



**The Consumer Council for Water's
submission to the
Competition and Markets Authority
about Bristol Water's referral of its 2014 Ofwat
Final Determination**

April 2015

1. Introduction

- 1.1 The Consumer Council for Water (CCWater) is the statutory independent consumer organisation representing household and non-household water and sewerage consumers in England and Wales. CCWater has four regional committees in England and a committee for Wales.
- 1.2 CCWater's role involves providing a strong national and regional voice for consumers through advocating consumers' views to the water industry, regulators and governments, and taking up consumers' complaints if they have tried and failed to resolve issues with water companies.
- 1.3 CCWater played an important part in the 2014 price review process. We were members of all 18 Customer Challenge Groups (CCGs) across the industry¹, including Bristol Water's Local Engagement Forum (LEF). CCWater had two representatives attending LEF meetings. We also chaired the LEF's sub-groups that focused on Bristol Water's customer research through the price review, and investment decisions.
- 1.4 The LEF Chair, Charles Howeson, was CCWater's Western region Committee Chair up to January 2015, whilst also chairing the Bristol Water LEF. Charles Howeson left CCWater in January 2015 to be the independent chair of the LEF, and is now paid by Bristol Water to compensate him for time spent on LEF matters.
- 1.5 We welcome the opportunity to submit our views to the Competition and Markets Authority (CMA) on Ofwat's referral of Bristol Water's Final Determination. This submission represents CCWater's views, and is separate to and has different emphasis to the submission from the LEF.

2. Executive Summary

- 2.1 CCWater broadly supports the package of outcomes (and the specific performance commitments to deliver them) set out in Bristol Water's business plan and the Ofwat Final Determination of 2014. This is because there is robust customer evidence underpinning the outcomes and delivery measures based on extensive customer research and engagement through the price control process, which was subject to scrutiny and challenge by us as members of the LEF.
- 2.2 We welcomed Ofwat's challenge to the company's proposed costs, as this gives customers assurance that the investment required to deliver services is needed, cost efficient and value for money. However, Bristol Water's proposed wholesale costs (and the model used to establish this) are significantly out of line with Ofwat's assessment.

¹ CCG's are independent groups of regulators and customer representatives established at the 2014 price review to scrutinise and challenge (where necessary) water company's 2015-20 business plan proposals.

- 2.3 Therefore, we would like to see the CMA examine the 19% gap in wholesale total expenditure (totex) and ensure that the range of outcomes and performance commitments for customers are delivered at a cost that reflects an efficient company.
- 2.4 We do not support Bristol Water's proposed Weighted Average Cost of Capital (WACC) of 4.37%. The company says its proposed WACC reflects what it sees as the risks associated with a smaller water only company. We question why the company requires such a significant increase above Ofwat's WACC to achieve financeability, when
- 17 of the 18 regulated water companies in England and Wales (including water companies of a similar size and financial structure to Bristol Water) have accepted the Ofwat WACC as part of their final determination 'package'.
 - The Ofwat WACC of 3.74% (3.6% wholesale) reflects the findings of a report by Economic Consulting Associates (ECA) commissioned by CCWater that shows that the cost of capital should be set within a range of 3.00% to 3.75%, reflecting evidence of market conditions and regulatory precedent. This also shows that the WACC could be lower than the figure set by Ofwat.
 - Customers should not pay for an increased cost of financing a company due to higher cost associated with a financing decision a company made in the past. Companies should carry the risk associated with such financing decisions.

2.5 Customer acceptability

The majority of customers were broadly supportive of Bristol Water's package of outcomes and performance commitments. Bristol Water's business plan package from December 2013 was viewed as acceptable by 92% of customers that took part in a survey by the company. In August 2014, CCWater measured customer acceptability of the Ofwat draft determination for Bristol Water using a different research methodology to the company and one that cannot be compared. This showed that 79% of customers found the prices proposed in the draft determination to be acceptable when given basic general information about what will happen to Bristol Water's average bill over 2015-20. This increased to 80% customer acceptability once forecast inflation was taken into account and rose further to 86% when customers taking part in the survey were presented with details of the outcomes the company aims to deliver².

- 2.6 As the Final Determination offers broadly the same outcomes and performance commitments as the Draft Determination, we agreed with the LEF that we would not carry out further research to measure customer acceptability of the Final Determination package and Bristol Water's statement of case. This is because it is likely that, when presented with two packages that offer broadly the same outcomes, customers would prefer the package with lower costs and bill impacts.

² Please see our response to Ofwat's Draft Determination for Bristol Water [here](#).

2.7 We consider that customers would also expect the outcomes to be delivered efficiently to give value for money. We look to the CMA to ensure that while allowed wholesale costs should reflect that of an efficient company, the package of outcome commitments to customers is intact.

2.8 Performance Commitments

We support Ofwat's interventions in Bristol Water's performance commitments, and have previously called on Ofwat to ensure that it takes a consistent approach to setting performance targets that reflect the upper quartile across industry³.

2.9 Research shows that Bristol Water's customers do not support the concept of financial performance incentives⁴. As such, we believe Bristol Water should not be rewarded for performance that is anything other than amongst the best in the industry. This view of rewards was reflected in our own research on the principle of using financial incentives in the delivery of required outcomes.

2.10 Cheddar 2 Reservoir

This company investment proposal was not allowed in Ofwat's Final Determination due to what the regulator sees as a lack of evidence to justify its delivery in the latter part of 2015-20.

2.11 Initially we supported Bristol Water beginning preparatory work for the scheme in 2019-20 to help spread the cost over a longer period. However, new evidence both from Bristol Water's statement of case and Ofwat's Final Determination, leads us to believe that Bristol Water should now

- revisit its assumptions around the amount of water it will have available for supply and the amount of water it needs to meet demand (headroom) used to justify the proposed investment, in the context of general industry practice and Environment Agency guidance; and
- reconsider whether smaller supply sources should be utilised ahead of the need for the Cheddar 2 Reservoir. This could allow more time to reassess the headroom and allow Bristol Water to delay the date when the reservoir's water is needed.

³ We have highlighted to Ofwat that it has been inconsistent in not re-assessing the performance commitments for the two water companies that received 'enhanced' status for their business plans, particularly South West Water's performance commitments and incentives relating to supply interruptions and negative customer contacts about drinking water quality. See our response to Ofwat [here](#) (paragraphs 4.1 to 4.8).

⁴ Bristol Water's business plan – December 2013 – refers to the incentives research – page 11 – link [here](#). CCWater also carried out qualitative research with customers in March 2014 in which customers gave a similar view – see 'Outcome and Delivery Incentives in the Water Industry (SPA Future Thinking)' [here](#).

2.12 Household and non-household retail

We supported the approach that Bristol Water took towards its retail performance commitments and the retail revenue allowance set in the Final Determination. We note that Bristol Water does not dispute the Ofwat decisions relating to the company's retail business.

3. CCWater's response to Bristol Water's appeal to the CMA against Ofwat's Final Determination

3.1 Overview

Our response focuses on the key areas that Bristol Water is challenging as it appeals Ofwat's Final Determination of prices for 2015-20. We have no issues about the retail element of the Determination as the areas of dispute between Ofwat and Bristol Water concern the costs, performance commitments, investment and financing of the company's wholesale business.

