ESSENTIAL SERVICES COMMISSION

Melbourne Water Draft Decision

2021 water price review

17 March 2021

An appropriate citation for this paper is:

Essential Services Commission 2021, Melbourne Water Draft Decision: 2021 water price review, 17 March

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Contents

Summary

In November 2020, Melbourne Water provided a submission to us proposing prices for a five-year period starting 1 July 2021

Melbourne Water provides wholesale water supply and sewage management services to retail water corporations that we also regulate. These retail water corporations are City West Water, South East Water, Yarra Valley Water, Western Water, Barwon Water, South Gippsland Water and Westernport Water.

Melbourne Water also provides drainage and waterways services in and around Melbourne.

This price review informs the maximum charges customers pay for these services. Almost 2.4 million water customers ultimately incur these prices passed on through their retail water corporations, which serve about 5.6 million Victorians.

We are seeking feedback from Melbourne Water customers and stakeholders.

We are reviewing Melbourne Water's prices under our new pricing framework

We are undertaking this review under our PREMO water pricing approach, which includes incentives for water corporations to deliver outcomes most valued by customers.[1] We assess Melbourne Water's price submission against the requirements set out in the Water Industry Regulatory Order 2014 (WIRO), the Essential Services Commission Act 2001, the Water Industry Act 1994 and the guidance we provided Melbourne Water in November 2019 and August 2020. We have obtained advice from expert consultants where appropriate.

Overview of Melbourne Water's price submission

This was Melbourne Water's first price submission under our new PREMO pricing framework, which incentivises water corporations to engage more extensively with customers and present ambitious pricing proposals delivering improved customer value. Melbourne Water proposed a self-rating of 'Advanced', suggesting a significant improvement in customer value, and a proposal that was more ambitious than those put forward by many other water corporations in recent price reviews.

The price submission proposed increases in operating expenditure in the waterways and drainage areas, and a 47 per cent increase in total capital expenditure compared with the current five-year

[1] Essential Services Commission 2016, Water pricing framework and approach: Implementing PREMO from 2018, October. Our PREMO incentive mechanism focuses on five elements: performance, risk, engagement, management and outcomes. These elements form the 'PREMO' acronym.

regulatory period. Melbourne Water cited much of the expenditure increase was population growth driven. The effect of this expenditure increase on prices was largely offset by falling finance costs and a significant increase in the amount of desalination plant payments Melbourne Water proposed to capitalise (which effectively shifts cost from today's customers to future customers).

Melbourne Water had the added challenge of completing its price submission during the coronavirus pandemic, which also brings increased uncertainty for planning and forecasting – in particular material changes to population growth forecasts. Melbourne Water outlined in its price submission that it had considered the impacts of the pandemic on its proposals and had addressed these through 'smoothing' its capital expenditure forecasts and its proposed waterways and drainage price rise across the five years.

We have completed our review of Melbourne Water's price submission

This draft decision sets out our views on Melbourne Water's price submission.[2] This paper should be read in conjunction with Melbourne Water's price submission.[3]

We invite interested parties to comment on our views in this draft decision before we make a final decision and issue a price determination in June 2021. Details on how to make a submission on our draft decision are outlined below.

Our draft decision

Our draft decision proposes to accept many elements of the price submission, including the tariff structure and price cap form of price control. However, we do not consider the price submission provides sufficient information and evidence to support several key elements, including the operating and capital expenditure forecasts, population growth and demand forecasts, and the length of regulatory period. Our draft decision is:

- To rate Melbourne Water's price submission as 'Standard' under our PREMO framework.
- To not accept Melbourne Water's proposed revenue requirement.
- To approve a three-year regulatory period.

Our reasoning for our decision on the various elements of Melbourne Water's proposal is set out in Chapters 1 through 13 of this draft decision.

[2] Clause 16 of the Water Industry Regulatory Order 2014 requires us to issue a draft decision.

[3] Melbourne Water's price submission is available on our website at www.esc.vic.gov.au.

What this means for customers

Melburnians will continue to receive high quality drinking water, safe disposal and treatment of sewage, and new investment in waterways and drainage. Melbourne Water will continue to reduce its environmental footprint and respond to climate change. Melbourne Water customers will benefit from $2.3 billion of capital investment (over the three years) with Melbourne Water's annual investment the highest since the millennium drought (compared to the current average annual investment of $503 million).

Our proposed cut to Melbourne Water's revenue will not impact its ability to deliver on its obligations, and translates to average bill reductions of up to $7 per year for a typical residential household. This is on top of the small reductions already proposed by Melbourne Water in its price submission.

We have sought further information from Melbourne Water to justify its proposed small increase in waterways and drainage charges (of about $1 per year).

Our draft decision rates Melbourne Water's price submission as 'Standard' under PREMO

Our draft decision proposes to rate Melbourne Water's price submission as 'Standard', compared to the 'Advanced' rating proposed by Melbourne Water (Table A). We consider Melbourne Water's submission did not adequately demonstrate how it significantly improved customer value, nor how it reflected greater ambition when compared with other water corporations. Melbourne Water's submission listed a number of statements in support of its 'Advanced' rating for each of the four PREMO elements. However, we consider these are more consistent with a 'Standard' rating, as set out in our discussion in Chapter 13. Throughout our assessment, we have provided examples of what we considered were 'Advanced' proposals in previous price reviews.

Our draft decision proposes a 'Standard' rating for all four elements of risk, engagement, management and outcomes, with a corresponding overall rating downgrade to 'Standard'. Accordingly, we have applied a reduced equity return rate of 4.2 per cent.[4]

> Our PREMO rating is an assessment of the water corporation's price submission. It is not an assessment of the water corporation itself.

[4] A lower rate of return may mean lower prices charged to end-use customers but not lower service standards. The level of final prices will depend on how Melbourne Water responds to our draft decision. Our final decision will outline the prices and tariff structures to apply from 1 July 2021.

Table A PREMO Rating

	Overall PREMO rating	Risk	Engagement	Management	Outcomes
Melbourne Water's rating	**Advanced**	Advanced	Advanced	Advanced	Advanced
Commission's rating	**Standard**	Standard	Standard	Standard	Standard

We propose not to approve Melbourne Water's proposed revenue requirement, reflecting our review of efficient costs

Our draft decision proposes adjustments to a number of Melbourne Water's inputs used to calculate its revenue requirement. Our assessment found, among other things:

- Some forecast operating expenditure increases for waterways and drainage were not sufficiently justified, relying on customer willingness-to-pay studies rather than robust business cases (see page 30)
- The growth allowance for forecast operating expenditure is overstated, given the impacts of the pandemic on population forecasts (page 27 to 28)
- Some costs for major capital projects were not sufficiently justified, including unexplained cost increases from previous business cases (page 40)
- The capital expenditure program does not adequately reflect the uncertainty arising from the pandemic – we propose to remove a notional amount from the capital expenditure forecast to reflect the likelihood some of the proposed growth-driven expenditure will not be required (page 42)
- The proposal for capitalising desalination payments is not consistent with our guidance and previous price decisions – Melbourne Water sought to 'catch-up' on amounts it did not capitalise in previous price decisions, which we had specifically disallowed (discussed from page 44)
- Our decision to reduce the PREMO rating reduces the return on equity Melbourne Water can earn during the period (pages 53 to 54).

The net effect of these adjustments is a $96 million reduction to Melbourne Water's proposed five-year revenue allowance, or a $41 million reduction (which is less than 1 per cent of the revenue proposed by Melbourne Water) across our proposed three-year regulatory period.

Addressing the impacts of the coronavirus pandemic

We recognised Melbourne Water would be finalising its price submission while the coronavirus pandemic was unfolding across 2020. Accordingly, we issued additional guidance to Melbourne Water on 18 August 2020, in accordance with the Water Industry Regulatory Order 2014 (WIRO).[5] Our additional guidance set out our expectations for Melbourne Water to address the impact of the pandemic in its price submission in several key areas.[6] We also extended the price submission due date by a month to allow extra time for Melbourne Water to address these matters and amend its submission. However, few of Melbourne Water's proposals in its final submission were amended to reflect the emerging effects of the coronavirus pandemic. We recognise these are uncertain times, however we consider Melbourne Water's submission did not adequately demonstrate how it is managing this increased uncertainty in the long-term interests of its customers. In particular, we would have expected amendments to its high demand growth forecasts and large growth-driven expenditure forecasts to ensure its customers did not bear the uncertainty risk through higher prices should the current lower growth trend continue.[7]

Our draft decision proposes to approve a three-year regulatory period from 1 July 2021

To better address this pandemic-related population growth uncertainty, we have proposed to reduce Melbourne Water's capital expenditure forecasts, and we propose a regulatory period of three years (see discussion from page 3). This shorter period will allow Melbourne Water to review and revise its proposals as a clearer understanding of the impacts of the coronavirus pandemic emerge in the coming years. Melbourne Water should prepare a new price submission for prices to apply from 1 July 2024, which may include a return to a five-year regulatory period and a PREMO self-rating higher than 'Standard'.

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[5] WIRO, cl 13(b).

[6] Essential Services Commission 2020, Additional guidance issued by the Essential Services Commission to Melbourne Water, 18 August, pp. 3-5.

[7] Melbourne Water's price submission strongly justified its large capital expenditure expansion on the basis of ongoing high population growth. We note Melbourne Water's revised figure is still well above the latest Victorian government projections in the State Budget and data released by the Australian Bureau of Statistics.

In addition, the Australian Bureau of Statistics recently released its population growth forecast for Victoria up until the September quarter 2020 and estimated population growth was 0.7 per cent. More information on the Australian Bureau of Statistics data can be found at https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/sep-2020#states-and-territories.

Also, the Australian Government's Centre for Population forecasts for the four years 2021–2024 that compound annual population growth for Victoria will be just over one per cent per annum – refer to https://population.gov.au/data-and-forecasts/data-and-forecasts-dashboard-statement-state.html.

This indicates Victoria is experiencing a significant slowdown in population growth. Melbourne Water should refer to the latest data on population growth in its response to our draft decision.

Melbourne Water must respond to our draft decision

In response to this draft decision, Melbourne Water must provide us with:

- Revised operating and capital expenditure forecasts reflecting our views on efficient costs [8]
- Revised demand forecasts that reflect government's most recent population growth projections and other relevant demand drivers
- A revised proposal for capitalisation of desalination plant payments consistent with our guidance and previous price decisions
- Individual tariffs that reflect our initial views on the revenue requirement
- Updated financial forecasts, including any applicable changes arising from the State Budget [9]
- Revised price adjustment mechanisms reflecting our views on this in Chapter 12
- An updated financial model.

Melbourne Water's response to our draft decision must address the issues we have raised and outline how its response is consistent with the WIRO and the requirements set out in our guidance papers. Melbourne Water's response will determine the price and bill impact of our draft decision on individual tariffs and customer groups.[10]

We invite feedback on our draft decision

We invite feedback from stakeholders on our draft decision before we make a final decision and price determination. Our final decision and price determination will be made in June 2021.

Stakeholders may comment on any aspect of our draft decision, including the information we have relied upon in our assessment (such as Melbourne Water's price submission). Feedback may also cover:

- additional matters or issues we should consider before making our final decision
- whether our draft decision on Melbourne Water's price submission has adequate regard to the matters in clause 11 of the WIRO and our guidance.

How to provide feedback:

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[8] This should include evidence supporting the prudency and efficiency of the additional waterways and drainage expenditure we have not accepted – for example, making a clear business case for the environmental benefits and alternative options considered, rather than relying solely on customer willingness-to-pay.

[9] We will update the long-term inflation forecast between our draft and final decisions.

[10] If we consider Melbourne Water's response to our draft decision does not have adequate regard for the matters specified in clause 11 of the WIRO or comply with our guidance, we may specify maximum prices, or the manner in which prices are to be calculated, determined or otherwise regulated.

Attend a virtual public forum

We will hold an online public forum on **22 April 2021**. Forums provide an opportunity for interested parties to discuss key features of our draft decisions. Find details about our public forum at www.esc.vic.gov.au/waterpricereview.

Provide written comments or submissions

Written comments or submissions in response to this draft decision are due by **4 May 2021**.

We require submissions by this date so we have time to fully consider submissions for our final decision. Comments or submissions received after this date may not be afforded the same weight as submissions received by the due date.

We would prefer to receive comments and submissions via:

- our dedicated consultation page on Engage Victoria (https://engage.vic.gov.au/melbourne-water-price-review-2021).

Alternatively, you may send comments and submissions by mail to:

2021 Water Price Review
Essential Services Commission
Level 8, 570 Bourke Street
Melbourne VIC 3000

We usually make all comments and submissions publicly available in the interests of transparency. If you wish part or all of your submission to be private, please discuss with commission staff.

If you cannot access documents related to our price review, please contact us to make alternative arrangements (phone (03) 9032 1300 or water@esc.vic.gov.au).

Next steps

Indicative dates are provided below. To keep up-to-date, visit our website at www.esc.vic.gov.au/waterpricereview.

22 April 2021 – virtual public forum
4 May 2021 – closing date for submissions on our draft decision
Mid-June 2021 – release of final decision and price determination
1 July 2021 – new tariffs apply

Our role and approach to water pricing

We are Victoria's independent economic regulator

Our role in the water industry is based on the Water Industry Regulatory Order 2014 (WIRO) which is made under the Water Industry Act 1994 (WI Act) and sits within the broader context of the Essential Services Commission Act 2001 (ESC Act). Our role under the WIRO includes regulating the prices and monitoring service standards of the 19 water corporations operating in Victoria.

We are reviewing the prices Melbourne Water proposes to charge customers from 1 July 2021

Our review of the prices proposed by Melbourne Water covers the prescribed services listed in the WIRO.[11] The prescribed services include:

- storage operator and bulk water services
- bulk sewerage services
- bulk recycled water services
- metropolitan waterways and drainage services.

We are undertaking this review under our PREMO water pricing approach, which includes incentives for Melbourne Water to deliver outcomes its customers value the most.

We assess prices against the WIRO and other legal requirements

Clause 11 of the WIRO specifies the mandatory factors we must have regard to when making a price determination, including matters set out in the WIRO, the WI Act and the ESC Act. In reaching this draft decision we have had regard to each of the matters required by clause 11 of the WIRO, including:

- the objectives and matters specified in clause 8 of the WIRO which include economic efficiency and viability matters, industry specific matters, customer matters, health, safety, environmental and social matters, and other matters which are specified in section 8 of the ESC Act and section 4C of the WI Act. We are also required to place emphasis on matters relating to efficiency set out in section 8A of the ESC Act
- the matters specified in our guidance [12]

[11] The prescribed services are listed at clause 7(b) of the WIRO.

[12] Essential Services Commission 2019, Melbourne Water's 2021 water price review: Guidance paper, 13 November; Essential Services Commission 2020, Additional guidance issued by the Essential Services Commission to Melbourne Water, 18 August.

- the principle that prices should be easily understood by customers and provide signals about the efficient costs of providing services, while avoiding price shocks where possible
- the principle that prices should take into account the interests of customers of the regulated entity, including low income and vulnerable customers.

Appendix A lists the specific objectives and the various matters we must have regard to when making a price determination and provides a guide to where we have done so in this draft decision.

In November 2019, we issued a guidance paper to Melbourne Water to inform its price submission. In addition, we issued guidance in August 2020 to ensure the effects of the coronavirus pandemic were reflected in Melbourne Water's 2021 price submission. The guidance papers set out how we will assess Melbourne Water's submission against the matters we must consider under clause 11 of the WIRO.

If we consider the price submission has adequate regard for the matters in clause 11 of the WIRO and complies with our guidance, we must approve Melbourne Water's proposed prices.[13]

If we consider the submission does not have adequate regard for the matters specified in clause 11 of the WIRO or comply with our guidance, we may specify maximum prices, or the manner in which prices are to be calculated, determined or otherwise regulated.[14]

[13] This is a requirement of the WIRO, clause 14(b).

[14] This is provided for under the WIRO, clause 14(b)(i).

Our assessment of Melbourne Water's price submission

We have made our draft decision on Melbourne Water's price submission after considering: Melbourne Water's price submission; its responses to our queries; our consultants' reports and written submissions from interested parties (a list of submissions is provided in Appendix B).

Any reports, submissions, or correspondence provided to us which are material to our consideration of Melbourne Water's price submission are available on our website (to the extent the content is not confidential).

This draft decision should be read together with Melbourne Water's price submission.

Our guidance to Melbourne Water included a number of matters it must address in its price submission. During our assessment, we and our consultants sought further information from Melbourne Water. We found Melbourne Water's price submission and the additional information it provided did not have adequate regard to the matters specified in clause 11 of the WIRO, or comply with our guidance in the areas of prudency and efficiency of its proposed expenditure, demand forecasts, customer engagement or the length of its regulatory period.

Our decision considers Melbourne Water's price submission reflects that of a 'Standard' rating.[15] We note that Melbourne Water is proposing significant increases in expenditure while proposing to keep overall prices increasing by a small amount each year. After taking into consideration the extent to which its proposed prices are kept lower by falling financing costs, Melbourne Water's proposed demand forecasts and its proposed capitalisation of desalination security payments, we could not find areas where Melbourne Water's proposal challenged itself or provided increased value to its customers equivalent to an 'Advanced' price submission.[16]

Where we have assessed Melbourne Water's PREMO elements of Risk, Engagement, Management and Outcomes as 'Standard', we have provided examples of what we consider 'Advanced' proposals throughout our draft decision. We have also taken into consideration that Melbourne Water's price submission was being finalised during the coronavirus pandemic. We consider that the full effects of the pandemic are not yet fully understood and may materially impact

[15] Our PREMO incentive framework required Melbourne Water to submit its 'best offer' in its price submission and self-rate the ambition of its submission. Melbourne Water cannot respond to our decision on its rating with additional information for us to review and revise our decision on its PREMO rating.

[16] Our draft decision is not to accept Melbourne Water's proposal on desalination capitalisation or its demand forecasts – see our discussion in Chapter 6.4 and Chapter 8 respectively.

Melbourne Water's demand forecasts and hence its level of growth expenditure. We consider the majority of Melbourne Water's reasons for its 'Advanced' self-rating were not affected by the pandemic.[17] But we do consider that key elements of the pricing proposal could be better addressed once the effects of the pandemic are understood more clearly. This would also mean less uncertainty and a better outcome for customers. To this end, our draft decision is for a three-year regulatory period.

Consequently, our draft decision is to not accept a number of proposals in Melbourne Water's price submission. We have used the best information available to us at this time to estimate Melbourne Water's revenue requirement. We require Melbourne Water to re-submit its proposed prices, along with appropriate supporting evidence consistent with our guidance and the WIRO.

We will provide Melbourne Water with updated values for cost of debt and inflation in April 2021. These changes will likely impact the revenue requirement proposed by Melbourne Water.

Melbourne Water must submit a response to our draft decision and provide an updated financial model by 4 May 2021 (via email to water@esc.vic.gov.au). The response will be published on our website.

We also invite other interested parties to make a submission in response to our draft decision up until that date.

We intend to make a final decision and price determination for Melbourne Water in June 2021.

[17] Our reasons are outlined in Chapter 13: PREMO rating.

1. Regulatory period

Melbourne Water proposes a five-year regulatory period starting 1 July 2021.

We consider it is in the interest of customers if Melbourne Water has a three-year regulatory period. We note that since March 2020, Melbourne Water was finalising its draft price submission during the coronavirus pandemic. We acknowledge that following our additional guidance published in August 2020, Melbourne Water reviewed parts of its submission to address any issues arising from the coronavirus pandemic that it could implement in a timely manner and incorporate into its final submission. We also understand that some substantive elements of Melbourne Water's pricing proposal were developed over a two-year period (for example its capital and operating expenditure programs). But we consider it would have been relatively straightforward to re-adjust its expenditure forecasts at a high level to reflect the increased uncertainty arising from the pandemic.

However, we found in many instances that Melbourne Water's price submission did not have adequate regard to the matters specified in clause 11 of the WIRO, or comply with our guidance. In addition, Melbourne Water gave itself an 'Advanced' PREMO rating for the regulatory period 2021-2026, yet our assessment found that Melbourne Water's proposal only meets the criteria for a 'Standard' PREMO rating. A shorter regulatory period provides Melbourne Water with sufficient time to prepare a proposal with better outcomes for its customers for the following period, and Melbourne Water does not have to continue with our decision for five years.[18] In its next price submission, Melbourne Water could again propose a five-year regulatory period, with the option to self-rate its price submission as 'Standard' or a higher PREMO rating.

The effects of the coronavirus pandemic may not be fully understood for at least another year and in our view, it may affect Melbourne Water's forecast demand, end-use customer affordability, proposed growth capital expenditure and operating expenses. We consider that a five-year regulatory period provides little flexibility for Melbourne Water to adjust its proposals for any significant effects arising out of the coronavirus pandemic.[19]

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[18] We consider a one-year regulatory period may not be enough time for the effects of the coronavirus pandemic to be fully understood or revealed. A two-year regulatory period would align Melbourne Water's price review with that of the other retailers. This is not ideal as Melbourne Water's costs have a material impact on retailers' final prices. Alignment of the reviews would be difficult to coordinate, will create uncertainty for retailers and their customers, and may not lead to a better outcome for customers.

[19] For example Melbourne Water advised us in response to our request for information on demand forecasts that should demand estimates fall to as low as one per cent and remain there for a length of time, closer to government's forecasts, it may not be able to fully absorb the shortfall in revenue that will arise from lower demand (see our discussion in Chapter 8).

The proposed five-year regulatory period also makes it difficult for Melbourne Water to undertake and implement any substantive tariff reforms, that it intends to commence during the regulatory period (discussed further in Section 9.3). Implementing tariff reforms within a regulatory period would require a re-opening of Melbourne Water's determination and potentially change approved price paths. We consider that our proposal for a three-year regulatory period provides Melbourne Water enough time to consult on its tariff reforms and implement these for the following regulatory period.

We consider a three-year regulatory period for Melbourne Water will:

- provide it sufficient time to prepare a proposal with better outcomes for customers in the next regulatory period
- enable Melbourne Water to submit a new price submission and PREMO self-rating after some of the uncertainties of the coronavirus pandemic are better understood
- consider tariff reforms during the period for implementation from 2023 onwards.

Our draft decision proposes a three-year regulatory period. Melbourne Water can respond to our draft decision with an alternative regulatory period, setting out its reasons on how its proposed regulatory period better provides:[20]

- certainty for customers about the outcomes to be delivered and prices to be charged
- sufficient time for Melbourne Water to focus on service delivery.

[20] Essential Services Commission 2019, op. cit., pp. 15–16.

2. Customer engagement

The purpose of customer engagement is for Melbourne Water to clearly understand the priorities of customers, including the products and services its customers expect. This is to enable Melbourne Water to deliver outcomes that matter most to customers, as efficiently as possible.

In assessing Melbourne Water's engagement, we reviewed its price submission, its engagement supplement and various supporting records we requested directly from Melbourne Water.

