ESSENTIAL SERVICES COMMISSION

Interim commentary - Port of Melbourne tariff compliance statement 2020-21

16 December 2020

An appropriate citation for this paper is:

Essential Services Commission 2020, Interim commentary - Port of Melbourne tariff compliance statement 2020-21, 16 December

Copyright notice

Contents

Summary

On 1 June 2020, the Port of Melbourne Operations Pty Ltd (the port) submitted its 2020-21 tariff compliance statement to us, available on our website.[1] In setting its prices for prescribed services[2], the port is required to comply with requirements in the pricing order[3] – a regulatory instrument made by the Governor in Council under section 49A of the Port Management Act 1995 (Vic).

The pricing order requires the port to submit annual tariff compliance statements to us. The tariff compliance statements must, among other things, explain how the prescribed service tariffs the port proposes to charge in the forthcoming financial year comply with the pricing order. This is the fourth tariff compliance statement the port has submitted to us since the private operator commenced operations in 2016.

Our role

We are responsible for assessing and reporting on the port's compliance with the pricing order. We must, at five-yearly intervals, conduct an inquiry and report to the minister responsible for administering the Essential Services Commission Act 2001 (Vic):

- whether the port has complied with the pricing order during the five-yearly review period
- if there was non-compliance with the pricing order, whether that non-compliance was, in our view, non-compliance in a 'significant and sustained manner'.[4]

The first compliance inquiry will commence in 2021.[5]

Why we are providing this commentary

To promote transparency and predictability in our approach, we have chosen to provide interim feedback on aspects of the port's annual tariff compliance statements by publishing commentary

---

[1] 'Port of Melbourne compliance with pricing regulations', Essential Services Commission, accessed 15 December 2020, https://www.esc.vic.gov.au/transport/port-melbourne/port-melbourne-compliance-pricing-regulations.

[2] Port Management Act 1995, s.49(1)(c).

[3] V*ictorian Government Gazette*, No S 201, Friday 24 June 2016, 1, as amended by V*ictorian Government Gazette*, No S 247, Wednesday 20 May 2020.

[4] Port Management Act 1995, s.49I(1).

[5] Our five-yearly inquiry must be conducted in accordance with Part 5 of the Essential Services Commission Act 2001 (except for sections 40 and 46), which sets out general provisions relating to inquiries and reports. We also have a role in investigating complaints by port users regarding the port's compliance with the pricing order, under section 49Q of the Port Management Act 1995 – for more information refer to https://www.esc.vic.gov.au/information-port-melbourne-users.

prior to undertaking our five-yearly inquiries. This approach has the benefit of giving advance notice to the port and other stakeholders of areas or topics that may, along with any other relevant issues or concerns, be the subject of examination in our five-yearly inquiries.

The views that we express in our interim commentaries are necessarily preliminary in nature and are not informed by the submissions of stakeholders, including the port, in the way in which our five-yearly inquiry will be. As such, the views expressed in this interim commentary should be understood as initial views that will be subject to change as further material and submissions are received and considered by us through the five-yearly inquiry process.

The issues we may consider in future commentaries will therefore not necessarily be limited to those in this commentary. Likewise, this commentary does not limit the scope of issues we may consider in our five-yearly inquiries.

Our high-level assessment of the port's tariff compliance statement

This is our fourth interim commentary and our last one prior to commencing our first five-yearly review of the port's compliance with the pricing order in 2021. The particular focus of this interim commentary, compared to previous interim commentaries, is the level of the weighted average cost of capital (WACC) for a benchmark efficient entity with a similar degree of risk as the port.

Specifically, we make some observations on whether the port's WACC is likely to reflect that of an efficient entity with a similar degree of risk operating in a workably competitive market. We consider that the long-term interests of consumers are served if these conditions are met.

We do not intend to provide detailed commentary on the various methodologies the port has used to calculate its WACC. In the past three interim commentaries we have provided detailed commentary on the methodologies the port has applied to estimate its WACC and the preliminary views that we have expressed on these methodologies have not changed substantially. Where we think it may be worth providing some commentary on methodologies, for example where the port may have changed its approach from the previous year, we have made some comments.

This interim commentary is also the first commentary following the changes we made to our guidance to the port on 'well accepted' approaches. Our guidance on 'well accepted' approaches is outlined in our Statement of Regulatory Approach V2.0.[6] We made the changes following consultation with the port.

[6] Essential Services Commission 2020, Statement of Regulatory Approach – version 2.0, April.

As noted above, this is the port's fourth annual tariff compliance statement. We have reviewed the port's tariff compliance statement 2020-21 and note that the port's calculation of its WACC estimate has fallen from 10.46 per cent (pre-tax nominal) in 2019-20 to 8.93 per cent (pre-tax nominal) in 2020-21. We note that the fall in the risk-free rate by over 1 percentage point from 2019-20 is a key driver of the decline in the port's WACC. Also, the ports approach to estimating its market risk premium and gamma estimates contributes somewhat to this decline.

As in previous years, it appears to be the market risk premium, asset beta and gamma parameters that contribute to what is, in our initial view, the port's relatively high WACC estimates compared to that of other regulated businesses.

Our preliminary assessment is that over the last four tariff compliance statements, the port's WACC has been materially higher relative to that of other regulated infrastructure businesses. This suggests that in the five-yearly review a closer examination of the manner in which the WACC has been estimated may be warranted. We consider that if the port were to alter the manner in which it estimated the WACC in light of the preliminary issues that have been raised in our interim commentaries, especially in connection with the market risk premium, asset beta and gamma parameters, the port's WACC would fall to within a range of 6.30 per cent to 7.90 per cent (pre-tax nominal).

The rest of this paper sets out our initial and high-level views on the port's 2020-21 tariff compliance statement, with a particular focus on its WACC estimation, deferred depreciation, length of regulatory period and stakeholder engagement. As outlined above, the issues we may consider in our five-yearly review will not necessarily be limited to those in this commentary.

The port's rate of return

The port's WACC has reduced over the last four years but remains relatively high compared to other regulated businesses

The port has reduced its WACC estimate over the last four years, 2017-2021, and those reductions have addressed some of the preliminary issues we raised in our past interim commentaries. We note that some of the reduction in the WACC has occurred as a consequence of a general fall in the risk-free rate over the same period as opposed to any change or refinement in the port's approach to estimating the WACC.

Figure 1.1 outlines the extent to which the port's WACC estimate has fallen over 2017-2021.

