

Water 2020: Regulatory framework for wholesale markets and the 2019 price review consultation questions

Question		Comments
Overview document	SQ1 Do you agree with our proposals for making a greater use of markets in relation to sludge and water resources?	Agree In principle and where it can be clearly identified that markets will add value for customers. However to ensure effective markets we need to better understand the costs and cost bases of the various stakeholders.
Overview document	SQ2 Do you agree with our proposals in relation to the future form of regulation for the sector?	Agree In principle yes. With regard to market reform and the use of markets we would welcome further dialogue on how markets can and will be used to benefit local and national decisions - especially regarding water resources. We would not wish to see a situation where a national approach was implemented where the costs of the set up and participation in the market was greater than the customer benefits for some companies.
Overview document	SQ3 Do you agree with our proposals in relation to customer engagement and outcomes?	Strongly Agree
Overview document	SQ4 Do you agree with our proposal to extend protection of the RCV to 2020?	Strongly Agree We would welcome guidance on RCV protection post 2020 as soon as possible. This will help with our long term planning and financing decisions which will drive further benefits for customers.
Sludge treatment, transport and disposal market design	1 Do you agree with our proposal to have one separate binding price control for sludge treatment, transport and disposal?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	2a Do you agree with our proposal to make a range of cost, capacity and location information available in order to facilitate the identification of trades?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	2b Do you agree that the data should be published on a STC and STW site level?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	2c Do you agree that the data should be published annually?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	2d Do you agree with the categories of data that we are proposing are necessary and appropriate, as illustrated in the tables? Are any missing?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	3 Do you agree that the information should also contain details of 'bids' in from entrants, and that there should be guidelines for ensuring that such bids are assessed on a level playing field basis?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	4 Do you agree that the data should be made available centrally through some form of information platform? Do you have any views as to how this might best be managed?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	5 Do you agree with our proposals not to make any changes to the status quo in relation to system operation activities?	Neither agree nor disagree- N/A
Sludge treatment, transport and disposal market design	6 Do you agree with our proposals not to have any specific financial incentives to support trading in relation to sludge at this time?	Neither agree nor disagree- N/A
Water resources market design	7 Do you agree with our proposal to have a separate binding price control for water resources?	Agree However I would caveat by stating that we believe this will help the regulator and other regulating institutions to have a better understanding of inefficient costs. Thereafter we believe benefits can be driven through better regulation rather than market based solutions.
Water resources market design	8 Do you agree with our proposal to implement an offset mechanism to ensure that entrants can recover the cost of new resources appropriately, whilst also ensuring that prices reflect average costs?	Neither agree nor disagree- N/A Need to understand more about how new entrants will recover these costs. We would like to understand more about the rules governing new entrants into the water supply market before commenting further, we are concerned about the impact on raw water quality, water treatment from new entrants and how the customer will be managed in this new environment. Who will be accountable for customer service?
Water resources market design	9 Do you agree with our proposals to create a market information database and bid assessment framework to allow for the 'bidding in' of third party resource options on an ongoing basis – as set out in the Deloitte report?	Agree Yes, in principle we agree with this point. However we would like to understand more about pre-qualifications for new water sources. Given the fact that companies are accountable for the quality of water supplied to customers we would want to ensure that the risk to the quality of product did not suffer as a result of water trading. On the positive side, if this could be managed with certainty then opening up water trading platforms between reliable suppliers and sources could help with both security of supply and costs
Water resources market design	10 Do you agree that a third party organisation may be best placed to manage the information database?	Neither agree nor disagree- N/A It is a question of how can this best be organised to minimise costs and maximise value for customers
Water resources market design	11 Do you agree that measures should be introduced to increase transparency and certainty around security of supply for water trading? How can this objective best be achieved?	Agree
Allocation of the RCV	12 Do you agree with our rationale for allocating the RCV?	Neither agree nor disagree- N/A Subject to further guidance. However I would caveat by adding that creating a market for trading water resources may not be necessary in all catchments or catchment regions. Therefore it may not be sensible to burden all companies with costs and regulatory costs that will not add value to customers at as local level.
Allocation of the RCV	13 Do you agree with our proposed approach for allocating the RCV for sludge?	Neither agree nor disagree- N/A
Allocation of the RCV	14 Do you agree with our proposed approach for allocating the RCV for water resources?	Neither agree nor disagree- N/A Subject to further guidance. However I would caveat by adding that creating a market for trading water resources may not be necessary in all catchments or catchment regions. Therefore it may not be sensible to burden all companies with

Protection and treatment of the RCV: managing transition and our approach to new investment	15	Do you agree with our proposal to address stranded asset risks by extending our commitment to protect efficient investment included in the RCV to 31 March 2020?	Agree	In principle yes. If Ofwat could expand on how "efficient investments" will be measured? Will this only be subject to third party testing? How will third party testing be used to ensure it is comparable in terms of price and quality of service for customers?
Protection and treatment of the RCV: managing transition and our approach to new investment	16	Do you agree with our assessment that there is no prospect for stranded assets due to the proposed form of control for sludge and water resources for the 2020-25 period?	Neither agree nor disagree- N/A	
Protection and treatment of the RCV: managing transition and our approach to new investment	17	Do you agree with our proposed approach of an income guarantee recovered through the network plus control for protection against the risk of stranding, if a mechanism is required? How do you consider that such a mechanism could be designed to provide a simple, transparent, largely ex ante mechanism that preserves incentives for efficiency?	Neither agree nor disagree- N/A	As stated above in Q12, creating a market for water resources where it may not be necessary creates unnecessary complexity and cost.
Our approach to access pricing	18	In relation to water resources, do you agree with our proposals to implement an approach based on the average cost of providing 'network plus' activities?	Neither agree nor disagree- N/A	As stated above in Q12, creating a market for water resources where it may not be necessary creates unnecessary complexity and cost.
Our approach to access pricing	19a	In relation to access prices for water resources, do you agree with our proposal that companies should be responsible for calculating and publishing these?	Neither agree nor disagree- N/A	As stated above in Q12, creating a market for water resources where it may not be necessary creates unnecessary complexity and cost.
Our approach to access pricing	19b	Do you agree they should be published by water resource zone, with network distribution and treatment costs separately identified?	Neither agree nor disagree- N/A	As stated above in Q12, creating a market for water resources where it may not be necessary creates unnecessary complexity and cost.
Our approach to access pricing	20	In relation to water resources, do you agree with our proposals to implement a mechanism that offsets the difference between the LRIC (or potentially the AIC in the absence of LRIC data) of new resource and the prevailing average cost of resource?	Neither agree nor disagree- N/A	As stated above in Q12, creating a market for water resources where it may not be necessary creates unnecessary complexity and cost.
Our approach to access pricing	21	Do you further agree that it is the incumbent's, rather than the entrant's LRIC, that should form the basis of the payment, in order to provide a stronger incentive for entry?	Neither agree nor disagree- N/A	As stated above in Q12, creating a market for water resources where it may not be necessary creates unnecessary complexity and cost.
Our approach to access pricing	22	In relation to sludge, do you agree that price and non-price terms should be the outcome of commercial negotiation, supported by the cost or price and capacity information previously set out?	Neither agree nor disagree- N/A	
Our approach to access pricing	23	Do you support our proposals to develop high level guidelines as to how rival offers in relation to sludge treatment, transport and disposal should be evaluated?	Neither agree nor disagree- N/A	
Making greater use of direct procurement for customers	24	Do you agree with our proposals relating to the use of direct procurement on behalf of customers?	Agree	
Making greater use of direct procurement for customers	25	Do you have any views on our specific proposal to set a £100 million threshold above which point we would expect companies to procure at market on a standalone basis?	Neither agree nor disagree- N/A	
The implications of making more use of markets	26	Do you agree that our proposal for four binding wholesale price controls should apply to companies whose area is wholly or mainly in Wales, as well as to companies whose area is wholly or mainly in England?	Agree	In principle yes, as improving understanding of inefficient costs will enhance the legitimacy of the sector and customer engagement. However given the differences in size and resources available to large WaSCs and small WoCs clarity of the scale of amount of detail required should be given early so as not to disadvantage small WoCs.
The implications of making more use of markets	27	Do you agree with our initial view that the network plus controls for water and wastewater and the water resources controls should be total revenue controls?	Agree	
The implications of making more use of markets	28	Do you agree that future investment in relation to sludge treatment, transport and disposal should be exposed to volume risk and, accordingly, what are your views regarding the appropriate form of control in this area?	Neither agree nor disagree- N/A	
The implications of making more use of markets	29	In your view, how should new investments be remunerated in the sludge and water resources controls from 2020?	Neither agree nor disagree- N/A	
The implications of making more use of markets	30	How can we best ensure that long-term contracting arrangements are not disincentivised – and that any continued application of a return on RCV approach for incumbents is on a level playing field with third party providers?	Neither agree nor disagree- N/A	Subject to further guidance.
Incentivising monopolies to discover and reveal information on efficient costs	31	Do you agree with our proposal to retain our RBR approach for PR19?	Agree	

