Affinity Water: PR19 – March 2019 Submission - Table Commentaries v3

Appointed business tables

App1 – Performance commitments (PCs) and outcome delivery incentives (ODIs)

General

Our PCs and ODIs are summarised as follows:

Line No.	Performance Commitment for 2020 to 2025	PC Ref. (company)	ODI Type	ODI Form	ODI Timing	Cap / Collar	Dead Band
1	Supply interruptions greater than 3 hours (avg. min lost per prop)	W-D1	£ + / (-) unit based	Revenue	In period	Collar & deadband	Yes
2	Leakage (Ml/d)	W-B1	£ + / (-) unit based	Revenue	In period	Cap & collar	No
3	Per capita consumption (l/p/d)	R-B1	£ + / (-) unit based	Revenue	In period	Cap & collar	No
4	Risk of severe restrictions in a drought (% popn. 1:200)	W-D2	Non-financial	n/a	n/a	n/a	n/a
5	Unplanned outage (Lost capacity as % of total company maximum production capacity)	W-D3	£ (-) unit based	Revenue	In period	Collar	No
6	Number of burst mains (per 1,000km)	W-D4	£ (-) unit based	Revenue	In period	Collar	No
7	Compliance Risk Index (CRI)	W-A1	£ (-) unit based	Revenue	In period	Collar & deadband	Yes
8	Customer measure of Experience (C-MeX)	R-C1	£ + / (-) unit based	Revenue	In period	Cap & collar	No
9	Developer measure of Experience (D-MeX)	W-C1	£ + / (-) unit based	Revenue	In period	Cap & collar	No

10	Properties experiencing longer or repeated instances of low pressure (non-DG2)	W-D5	Non-financial	n/a	n/a	n/a	n/a
11	Customers in vulnerable circumstances satisfied with our service (receiving financial help)	R-C2	Non-financial	n/a	n/a	n/a	n/a
12	Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)	R-C3	Non-financial	n/a	n/a	n/a	n/a
13	Environmental Innovation – delivery of community projects	W-B2	£ + unit based	Revenue	In period	No	No
14	Reducing the total number of void properties by identifying false voids	R-C4	£ + / (-) unit based	Revenue	In period	No	No
15	River restoration	W-B3	£ + / (-) unit based	Revenue	In period	Cap	No
16	Abstraction reduction	W-B4	£ + / (-) unit based	Revenue	In period	No	No
17	Number of sources operating under the Abstraction Incentive Mechanism	W-B5	£ + / (-) unit based	Revenue	In period	No	No
18	Properties experiencing longer or repeated instances of low pressure (DG2)	W-D5	£ + / (-) unit based	Revenue	In period	Collar	No
19	Number of occupied properties not billed (Gap sites)	W-C2	£ (-) unit based	Revenue	In period	No	No

20	Unplanned interruptions to supply over 12 hours	W-N1	Non-financial	n/a	n/a	n/a	n/a
21	Customer contacts for discolouration	W-N2	£ (-) unit based	Revenue	In period	No	No
22	% customers aware of (or on) PSR	R-N3	Non-financial	n/a	n/a	n/a	n/a
23	BSI accreditation	R-N4	Non-financial	n/a	n/a	n/a	n/a
24	Strategic resource development	W-N5	£ (-) unit based	Revenue	In period	No	No
25	Cyber security & resilience	R-N6	Non-financial	n/a	n/a	n/a	n/a
26	Customers in vulnerable circumstances satisfied with our service (not receiving financial help)	R-N7	Non-financial	n/a	n/a	n/a	n/a
27	Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)	R-N8	Non-financial	n/a	n/a	n/a	n/a
28	Value for Money survey	R-N9	Non-financial	n/a	n/a	n/a	n/a

Table 1: PC and ODI Summary

Columns D-G - Outcome, PC History, PC ref and PC name

We have included the following common PCs as required by Ofwat:

- Supply interruptions greater than 3 hours
- Leakage
- Per capita consumption
- Risk of severe restrictions in a drought
- Unplanned outage
- Number of burst mains
- Compliance Risk Index (CRI)
- Customer measure of experience (C-MeX)
- Developer measure of experience (D-MeX)