2.1. Our assessment of Melbourne Water's engagement

Melbourne Water gave itself an 'Advanced' PREMO rating for engagement and justified this on the reach of its engagement, the shift towards more collaboration with key stakeholders, the opportunities to provide feedback on meeting stakeholder expectations, and the level of influence customers had on proposals.[21]

We assessed Melbourne Water's customer engagement against the WIRO and the principles in our guidance papers, and we are satisfied Melbourne Water's overall engagement generally met these principles.[22] We then went on to assess the quality of its engagement against our requirements for an 'Advanced' PREMO rating.[23]

We accept that Melbourne Water's overall engagement program met the minimum requirements of a 'Standard' price submission: it commenced early; was inclusive of its broad customer base; and covered a range of topics relevant to its services and prices. We observed instances of engagement that reflected a high level of expertise in the planning and delivery of its programs, which is what we would expect of a well-resourced water corporation. For example, Melbourne Water successfully raised awareness and discussion amongst diverse customer groups. Melbourne Water also established deliberative processes to examine focused issues with key stakeholder groups, to refine performance measures, test some proposals, and to mitigate the effects of the coronavirus pandemic.

[21] Melbourne Water 2020, Melbourne Water Price Submission 2021: 1 July 2021 to 30 June 2026, 9 November, p. 35–36.

[22] Our 2019 guidance required Melbourne Water to engage with customers to inform its price submission and included five key principles to guide Melbourne Water in its customer engagement. In August 2020, we published additional guidance requiring Melbourne Water to consider the possible impacts of the coronavirus pandemic on its submission and customer preferences.

[23] Essential Services Commission 2019, op. cit., pp. 67–68.

However, we considered Melbourne Water's engagement program generally followed a more traditional approach. That is, its engagement practices provided limited opportunity for its more sophisticated stakeholders to influence the direction of the engagement at an early stage, or did not include opportunities to deliberate on complex issues at later stages for recommendation in its final price submission. We note that Melbourne Water undertook more extensive engagement on specific issues but not on its whole list of proposals during its final engagement stages, within the context of its final price submission, to allow influence and 'close-off' stakeholders' issues. In contrast, in our 2018 water price review, we found many metropolitan and regional water corporations included participation in the later stages of their engagement processes so proposals could be seen and finalised within the context of the overall submission.

For an 'Advanced' PREMO rating for engagement we would expect to see:

- Stronger endorsement of Melbourne Water's claim for effective collaboration. In its price submission Melbourne Water claimed its ability to achieve effective collaboration justified its 'Advanced' rating.[24] Our review of Melbourne Water's supporting documentation found that not all stakeholders supported this claim, with written material between Melbourne Water and stakeholders showing a lot of questioning of the level of influence at key points in the engagement process. In one instance, the Water and Sewerage Customer Council, which includes the three metropolitan water retailers, reported back to Melbourne Water that its engagement program lacked 'genuine influence'.[25] These views, from an experienced engagement cohort which achieved an 'Advanced' engagement rating or higher in their corporations' 2018 water price review, challenge Melbourne Water's claim of effective collaboration.[26]
- Evidence that all proposals that have a significant effect on services and prices are tested with stakeholders before they are submitted to us. For example, we found that stakeholders were not given sufficient information to provide feedback on Melbourne Water's proposed approach to capitalisation of desalination plant payments. By contrast, as part of its 'Advanced' rating in its 2018 water price review, City West Water's alternative tariff structure was fully tested before being included in its price submission.
- Assurance that engagement methods were fit for purpose and outcomes of these methods were fully tested. In its price submission, Melbourne Water relied heavily on the findings of a Simultaneous Multi-Attribute Level Trade-Off analysis (SIMALTO) study to justify increased expenditure on its waterways and drainage services. We reviewed the appropriateness of

[24] Melbourne Water 2020, op. cit., p. 35.

[25] Correspondence received from Melbourne Water on 18 November 2020.

[26] Melbourne Water 2020, op. cit., p. 35.

Melbourne Water's methodology and use of SIMALTO, and found that the supporting information in the process did not enable customers to engage meaningfully on their preferences. Melbourne Water also relied on the SIMALTO study findings in describing its customers' views but did not re-open the test results for interrogation before formulating its final recommendations. See Box 2.1 for further detail on Melbourne Water's willingness to pay study.

Melbourne Water's PREMO assessment is discussed further in Chapter 13.

2.1 Waterways and drainage services (SIMALTO study)

To establish customers' willingness to pay for additional investment in waterways and drainage services, Melbourne Water adopted a market research tool, SIMALTO. This involved an online survey of the community, including 1,204 residents and 150 business customers located in Melbourne Water's service area. Melbourne Water described extensive qualitative research to inform the survey design, including eight focus groups, a series of cognitive interviews, and a stakeholder workshop. Surveys with 77 respondents occurred after the initial survey.

The findings are interpreted by Melbourne Water as suggesting the majority of residential customers in the metropolitan area were willing to pay up to $8 more across the regulatory period for improvements in stormwater quality management and wetland condition flood protection, amongst other things.

Melbourne Water has used this study to justify its proposal for increasing the waterways and drainage charge to recover an additional $43.5 million investment in waterways and drainage services.[27]

We received several submissions in support of Melbourne Water's engagement on its waterways and drainage proposal, particularly its SIMALTO study.[28] The Werribee Riverkeeper Association, Yarra Riverkeeper Association, Friends of Steele Creek and the author of an anonymous submission, all identified as being involved in Melbourne Water's consultation and were supportive of Melbourne Water's engagement on its waterways and drainage proposal. All three submissions identified the SIMALTO study as a valuable input into their deliberations.

[27] Melbourne Water 2020, op. cit., p. 6–14.

[28] Friends of Steele Creek 2021, submission to the Essential Services Commission on the Melbourne Water price review, 8 February; Yarra River Keeper Association 2021, submission to the Essential Services Commission on the Melbourne Water price review, 5 February; Anonymous 2 2021, submission to the Essential Services Commission on the Melbourne Water price review, 5 February.

We reviewed Melbourne Water's SIMALTO study and found that SIMALTO is not a widely recognised method of estimating willingness to pay. It has limited presence in the relevant academic literature and therefore it is not clear whether it is scientifically validated for this purpose.

Melbourne Water has provided us insufficient evidence in its price submission and in response to our further questions on the way the SIMALTO technique was used to estimate customer preferences. In particular, the simulation methodology that was used to analyse the data, which was described in its initial report as 'a bespoke mathematical model derived from approaches similar to neural network designs' is not at all transparent to us and makes the method by which the outcomes were derived a 'black box'. In addition, the spreadsheet model Melbourne Water provided us was locked, preventing any formal examination of the method or tools applied. Only outputs were provided.[29] Because of this lack of transparency, we do not understand how the willingness to pay analysis was performed or whether the analysis undertaken is fit for purpose.

It is unclear that the SIMALTO study derived unbiased measures such as willingness to pay and the extent to which the values obtained for these measures in hypothetical settings corresponds to their values in real-world settings (hypothetical bias). Generally, when hypothetical bias has been found, it results in higher willingness to pay outcomes than those found to exist in real markets and we are not satisfied that the measures undertaken by Melbourne Water to try to eliminate hypothetical basis were, or could have been, sufficient given the nature of the survey (see Appendix C for more details).

The SIMALTO type questions posed to respondents may be subject to errors or bias. That is, respondents answering SIMALTO type questions cannot be assumed to be perfect decision makers making no errors, particularly given the large number of choices they are expected to make or the large number of choices that are required to be made within a budget. Any mistake made by the respondent in answering the original questions, or uncertainty in their responses, will impact on their calculated willingness to pay. Without correction, there is a high probability that the outputs from this SIMALTO model are biased and we are not satisfied that Melbourne Water took sufficient steps to mitigate this type of error.

[29] We understand that parts of the SIMALTO modelling may be intellectual property. However, we suggest Melbourne Water consider providing us with a more transparent model to allow us to fully assess the implementation of its willingness to pay study.

We note that where SIMALTO has been used to inform past price submissions, it was used to identify service level trade-offs.[30] We accepted SIMALTO when used for this purpose.

Design of willingness to pay studies

Our PREMO framework is designed to promote engagement by water corporations that is effective and influential. We consider that the onus is on water corporations to ensure engagement methods are sufficiently robust to support the purpose of the engagement as well as the level of influence promised.

Water corporations seeking to rely heavily on a willingness to pay study must ensure the findings are sound. This means the methodology must be well supported and the analysis fully transparent. The study must be designed in a way to comprehensively address the known limitations and biases associated with studies of this nature. This is not the case with Melbourne Water's SIMALTO study.

Use of willingness to pay studies

We consider that an effective willingness to pay study has a role in supporting robust and well justified expenditure proposals. Willingness to pay studies should inform, rather than replace, robust expenditure forecasts.[31] This reflects our role in ensuring customers pay only for proposals that are prudent as well as efficient.

Our preference is to see the findings of willingness to pay studies sit alongside engagement approaches that test and verify customers' preferences and their willingness to pay for new initiatives.

Our draft decision places a low weighting on this willingness to pay study. Appendix C outlines in more detail the shortcomings in the use of SIMALTO as a stated preference technique for the purposes of establishing customers' willingness to pay.

2.2. Addressing the interests of low income and vulnerable customers

When assessing Melbourne Water's price submission, the WIRO requires us to take into account the interests of low income and vulnerable customers. Melbourne Water evidenced that it had

[30] The SIMALTO technique has been used in the past by water corporations as a trade-off modelling exercise. It should be noted that the objective was not to estimate customers' willingness to pay for additional investment. Rather Melbourne Water (2016 price submission) and City West Water (2018 price submission) have used this technique to test the value placed by customers on different levels of service. The result enabled the corporations to investigate customer preferences as well as the types of activities customers wanted their provider to invest in to achieve those outcomes. This study was used together with additional business cases to justify the relevant proposed investment.

[31] Essential Services Commission 2016, Water pricing framework and approach: Implementing PREMO from 2018, October, p. 17.

engaged with various customer groups who were more likely to experience affordability issues to understand the impact of its proposed prices. Melbourne Water also evidenced that affordability concerns were considered in its specific proposals. Areas where we did not agree that affordability was fully consistent with an 'Advanced' rating are outlined above. On balance, we consider that Melbourne Water has addressed these concerns sufficiently to meet this requirement of the WIRO.

3. Outcomes

Melbourne Water proposes to deliver the following six outcomes over the 2021-2026 regulatory period starting 1 July 2021:[32]

- access to safe and reliable water and sewerage services
- Melbourne's environment, rivers, creeks, and bays are protected and Melbourne Water's greenhouse gas emissions are minimised
- Melbourne remains liveable as it deals with the impacts of climate change and population growth
- Melburnians are empowered to support the design and delivery of service outcomes
- easy, respectful, responsive, and transparent customer service
- bills are kept as low as possible.

Melbourne Water also proposes a number of measures and targets that it will use to report on the performance of each outcome. These are listed on pages 14 to 15 in its price submission. It has committed to reporting annually to customers on how it has delivered on its proposed outcomes, both directly to a representative customer forum and on its website.

Melbourne Water demonstrated customer agreement for the majority of its proposed outcomes and measures. Most of its targets (10 out of a total of 18) are set to maintain current service levels, with the remaining targets either belonging to new measures or set to improve on past performance. Of the targets set to improve on past performance, the majority of these are for outcomes that customers ranked lower in priority.

We note one of Melbourne Water's proposed targets under its outcome 'bills are kept as low as possible' is to identify more than $0.5 million per year in operating expenditure efficiencies.[33] However, since Melbourne Water's controllable operating expenditure is around $400 million per year, $0.5 million accounts for a relatively small amount (about 0.1 per cent). Therefore, we do not consider Melbourne Water has adequately challenged itself in this area to provide significant improvements in customer value that reflect an 'Advanced' PREMO rating.

We also note Melbourne Water's submission did not outline its approach to addressing potential shortfalls in reaching its targets.

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[32] Essential Services Commission 2019, op. cit., p. 19. We required Melbourne Water to propose a set of outcomes that its customers will receive during the next regulatory period.

[33] Melbourne Water 2020, op. cit., p. 15.

While we consider Melbourne Water's outcomes proposal satisfies a 'Standard' PREMO rating, we do not consider it satisfies an 'Advanced' rating. For an 'Advanced' rating we expect corporations to:

- demonstrate they have challenged themselves to deliver significant improvement in customer value in areas customers value most
- show accountability to customers and outline a plan to address lower customer value where they have fallen short on their commitments. Barwon Water and Yarra Valley Water did this by committing to compensate customers for unmet outcomes.

Melbourne Water's price submission stated it intends to introduce a set of guaranteed service levels (discussed further in Section 3.1 below).[34] Guaranteed service levels provide greater accountability to customers, but we do not consider this demonstrates greater accountability beyond what the water industry is already doing. Rather Melbourne Water will catch up to industry standards by adopting guaranteed service levels.

Under the PREMO framework, it is not our role to 'approve' a water corporation's proposed set of outcome measures and targets – this is between the water corporation and its customers. However, we will work with Melbourne Water to ensure its final set of measures and targets meet the requirements set out in our guidance, namely they are clearly defined, unambiguous, have clear annual performance targets, and reflect successful delivery of the stated customer outcome. When we are satisfied they meet our guidance requirements, we will ask Melbourne Water to publish its final outcome commitments, and we will also publish these on our website.

Melbourne Water's actual performance against these published measures and targets will allow it to clearly demonstrate through its annual reporting whether its customers received the value they paid for. It will also inform the rating for the Performance element of PREMO at the next price review.

3.1. Guaranteed service levels

Guaranteed service levels define a water corporation's commitment to deliver a specified level of service. For each guaranteed service level, a water corporation commits to a payment or a rebate on bills to those who have received a level of service below the guaranteed level.

Melbourne Water proposes to introduce guaranteed service levels for the first time in response to feedback from its water and sewerage customer council for greater accountability and transparency. Its submission includes a guaranteed service level prototype that it has developed in

[34] Melbourne Water 2020, op. cit., p. 11.

consultation with retail water corporations across June and July 2020. Melbourne Water intends to commit to a final set of guaranteed service levels to commence on 1 July 2021.

Table 3.1 Guaranteed service levels currently under consideration by Melbourne Water

Guaranteed service level	Customer impact	Indicative payment
Planned event – breach of minimum (for example, change of water source)	Household or business impact – unexpected loss of amenity (for example, change in taste, odour of water supply)	Match retail water company payment – in order of $50 to household or business customer
	Retail water company impact – additional management of customer calls/complaints	$5,000 per incident per affected retail water company
Unplanned water or sewerage service disruption/event	Household or business impact – unexpected loss of service or amenity	Match retail water company payment – in order of $50 to $200 to household or business customer
Pressure deviations above tolerances	Damage to retail water company infrastructure	Actual cost >$10,000 per incident to retailer
Sewage spill (caused by system failure)	Household or business premises or local environment	Match retailer payment to end customer in order of $1,000-$3,000

In its price submission, Melbourne Water advised it will provide further details during the review period. We expect any decision we make to approve a guaranteed service level program will be subject to customer feedback on a final set of guaranteed service levels.

We consider Melbourne Water's proposed guaranteed service levels reflect that of a 'Standard' price submission. For an 'Advanced' PREMO rating for outcomes, we would expect to see a guaranteed service level list that is the product of recommendations, or which are independently set by customers. (See 'Advanced' ratings by East Gippsland Water, GWMWater, Barwon Water).

In our view, introducing a guaranteed service level program alone does not merit an 'Advanced' PREMO rating. Rather it brings Melbourne Water up to meet current industry standards.

4. Revenue requirement

The revenue requirement is the forecast amount Melbourne Water needs to deliver on customer outcomes, government policy, and obligations monitored by technical regulators including the Environment Protection Authority Victoria and the Department of Health. Along with forecast demand, it is an input to calculating prices.

We do not consider Melbourne Water's proposed revenue requirement is consistent with the promotion of efficient use of prescribed services by customers or the promotion and provision of incentives for efficiency in the regulated entities, as well as efficiency in, and the financial viability of, the regulated water industry.[35] These are considerations that the commission must place particular emphasis on when assessing Melbourne Water's price submission.[36]

Our guidance clearly indicated that we required Melbourne Water to provide us with forecasts in the financial model based on robust underlying assumptions.[37] Our guidance also outlined the consequences if we assess that its price submission and financial model are not consistent and did not meet the requirements of our guidance (for example, set a lower revenue requirement).

Melbourne Water proposed a forecast revenue requirement of $8,183.2 million over a five-year period starting 1 July 2021. However, our draft decision proposes not to accept the revenue requirement in Melbourne Water's submission for reasons outlined in this decision, including:

- our proposed adjustments to forecast operating expenditure
- our proposed adjustments to forecast capital expenditure
- our proposed reduction to the return on equity
- our proposed reduction to the regulatory period.

Draft decision on revenue requirement

For the purposes of making our draft decision, we have established a three-year notional revenue requirement of $4,785.4 million, reflecting our assessment of each element that comprises the revenue requirement, as shown in Table 4.1 below.

[35] WIRO, Clause 8(b)

[36] WIRO, Clause 8(b)

[37] Essential Services Commission 2019, op. cit., p. 50.

Table 4.1 Draft decision on Melbourne Water's revenue requirement

$ million 2020-21

	2021-22	2022-23	2023-24	3-year Total	2024-25	2025-26	5-year Total
Operating expenditure	938.8	928.5	917.7	**2,785.0**	906.3	896.8	**4,588.0**
Return on assets	420.4	439.1	455.8	**1,315.3**	467.4	475.9	**2,258.6**
Regulatory depreciation	189.4	203.6	222.6	**615.6**	243.3	265.6	**1,124.4**
Tax liability	23.4	23.2	23.0	**69.6**	21.5	24.5	**115.6**
Draft decision - revenue requirement	**1,572.0**	**1,594.3**	**1,619.0**	**4,785.4**	**1,638.5**	**1,662.8**	**8,086.7**

Note: numbers have been rounded

The main adjustments we have proposed in our draft decision on the revenue requirement relate to adjusting Melbourne Water's operating and capital expenditure, and return on equity. These adjustments result in a decrease of $40.9 million (or 0.8 per cent) to the overall three-year revenue requirement. Table 4.2 summarises our proposed changes to the revenue requirement.

Table 4.2 Adjustments to Melbourne Water's revenue requirement

$ million 2020-21

	2021-22	2022-23	2023-24	3-year Total	2024-25	2025-26	5-year Total
Proposed - revenue requirement	**1,579.5**	**1,608.2**	**1,638.7**	**4,826.3**	**1,664.3**	**1,692.6**	**8,183.2**
- Operating expenditure	27.6	27.2	27.2	**82.0**	26.1	25.6	**133.7**
- Return on assets	-30.0	-35.6	-41.1	**-106.7**	-45.8	-49.2	**-201.7**
- Regulatory depreciation	0.001	0.001	0.001	**0.002**	0.001	0.001	**0.003**
- Tax allowance	-5.0	-5.4	-5.8	**-16.2**	-6.1	-6.3	**-28.5**
Total adjustments	**-7.5**	**-13.8**	**-19.6**	**-40.9**	**-25.8**	**-29.9**	**-96.5**
Draft decision - revenue requirement	**1,572.0**	**1,594.3**	**1,619.0**	**4,785.4**	**1,638.5**	**1,662.8**	**8,086.7**

Note: numbers have been rounded

In its response to this draft decision, Melbourne Water must respond to our proposed adjustments, in order to calculate a final revenue requirement.[38]

[38] For comparison, our total adjustment to Melbourne Water's revenue requirement in 2013 was around $381 million and in 2016 $102 million.

Our final decision will be based on the most recent and best available information. Melbourne Water will need to update its revenue requirement and prices to reflect our April 2021 updates to estimates for the cost of debt. Our forecast inflation for Melbourne Water's price model was 1.7 per cent. We recalculated forecast inflation based on our current methodology and estimated an inflation rate closer to two per cent per year. Given this, we will review our current forecast inflation of 1.7 per cent for the final decision, after the release of March quarter CPI. We may update the forecast inflation in the final decision price model from 1.7 per cent, based on the latest available data.

There may be changes in laws or government policy before we make a price determination. If any such changes occur between the draft decision and the price determination, and impact on the revenue requirement, Melbourne Water should update its price submission and also provide us with an updated financial model. Any updates will be made publicly available on our website.

4.1. Tax allowance

Melbourne Water is subject to a tax equivalence regime that reflects the corporate tax regimes faced by private sector firms. Our guidance stated the tax allowance should reflect the corporate tax rate, less imputation credits that a hypothetical private investor would receive.[39] The regulatory rate of return estimate we adopted in this draft decision is expressed in post-tax terms and does not specifically include taxation. It is therefore necessary to include an estimate of the tax liability in water corporations' revenue requirements.

The tax allowance is an input to the revenue requirement. Melbourne Water has calculated its forecast tax allowance based on a corporate tax rate of 30 per cent for all the years. Melbourne Water's tax allowance is set out in table 79 on page 7-2 of its price submission supplement, and is also included in its financial model.[40]

Draft decision on tax allowance

Our draft decision on the tax allowance differs from Melbourne Water's proposal due to our proposed adjustments to expenditure and return on assets. After considering Melbourne Water's response and any other submissions on our draft decision, our final decision will confirm the final tax allowance to be reflected in the revenue requirement.

Our draft decision on tax allowance is shown in Table 4.1.

[39] Essential Services Commission 2019, op. cit., p. 37–39.

[40] For the period from 2021–2026, Melbourne Water proposed a forecast tax allowance of $144.1 million.

4.2. Regulatory depreciation

In our guidance, we stated Melbourne Water's approach to estimating regulatory depreciation should reflect reasonable assumptions about asset life and use. Our usual approach is to allow water corporations to realise depreciation when an asset comes into service.

Regulatory depreciation is an input to calculating the regulatory asset base and the revenue requirement. Regulatory depreciation allows a water corporation to recover the cost of investing in assets.

In the past, most water corporations have adopted a straight-line depreciation profile. For a particular asset, this means the amount for regulatory depreciation will be the same each year, over the assumed asset life. We noted in our guidance that we prefer straight line depreciation.[41]

We typically allow a water corporation some flexibility to either defer or bring forward the recovery of regulatory depreciation to better reflect asset utilisation, or to smooth prices over the longer term. However, as stated in our guidance, we expect that any proposal to defer or bring forward depreciation in the price submission must be justified.[42]

In its price submission, Melbourne Water proposes to use a straight-line depreciation for existing assets. However, it used the depreciation override option in the financial model to lower the depreciation for the new assets (forecast capital expenditure). The depreciation for new assets as per straight-line depreciation in the financial model was $259.7 million, but Melbourne Water's proposed depreciation for new assets is $216.8 million – a reduction of $42.9 million over the period 2021-22 to 2025-26. Melbourne Water's justification for the use of the override option is to smooth the capital expenditure profile (Water and Sewerage), and thus smooth prices over the 2021-2026 regulatory period.