- 3.2 We welcome the CMA's review of the determination, and in terms of wholesale costs, we seek assurance that your determination will allow the company to deliver the required outcomes for customers at a cost that reflects an efficient company and represents value for money for customers.
- 3.3 We are aware that both Ofwat and Bristol Water have used different methods for modelling costs, and we trust that your assessment will establish the appropriate level of wholesale costs to allow the company to meet its commitments efficiently.

3.4 Outcomes

We support the outcomes that Bristol Water has in its plan, as they reflect customers' views on what are priority issues for them. We also support the measures for tracking the delivery of the outcomes, as confirmed by the Ofwat Final Determination. The measures also reflect customer evidence and were subject to scrutiny and challenge by CCWater and the LEF.

- 3.5 Bristol Water undertook research to explore customers' views and expectations of the service they receive⁵ and found - in order of priority - that they wished to make sure:
 - Water is always 'on tap' with no interruptions.
 - Water has a clean and clear appearance.
 - Leaks are reduced.
 - Water tastes good.
 - Problems are resolved with no quibble.
 - There is a reliable water supply in the future.
 - Staff are knowledgeable.

⁵ Bristol Water's document 'Water in the Future' December 2012 - research results outlined page 9 - link [here](#)

- Bills are clear and easy to understand.
- The company is environmentally friendly.

3.6 While the CMA will need to evaluate the efficient wholesale costs the company requires, we believe the list of customer priorities above should be the commitments to customers the company delivers.

3.7 Performance Commitments/ Incentives

Prior to publishing its Final Determinations, we raised concerns with Ofwat about the inconsistency in both performance commitments and associated financial incentives. Ofwat then conducted a ‘horizontal review’ of six key measures for performance commitments common across all companies. We supported this as a way of helping to ensure companies’ proposed ‘targets’ for performance reflect ‘upper quartile’ of industry performance for each measure.

3.8 Bristol Water has challenged Ofwat’s interventions on three specific performance commitments and incentives. Our views on these are set out below.

3.9 Unplanned supply interruptions (customer minutes lost):

Making sure water is always on tap with no interruptions is Bristol Water customers’ top priority. The company has had several large bursts in recent months that have affected its overall performance. We, therefore, expected Bristol Water to set itself challenging targets to reflect customers’ expectations, especially as the company was seeking a reward for outperformance.

3.10 Given the above, along with the evidence⁶ that Bristol Water’s customers did not support the concept of paying financial rewards for company outperformance, we do not support the company’s case for earning a reward unless its performance is anything other than amongst the best in the industry.

3.11 During the 2015-20 period, customers will be able to see information (published by Ofwat, CCWater and companies) that shows how well companies are performing against each of their performance commitments.

3.12 Where there are performance measures that are common across industry, it should be possible to make some comparisons. Therefore, there is a risk that Bristol Water customers would not be satisfied with an approach where the company is given a lower targeted performance on this measure (the company asked for 11.25 minutes average customer minutes lost), compared

⁶ Bristol Water’s business plan – December 2013 – refers to the incentives research – page 11 – link [here](#). CCWater also carried out qualitative research with customers in March 2014 in which customers gave a similar view – see ‘Outcome and Delivery Incentives in the Water Industry (SPA Future Thinking)’ [here](#).

to other companies. Ofwat set a target of 7.2 minutes to reflect upper quartile performance⁷.

- 3.13 We know through research that Bristol Water's customers did not like business plan scenarios where interruptions of more than three hours increased⁸, even if bills were lower as a result.
- 3.14 We also understand that Bristol Water considers Ofwat's intervention to increase the target has not taken into account the company's specific circumstances. In the company's view a penalty cannot be avoided against this measure because of what it sees as an inadequate wholesale revenue allowance. However, because of recent performance, we believe the company needs to improve its performance around unplanned interruptions to the upper quartile and would support a CMA determination that allows for this. We would expect the assessment of specific circumstances (particularly the assessment of historical performance regarding supply interruptions the company believe were outside of its control) to be consistent with how all other companies have been assessed.

3.15 Compliance with Drinking Water Quality Standards (Mean Zonal Compliance)⁹:

We support Ofwat's performance level requirements on the penalty deadband for mean zonal compliance. This is because customers expect safe water, and want CCWater to work with companies to ensure water is of a safe and high standard¹⁰. We would therefore expect Bristol Water to perform in line with the Drinking Water Inspectorate's and Ofwat's expectations for drinking water quality.

- 3.16 Bristol Water's statement of case suggests that it could incur a penalty due to the number of properties with lead pipes in its supply area. As Bristol Water has suggested a performance commitment of 99.96%, it would seem a fairly low risk that Bristol Water would incur a penalty because Ofwat's determined penalty collar is 99.94%, with the deadband starting at 99.95%. We would like this performance commitment to remain as set by Ofwat to ensure there is consistency with the rest of the industry.

⁷ Apart from Bristol Water's target for this measure, the only other exception to this across industry is South West Water that did not receive an Ofwat intervention on its target for this measure due to the 'enhanced' status awarded to its business plan. See 2.6 above.

⁸ Bristol Water's business plan – acceptability stage 1 work described from page 36 – link [here](#)

⁹ This is a performance indicator used by the Drinking Water Inspectorate to assess overall compliance with required drinking water quality standards across all water companies in England and Wales.

¹⁰ CCWater's research into expectations of CCWater June 2012 – page 7 – link [here](#)

3.17 Customer contacts about drinking water quality¹¹:

We support Ofwat's view that Bristol Water's performance commitment on negative water quality contacts should be equal to the upper quartile performance.

3.18 Wholesale costs/ totex

We welcome the company being challenged to be efficient. There is a large gap between Ofwat's view of the wholesale totex needed to deliver the services customers want and need, compared to Bristol Water's view. Bristol Water's proposed £541m required wholesale totex, while Ofwat's final determination set it at £437.8m.

- 3.19 A key reason for the significant difference is Ofwat's assessment of Bristol Water's historical efficiency compared to the rest of the industry. The Final Determination suggests that during the previous price control period, Bristol Water were comparatively inefficient, and as historical cost efficiency is factored into Ofwat's models, this is a factor in the sizeable 'gap'.
- 3.20 In the Final Determination, Ofwat also made efforts to increase Bristol Water's revenue in several areas, based on evidence the company provided confirming unavoidable higher costs. The 'pay as you go' ratio was also adjusted to 55.3% to allow further short term revenue, offering a one year 'glide path' to allow Bristol Water more time to reach relative efficiency.
- 3.21 We note that Ofwat allowed Bristol Water wholesale costs approximately 30% above its baseline, reflecting a combination of evidence of higher input costs, and justifiable enhancement. However a 19.8% gap remains, which the company says is due to its specific circumstances. Ofwat's final determination and statement of case says that the company did not provide sufficient evidence to justify all of the proposed additional costs.
- 3.22 Bristol Water is seeking an increase in wholesale totex as it says that some of its costs are exceptional and were not adequately assessed by Ofwat. We consider that any exceptional costs allowed for in the company's totex must be clearly evidenced to justify why the company has higher input costs or requires costs that are higher than comparable costs for other companies.

3.23 Cheddar 2 Reservoir

This company investment proposal was not allowed in Ofwat's Final Determination due to what the regulator sees as a lack of evidence to justify its delivery in the latter part of 2015-20.

¹¹ This is a measure of the number of customer contacts Bristol Water receives each calendar year about the taste, odour or appearance of drinking water. Referred to as 'negative customer contacts' in Bristol Water's statement of case.