Our bespoke PCs were set based on customer and stakeholder engagement and are as follows:

- Properties experiencing longer or repeated instances of low pressure
- Customers in vulnerable circumstances satisfied with our service
- Customers in vulnerable circumstances who found us easy to deal with

- Environmental innovation – delivery of community projects
- Reducing the total number of void properties by identifying false voids
- River restoration
- Abstraction reduction
- Number of sources operating under the Abstraction Incentive Mechanism
- Number of occupied properties not billed (Gap sites)

Following the IAP, we have taken on-board Ofwat's feedback and introduced the following PCs:

- Customer contacts for discolouration
- Unplanned interruptions to supply over 12 hours
- % customers aware of (or on) PSR
- BSI accreditation
- Cyber security & resilience
- Value for Money survey

We also took Ofwat's advice and split:

- Properties experiencing longer or repeated instances of low pressure
- Customers in vulnerable circumstances satisfied with our service
- Customers in vulnerable circumstances who found us easy to deal with

Into:

- Properties experiencing longer or repeated instances of low pressure (DG2)
- Properties experiencing longer or repeated instances of low pressure (non-DG2)
- Customers in vulnerable circumstances satisfied with our service (receiving financial help)
- Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)
- Customers in vulnerable circumstances satisfied with our service (not receiving financial help)
- Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)

We also removed Mean Zonal Compliance as a PC following Ofwat feedback.

Please note that we have changed the title of the PC "*Number of properties wrongly classified as unoccupied (False voids)*" to "*Reducing the total number of void properties by identifying false voids*". This is to better match the PC title to the unit target (which is "*Voids as % of total billed residential properties*").

This gives us 28 PCs in total.

In addition, some of these PCs meet the Ofwat requirement for Asset Health and Resilience PCs, as follows:

Asset Health (p.27 of Annex 2 of Ofwat PR19 methodology and Ofwat feedback in "Affinity Water: Delivering outcomes for customers detailed actions")

- Number of burst mains
- Unplanned outage
- Properties experiencing longer or repeated instances of low pressure (DG2)
- Customer contacts for discolouration

Resilience (p.46 of Ofwat PR19 methodology for common PC list)

- Leakage
- Per capita consumption

- Risk of severe restrictions in a drought
- Environmental innovation – delivery of community projects
- Abstraction reduction
- Number of sources operating under the Abstraction Incentive Mechanism
- Properties experiencing longer or repeated instances of low pressure (non-DG2)
- Unplanned interruptions to supply over 12 hours
- BSI accreditation
- Cyber security & resilience
- Strategic resource development

Columns I-Q - Price control allocation (%)

We have adhered to the Ofwat guidance and not split any of the ODIs over multiple price controls except for "*Cyber security & resilience*"; we have split this 50/50 between Water Network Plus and Residential Retail as it has impacts on both of these areas.

Columns R-T - ODI type, form and timing

All financial ODIs are revenue-based and in-period.

The following ODIs are "Out & Under":

- Supply interruptions equal or greater than 3 hours
- Leakage
- Per capita consumption
- Customer measure of experience (C-MeX)
- Developer measure of experience (D-MeX)
- Reducing the total number of void properties by identifying false voids
- River restoration
- Abstraction reduction
- Number of sources operating under the Abstraction Incentive Mechanism **(CHANGE FROM ORIGINAL BP SUBMISSION)**
- Properties experiencing longer or repeated instances of low pressure (DG2) **(ADDED SINCE ORIGINAL BP SUBMISSION)**

The following ODIs are "Under" only:

- Unplanned outage
  This is "Under" because our objective is to maintain the AMP6 target, which is the position that best serves intergenerational equity.

- Number of burst mains
  This is "Under" because our objective is to maintain the AMP6 target, which is the position that best serves intergenerational equity.

- Water Quality Compliance, Compliance Risk Index (CRI)
  This is "Under" because we are targeting a score of zero, and therefore we cannot exceed the target.