Incentivising monopolies to discover and reveal information on efficient costs	32	Do you agree with our proposal to reflect current performance in our RBR assessment (and for CCGs to consider this as part of their report?)	Agree	
Incentivising monopolies to discover and reveal information on efficient costs	33	Do you agree that the RBR assessment should consider the extent to which the business plans are part of a longer term plan?	Strongly Agree	
Assessing cost efficiency	34	Do you agree that the consideration of disaggregated cost models is appropriate given the price control structure proposed?	Agree	
Assessing cost efficiency	35	Do you agree that the development of detailed cost allocation guidelines is appropriate?	Agree	In principle yes, however it is important that cost allocations rules are fit for purpose and based around the way companies manage their operations rather than arbitrary cost allocations which add no value. In addition, we believe companies should be able to make representation on cost allocations which are aligned to their business structure.
Encouraging a longer-term approach	36	Do you agree with our proposal to retain the current timings of our price controls, that is not change the duration of wholesale price controls, not to stagger wholesale water and wastewater price controls and not seek to further align the timing of controls with other planning processes?	Disagree	
Encouraging a longer-term approach	37	Are there any other measures, not considered above that could help to encourage a longer term approach?	Neither agree nor disagree- N/A	We believe a longer price review period would improve long term planning and industry resilience. More time between regulatory reviews, especially for smaller companies, would enable us to give greater focus and resources to improving performance and service.
A more responsive regulatory framework	38	Do you agree that we should amend the licence to allow for in period adjustments for some or all of the following: outcome delivery incentives, revenues and cost sharing?	Disagree	Immediate recognition is good, however could lead to bill instability and encourage short term thinking. Is there really a need to create more change/cost of change to move to in period adjustments.
Indexation of future price controls (RPI versus CPI)	39	Do you agree with our proposal to move to CPI (subject to the UKSA's final recommendations)?	Strongly Disagree	Please see our separate report on the RPI/CPI change, which we consider makes the largest regulatory change to the balance of risk and reward.
Indexation of future price controls (RPI versus CPI)	40	Do you agree with our proposal to implement a CPI based approach, for both revenues (prices) and the RCV, subject to a transition process?	Strongly Disagree	Please see our separate report on the RPI/CPI change, which we consider makes the largest regulatory change to the balance of risk and reward.
Indexation of future price controls (RPI versus CPI)	41	Do you agree with our proposal to transition to CPI over time, both in terms of the overall method and the specific proportions of the RCV we are suggesting would remain indexed by RPI?	Strongly Disagree	Please see our separate report on the RPI/CPI change, which we consider makes the largest regulatory change to the balance of risk and reward.
Indexation of future price controls (RPI versus CPI)	42	Do you agree with our commitment to ensuring that any such change is value and bill neutral in NPV terms over time in nominal terms? What steps could be taken to make this commitment as credible as possible?	Strongly Agree	Publication of the methodology to demonstrate how this would be achieved would be very welcome
Indexation of future price controls (RPI versus CPI)	43	Do you agree that we should calculate the RPI linked element of the RCV based on forecast RPI with a true up at the end of the period to protect companies from changes in the difference between RPI and CPI over the control period?	Disagree	Please see our separate report on the RPI/CPI change, which we consider makes the largest regulatory change to the balance of risk and reward.
Impact of the balance of risk and reward on the cost of capital	44	To what extent does the current balance of risk and opportunities vary across the proposed wholesale controls and how does this impact on the cost of capital?	Disagree	Please see our separate report on the RPI/CPI change, which we consider makes the largest regulatory change to the balance of risk and reward.
Impact of the balance of risk and reward on the cost of capital	45	To what extent would our proposed market and incentive reforms impact on the balance of risk and opportunities and the cost of capital and whether this would vary across the proposed wholesale controls?	Disagree	Please see our separate report on the RPI/CPI change, which we consider makes the largest regulatory change to the balance of risk and reward.
Customer engagement	46a	What does good customer engagement look like?	Agree	In principle we support the proposals stated in Ofwat's documentation
Customer engagement	46b	What are your views on the principles outlined above?	Agree	
Customer engagement	46c	How could companies draw on good practice from within and outside the sector?	Agree	There are a range of means of learning best practice from other sectors. All companies should be continuously reviewing their service levels and benchmarking it against the very best from all sectors.
Customer engagement	46d	How can companies make use of revealed preference techniques and information obtained in their day-to-day interactions with customers to develop a richer set of evidence of customers' needs and requirements?	Agree	The majority of companies are now collecting significant amounts of data and information from customers on day to day basis. Sentiment engines and score ranking are becoming common practice across the water sector. Companies will already be using this data to effect and implement customer based decisions, how can the regulator and companies make better use of this data to drive performance improvement
Customer engagement	47a	What are your views in relation to our proposals on future CCG remit; scope; timetable; governance arrangements; and membership?	Agree	In principle we support the proposals stated in Ofwat's documentation. We would welcome further guidance on how Ofwat will manage differences in views between local/company CCGs and a national approach to customer engagement and CCGs
Customer engagement	47b	In relation to the quality of a company's customer engagement, do you agree with the above list of issues that should be covered by the CCG report?	Agree	
Customer engagement	47c	What are your views on the division of responsibilities between CCGs and Ofwat?	Agree	See 47a
Customer engagement	48a	What are your views on our proposal to facilitate more collaboration between CCGs?	Strongly Agree	
Customer engagement	48b	What are your views on our aspiration to publish information on the WACC and outcome RoRE ranges early?	Strongly Agree	