- 3.24 In our response to Ofwat's draft determination, we supported Bristol Water beginning preparatory work for the scheme in 2019-20 to help spread the cost over a longer period. However, the original case CCWater had heard from Bristol Water through the LEF process (chiefly that the operations of a local power station fuelled shorter term demand), has changed in the intervening period. Due to new evidence both from Bristol Water's statement of case and Ofwat's Final Determination, we commissioned an independent consultant to re-examine the case.
- 3.25 We now believe that Bristol Water should
- revisit its headroom assumptions in the context of general industry practice and Environment Agency guidance; and
 - reconsider whether smaller supply sources should be utilised ahead of the need for Cheddar 2. This could allow more time to reassess the headroom and allow Bristol Water to move the 'in service' requirement for the reservoir back to 2030.
- 3.26 We also have concerns about the presentation of risk in the case for Cheddar 2. Customers placed reducing the risk of a hosepipe ban at the lower end of their priority list in research carried out for the company's 25 year strategic plan and it's willingness to pay research. Considering other supply options, and starting Cheddar 2 later, and over a longer time frame to spread the cost to customers may be the optimal solution.
- 3.27 Further detail is at Appendix 1. We have shared this analysis with the Environment Agency (EA). Due to the timescale for making this submission, the EA has not given us any feedback yet but we will notify the CMA if the EA has any significant comments
- 3.28 **Financeability and the cost of capital**
- In 2014, we commissioned Economic Consulting Associates (ECA) to examine market conditions, water company financial performance and regulatory precedence and make recommendations as to what the Weighted Average Cost of Capital (WACC) should be for 2015-20¹². ECA recommended that the WACC should be set at a point estimate of 3.5%, within a range of 3.00% to 3.75%. Ofwat set a WACC of 3.74% (3.6% wholesale) in its Final Determinations. While we welcomed this as it was within ECA's recommended range, we believe there is scope to reduce this further, based on these findings.
- 3.29 Ofwat's Final Determination explains that, principally due to a continuing lower cost of debt, companies should be able to finance themselves at a lower cost of capital. We have not seen any evidence to suggest that Ofwat's 'baseline' cost of capital should increase beyond the level it set. Indeed, we believe that the asset/equity beta is higher than one would expect for a monopoly industry, and therefore the WACC could be lower¹³.

¹² ECA report for CCWater - link [here](#) for 2014 summary report.

¹³ Please see ECA's report 'Recommendations for the Weighted Average Cost of Capital' [here](#) for details.

- 3.30 Bristol Water's statement of case proposes a WACC of 4.37%, including a premium to reflect what it sees as the risks associated with a smaller water only company. We question why the company requires such a significant increase above Ofwat's WACC to achieve financeability, particularly as 17 of the 18 regulated water companies in England and Wales have accepted the WACC as part of their final determination 'package'. This includes water only companies of a similar size, and with similar levels of gearing or investment requirements¹⁴.
- 3.31 We do not support Bristol Water's case for a WACC uplift (or small company premium) to 4.37%. While the company disputes the methodology used by Ofwat to evaluate the benefits of an uplift to current and future customers, we do not believe that customers should carry higher costs to reflect the risks of a small company operation if there is no benefit of at least equal value in return.
- 3.32 The two companies that received a small company premium in the Final Determinations had proved those benefits and had conducted research with their customers¹⁵ to see if they would support an uplift on this basis. Bristol Water did not conduct research about small company premiums or WACC uplifts with its customers, nor did it provide compelling evidence of the benefits that customers would receive from such an uplift.
- 3.33 The uplift given to SembCorp Bournemouth Water and Portsmouth Water was 0.15% added to the 3.60% wholesale Weighted Average Cost of Capital (WACC), "*where the benefits of providing the uplift to current and future customers exceed the incremental costs. This results in a WACC of 3.75% for both of these companies.*" (Ofwat Final Determination, Chapter 7).
- 3.34 We do not consider that customers should pay for financing decisions a company made in the past. Companies should carry the risk associated with such financing decisions, not customers. They should not expect the regulatory process to allow customers to carry additional cost if such a change in the financial structure was inefficient.
- 3.35 While we do not support a WACC uplift for these reasons, we have supported Ofwat's allowance of a small increase in the 'pay as you go' ratio as a 'glide path' to give Bristol Water sufficient time to enable the company to adjust to Ofwat's expectations on cost efficiency, and to help protect the company's financeability.

¹⁴ Figure 6.3 (page 32) of the Ofwat commissioned report, '[Cost of capital for PR14 – Methodological Considerations](#)' (PwC) shows water company gearing levels as per 31 March 2013. This shows that, of similar water only companies to Bristol Water, South Staffs, South East and Dee Valley Water have higher levels of gearing. All of these companies have accepted the Ofwat 2014 Final Determination.

¹⁵ SembCorp Bournemouth Water's Representation on the Draft Determination – page 51-53 – link [here](#)
Portsmouth Water's Representation on the Draft Determination – page 1 – link [here](#)



Appendix 1: Re-examining Bristol Water's proposal for Cheddar 2 reservoir

Executive Summary

CCWater has asked for advice on two matters as it prepares to contribute to the Competition and Markets Authority's (CMA) review of Bristol Water's (BW) business plan:

- The validity/robustness of the case for investment in Cheddar 2 based on forecast demand and population growth (including the suggestion that a new power station could be a significant factor in this).
- Is there a case for starting work on Cheddar 2 during this AMP? Would a delay in starting its construction mean that there is a risk of a bill spike in the future when its construction may be needed? Or to what extent could BW reduce this risk through the use of the PAYG ratio/RCV run off?

The robustness of Bristol Water's (BW) business case

We have considered relevant material (including its CMA statement of case, water resource management plans and responses, PR14 business cases and responses, proposals for power stations, and CCWater and LEF reports). At times it seems as BW has assembled evidence to support its vision of a building a new reservoir now, rather than the investment resulting from a rational analysis of the need and the available options. We conclude that BW's business case for starting Cheddar 2 in AMP6 is not highly robust.

In its Statement of Case (SoC) to the CMA, BW justifies its proposal for Cheddar 2 in section 10.6 (from page 353). It responds to the challenges made by Ofwat in its FD documentation, in particular by playing down the 'requirement' to supply the Avonmouth power generation facilities. BW's SoC now argues that all versions of the future (as defined by BW) will need Cheddar 2, and that customers face serious risks if it is not started in AMP6.

There are three particular areas of concern:

- In its PR14 business plan, BW's case for beginning the construction phase of Cheddar 2 in this period was contingent on the SSE proposal to require a major supply of water for its Seabank 3 power station. However, it was evident that:
 - SSE expected to take cooling water from Wessex Water's waste water treatment plan,

- SSE has delayed its decision on whether to invest until 2016, and
- BW could decline to supply SSE (or any other promoter).
- BW's headroom analysis (which effectively drives water resource interventions) is unusually risk adverse, does not follow Environment Agency (EA) guidance and not aligned to general water industry practice. This affects the scale and timing of water resource investment.
- BW's scenario analysis is relatively narrow and appears to dismiss options that could offer a better overall outcome.