- Customer contacts for discolouration **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  This is "Under" because our objective is to maintain the health of the asset, and therefore the AMP6 target. Trying to outperform this target would not serve intergenerational equity.

- Strategic resource development **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  This is "Under" because the mechanism is designed to recover the allowance Ofwat has given us if we do not complete the required projects.

- Number of occupied properties not billed (Gap sites) **(CHANGE FROM ORIGINAL BP SUBMISSION)**
  Following Ofwat feedback we have decided to make this an "underperformance-only" ODI.

The following ODI is "Over" only:

- Environmental innovation – delivery of community projects **(CHANGE FROM ORIGINAL BP SUBMISSION)**

The following ODIs are reputational/non-financial:

- Properties experiencing longer or repeated instances of low pressure (non-DG2) **(CHANGE FROM ORIGINAL BP SUBMISSION)**
  We have not set a penalty/reward with this PC as it would risk double-counting with the DG2 measure.

- Unplanned interruptions to supply over 12 hours **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  We have not set a penalty/reward with this PC as it would risk double-counting with the supply interruptions Common PC.

- % customers aware of (or on) PSR **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  We have not set a penalty or reward for this ODI as we believe it would be inappropriate for this performance commitment to have a financial incentive. We do not think a water company should receive a reward for providing good service to customers in vulnerable circumstances. We do not need a financial incentive to get this right as this is a matter of corporate pride.

- BSI accreditation **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  This has been set as a non-financial ODI because we do not think that customers would support an outperformance payment for this accreditation and that the accreditation is something that customers are entitled to expect as part of the base service. We do not wish to add an underperformance payment as we already have a preponderance of under-only ODIs and don't think it is balanced to have too many. We have therefore focussed on those which have a higher priority for customers.

- Cyber security & resilience **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  This is an innovative ODI, but we have added it as a non-financial one as IT outages to major systems are already very expensive to the company, causing overtime, external fees, rework and sometimes hardware replacements. We therefore already incur costs when we do badly on this measure and save money if we perform well. To add a financial ODI would effectively be a double jeopardy.

- Risk of severe restrictions in a drought
  We have decided not to assign a financial ODI to this Common PC. This is because any improved performance in this PC will be through investment in other PCs. For example, by reducing our PCC and leakage levels and implementing the sustainability reductions (through new network connections), we will improve our drought resilience. This will lead to reward multiples if we outperform on these contingent PCs, and if we underperform, we would be exposed to double-jeopardy (or doubled rewards).

- Customers in vulnerable circumstances satisfied with our service (receiving financial help) **(ADDED SINCE ORIGINAL BP SUBMISSION)**

We have not set a penalty or reward for this ODI as we believe it would be inappropriate for this performance commitment to have a financial incentive. We do not think a water company should receive a reward for providing good service to customers in vulnerable circumstances. We do not need a financial incentive to get this right as this is a matter of corporate pride.

- Customers in vulnerable circumstances satisfied with our service (not receiving financial help) **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  We have not set a penalty or reward for this ODI as we believe it would be inappropriate for this performance commitment to have a financial incentive. We do not think a water company should receive a reward for providing good service to customers in vulnerable circumstances. We do not need a financial incentive to get this right as this is a matter of corporate pride.

- Customers in vulnerable circumstances who found us easy to deal with (receiving financial help) **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  We have not set a penalty or reward for this ODI as we believe it would be inappropriate for this performance commitment to have a financial incentive. We do not think a water company should receive a reward for providing good service to customers in vulnerable circumstances. We do not need a financial incentive to get this right as this is a matter of corporate pride.

- Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help) **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  We have not set a penalty or reward for this ODI as we believe it would be inappropriate for this performance commitment to have a financial incentive. We do not think a water company should receive a reward for providing good service to customers in vulnerable circumstances. We do not need a financial incentive to get this right as this is a matter of corporate pride.

- Value for Money survey **(ADDED SINCE ORIGINAL BP SUBMISSION)**
  This is a revision of our AMP6 PC, which was also non-financial. We do not think it is appropriate to set this as a financial ODI given its potential interaction with parts of the (financial) C-Mex measure, thus leading to double jeopardy.