Customer engagement	48c	Without inserting ourselves between companies and their customers, what else could we do to incentivise and encourage good quality customer engagement?	Agree	We believe that all companies are looking to develop high quality levels of customer service and strong customer engagement programmes, which can be seen from the high and improving ratings given to water companies, especially by comparison with other utility companies (where the "emotional" attachment is not so high). Given this positive background Ofwat could encourage improvements in customer engagement by giving greater support to the local solutions brought by companies and their customers. And to further develop local solutions by starting a dialogue with companies and CCGs to outline how they could move from current regulatory practice to negotiated settlements.
Outcomes	49	How can the outcomes framework encourage a longer-term approach? Should we encourage, or even mandate, that certain measures - for example asset health – span more than a single regulatory control period?	Agree	Fully agree, but would welcome discussions on how to link customer preferences to multi period outcomes in a way that is meaningful to customers.
Customer engagement and outcomes in the face of change	50	What are your views on the proposed contents of our November 2016 consultation on outcomes (balance of bespoke versus comparative measures, and role of comparative information)?	Agree	
Customer engagement and outcomes in the face of change	51	What are your views on our proposal that companies submit the definitions – but not the targets or any associated incentives - for their performance commitments to us in early 2018 before they submit their business plans?	Agree	
Customer engagement and outcomes in the face of change	52	What are your views on our proposal for a licence modification to allow for the in-period payment of outcome delivery rewards and penalties?	Neither agree nor disagree- N/A	Positive to reward in a timely manner, however would want to guard against bill volatility caused by differences in year on year performance
Implementing our proposals: licensing and next steps	53	Do you agree with our summary of potential licence changes and the process for achieving these outlined in section 9.1	Agree	
Implementing our proposals: licensing and next steps	54	Do you agree with the next steps for establishing the necessary data for the 2019 price review outlined in section 9.2?	Neither agree nor disagree- N/A	We would like to understand more about the detail, the process and the resources required to comply with Ofwat's requirements.
Implementing our proposals: licensing and next steps	55	Do you agree with our indicative timetable for the Water 2020 programme?	Agree	
Impact Assessment	IA1	Do you agree with the benefit and cost impact categories we have identified?		
Impact Assessment	IA2	Are there any impact categories you think we have not included that are relevant, or any we have included that should be omitted?		
Impact Assessment	IA3	What are your views on the indicative scale of the impacts we have identified?		
Impact Assessment	IA4	Are you able to provide any evidence on any of the impacts in relation to our proposals?		

Dee Valley Water's Executive Summary of Frontier Economics Report

10 February 2016

RCV Indexation Proposals

In relation to Ofwat's proposals for the change in price indexation Dee Valley Water (DVW) has a number of concerns with Ofwat's preferred approach. Whilst we understand the need to use an inflation index that is legitimate in the eyes of customers and wider society we consider that Ofwat's proposal to change the indexation of the RCV at the next price review results in material financing risks for the company and increased customer bills. In our view these factors outweigh any potential benefits to customers.

Our specific concerns are as follows:

- The Ofwat proposal will result in an increase in customer bills in 2020/21. We estimate that DVW's bills will increase by 2.1% more than otherwise in that year. Depending on the other factors driving bills this may result in adverse and unnecessary bill instability. Moreover, given the way CPI impacts the WACC, without manipulation of bills through mechanisms such as PAYG it will be 30 years before customer bills will be lower than would be the case if we continued to use RPI.
- The proposals will result in material additional systematic financing risk for DVW. The large majority of our debt financing is in the form an RPI linked Bond that matures in 2032.
- Even if an efficient CPI market was put in place Dee Valley Water would not be able to take advantage of this market until 2032. To exit this debt arrangement would cost Dee Valley Water £137m to redeem the debt, which is clearly not possible. DVW does not have the option of choice with regard to their current financing position and strategy until the Artesian debt reaches maturity, therefore would not be able to take advantage of any new market developments.
- Between 2020 and 2032 this debt as a share of RCV will vary between 55% and 62%, which is always higher than the 50/50 split currently being proposed by Ofwat. This means that until DVW can re-finance its Artesian debt in 2032 it will always be disadvantaged by this change and retroactive application of/in regulation.
- Changing the indexation of the RCV from RPI to CPI will expose DVW to the material risk of divergence between the two price indices. This systematic risk will be much higher for DVW than the majority of the rest of the industry and this has not been reflected in Ofwat's analysis to date. As such this higher level of risk will be priced into DVW's funding requirements for AMP7 and AMP8, further disadvantaging the company and potentially customers.
- DVW entered into the Artesian Bond in 2002 in accordance with the regulatory principles in place at that point in time. The Artesian Bonds were considered to be efficient financing vehicles at this point in time. By retroactively amending the regulation of the RCV would in effect penalise DVW for decision that were

efficiently taken and were considered to be in accordance with regulatory best practice at the time and during the PR14 process.

- More generally, the proposal risks harming investor confidence and increasing financing costs. The proposed change to RCV indexation does not achieve any additional customer benefits to the proposed change to price indexation.

These points are set out below in more detail. In summary we request that Ofwat reconsiders its proposals regarding the speed and transition of the arrangements for RPI/CPI RCV indexation and in particular to recognise the importance of retaining the RPI indexation as it relates to existing assets and financing.

Dee Valley Water has participated in the work undertaken by Water UK and supports the findings of this analysis. In addition, Dee Valley commissioned Frontier Economics to undertake modelling of the specific impact on the company, given its own financing arrangements.

Adverse impact on customers

The modelling undertaken by Frontier shows that the Ofwat proposals would result in an increase in customer bills of over 2% in 2020/21. This is driven by the higher cost of capital relative to CPI. This result is consistent with the findings of the Nera study for Water UK for the industry as whole.

The Ofwat proposal raises a risk that the level of bill increase in 2020/21 will not be acceptable to customers. In order to manage this the company would be required to adjust the PAYG rates or RCV run-off rates. This has the effect of deferring revenue to future periods and therefore undermines the basis for the Ofwat proposal in the first place as the same result could be achieved by a slower transition profile.