We consider that as a general principle, the capital costs of an asset should be recovered over a period that approximates the useful life of the asset. This approach ensures that customers contribute to the costs of assets as they receive the benefits of those investments. In most cases, this means that capital costs are recovered through customer prices over multiple regulatory periods. This can also be described as inter-period smoothing. This approach is well established in regulated utility industries and forms a key part of the building block methodology to calculate maximum prices.

[41] Essential Services Commission 2019, op. cit., p. 31–32.

[42] ibid.

In response to our draft decision, Melbourne Water must take into account our proposed changes to the capital expenditure forecast and reduced regulatory period to determine the revised depreciation for new assets.

Draft decision on regulatory depreciation

Our draft decision on regulatory depreciation differs from Melbourne Water's proposal due to our proposed adjustments to capital expenditure. After considering Melbourne Water's response and any other submissions on our draft decision, our final decision will confirm the regulatory depreciation to be reflected in the forecast regulatory asset base.

Our draft decision on regulatory depreciation is shown in Table 4.1.

5. Operating expenditure

Melbourne Water recovers operating expenditure through tariffs charged directly to end-use customers (waterways and drainage) and to the retail water corporations (bulk water and sewerage services). Operating expenditure relates to recurrent costs that can usually be allocated to a single year and generally comprises the majority of Melbourne Water's revenue requirement, so it is a key element for our review. Details of Melbourne Water's forecast operating expenditure is on pages 6-1 to 6-23 of the price submission.

While our review looks at the business areas separately, the benchmark operating expenditure that we propose to adopt for Melbourne Water does not represent the amount that Melbourne Water is required to spend or allocate to particular operational, maintenance and administrative activities. Rather, it represents assumptions about the overall level of operating expenditure (to be recovered through prices) that we consider sufficient to operate the business efficiently and to maintain services over the regulatory period.

The WIRO and our guidance to Melbourne Water set out the requirements and criteria for our review and draft decision. We reviewed Melbourne Water's proposed operating expenditure allowance for the 2021-2026 regulatory period against these criteria. Our decision is formed following an established and thorough process including requests for further information from Melbourne Water, an expert assessment, consultation with other agencies and stakeholder submissions.

Our draft decision is based on an assessment of:

- controllable costs – directly or indirectly influenced by Melbourne Water's decisions
- non-controllable costs – not directly or indirectly influenced by Melbourne Water's decisions.

Controllable operating expenditure is estimated once baseline efficient costs are established, based on the last year of actual costs (in this case 2019–20). We then consider forecast expenditure for the regulatory period relative to the baseline, with a particular focus on forecast growth and the efficiency improvement rate. We engaged Deloitte Access Economics to provide expert advice to inform our assessment of controllable operating expenditure. Deloitte's review of Melbourne Water's expenditure forecast is available on our website.[43]

[43] Deloitte Access Economics 2021, Expenditure review – Melbourne Water 2021 Price Submission: Final Report for the Essential Services Commission – Public, 23 February. It can be found at www.esc.vic.gov.au/waterpricereview.

We confirm the proposed forecasts for non-controllable expenditure (including Victorian desalination plant security payments, government charges and licence fees) with the relevant regulatory body where appropriate.

Table 5.1 sets out our draft decision on Melbourne Water's forecast operating expenditure, for the purpose of establishing the revenue requirement (see Table 4.1). Details of our assessment and reasons for our proposed adjustments to Melbourne Water's proposal follow, with a summary of our adjustments shown at Table 5.2.

We consider our proposed operating expenditure in this draft decision reflects the expenditure a prudent service provider would incur when acting efficiently to achieve the lowest cost in delivering the outcomes specified in Melbourne Water's price submission.

Table 5.1 Draft decision – operating expenditure

$ million 2020–21

	2021–22	2022–23	2023–24	3-year Total	2024–25	2025-26	5-year Total
Controllable costs	380.2	377.7	378.6	**1,136.4**	383.7	387.4	**1,907.6**
Non-controllable costs	558.6	550.8	539.1	**1,648.5**	522.6	509.4	**2,680.4**
- Desalination payments	527.6	519.8	507.6	**1,555.0**	491.6	478.4	**2,525.0**
- Environment contribution	1.0	0.9	0.9	**2.8**	0.9	0.9	**4.6**
- Licence fees - ESC	1.1	1.1	1.7	**4.0**	1.1	1.1	**6.3**
- Licence fees - DH	0.2	0.2	0.2	**0.7**	0.2	0.2	**1.2**
- Licence fees - EPA	1.3	1.3	1.4	**4.0**	1.4	1.4	**6.8**
- Other	27.3	27.3	27.3	**81.9**	27.3	27.3	**136.5**
Draft decision – operating expenditure	**938.8**	**928.5**	**917.7**	**2,785.0**	**906.3**	**896.8**	**4,588.0**

Note: numbers have been rounded

The Environmental Contribution collects funds from water corporations under the WI Act; Licence fees are paid to cover costs incurred by Department of Health (DH), Environment Protection Authority Victoria (EPA), and the Essential Services Commission (ESC) in their regulatory activities related to the water corporation.

Draft decision on operating expenditure

Our draft decision is to adopt a total operating expenditure of $2,785.0 million for a three-year regulatory period 2021–24.

This differs from Melbourne Water's proposal because it:

- decreases controllable operating expenditure by $23.6 million over the 2021–24 regulatory period (or $41.8 million over the 2021-2026 regulatory period), which reflects adjustments to ensure expenditure is prudent and efficient based on Deloitte's expenditure review
- increases non-controllable operating expenditure by $105.5 million over the 2021–24 regulatory period (or $175.5 million over the 2021-2026 regulatory period), which largely reflects our adjustments to Melbourne Water's capitalisation of desalination plant payments.

5.1. Assessment of controllable operating expenditure

Melbourne Water proposed a total forecast controllable operating expenditure of $1,949.4 million over a five-year regulatory period.[44] For the reasons set out below, we propose to reduce this by $41.8 million to establish a benchmark controllable operating expenditure of $1,907.6 million.

We consider applying our proposed adjustment of $41.8 million to Melbourne Water's total proposed controllable operating expenditure reflects the requirements of the WIRO, and the criteria for prudent and efficient expenditure outlined in our guidance.[45]

Melbourne Water's forecast controllable operating expenditure for the 2021-2026 regulatory period is estimated through a series of steps:

1. Establish a baseline controllable operating expenditure – the baseline comprises the efficient recurring costs from the last full year of data (2019–20) after non-controllable expenditure, one off items are removed or normally occurring items are added in.
2. Apply a growth rate for operating expenditure for the regulatory period – assumed by Melbourne Water to be 1.95 per cent per year.
3. Apply an annual cost efficiency improvement rate – two per cent per year.
4. Make adjustments for additional costs or cost saving expected in future years.

[44] We note that Deloitte's expenditure review includes an additional $7.5 million based on revised energy cost forecasts. We have not included this revision as Melbourne Water has not submitted this revision to the commission. We seek any updates to energy costs, along with detailed explanation and justification, in response to our draft decision.

[45] Essential Services Commission 2019, op. cit., pp. 20–22.

Melbourne Water also removes its electricity costs from the baseline controllable expenditure and separately estimates the efficient benchmark for this expenditure based on an approach approved in our 2016 final decision. These costs are separately estimated and factor into our consideration of the total controllable operating expenditure for Melbourne Water.

While Melbourne Water has separately estimated controllable operating expenditure for its water and sewerage, and waterways and drainage business areas, the following discussion covers total expenditure due to the significant overlap in our decisions in both areas. We do highlight where adjustments are specific to a particular business area. Each section below details how we have assessed and adjusted each step in estimating controllable operating expenditure to make our draft decision.

5.1.1. Baseline controllable operating expenditure

In developing its baseline year efficient controllable expenditure, Melbourne Water proposes several adjustments to reflect costs usually incurred but avoided in 2019–20. In line with our 2016 final decision, the price submission also removes actual energy costs in order to separately estimate the efficient cost for energy. Melbourne Water's adjustments to actual 2019–20 controllable operating expenditure comprise:

- a $43.8 million decrease for water and sewerage
- a $1.2 million increase for waterways and drainage.[46]

Deloitte's review found that a number of adjustments to the baseline year should not have been included, arguing small changes would ordinarily be absorbed within the Melbourne Water business.[47] We agree with Deloitte and have removed the following items in making our draft decision, which results in a $2.4 million reduction in baseline controllable operating expenditure.[48] This includes a:

- $1.9 million reduction to water and sewerage baseline year expenditure
- $0.5 million reduction to waterways and drainage baseline year expenditure.

Table 5.2 shows the impact of these adjustments over the 2021-2026 regulatory period, which totals $12.1 million.

[46] These adjustments differ from the estimates in the price submission as they reflect updates made by Melbourne Water to its financial model and submitted to the commission on 17 November 2021.

[47] Deloitte Access Economics 2021, op. cit., pp. 21-22.

[48] Deloitte Access Economics 2021, op. cit., p. 23. Melbourne Water made revisions to its baseline year expenditure following its price submission.

5.1.2. Operating expenditure growth rate

Melbourne Water has chosen to increase baseline controllable operating expenditure at 1.95 per cent per year, directly in line with the submission's forecast of population growth during the 2021-2026 regulatory period. These increases are offset by an efficiency factor of two per cent per year discussed in Section 5.1.3 below.

The population growth forecast assumptions in Melbourne Water's submission are based on analysis conducted prior to the coronavirus pandemic. We issued additional guidance to Melbourne Water on 18 August 2020 that specifically requested the price submission demonstrate how the coronavirus pandemic impacted both baseline operating expenditure and forecast operating expenditure.[49] Melbourne Water sought advice from Macroplan on the impact of the pandemic on population growth. Macroplan forecast that population growth will be marginally lower than the forecast in the price submission.[50] Based on this analysis Melbourne Water made no update to the price submission on the basis it would avoid customers bearing the risk of higher prices. Pages 45 and 46 of the submission highlight that a forecast small reduction in operating expenditure for chemicals and energy would be outweighed by upward pressure on prices from lower demand (as many of Melbourne Water's tariffs are fixed).

As part of our review, we sought advice from Deloitte on the reasonableness of Melbourne Water's population forecast, and therefore its controllable operating expenditure forecast, given the major impacts on international and domestic migration.[51] [52]

We have concerns with Melbourne Water's response to the impact of the coronavirus pandemic, which were highlighted by Deloitte in its review.[53] [54] We agree with Deloitte's finding that the updated population growth rate, and consequent impacts on operating expenditure, put forward by Melbourne Water did not adequately represent the effect of the coronavirus pandemic. While we

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[49] Essential Services Commission 2020, op. cit., p. 4. Melbourne Water's submission date was also extended to 9 November 2020.

[50] See page 40 of Melbourne Water's price submission.

[51] The full review from Deloitte is found in appendix A of its final report.

[52] In our August 2020 guidance, we outlined that Melbourne Water's price submission must demonstrate how it addresses and proposes to manage the increased uncertainty associated with growth forecasting and capital project planning in its capital expenditure forecast.

[53] The Macroplan forecast population growth rate overstates expected growth during the 2021–2026 regulatory period. Recognising that information about the pandemic continued to change throughout 2020, it was clear by the time Macroplan delivered its analysis in September 2020 that both international and domestic migration to Melbourne was likely to remain very low for some time. Deloitte points out that Macroplan's assumed migration rates are significantly higher than those adopted by the Victorian and Commonwealth Treasuries.

[54] Deloitte found that the forecast drivers underlying the overall expenditure growth rate associated with labour, IT, chemicals and the cost allocation methodology, were generally reasonable. Our draft decision agrees with its review and does not make any specific adjustments related to each of these components.

recognise that Melbourne Water faced uncertainty when developing its forecasts, we do not believe it is reasonable to approve a proposal that has not been adjusted for the latest information available – this would not be in the long-term interests of consumers. Our proposed three-year regulatory period partly addresses this by seeking updated forecasts for the period ending 2023-24 and then allowing Melbourne Water to make a new submission to begin in 2024 once there is greater certainty.

Deloitte reviewed Melbourne Water's estimated impact of lower population growth on its operating expenditure and found it unclear how chemical and energy costs varied in response to falling demand.[55] It noted that Melbourne Water did not make any adjustment to waterways and drainage operating expenditure in response to lower population growth. We are concerned that Melbourne Water is taking an inconsistent approach to considering how population growth impacts operating expenditure. In its proposal, operating expenditure growth is directly linked to population growth for increases, but not linked when population may be lower than forecast. It is unclear how this approach reflects Melbourne Water's claim that maintaining pre-pandemic population growth means less risk is placed on customers. In taking this approach we consider Melbourne Water has not justified the operating expenditure growth rate proposed in its price submission.[56]

We also note that Melbourne Water's submission does not reflect Macroplan's forecast for population to be 132,000 lower by 2023-24 when compared with Melbourne Water's pre-pandemic forecasts.[57] Melbourne Water has not assessed whether there is likely to be a greater (negative) impact on expenditure by the time the regulatory period begins. This approach places the risk on customers as Melbourne Water does not plan to reduce prices for customers in response to possible expenditure reductions in 2020-21 following a significant drop in population growth. This is discussed further for capital expenditure in Chapter 6.

For the purpose of making a draft decision, we agree with Deloitte's recommendation, and have adjusted the expenditure growth rate to one per cent per year because we consider this better reflects forecast population growth in the 2021-2026 regulatory period. The impact of this on the revenue requirement is estimated in conjunction with adjustments to the efficiency improvement rate in Table 5.2 and in Section 5.1.3. In response to our draft decision, we expect Melbourne Water to provide updated population and expenditure growth forecasts to address our concerns. In particular, we expect greater justification for the proposed relationship between population growth and expenditure growth across both business areas.

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[55] Deloitte Access Economics 2021, op. cit., p. 25.

[56] Essential Services Commission 2019, op. cit., pp. 22-23.

[57] Deloitte Access Economics 2021, op. cit., p. 5.

5.1.3. Efficiency improvement rate

The efficiency improvement rate is considered in conjunction with the expenditure growth rate to determine the net impact on controllable operating expenditure. Melbourne Water's choice of two per cent per year is above the industry average, but at the lower end of the range proposed by the three metropolitan retailers in their 2018 price submissions.[58]

Melbourne Water's submission proposes an annual net efficiency improvement (growth allowance minus efficiency rate) of 0.05 per cent per year. However, this is before electricity cost adjustments that result in forecast total controllable operating expenditure increasing over the 2021-2026 regulatory period. We discuss the interaction between energy costs and the efficiency improvement rate in Section 5.1.4.

We support the efficiency rate proposed by Melbourne Water, but note its response to Deloitte that the efficiency rate is calculated once the expenditure growth rate is established and that it would be difficult, if not unachievable, to deliver a net efficiency improvement of one per cent per year if the adjustment to expenditure growth rate was applied in isolation.[59] While we accept that this may partly be the case, we also believe that Melbourne Water should be able to maintain some efficiency gains despite a reduction in the growth rate. If the gross efficiency improvement rate is fully contingent on the approved growth rate, we would question how genuine the efficiencies are that Melbourne Water proposes. One example of efficiencies which should be unaffected by the growth rate are reductions to electricity consumption from new generation assets (discussed in Section 5.1.4).

As such, for the purposes of making a draft decision we agree with the approach proposed by Deloitte to reduce the efficiency improvement rate to 1.2 per cent per year. This results in an annual net efficiency improvement of 0.2 per cent per year, which is in line with the industry average from 2018 and consistent with Melbourne Water's proposal in 2016.[60]

We expect Melbourne Water to review and update its efficiency improvement rate in response to our draft decision.

The combined impact of our draft decision on the expenditure growth rate and efficiency improvement rate is detailed in Table 5.2 and reduces controllable operating expenditure by $7.7 million during the five-year regulatory period.

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[58] Deloitte Access Economics 2021, op. cit., pp. 25–26. Deloitte noted a direct comparison has some limitations given the differing economic conditions and business operations.

[59] Deloitte Access Economics 2021, op. cit., p. 26.

[60] Melbourne Water outperformed its efficiency rate in the first three years of the current regulatory period.

5.1.4. Adjustments for other costs or savings during the regulatory period

Melbourne Water proposes a number of adjustments that increase controllable operating expenditure during the 2021-2026 regulatory period in the following areas:

- New and existing obligations related to water quality management, carbon emissions, traditional owners and advice under the Marine and Coastal Act 2018.
- Uplift in waterways and drainage expenditure based on a willingness to pay study.
- Separate estimation of efficient energy costs.

New and existing obligation costs

Our draft decision is to accept the proposed increase in costs for new and existing obligations. We agree with Deloitte's assessment that these obligations represent new obligations that must be met by Melbourne Water, or the efficient cost of meeting these obligations will increase.

Uplift in waterways and drainage operating expenditure

As discussed in Chapter 2, we placed a low weighting on Melbourne Water's willingness to pay study to support an additional $43.5 million in waterways and drainage operating expenditure over the 2021-2026 regulatory period. Deloitte requested further business cases and independent reviews from Melbourne Water to assess if the additional expenditure was prudent and efficient. Deloitte considers $21.5 million of the proposed expenditure was clearly justified.[61] We agree with Deloitte's finding and our draft decision removes $22.0 million, or an average of $4.4 million per year, from the additional $43.5 million controllable operating expenditure proposed by Melbourne Water. Melbourne Water can respond to our draft decision and provide additional business cases in support of the expenditure ($22.0 million) we did not accept.

Energy cost adjustments

The key adjustment to controllable operating expenditure is the inclusion of efficient electricity costs. We support this general approach as it ensures that customers do not pay the entire price premium, above current market rates, under Melbourne Water's current electricity contract.[62] The proposal is detailed on pages 6-5 and 6-6 of the price submission and broadly aligns with the approach we adopted in our 2016 final decision.

However, we have some concerns with Melbourne Water's application of the approach, which has made it difficult to work out what customers are being asked to pay and whether the expenditure is efficient. Despite these concerns our draft decision does not adjust Melbourne Water's proposal

[61] Deloitte Access Economics 2021, op. cit., p.41.

[62] For more detail see our 2016 draft decision and final decision for Melbourne Water.

following Deloitte's finding that the expenditure adjustment does not appear to impose costs on customers above the efficient level.

We do, however, request further justification and explanation from Melbourne Water in response to our draft decision in the following areas:

- Forecast electricity consumption – while the overall forecasts appear reasonable, we note that it includes consumption that will be served by new Melbourne Water-owned generation assets. Based on information provided to Deloitte, it also appears that the financial model provided by Melbourne Water has not removed consumption related to pumping additional water from a desalination plant water order as claimed in the submission.[63] We expect Melbourne Water to provide further detail of any adjustments required to align the financial model and price submission in its response to our draft decision.
- Forecast consumption offsets from new renewable generation and its interaction with the overall efficiency improvement rate – Melbourne Water has not specifically identified the efficiencies from new renewable generation in its price submission, as required in our guidance.[64] Melbourne Water has instead included these savings within its proposed overall efficiency allowance.[65] This approach has made it difficult to determine the expenditure Melbourne Water is seeking to recover from customers, and is also inconsistent with the approach taken to the waterways and drainage additional expenditure where Melbourne Water separately estimated and included efficiencies outside of the overall efficiency rate.
- Network tariff forecast – Deloitte identified that Melbourne Water has not proposed to pass on the likely fall in electricity network tariffs during the 2021-2026 regulatory period.[66] We do not consider this is an approach of an 'Advanced' price submission as it indicates Melbourne Water is likely to meet a portion of its proposed efficiency gains from likely changes in input costs rather than from astute management decisions.

5.2. Assessment of non-controllable operating expenditure

For non-controllable operating expenditure, we have adjusted Melbourne Water's forecasts where required based on information available to us, and the latest information received from the relevant

[63] Deloitte Access Economics 2021, op. cit., p. 42.

[64] Essential Services Commission 2019, op. cit., p. 23

[65] However, we note this may overestimate the true savings as Melbourne Water appears to propose recovering costs from customers for this consumption at the benchmark cost rate.

[66] Deloitte Access Economics 2021, op. cit., p. 44.

government bodies on their licence fees, environmental contribution and desalination security payments. The values we have adopted for our draft decision are set out in Table 5.2 below.

For the environmental contribution, we have used the values provided by the Department of Environment, Land, Water and Planning and for this draft decision assumed it will remain flat in nominal terms (decline in real terms) across the regulatory period. However, the environmental contribution amounts to be recovered in 2024-25 and 2025-26 have not yet been set by the department. We have used the values set for 2020-21 to 2023-24 as a forecast for these years and will adjust for any changes if required during the period.

For Environment Protection Authority Victoria (EPA) licence fees, we have used forecast data provided by the authority for our draft decision.[67] Melbourne Water's annual EPA licence fee is set to increase slightly in real terms each year from 2020-21 to 2024-25. We have carried over the forecast 2024-25 EPA licence fee for the last year of the regulatory period.

We have assumed the licence fees for the Department of Health (DH)[68] and the Essential Services Commission (ESC) remain flat in real terms across the period, but with a 50 per cent increase in our commission fee in 2023-24 to align with our major regulatory price review cycle.[69]

Melbourne Water is obliged to pay for the security service provided by the Victorian desalination plant's current operator over a lease period of 27 years (up to 2039) after which Melbourne Water will assume ownership of the plant.[70] We review Melbourne Water's proposals on how these security payments are reflected in its revenue requirement and prices over each regulatory period.

The security payments, forecast by the Department of Environment, Land, Water and Planning, reflect the cost of financing and maintaining the desalination plant and related infrastructure. The forecast payments make up over 50 per cent of Melbourne Water's annual operating expenditure over the 2021-2026 regulatory period.

We verify Melbourne Water's forecast desalination plant security payments against the desalination plant cost schedule provided to Melbourne Water by the Department of Environment, Land, Water and Planning. Prior to the release of our draft decision, the department provided an

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[67] The Minister for the Environment sets a licence fee payable by the water corporations under section 24 of the Environment Protection Act 1970, for costs incurred by EPA Victoria in administering discharge licences and works approvals.

[68] The Minister for Health sets a licence fee payable by the water corporations under section 51 of the Safe Drinking Water Act 2003, for costs incurred by the Department of Health in administering the Safe Drinking Water Regulations.

[69] The Minister for Finance, in consultation with the Minister for Water, sets a licence fee payable by water corporations under section 4H(2) of the Water Industry Act 1994, for costs that we incur in administering the economic regulatory framework.

[70] For more detail of Melbourne Water's arrangement with the Victorian Government, refer to Essential Services Commission 2013, Price review 2013: Greater Metropolitan Water Businesses – Final decision, June, pp. 21-22.

updated desalination plant cost schedule to Melbourne Water. We have updated our analysis of Melbourne Water's required desalination payments to reflect this new information.