Columns U-Y - Primary category, PC Unit, PC Unit description, Decimal places and Direction of improving performance

We have assigned the PCs to the relevant “primary” categories from the drop-down selection list.

We have provided the units, unit description and direction of improving performance of all PCs except C-MeX and D-MeX, where we are waiting for confirmation of the PC methodologies from Ofwat.

Please note that we have updated the unit description for “Sustainable abstraction” since our September Plan. This has been done to better reflect what the target measure actually is, and is now described as “Cumulative Ml/d reduction over AMP”.

We have set the decimal places we regard as appropriate, where applicable.

Column Z - Common performance commitment

We have included the following WoC common PCs as required by Ofwat:

- Supply interruptions greater than 3 hours
- Leakage
- Per capita consumption

- Risk of severe restrictions in a drought
- Unplanned outage
- Number of burst mains
- Compliance Risk Index (CRI)
- Customer measure of experience (C-MeX)
- Developer measure of experience (D-MeX)

Columns AA-AE - Special cost factor, Scheme specific factor, Asset health, NEP and AIM

We have no PCs related to:

- Special cost factor
- Scheme specific factor

The following are Asset Health PCs (p.27 of Annex 2 of Ofwat PR19 methodology and Ofwat feedback in "Affinity Water: Delivering outcomes for customers detailed actions")

- Number of burst mains
- Unplanned outage
- Properties experiencing longer or repeated instances of low pressure (DG2)
- Customer contacts for discolouration

The following PCs are part of the NEP:

- River restoration
- Abstraction reduction

We have one PC related to AIM.

Column AF: Customers' relative priority/importance

We consider that our benefit valuations and outperformance rates reflect customer priority, in three clear categories:

Category one – very important

- Supply interruptions equal or greater than 3 hours
- Leakage
- Per capita consumption
- Unplanned outage
- Compliance Risk Index (CRI)
- Customer measure of experience (C-MeX)
- Developer measure of experience (D-MeX)
- Environmental innovation - delivery of community projects
- Reducing the total number of void properties by identifying false voids
- Properties experiencing longer or repeated instances of low pressure (DG2)
  Number of occupied properties not billed (Gap sites)
  Customer contacts for discolouration

Category two – important

- Number of burst mains
- River restoration
- Abstraction reduction
- Number of sources operating under the Abstraction Incentive Mechanism
- Strategic resource development

Category three – lower value / non-financial

- Risk of severe restrictions in a drought

- Properties experiencing longer or repeated instances of low pressure (non-DG2)
- Customers in vulnerable circumstances satisfied with our service (receiving financial help)
- Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)
- Unplanned interruptions to supply over 12 hours
- PSR % target of customers
- BSI accreditation
- Cyber security & resilience
- Customers in vulnerable circumstances satisfied with our service (not receiving financial help)
- Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)
- Value for Money survey

Columns AG-AP - Past performance levels (where available)

We have provided historic performance where data is available and comparable to our proposed AMP7 PCs. For columns AO and AP, we have provided our latest view of forecast performance noting we have almost completed 2018-19.

The following existing PCs have had their historic data updated:

PC	Comments
Leakage	Updated due to revised 2018/19 absolute forecast performance (as we now almost have a 2018/19 actual figure); as a rolling 3-yr average this impacts the targets for 2019/20, and 2020/21.
Per capita consumption	Historic data updated due to revised 2018/19 absolute forecast performance (as we now almost have a 2018/19 actual figure); as a rolling 3-yr average this impacts the targets for 2019/20, and 2020/21.
Risk of severe restrictions in a drought	The minor changes to our figures in 2018/19 and 2019/20 are a result of the various updates and improvements to the revised dWRMP.
Number of burst mains	Historic data updated due to revised 2018/19 (as we now almost have a 2018/19 actual figure); and 2019/20 forecast performance (which has been revised to forecast a more reasonable figure below target).
CRI	Historic data updated due to revised 2018/19 (as we now almost have a 2018/19 actual figure) and 2019/20 forecast performance.
AIM	Historic data updated due to revised 2018/19 forecast performance (as we now almost have a 2018/19 actual figure).