1.1 The port's WACC estimates adjusted to reflect the current risk-free rate

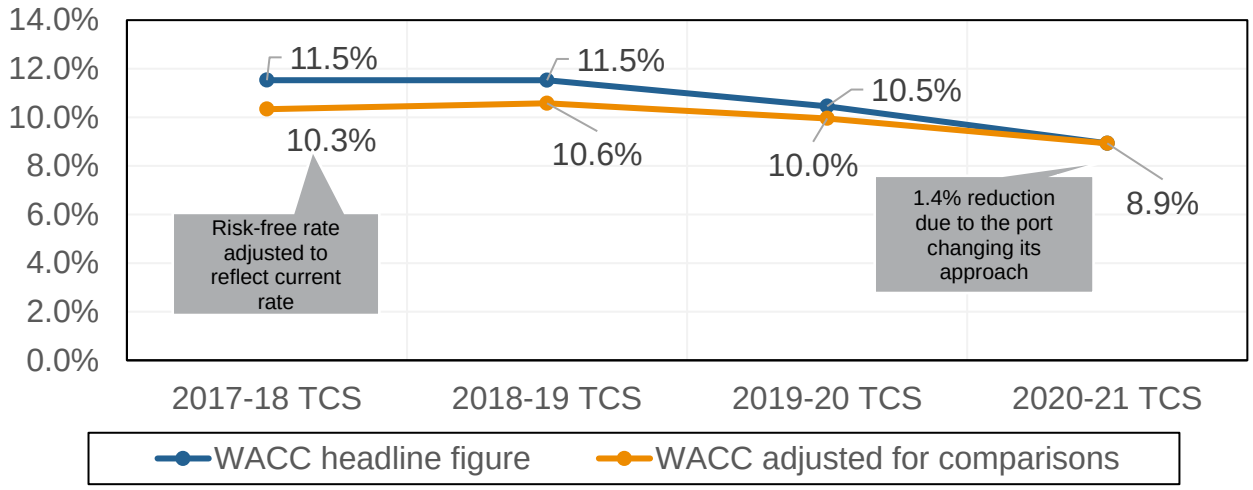
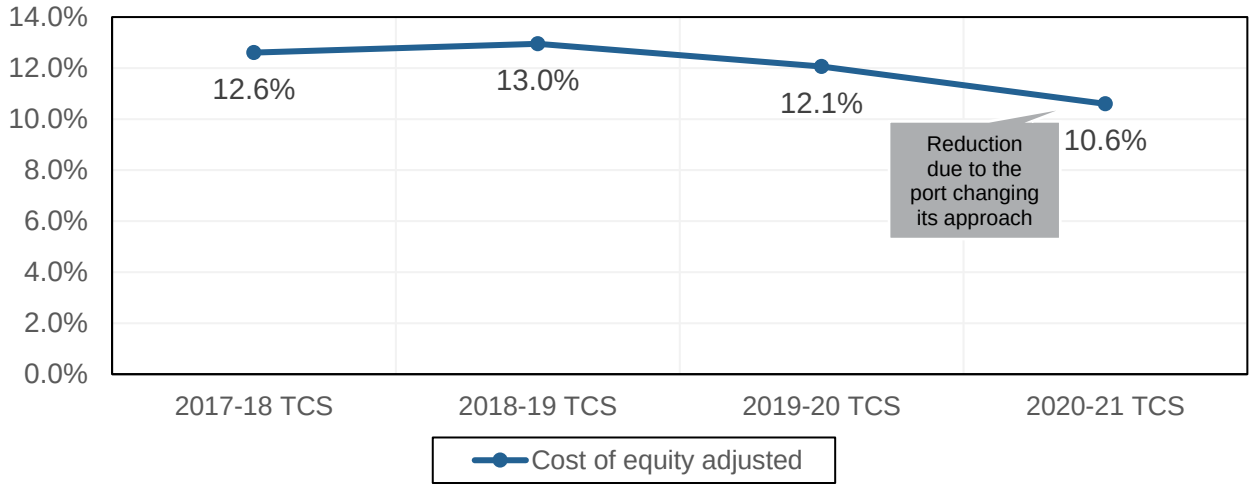


Figure 1.1 shows the port's WACC for each year since 2017-18 adjusted to reflect the current risk-free rate. This adjustment removes the impact of the decline in the risk-free rate on the WACC and is therefore a measure of the change to the port's WACC as a consequence of adjustments to its approach.

Accordingly, the port's WACC has reduced by 1.4 per cent since 2017-18. The main driver of this reduction is the fall in the return on equity. Figure 1.2 outlines the extent to which the return on equity has declined since 2017-18 when we adjust for the risk-free rate to reflect the current rate.