Furthermore it is important to note that customers have no visibility over the indexation method for the RCV and therefore there is a clear distinction between indexation of prices and the indexation of revenues. To the extent that customers become more focussed on CPI as the 'core measure' of inflation over time, we consider that customer acceptability of the indexation method can be achieved through switching to CPI indexation of prices only.

Impact of Dee Valley's existing debt arrangements

The Ofwat proposal of a 50% transition to CPI indexation of the RCV is based on a 'one size fits all' approach to the industry and does not reflect the specific financing situation of DVW. As a result, the proposal will unfairly penalise DVW and expose the company to higher risks than the rest of the industry. The analysis undertaken by Ofwat to date has not considered the impact on individual companies.

The vast majority of DVW's debt is comprised of an RPI linked debt issued under the Artesian Bond structure. This debt has a maturity of 2032 and currently represents around 65% of DVW's RCV. This is forecast to decline over the AMP6 period due to the scale of the investment programme but will nevertheless average around 60% for the period. Clearly the principal and coupon on this debt are indexed to RPI and therefore the RCV linked to RPI provides an appropriate risk hedge for this debt.

We would also emphasize that DVW was in no way inefficient or imprudent in entering into this debt arrangement. As a small Water only Company (WoC) DVW does not have the scale of financing to support a portfolio of bond issues. At the time of issuance the Artesian bond represented an efficient debt structure that provided a natural match to the indexation of the RCV.

We have investigated whether it would be possible to re-finance the Artesian bond in the event of a change in the RCV indexation. The clear evidence shows that such an option would be prohibitively expensive. The Artesian structure permits the voluntary redemption of Artesian Bonds at the higher of ‘Par’ and ‘Spens’ – this is calculated as buying the Bonds back at a yield ‘flat to the reference Gilt’. For the current DVW debt of £51.7 million it would cost approximately £137million to redeem the Artesian bond. This is clearly not an option for a company with an RCV of just over £70 million.

In addition, the view from the financial advisers is that it would be extremely challenging, if not impossible to transition the debt to a CPI structure and specifically is not plausible in the absence of CPI linked government debt.

Therefore it is clear that the Artesian debt will form the core of DVW’s financing until 2032. This is the earliest point at which we will be able to readjust a financing structure to reflect any change in the regulatory methodology. Again this fact derives from our size and not from any inefficiency on our part.

The Ofwat proposal will therefore break the current risk hedge with the RPI indexation of both our debt financing and our regulatory asset base. The modelling we have undertaken highlights the exposure we will face under the proposal. The table shows that the gap between our RPI linked debt and RPI linked RCV will be over £6m in the PR19 period. It will then increase dramatically depending on how quickly Ofwat switches to full CPI indexation. Assuming a 25% transition at PR24 would leave a gap of over £40m.

Table: Exposure to RPI-linked debt (£ nominal)

Period	Average Artesian debt	RPI linked RCV under Ofwat proposal	Gap between RPI linked debt and RPI linked RCV
20/21 – 24/25	£62.7m	£56.1m	£6.5m
25/26 – 29/30	£72.7m	£32.1m*	£40.5m
30/31 – 32/33	£81.7m	-	£81.7m

* assumes a 25% RPI indexation at PR24

This highlights that Ofwat’s analysis of the impact at the industry level is not applicable to the situation faced by DVW. The proposal would have a material adverse impact on the financial resilience of DVW.

Impact on investor confidence and financeability

It is also clear that the Ofwat proposal has prompted concerns from investors. The ratings agency Moody's has identified a number of risks and challenges with the change in indexation.

- The change to CPI indexation requires Ofwat to forecast the differential between RPI and CPI. Moody's highlights the risk that Ofwat may underestimate the differential. If this happens then the change in regulatory methodology would not be NPV neutral.
- Moody's identify that using the PAYG rate or other levers to manage bill increases would be 'credit negative' as it increases the risk that investors lose some confidence in the regulatory framework which is currently perceived as being low risk.
- A further risk is that Ofwat would need to set cost allowances relative to CPI and not RPI. In theory this should result in higher cost allowances but again the concern is that this does not get fully reflected.

The concerns raised by Moody's have been echoed across the investor base. As part of the Water UK work, Nera interviewed a range of equity and debt investors, as well as analysts.

The interviews highlighted that investors were concerned that:

- Ofwat cannot credibly commit to the value neutrality of the change;
- CPI risks cannot be hedged perfectly and this will increase financing costs;
- CPI corporate debt instruments require CPI linked government bonds; and
- There is a concern from investors that Ofwat's move was premature and not properly motivated, investors are not clear why Ofwat are moving in advance of the development of a CPI linked debt market.

Overall investors consider that the proposal will increase financing costs and reduce confidence in the sector.

Summary position

In summary, there are potential material costs to customers in terms of bill impacts at PR19, bill impacts in AMP7 and AMP8 from future financing risk, and costs to investors in terms of increased financing risk and uncertainty around the adjustments that Ofwat would need to make preserve value neutrality.

In particular the proposal is not consistent with the financing structure of DVW, which has a large exposure to RPI linked debt until 2032. The proposal would increase financing risk and undermine the financial resilience of the company and unfairly penalise DVW as it is too small to operate with a portfolio of different debt instruments.

Ultimately, anything that lowers investor confidence in the sector will adversely impact on customers in the medium term. We urge Ofwat to reconsider its proposals for RCV indexation, especially the timing and transition arrangements and in particular to

recognise the importance of retaining the RPI indexation as it relates to existing assets and financing.

END



Modelling the impact of a switch to CPI indexation

A REPORT PREPARED FOR DEE VALLEY WATER

February 2016

Modelling the impact of a switch to CPI indexation

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Modelling the impact of a switch to CPI indexation

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Executive summary

In its consultation paper on Water 2020, published in December 2015, Ofwat set out proposals to change the basis for the price indexation of regulated prices and the regulatory asset value (RCV). We have been asked by Dee Valley Water to undertake financial modelling of the options for price indexation and to evaluate the impact on customer bills and financial ratios. Dee Valley Water (DVW) provided us with a financial model of the current regulatory period. This model was extended to allow the modelling of the change in price indexation.

Our main findings from this modelling are as follows.