Starting Cheddar 2 in AMP6

In its SoC BW remains committed to beginning to build Cheddar 2 in AMP6. In the SoC it considers (and rejects) two options for delaying construction:

- Starting the build later in AMP 6 but completing as planned in 2025 – essentially a 7 rather than 10 year build. BW dismisses this as it would put more costs into AMP7 and lead to higher bills. This is true – there is little merit in this option – indeed, it is difficult to see why BW has set it out.
- Starting the build in AMP7 with a 2030target in-service date. This allows for the 10-year efficient build period (BW says the costs would be £1.2m higher). BW dismisses this option on the basis that there is:
 - no benefit to be gained from a delay (*"it is unlikely that there will be a material change to supply demand calculations"*);
 - it would need to develop other resources to maintain headroom in the meantime; and
 - the wider benefits of having the reservoir would be delivered 5 years later.
- In the absence of the power station supply commitment, it seems that by bringing forward some minor water resource development options BW could avoid the need for a major resource to be in service before 2030 and, subject to a review of headroom assumptions possibly not before 2035. The start date for the eventual major resource (either Cheddar 2 or the offered Wessex Water supply) depends on the optimum investment profile. BW has presented evidence that a less than 10-year build would not be efficient, and while it has not presented evidence on the costs of a longer build it does seem that a 10-year programme offers the best bill profile options for customers.

All options for Cheddar 2 will have a significant bill impact. A 7-year build programme will lead to uneven bills whenever it begins – and while BW and Ofwat have some options to smooth this it would be better for customers if the project were spread over as long as possible. It is difficult to see the benefits of the 7-year build; even though the headroom constraints are artificial, BW could avoid them by developing other water resources.

Selecting Cheddar 2 as the next major resource development

In its WRMP and PR14 business plans BW uses scenarios to demonstrate the options it has considered – setting out the points for and against each scenario. It develops this approach in its response to the draft determination and again in its SoC where it presents (and dismisses) a supply demand balance (SDB) scenario without Cheddar 2 (which does seem to work even against BW's headroom assessment) and a scenario with a delayed Cheddar 2 and no other resource development (which of course does not work).

While its reasons for not preferring Wessex Water's offer of supply as the first major resource development (rather than Cheddar 2) are not fully explained in the BW documents, it seems that there is no need for any major investment in respect of either choice in AMP6. It is disappointing that BW does not test the obvious alternative scenario – minor resource development in AMP6 while headroom and costs are reviewed with a major resource development beginning in AMP7.

Conclusions

BW is insistent that it should begin to construct Cheddar 2 in AMP6, even without the requirement to supply the Avonmouth power stations. BW's arguments are based on an headroom requirement in 2040 that uses an unrealistic risk profile and is rather pessimistic in its use of climate change scenarios. A more moderate position, using assumptions more closely aligned to the rest of the water industry could lead to a different water resource development plan.

It is clear that Cheddar 2 will make BW's job much easier. It will find it easier to cope with the most extreme events and will be able to guarantee the highest levels of service to its current and future customers. But if it were to follow other the example of other companies and make affordability more of a priority, it might conclude that a different plan was a better option. In particular, it seems that the early development of some minor and more cost-beneficial resources could allow the company time to review its headroom risk analysis in the light of additional operating experience.

Major water resource development always has a serious bill impact. It is clear that even with the regulatory tools now available, squeezing the Cheddar 2 build into 7 years will not benefit customers. However, moving the in-service requirement back until after 2030 will allow BW to develop an investment profile that better suits its customers.



1. Introduction

- 1.1. In its PR14 business plan BW argued that beginning the construction of a second Cheddar reservoir (Cheddar 2) in the current period provides the only solution to the challenges of rising demand, declining resources and maintaining levels of service. BWs preferred scenario was built on:
 - A forecast of declining water availability.
 - A need to make a major non-potable supply to a new power station.
 - A need to increase the supply contingency margin (headroom) from 13 Mld to 40 Mld by 2040.
 - A forecast of increasing domestic demand for water.
- 1.2. In its PR14 final determination, Ofwat rejected BWs proposed Cheddar 2 investment. It did not accept the need to start work on the reservoir in the current period, found that the costs benefit analysis was not complete, and that investment proposals were not robust. In its opening submission to the CMA, Ofwat said:

'In particular, the information the company provided to justify its proposed expenditure on the Cheddar 2 reservoir (the biggest element of the company's proposed enhancement spending) failed these tests. Bristol Water failed to provide a balanced assessment and full information in relation to the need case for this development. The justification for this investment was inconsistent, switching between the need to supply water to a new power station and benefits for resilience of the investment. The company failed to provide information on the plans of the power station to use alternative supplies or give a balanced account of its Water Resource Management Plan which actually included scenarios with sufficient supplies without the reservoir development.'
- 1.3. CCWater questioned Ofwat's decision to exclude Cheddar 2 from the draft determination. It (and BW's Local Engagement Forum) was satisfied that BW had demonstrated the reservoir was the most cost beneficial option to balance supply and demand by 2029.¹ CCWater accepted that it might be possible to delay the Cheddar 2 by up to 4 years, but was concerned that this would lead to higher bills than necessary in later periods. CCWater has not commented on Ofwat's final

¹ Ofwat: Draft 2010-2015 price control determination for Bristol Water – CCWater October 2014

decisions but intends to set out its position to the CMA which is now re-determining the BW price control.

1.4 To prepare for this, CCWater has asked for independent advice on two issues:

- The validity/robustness of the case for investment in Cheddar 2 based on forecast demand and population growth (including the suggestion that a new power station could be a significant factor in this).
- Is there a case for starting work on Cheddar 2 during this AMP? Would a delay in starting its construction mean that there is a risk of a bill spike in the future when its construction may be needed? Or to what extent could BW reduce this risk through the use of the PAYG ratio/RCV run off?

1.5 BW has now submitted its SoC to the CMA. It has responded to Ofwat's challenges and developed new arguments for beginning Cheddar 2 in AMP6.

2. Findings

To answer CCWater's questions we have considered the available documentation – including water resource management plans, business plans, the CMA SoC, regulatory decisions, power station plans, and customer views and comments. We have found that:

2.1. *Robustness of the BW case for Cheddar 2*

The BW case for Cheddar 2 is contingent on the interaction of three key water supply and demand factors:

- Water available for use (WAFU)²

BW forecasts that climate change factors will lead to a steady decline in underlying WAFU at a rate of about 0.5 Mld per year. In addition, its PR14 business plan preferred view on WAFU includes a reduction relating to the provision of a major supply of non-potable water to a new power station. In its SoC, BW sidesteps the non-potable supply issue and seeks to justify Cheddar 2 on other criteria. However, in the SoC (figure 19 on page 114) BW presents a version of the future which still includes future power station demand.

² The total water available for use from a company's own sources, plus any imports, minus any exports, or supplies of non-potable water. This also excludes water lost from treatment works outages, reductions in abstraction to restore sustainable abstraction levels, or other processes losses.



- Headroom³

BW is concerned to meet the aspirations of customers in respect of all aspects of supply security. It has calculated that, in the face of assessed risks (principally relating to climate change) it needs to increase headroom to around 40 Mld by 2040. In its SoC, BW argues that its approach to headroom risk is aligned to other companies.

- Demand

BW forecasts that demand for water will rise in the period to 2040, mostly due to new housing developments and the impact of climate change. BW will take action (leakage control, water efficiency, metering) to limit the rate of increase. In the SoC (paragraph 1356) BW warns us that the most recent forecasts for housing growth are higher than those used to develop its WRMP.