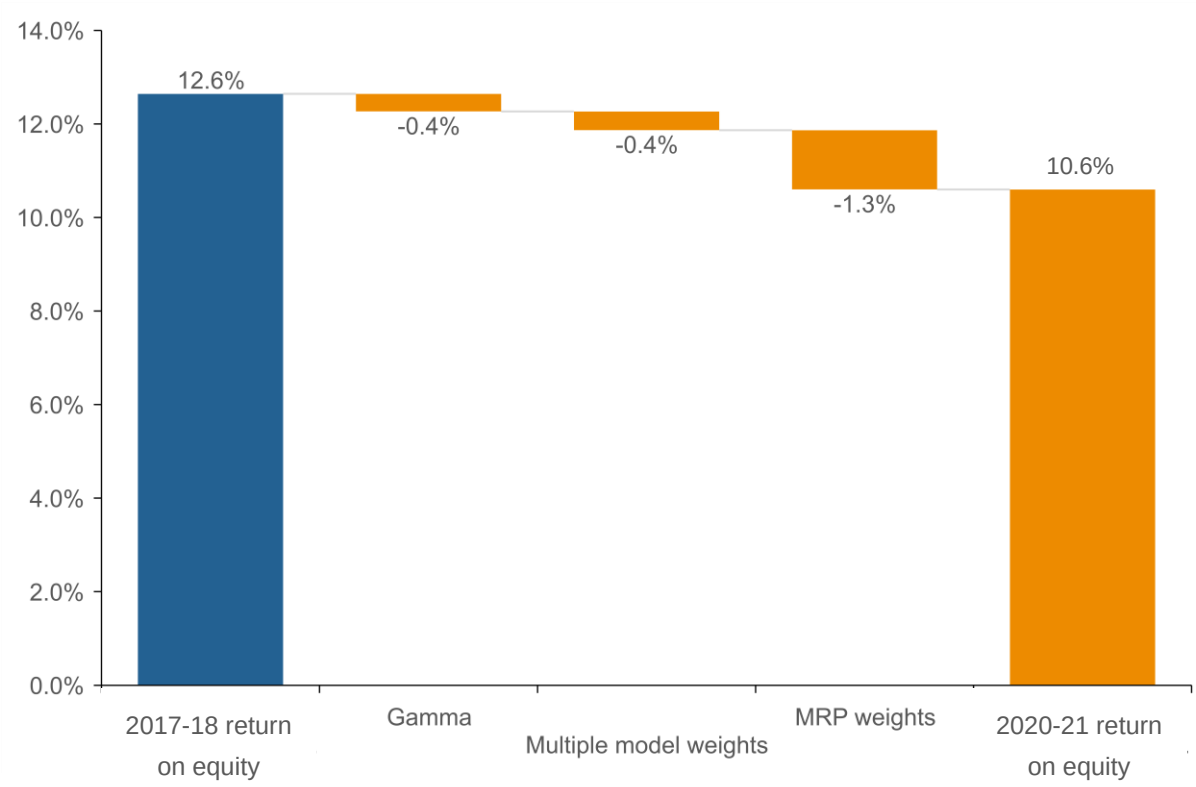
1.2 The port's adjusted cost of equity



The port's revised estimation approach for gamma, asset beta and market risk premium are driving the decline in the return on equity

The main drivers of the decline in the return on equity since 2017-18 are gamma, asset beta and the market risk premium as outlined in Figure 1.3.

1.3 Key drivers of changes in the port's return on equity,2017—2021

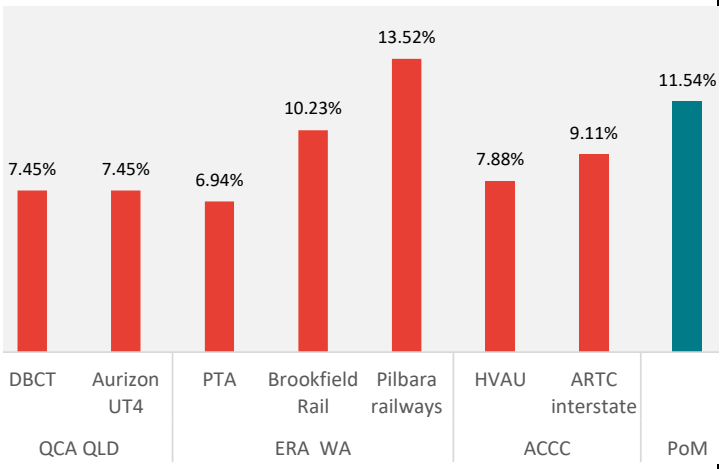


The decline in the return on equity is a result of the increase in gamma from 0.25 to 0.33, placing weight on only the Sharpe-Lintner CAPM model and the increase in the weight on the historical returns model (Ibbotson) in the estimation of the return on equity.[7]

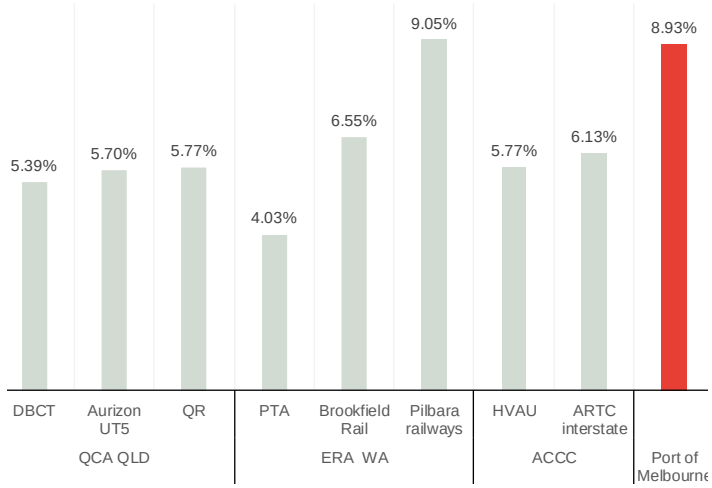
Although the port's estimated WACC has declined, on the commission's preliminary analysis it remains at the top end of the WACC range across regulated transport infrastructure assets. Figure 1.4 below compares the port's WACC in 2017-18 and in 2020-21 with those of other regulated businesses within a similar time period.

1.4 Comparison of the port's WACC with regulatory benchmarks in the transport infrastructure sector

2017-18: the port's WACC is at the top end of the range



2020-21: the port's WACC remains at the top end the range



Sources: QCA – Queensland Competition Authority; ERAWA – Economic Regulation Authority Western Australia; ACCC – Australian Competition and Consumer Commission and the port.

We also considered the port's 2020-21 WACC parameters with those of the other regulated businesses and found the port's market risk premium, equity beta and gamma consistently remains within the range that lends itself to higher WACC estimates.

Table 1.5 compares the port's WACC with recent regulatory decisions.

[7] We note that the port may use the Fama French Three Factor model in its future WACC estimations. Our preliminary view remains that there is no clear evidence of the use of the Fama French model by valuation experts or regulators in Australia, UK or New Zealand. Our initial views are further detailed on pp. 7–13 in our interim commentary on the port's 2019-20 tariff compliance statement.

1.5 Comparison of port's WACC parameters for selected regulated businesses

Entity	IPART	ESCOSA	QCA	ERAWA	ERAWA	ERAWA	Port
Source	WACC Model - Rail	SA Water Regulatory Determination	Gladstone Area Water Board	Public Transport Authority	Arc Infrastructure	Pilbara Railways	TCS 2020-21
Date of publication	Aug-20	Jun-20	May-20	Aug-19	Aug-19	Aug-19	May-20
Risk-free rate	2.35%	0.91%	0.90%	1.53%	1.53%	1.53%	0.90%
Market risk premium	7.30%	6.00%	7.00%	5.90%	5.90%	5.90%	7.57%
Equity beta	0.90	0.67	0.73	0.60	0.90	1.3	1.00
Debt risk premium	2.23%	4.18%	2.44%	1.61%	2.08%	3.17%	4.04%
Debt raising costs	0.13%	0.13%	0.11%	0.10%	0.10%	0.10%	0.10%
Gearing	60%	60%	50%	50%	25%	20%	30%
Gamma	0.25	0.59	0.48	0.50	0.50	0.50	0.33
Cost of equity (pre-tax nominal)	11.51%	5.63%	7.11%	5.96%	8.05%	10.82%	10.60%
Cost of debt (pre-tax nominal)	4.70%	5.22%	3.45%	3.24%	3.71%	4.80%	5.04%
WACC (pre-tax nominal)	**7.42%**	**5.38%**	**5.28%**	**4.60%**	**6.96%**	**9.62%**	**8.93%**
WACC margin [a]	5.07%	4.47%	4.38%	3.07%	5.43%	8.09%	8.03%

Sources: IPART – Independent Pricing and Regulatory Tribunal; ESCOSA – Essential Services Commission of South Australia; QCA; ERAWA and the port's tariff compliance statement (TCS).