- The Ofwat proposal will result in an increase in customer bills in 2020/21. We estimate that DVW's bills will increase by 2.1% more than otherwise in that year. Depending on the other factors, e.g. the totex and revenue true-ups from AMP6 as well as the level of totex spending in AMP7, this may result in material bill volatility. In order to manage this volatility the company would be required to adjust the PAYG rates or RCV run-off rates. This has the effect of deferring revenue to future periods and arguably undermines the basis for the Ofwat proposal in the first place as the same result could be achieved by a slower transition profile.
- The proposals will result in additional financing risk for DVW. The large majority of its debt financing is in the form an RPI linked Bond that matures in 2032. Clearly the principal and coupon on this debt are indexed to RPI and therefore the RCV linked to RPI provides an appropriate risk hedge for this debt. Between 2020 and 2032 this debt as a share of RCV will vary between 55% and 62%, which is always higher than the 50% RPI share currently being proposed by Ofwat. We also note that Ofwat envisages that the RPI share of RCV would be reduced further at PR24.
- It is not realistic for DVW to re-finance this RPI linked debt. To redeem the debt exit would cost DVW £137m, which is clearly not feasible. As a result DVW does not have any flexibility of its current financing position and strategy until the Artesian debt reaches maturity, therefore would not be able to take advantage of any new market developments.
- Changing the indexation of the RCV from RPI to CPI will expose DVW to the risk of divergence between the two price indices. This systematic risk will be much higher for DVW than the majority of the rest of the industry. The modelling highlights the exposure DVW will face under the proposal. The gap between the RPI linked debt and RPI linked RCV will be over £6m in the PR19 period. It will then increase dramatically depending on how

quickly Ofwat switches to full CPI indexation. Assuming a 25% transition at PR24 would leave a gap of over £40m.

- The change to CPI indexation requires Ofwat to forecast the differential between RPI and CPI. Moody's highlights the risk that Ofwat may underestimate the differential or not allow the differential in full in the cost of capital. If this happens then the change in regulatory methodology would not be NPV neutral. The scenario modelling indicates that the key financial ratios face a material adverse trend if the full adjustment is not made to the allowed cost of capital.

1 Introduction

In its consultation paper on Water 2020¹, published in December 2015, Ofwat set out proposals to change the basis for the price indexation of regulated prices and the regulatory asset value (RCV).

The Ofwat paper identified five options for price indexation:

- The current model where both prices and the RCV continue to be indexed by the Retail Price Index (RPI).
- A dual indexation model, where prices would switch to indexation on the Consumer Prices Index (CPI), while the RCV would continue to be indexed by RPI.
- Transition to CPI indexation. Under this option the prices would switch to CPI indexation while the RCV would transition from RPI to CPI. At PR19 the RCV would be 50% indexed by RPI and 50% by CPI. These proportions would be reviewed at subsequent prices reviews.
- New RCV linked to CPI. Under this option existing RCV would be linked to RPI while new RCV post 2020 would be linked to CPI. Prices would be indexed by CPI.
- The final option involves both prices and RCV switching to CPI indexation from PR19.

We have been asked by Dee Valley Water to undertake financial modelling of the options for price indexation and to evaluate the impact on customer bills and financial ratios. Dee Valley Water (DVW) provided us with a financial model of the current regulatory period. This model was extended to allow the modelling of the change in price indexation.

This report is structured as follows.

- Section 2 describes the approach to the modelling and outlines the main assumptions and inputs.
- Section 3 outlines the scenarios that have been modelled.
- Section 4 contains the detailed results of the modelling.

¹ Ofwat, *Water 2020: Regulatory Framework for wholesale markets and the 2019 price review*, December 2015.

2 Approach to modelling

This section describes the modelling approach and main assumptions and inputs into the analysis.

2.1 PR14 model

DVW provided Frontier with a current financial model that covered the period to 2019/20. The model reflected the final determination and the company's latest information of operating expenditure and capital expenditure categories and financing costs.

The model contained the following sheets.

- Input sheets for regulatory and financing assumptions;
- Calculation sheets for financing costs, investment and depreciation and tax and working capital;
- Output sheets for the P&L, balance sheet and cashflow and for the main financial ratios used by analysts and the specific covenants for the debt issuance.

2.2 Extending the model

Frontier extended this financial model for the purpose of evaluating the different options for price indexation. This involved making the following changes.

- Extending the time period out to 2034/35 and therefore covering a further three regulatory price control periods.
- Allowing the RCV indexation to switch between RPI and CPI, or any split between the two.
- Calculating regulatory revenue in each period, based on current methodology including: totex allowance, PAYG and RCV run-off, a return on RCV and an allowance for retail costs and revenue.
- Enabling the allowed return on capital (the cost of capital) to vary depending on the indexation method, with a higher cost of capital for CPI indexation.
- Adding assumptions for future financing costs.

Details of the main assumptions in the model are provided below.

2.3 Regulatory assumptions

The core regulatory assumptions in the modelling were as follows.

- The allowed wholesale cost of capital was assumed to remain at 3.6% (real, relative to RPI) for the three price control periods.
- The PAYG rate was assumed to be set to reflect the company's split of actual opex and capex with a gradual convergence to this level from the level implied by the pricing in the current period.
- The run-off of 2015 RCV was assumed to remain at 6.1% as per the PR14 determination.
- The level of totex was based on the following assumptions:
 - A capex programme of £5m per year in real (RPI) terms;
 - A level of opex based on the 2019/20 projection and then rolled forward by a mix of RPI and CPI (equivalent to 2.5% in nominal terms);
 - No assumed totex out-performance or under-performance.
- No assumptions regarding ODI or WRFIM adjustments were included.
- Average bill calculations were based on an assumed growth rate of households of 1% per year and a growth rate of non-households of 0.3% per year.

2.4 Financing and inflation assumptions

The main financing and inflation assumptions were as follows:

- The level of RPI inflation was assumed to be 3.0% per year after 2019/20.
- The level of CPI inflation was assumed to be 2.0% per year after 2019/20. The 1.0% differential between RPI and CPI is approximately in-line with the differential observed in historic trends.
- New debt issuance was assumed to be based on a revolving credit facility and at a margin of 90 bps over LIBOR. This margin was chosen to include debt fees and was based on recent quotes received by DVW.

Approach to modelling

- We used a projection for future LIBOR based on current yield curves and a convergence of LIBOR rates from a current level of around 1% to an historic average of 5% by 2029/30.
- We have assumed that the Artesian loan, which matures in 2032, rolls forward in a similar structure to the end of the period. This is a simplifying assumption and in practice the form of refinancing would depend on the situation at the time including the form of RCV indexation.

In addition, we considered whether scenarios where the Artesian loan is refinanced should be evaluated. The Artesian structure permits the voluntary redemption of Artesian Loans at the higher of 'Par' and 'Spens' – this is calculated as buying the Bonds back at a yield 'flat to the reference Gilt'. For the current DVW loan of £51.7 million it would cost approximately £137million to redeem the loan Artesian I. This is clearly not an option for a company with an RCV of just over £70 million. Such a transaction would involve material transaction costs and although the interest costs may not be much higher afterwards the level of gearing would be unsustainably higher. Therefore, re-financing options are not realistic.

3 Price indexation scenarios

This section describes the five scenarios for price indexation that have been modelled in this analysis.

As outlined above, Ofwat identified five indexation options.