The following existing PCs have not had the historic numbers changed since the original PR19 BP submission:

- Supply interruptions greater than 3 hours

- Risk of severe restrictions in a drought
- Unplanned outage
- Customer measure of experience (C-MeX)
- Developer measure of experience (D-MeX)
- Reducing the total number of void properties by identifying false voids
- River restoration
- Abstraction reduction
- Environmental innovation - delivery of community projects
- Number of occupied properties not billed (Gap sites)

For our new PCs the historic performance was calculated as follows:

PC	Comments
Properties experiencing longer or repeated instances of low pressure (DG2)	We have provided historic data for this measure.
Properties experiencing longer or repeated instances of low pressure (non-DG2)	Our measure of low pressure is difficult to forecast with any accuracy for the last two years of AMP6. The reason for this is that we are in the process of installing a lot of new remote detection loggers onto our network that will provide us with a large quantity of new data about water pressures. The forecast for 2020/21 has been produced by extrapolating data from the parts of our network that have DG2 loggers installed. However, it should be noted that this constitutes a small percentage of our total network and it is not typical in the sense that the loggers were installed in parts of the network that were thought to be vulnerable to low pressure. Extrapolation of this data is therefore likely to be unreliable. We expect this situation to improve over the next twelve months as more data becomes available, but we think it is unwise to provide estimates for 2018/19 and 2019/20 that we know will be soon superseded by superior information.
Customers in vulnerable circumstances satisfied with our service (receiving financial help)	This is a new measure for AMP7, so we do not have pre-AMP7 figures for it.
Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)	This is a new measure for AMP7, so we do not have pre-AMP7 figures for it.
Customers in vulnerable circumstances satisfied with our service (not receiving financial help)	This is a new measure for AMP7, so we do not have pre-AMP7 figures for it.
Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)	This is a new measure for AMP7, so we do not have pre-AMP7 figures for it.
% customers aware of (or on) PSR	We have provided historic data for this measure.
Unplanned interruptions to supply over 12 hours	We have provided historic data for this measure, collected as part of our regular monitoring and reporting of this PC in AMP6.

Customer contacts for discolouration	We have provided historic data for this measure, collected as part of our regular monitoring and reporting of this PC in AMP6.
Strategic resource development	This is a new measure for AMP7, so we do not have pre-AMP7 figures for it.
BSI accreditation	We have provided historic data for this measure.
Cyber security & resilience	We have provided historic data for this measure, though have not been able to provide data pre-2017 as the measure was not developed until then.
Value for Money survey	We have not included historic performance for this measure as the methodology is being revised from PR14, so the historic numbers may not be comparable for the AMP7 measure.

Columns AQ-AU - 2020-25 performance commitment levels

For our existing PCs, we have updated targets for the following:

PC	Comments
Leakage	Following Ofwat IAP feedback, we have now set a more stretching target to achieve an 18.5% reduction over AMP7.
Supply Interruptions	We have set our target in line with UQ set out on page 26, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019.
Risk of severe restrictions in a drought	We have updated our Drought targets in line with our revised dWRMP. In the years 2020/21 to 2023/24 we assume that we are able to access drought orders and permits that would allow us to avoid severe restrictions in the event of a 1 in 200 year drought. This is our interpretation of the sentence at the top of page 3 in the common definition guidance for the drought resilience metric: This may include drought orders and permits where these are likely to be permitted (consistent with a company's WRMP) and where the benefits reflect those that would be considered reasonable in a 1-in-200 year drought. Please note that in our September Plan we interpreted that sentence differently, and that is the primary cause of the movement between the PC commitment that we submitted in September and the one that we are submitting now (more minor changes result from updates and improvement in the dWRMP). The balance improves from 2018/19 and 2019/20 where there is some risk of restrictions as a result of the schemes identified in the WRMP, which are primarily leakage and PCC