[a] 'WACC margin' is the WACC value minus the risk-free rate.

We understand that the requirement in the pricing order is for the port to estimate the WACC of a benchmark efficient entity facing similar risk as the port. However, we think it is worth comparing the port's WACC with those of regulated businesses in the transport infrastructure sector. The WACC represents the return investors expect from other investments with similar risks. Otherwise, it is unlikely that the port would be able to attract the capital it needs as investors would invest elsewhere. A consistently high WACC relative to other regulated entities in the transport sector suggests that the port appears to assess its risk to be substantially higher than the risk of most of these entities.

For example, on a preliminary analysis, Table 1.4 tends to indicate that the port is arguing its risk profile is closer to that of the Pilbara Railways than of the other entities. In this connection, our initial view is that the port's calculation of its risk may be overstated. We have sought to test this initial view by comparing the port's estimated WACC of a benchmark efficient entity with a similar degree of risk with our own preliminary estimates. This is set out in the following sections.

The port's key drivers of WACC appears to remain consistently high relative to a benchmark efficient entity with a similar degree of risk

Before we set out what, in our preliminary view, are the key drivers of the WACC for a benchmark efficient entity with a similar degree of risk as the port, we first set out our initial views on what the pricing order requirements are for estimating the WACC. In setting its prices for prescribed services, the port is required to comply with requirements in the pricing order – a regulatory instrument made by the Governor in Council under section 49A of the Port Management Act.

The objectives of Part 3 of the Port Management Act 1995 are also relevant as the pricing order is made under the powers granted by this Act.

Section 48(1) of the Act provides that these objectives are:

> (a) to promote efficient use of, and investment in, the provision of prescribed services for the long-term interests of users and Victorian consumers; and
> (b) to protect the interests of users of prescribed services by ensuring that prescribed prices are fair and reasonable whilst having regard to the level of competition in, and efficiency of, the regulated industry; and
> (c) to allow a provider of prescribed services a reasonable opportunity to recover the efficient costs of providing prescribed services, including a return commensurate with the risks involved; and
> (d) to facilitate and promote competition:
> (i) between ports; and
> (ii) between shippers; and
> (iii) between other persons conducting other commercial activities in ports; and
> (e) to eliminate resource allocation distortions by prohibiting a State sponsored port operator from providing a relevant service at a price lower than the competitively neutral price for that service.

The port's requirement for estimating its WACC under clause 4.1.1(a) of the pricing order is the following:

> For the purposes of determining its Aggregate Revenue Requirement, the Port Licence Holder must apply an accrual building block methodology over the Regulatory Period comprising:
>
> (a) an allowance to recover a return on its capital base, commensurate with that which would be required by a benchmark efficient entity providing services with a similar degree of risk as that which applies to the Port Licence Holder in respect of the provision of the Prescribed Services (see clauses 4.2 and 4.3)

This clause could be understood as establishing that the purpose of the building block model (and the estimation of the WACC as an input to that model) is to derive an Aggregate Revenue Requirement (ARR), and that any return on capital should be commensurate with that which would be required by a benchmark efficient entity providing services with a similar degree of risk.

This clause needs to be read alongside clause 4.3.1 of the pricing order, which states:

> Subject to clause 4.2.3, in determining a rate of return on capital for the purposes of clause 4.1.1(a) the Port Licence Holder must use one or a combination of well accepted approaches that distinguish the cost of equity and debt, and so derive a weighted average cost of capital.

The commission's Statement of Regulatory Approach V2.0 sets out our initial view that 'well accepted' means by those who use such approaches for the purpose of estimating a WACC, as part of a building block model to calculate an ARR for a regulated entity.

The purpose of the pricing order, including clause 4.3.1 and the requirement for 'well accepted approaches', is to arrive at an ARR that ensures that the port recovers a reasonable return on the provision of services, which otherwise might result in it recovering above the efficient costs of providing the service.

In our 2019-20 interim commentary[8], we identified that the key drivers of the port's WACC were the market risk premium, asset beta and gamma. We raised some initial concerns with the port's methodology and approach to implementing these parameters. The basis for these initial concerns can be found in our interim commentary. Table 1.6 sets out the re-estimated parameters if the port altered its approach to address these preliminary concerns.

1.6 Re-estimated WACC parameters

WACC parameters	Port's 2019-20 TCS	Our 2019-20 re-estimates
Market risk premium	7.77%	7.77%
Asset beta	0.7	0.39
Gamma	0.25	0.25 to 0.4

Source: Our 2019-20 Interim Commentary.

Our initial view was that the port may have overestimated its risk and applied a value of gamma that was low relative to a benchmark efficient entity with a similar degree of risk as the port.

[8] Essential Services Commission 2019, Interim commentary - Port of Melbourne tariff compliance statement 2019-20, 16 December

We also set out our initial views as to an estimated WACC range for a benchmark efficient entity with a similar degree of risk as the port applying our preliminary views on parameter estimates. Table 1.7 outlines our estimated WACC range compared to the port's estimate.

1.7 Our 2019-20 estimated WACC range (pre-tax-nominal) compared to the port's estimate

Port's estimated WACC 2019-20	2019-20 estimated WACC range
10.46 per cent	7.5 per cent to 8 per cent[a]

[a] We note the WACC range is calculated from values of gamma of 0.4 to 0.25 respectively.
Source: Our 2019-20 Interim Commentary.

We considered that if the port were to address the concerns identified in the 2019-20 interim commentary and adopted our findings, the port's WACC would fall to within the range of about 7.5 per cent to 8.0 per cent (pre-tax nominal), using values of gamma of 0.4 and 0.25, respectively.[9] We note that the port's WACC compared to a benchmark efficient entity with a similar degree of risk is also substantially higher than our preliminary estimate.

We have also conducted an initial review of the port's 2020-21 WACC estimate and as noted earlier, consider the key drivers of the port's high WACC remain the market risk premium, asset beta and gamma.

The port's market risk premium estimate is higher than recent Australian regulatory decisions

The port's weighted average point estimate of the market risk premium for 2020-21 is 7.57 per cent. This is lower than the estimate used in 2019-20 (7.77 per cent) and the lowest estimate that the port has used in its tariff compliance statements (i.e., since 2017-18). Consistent with the approach adopted for the 2019-20 tariff compliance statement, the port has again used three approaches to estimate the market risk premium – the Ibbotson, Wright and Dividend Discount Model (DDM) approaches. The proposed estimate of the market risk premium for 2020-21 reflects updated estimates based on each of these approaches and further modification of the weights applied as summarised in Table 1.8.