1. The current model where both prices and the RCV continue to be indexed by the Retail Price Index (RPI).
2. A dual indexation model, where prices would switch to indexation on the Consumer Prices Index (CPI), while the RCV would continue to be indexed by RPI.
3. Transition to CPI indexation. Under this option the prices would switch to CPI indexation while the RCV would transition from RPI to CPI. At PR19 the RCV would be 50% indexed by RPI and 50% by CPI. These proportions would be reviewed at subsequent prices reviews.
4. New RCV linked to CPI. Under this option existing RCV would be linked to RPI while new RCV post 2020 would be linked to CPI. Prices would be indexed by CPI.
5. The final option involves both prices and RCV switching to CPI indexation from PR19.

In choosing which scenarios to model we have varied some of these options.

- We have not included Ofwat's second option. This option only differs from the first option if the out-turn differential between RPI and CPI is different than expected. Our modelling did not include any simulation modelling around out-turn inflation and therefore this scenario is redundant.
- We did not include Ofwat's fifth option of a full switch to CPI. Given the financing structure of DVW this would be likely to generate adverse impacts on financing metrics and therefore is unlikely to be a realistic option.

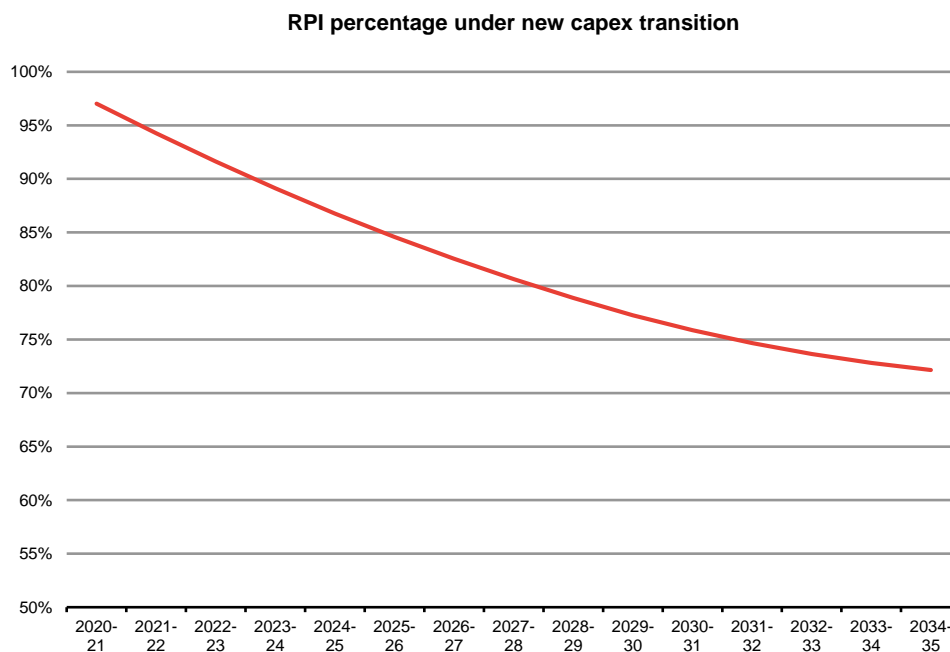
In addition, we included two further scenarios.

- A phased transition to CPI indexation that is slower than the Ofwat proposal.
- A version of the Ofwat proposal where the cost of capital does not fully reflect the differential between RPI and CPI. Ofwat has stated that the switch to CPI may reduce the risk profile of the companies and therefore we consider a scenario where not all of the differential is included in the WACC.

Reflecting these changes the five scenarios that we have modelled are as follows.

- Scenario 1: The current model. With RCV indexed to RPI as in the current methodology.
- Scenario 2: 50% transition. This is the Ofwat proposal with RCV 50% linked to RPI at PR19. We have had to make an assumption about future periods and we assumed that the RPI percentage decreases to 25% at PR24 and 0% at PR29.
- Scenario 3: 75% transition. This is a slower transition option with the RCV 75% linked to RPI at PR19. The assumption about future periods is 50% at PR24 and 25% at PR29.
- Scenario 4: New capex. In this option the % of the RCV linked to RPI is equal to the proportion of the RCV that represents 'existing RCV' at 2019/20. The profile of this transition for DVW is shown **Figure 1** below.
- Scenario 5: 50% transition, lower WACC. This is the Ofwat proposal as in scenario 2 with 50% of the differential reflected into the higher WACC.

Figure 1. New capex transition



Source: Frontier calculations

4 Detailed modelling results

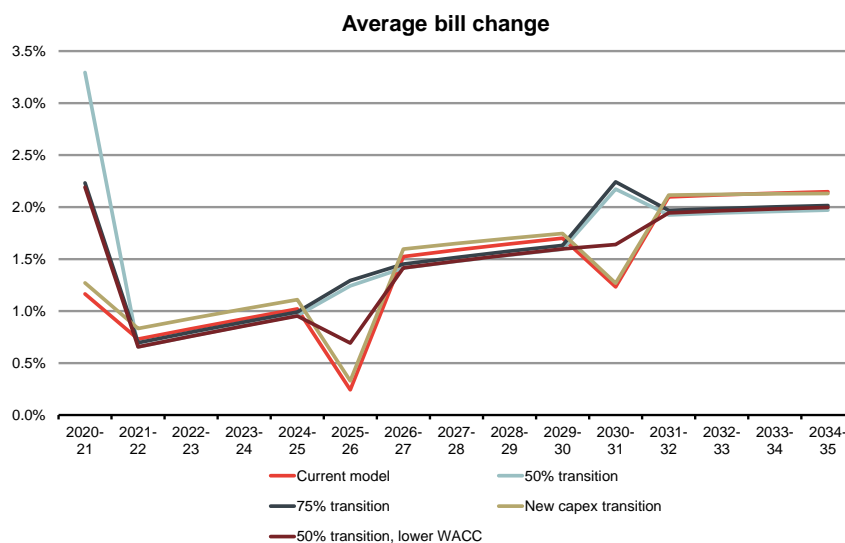
This section summarises the results of the scenario modelling, including the impact on customer bills and key financial metrics. For each scenario we have considered the impact on:

- average customer bills;
- trends in RCV and revenue;
- core financial metrics; and
- financial resilience.

4.1 Impact on average customer bills

The impact of average customer bills is shown in **Figure 2**, which shows the annual percentage change in the bill level under the five scenarios².

Figure 2. Impact of average customer bills



Source: Frontier calculations

The figure shows that there is a material increase in bills under the Ofwat proposal of 50% transition. With a bill increase of nearly 3.5% under this option

² The average bill is calculated as the revenue requirement divided by the number of household and non-household properties.

there is a material chance that the overall bill increase would exceed 5%, once other factors (such as PR14 true-ups) are included.

An alternative way to consider this is to assess the impact on the bill change in 2020/21 of each option relative to the status quo. This is shown in **Table 1** and allows the impact to be assessed independently of other drivers of customer bills.