2.1.1 *BW preferred scenario*

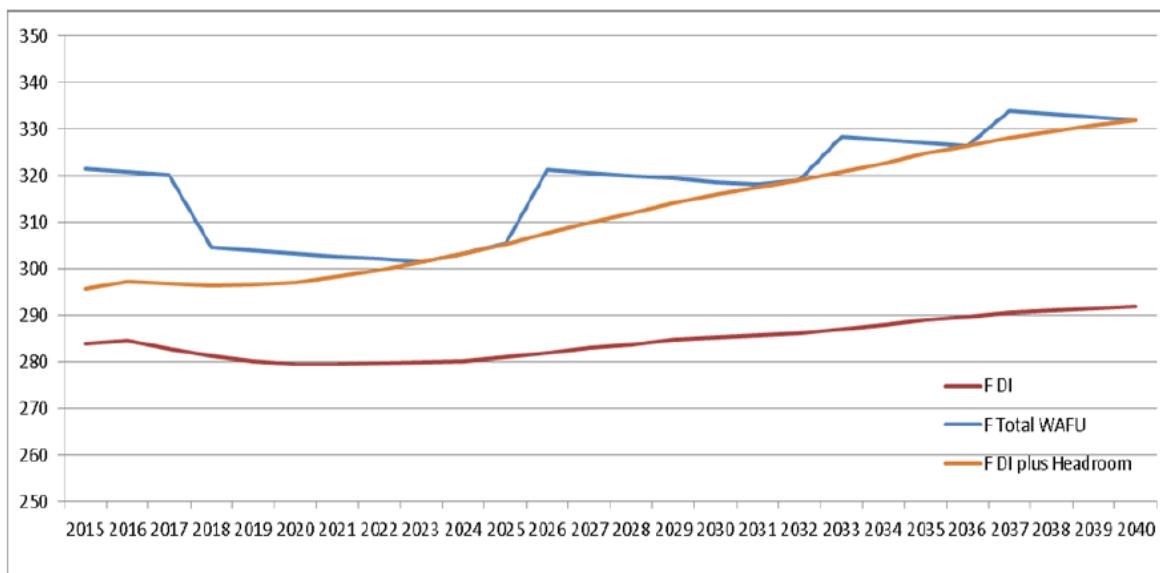
BW believes that the best action in the face of these challenges is to begin building Cheddar 2 in the current price control period. The chart⁴ in Figure 1 below shows its PR14 business plan preferred scenario. It does not present a preferred scenario graphic in its SoC.

³ Headroom is the margin used to address the uncertainty associated with individual elements of the supply and demand forecasts. Target headroom is the minimum buffer that is applied to the supply-demand balance to ensure that the chosen level of service can be achieved. Available headroom is the actual difference between water available for use and demand at any given time.

⁴ Bristol Water representation on the PR14 draft determination – Appendices – November 2014



Figure 1 BW Business plan preferred SDB scenario



The blue line shows water availability with an underlying climate change related decline. It is modified by four specific events, a sharp reduction (essentially a re-base) in 2017-18 because of the impact of the Seabank 3 power station, then small increases relating to small resource development before Cheddar 2 becomes productive in 2026. There follows a Wessex Water import in 2034 and an extension to the Mendip group reservoirs in 2037.

The red line at the bottom shows demand, there are initial declines as BW improves on leakage levels, increases its water efficiency and installs more meters. The impact of forecast household growth and climate change produces a rising trends from 2024.

The orange line is headroom plus demand. Headroom is the margin BW thinks it must hold over demand in order to address its assessment of future risks and provide the desired level of service. In this case, the risks mostly relate to climate change.

The SoC narrative suggest that BW's current preferred scenario is the same as that shown in figure 1, but without the power station related reduction to WAFU and presumably without the AMP6 minor resource development (but this is not explained, nor can we see any changes in costs).

2.1.2 Challenges to the BW preferred scenario

2.1.2.1 WAFU

The BW WAFU assumption relating to Seabank 3 is not realistic. We observe:

- Seabank 3 looks unlikely to ask for a supply of non-potable water from BW; its most recent update indicates that it will take a supply of cooling water from the nearby Wessex Water wastewater treatment works⁵.
- BW can decline invitations to provide the power station cooling supply because it is clearly not in the interest of customers to provide such supplies.

Without the Seabank 3 demand it appears that BW can maintain headroom without developing any major resource until 2030 at the earliest. It could do this using around 5 Mld from small resource developments - this maintains headroom until around 2030 (it had planned to do this anyway to overcome the power station/Cheddar 2 timing issues). BW then has two options – it could take up Wessex Water offer of 10 Mld to the south of the area, or it could build Cheddar 2 (this might remove the need for the outlined new Mendip reservoir). Subject to consideration of headroom and efficient financing, there would be no need to begin work on Cheddar 2 until the 2020-25 period.

2.1.2.3 Headroom

For all companies, decisions on headroom are important in determining the scale and timing of resource development.

The approach to headroom assessment is generally contingent on the overall and zonal water resource situation and the current and aspirational levels of customer service. The WRMP process requires companies to produce an outline supply demand balance (SDB) analysis out to 2040. From the planning origin (2014 for WRMPs) the uncertainty around many of the SDB components increases rapidly with time. But as we move forward the uncertainty decreases and margins become close to those we see in the short and medium term. The Environment Agency (EA) recognises this in its Water Resources Planning Guideline, and advises companies that they should accept a greater level of risk towards the end of the planning period. The resulting profile should represent a balance between being overly cautious, which would be very expensive, and overly optimistic, which could have serious implications for customers.

BW discusses its approach to headroom in section 7 of its final WRMP⁶. There is additional technical detail in Appendix 8 to the WRMP. There are two components in the headroom analysis, the risk analysis and the choice of risk profile.

⁵ Seabank 3 PEI non-technical summary – SSE May 2014

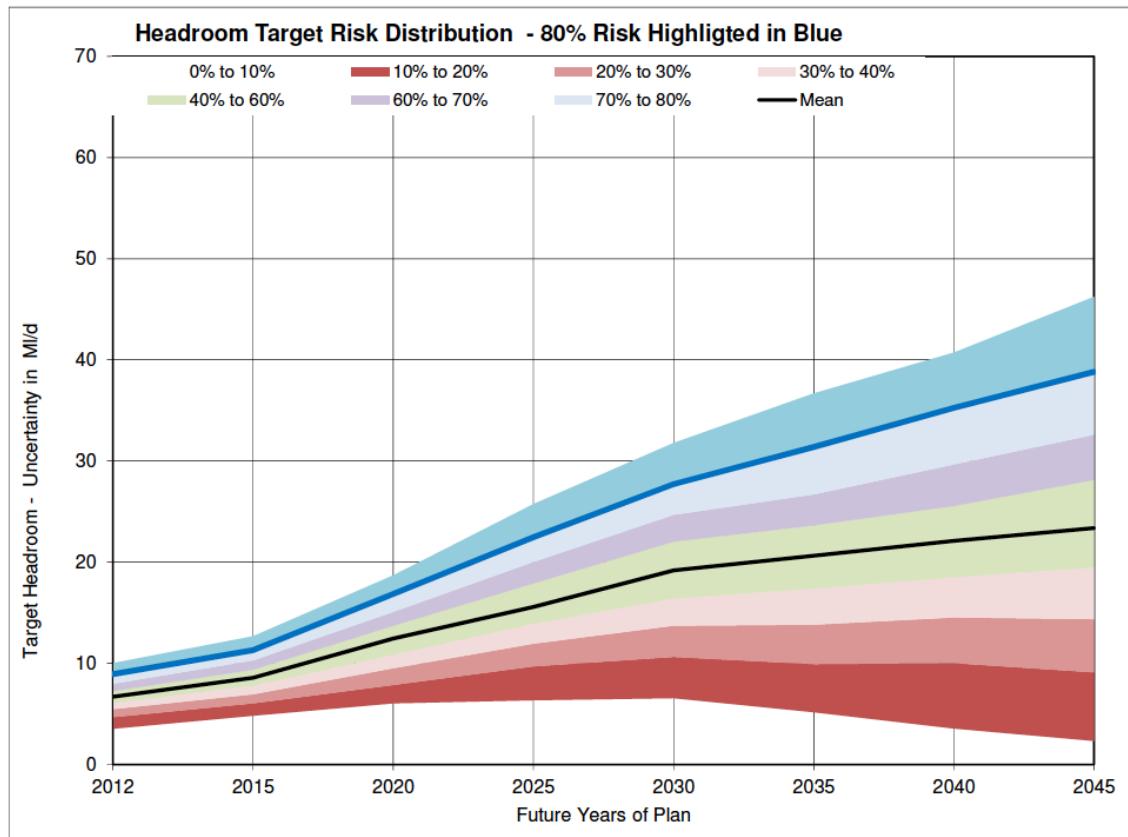
⁶ Final Water Resource Management Plan – Bristol Water June 2014