[9] Our reasons outlining why we consider our range meets the requirements of the pricing order, in particular that of a benchmark efficient entity with a similar degree of risk as the port, and the objectives of the Port Management Act 1995 are set out in our 2019-20 Interim Commentary.

1.8 Evolution of the port's market risk premium estimates

Methodology	2017-18 TCS	2018-19 TCS	2019-20 TCS	2020-21 TCS
Ibbotson approach	6.53%	6.56%	6.48%	6.42%
Weight	*50%*	*50%*	*50%*	*70%*
Wright approach	9.01%	8.86%	9.54%	10.74%
Weight	*50%*	*50%*	*25%*	*15%*
Dividend Discount Model	N/A	N/A	8.56%	9.75%
Weight	*N/A*	*N/A*	*25%*	*15%*
Weighted average	**7.77%**	**7.71%**	**7.77%**	**7.57%**

Source: The port's tariff compliance statements for 2017-18, 2018-19, 2019-20 and 2020-21.

On the basis of our preliminary analysis, the port's overall estimate of the market risk premium (7.57 per cent for 2020-21) is above the high end of the range of recent regulatory decisions in Table 1.5. In broad terms, this reflects higher estimates from each of the approaches and higher weight attached to the Wright and DDM estimates.

As outlined in our 2019-20 interim commentary, our initial view is that the Ibbotson approach is well accepted.[10] Our preliminary view is that, as in previous interim commentaries, the Wright approach is not well accepted, and we have some initial concerns with what we understand to be the port's implementation of the dividend discount model. For example, it is not clear that the port has implemented, as claimed, its dividend discount models in the same manner as IPART's Damodaran and two Bank of England dividend discount model estimates or ERA's dividend discount model estimate as published in the 2018 and 2019 rail WACC decision .

Other preliminary issues include that the original estimates of the stock accumulation index used to estimate the market risk premium applied unweighted average dividend yields on dividend paying stocks (rather than value-weighted dividend yields) and excluded non-dividend paying shares. As a result, estimates of the accumulation index and resultant market risk premium may be affected by an upward bias.

The main sources of adjusted data are Brailsford, Handley, and Maheswaran (BHM) and NERA.[11] The port considers that the BHM adjusted dataset overstates the potential downward adjustment

[10] Our reasons can be found on pp 14 – 20 of our 2019-20 Interim Commentary.

[11] BHM adjust the original yield by multiplying it by a constant factor (0.75). The NERA adjustment factor is based on their analysis of yield data for seven different quarters over the period in question (December 1891, December 1901, December 1911, December 1921, December 1931, December 1941, December 1951) and interpolation between those and therefore varies over time. NERA's adjustment factors are higher than BHM's until about 1930 and then slightly lower.

required and therefore it relies exclusively on the NERA adjusted dataset. Our initial view is that the exclusive reliance on the NERA adjusted dataset appears to lead to a higher estimated market risk premium that may not be justified if affected by bias. The port should consider using an average of the BHM and NERA adjusted datasets to estimate its market risk premium to reduce the impact of any bias.

The port should review the implementation of its approach to estimate the systematic risk (beta) of the benchmark efficient entity

In its 2020-21 tariff compliance statement the port has maintained an asset beta of 0.70. This translates to an equity beta of 1.0 when combined with the port's estimated gearing ratio of 30 per cent. We raised several preliminary concerns in our 2019-20 interim commentary in relation to the approach the port has adopted when estimating beta. The port addressed a few of these initial concerns in its 2020-21 tariff compliance statement. However, our preliminary view is that a number of issues remain from our previous interim commentaries for estimating beta such as the port's inclusion of railways as a set of comparators, reliance on emerging economies to construct the benchmark efficient entity and use of monthly data instead of weekly data.

The port may need to further investigate its reliance on non-industry specific comparators including railroads, airports and toll roads as comparators

The port relies on inclusion of sectors outside ports' businesses as comparators to the benchmark efficient entity. Our initial view is that the port should review its approach concerning the inclusion of railways as a direct comparator. Particularly, we consider that care should be taken with how high a weighting is applied to this class of comparators, noting that the port gives these entities equal weight with comparators in its ports sample.

At present, the approach of regulators to constructing comparator samples outside the relevant sector are largely dependent on the availability of companies. Table 1.9 compares Australian regulators' approaches for the selection of comparators. Our initial analysis tends to indicate that when sufficient alternatives exist, Australian regulators do not place substantial reliance on comparators from industries outside the regulated entity's sector. Rather, estimates of beta from other industries can be used as a crosscheck.

1.9 Summary of Australian regulatory approaches using international comparators

Regulator	Year	Number of comparators	Use of international comparators	Use of comparators outside sector[12]
AER	2018	9	No	No
ERAWA	2019	5, 7 and 11	Yes[13]	Yes
IPART	2020	35	Yes[14]	No
QCA	2020	16/18	Yes	No
ACCC	2019	8/5	Yes[15]	No

Sources: AER – Australian Energy Regulator, ERAWA, IPART, QCA and ACCC.

The port should revisit its use of developing or emerging economies to find relevant comparators

In our 2018-19 interim commentary, we identified, in our preliminary view, several drawbacks with the use of international comparator firms for deriving beta estimates. While we acknowledge the support of the other Australian regulators for including international comparators, limits are often placed on which countries these can be drawn from.

The port uses international comparators drawn from emerging and developing economies. Although there is the statistical benefit from extending the sample to include international comparators, the choice of using comparators from emerging countries, most notably China, requires further investigation. In our preliminary view, a small set of comparators may not necessarily justify expanding the comparator set to international firms for the sole purpose of increasing sample size.

[12] Regulated entities do not always have a classification (such as GICS). As such, whether comparators are included from outside the sector is the regulators judgement.

[13] Relevant comparator company must be located in: USA, Canada and New Zealand. Economic Regulation Authority (Western Australia), Final Determination – 2018 and 2019 Weighted Average Cost of Capital – For the Freight and Urban Networks, and the Pilbara Railways, August..

[14] Remove companies that are listed on Chinese, Russian and a selection of African stock exchanges. Independent Pricing and Regulatory Tribunal, Review of our WACC method – Final Report, February 2018

[15] International comparators include Germany, British, Netherlands, Belgian, Austrian, Singaporean, Portuguese and Malaysian companies. Australian Competition & Consumer Commission, Decision on Australian Postal Corporation 2019 price notification, December.