Table 1. Change in 2020/21 bill increase

Scenario	Difference in bill increase compared to Scenario 1
Scenario 2: 50% transition	+2.1%
Scenario 3: 75% transition	+1.1%
Scenario 4: New capex transition	+0.1%
Scenario 5: 50% transition, lower WACC	+1.0%

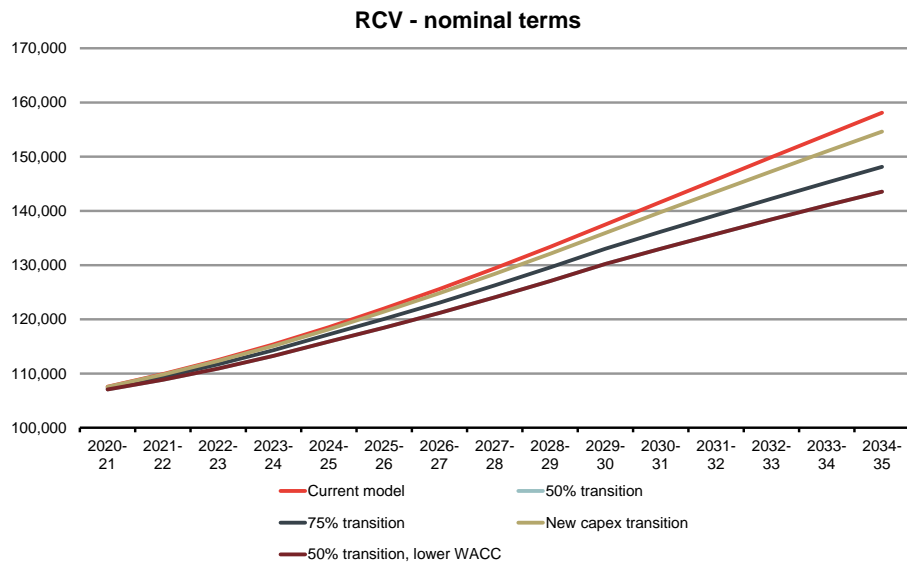
Source: Frontier calculations

The Ofwat proposal increases bill levels by 2.1% compared to the current model. The option with the smallest impact on bills is, unsurprisingly, the ‘new capex’ transition model.

4.2 Trends in RCV and revenue

The trends in nominal RCV and revenue are shown below. **Figure 3** shows the profile of RCV for the five scenarios. As expected, all of the alternatives to the current model result in a lower path for RCV, as the impact of lower CPI indexation feeds through. Scenario 4, with the new capex transition, is closest to the current model.

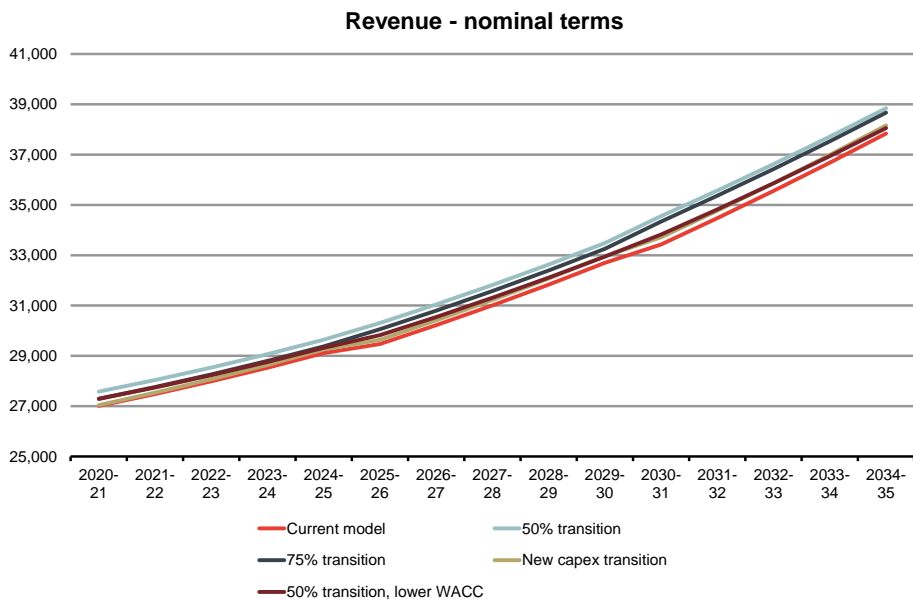
Figure 3. Nominal RCV



Source: Frontier calculations

Figure 4 shows the profile of nominal revenue.

Figure 4. Nominal revenue



Source: Frontier calculations

Nominal revenue is lower in the current model. This is because, in this period, the impact of the higher WACC (relative to CPI) outweighs the lower RCV

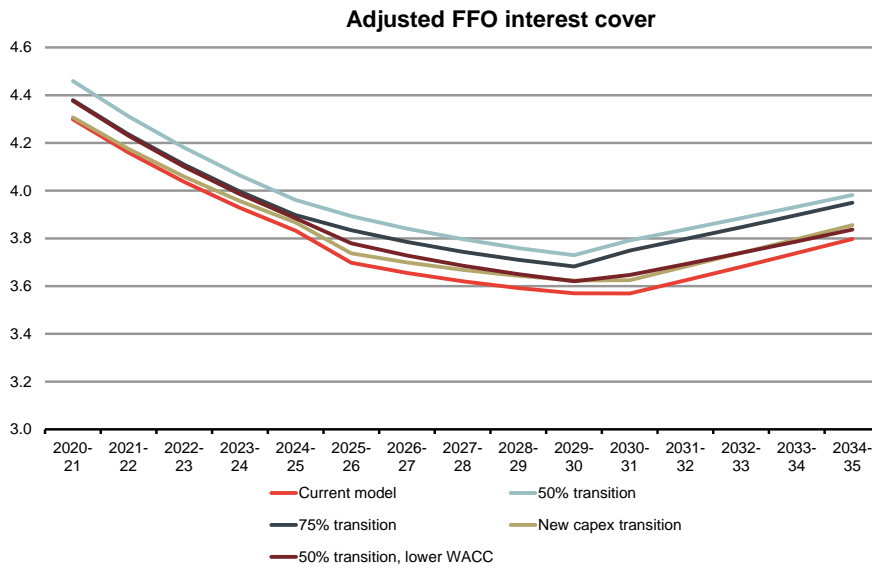
profile in the other scenarios. Assuming that the cost of capital is unchanged the scenarios are ‘value neutral’ (with the exception of scenario 5). As a result, the revenue under the different scenarios will switch over in time as the impact of the lower RCV then outweighs the higher WACC.

4.3 Trends in financial metrics

To assess the impact on financial metrics we have focused on two key ratios: the adjusted FFO interest cover ratio and the ratio of net debt to RCV (regulatory gearing).