Our draft decision for the proportion of these costs recovered from operating expenditure is summarised in Table 5.1. Detailed discussion of our draft decision for the proportion of these costs captured in capital expenditure, which offsets the amounts collected through operating expenditure, is found in Section 6.4.

Prior to making our final decision, we will adjust Melbourne Water's forecast non-controllable operating expenditure for the latest inflation data.

Table 5.2 Adjustments to operating expenditure

$ million 2020–21

	2021–22	2022–23	2023–24	3-year Total	2024–25	2025-26	5-year Total
Proposed – operating expenditure	**911.2**	**901.3**	**890.5**	**2,703.0**	**880.2**	**871.2**	**4,454.4**
Water and sewerage	-2.2	-2.6	-2.9	**-7.7**	-3.2	-3.5	**-14.3**
Waterways and drainage	-5.1	-5.3	-5.5	**-15.9**	-5.7	-5.9	**-27.6**
Total controllable costs adjustments	**-7.3**	**-7.9**	**-8.4**	**-23.6**	**-8.9**	**-9.4**	**-41.8**
Desalination payments	34.5	34.6	34.6	**103.7**	34.6	34.5	**172.8**
Licence fees (ESC, DH, and EPA)	0.383	0.389	0.970	**1.742**	0.400	0.400	**2.542**
Environmental contribution	0.023	0.026	0.031	**0.080**	0.014	0.019	**0.113**
Total non-controllable costs adjustments	**34.9**	**35.0**	**35.6**	**105.5**	**35.0**	**35.0**	**175.5**
Draft decision – operating expenditure	**938.8**	**928.5**	**917.7**	**2,785.0**	**906.3**	**896.8**	**4,588.0**

Note: numbers have been rounded

6. Capital expenditure

This chapter sets out our draft decision on Melbourne Water's capital expenditure for the 2021-2026 regulatory period. Section 6 to 6.3.2 deals with Melbourne Water's proposed capital expenditure program over the period, while Section 6.4 discusses Melbourne Water's proposed approach to its capitalisation of Victorian Desalination Plant security payments.

Expenditure to maintain existing assets and establish new assets that serve water retailers and end-use customers over the longer term is referred to as capital expenditure. The core drivers of the forecast capital expenditure are infrastructure renewal to maintain or rehabilitate services, to comply with policy and technical standards, and to meet historical and forecast population growth. In its price submission, Melbourne Water indicated that of these three drivers, the largest increase of capital expenditure for the 2021-2026 regulatory period was population growth.

Capital expenditure is a key component of Melbourne Water's revenue requirement. Prices reflect capital expenditure through the rate of return on the regulatory asset base (RAB) — that is, the weighted average cost of capital (WACC) multiplied by the RAB — and a return of the RAB (through regulatory depreciation).

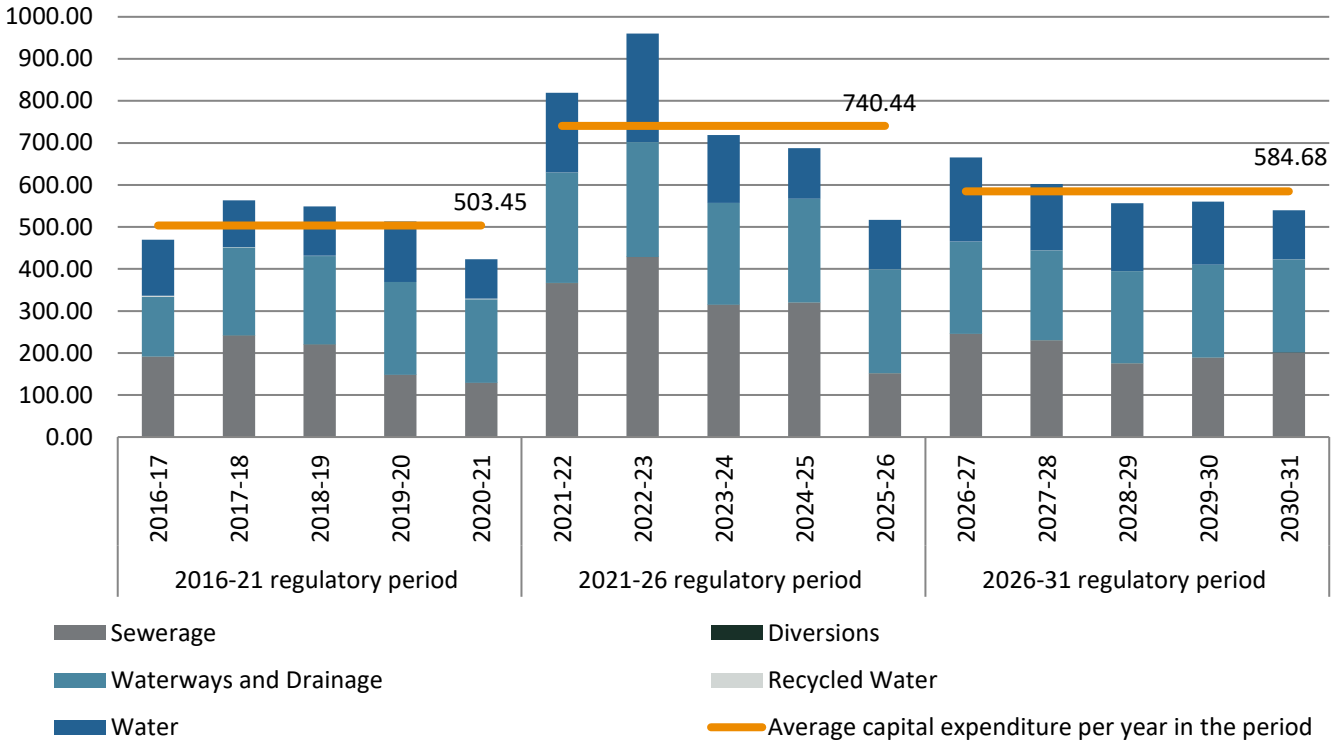
Melbourne Water proposes total capital expenditure (excluding Melbourne Water's proposed approach to capitalising desalination plant security payments) of $3,702.2 million over the five-year regulatory period – its forecast capital expenditure and supporting information is provided in section S6 of its price submission (pages 6-24 to 6-59). Figure 6.1 summarises capital expenditure for the current regulatory period and for the 2021-2026 regulatory period. Melbourne Water proposes a significant increase in capital expenditure in 2021-22 compared to the previous year. The proposed capital expenditure for the 2021-2026 regulatory period is 47 per cent higher than the total capital expenditure (less desalination plant security payments) approved for the current regulatory period.

We engaged Deloitte Access Economics to provide expert advice to inform our draft decision for capital expenditure. Deloitte's report on its assessment of Melbourne Water's expenditure forecast is available on our website.[71]

[71] Deloitte Access Economics 2021, Expenditure review – Melbourne Water 2021 Price Submission: Final Report for the Essential Services Commission – Public, 23 February. It can be found at www.esc.vic.gov.au/waterpricereview.

Figure 6.1 Proposed gross capital expenditure by service category

$ million 2020-21



6.1. Approach to assessing capital expenditure

We assessed Melbourne Water's forecast capital expenditure against the requirements of the WIRO and the criteria in our guidance. In particular, our initial guidance paper notes that in determining the revenue requirement only capital expenditure that would be incurred by a prudent service provider acting efficiently to achieve the lowest cost of delivering on service outcomes over the regulatory period should be included.[72] That is, capital expenditure that achieves the lowest costs of delivering on service outcomes, taking into account a long-term planning horizon.[73]

Further, our additional guidance noted that Melbourne Water should address the ongoing coronavirus pandemic impact on its proposed capital expenditure forecasts, and how any subsequent risks and uncertainties have been addressed.[74]

[72] Essential Services Commission 2019, op. cit., p. 20–21.

[73] For further detail on the assessment approach, see our guidance papers and Deloitte's final report on its expenditure review (released with this draft decision on our website at www.esc.vic.gov.au/waterpricereview).

[74] Essential Services Commission 2020, op. cit., p. 2.

6.2. Draft decision on capital expenditure

The Commission formed its draft decision on capital expenditure forecasts after considering:

- Melbourne Water's pricing submission
- additional information provided by Melbourne Water to support its forecasts
- our expert consultant Deloitte's final report on its expenditure review
- customer and stakeholder submissions.

We propose to approve a capital expenditure benchmark (excluding Melbourne Water's proposed approach to capitalising desalination plant security payments) of $3,405.4 million for Melbourne Water for the five-year 2021-2026 period. Our draft decision proposes a reduction of $296.8 million from Melbourne Water's proposed five-year forecast. (For our proposed three-year regulatory period, we propose to approve $2,271.1 million). This reduction relates to the following components we have adjusted:

- major projects
- the remaining capital program.

Our draft decision on Melbourne Water's approach to capitalising its Victorian Desalination Plant security payments is discussed in Section 6.4. of this chapter.

The benchmark that the commission adopts for Melbourne Water does not represent the amount that Melbourne Water is required to spend or allocate to particular projects. Where we have made an adjustment to exclude a project's capital expenditure from Melbourne Water's revenue requirement, we are not requiring the business to remove that project. Rather, it represents assumptions about the overall level of expenditure (to be recovered through prices) that we consider sufficient to operate the business and to maintain or improve services over the regulatory period. Melbourne Water determines how to best manage the allocation of its revenue and priority of its expenditure within a regulatory period.

Table 6.1 summarises our draft decision.

Table 6.1 Draft decision – capital expenditure

$ million 2020-21

	2021–22	2022–23	2023–24	3-year Total	2024–25	2025-26	5-year Total
Proposed – gross capital expenditure	**819.4**	**960.0**	**718.5**	**2,497.9**	687.4	516.9	3,702.2
- Top 15 major projects	-13.1	-21.9	-30.8	**-65.8**	-6.9	25.9	**-46.8**
- Remainder of program	-58.6	-54.0	-48.5	**-161.1**	-45.8	-43.1	**-250.0**
Total gross capital expenditure adjustments	**-71.7**	**-75.8**	**-79.3**	**-226.8**	-52.7	-17.3	-296.8
Draft decision – gross capital expenditure	**747.7**	**884.2**	**639.2**	**2,271.1**	634.7	499.7	3,405.4

Note: numbers have been rounded

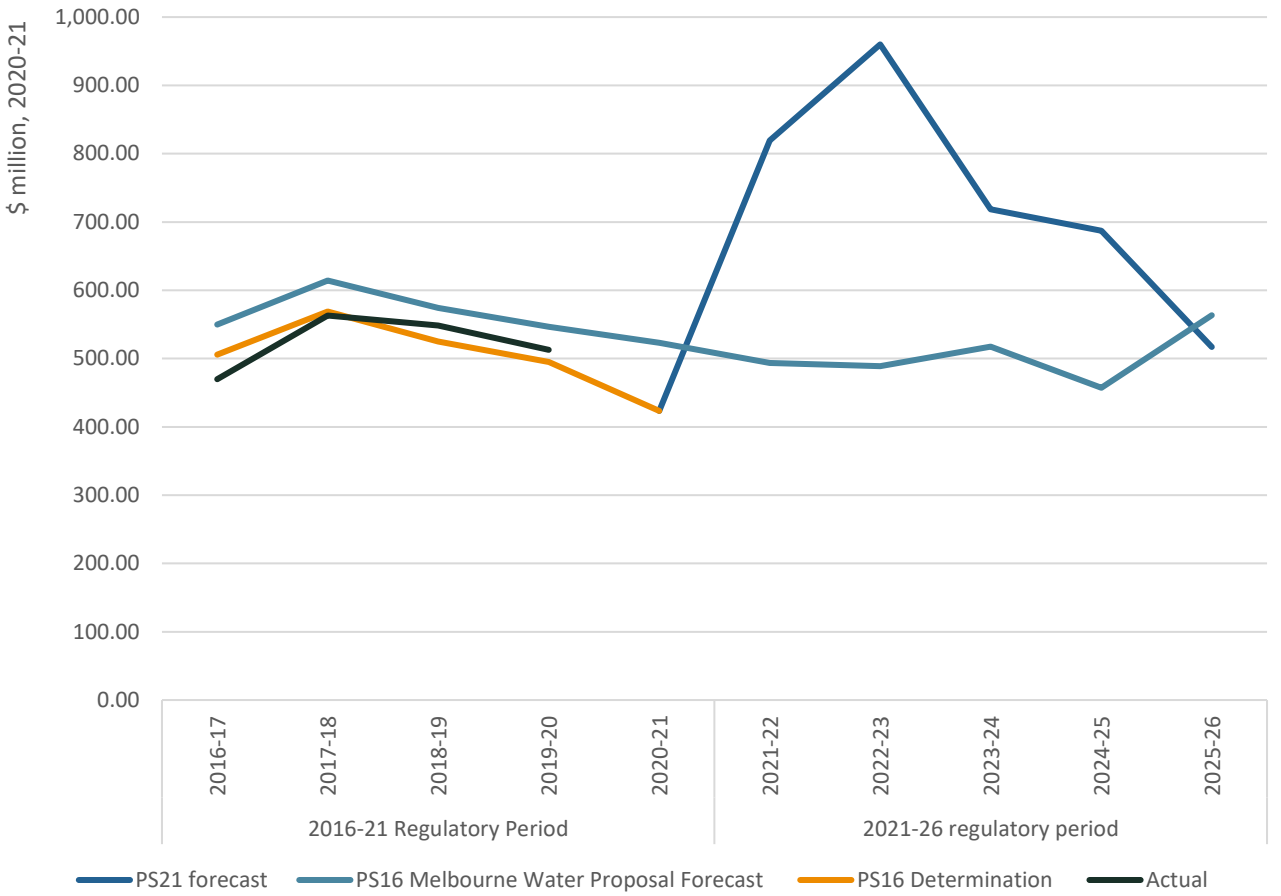
6.3. Assessment of capital expenditure proposals

As noted above, Melbourne Water proposed a total of $3,702.2 million in capital expenditure over the 2021-2026 regulatory period. This is $1,184.2 million higher than the capital expenditure benchmark approved for the current 2016–2021 regulatory period ($2,518 million), a 47 percent increase. The forecast expenditure remains high into the following 2026–2031 regulatory period, as clearly shown in Figure 6.1.

In its 2016 price submission, Melbourne Water's forecast for the 2021-2026 period (adjusted to $2020-21) was $2,520.7 million, with a relatively flat profile across the period, as shown in Figure 6.2 below. The new forecast profile is a marked divergence from the forward outlook at Melbourne Water's last price review, and represents a step change in base capital expenditure going forward.

Figure 6.2 Melbourne Water forecast gross capital expenditure

2016 forecast capital expenditure and 2021 forecast capital expenditure comparison



In our guidance paper, we advised Melbourne Water that forecast capital expenditure should only include projects that are prudent and efficient, and should demonstrate robust management of the risk associated with uncertain capital forecasting.[75] Further, we required Melbourne Water to demonstrate how it has identified cost risks, and balanced them between itself and customers to reduce the risk borne by customers, while stating that actual prudent and efficient capital expenditure will be rolled into its asset base (at no net loss) at the end of the regulatory period.

Our additional guidance paper also requested Melbourne Water to explain how any key assumptions underpinning its capital expenditure forecasts address any risks or uncertainties arising from the coronavirus pandemic, and explain how it has managed increased uncertainty around growth forecasting.[76]

[75] Essential Services Commission 2019, op. cit., pp. 14 and 24.

[76] Essential Services Commission 2020, op. cit., p. 2.

Given the significant increase in forecast capital expenditure proposed by Melbourne Water over the 2021–2026 regulatory period, along with the increased uncertainty caused by the ongoing coronavirus pandemic, we considered that Melbourne Water's proposed capital expenditure program warranted a rigorous review of its justifications for the significant uplift to its capital program.

6.3.1. Review of forecast major capital project expenditure

Initially, we expected Deloitte would focus on a few select samples of Melbourne Water's forecast key projects in the three major service categories (water, sewerage, and waterways and drainage). However, given the large increase in the size of the capital program, along with the number of projects proposed by Melbourne Water, we considered it more appropriate for Deloitte to review a larger sample of projects drawn from the three major service categories (five from each service category). This would allow us to gain a robust understanding of the prudency and efficiency of Melbourne Water's capital program, along with the approach Melbourne Water has taken to managing, and balancing, the risks associated with its forecast capital expenditure.

Deloitte's review also sought to understand Melbourne Water's capability to deliver on the significant increase in project workload included in its capital program.

Deloitte conducted its review against the requirements in our guidance and the WIRO and has recommended adjustments to the timing or expenditure for some major projects based on issues identified around either the prudency, efficiency, or both, for these projects.[77] Of the 15 major projects reviewed by Deloitte, it recommends cost reductions to four and timing changes to another three. A summary of Deloitte's recommended reductions follows:

- **Winneke Treatment Plant – UV Disinfection:** The Winneke Treatment Plant is a key component of Melbourne Water's supply system. The proposed project is to complement current bacteria filtration processes at the plant and further reduce risks to public health. Deloitte was comfortable with the prudency of the project considering issues that had previously been identified with the project during the 2016 price review had been sufficiently resolved. Deloitte raised concerns around significant, unexplained cost increases since the project was last proposed and recommended adjustments of $8.5 million (reducing the project total to $34.6 million) to align the project with previous cost estimates.
- **WTP 55E Activated Sludge Plant Upgrade:** Melbourne Water has proposed this project to upgrade sewerage treatment capacity at the Western Treatment Plant (WTP) to meet historical and future growth. Melbourne Water previously proposed the project in its 2016 price submission. Deloitte regarded the project to be prudent but considered that some expenditure

[77] Deloitte Access Economics 2021, op. cit., p.103.

may be inefficient, as it represents a significant increase in cost compared to a similar project recently completed by Melbourne Water that delivers the same, or similar, outcomes. Deloitte has recommended reducing the allowance for this project by $12 million, to bring the project cost more in line with Melbourne Water's previously completed project.

- **Maribyrnong Main Sewer Augmentation**: Melbourne Water and City West Water have identified there have been some non-compliant sewer spills from the Maribyrnong Main Sewer. Melbourne Water is proposing augmentation works to improve the capacity of the sewer and the compliance with environmental requirements. It has proposed capital expenditure of $56.9 million for this project, however a previous business case had identified the cost as $45.6 million, which accounts for the cost of a 5.7 megalitre storage tank being constructed by City West Water. Based on its analysis, to align the cost of the project with the earlier business case, Deloitte has recommended a reduction of $13.4 million, resulting in expenditure of $43.5 million over the regulatory period for this project.
- **WTP Gas Plant Renewal**: The Western Treatment Plant produces biogas, which is combusted in two onsite gas plants to produce electricity. Melbourne Water is proposing the construction of a new gas plant at the WTP, as the current gas plants approach the end of their useful life. This project is currently in an early stage of development and Deloitte considers the current level of detail is inadequate to demonstrate the initial prudency and efficiency of Melbourne Water's proposal. Deloitte has recommended delaying the project by one year to allow the development of further options. This would be a $12.9 million reduction, resulting in expenditure of $22.6 million over the regulatory period for this project.

We agree with Deloitte's approach to reviewing the 15 major projects proposed by Melbourne Water and accept its reasoning for each of its recommended adjustments to the above projects, given elements of these projects do not meet the requirements set out in our guidance paper.[78]

These issues identified by Deloitte in the group of sample projects include:

- the inclusion of a project in the early stages of development, that does not include detailed information to demonstrate the prudency and efficiency of the project.
- unexplained cost increases and potentially inefficient expenditure when compared with previous business cases for the same project.
- uncertainty about which water corporation will bear the cost of elements of a proposed project.

[78] In our guidance paper we stated that the forecast capital expenditure to be included for the purposes of determining the required revenue is capital expenditure that would be incurred by a prudent service provider acting efficiently to achieve the lowest cost of delivering service outcomes, taking into account a long-term planning horizon. We also required Melbourne Water to demonstrate how it has managed risk associated with uncertain capital forecasting, while applying a balanced approach to managing these risks between the business and its customers.

For the above reasons, we have adopted Deloitte's recommendations for our draft decision. The resulting reduction of $46.8 million applicable to four of the 15 projects reflects a 4.4 per cent reduction to Melbourne Water's proposed capital expenditure across the fifteen major projects.[79]

6.3.2. Adjustments to the remaining capital expenditure program

Outside of the sample 15 projects reviewed by Deloitte, Melbourne Water has forecast $2,646.7 million in capital expenditure over the regulatory period (excluding Melbourne Water's proposed approach to desalination security payment capitalisation).

As set out in Chapter 8 and in Deloitte's review, Melbourne Water's demand forecast is likely to be overstated, with population growth more likely to be around half of Melbourne Water's forecast over the next five years. Melbourne Water has attributed approximately 25 per cent ($900 million) of its capital expenditure to growth, signalling some of this expenditure tied to forecast growth may not be required if demand forecasts fall within the range of more recent, publicly available estimates.[80]

Deloitte also notes that material increases in the delivery of capital projects, such as that proposed by Melbourne Water, are usually difficult to achieve, though there are no particular concerns around Melbourne Water's capital delivery model. However, Deloitte considers the significant number of projects together with the increase in the value of proposed projects occurring in the first years of the regulatory period makes it likely Melbourne Water's revenue requirement includes expenditure for projects that are unlikely to be delivered to schedule during the period. Customers bear risk when capital project expenditure is added to the regulatory asset base but is not actually incurred. This risk is realised in the prices paid by customers. We do not consider this approach to be consistent with that of an 'Advanced' price submission and describe in more detail below the practices of 'Advanced' price submissions in managing customer risk.

A number of water corporations that achieved an 'Advanced' rating in the 2018 water price review did not propose to fully recover capital expenditure for projects where significant uncertainty in the timing or cost had been identified. For example, for projects where it had identified significant uncertainty around the scope, costs, or timing of capital projects, Yarra Valley Water proposed either to recover the lower bound cost estimate, or no costs at all, with actual efficient costs to be trued-up at the next price review.[81] Similarly North East Water excluded certain projects from its proposed capital expenditure program where it was deemed appropriate, and committed to only

[79] Deloitte Access Economics 2021, op. cit., p. 103.

[80] Deloitte Access Economics 2021, op. cit., p. 110.

[81] For more information, see pages 91–93 of Yarra Valley Water's 2018 price submission.

seeking to recover a return in the next regulatory period if a project was in fact required during the period.[82]

We also agree with Deloitte's assessment that Melbourne Water's demand forecasts are likely to overstate population growth and a reduction in capital expenditure is justified. While we recognise Melbourne Water's argument that rapid population growth in particular parts of Melbourne over recent years has driven a significant amount of the uplift in its proposed capital program, we would also expect that the impact of the coronavirus pandemic on population growth both before and throughout the 2021–2026 regulatory period would reduce the need or delay the timing for some of the proposed capital expenditure.