We have preliminary concerns with the port continually changing its approach on market capitalisation filtering

The port has changed its approach to using a company size filter in its selection of comparators each year since 2017. In its 2017-18 tariff compliance statement, the port applied a USD$100m market capitalisation filter. All companies below this size threshold were excluded from the comparator sample. In its 2018-19 tariff compliance statement, the port added six firms as a result of removing the USD$100m market capitalisation threshold, in response to the commission's commentary in 2017-18. The port also stated in its tariff compliance statement:

> We acknowledge that the $US100 million threshold was arbitrary and that each firm should be considered individually in terms of risk characteristics as well as statistical significance. Accordingly, we have included companies whose market capitalisation is less than $US100 million in the comparator set where appropriate this year.[16]

We raised some initial concerns about the port's use of statistical filters in the 2019-20 interim commentary.[17] In particular, we noted that the statistical filters used by the port were a very stringent requirement by conventional standards and may cause a bias by excluding low-beta stocks.

We have some preliminary concerns that the port is adopting inconsistent approaches over time, which tends to indicate the approach may not be underpinned by sound principles.

We consider the port's implementation of its approach to estimating systematic risk (beta) may overstate its beta estimate

The port's estimates of beta are sensitive to the return specification employed. The port has considered using mostly both monthly betas, as well as placing equal weight on weekly and monthly betas. Our estimates indicate monthly returns produce a higher asset beta estimate in the ports sample. The adoption of a weekly (all days) return interval reduces the estimated asset beta by approximately 0.05.

Table 1.10 shows the estimation parameters in recent Australian regulatory decisions.

[16] 2018 - 2019 tariff compliance statement general statement, page 46

[17] 2019 - 2020 tariff compliance statement general statement, page 28

1.10 Beta estimation procedures in recent Australian regulatory precedent

Regulator	Year	Period	Index selection	Return specification	De-leveraging formula	Estimation procedure	Special adjustments
AER	2018	Multiple periods	Local	Weekly	Brealey-Myers	OLS	None
ERAWA	2019	10-years	Local	Weekly/AD[a]	Brealey-Myers	OLS, LAD, MM, T-S	None
IPART	2020	5-years	Local	Weekly/AD	Brealey-Myers	OLS	Vasicek
QCA	2020	5-year/10-year	Local	Weekly/AD and four-weekly	Conine	OLS	None
ACCC	2019	5-year	Local	Weekly and monthly	Brealey-Myers	OLS	None

Sources AER, ERAWA, IPART, QCA and ACCC.

[a] all days (AD)

As the table indicates, while monthly returns might still be considered, recent Australian regulatory precedent provides strong support for using weekly returns including using all trading days rather than just end of weeks. Our preliminary view is that the port should consider revisiting its use of monthly data to estimate its beta.

The port's approach to estimating gamma by combining two different approaches may not be logical

The estimate of gamma measures the value of imputation credits to equity investors. Imputation credits enable shareholders to offset tax liabilities. This tax benefit means that most shareholders would be willing to accept a lower rate of return for an investment with imputation credits attached. Therefore, a higher gamma leads to a lower pre-tax WACC.

The port has increased its gamma estimate from 0.25 to 0.33 and continues to use a weighted combination of approaches; the utilisation approach (that relies on equity ownership estimates) and financial practitioners' approach (that assigns no value to gamma in a valuation context) to construct its estimate of gamma. The port retains a one-third weighting on financial practitioners' approach but doubles the weighting to the utilisation approach to two-thirds. The port maintains there is still value in applying a market approach to estimating gamma but recognises it is only endorsed by one regulator, IPART, and therefore no longer assigned any weight to it.

Our preliminary view is that the two different approaches are underpinned by two different conceptions of the value of gamma. As such, our initial view is that it may not be sensible or logical to combine such different approaches. As discussed in more detail below, it is also not clear to us at this stage that financial practitioners' approach is a well accepted approach in the terms of the pricing order. On this basis, our preliminary view is that a utilisation approach that relies on well accepted estimates of the distribution rate and utilisation rate may be the better approach.[18] Table 1.11 shows the range of gamma estimates in recent Australian regulatory precedent. As the table indicates, the utilisation approach is overwhelming favoured by Australian regulators and the port's gamma of 0.33 remains at the lower end of recent regulatory decisions.

[18] Our reasons are outlined on pp 20 – 24 of our 2019-20 Interim Commentary.

1.11 Gamma estimates in recent Australian regulatory precedent

Regulator	Approach	Distribution rate	Theta	Gamma
AER	Utilisation approach: • Distribution rate – ASX data • Utilisation rate – ABS equity ownership	0.9	0.65	0.585
ERAWA	Utilisation approach: • Distribution rate – ASX data • Utilisation rate – ABS equity ownership	0.9	0.6	0.5
ESC	Utilisation approach: • Distribution rate – ATO tax statistics • Utilisation rate – Mix of evidence	0.82	0.6	0.5
ESCOSA	Utilisation approach: • Distribution rate – Mix of evidence • Utilisation rate – Mix of evidence	0.7-1.0	0.25-0.81	0.5
IPART	Utilisation approach: • Distribution rate – ATO statistics • Utilisation rate – Dividend drop off study	0.7	0.35	0.25
QCA	Utilisation approach: • Distribution rate – ASX data • Utilisation rate – ABS equity ownership	0.88	0.55	0.484
ACCC	These regulators use the AER's utilisation (equity ownership) approach.			
ICRC				
OTTER				

Sources: AER, ERAWA, the commission, ESCOSA, IPART, QCA, ACCC, ICRC – Independent Competition and Regulatory Commission and OTTER – Office of the Tasmanian Economic Regulator.

In this year's tariff compliance statement, the port sets out that a gamma of zero is a 'well accepted' approach by relying on evidence from independent expert valuations and surveys of financial practitioners. We have the following preliminary observations on the evidence provided by the port.

