:

- DBCTM has included a new term, 'Supply Chain Business', which encompasses any related party that:
  - provides or proposes to provide above rail services in Queensland;
  - owns or holds an interest in, or proposes to acquire such an interest in, coal-producing mines in Queensland;
  - purchases coal that has been produced in Australia;
  - provides shipping services from the Terminal; or
  - trades in capacity at the terminal (which includes the secondary trading company established by Brookfield, referred to in the 2015 DAAU and 2016 DAU as the 'Trading SCB').
- Section 9.2 contains clear and unequivocal obligations in relation to non-discrimination, which directly reflect the requirements under the QCA Act. It also precludes DBCTM from engaging in anti-competitive cost shifting, cross-subsidies or margin squeezing.

- Noting that DBCTM already provides annual regulatory accounts to the QCA, which it will continue to do under the 2016 DAU (Section 10.1), Section 9.2(c) provides that it will maintain accounts for each RAB which are separate to those maintained for the Brookfield Group and that these accounts will not include any amounts that relate to any business of the Brookfield Group other than DBCTM.

- DBCTM will continue to be managed by its Chief Executive Officer (CEO) and Executive Management Team. Section 9.3 contains provisions maintaining the ongoing independence of the CEO and Executive Management Team, including appointments. Employees of DBCTM will not be able to undertake work for a Supply Chain Business, other than the Trading SCB.

- DBCTM will ensure that its Executive Management Team and employees are appropriately trained in relation to its ring-fencing obligations (Section 9.3(f)).

- Section 9.4 contains provisions in relation to the protection of Confidential Information ('Protected Information'), including limiting access by employees working for a Supply Chain Business to DBCTM's offices, other than in limited circumstances.

- Section 9.5 contains obligations in relation to compliance, which includes allowing the QCA to:
  - request evidence of systems and processes that have been put in place to ensure DBCTM complies with its ring-fencing obligations under the 2016 DAU;
  - require that DBCTM conducts an audit, or provides a rectification plan, if it is concerned that those systems and processes do not comply with its obligations under the 2016 DAU.

- Section 9.6 sets out a complaints handling mechanism for an access seeker or holder who considers that DBCTM may have breached one or more of its obligations under Section 9. If this complaint is not resolved to the aggrieved party's satisfaction, it can apply to the QCA to seek an audit of the matter that has been the subject of the complaint. If an audit is required, it is to be conducted by a third party auditor.

- Section 9.7 requires DBCTM to have an audit of its compliance conducted annually by a third party auditor. DBCTM is required to implement any audit recommendations as well as any directions of the QCA arising from the audit report.

Finally, Section 9.8 contains provisions in relation to the compliance of these obligations by the Brookfield Group. In relation to secondary capacity trading, these requirements include:

- a specific requirement for DBCTM to procure that the Trading SCB gives an undertaking that it will comply with the ring-fencing requirements (the form of undertaking is attached as Schedule I to the Undertaking); and

- an acknowledgement that the Trading SCB cannot contract directly with DBCTM.

Section 9.8(a) provides that DBCTM will take all reasonable steps to procure compliance from each relevant entity within the Brookfield Group (including, but not limited to, a Supply

Chain Business), noting that those entities are not parties to the access undertaking (and hence cannot be bound by it). This will include requiring the implementation of relevant systems and processes to ensure compliance with Section 9. Further, parties can lodge a complaint under Section 9.6 if they are concerned that an entity within the Brookfield Group has breached the requirements of DBCTM's access undertaking.

DBCTM has not sought to submit a 'minimum adequate' ring-fencing regime. Instead, it has submitted a comprehensive and robust set of arrangements that will apply to its future potential relationship with Pacific National and its present relationship with the Trading SCB, as well as to any other future related parties in the supply chain. DBCTM considers that its proposed ring-fencing regime more than adequately satisfies the requirements of the QCA Act.

4.3 Other matters

4.3.1 Funding costs for feasibility studies

DBCTM is proposing to make a number of amendments to the funding of feasibility studies (Section 5.10).

Clause 5.10(j)(1) of the 2010 AU provides for the inclusion of certain costs incurred in undertaking feasibility studies in the RAB. This provides that DBCTM can apply to have these costs included in the RAB if the relevant expansion proceeds. If it does not proceed, DBCTM can still apply to have these costs included, although in circumstances where DBCTM has elected to fund the studies (as opposed to being required to fund them) the amount is capped at 20% of the prudent cost of the relevant feasibility study.

As DBCTM is not otherwise able to recover these costs, nor is it otherwise compensated for bearing this risk, DBCTM has little incentive to fund feasibility studies, noting that its alternative is to require the relevant access seekers to fund the studies. There is no benefit or 'upside' to DBCTM if the expansion does in fact proceed (other than being able to recover its efficient costs), so requiring DBCTM to bear the full amount of these costs if the expansion doesn't proceed only exposes it to downside risk.

DBCTM proposes to remove the cap, which would enable it to apply to the QCA to include in the RAB all of the prudently incurred costs of the relevant feasibility study.

Users have expressed concerns with this proposal. However DBCTM is simply seeking to have the right to apply to the QCA to recover its efficient costs, as it is entitled to do under the QCA Act. Ultimately, these costs are subject to QCA approval and will not be included in the RAB unless it deems them to be prudently and efficiently incurred. This provides important protections to users and access seekers. It also incentivises DBCTM to make its study funding decisions prudently.

DBCTM has therefore proposed an amendment to this provision (now Section 5.10(o)(2)) to remove the 20% cap on the costs of feasibility studies (FEL1 and FEL2) not required by the Undertaking or PSA that it can apply to the QCA to have included in the RAB if an expansion does not proceed.

If the QCA rejects these proposed amendments, DBCTM requests that Section 5.10(l) of the 2010 AU be reinstated. This provision provides protection to DBCTM where it is required to undertake an expansion pursuant to the PSA or Part 12, allowing it to fund a feasibility study where not funded by Access Seekers, without prejudicing its rights to seek to have these a amounts included in the RAB.

4.3.2 Non-Expansion Capital Expenditure

Section 12.10(b) of the 2010 AU provides for the streamlined approval of non-expansion capital expenditure (NECap) for inclusion in the RAB, up to $20 million per year over the regulatory period. Amounts above $20 million would be considered by the QCA for inclusion in the RAB in accordance with Section 12.10(c), which involves an extended QCA investigation and approval process.

Historically, the approval of NECap has been uncontentious, compared with the substantially more onerous process for capacity expansions. Further, DBCTM has only ever commenced NECap expenditure upon recommendation of the Operator and with the unanimous approval of Access Holders.

Accordingly, DBCTM is proposing that the streamlined approval process applies to all NECap expenditure incurred, regardless of the amount. However, this is still subject to DBCTM confirming to the QCA's reasonable satisfaction that the expenditure incurred falls within the definition of Capital Expenditure, and that the Operator has recommended in writing the proposed expenditure. Further, DBCTM is proposing that the streamlined process only applies where:

- the expenditure been unanimously approved by all access holders; or
- DBCT Pty Ltd remains Operator of the terminal (and is wholly or majority owned and controlled by access holders) and no access holder has objected to the expenditure within 20 business days of receiving written notice of the proposed expenditure by DBCTM.

If any of the above changes are not satisfied, the streamlined approval process will not apply and the QCA will need to review and approve the expenditure in accordance with Section 12.10(c) which remains unchanged from the 2010 AU.

These proposed amendments are contained in Section 12.10(b) of the 2016 DAU.