Based on the above and Deloitte's review of demand forecasts, we consider that Melbourne Water's approach to forecasting growth does not sufficiently consider the impacts of the pandemic on population growth, as requested in our further guidance paper. That is to say, if Melbourne Water's capital program was to proceed as set out in its price submission, and actual growth does not meet Melbourne Water's estimates, customers would be required to pay for projects that are either inefficient, or not required at the time. We do not consider this approach adequately addresses the risk of capital projects not occurring during the period, or effectively balances this risk between Melbourne Water and its customers.

Melbourne Water has also justified the uplift in capital expenditure at the beginning of the 2021–2026 regulatory period as an example of its 'just-in-time' project delivery model. This approach is likely to mean capital projects are initiated when they are needed (that is, when an existing asset is reaching the end of its useful life, or growing demand necessitates a new project to increase capacity). We note that the level of annual capital expenditure Melbourne Water has forecast over the next two regulatory periods remains at levels significantly higher than the current and previous regulatory periods (as evident in Figure 6.1 above). It is unclear why capital expenditure is expected to remain at elevated levels beyond 2026.

When considering publicly available population forecasts and the continued uncertainty caused by the coronavirus pandemic, we would anticipate that average capital expenditure would return to historic levels, following a spike in forecast capital expenditure for projects brought forward to meet rapid growth. This view is particularly strengthened by the fact that Melbourne Water's 2016 price submission indicated no major increase in average annual capital expenditure from 2021-22, with a flat forecast throughout the 2021–2026 regulatory period.

Overall, we do not consider that Melbourne Water's capital expenditure proposal sufficiently addresses uncertainties and risks impacting its forecast capital expenditure, particularly in

[82] For more information, see pages 28-31 of North East Water's 2018 price submission.

response to the uncertainty caused by the ongoing coronavirus pandemic, and the subsequent impact on forecast demand.

In balancing all this, Deloitte has recommended a notional $250 million reduction across the remainder of the five-year capital program (an average reduction of $50 million per year).[83] This is in addition to the specific project adjustments discussed in Section 6.3.1 above.

We recognise an average reduction of $50 million dollars per year is seemingly an arbitrary figure. However, we are confident that due to Melbourne Water's high demand forecasts, and its cautious approach to forecasting capital expenditure over the 2021–2026 regulatory period, the level of capital expenditure set out in Melbourne Water's submission is likely to be over-stated. We do not suppose to know, nor do we assume Melbourne Water should know, which particular projects will be affected by the pandemic, and to what extent. Rather, we consider a wholesale reduction to Melbourne Water's forecast expenditure is an appropriate approach to reflect the increased uncertainty due to the pandemic, and our draft decision therefore adopts Deloitte's recommendation. This will help protect customers in the short term by transferring some of the project delivery risk back to Melbourne Water, which is better positioned to manage this particular risk.

We noted earlier Melbourne Water will have the opportunity to true-up its asset base at the end of the regulatory period to reflect actual prudent and efficient expenditure incurred during the period. Our proposal for a three-year regulatory period will allow Melbourne Water to manage capital projects that have been brought forward to meet historic growth, while providing time to reassess the capital expenditure required beyond this shorter period to more appropriately balance risk between the water corporation and its customers.

Draft decision on capital expenditure

Our draft decision is to adopt a total capital expenditure of $2,271.1 million for a three-year regulatory period 2021–24.

6.4. Capitalisation of Victorian Desalination Plant security payments

Melbourne Water is obliged to pay for the security service provided by the Victorian desalination plant's current operator over a lease period of 27 years (up to 2039) after which Melbourne Water will assume ownership of the plant. The desalination plant's asset life is much longer and

[83] Deloitte Access Economics 2021, op. cit., p. 104.

Melbourne Water has the choice to reflect some of these security payments as part of its capital expenditure to reflect the plant's useful life when it transfers to Melbourne Water ownership.

Direct recovery of this cost in the year it is incurred can have a significant impact on end-use customers' bills and provide disproportionate cost signals about the desalination service. Accordingly, in both our 2013 and 2016 price reviews, we encouraged Melbourne Water to treat a portion of its annual desalination security payments as capital expenditure to phase cost recovery over the useful life of the plant rather than just the 27 year lease period.[84] This approach takes into consideration the long-term interests of customers, in line with the WIRO.[85]

Melbourne Water's approach to capitalisation needs to deliver an equitable payment recovery profile for all generations of customers that benefit from the desalination plant's supply security service. In its current price submission, Melbourne Water proposes to continue to capitalise a portion of its annual security payments, equal to $399 million over the 2021-22 to 2025-26 five-year period.

The remainder of security payments is to be treated as non-controllable operating expenditure and directly passed through to end-consumers as set out in Section5.2. Table 6.2 shows Melbourne Water's preferred approach to capitalisation out of three options it has considered for pricing purposes.

[84] Melbourne Water can recover the capitalised amounts via 1) a return on the asset base and 2) regulatory depreciation over the useful life of the desalination plant, currently estimated at 68 years.

[85] WIRO, clause 11(d).

Table 6.2 Melbourne Water's proposed treatment of desalination security payments

$ million 2020-21

	2021–22	2022–23	2023–24	3-year total	2024–25	2025–26	5-year total
Operating expenditure	493.1	485.2	473.0	**1,451.3**	457.0	443.9	**2,352.2**
Capital expenditure	57.4	67.0	82.3	**206.7**	91.8	100.0	**398.6**
a) principal payments[86]	20.3	29.9	45.2	**95.4**	54.7	62.9	**213.0**
b) 'shortfall' from 2012-2021[87]	37.1	37.1	37.1	**111.4**	37.1	37.1	**185.6**
Total expenditure[88]	**550.5**	**552.3**	**555.3**	**1,658.0**	**548.8**	**543.9**	**2,750.8**

Note: numbers have been rounded

According to Melbourne Water, its proposed capitalisation profile set out in Table 6.2 is in line with feedback from the Water and Sewerage Customer Council (WSCC) and Consumer Action Law Centre (CALC).[89]

In our guidance, we noted that Melbourne Water's approach to capitalisation will be a key consideration in our assessment of its PREMO rating and that in our view the amount capitalised over the current 2016–2021 regulatory period is below a level most equitable for customers.[90]

According to the Australian Taxation Office (ATO), the principal payments that Melbourne Water makes under the desalination plant's finance lease relate to the purchase of the asset and reflect the capital component of the security payments.[91] Consistent with the ATO's view, in 2016 we advised Melbourne Water that its principal payments under the finance lease may provide a reasonable benchmark for capitalisation.[92] Importantly, we also emphasised that we will not allow

[86] Annual expenditure amounts for tax purposes in Melbourne Water's statutory accounts, reported under finance lease associated with the desalination plant, over the period from 2021-22 to 2025-26.

[87] This is the difference between the above tax benchmark and the annual amounts capitalised by Melbourne Water over previous regulatory periods from 2012-13 to 2020-21. We note that the proposed approach is not accurately described in the price submission, which states the catch-up period is from 2016-17 to 2020-21. Melbourne Water confirmed the proposed catch-up period on 8 December 2020 in response to our information request.

[88] Consistent with the schedule of payments we received from the Department of Environment, Land, Water and Planning in November 2020.

[89] Melbourne Water 2020, op. cit., pp. 6-62 and 6-65.

[90] Essential Services Commission 2019, op. cit., pp. 27–29.

[91] Stated in a ruling made on 29 October 2015 to address the appropriate tax treatment of Melbourne Water's finance lease payments associated with the Victorian Desalination Plant.

[92] Essential Services Commission 2016, Melbourne Water Price Review 2016: Final decision, 15 June, pp. 24–25.

Melbourne Water to amend its previous approach and capitalise any shortfall between the above tax benchmark and amounts capitalised in the 2021–2026 regulatory period in future regulatory periods.

Melbourne Water's approach to capitalisation (see Table 6.2) is not consistent with our 2016 final decision because it seeks to capitalise the shortfall from previous years, equal to $186 million, over the 2021–2026 period. We also consider this proposal to capitalise the previous shortfall is inconsistent with our guidance.

In particular, any additional capitalisation above the tax benchmark would create a greater reduction in water prices from 2021-22 that has already been partly paid for by higher prices in previous generations of Melbourne Water's end-use customers. Such a significant fall in prices now, achieved by this approach to capitalisation, is unlikely to provide reasonable signals about the efficient cost of the service.[93]

As noted in Chapter 2, Melbourne Water's submission lacks evidence of stakeholder support for this approach and what it might mean for long-term affordability for customers.[94] Furthermore, Melbourne Water has not provided any explanation as to why its payment recovery profile is not consistent with our 2016 final decision, nor has it addressed intergenerational equity concerns.

Draft decision on desalination security payments

Based on the above assessment, our draft decision is to not approve Melbourne Water's proposed approach to recovering its desalination security payments. In particular, we do not consider the additional capitalisation amount of $186 million to recoup previous shortfalls is consistent with our guidance or the WIRO of:

- providing price signals about the efficient costs of providing services to all generations of end-use customers
- considering the interests of customers and the long-term interests of Victorian consumers.

We set out our draft decision in Table 6.3.

We note that Melbourne Water received an updated desalination security payment schedule from the Department of Environment, Land, Water and Planning after the price submission was made.[95]

[93] Essential Services Commission 2019, op. cit., p. 28.

[94] Customer affordability in relation to the recovery of desalination security payments was a key issue raised during the 2018 retail water businesses' price review.

[95] Correspondence received from Melbourne Water on 11 February 2021.

We incorporated the revised costs into our draft decision. Melbourne Water should verify our adjustments.

Table 6.3 Draft decision on the treatment of desalination security payments

$ million 2020-21

	2021–22	2022–23	2023–24	3-year total	2024–25	2025–26	5-year total
Proposed capital expenditure	57.4	67.0	82.3	**206.7**	91.8	100.0	**398.6**
Draft decision adjustment							
'Shortfall' from 2012-2021	-37.1	-37.1	-37.1	**-111.4**	-37.1	-37.1	**-185.6**
Draft decision – capital expenditure	**20.3**	**29.9**	**45.2**	**95.4**	**54.7**	**62.9**	**213.0**
Proposed operating expenditure	493.1	485.2	473.0	**1,451.3**	457.0	443.9	**2,352.2**
Draft decision adjustments							
'Shortfall' from 2012-2021	37.1	37.1	37.1	**111.4**	37.1	37.1	**185.6**
Revised Victorian Desalination Plant operating costs	-2.6	-2.5	-2.5	**-7.7**	-2.6	-2.6	**-12.8**
Draft decision - operating expenditure[96]	**527.6**	**519.8**	**507.6**	**1,555.0**	**491.6**	**478.4**	**2,525.0**

Note: numbers have been rounded

[96] In this draft decision, we have taken into account a reduction in the desalination plant's operating costs as per the updated desalination security payment schedule Melbourne Water received on 22 January 2021.

7. Financing capital investments

This chapter sets out our draft decision on Melbourne Water's financing of capital investments, namely the regulatory asset base, the rate of return on investments, and financial position.

7.1. Rolling forward the regulatory asset base

The regulatory asset base is used to estimate the return on assets and regulatory depreciation in the revenue requirement. Our guidance required Melbourne Water to propose its:

- closing regulatory asset base at 30 June 2020
- forecast regulatory asset base for each year of the regulatory period from 1 July 2021.

7.1.1. Closing regulatory asset base

We update the regulatory asset base to reflect actual capital expenditure, government and customer contributions, and asset disposals for the period to 30 June 2020. This helps to ensure prices reflect the actual net expenditure of a water corporation.[97]

We compared Melbourne Water's actual net capital expenditure for 2015-16 to 2019-20 with the forecast used to approve maximum prices for the period from 1 July 2016. We undertake a prudency and efficiency review where a water corporation's net capital expenditure is more than 10 per cent above the forecast used to approve maximum prices for the period from 1 July 2016. We believe this approach is reasonable given capital expenditure can be relatively 'lumpy' in nature.

Our review identified a relatively minor correction to the input data in the financial model by Melbourne Water for net capital expenditure in 2019-20, which adjusted Melbourne Water's assumed $1,899.47 million net capital expenditure over the period from 2015-16 to 2019-20 to $1,899.51 million.

Draft decision on closing regulatory asset base

Melbourne Water calculated its closing regulatory asset base in accordance with the requirements of our guidance. For these reasons, our draft decision proposes to approve a closing regulatory asset base for 30 June 2020 of $11,337.9 million.

[97] Net capital expenditure is calculated by deducting government and customer contributions from gross capital expenditure. Customer contributions reflects revenue earned from new connections made to the water corporation's water, sewerage or recycled water networks. The gross capital expenditure includes the capitalised desal costs.

Table 7.1 sets out our draft decision on Melbourne Water's closing regulatory asset base at 30 June 2020.

Table 7.1 Closing regulatory asset base

$ million 2020-21

	2015-16	2016-17	2017-18	2018-19	2019-20
Opening RAB at 1 July	10,534.2	10,637.4	10,804.8	11,025.1	11,216.8
Plus gross capital expenditure	459.0	469.7	563.0	548.5	512.7
Plus desal capitalisation	-	32.8	32.8	32.8	32.8
Less government contributions	-	-	-	-	-
Less customer contributions	121.4	147.3	165.6	166.2	183.9
Less proceeds from disposals	9.3	9.0	13.8	11.1	14.4
Less regulatory depreciation	225.2	178.8	196.0	212.3	226.0
Closing RAB at 30 June	**10,637.4**	**10,804.8**	**11,025.1**	**11,216.8**	**11,337.9**

Note: numbers have been rounded

7.1.2. Forecast regulatory asset base

The forecast regulatory asset base is calculated having regard to the closing asset base, and forecasts for capital expenditure, government and customer contributions, and asset disposals. The commission's draft decision on the forecast regulatory asset base reflects our draft decision on:

- the closing regulatory asset base
- capital expenditure in Chapter 6
- customer (developer) contributions.

Melbourne Water has proposed to maintain the 2020-21 net capital expenditure as per the forecast benchmark for that year in the 2016 price determination. Our guidance noted that where the 2020-21 forecasts for net capital expenditure are lower than the forecast benchmark for that year in its 2016 price determination, the lower amount must be used (otherwise the 2016 determination forecast applies). This approach helps to limit incentives for a water corporation to delay capital works until the last year of a regulatory period.[98]

[98] Even if unintentional, delayed projects provide an undue benefit to a water corporation, as customer prices assume capital works proceed to schedule.

Table 7.2 sets out our draft decision on Melbourne Water's proposed forecast regulatory asset base from 1 July 2021. Our assessment of the components of the forecast regulatory asset base is set out in the following sections.

Table 7.2 Forecast regulatory asset base

$ million 2020-21

	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Opening RAB at 1 July	11,337.9	11,419.3	11,870.0	12,458.3	12,791.2	13,105.4
Plus gross capital expenditure	423.3	747.7	884.2	639.2	634.7	499.7
Plus desal capitalisation	32.8	20.3	29.9	45.2	54.7	62.9
Less government contributions	-	-	-	-	-	-
Less customer contributions	121.7	119.3	119.3	124.9	119.8	133.1
Less proceeds from disposals	14.0	8.5	2.9	3.9	12.1	7.3
Less regulatory depreciation	239.0	189.4	203.6	222.6	243.3	265.6
Closing RAB at 30 June	**11,419.3**	**11,870.0**	**12,458.3**	**12,791.2**	**13,105.4**	**13,262.0**

Note: numbers have been rounded

7.2. Customer (developer) contributions

Developer contributions are forecast to be 21 per cent lower during 2021–2026 compared to the previous regulatory period, reflecting a significant reduction in growth expectations.

We asked Melbourne Water to clarify its methodology in deriving its developer contribution forecasts. Melbourne Water advises us that it has applied the same approach to derive the capital and operating expenditure offset. Melbourne Water confirms that its contributions forecasts have been based on pre-coronavirus pandemic long-term industry demand and have been assessed against potential coronavirus pandemic impacts and determined to be applicable for the 2021–2026 regulatory period. Melbourne Water notes that the forecasts of developable hectares reflect adjustments for a downturn in demand. The Urban Development Institute of Australia representative supports Melbourne Water's forecast and has advised that around 15,000 lots per year is a 'sustainable' volume for Melbourne's greenfield belt and Melbourne Water's proposed average aligns to that. In light of recent changes in population growth and the enduring impact of the pandemic, we recommend Melbourne Water update its forecasts for customer contributions for 2021–2026 to account for updated state government population forecasts and the decline in net overseas migration.

We also note that Melbourne Water has applied a higher inflation forecast series in converting nominal to real values for the developer contributions forecasts. This has resulted in a small

underestimation of its developer contributions revenue forecast, administration costs and capital offset costs in real 2020-21 dollars. Melbourne Water needs to ensure that the inflation series used is consistent within the pricing model.

7.3. Rate of return

In our guidance paper, we set out our process for estimating the regulatory rate of return. A regulatory rate of return is applied to the regulated asset base to calculate the annual return on the regulated asset base to be included in the revenue requirement. The regulatory rate of return comprises two components: a cost of debt and a return on equity (based on PREMO rating).

7.3.1. Cost of debt

Our guidance required Melbourne Water to use estimates of the cost of debt we provided to estimate its revenue requirement and prices, subject to any updates before we make a price determination. [99] [100]

Melbourne Water has not used the cost of debt value we specified to calculate its revenue requirement and prices. Melbourne Water has proposed its own revised 2020-21 estimate as set out in its submission financial model.

We sought further information from Melbourne Water on its proposal. Melbourne Water has proposed a revised 2020-21 nominal cost of debt estimate of 3.16 per cent, reflecting actual data for April to July 2020 and future cost of debt estimates for the period August 2020 to March 2021.

Our guidance stated that the nominal cost of debt for the 2020-21 financial year will be updated to reflect actual data, prior to the final decision. This allows the water corporation to adjust prices to reflect movements in the cost of debt, and ensures 2021-22 prices reflect our assessment of efficient costs for a BBB-benchmarked business. Melbourne Water has effectively used a more up-to-date forecast in its price submission.

Given that we will true-up the cost of debt prior to making our final decision, for the purposes of making this draft decision we will accept Melbourne Water's proposed 2020-21 cost of debt as set out in Table 7.3. However, our final decision will update its 2020-21 cost of debt with actual data –

[99] From 2016, we accepted a ten-year trailing average approach to estimating the benchmark cost of debt, changing from an on-the-day approach. The trailing average approach better aligns the actual cost of debt for an efficient business to the regulated benchmark, compared with an on- the-day approach. We consider the ten-year trailing average approach helps to minimise risk to water corporations and provides better incentives for long-term investments.

[100] Essential Services Commission 2019, op. cit., p. 32–33.

that is, we will replace Melbourne Water's forecast data with the Reserve Bank of Australia 10-year BBB-rated corporate bond rates, consistent with the approach set out in our guidance.[101]

Table 7.3 Trailing average cost of debt

(Nominal)

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Cost of debt	6.31%	5.27%	7.05%	5.36%	5.27%	4.91%	4.53%	4.61%	3.31%	3.16%

*Melbourne Water's estimated cost of debt – we will update the 2020-21 figure to reflect the latest actual data before the final decision and price determination.

Note: numbers have been rounded

In our financial model, we use an estimate for forecast inflation, which is an input for the Fisher equation to convert nominal cost of debt to real cost of debt. We had estimated the forecast inflation at 1.7 per cent for Melbourne Water's price submission model. This was the same estimate we had adopted in our 2020 Water Price Review, which was based on the midpoint of 'RBA geometric' (similar to AER's approach) and 'bond breakeven' inflation rates. As noted earlier in this decision, we recalculated our inflation estimate using our current approach and estimated inflation at around two per cent per year. Given this, we may revise this estimate in our final decision after the release of the RBA's end of March 2021 quarter data.

7.3.2. Return on equity – PREMO rating

Melbourne Water rated its price submission as 'Advanced'. Based on its PREMO self-rating, Melbourne Water proposed a rate of return on equity of 4.8 per cent per year (real). This reflects the maximum return rate allowed in our guidance for a price submission rated as 'Advanced'.[102]

Our draft decision proposes not to accept Melbourne Water's PREMO self-rating, consistent with our PREMO assessment (see Chapter 13), and proposes to adopt a return on equity of 4.2 per cent per year (real), the penalty rate specified in our guidance.[103]

Our draft decision on the return on equity is consistent with the approach set out in our guidance.

[101] We will provide Melbourne Water with the 2020-21 actual cost of debt in April 2021.

[102] Essential Services Commission 2019, op. cit., p. 33–37.

[103] Essential Services Commission 2019, op. cit., p. 34–35.

Draft decision on the equity rate of return

Our draft decision accepts Melbourne Water's proposed 2020-21 cost of debt (nominal) on the basis that it will be updated to reflect actual data prior to making our final decision.

Our draft decision proposes to set the return on equity to 4.2 per cent (in real terms, after tax), which reflects the downgrade in Melbourne Water's PREMO rating (see Chapter 13).

7.4. Financial position

In approving prices, we must have regard to the financial viability of the water industry.[104] We interpret the financial viability requirements under the Essential Services Commission Act 2001 (Vic) and the Water Industry Regulatory Order 2014 to mean that the prices we approve should provide a high level of certainty that each water corporation can generate sufficient cash flow to deliver on service commitments, including financing costs arising from investments to meet service expectations.

Melbourne Water's price submission and the supporting financial model provided estimates for key indicators of financial performance. These estimates were based on its assumptions about revenue and expenditure. Our draft decision proposes adjustments to revenue and expenditure. We have reviewed the key indicators of financial performance based on our draft decision. Under our draft decision, we consider Melbourne Water will generate sufficient cash flow to deliver on service commitments, including financing costs arising from investments to meet service expectations.

Melbourne Water received a 'credit opinion' on its financial position reviewed by an independent credit rating agency.[105] The credit opinion supports our current view that Melbourne Water's financial position is sound.

Draft decision on financial position

Our draft decision considers that Melbourne Water provided estimates of key indicators of forecast financial performance in a manner consistent with our guidance.[106] We have reviewed these indicators and assess that Melbourne Water's forecast financial position, given its proposed prices, is consistent with an investment grade credit rating.

[104] WIRO clause 8(b)(ii) and ESC Act s.8A(1)(b).

[105] The 'credit opinion' report is not available to public as it contains commercial in confidence information.

[106] Essential Services Commission 2019, op. cit., p. 48–49.

8. Demand

This chapter sets out our draft decision on Melbourne Water's proposed demand forecasts. We require demand forecasts from Melbourne Water in order to calculate the tariffs that Melbourne Water may charge its customers. This calculation is based on its approved revenue requirement. Melbourne Water's demand forecasts also influence its operating expenditure forecast, which is discussed in Chapter 5.