	reduction. The risk therefore falls to 0% by the start of AMP7. (The risk in 2018/19 is obviously theoretical only as the year has virtually completed at the point of submission of this document with no risks being realised.) During AMP7 the net movement of schemes and demand changes forecast in the WRMP keeps the risk at 0. In 2024/25 the Sundon conditioning works will be commissioned, which will enable the company to have a 0% risk without relying on the use of drought orders and permits. These forecasts are consistent with the dWRMP.
Reducing the total number of void properties by identifying false voids	Following Ofwat IAP feedback we have created a more stretching target, including a first-year reduction in AMP. Following the initial assessment of our September BP, we benchmarked our residential voids performance against the rest of the industry. We found that our original target, 2.3% would have left us below upper quartile in 2024/25. Therefore, we have reset our targets to reach 2.1% target in 2024/25 – industry upper quartile performance. Please see App30 Table commentary for further details.
Abstraction reduction	Following our revised dWRMP, we have updated our PC targets; we are now targeting a36.31ML/d reduction by end of AMP7.

For our new PCs the targets were set as follows:

PC	Comments
Unplanned interruptions to supply over 12 hours	Because our objective is to maintain the health of the asset, we are using the AMP6 target.
Customer contacts for discolouration	We have set a challenging target of 0.3, rather than our AMP6 target of 0.66.
Strategic resource development	The companies involved in the strategic Resource Development are working together, and with Ofwat to develop an agreed set of projects and gateways, but will not conclude this work before 1st April, so we are not able to fill in these lines of App1 yet.
Customers in vulnerable circumstances satisfied with our service (receiving financial help)	Following the Ofwat IAP feedback, we are now targeting a score of 90% every year of AMP7.
Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)	Following the Ofwat IAP feedback, we are now targeting a score of 90% every year of AMP7.
Customers in vulnerable circumstances satisfied with our service (not receiving financial help)	Following the Ofwat IAP feedback, we are now targeting a score of 90% every year of AMP7.
Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)	Following the Ofwat IAP feedback, we are now targeting a score of 90% every year of AMP7.
PSR % target of customers	Targets have been decided by our Retail colleagues, based on research data suggesting possible percentage of our population qualifying for PSR.
Properties experiencing longer or repeated instances of low pressure (DG2)	We have set our target in consultation with our Asset Health colleagues.
BSI accreditation	Target is to pass and maintain certification.
Cyber security & resilience	We have set targets in consultation with our IT colleagues.
Value for Money survey	We have not included targets for this measure yet as we are currently revising the methodology from PR14; this will be done in conjunction with CCG engagement with targets decided in time for the start of AMP7.

- The remaining PCs were submitted as part of our September Plan and have remained unchanged. The targets are from Appendix 4 of our September Plan. These PCs are:
    - PCC
    - CRI
    - Mains Repairs
    - Unplanned outage
    - Customer measure of experience (C-MeX)
    - Developer measure of experience (D-MeX)

- Properties experiencing longer or repeated instances of low pressure (non-DG2)
- Environmental innovation - delivery of community projects
- River restoration
- Number of sources operating under the Abstraction Incentive Mechanism
- Number of occupied properties not billed (Gap sites)

Columns AV-BK - Longer term projections

For our existing PCs, we have updated forecasts for the following:

PC	Comment
Leakage	Following our revised dWRMP we are now targeting a 3-yr average leakage level of 106.933 ML/d by 2044/45. This is in-line with our dWRMP objective of achieving a 50% reduction in leakage from 2015 to 2050.
Per capita consumption	Following our revised dWRMP, we are now forecasting a series of annual reductions in PCC, targeting a PCC level (3-yr average) of 118.64 l/p/d by 2045.
Risk of severe restrictions in a drought	Our revised dWRMP now achieves, from AMP7 onwards, a 1-in-200 year level of drought resilience across all WRZs, which is reflected in the PC target of 0 post-AMP7.
Abstraction reduction	Our forecast here assumes we will complete all reductions necessary to achieve good status by 2027 under the WFD. Currently, the EA is targeting completion by 2024 of all WINEP3 green and amber SR's to measure improvement by 2027 so we expect to complete all SR's in AMP7 and good status by 2027 and flat after AMP7. We have no 'red' WINEP3 requirements