2.1.2.4 Headroom target risk analysis

BW's headroom target risk distribution is in figure 2 below. It is made up of the risk profiles of each defined component – in Mld for each year of the assessed period. BW sets these out in Appendix 8 to its WRMP.

Figure 2 BW Headroom target risk distribution



The chart looks shows how much headroom you would need to avoid the current assessment of risks in the future. The risks are getting bigger for BW mostly because of its view on the climate change risk on resource yields and on customer demand. BW sets out some of the background to the individual components in a technical annex to its WRMP⁷. The risks are mostly set out as an impact on the Deployable Output – the amount of water that may be produced from a source or SDB component. We accept that in some ways, BW is more sensitive than many companies to the impact of climate change on its surface water resources, but its customers are no different to those of other companies and the potential climate change impact on demand should be similar. Some of the risks may be managed

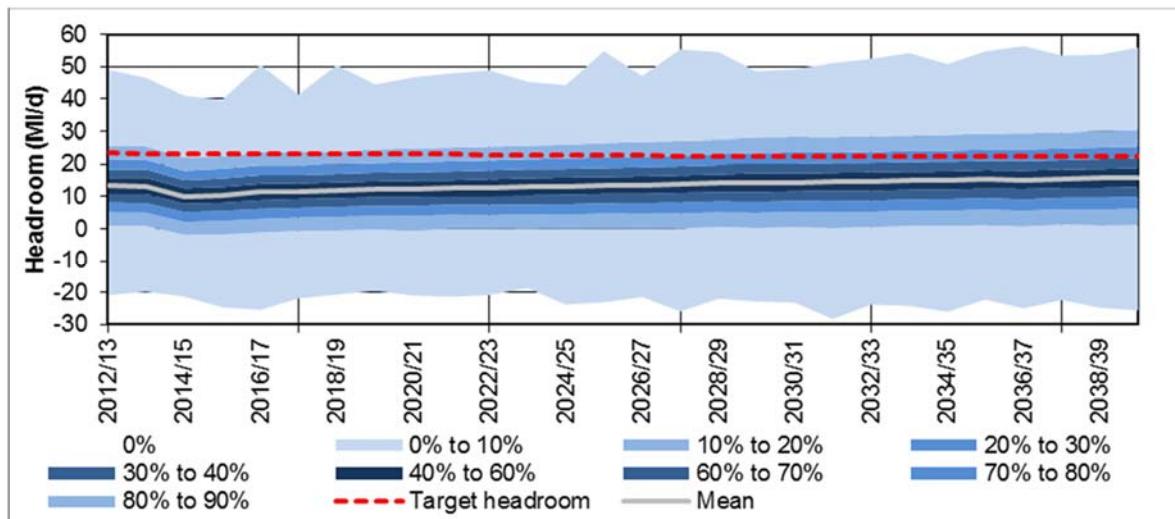
⁷ BW Baseline Headroom PR14 V3.xls



in the future (that is one of the points of identifying them) and some will quickly show that they are building up more slowly than the assumed glidepath suggests.

Most companies have a different view and present a more restrained view of impact risk on supply and demand. The chart below shows Wessex Water's analysis.

Figure 3 Wessex Water Headroom Target risk analysis



2.1.2.5 Choice a risk profile

Once a company has assessed the headroom risks it has to make a choice about its risk position within the risk volume – this leads to the headroom target.

In its SoC (paragraph 1301) BW says that its headroom risk value (90% throughout the period) is consistent with the 'practice used by other water companies in the industry'. It is consistent with some companies – but not with many. The table below shows the assumptions made by a range of companies:

Company	Headroom risk %	
	2015	2040
Bristol	90	90
Wessex	85	72
South West	85	70
Bournemouth	90	90
Portsmouth	95	91
United Utilities	95	70
Dwr Cymru	90	75

Thames	95	70
South Staffs	90	80

As BW says in its SoC, many companies have a 90% risk position – but for most this is only in the short term. A small number do ignore the EA guidance and use a high figure throughout the planning period but these generally have a rational reason (beyond seeking to justify new resources). But most large companies, particularly those with a high degree of water resource management competency, adopt a declining risk profile from around 90% now to around 75% in the future.

While BW has highlighted an 80% of risk position in its chart – at some point after producing the chart it has decided to use a 90% position throughout the planning period to derive its headroom target⁸. For a company such as BW we might expect to see a 90% start leading to 80% (for planning purposes) in 2040. This would generate a 2040 headroom target of 35 Mld – which, if used would have a material impact on resource development decisions.

2.1.2.6 Headroom conclusions

Headroom is an important issue for BW's customers – they have made it clear that continuity of supply is very important to them and that they do not want to see service levels decline. It is for BW to assess how much headroom is needed in the future. BW might argue that its water resource options have a long lead-time, and it cannot ignore the future risks. In reality, the BW plan transfers risks from its managers to its customers – because it thinks they are happy to pay. Other companies do not see things in the same way, they do what they can to keep bills down – and they seem to understand and manage risks better than BW.

The results of BWs headroom risk analysis are unusual – but not unique. The analysis is always somewhat subjective – but it is only a guide to decision making. BW's choice of risk position (90% throughout the period to 2040) is also unusual – but it does produce the headroom figure that is needed to get Cheddar 2 started in this period. If BW was to use the 80% risk line (still consistent with the customer views on service levels) it would suggest headroom of 35 Mld in 2040 – allowing resource development to be delayed by at least 5 and perhaps 10 years.

2.1.2.7 Demand

⁸ WRMP section 7.1 page 105



While most other companies forecast continuing declines in demand in the period to 2040, BW present a forecast of an initial fall in demand (as leakage, water efficiency and metering have an impact) followed by an increase in demand for the remainder of the period until 2040.

BW explains that the forecast increase relates to the declining impact of leakage control, water efficiency and metering; an increase in the number of households as population rises and new houses are built in the BW area; and the impact of climate change. Household number growth is the biggest demand growth factor; BW has based its demand forecast on ONS predictions as these have proved more accurate in the past. The ONS figures tend to be higher than Local Authority forecasts but using them should take some of the risk out of the headroom assessment. It is not clear if BW has considered this.