8.1. Melbourne Water's proposed demand forecasts

Melbourne Water proposes demand forecasts for three areas:

- For bulk water demand, Melbourne Water's forecasts represent an aggregation of recent forecasts provided by retail water corporations in December 2019. Yarra Valley Water, South East Water, City West Water and Western Water used integrated-supply demand planning models which are a type of end use model.[107]
- Melbourne Water's sewage forecasts are also based on retailer's forecasts prior to the coronavirus pandemic, with the application of a common methodology to sewage forecasting. Where possible, retailers aligned key assumptions underpinning retail water company forecasts and local assumptions were applied only when appropriate. Melbourne Water used a baseline-plus-growth approach for sewage forecasting, a type of trend extrapolation.
- Demand for waterways and drainage services are forecast using trend extrapolation, by combining property and developer contribution forecasts.

Melbourne Water's demand proposals, including its proposed water demand by retail water corporations, sewage demand and waterways and drainage customer numbers are outlined in pages 5-1 to 5-29 of Melbourne Water's Price Submission 2021 – Supplement.

Melbourne Water's original demand forecasts were prepared prior to the coronavirus pandemic and were mostly based on Victoria in Future 2019.[108] The Victoria in Future population forecast was from July 2019 and had a compound annual growth rate of 1.9 per cent between 2018-19 and 2023-24. Melbourne Water engaged Macroplan to provide an independent opinion on how the

[107] These four retail businesses account for 99.3 per cent of total water supplied by Melbourne Water in 2018-19.

[108] Melbourne Water's waterways and drainage forecasts are underpinned by population forecasts prepared by BIS Oxford Economics, which were also finalised prior to the coronavirus pandemic. Melbourne Water notes that the BIS Oxford Economics forecasts are in line with the Victoria in Future 2019 forecasts (see page 5-5 of Melbourne Water's Price Submission 2021 – Supplement).

Victoria in Future 2019 population level forecasts might be adjusted to account for the impact of coronavirus.

Melbourne Water proposed to keep its original demand forecasts because it considers:

- Macroplan's revised demand forecasts have a negligible impact on its proposed expenditure and revenue requirement
- prices would be higher if it used the revised demand forecasts
- that by using the original demand forecasts, the risk (of collecting less revenue) lies with Melbourne Water rather than its customers.

8.2. Our review

We engaged Deloitte Access Economics to undertake a review of the assumptions and methodology Melbourne Water applied in developing its growth forecasts, and comment on the implications of any findings for the proposed expenditure. Deloitte's report including its assessment of Melbourne Water's demand forecasts is available on our website.[109]

8.2.1. Melbourne Water's population forecast

We agree with Deloitte's view that the Victoria in Future 2019 pre-coronavirus pandemic population growth forecast does not consider the impacts of coronavirus pandemic on the underlying drivers of population, including migration, fertility and mortality.

The Macroplan forecasts Melbourne Water refer to that include the effects of coronavirus pandemic are materially higher than Victorian Treasury, Australian Government Centre for Population and Deloitte Access Economics forecasts. This is partly due to an assumed relatively modest impact of coronavirus on Victorian net overseas and net interstate migration, as well as a sharp fall in mortality which outweighs a decline in the fertility rate.

We consider that Melbourne Water's demand forecasts do not fully incorporate the impact of the coronavirus pandemic on population growth, because its forecasts are materially higher than other reputable sources.[110]

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[109] Deloitte Access Economics 2021, op. cit.

[110] For example, Melbourne Water's price submission strongly justified its large capital expenditure expansion on the basis of ongoing high population growth. We note Melbourne Water's revised figure is still well above the latest Victorian government projections in the State Budget and data released by the Australian Bureau of Statistics.

In addition, the Australian Bureau of Statistics recently released its year-on-year population growth forecast for Victoria up until the September quarter 2020 and estimated population growth was 0.7 per cent. More information on the Australian Bureau of Statistics data can be found at https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/sep-2020#states-and-territories.

Table 8.1 Population compound annual growth rate forecast – 2018-19 to 2023-24

Forecast source	Forecast
VIF (2019) (Jul 2019) – used by Melbourne Water	1.9%
Macroplan (Sep 2020)	1.5%
Deloitte Access Economics (Sep 2020)	1.1%
Centre for Population Projections (Dec 2020)	1.0%
2020-21 Victorian Budget (Nov 2020)	1.0%

Source: Deloitte Access Economics 2021, Expenditure review – Melbourne Water 2021 Price Submission: Final Report for the Essential Services Commission – Public, 23 February, p. 117.

We note that the Macroplan forecasts were made in September 2020. We asked Melbourne Water to provide updated forecasts for population in December 2020. In response, Melbourne Water provided some revised forecasts reflecting the impact of the coronavirus pandemic but it has not applied these revised forecasts to its financial model.

In Melbourne Water's submission, it accepted the additional revenue risk on behalf of customers for a reduction in growth in waterways and drainage connections. However, in December 2020, Melbourne Water noted it would be unlikely to absorb, in full, the much higher revenue risk (about $47 million) should growth be closer to the state forecasts of population.[111]

Melbourne Water suggests in its submission that unexpected growth occurred over the past five years. However, Deloitte found that actual population at the end of the current regulatory period will be almost the same as forecast by Melbourne Water in 2016. This suggests that Melbourne Water's population forecasts included in its price submission require revision. There is also more information now on the impact of coronavirus on population growth than there was when the Macroplan forecasts were made in September 2020. For the following reasons, we request Melbourne Water revise its population growth forecasts to better reflect the impact of coronavirus as indicated in other reputable forecasts:

- Melbourne Water noted it would be unlikely to be able to absorb the revenue risk it committed to absorbing in its submission should growth be closer to the state forecasts. Updated demand forecasts will promote the financial viability of Melbourne Water, which the commission must

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Also, the Australian Government's Centre for Population forecasts for the four years 2021–2024 that compound annual population growth for Victoria will be just over one per cent per annum – refer to https://population.gov.au/data-and-forecasts/data-and-forecasts-dashboard-statement-state.html.

This indicates Victoria is experiencing a significant slowdown in population growth. Melbourne Water should refer to the latest data on population growth in its response to our draft decision.

[111] Correspondence from Melbourne Water received via email on 23 December 2020.

have regard to under the Water Industry Regulatory Order and the Essential Services Commission Act.[112]

- Controllable operating expenditure and capital expenditure timing should be determined based on updated demand forecasts, to ensure efficiency and appropriate incentives for investment, which we must have regard to under the Water Industry Regulatory Order 2014 and the Essential Services Commission Act 2001 (Vic).[113]
- Our additional guidance required Melbourne Water to show how the proposed demand forecasts have accounted for the impact of the coronavirus pandemic.[114] Our guidance paper also required Melbourne Water to represent the best available estimates.[115] As outlined above, we consider using the Victoria in Future 2019 pre-coronavirus population growth forecasts does not account for the impacts of the coronavirus pandemic and it is not the best estimate currently available.

We understand, based on a response to our request for Melbourne Water to provide updated forecasts for population in December 2020, that the retail water corporations plan to revisit their demand forecasts in early 2021.[116] We expect Melbourne Water to update its forecasts with the most recent information from retailers.

8.2.2. Sewage demand assumptions

Deloitte's assessment also considered the key drivers of sewage demand. The review recommends that other factors might be more appropriate for Melbourne Water to use as drivers of non-residential property forecasts for sewage demand:[117]

- Melbourne Water's non-residential sewage forecasts are based on population growth. Deloitte found that factors such as employment and output growth are likely to be more appropriate drivers.
- Melbourne Water derives large non-residential sewage demand using customer insights. Deloitte recommended that these are updated to incorporate potential changes in planned investments following the coronavirus pandemic.

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[112] Water Industry Regulatory Order 2014, clause 8 (b) (ii). Essential Services Commission Act 2001, clause 8A (1) (b).

[113] Water Industry Regulatory Order 2014, clause 8 (b) (ii). Essential Services Commission Act 2001, clause 8A (1) (a).

[114] Essential Services Commission 2020, op. cit., p. 4.

[115] Essential Services Commission 2019, op. cit., p. 39.

[116] Correspondence from Melbourne Water received via email on 23 December 2020.

[117] Deloitte Access Economics 2021, op. cit.

We propose that Melbourne Water considers these changes to demand drivers and either adopts these changes or justifies why they are not more suitable than the approach in Melbourne Water's proposal.

Treatable sewage load parameters are a more material driver of treatment plant costs than sewage volume growth. Deloitte found that forecast growth rates for some sewage parameters appear unreasonably high given historical trends, the impact of the coronavirus pandemic and differences between retailers.[118] These parameters are:

- **Biological oxygen demand growth rates** – Deloitte found that the forecast growth appears unreasonably high particularly given likely population growth changes as a result of the coronavirus pandemic.
- **Total suspended solids growth rates for the Western Treatment Plant** – Deloitte found that there is unreasonably strong growth in total suspended solids balancing items for the Western Treatment Plant (all retailers), much higher than population growth.[119] In 2018-19, total suspended solids balancing items for the Western Treatment Plant accounted for 18.3 per cent of the overall total suspended solids load at the Western Treatment Plant. Melbourne Water considered two growth scenarios for its balancing items – zero growth and proportional to population growth. Melbourne Water chose to use the proportional to population growth scenario. Since Melbourne Water's population forecasts are too high and need to be revised, its growth rate for balancing items also needs to be revised.
- **Total suspended solids growth rates for the Eastern Treatment Plant** – Deloitte found that forecast non-residential demand for total suspended solids for South East Water at the Eastern Treatment Plant appears high when compared to South East Water's residential demand forecasts and Yarra Valley Water's non-residential demand forecasts.
- **Non-residential total suspended solids growth rates for Western Treatment Plant** – Deloitte concluded that it is uncertain whether Yarra Valley Water and South East Water's non-residential suspended solids forecast annual growth rates are reasonable.

We expect Melbourne Water to address these findings when updating its forecasts with the most recent information from retailers and provide further justification for the approach Melbourne Water has chosen.

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[118] Deloitte Access Economics 2021, op. cit., p. 140-142.

[119] When determining sewage forecasts, Melbourne Water considered flows and loads from both top-down and bottom-up perspectives. The balancing item comprises the remaining contributions to the sewer (measured at treatment plants) that have not been captured in the measured data of segments contributing to the make-up of sewage flows and load (residential, non-residential and inflow and infiltration forecast segments).

Draft decision on demand

We propose not to accept Melbourne Water's demand forecasts.

In response to our draft decision, Melbourne Water should revise its population growth forecasts to better reflect the impact of coronavirus as indicated in other recent forecasts and consider other potentially more relevant demand drivers (as outlined above).

We expect Melbourne Water to:

- update its forecasts with the most recent information from water retailers
- address the sewage parameter growth rates which appear unreasonably high and provide justification for its chosen approach.

9. Bulk tariffs

This chapter sets out our draft decision on Melbourne Water's proposed bulk tariff structure. Melbourne Water's response to our draft decision must include proposed tariffs (including prices) that reflect our draft decision. Because of this, our draft decision does not approve maximum prices for each tariff. We will provide final maximum prices in our final decision. Our draft decision considers proposals related to tariff structures, and any submissions relating to the level of prices.

Melbourne Water provides bulk water and storage operator services and bulk sewerage services. It supplies these bulk water services to urban retailers City West Water[120], South East Water and Yarra Valley Water, as well as regional retailers Barwon Water, Gippsland Water, South Gippsland Water, Western Water and Westernport Water, as required. Melbourne Water provides bulk sewerage services to the three urban retailers City West Water, South East Water and Yarra Valley Water from its western treatment plant and bulk sewerage services to South East Water and Yarra Valley Water from its eastern treatment plant.

As noted in our guidance, we have typically given Melbourne Water a large degree of discretion to decide on tariff structures, as it is best placed to design tariffs and tariff structures that meet its customers' needs, manage its risk, and deliver its desired business outcomes. We expect that any possible reforms to bulk tariffs must be justified by Melbourne Water as better meeting the requirements in clause 11 of the WIRO. Melbourne Water's price submission must also provide a summary of stakeholder views on bulk water tariffs, and how these views have been considered in reaching its final proposals.

9.1. Melbourne Water's bulk water tariffs

Melbourne Water proposes to retain its existing tariff structure for the bulk water storage and transmission service relating to the three main water supply sources, the Greater Yarra System – Thomson River, North South Pipeline and the Victorian Desalination Plant. The current structure is:

- a separate fixed headworks charge for each supply system
- a single variable usage (transfer) charge for all retail water corporations (except Gippsland Water).

[120] On 1 July 2021, City West Water and Western Water will integrate to form a new water corporation called Greater Western Water. For the purpose of this draft decision, the two service regions will be referred to by their former business names.

The Victorian Desalination Plant water order charge is the variable bulk water supply charge allocated based on the volume of entitlement ordered by each metropolitan water retailer (City West Water, South East Water and Yarra Valley Water).

These bulk water tariff structures have been in place since our last price review in 2016.[121] We consider the headworks charges provide appropriate price signals about the varied costs of accessing each of the main supply systems. The single transfer fee reflects the integrated nature of Melbourne Water's water transfer system.

Proposed change to Gippsland Water's bulk water charges

Melbourne Water proposes a reform to the existing tariff structure applied to Gippsland Water to:

- change the currently variable headworks charge to a fixed charge
- discontinue the existing variable transfer charge.

According to Melbourne Water, its services to Gippsland Water only relate to the fixed infrastructure costs of headworks and transfers from the Tarago Reservoir, as no additional water treatment or pumping services are required.[122] Gippsland Water supports this revised tariff structure. We consider the proposed change is appropriate as it provides better price signals about the fixed cost nature of the bulk water service Gippsland Water receives and is simple for customers to understand.[123]

Water and Sewerage Customer Council has highlighted its desire for Melbourne Water's pricing proposals to be aligned with its customers' needs with a focus on affordability and price stability. We note that Melbourne Water's proposed bulk water revenue requirement for the 2021–2026 regulatory period is 13 per cent lower than in the last regulatory period and that the proposed price paths are smoothed to avoid any price shocks. The fixed to variable ratio of Melbourne Water's bulk water revenue requirement decreases across the 2021–2026 regulatory period. The main driver of this trend is the higher annual capitalisation of desalination costs which has an equal but opposite effect on the Victorian Desalination Plant operating expenditure passed through to customers via the fixed headworks charge. Our draft decision adjustments to underlying bulk water expenditure further decreases the fixed component of the bulk water tariff revenue requirement.

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[121] For more details refer to our 2016 draft decision. Essential Services Commission 2016, Melbourne Water price review 2016: Draft decision, March, pp. 76–81.

[122] Correspondence received from Melbourne Water on 15 January 2021.

[123] WIRO, clause 11(d); Essential Services Commission 2019, op. cit., pp. 42-43.

Draft decision on bulk water tariffs

We propose to approve Melbourne Water's proposed bulk water tariff structures because it meets our guidance criteria and the WIRO requirements.

In response to our draft decision, Melbourne Water should revise its Victorian Desalination Plant headworks charges and price levels because our draft decision is not to accept Melbourne Water's proposed operating and capital expenditure.

9.2. Melbourne Water's bulk sewerage tariffs

Melbourne Water proposes to retain its existing fixed and variable bulk tariff structures for sewerage service charges to the three urban water retailers for the next regulatory period. Currently, there are separate tariffs for the Eastern and Western sewerage treatment plants as follows:

- fixed bulk sewerage service charges ($/month)
- variable transfer and treatment charges ($/megalitre, ML)
- variable trade waste load charges for disposal of biological oxygen demand (BOD), total suspended solids (TSS) and total kjeldahl nitrogen (TKN) ($/tonne).

Consistent with our 2016 Final Decision, Melbourne Water proposes to keep the current load tariff for the disposal of inorganic total dissolved solids (iTDS) at the Western Treatment Plant constant in real terms during 2021–2026.

Melbourne Water has revised the variable costs for sewerage treatment that are based on updated long run marginal cost (LRMC) models, while a revised short run marginal cost (SRMC) model has been used to set the transfer charge. A separate LRMC charge is set for the treatment of the contaminant loads BOD, TSS and TKN at each treatment plant. We reviewed the revised LRMC models and support Melbourne Water's approach because it sends strong pricing signals to retailers and some end-use customers, and consider that it is consistent with the tariff principles.[124] We expect Melbourne Water to update its LRMC and SRMC models to reflect its response to our draft decision on expenditure and updated sewerage demand forecasts from retailers.

We received three submissions on pricing, fairness and affordability. An end-use customer noted that the water usage component of the bill is very small and does not provide any incentive to save on the bill. An anonymous submission questioned the basis of charging similar sewage fees at properties at different locations and with different market values. Another customer raised

[124] Essential Services Commission 2019, op. cit., pp. 42–43

affordability concerns due to more people working remotely at home, resulting in high water and sewerage bills. Given that Melbourne Water's bulk charges comprise up to 60 per cent of retailer's operating costs, these submissions highlight the importance of customer affordability resulting from the pandemic. Our draft decision on sewerage services and Melbourne Water's return on equity (PREMO rating) addresses, to some extent, these customers' concerns on affordability.

Draft decision on bulk sewerage tariffs

Our draft decision proposes to approve Melbourne Water's proposal to maintain the existing tariff structures for bulk sewerage services.

Melbourne Water should revise its LRMC and SRMC estimates and other charges to reflect its response to our draft decision on sewerage expenditure and updated sewage demand forecasts.

9.3. Tariff reform

Melbourne Water has made a commitment to water retailers to fully investigate the cost allocation and design of tariff structures by October 2022. This date coincides with the submission deadline for the retail water corporations for the 2023 water price review.

Melbourne Water's bulk water tariffs were recently reformed in 2016 following the Victorian Government changes to the structure of bulk water entitlements. We considered the changes provided for better price signals, with tariffs better reflecting the different costs of providing bulk water services from each of the main water sources. The current bulk water tariff structures were agreed on by retailers at the time.

We support Melbourne Water's review of tariff structures under a three-year regulatory period. A longer regulatory period would mean re-opening of Melbourne Water's determination and amendments to approved price paths.[125] We consider that our proposal for a three-year regulatory period provides Melbourne Water with enough time to consult on its tariff reforms and implement these for the following regulatory period.

We also consider that an 'Advanced' price submission would propose tariff reform based on the tariff review during the development of its price submission. We do not consider the intention of undertaking potentially significant tariff reforms reflects that of an 'Advanced' proposal.

[125] This is discussed in chapter 1, regulatory period.

10. Waterways and drainage, diversions and miscellaneous services

This chapter sets out our draft decision on Melbourne Water's proposed waterways and drainage tariff, diversions tariff structures and miscellaneous tariffs.

10.1. Waterways and drainage tariffs

Melbourne Water provides drainage, waterways and floodplain management services in the Port Phillip and Westernport region. It administers programs to improve the health of rivers and creeks, improve stormwater quality, and maintain drainage infrastructure to service urban growth and provide flood protection. The waterways and drainage tariffs are collected from all rateable residential and non-residential properties within Melbourne Water's Waterways Management District.

Melbourne Water's proposed waterways and drainage tariffs are set out at section 7-8 of its price submission. It proposes to maintain its existing tariff structure for waterways and drainage services. For non-residential customers, Melbourne Water proposes to continue a 10-year transition from property-based charges to a flat charge 1.5 times greater than residential customers, completing in 2025-26. Currently, there are about 33,000 non-residential customers on property-based charges.

Melbourne Water is proposing to increase its waterways and drainage charge by one per cent per year across 2021–2026 to improve its waterways and drainage services. Its proposal is based on its willingness to pay study and applies to residential, non-residential (minimum fee) and rural customers. Our assessment and decision on Melbourne Water's willingness to pay study is discussed in more detail on page 7 of this draft decision. We placed lower weighting on Melbourne Water's willingness to pay study and requested Melbourne Water provide business cases to support its additional expenditure and price increases. Melbourne Water provided our consultant Deloitte with additional information that justified part of the proposed price increase (see our discussion in Section 5.1.4).

Patterson Lakes – Melbourne Water proposes to continue to maintain jetties for the Tidal Waterways community and conduct bore water flushing on a fee for service basis. It proposes to reduce the jetty renewals charges to reflect a lower cost of debt.

Quiet Lakes – Melbourne Water proposes to increase its bore flushing and algae testing under a property owner-funded arrangement. It proposes to increase the tariff for these services from $118 to $188 from 2021-22 for the next five years.

Lake Carramar – Melbourne Water is proposing to continue to bear the cost of bore flushing trials at Lake Carramar. If successful, Melbourne Water will propose to move to a fee-for-service price in 2026.

Koo Wee Rup–Longwarry – Melbourne Water proposes to extend the transition from a property-based charge to a single cost-reflective price by 2025-26.[126] Melbourne Water stated that this extension is proposed to minimise the bill impact on customers resulting from an uplift in flood protection and waterways work. This additional work would lead to an average price of $237 per property. However, after re-testing customers' preferences, Melbourne Water noted that the majority of customers are concerned about the financial impact of the coronavirus pandemic, therefore Melbourne Water is seeking to delay the service (and price) increase in 2021-22 with the intention to revisit this in 2022-23.

Melbourne Water has largely demonstrated its compliance with our guidance to consider end-use customer preferences since the onset of the coronavirus pandemic in its proposals. But we have some concerns with Melbourne Water's rate of transition of non-residential customers to the proposed waterways and drainage charge and the cost build-up of the Quiet Lakes bore flushing tariff.

In our 2016 final decision, we noted Melbourne Water should continue with tariff reforms for non-residential waterways and drainage customers. Specifically, we noted that Melbourne Water proposed that during the 2021–2026 regulatory period, the remaining customers on the property-based tariff will either shift to the flat minimum tariff, or move to an alternative cost reflective tariff arrangement, to be developed between now and Melbourne Water's next price submission. In addition, our guidance required Melbourne Water to continue to move to a more cost-reflective non-residential waterways and drainage tariff, and consider the customer impacts, including impacts to water retailers, and any transition strategies for non-residential customers most affected by the reforms.

In response to a request for further information, Melbourne Water provided us with the number of customers on property-based charge per year (see Table 10.1). Currently, about 18 per cent of non-residential customers are paying a property-based fee. Melbourne Water's forecast indicates it will transition between 4,000 to 5,000 customers per year, suggesting that 11,503 customers will remain on this tariff by the end of 2025-26. Although this rate of transition is consistent with Melbourne Water's 2016 pricing proposal when this was first proposed, we consider Melbourne Water has not done enough to ensure its tariffs for impervious surfaces (roofs and paved surfaces) is cost reflective. A fee based on property value does not reflect the contribution of the property to

[126] This transition has commenced in 2013 and was scheduled to be completed in 2021. Melbourne Water 2016, op. cit., p. 20.

waterways and drainage costs. We also do not consider that a flat charge could provide the appropriate price signals on efficiency of, for example, Melbourne Water's integrated watercycle management projects. That is, if a business reduced its level of run-off and hence its impact on waterways and drainage assets, it would not receive any benefits under the current flat charge.

Table 10.1 Non-residential customers on property-based charge

Number

	Current					
	2020-21	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**
Number of customers on non-residential charge	33,134	30,669	26,709	21,887	16,616	11,503

Similar to our previous decisions, we consider Melbourne Water should review its waterways and drainage charge for non-residential customers and progress to a more cost reflective charge.