Figure 5 shows the profile of the adjusted FFP interest cover under the five scenarios. As expected the ratio improves under the CPI indexation scenarios relative to the current model. This is consistent with the revenue impact analysed above and reflects the additional cash-flow from the higher WACC. Note that the scenario where the 50% transition is combined with a lower WACC increase, the cover ratio shows no material improvement over the current model.

Figure 5. Trends in adjusted interest cover



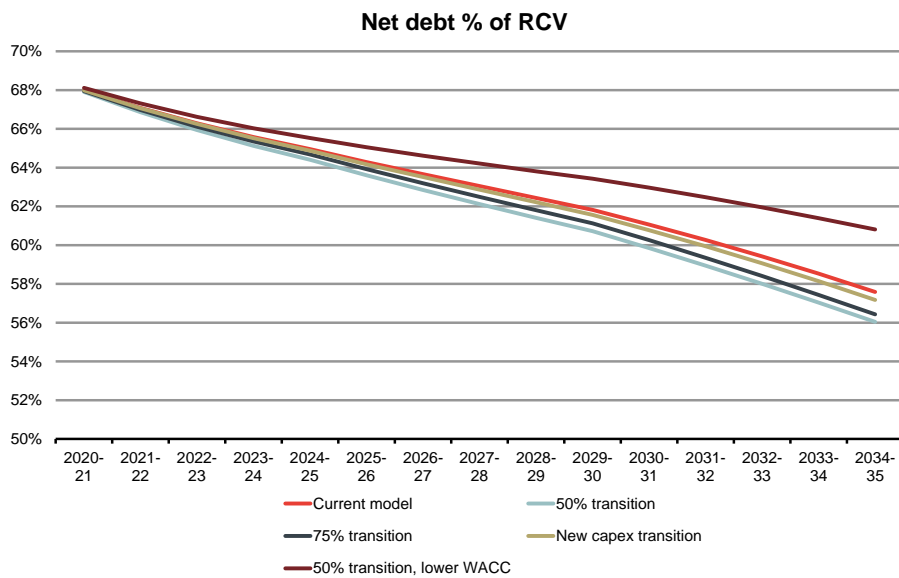
Source: Frontier calculations

Figure 6 shows the trends in regulatory gearing under the five scenarios. All of the five scenarios show a reduction in gearing over the period. This reflects the

Detailed modelling results

other assumptions in the model³. As a result it is more useful to focus on the relative movements in gearing between the scenarios. This shows that the profile of gearing is broadly similar in scenarios 1 to 4, with the CPI indexation options exhibiting slightly lower gearing. However, the scenario 5 where the full differential between RPI and CPI is not reflected in the WACC results in a materially higher gearing level.

Figure 6. Trends in regulatory gearing



Source: Frontier calculations

This is consistent with the evidence from the investment community that identifies the adjustment to the WACC as a key concern with the Ofwat proposal⁴.

4.4 Trends in financial resilience

One of the key features of DVW's financing structure is its reliance on existing RPI linked debt. The Artesian debt instrument has a maturity of 2032 and until this debt matures DVW's financing costs will reflect the trends in RPI. As a result, options where revenues and RCV are linked to CPI result in an additional

³ For example, the regulatory WACC is maintained at 3.6% relative to RPI despite the continuing low costs of new debt. Alternative modelling scenarios with a lower base WACC at PR19 could be considered.

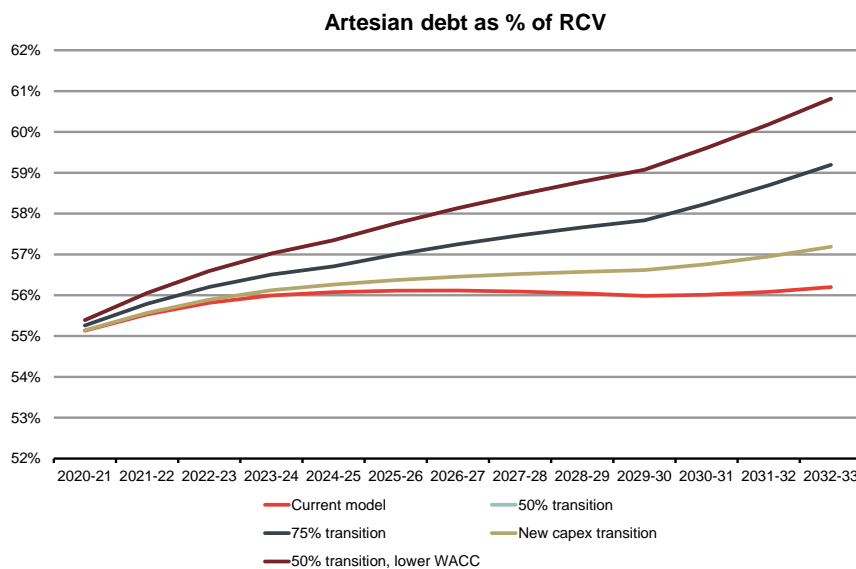
⁴ See Moody's paper, *Transition to CPI creates risks for water and energy networks*, 13 January 2016.

financing risk for DVW, i.e. the risk that RPI and CPI diverge for periods of time.

This additional risk has not been captured in our modelling, as our modelling assumes a constant and predictable differential between RPI and CPI. In order to model this scenario it would be necessary to undertake simulation or scenario modelling of potential divergence between RPI and CPI.

However the exposure to this risk can be assessed by evaluating the exposure of DVW to RPI linked debt. This is shown in **Figure 7** which shows the Artesian debt as a % of RCV until its maturity in 2032.

Figure 7. Artesian debt as a % of RCV



Source: Frontier calculations

The Figure shows that the percentage of RPI linked debt remains above 55% in all scenarios and is higher in the Ofwat proposed scenarios with 50% CPI transition. This shows that DVW will be exposed to the higher risk associated with embedded RPI linked debt.

Another way to illustrate the scale of the risk is to consider the trend between RPI linked debt and RPI linked RCV. This is shown in **Table 2** below. The table shows that the difference between the RPI linked debt and RPI linked RCV will be £6.5m in the PR19 period. It will then increase materially at PR24, depending on how Ofwat applies the transition to full CPI indexation. Assuming a 25% transition, as we have above, would leave a differential of over £40m at PR24.

Detailed modelling results

Table 2. RPI linked debt and RCV under 50% transition proposal

Regulatory period	Average Artesian debt	RPI linked RCV under Ofwat proposal	Gap between RPI linked debt and RPI linked RCV
20/21 – 24/25	£62.7m	£56.1m	£6.5m
25/26 – 29/30	£72.7m	£32.1m*	£40.5m
30/31 – 32/33	£81.7m	-	£81.7m

Source: Frontier calculations

* Assumes a 25% RPI indexation at PR24

As explained in Section 2, the terms of the Artesian debt means that there is no realistic option for DVW to reduce its exposure to RPI linked debt during this period.

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