2.2 Impact on customers

The second part of CCWater's questions concerns the impacts on the bills to customers. The BW SoC explains that starting to build Cheddar 2 in AMP6 is best for customers in the long term. BW clearly understand the CCWater preference for smooth bill profiles and argues that beginning Cheddar 2 in AMP6 is the best way of doing this.

CCWater has already identified the possibility of moving Cheddar 2 into the future by 4 years – but this would mean that an AMP6 start was still needed. BW considers this in its statement of case and concludes that building in 7 years would lead to higher bills. Even though there are some regulatory mechanisms to smooth bill impacts, it would seem that a 7 year build is not a good option for customers whenever it starts.

The key matter for customers is the in-service date for the major resource. As Cheddar 2 will take 10 years to build, an in-service date before 2030 would mean beginning an immediate commitment to begin construction in AMP6. So, customers would see higher bills in this period. (We do not know how long the Wessex scheme would take, so cannot include it in this analysis). But, if a major resource is not needed until after 2030, there will be no bill impact at all in this period. In addition, BW can revisit and refine its proposals.

With this in mind, customers might benefit from BW revisiting its water resource development proposals with a more open mind. The task now is not to identify when it should start Cheddar 2 but what is the best solution to the water supply challenges of the future. This could mean a start on Cheddar 2 in the next period or even later. The BW scenario analysis could facilitate this.

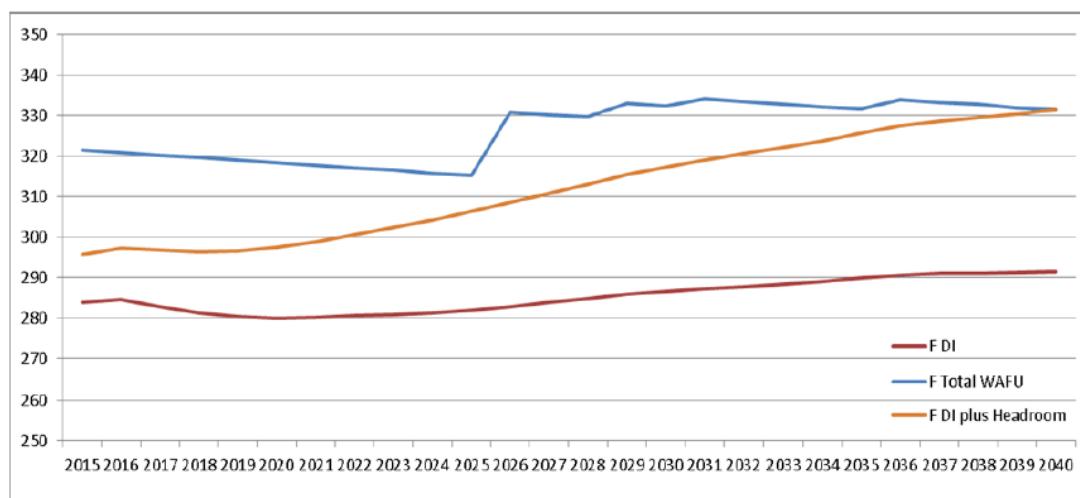
2.2.1 The BW scenarios

In its WRMP, BW set out a range of 12 scenarios to illustrate the benefits of its final SDB choice (see figure 1). Subsequently, in its response to Ofwat's draft determination, BW developed four of the scenarios. Now, in its SoC, it presents three more.

2.2.1.1 Draft Determination Situation 1 – Cheddar 2 in service from 2025 with no Seabank 3 demand; 40 Mld headroom in 2040

This scenario is what, in the light of the evidence on Seabank 3 – should have been BW's preferred scenario. Figure 4 presents it as a graphic, (it is what was scenario 4 in the WRMP analysis). In this scenario Cheddar 2 is the preferred major resource and its timing is driven by the headroom requirement. We can see that a slight reduction in the headroom target in 2040 allows Cheddar 2 to move into AMP7 or AMP8. BW seems to have discarded other resource option, the Wessex import, because of its higher AISC⁹. This seems a little odd given that the Wessex supply is water ready for blending with BW's treated water.

Figure 4 BW Draft Determination SDB situation 1



2.2.1.2 Draft Determination Situation 2 - Cheddar 2 with Seabank 3 demand from 2017, minor resource development in 2015, 40 Mld headroom in 2040.

⁹ Average Incremental and Social Cost – it divides the present worth of social costs incurred in the option's construction, operation and maintenance by the present worth of water delivered to customers or saved, IWA Water Demand Management 2006

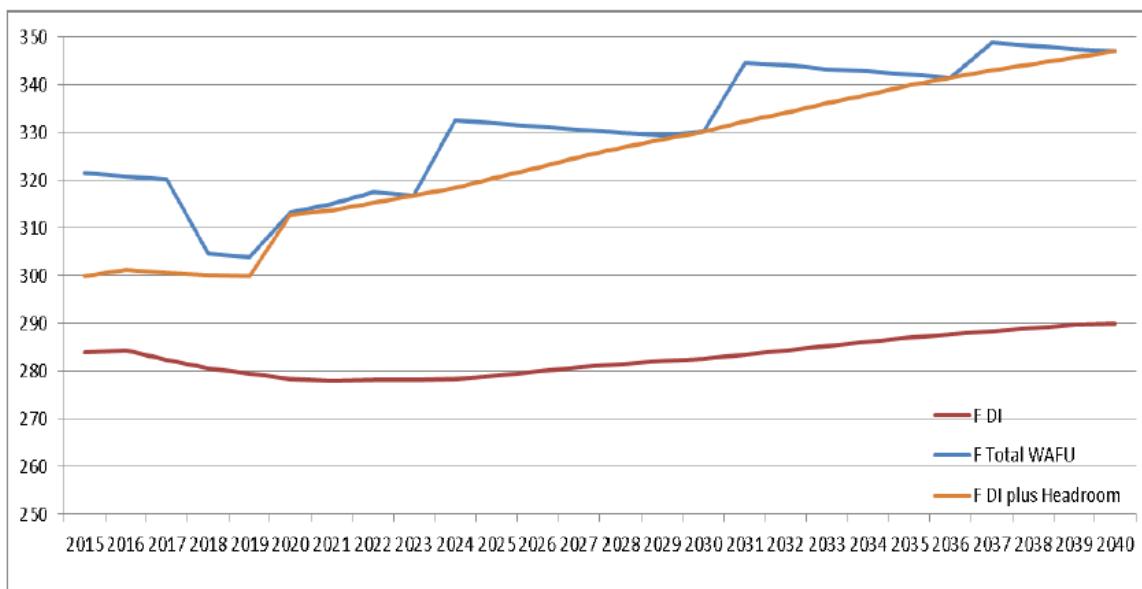


This was BW's preferred option (Figure 1) – it includes the Seabank 3 supply and needs both Cheddar 2 and the Wessex import. However, as in Situation 1, timings are sensitive to the headroom assumption.

2.2.1.3 Draft Determination Situation 3 – Cheddar 2, Seabank 3 demand and extra headroom (58 Mld in 2040)

This scenario (Figure 5) need not detain us long. BW seems to have included this to show the strength of the two-resource solution – it could even cope with a further Avonmouth power station.