- It is not obvious to us at this stage that a financial practitioner approach is well accepted in setting a rate of return for a regulated entity. Financial practitioner approaches are typically focused on valuing companies; they are not attempting to determine the future cash flows of the company using an estimate of the rate of return and for determining revenue using an accrual building block methodology.
- The port's inclination to rely on views of financial practitioners when it comes to estimating a value for gamma appears inconsistent with the port's methodology on estimating the market risk premium. In particular, our understanding is that the port adjusts its market risk premium for theta but it places no weight on financial practitioners' views on market risk premium that is consistent with their views on gamma.[19]
- The port appears to incorrectly interpret the findings from the market practitioner survey undertaken by Truong, Partington and Peat (2005).[20] It found that of the 85 per cent of respondents that did not adjust for imputation in estimating beta or the market risk premium, and only 17 per cent made an adjustment for imputation credits for project evaluation. However only 10 per cent considered that the value of imputation credits had zero market value. Independent experts may not place an explicit value on imputation credits to value the company as a whole, but they do appear to consider that there is value for Australian investors from imputation credits.
- The port refers to a KPMG 2019 survey where 92 per cent of respondents state that they do not make a gamma adjustment to the discount rate. However, KPMG also asked the following question "Where imputation benefits are included as an adjustment to the cash flows, what utilisation factor do you assume?" This is a different question from whether respondents make any adjustment for 'imputation'. KPMG do not state the proportion of respondents that make an adjustment to cash flows. Nevertheless, of those that do make an adjustment to the cash flow, the average utilisation factor applied was 36.4 per cent.

[19] Synergies Economic Consulting 2020, Determining a WACC estimate for Port of Melbourne, May 2020, p. 133

[20] Truong, G., Partington, G., and Peat, M,. (2008), Cost-of-Capital Estimation and Capital-Budgeting Practice in Australia, June., page 116. f.

Our initial estimates produce a lower WACC range than the port's estimate of 8.93 per cent

We consider that if the port addressed the initial matters outlined above, the WACC parameters for market risk premium, asset beta and gamma would fall within the ranges outlined in Table 1.12.

1.12 Our initial parameter estimates of a benchmark efficient entity with the same degree of risk as the Port of Melbourne

WACC parameters	Our estimates
Market risk premium	Ibbotson range 6% to 7.10%
Asset beta	0.60 to 0.70
Gamma	0.35 – 0.5

Source: The commission

When we apply these initial parameter values to estimate the port's WACC, the range of its WACC is substantially lower than the port's WACC estimate 8.93 per cent (pre-tax nominal) and lies between 6.3 per cent (pre-tax nominal) and 7.90 per cent (pre-tax nominal).

We understand that there is a degree of uncertainty in setting WACC estimates and that setting a WACC that is "too low" can lead to under investment, send incorrect pricing signals to end-users (i.e., over consumption of the asset) and lead to financial viability issues. However, we consider that the upper end of the range, around 7.90 per cent (pre-tax-nominal) suggests that the port's estimated WACC (8.93 per cent) for a benchmark efficient entity with a similar degree to risk as the port may be overstated. That is, our preliminary analysis suggests that the port's WACC may not be commensurate with that required by a benchmark efficient entity providing services with a similar degree of risk as the port.

Any over-estimation of the WACC (relative to the port's true cost of capital) may have negative consequences (underuse of resources, over investment and capture of market rent). As set out earlier, the level of WACC should allow the port to undertake necessary investments (efficient investments), but should not encourage inefficient investment. We also note that those entities to which we compared the port's WACC in Table 1.5 have remained financially viable at WACC estimates materially lower than the port's estimates over the four years from 2017-18.

In light of the above preliminary views, the port may wish to review in particular its estimates of beta, gamma and market risk premium in future tariff compliance statements.

The rest of this paper addresses the port's approach to managing deferred depreciation, its length of regulatory period and stakeholder engagement.

Depreciation methodology and implementation

The port should provide more clarity on how it will unwind deferred depreciation and manage tariff shock on port users post TAL period

The port has maintained its approach of not using straight-line depreciation, which is the default method specified in clause 4.4.2(a) of the pricing order. As discussed in our previous year's interim commentary, the port has stated that it has not adopted a straight-line depreciation methodology as a consequence of the application of the tariff adjustment limit (TAL) which constrains recovery of the aggregate revenue requirement determined by the port.

The TAL prevents the port from increasing tariffs to the level whereby the port could recover what it has estimated to be its aggregate revenue requirement with the application of straight-line depreciation. So the port has proposed to defer the recovery of depreciation into some (unspecified) future period to minimise the revenue shortfall between the aggregate revenue requirement and the tariff adjustment limit.

Therefore, the port has set the 2020-21 return of capital (depreciation) to zero and deferred recovery of straight-line depreciation to future years – the same approach it has applied in the past three years.

The port has re-iterated a view that its approach to depreciation complies with the pricing order provisions relating to return of capital, including clause 4.4.3, which requires that the return of capital allowance in any financial year is not below zero.

The port also states that the unrecovered depreciation balance is included in the capital base until it is recovered through the return of capital component of the aggregate revenue requirement.[21] It says that this approach ensures that the initial capital base and any new net capex is not recovered more than once.[22]

Our review of the port's regulatory model confirms that straight-line depreciation that cannot be recovered now will be recovered when forecast revenues are high enough within the TAL or when the tariff adjustment limit no longer applies.[23] We also note that following the end of the tariff adjustment limit period, the port's regulatory model has a mechanism that allows it to nominate

[21] Port of Melbourne 2020, 2020-2021 Tariff Compliance Statement General Statement, May, p 48.

[22] Ibid, p. 49.

[23] Port of Melbourne 2020, 2020-2021 Tariff Compliance Statement: Appendix B, Return of Capital tab, May.

whether any portion of the balance is further deferred into future years to manage tariff shocks to the port users.[24]

In our 2019-20 interim commentary, we noted that the port did not clearly indicate in its tariff compliance statement (or model) how the port was going to recover deferred depreciation in future years. While it continues to maintain that it has built-in a mechanism within the regulatory model to unwind deferred depreciation post the tariff adjustment limit period, it has still not provided detailed information on the timing and approach for recovering deferred depreciation or how this affects port users.

Our initial view is that we are particularly concerned about the port's approach to recovery of depreciation because depreciation accounts for a significant proportion of the port's aggregate revenue requirement.

For example, based on the port's regulatory model, and assuming recovery of depreciation does not occur until the end of the tariff adjustment limit period in 2032-33, the total depreciation available for recovery is estimated at $2,349.5 million.[25] We can observe from the model that this amount is "available" for recovery in 2032-33, but the port has not demonstrated how this amount will be recovered in a manner that is consistent with clause 4.4.2(b) – i.e., it does not cause a 'significant' price shock to port users.

We also note that some of the port users have raised concerns about this issue during stakeholder engagement sessions.

As outlined in our previous interim commentary, the pricing order provisions (clause 4.4.2(b)), make reference to an (alternative) depreciation profile considering pricing impacts, implying that an alternative approach should minimise any volatility in tariffs through price smoothing, and at least certainly once the tariff adjustment limit period has concluded.