The coronavirus pandemic may have materially affected some small to large businesses in Melbourne. For example, some businesses may not have been operating fully for long periods of time but may have been required to pay the waterways and drainage charge. In response to our draft decision, we request Melbourne Water outline how it assisted these customers, who may have had difficulty paying for its waterways and drainage services.

In addition, in a response to a request for further information on 3 December 2020, Melbourne Water detailed its approach to estimating the Quiet Lakes tariff. We found Melbourne Water had overestimated the energy cost component of this tariff as it does not appear to be based on the efficient benchmark approach used to estimate general energy costs. Melbourne Water should review its proposed tariff increase in light of our draft decision on its energy costs. It should also confirm that energy consumption for these customers is also removed from the total energy consumption forecasts to avoid double counting.

Quiet Lakes – Melbourne Water's decision to delay the service improvement and price increase for residents of Quiet Lakes is inconsistent with its finding of the consultation with this community.[127] In addition, as we noted in our expenditure assessment, Melbourne Water has overestimated the energy cost for its Quiet Lakes tariff, therefore it is not considered to be cost

[127] Melbourne Water 2020, op. cit., p. 39

reflective. Melbourne Water should review its proposed tariff increase in light of our draft decision on its energy costs.

Koo Wee Rup–Longwarry – we agree with Melbourne Water's overall approach to pause the service and price increase in 2021-22 given the financial impact of coronavirus on this community. We found some inconsistency between Melbourne Water's price submission and the financial template. Our guidance required consistency across the written submission and the financial model. While we note that Melbourne Water's intention is to set a higher maximum price and charge below this at the current price level, at least for the first year, this mismatch and inconsistency might lead to confusion for customers on the price path movement. In response to our draft decision, Melbourne Water should set out the actual prices for those years it knows it will charge below the maximum charge.

We have received several public submissions from stakeholders on Melbourne Water's proposal relevant to waterways and drainage tariffs, some are noted below.

The Yarra Riverkeeper Association supported a price increase in waterways and drainage tariff and stated: 'The Yarra Riverkeeper Association's concern is that the current pricing will not be sufficient to fulfil these obligations, particularly the requirement to improve the health of waterways'.[128] As stated earlier, in response to our draft decision, Melbourne Water can provide additional business cases in support of the $22 million of waterways and drainage expenditure (and any subsequent price increase) that we propose not to support.

We also received a submission in support of the Koo Wee Rup–Longwarry tariff proposal. One stakeholder raised some concerns on the cost reflectiveness of non-residential tariffs for customers on a property-based charge. Our draft decision proposes Melbourne Water consider a more cost reflective tariff in its next price review, noting that such a review is in-depth and cannot be undertaken in a short period of time.

Draft decision on waterways and drainage tariffs

We propose to approve Melbourne Water's waterways and drainage tariff structures for residential and rural customers, including the extension of transition to a single cost-reflective tariff for customers of Koo Wee Rup–Longwarry.

We propose Melbourne Water review and revise its waterways and drainage tariff for non-residential customers at the following price review to ensure a more cost reflective tariff.

[128] Yara Riverkeeper Association 2021, submission to the Essential Services Commission on Melbourne Water's 2021 price review, 5 February.

Regarding the Koo Wee Rup–Longwarry tariff, we support the proposal to revisit the service and price increase in 2022-23. In response to our draft decision Melbourne Water should set out the actual prices for those years it will charge below the maximum charge.

We propose to approve Melbourne Water's Quiet Lakes bore water flushing tariff subject to Melbourne Water reviewing the cost build-up of the tariff, particularly the energy costs and consumption.

10.2. Diversion services tariffs

Melbourne Water provides diversion services to customers who access water from waterways such as rivers, streams or dams.[129] Diversion customers are generally charged a licence service fee and a volume charge. We regulate Melbourne Water's tariffs according to the WIRO's pricing principles.[130]

Melbourne Water proposes:

- to retain the existing tariff structures for diversion tariffs
- a one-off increase in licence fees and volume charges of 5.2 per cent in 2021-22
- tariffs for diversion-related application fees remain flat in real terms.

Melbourne Water's diversion services tariffs are based on the principle of cost recovery and reflect direct expenditure and capital works as well as a provision for overheads. Melbourne Water proposes a 5.2 per cent increase in licence fees and volume charges in 2021-22 so it can recover its costs. This meets the WIRO requirement of providing signals about the efficient costs of providing prescribed services to customers.

Draft decision on diversion services tariffs

Our draft decision is to approve Melbourne Water's proposed diversion tariffs because it proposes to continue with existing arrangements, promotes cost reflectivity and complies with the WIRO pricing principles.

[129] Diversion services account for about 0.1 per cent of Melbourne Water's revenue.

[130] The pricing principles that we must have regard to are listed at clause 11(d) of the WIRO.

10.3. Miscellaneous services

Melbourne Water currently provides a range of miscellaneous services to retail water companies, developers and the general public. Miscellaneous service tariffs are regulated under the WIRO and according to our guidance, prices must reflect the actual cost of providing the services.[131]

Melbourne Water does not propose any changes to the structure of its tariffs for miscellaneous services. Melbourne Water proposes one-off changes to the level of some tariffs in 2021-22 to ensure cost-reflectivity: [132]

- a 6.1 per cent decrease in charges for property information statements
- a 4.9 per cent increase in charges for hydrological data
- a 6.8 per cent increase in charges for property flood level information.

All other miscellaneous service fees will remain flat in real terms.

Melbourne Water provides some services (processing of applications to construct over Melbourne Water assets and stormwater connections) below cost to encourage greater customer compliance and service uptake.[133]

Melbourne Water notes it has consulted with representatives of main applicants for miscellaneous services on the proposed changes to tariff levels.[134]

Draft decision on miscellaneous service charges

We propose to approve Melbourne Water's proposed changes to the level of its miscellaneous service charges as they are cost reflective.

[131] Essential Services Commission 2019, op. cit., p. 74.

[132] Melbourne Water 2020, op. cit., pp. 7-10 to 7-11. Miscellaneous services make up about 0.1 per cent of Melbourne Water's total revenue requirement over the 2021–2026 regulatory period.

[133] Correspondence from Melbourne Water received via email on 11 January 2021.

[134] Melbourne Water 2020, op. cit., p. 7-11.

11. Developer charges

Developers pay Melbourne Water for the capital investment for drainage and waterway services on undeveloped land (which is usually on the urban fringe). Developer charges are also known as 'new customer contributions'. Melbourne Water's proposal is set out on page 7-8 of its price submission supplement.

Melbourne Water proposes to continue to use the principles-based approach to calculating developer charges for drainage infrastructure and stormwater quality offsets with the following amendments:

- In addition to using developable hectares to calculate developer charges for greenfield developments, Melbourne Water proposes to use developable floor area as a new measure for calculating contributions for urban renewal precincts. The current pricing principles focus on greenfield developments.
- Financial assumptions relating to active schemes would be reviewed every year, but engineering specifications would be reviewed where required rather than every five years.

We sought further information on the proposed new measure of development density (developable floor space) to calculate developer charges in urban renewal precincts. Melbourne Water advises us that it has received independent advice that charging on a land area basis for urban renewal precincts would have a strong negative impact on affordability for low density and mixed-use developments. It is therefore considered more equitable to both developers and prospective purchasers that contributions are levied on a gross floor area basis. We consider that the proposed measure of calculating contributions better meets the WIRO principles.

In response to an information request, Melbourne Water advises us that toward the end of 2016, it moved away from a five-yearly engineering review to an annual needs-based assessment of every scheme in addition to the annual financial review. Melbourne Water notes that this improved targeted approach is supported by developers because it targets schemes determined as having the highest level of risk in terms of the ongoing achievement of scheme standards and asset construction. We consider that this amended principle better meets the requirements of the WIRO.

11.1. Drainage services schemes

Melbourne Water has provided us a sample of models and reports for active drainage systems, noting that there are over 100 active pricing models for drainage schemes. We have reviewed this sample to check that the pricing principles have been correctly applied by Melbourne Water.

We notice that in the sample of five pricing models provided, all use a post-tax real weighted average cost of capital (WACC) in the net present value calculations, instead of a pre-tax real

discount rate as specified in section 4.3 of Melbourne Water's determination. Melbourne Water admits this was an oversight but that the impact on the contribution rate is small and within the forecasting error of the price modelling process. Our determination sets out that Melbourne Water should use a pre-tax discount rate and we consider Melbourne Water should apply the pre-tax WACC in its contribution calculations as per the determination.

Draft decision on developer contributions202

We propose to approve Melbourne Water's proposal to use the amended pricing principles to calculate developer charges for drainage infrastructure and stormwater quality for the 2021–2026 regulatory period because it better meets the WIRO principles.

12. Form of price control and adjusting prices

This chapter sets out our draft decision on Melbourne Water's proposed form of price control and annual price adjustment mechanisms that may apply from 2021-22 to 2023-24. Currently, Melbourne Water uses price adjustments to account for:

- uncertain and unforeseen events
- differences between forecast and actual desalination costs (covering desalination security payments and the cost of any water ordered)
- a pass through of changes in some costs (such as taxes) during the regulatory period.

Melbourne Water proposed minor changes to its current price adjustment mechanisms to recover other costs associated with executing a desalination plant water order. Melbourne Water proposed to continue with a price cap form of control for its water, sewerage, recycled water, and waterways and drainage services.

12.1. Melbourne Water's proposed form of price control

The form of price control can be an important means of managing risk for water corporations and has implications for how price changes will affect their customers. Melbourne Water proposes to continue to apply its current price cap to its regulated tariffs. Melbourne Water has identified its key risks and specified the various mechanisms to manage them.[135] The form of price control has been discussed with the water and sewerage customer council and Melbourne Water believes that a continuation of the current form of control best balances the views of its customers and Melbourne Water's commitment to conduct a tariff review after the 2021 price review. Melbourne Water notes it retains the ability to price below the price cap where actual demands are significantly above forecast, passing through savings to customers.

Approach to reviewing form of price control

Our guidance notes we would have particular regard to whether Melbourne Water proposes to continue its existing approach or introduce a new form of price control.[136] Where a change is proposed, however, Melbourne Water would need to demonstrate that the new price control better satisfies the requirements in clause 11 of the WIRO than the existing structure. In our assessment,

[135] Melbourne Water 2020, op. cit., p. 4-2 to 4-12.

[136] Essential Services Commission 2019, op. cit., p. 40.

we note we would place a strong weighting on the feedback Melbourne Water receives from customers and water retailers.

We consider Melbourne Water's current price cap optimises risk sharing between the corporation and its customers. A price cap also provides customers with price certainty, and means Melbourne Water is managing demand risk on behalf of its customers. We consider demand risk is more efficiently managed by Melbourne Water, rather than its customers.

Draft decision on form of price control

We propose to accept Melbourne Water's proposed price cap form of price control for water, sewerage and waterways and drainage services because it complies with clause 11 of the WIRO.

12.2. Melbourne Water's proposed approach to adjusting prices

Melbourne Water proposes to continue to apply the existing price adjustment mechanisms identified in the 2016 Price Determination.[137] [138] It proposes to continue:

- to apply its existing definition of uncertain and unforeseen events mechanism
- the current pass-through mechanism for the Victorian Desalination Plant security cost payments
- the current pass-through mechanism for the cost of Victorian Desalination Plant water orders, as set by the Department of Environment, Land, Water and Planning
- the current annual update to the weighted average cost of capital.

Melbourne Water also proposes to amend the pass-through mechanism related to the water order costs to recover other costs associated with the management of Victorian Desalination Plant water orders. Melbourne Water explained that pumping water from Cardinia Reservoir to Silvan Reservoir to accommodate desalinated water increases its energy usage costs. At the same time, its hydro electricity generation, which relies on the downhill flow from Silvan Reservoir to Cardinia Reservoir, is adversely impacted. This causes Melbourne Water to forgo revenue that is used to offset its electricity costs. Melbourne Water estimated that annual costs associated with fulfilling the water order can be upwards of $3.5 million in a given year. Melbourne Water argues this approach to cost recovery is preferrable to requesting an allowance based around forecasts (which would depend on yearly climatic conditions and subject to Ministerial approval).

[137] Melbourne Water 2020, op. cit., pp. 8-1 and 8-12.

[138] Essential Services Commission 2016, Metropolitan Melbourne Water Price Review 2016 Final Decision: Melbourne Water Determination, 15 June.

Melbourne Water proposed an offset mechanism where the actual costs associated with accommodating a water order in year one would be recovered in year two. This mechanism could then extend across regulatory periods should costs be incurred in year five. Melbourne Water states it intends to apply a robust methodology to identify only actual costs associated with pumping and forgone hydro-electric plant revenue.

The proposal is in line with end-use customer feedback. The water and sewerage customer council's preference is for Melbourne Water to adopt a new pricing approach based on forecast order volumes to minimise any bill shocks associated with the water ordering process.[139] However, both retail water corporations and their customers recognise the difficulty in forecasting water orders over a five-year period due to the associated uncertainty and because the final order volume is subject to ministerial decision-making.[140] In response, Melbourne Water has decided to not include any costs associated with desalinated water orders in its proposed prices.[141]

We recognise that allowing Melbourne Water to recover actual electricity pumping costs associated with executing a water order sends appropriate signals about the costs of desalinated water.

We note that Melbourne Water has not explained how it would calculate the forgone revenue from its lost hydro-electric generation, the baseline from which any potential loss is derived and the rate at which the electricity will be priced. We also note that the execution of the desalination order will result in comparably more water in Melbourne's storage system, which could be used to increase hydro-electric generation at Melbourne Water's other plants. We consider this would mitigate the loss in generation at Cardinia power plant. It is therefore unclear whether Melbourne Water will incur a loss in revenue from hydro-electric generation more generally, and whether Melbourne Water can take action to mitigate such loss. In the absence of a clear and transparent mechanism to adjusting prices that is consistent with the WIRO, we cannot accept Melbourne Water's proposal to pass through forgone revenue from hydro-electric generation at the Cardinia power plant.

We also examined Melbourne Water's proposed offset mechanism to recover actual pumping costs in the following year. Given the timeframes during the annual tariff adjustment process, it is unlikely Melbourne Water would have a full year of actual electricity pumping costs in time for inclusions in tariffs for the forthcoming new financial year. We suggest that in response to our draft decision, Melbourne Water propose to either recover the incurred costs two years later or develop a true-up mechanism whereby only estimated costs are adjusted for actual costs in the following year. This would allow Melbourne Water to provide assurance that only actual costs arising from

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[139] With a mechanism to vary prices should the accrual order differ from the forecast.

[140] Melbourne Water 2020, op. cit., p 4–13.

[141] Correspondence from Melbourne Water received via email on 1 December 2020.

pumping desalinated water would be passed through and Melbourne Water only receives revenue through actual costs incurred. Given the later recovery of the pass-through amount, Melbourne Water should take into account the time value of money.

Draft decision on adjusting prices

We propose not to approve Melbourne Water's proposed pass-through mechanism for forgone hydro-electric revenue because Melbourne Water has not proposed a methodology as required by the WIRO.

In response to our draft decision Melbourne Water should propose an offset mechanism to recover actual pumping costs to allow it to recover actual costs to ensure the tariff is cost-reflective.

We propose to accept Melbourne Water's annual price adjustment mechanisms for the costs associated with the Victorian Desalination Plant water order, contract cost changes and annual update to the weighted average cost of capital because Melbourne Water proposes to continue with current mechanisms and they have worked well in the past.

13. PREMO rating

PREMO is an incentive mechanism that links the return on equity to a water corporation's level of ambition in delivering value to its customers. Melbourne Water assigned its price submission an 'Advanced' PREMO rating for this regulatory period.

For the 2021 price review, Melbourne Water must rate its price submission as 'Leading', 'Advanced', 'Standard' or 'Basic'. The rating is based on an assessment against the Risk, Engagement, Management and Outcomes elements of PREMO. A 'Leading' price submission receives the highest return on equity, and a 'Basic' receives the lowest.

The assessment tool included in our guidance directs Melbourne Water to consider its level of ambition in relation to matters covered in its price submission, such as proposals related to operating and capital expenditure, customer engagement and tariffs.

In Section 7.3, we noted our draft decision is not to accept Melbourne Water's proposed return on equity of 4.8 per cent. Instead, we propose to allow a return on equity of 4.2 per cent.

Below, we set out our preliminary assessment of Melbourne Water's proposed PREMO rating.

Table 13.1 PREMO rating

	Overall PREMO rating	Risk	Engagement	Management	Outcomes
Melbourne Water's rating	Advanced	Advanced	Advanced	Advanced	Advanced
Commission's rating	Standard	Standard	Standard	Standard	Standard

Our assessment considered, among other things, the effect of the coronavirus pandemic on Melbourne Water's PREMO rating. When we examined Melbourne Water's proposals for its 'Advanced' rating, we consider that most were established pre-coronavirus pandemic and little of its proposal for an 'Advanced' rating on risk, engagement, management and outcomes was adjusted in response to the pandemic.[142]

Melbourne Water sets out its reasoning for its 'Advanced' rating for each of the four PREMO elements on pages 32 to 34 of its price submission. Our assessment considers the claims made by

[142] As noted in chapter 1, regulatory period, we have outlined where we consider the coronavirus pandemic affected Melbourne Water's proposal in our reasons for a shorter than five-year regulatory period.

Melbourne Water against our PREMO assessment tool guidelines. We have also compared Melbourne Water's claims against the proposals of other water corporations that received an 'Advanced' rating in our 2018 water price review, in particular the three metropolitan water retailers. We have outlined throughout our draft decision where we consider Melbourne Water's proposal does not reflect its claims for an 'Advanced' rating, and provided numerous examples of what we considered 'Advanced' proposals as a direct comparison.

Overall, we do not consider Melbourne Water has provided sufficient or adequate information to support its self-rating of 'Advanced'. Many of its claims clearly meet the requirements for a 'Standard' rating but do not show how its price submission has provided improved value for its customers or how it outperformed other water corporations. Our PREMO incentive framework required Melbourne Water to submit its 'best offer' in its price submission and self-rate the ambition of its submission. Melbourne Water cannot respond to our decision on its rating with additional information for us to review and revise our decision on its PREMO rating.

Our decision is to downgrade Melbourne Water's overall PREMO rating from 'Advanced' to 'Standard'. Our reasoning for our PREMO rating for each of the elements is set out below.

13.1. Risk

Our decision approves a 'Standard' rating for the Risk element of PREMO. Melbourne Water proposed an 'Advanced' rating.

Melbourne Water's price submission lists a number of matters in support of its 'Advanced' rating which we consider are good practice of any water corporation, and therefore consistent with a 'Standard' rated corporation, including:

- bearing the operating expenditure risk of non-delivery or downtime of its self-generated renewable energy
- deferring $498 million of additional capital expenditure (discussed below under our management element)
- introducing guaranteed service level payments (which are yet to be defined)
- pass-through of desalination water orders, which is already the case, and associated pumping costs
- not collecting costs for any future augmentation of the Victorian Desalination Plant.

Melbourne Water's submission states it has completed a robust consideration of coronavirus pandemic related risks. We would have expected the significant increase in uncertainty arising from the pandemic to be reflected in the price submission, especially in the form of revised demand forecasts, and adjustments to growth-related capital expenditure, but both remained unchanged. Melbourne Water has 'smoothed' its capital expenditure profile, pushing some expenditure from the front years of the period to the latter years, however we do not consider Melbourne Water's

submission adequately addresses the uncertainty associated with its very large expenditure program. As discussed in the capital expenditure chapter (Chapter 6), we have proposed material adjustments to the benchmark expenditure allowances which we consider better balances the uncertainty risks for customers.

On demand forecasting, we note that Melbourne Water proposed to accept the risk on behalf of customers if actual population growth is lower than its proposed growth of 1.9 per cent per year. We sought additional information from Melbourne Water when the Victorian Government released revised demand forecast estimates of around one per cent per year, and Melbourne Water responded that it may not be able to fully absorb the impact on its revenue requirement arising out of a lower population growth and demand.[143] We do not consider that this response is consistent with that of an 'Advanced' corporation, where well-balanced and cost-reflective expenditure forecasts should readily adapt for changed input conditions.

For the reasons set out above, our draft decision proposes a 'Standard' rating for the Risk element of PREMO.

13.2. Engagement

Our decision approves a 'Standard' rating for the Engagement element of PREMO. Melbourne Water proposed an 'Advanced' rating.

We recognise that many elements of Melbourne Water's engagement program demonstrate sound engagement practice, that is, it commenced early, was inclusive of its broad customer base, and covered a range of topics relevant to its services and prices. Its program met our six principles of customer engagement outlined in our guidance in a way that we expect of any water corporation of its size and resourcing. We also saw evidence that it has sought to understand the impact of its proposed prices on customers more likely to experience payment difficulty. In doing so, its submission supports the WIRO requirement to take into account the interests of low income and vulnerable customers.

However, we consider that Melbourne Water adopted a more traditional approach to its engagement, which included engagement practices that did not fully support the level of collaboration, influence and deliberation of final proposals in its near final submission, that we would expect with an 'Advanced' submission. This was evident in its engagement on critical issues such as its approach to capitalising desalination payments and the formulation and use of its study to establish willingness to pay. For example, by not fully engaging stakeholders on its preferred approach to capitalising its desalination payments, we could not be assured it had taken into

[143] Correspondence from Melbourne Water received via email on 23 December 2020.

account customer views on this issue. By relying on research methodology that was not well suited to establishing willingness to pay, and which lacked transparency and was conducive to biased outputs, we could not be assured that the results were valid or could be relied on in the way described in stakeholders' submissions.

Further challenging its claim to an 'Advanced' rating, we found evidence of stakeholders questioning the level of influence, including from Melbourne Water's Water and Sewerage Customer Council (which included the three metropolitan water retailers), which did not fully support the level of collaboration Melbourne Water described in its submission. To be an 'Advanced' engagement program, we would expect strong endorsement of its claims by engagement participants, particularly participants who are highly experienced in designing and implementing engagement programs under our PREMO framework, some of whom contributed to their businesses' own 'Advanced' PREMO rating in the 2018 water price review.

On balance we consider a 'Standard' PREMO rating for engagement better reflects the engagement program overall.

13.3. Management

Our decision approves a 'Standard' rating for the management element of PREMO. Melbourne Water proposed an 'Advanced' rating.

PREMO was designed to provide incentives for water corporations to deliver a high-quality price submission with accurate and consistent data throughout. We and our consultant Deloitte found a number of inconsistencies between the written submission and financial model, adding to the complexity of our assessment.[144] We also saw inconsistencies in forecasting assumptions, in particular with regards to demand where the customer growth claims in the operating expenditure section did not align with other sections of the submission.