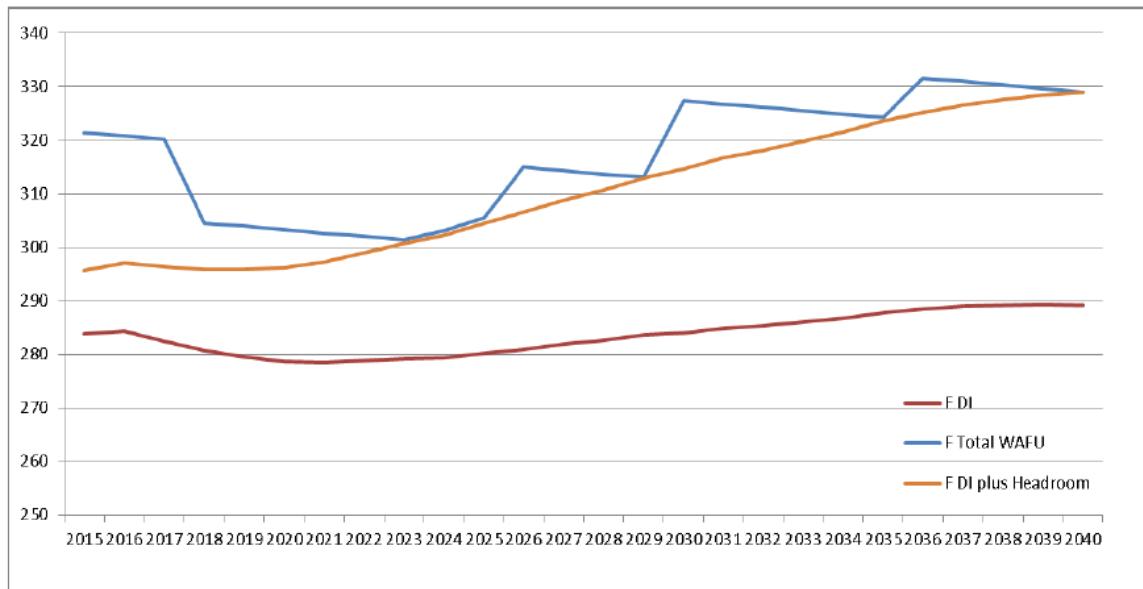
Figure 5 BW Draft Determination SDB situation 3



2.2.1.4 Draft Determination Situation 4 – No Cheddar 2 but with Seabank 3 demand, 40 Mld headroom in 2040 (Figure 6).

In this situation, BW shows that it could meet Seabank 3 and maintain service levels without Cheddar 2, but it makes the point that this would be very risky for customer and for the company.

Figure 6 Draft Determination response SDB situation 4



Of the scenarios presented by BW, Situation 1 (figure 4) is, at first glance, the most attractive to customers. Real headroom remains very high and resources are made available in good time. However, we can see that with a more pragmatic headroom assessment and minor resource development in the current period, it is possible to delay investment even further. In its DD response, BW accepts that without Seabank 3, this situation might have been its preferred option. In the SoC (paragraph 1303), it develops its arguments in support of an early start on Cheddar 2 even without Seabank 3. However, it does not discuss the obvious improvement to the scenario – the inclusion of the small resource developments identified in some other scenarios and set out in table 97 of the SoC. Ideally, we would also see some analysis of scenarios with a more pragmatic headroom target for 2040.

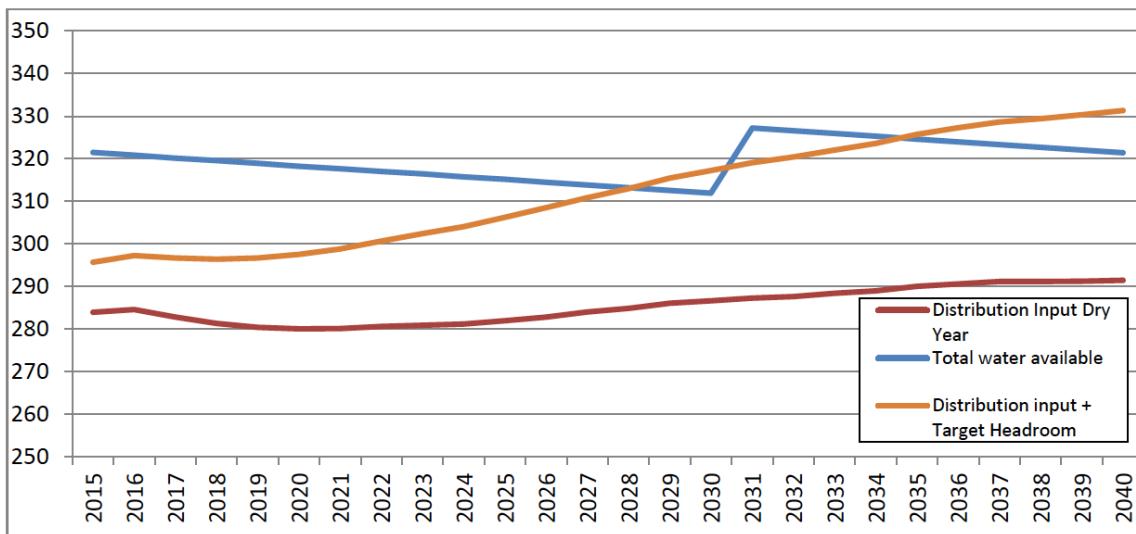
Later in the SoC, BW sets out some consideration of the impact of not building Cheddar 2 (paragraph 1333) or delaying Cheddar 2 until AMP6 or later (paragraph 1357).

BW says that the no-build option has the same cost-benefit as its preferred scenario (although it assert that the costs after 2040 will be higher). But it says that it is a more risky approach. We believe that most of the identified risks are probably already in the headroom, WAFU and demand modelling.

BW has two delay-build scenarios; the first is simply a compression of the build phase. This is clearly more expensive and more risky. The second, with a later in-service date, is dismissed using the graphic in figure 7 below:



Figure 7 SoC Delayed in-service scenario



The chart clearly shows that if BW delays reservoir construction into AMP7, develops no other resources and sticks with its headroom forecast it will be in headroom deficit from about 2028. More importantly, it will again be in deficit in 2035 (although BW does not discuss this). BW says that this approach will not deliver headroom throughout the period, would cost an additional £1.2m and will lose 5 years of utility. However, it would seem that by combining this approach with the identified smaller resource development BW could produce a much better overall scenario and avoid the risk of putting an idle resource in place.

2.3 Conclusion

BW's vision for water supply in the next 25 years includes the early construction of a second raw water reservoir at Cheddar (Cheddar 2). BW's PR14 business plan and SoC set out a case for including the investment need to begin building the reservoir in the current price control period. Ofwat did not accept BW's proposals, largely because it could not see the need to begin construction before 2020.

CCWater is concerned about the customer impacts of these decisions and will make this clear in its submission to the CMA. In particular CCWater is concerned that:

- there should be no increased risk to water supplies to BW's customers; and
- the outcome should not increase costs or decrease bill stability to customers (for example by compressing resource development into an uneconomic time frame).

We have considered BW's proposals and Ofwat's decisions. Despite the clearer arguments set out in the SoC, it does not seem that the reservoir must be in service by

Mark Hann Consulting Ltd

2025. By developing some smaller resources, and not offering to supply a new power station (which now seems to have gone elsewhere for its water), BW does not need a major (>10Mld) water resource to be in service until after 2030. Given a 10-year build time for Cheddar 2 (and surely nothing longer for the other options), BW could give itself 5 more years to improve its understanding of the future risks and consider further all the contingent options and costs. It must be in the interests of customers to take this opportunity.