We also have initial concerns that the port's proposed treatment of depreciation does not provide for an allowance to recover (any of) the return of its capital base as may be required by clause 4.1.1(b) or is an "alternative depreciation methodology" as required by clause 4.4. It may be considered, presently, to be no methodology at all.

We continue to impress upon the port the importance of providing us and other stakeholders with illustrative modelling to demonstrate the impact of its treatment of depreciation on future tariffs for

---

[24] The port's mechanism is a five-step approach to calculate the return of capital during the tariff adjustment limit period. This approach is explained in detail in the port's regulatory model user guide – see Appendix C, p. 10 of the 2020-21 Tariff Compliance Statement.

[25] Port of Melbourne 2020, 2020-21 Tariff Compliance Statement: Appendix B, Return of Capital tab, May.

its next tariff compliance statement and provide us with updates from port users on their views on the port's proposed recovery method.

The length of regulatory period

The port should consider a longer regulatory period to increase certainty on pricing outcomes

The regulatory period is the duration over which the port's aggregate revenue requirement (ARR) is forecast (using the accrual building block methodology) and consequently prescribed service tariffs are set. The choice of regulatory period impacts the level of tariffs that port users will pay for prescribed services and the level of service they will receive over the chosen period.

Clause 13.1.1 of the pricing order provides that the port may determine the duration of each regulatory period and adopt different lengths over the term of the lease.[26] Our Statement of Regulatory Approach V2.0 provides guidance to the port on how it should explain the basis of its choice of regulatory period.[27] We expect the port to outline the factors influencing its choice of regulatory periods.

Consistent with the previous four years, the port has adopted a length of one year for its forthcoming regulatory period in setting its prescribed service revenue allowance for 2020-21. The 2020-21 tariff compliance statement reasons that the tariff adjustment limit (TAL) provides price certainty for port users and incentives for the port to seek cost efficiencies regardless of the length of the regulatory period. But the port has expressed its intent to consider a longer regulatory period once it finalises the long-term investment strategies and associated performance standards.

Our initial view is that a longer regulatory period would promote stability and predictability of prescribed service tariffs for port users within the applicable tariff limit (TAL or ARR). This is likely to be in the best interests of port users in the current economic climate. A consistent approach to the port's required rate of return would translate into reduced variance in annual tariff changes over the regulatory period. We observe the use of five-year regulatory periods for port access regimes in South Australia and Queensland[28], in the Victorian water pricing regime[29], and Australia's

[26] Victoria Government Gazette (No. S 201) 2016, Pricing Order, June, p. 9.

[27] Essential Services Commission 2020, Statement of Regulatory Approach – version 2.0, April, pp. 27-28.

[28] Essential Services Commission of South Australia 2017, 2017 Ports Access and Pricing Review – Final Report, September, p. 1; Queensland Competition Authority 2017, Draft decision - Aurizon Network's 2017 draft access undertaking, December, pp. 125-133.

[29] Essential Services Commission 2016, Water Pricing Framework and Approach – Implementing PREMO from 2018, October, p. 45.

electricity and gas pricing regimes.[30] A five-year period would also align with our five-yearly compliance inquiries.

We note that capital planning and forecasting over a lengthy time period is a normal part of business in industries with significant and lumpy infrastructure spends such as the port. The fundamental risks are around the accuracy and reliability of forecasts, and the resulting divergence between tariffs and actual costs over the regulatory period. The benefits include greater incentives to outperform expenditure and demand forecasts.

[30] The National Electricity Rules require regulatory periods to be at least five years, and the National Gas Rules contain a 'general rule' for five-year periods.

Stakeholder engagement

The port's engagement program with port users and other stakeholders needs further work

In our 2019-20 interim commentary we noted that the port had clearly documented its engagement processes and undertaken engagement activities on a wide range of issues. We reviewed the port's 2020-21 tariff compliance statement and note that the port has clearly outlined its engagement program with port users and other stakeholders over the course of 2019 and early 2020. It covered:

- business plans as set out in the port's 2050 Port Development Strategy (PDS), including for the accommodation of larger vessels
- Port Rail Transformation Project
- broad business engagement on the markets in which the port provides its prescribed services and charges its tariffs, including discussing the tariff structures.

We note the early engagement on the future development of the port through its 2050 PDS and its extensive engagement program for the Port Rail Transformation Project.

The requirement on the port regarding stakeholder engagement is set out in the pricing order and our Statement of Regulatory Approach.[31,32] In commenting on the port's compliance, we are guided by the four questions:

1. Has the port's form of engagement been tailored to suit the topic on which it seeks to engage?
2. Has the port provided port users with appropriate information outlining the purpose, form and the content of the engagement?
3. Has the port provided port users with a reasonable opportunity to participate?
4. Does the port's engagement program give priority to matters that could have a significant impact on port users?

[31] Clause 7.1.2(d) of the pricing order states: 'The Tariff Compliance Statement must set out the process by which the Port License Holder has effectively consulted and had regard to the comments provided by Port Users'.

[32] Essential Services Commission 2020, Statement of Regulatory Approach – version 2.0, 28 April, p.15.

The port's engagement program:

- took place between Feb 2019 and March 2020
- included a series of workshops in five different locations: Hobart, Sydney (2), Griffith, Wagga Wagga and Melbourne (2)
- included participants representing direct and indirect port users including shipping lines, cargo owners, shippers, and stevedores
- covered matters such as services, service standards, market changes, tariff structures, and investment priorities.

We assess that the port has undertaken a clear set of engagement processes however, we closely reviewed the effectiveness of the port's engagement program in its 2020-21 tariff compliance statement following feedback from stakeholders on the port's engagement. We consider that it is unclear if these processes are effective in collaborating with stakeholders on key issues. For example, it is not clear whether the port has fully addressed the fourth question in our guidance which provides for the port to give priority to matters that could have a significant impact on port users, or use effective means to seek stakeholders consideration on key issues. We note that three stakeholders raised deferred depreciation during the port's engagement activities. Based on the information provided in Appendix J of the tariff compliance statement, this matter was not mentioned in the list of key issues presented to participants during the workshops. We consider deferred depreciation could have a significant impact on port users. It is also not clear if stakeholders have collaborated on the prudency and efficiency of key investments that have a direct impact on port stakeholders.

Although we do not undertake stakeholder engagement on our interim commentaries, our five-yearly review will provide an opportunity for stakeholders to comment on issues which they consider relevant to our assessment of the port's compliance with the pricing order. We consider that the port should do more to demonstrate that the processes it has undertaken throughout its engagement consultation are effective in ensuring stakeholders are able to effectively collaborate on key issues and inform outcomes.