Melbourne Water proposed a controllable operating expenditure efficiency gain of 2.0 per cent per year, against a growth factor of 1.95 per cent. In its review, Deloitte did not accept the proposed growth factor and proposed a notional value of one per cent for the draft decision. Melbourne Water's response to Deloitte's proposal was to also lower the efficiency improvement rate to 1.2 per cent. This suggests the original proposed efficiency gain was partly tied to unnecessary operating expenditure in the initial growth allowance proposed by Melbourne Water, rather than true cost savings introduced through efficient management decisions. We consider the real efficiency factor is therefore more consistent with a 'Standard' rating.

[144] Examples include energy consumption forecasts (Section 5.1.4) and the approach to desalination capitalisation (Section 6.4).

Melbourne Water proposed an additional $43.5 million operating expenditure for its waterways and drainage service, and justified much of this on a single customer 'willingness to pay study'. We consider willingness to pay studies should inform rather than replace robust expenditure forecasts, and should sit alongside engagement approaches that verify the willingness to pay. For an 'Advanced' management rating, we would expect to see a strong standalone justification, including business cases, demonstrating the prudency and efficiency of the additional expenditure, as part of Melbourne Water's price submission. In addition, we would expect an 'Advanced' business to rely on more than a single study to support its proposals for significant increases in expenditure.

Melbourne Water's proposed capital expenditure forecast for the 2021–2026 regulatory period is significantly higher than the outlook for that period at its 2016 price review. Melbourne Water claimed the increased spend was largely justified by urgent capacity increase requirements driven by higher than expected customer growth during the current period. While we don't doubt the capacity increases are in fact required, with timing dependent on the revised growth forecast, we would have expected such major investment needs to be on the forward planning horizon.

In support of its 'Advanced' rating, Melbourne Water also stated it had deferred $498 million in additional capital projects that could have been included on prudency grounds. Given the already very large increase in capital expenditure forecast, we would have expected a very rigorous internal challenge to the investment program, and see this as a solid 'Standard' approach to preparing an acceptable capital expenditure forecast.

Melbourne Water's approach to capitalisation of a portion of the desalination payments is inconsistent with our 2016 price review final decision (discussed in detail in Section 6.4). During the development of its price submission, Melbourne Water did not discuss with us its proposed approach to increase the amount capitalised to recoup amounts it had previously chosen not to capitalise – this is unusual given its proposed approach is inconsistent with past pricing decisions. The amount of additional desalination capitalisation that we propose not to approve in our draft decision, $111.4 million, is substantive and makes a material impact on prices proposed by Melbourne Water. We would have expected Melbourne Water to raise the implications of its proposed desalination capitalisation during the development of its price submission given the direct impact it has on end-use customer prices.

For the reasons set out above, our draft decision proposes a 'Standard' rating for the Management element of PREMO.

13.4. Outcomes

Our decision is to not approve Melbourne Water's proposal of an 'Advanced' rating for the Outcomes element of PREMO. We approve a 'Standard' rating.

Through its customer engagement processes, Melbourne Water established six customer outcomes and a set of measures and targets for each, as required under the PREMO framework and in accordance with our guidance. We note there was general customer support for the measures and targets, but as discussed in Chapter 3, most of the proposed targets do not represent an improvement in service level across the regulatory period. And those that do are mostly either mandated programs or improved customer survey results. We do not consider Melbourne Water's proposal reflects a significant improvement in value, and therefore is not consistent with an 'Advanced' rating.

Melbourne Water's proposed outcomes reporting process is consistent with our expectations for a 'Standard' rating, but does not demonstrate how its reporting will be well ahead of other water corporations and deserving of the proposed 'Advanced' rating.

Melbourne Water's proposed outcome measure to identify operating expenditure savings of $0.5 million per year is relatively small compared to its controllable operating expenditure of about $380 million per year. This does not indicate Melbourne Water is challenging itself to deliver significantly improved value to customers, consistent with an 'Advanced' level.

Melbourne Water has not set guaranteed service levels but noted its intention to finalise guaranteed services levels during the regulatory period. Our guidance did not specifically require Melbourne Water to establish guaranteed service levels, and we recognise this initiative arises from its customers' expectations. However, we do not consider an *intention* to finalise GSLs lends itself to an 'Advanced' proposal.

For the reasons set out above, our draft decision is for a 'Standard' rating for the Outcomes element of PREMO.

Draft decision on PREMO rating

Our draft decision proposes a 'Standard' overall PREMO rating for Melbourne Water's price submission. We also propose 'Standard' ratings for the risk, engagement, management and outcomes elements of PREMO.

Appendix A: Our consideration of legal requirements

Clause 11 of the Water Industry Regulatory Order 2014 (WIRO) specifies the mandatory factors we must have regard to when making a price determination. The WIRO covers matters that are included in the Water Industry Act 1994 (WI Act) and the Essential Services Commission Act 2001 (ESC Act).

Below, we describe how we apply the mandatory factors and where we have done so in our draft decision for Melbourne Water.

In addition to the mandatory factors set out below, clause 11 of the WIRO requires the commission to have regard to the matters specified in the commission's guidance.[145] We have had regard to the matters specified in our guidance in reaching our preliminary view. Our draft decision provides further information on where we have considered our guidance, and Melbourne Water's compliance with our guidance, in reaching our preliminary view.

Note: all page numbers referenced below refer to our draft decision for Melbourne Water.

[145] Essential Services Commission 2019, op. cit; Essential Services Commission 2020, op. cit.

Economic efficiency and viability matters

WIRO clause 8(b)(i) requires us to have regard to the 'promotion of efficient use of prescribed services by customers'.

We consider that the efficient use of prescribed services by customers is promoted when a tariff is applied to customers benefiting from the service covered by the tariff, and tariffs send appropriate signals about efficient costs.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

WIRO clause 8(b)(ii) requires us to have regard to the 'promotion of efficiency in regulated entities as well as efficiency in, and financial viability of, the regulated water industry'.

We consider that the delivery of outcomes which reflect customer service priorities at an efficient cost promotes efficiency in regulated entities and the water industry. Our draft decision has therefore had regard to the extent that Melbourne Water has demonstrated its proposed outcomes reflect customer service priorities, and whether its tariffs and forecast costs reflect efficient levels of expenditure.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 12).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).
- Our assessment of financial viability (pages 49 to 54).

WIRO clause 8(b)(iii) requires us to have regard to the 'provision to regulated entities of incentives to pursue efficiency improvements'.

We consider that the delivery of outcomes which reflect customer service priorities at an efficient cost provides regulated entities incentives to pursue efficiency improvements. The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our consideration of outcomes (pages 11 to 13).

- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

Additionally, our pricing approach allows a water corporation to retain the benefits of any cost efficiencies it generates until the end of its regulatory period. In other words, a water corporation has an incentive to outperform the operating and capital expenditure benchmarks we accept for the purpose of estimating its revenue requirement and prices. This is consistent with providing incentives for water corporations to pursue efficiency improvements.

ESC Act section 8A(1)(a) requires us to have regard to 'efficiency in the industry and incentives for long term investment'.

We consider that adopting forecasts of efficient expenditure that reflect the service priorities of the customers of each water corporation promotes efficiency in the water industry.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our consideration of outcomes (pages 11 to 13).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

We have had regard to incentives for long term investment by adopting:

- A ten-year trailing average approach to estimating the benchmark cost of debt (see pages 52 to 53).
- A regulatory rate of return that we consider will enable Melbourne Water to recover costs associated with its investment in services.[146]

ESC Act section 8A(1)(b) requires us to have regard to the 'financial viability of the industry'.

We consider that the financial viability of the industry is secured by approving prices that provide a high degree of certainty that each water corporation can maintain an investment grade credit

[146] The regulatory rate of return is comprised of the cost of debt and the return on equity.

rating. Further, prices should enable each corporation to generate cash flow to service financing costs arising from investments to meet service expectations.

We have had regard to this matter on pages 15 to 19 and pages 49 to 54.

ESC Act section 33(3)(b) requires us to have regard to the 'efficient costs of producing or supplying regulated goods or services and of complying with relevant legislation and relevant health, safety, environmental and social legislation applying to the regulated industry'.

In preparing our draft decision, we have had regard to the extent Melbourne Water has demonstrated its forecasts reflect efficient costs to deliver services valued by customers, and to deliver on relevant legislation and relevant health, safety, environmental and social obligations.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

Industry specific matters

ESC Act section 33(3)(a) requires us to have regard to the 'particular circumstances of the regulated industry and the prescribed goods and services for which the determination is being made'.

Our pricing approach allows each water corporation to propose outcomes, tariff structures and expenditure that reflect its particular circumstances. We consider that taking into account the particular circumstances of each water corporation is consistent with taking into account the particular circumstances of the water industry.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our consideration of outcomes (pages 11 to 13).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

We have had regard to the prescribed services listed in the WIRO in making our decision. This includes adopting operating and capital expenditure benchmarks that we consider will allow

Melbourne Water to deliver services that are covered by the prescribed services listed in the WIRO.

ESC Act section 33(3)(c) requires us to have regard to the 'return on assets in the regulated industry'.

Our draft decision provides for Melbourne Water to generate a return on assets through:

- Our consideration of the regulatory asset base (pages 49 to 51).
- Our consideration of the cost of debt (pages 52 to 53).
- Our consideration of the return on equity (pages 53 to 54).

ESC Act Section 33(3)(d) requires us to have regard to 'any relevant interstate and international benchmarks for prices, costs and return on assets in comparable industries'.

In assessing costs, prices and return on assets we have had regard to relevant interstate benchmarks:

- indicative bills paid by customers in other jurisdictions in Australia[147]
- operating and capital expenditure costs per connection throughout Australia[148]
- tariff structures applied by water corporations throughout Australia[149]
- the regulatory rate of return set by other regulators.[150]

We are not aware of any international benchmarks that are relevant to our decision.

WI Act section 4C(b) requires us to 'ensure that regulatory decision making and regulatory processes have regard to any differences between the operating environments of regulated entities'.

Our pricing approach allows each water corporation to propose outcomes, a revenue requirement, expenditure and tariffs that reflect its particular circumstances and operating environment.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our consideration of outcomes (pages 11 to 13).

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[147] Bureau of Meteorology 2021, National performance report 2019-20: urban water utilities, part A, Melbourne.

[148] Ibid.

[149] Includes Icon Water, Sydney Water, Hunter Water, Gosford City Council, Wyong Shire Council, Power and Water Corp, Urban Utilities, Unity Water, SA Water and TasWater.

[150] Essential Services Commission of South Australia 2018, SA Water Our Plan 2020–24, December; Independent Pricing and Regulatory Tribunal 2019, WACC biannual update, August.

- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

Our price review also considers the views of stakeholders affected by Melbourne Water's proposals, including through submissions and public meetings.

Customer matters

ESC Act section 8(1) requires us to have regard to the fact that the 'objective of the Commission is to promote the long term interests of Victorian consumers'.

We consider that promoting efficiency in delivering outcomes that align to service priorities of customers is consistent with promoting the long term interests of Victorian consumers.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our consideration of outcomes (pages 11 to 13).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

ESC Act Section 8(2) requires us to 'have regard to the price, quality and reliability of essential services' in seeking to achieve the objective in section 8(1) of the ESC Act.

We consider that promoting efficiency in delivering outcomes that align to service priorities of customers, and allowing corporations to meet regulatory and policy obligations is consistent with this objective.

In terms of prices, the following sections of our draft decision involved consideration of this factor:

- Our consideration of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our consideration of demand (pages 55 to 60).
- Our consideration of tariffs (pages 61 to 72).

In terms of the quality and reliability of services, the following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).

- Our consideration of outcomes (pages 11 to 13).

WIRO Clause 11(d)(i) requires us to have regard to whether Melbourne Water's prices 'enable customers or potential customers of the regulated entity to easily understand prices charged by the regulated entity for prescribed services or the manner in which such prices are calculated, determined or otherwise regulated'.

We consider that the following matters are relevant when considering whether Melbourne Water's prices enable customers or potential customers to easily understand prices, or the manner in which prices are calculated, determined or otherwise regulated:

- feedback from customers during a water corporation's engagement
- the structure of individual tariffs
- the proposed form of price control
- any changes to tariffs and how water corporations explain them to customers.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of the form of price control and tariffs (pages 73 to 76 and 61 to 72).

WIRO Clause 11(d)(ii) requires us to have regard to whether Melbourne Water's prices 'provide signals about the efficient costs of providing prescribed services to customers while avoiding price shocks where possible'.

We consider prices can provide signals about efficient costs when a tariff is applied to customers benefiting from the service covered by the tariff, and tariffs send appropriate signals about efficient costs.

The following sections of our draft decision involved consideration of this factor:

- Our consideration of customer engagement (pages 5 to 10).
- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

WIRO Clause 11(d)(iii) requires us to have regard to whether Melbourne Water's prices 'take into account the interests of customers of the regulated entity, including low income and vulnerable customers'.

In considering the above factor, we had regard to:

- Melbourne Water's customer engagement, noting that affordability was one of the major priorities identified by its customers and was reflected in Melbourne Water's outcome commitment 'bills are kept as low as possible' (pages 5 to 10)

- Melbourne Water's willingness to pay study, to establish customers' willingness to pay for additional investment in waterways and drainage services (pages 7 to 10).

Health, safety, environmental and social obligations

ESC Act Section 8A(1)(d) requires us to have regard to 'the relevant health, safety, environmental and social legislation applying to the industry'.

Our draft decision proposes to approve a revenue requirement that will enable Melbourne Water to deliver on its legal and regulatory obligations.

The following sections of our draft decision involved consideration of this factor:

- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of the form of price control (pages 73 to 76).

WI Act section 4C(c) requires us to 'ensure that regulatory decision making has regard to the health, safety, environmental sustainability (including water conservation) and social obligations of regulated entities'.

Our draft decision proposes to approve a revenue requirement that will enable Melbourne Water to deliver on its health, safety, environmental sustainability and social obligations.

The following sections of our draft decision involved consideration of this factor:

- Our assessment of the revenue requirement (pages 15 to 19).
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).
- Our assessment of tariffs (pages 61 to 72).

Other matters

ESC Act section 8A(1)(c) requires us to have regard to 'the degree of, and scope for, competition within the industry, including countervailing market power and information asymmetries'.

In relation to the above, Melbourne Water does not face any competition in the delivery of its prescribed services within its region. Our draft decision takes this into account through our consideration of forecast efficient costs, and considering the service priorities of customers as revealed through a business's customer engagement.

The following sections of our draft decision involved consideration of this factor:

- Our assessment of engagement (pages 5 to 10)
- Our assessment of outcomes (pages 11 to 13)
- Our assessment of efficient operating expenditure (pages 23 to 33) and capital expenditure (pages 35 to 48).

We consider that our pricing approach helps to address market power and information asymmetries relating to the water corporations. Our PREMO water pricing approach provides incentives for a water corporation to provide its "best offer" to customers in its price submission. This is described in further detail in a report we released in 2016.[151]

ESC Act section 8A(1)(e) requires us to have regard to the 'benefits and costs of regulation (including externalities and gains from competition and efficiency) for: (i) consumers and users of products or services (including low income and vulnerable consumers); and (ii) regulated entities'.

We have had regard to benefits and costs of regulation by:

- Focusing our assessments of price submissions on the materiality of proposals to customer interests (including low income and vulnerable services), including in terms of price, bill and service impacts.
- Designing our guidance so we minimise the compliance costs for water corporations. Our guidance noted that much of the information required in price submissions should be readily available to water corporations as it would be relevant for other purposes such as corporate planning and project prioritisation and justification.[152]

A benchmarking study found that the cost of the commission's price reviews in the past has been lower than those of regulators in other Australian jurisdictions (after being normalised for revenue covered by price decisions).[153]

ESC Act section 8A(1)(f) requires us to have regard to 'consistency in regulation between States and on a national basis'.

Similar to other state and national regulators, our economic regulatory approach:

- uses the building block method to estimate a water corporation's revenue requirement

[151] Essential Services Commission 2016, Water Pricing Framework and Approach, Implementing PREMO from 2018, October, pp. 11–13.

[152] Essential Services Commission 2019, op. cit., p. 2.

[153] Essential Services Commission 2014, Information paper for the Independent Review of the Economic Regulatory Framework, April.

- allows water corporations to implement various forms of price control, including price caps and revenue caps
- allows for consultation with key stakeholders during a price review, including through the release of a draft decision.

WI Act section 4C(a) requires us to 'ensure that the costs of regulation do not exceed the benefits'.

We have sought to ensure that the costs of regulation do not exceed the benefits by:

- Implementing a price review process so that water corporations may receive streamlined price reviews if they submit a high quality price submission. This reduces the costs of regulation for water corporations and the commission.
- Focusing our assessments of price submissions on the materiality of proposals to customer interests (including low income and vulnerable services), including in terms of price, bill and service impacts.
- Designing our guidance so we minimise the compliance costs for water corporations. Our guidance noted that much of the information required in price submissions should be readily available to water corporations as it would be relevant for other purposes such as corporate planning and project prioritisation and justification.[154]

[154] Essential Services Commission 2019, op. cit., p.2.

Appendix B: Submissions received

Date	Name or organisation
18 November 2020	Robert Unterberger
25 November 2020	Name withheld
2 December 2020	Michael Jacombs
27 January 2021	Travis Aheam
29 January 2021	Michael Carydakis
4 February 2021	Hume City Council
5 February 2021	Yarra Riverkeeper Association
5 February 2021	Name withheld
8 February 2021	Sue King
8 February 2021	Friends of Steele Creek
8 February 2021	Werribee River Association

Appendix C: SIMALTO as a stated preference technique

SIMALTO as a research method is a form of stated preference survey task in which respondents are asked to make a series of choices based on different hypothetical scenarios. SIMALTO differs from other more traditional stated preference formats such as traditional conjoint, choice based conjoint, and contingent valuation type questions in a number of ways. Further, it should be noted that the version of SIMALTO implemented for Melbourne Water by Newgate Research incorporates both contingent valuation and choice based conjoint type questions.

Traditional conjoint presents respondents with a large number of alternatives, usually constructed from a full factorial or fractional factorial, which they are asked to rank or rate in a single task. Outside of environmental economics, traditional conjoint was the dominant stated preference approach used in both industry and academia in the 1970s and early 1980s. As a technique, the approach suffered from a number of major criticisms that saw its popularity wane, until today where it has disappeared completely from academic use, and is used only rarely in marketing research studies.

One of the major criticisms of the approach was that it was born primarily from an industry need and lacked any behavioural or theoretical basis. Choice based conjoint on the other hand has a long history dating back to the 1920s and 30s (Thurstone 1927, 1931) in mathematical psychology, and has a strong theoretical connection with economics theory, in particular random utility theory. Since the 1980s, traditional conjoint has been largely replaced by choice based conjoint questions. Choice based conjoint survey approaches differ to traditional conjoint insofar as choice based conjoint presents respondents with subsets of alternatives from which they are asked to choose their most preferred alternative in multiple tasks.

SIMALTO on the other hand presents respondents with a pre-specified budget in the way of points, which they are asked to allocate amongst a series of attributes. Each attribute has a number of levels, representing increasing improvements in the attribute's level of service, and require a certain number of points in order to be selected. Newgate Research has extended SIMALTO beyond its original formulation by requiring respondents to indicate how much they would be willing to pay, selected from pre-selected values (a form of contingent valuation question), for the alternatives they construct given the points budget allocated. This additional willingness to pay question was not part of the original SIMALTO question format. After answering the willingness to pay question, the process is repeated twice more (including with the additional willingness to pay question) with the respondent given a larger budget of points to allocate in each round. After completing three rounds, respondents are next presented with the choices they made in the three

budget allocation tasks, as well as an alternative representing the level of service currently exhibited by Melbourne Water. Presented with these three alternatives, respondents are asked a discrete choice question as to which alternative they would choose given prices calculated based on their previous selections (a form of choice based conjoint question). This too represents a deviation from the original SIMALTO questionnaire format. Finally, respondents are asked to respond to an open-ended contingent valuation question.

Concerns on the use of SIMALTO

It was noted that SIMALTO used a version of what is called self-explicative conjoint. It is worth noting that like traditional conjoint approaches, self-explicative conjoint as a data collection approach disappeared largely from the academic literature in the early 2000s. Studies conducted in the 1980s and 1990s exploring self-explicative conjoint as a preference elicitation approach found that it suffers from issues, including:

No theoretical basis: the technique has no underlying theoretical basis linking it to behaviour, meaning that it is not clear what economic interpretation should be given to the results presented.

Measurement error: this means that respondents are assumed to be error free when answering questions, having full information and acting purely rationally. This can result in endogeneity issues as well.

Realism: compared to the approach used by Melbourne Water, traditional conjoint and choice based conjoint methods have been shown to represent more realistic choices for respondents to make than self-explicative conjoint approaches.

Interpretation: traditional conjoint and choice based conjoint have been shown to be more likely to detect real importance weights, compared to self-explicative conjoint approaches which tend to ask respondents directly how important each attribute level is (Srivansan, 1988).

Black box: the absence of academic papers using SIMALTO makes it extremely difficult to disentangle precisely what analysis Newgate Research undertook.

Social acceptability: when asked directly, self-explicative conjoint questions have been shown to result in respondents providing more socially acceptable responses rather than revealing their true preferences (Hensel-Borner and Sattler, 1999).

Sensitivity: studies have found that self-explicative conjoint questions tend to produce less sensitivity than other stated preference approaches (Gedenk et al. 1999). Nitzsch and Weber (1993) report instances where self-explicative conjoint approaches result in total insensitivity to changes in levels, resulting in significant validity issues.

Non-linearity: studies have found that self-explicative conjoint questions tend to produce linear relationships between attribute levels compared to other stated preference approaches (Green and Srinivasan, 1990).

Double counting: if there are redundancies in the attributes, self-explicative conjoint approaches tend to result in double counting. For example, if respondents see a relationship between flood mitigation and flood preparedness, the fact that both are questioned separately in self-explicative conjoint approaches (with respect to the desirability questions), rather than traded off, can result in double counting of preferences (Green and Srinivasan, 1990).

Simulation or simulation error: given the limited data available for each respondent in this study, and the number of different possible combinations, the resulting simulation is highly likely to represent simulation noise as opposed to representing respondents' actual willingness to pay outcomes.

Validity and hypothetical bias: this refers to the ability to derive unbiased measures such as willingness to pay or willingness to accept, and the extent to which the values obtained for these measures in hypothetical settings correspond to their values in real-world settings. Numerous mitigation approaches have been proposed and tested within the stated preference literature (Hofstetter et al., 2020), each of which has been shown to reduce, although not eliminate completely, hypothetical bias concerns. None of these measures were used in the current study. At least ten hypothetical bias techniques can be identified within stated preference literature:

1. cheap talk
2. choice certainty scales
3. honesty priming
4. induced truth telling and inferred valuation
5. solemn oath
6. opt-out option or budget reminders
7. time-to-think method
8. revealed preference – assisted estimations
9. referencing and pivot (contextually realistic) designs and
10. perceived consequentially scales or consequentiality scripts.

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