For our new PCs the forecasts were set as follows:

PC	Comment
Customers in vulnerable circumstances satisfied with our service (receiving financial help)	We are forecasting that we will maintain a satisfaction level of 90%.
Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)	We are forecasting that we will maintain a satisfaction level of 90%.
Customers in vulnerable circumstances satisfied with our service (not receiving financial help)	We are forecasting that we will maintain a satisfaction level of 90%.
Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)	We are forecasting that we will maintain a satisfaction level of 90%.
% customers aware of (or on) PSR	We believe there are potentially 500,000 customers in vulnerable circumstances in our area, so we have set this as the target for 2044/45 (as a percentage of household connected properties), however this is only an estimate and will require continued monitoring, awareness campaigns, and data sharing with other utilities.

Properties experiencing longer or repeated instances of low pressure (DG2)	We are targeting 0 properties on DG2 by 2034-35.
Customer contacts for discolouration	We are forecasting a target of 0.2 discolouration contacts by 2034-35, which is then maintained into the future.
Strategic resource development	The companies involved in the strategic Resource Development are working together, and with Ofwat to develop an agreed set of projects and gateways, but will not conclude this work before 1st April, so we are not able to fill in these lines of App1 yet.
BSI accreditation	We are forecasting that we always achieve (pass) BSI accreditation.
Cyber security & resilience	Our forecast is to maintain the AMP7 target as this reflects stable serviceability of our assets.
Unplanned interruptions to supply over 12 hours	Our forecast is to maintain the AMP7 target as this reflects stable serviceability of our assets.
Value for Money survey	We have not included post-AMP7 forecasts for this measure yet as we are currently revising the methodology from PR14; this will be done in conjunction with CCG engagement with forecasts decided in time for the start of AMP7.

- The remaining PCs were submitted as part of our original Business Plan and the forecasts have remained unchanged. The forecasts are from Appendix 4 of our original Business Plan. These PCs are:

    - Supply interruptions greater than 3 hours
    - Unplanned outage
    - Number of burst mains
    - Compliance Risk Index (CRI)
    - Customer measure of experience (C-MeX)
    - Developer measure of experience (D-MeX)
    - Properties experiencing longer or repeated instances of low pressure (non-DG2)
    - Reducing the total number of void properties by identifying false voids
    - River restoration
    - Environmental innovation - delivery of community projects
    - Number of sources operating under the Abstraction Incentive Mechanism
    - Number of occupied properties not billed (Gap sites)

Columns BL-BP - Financial ODI may accrue or apply

Financial ODIs apply each year for all our PCs except the non-financial PCs:

- Risk of severe restrictions in a drought
- Properties experiencing longer or repeated instances of low pressure (non-DG2)
- Customers in vulnerable circumstances satisfied with our service (receiving financial help)
- Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)
- Unplanned interruptions to supply over 12 hours
- % customers aware of (or on) PSR
- BSI accreditation
- Cyber security & resilience

- Customers in vulnerable circumstances satisfied with our service (not receiving financial help)
- Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)
- Value for Money survey

Columns BQ-BU - Enhanced underperformance penalty collar

We have no enhanced ODIs.

Columns BV-BZ - Standard underperformance penalty collar

We have followed the Ofwat guidance in not setting caps, collars and deadbands for the majority of our ODIs. We have set a standard under performance penalty collar for some PCs.

Changes since September Plan

- Supply interruptions greater than 3 hours: Following Ofwat IAP feedback, we have amended our underperformance collar but not removed it. We have amended our underperformance collar in our Revised Plan but not removed it. Given the underlying increase in incentive rates through adopting the Ofwat average rates any operational underperformance now carries more financial risk. Our proposal is to set the penalty collar at the equivalent of 5 minutes above the UQ proposed PC level. This makes the maximum financial exposure equivalent to £3.7m p.a. more than double the September Plan. However, this financial exposure is somewhat mitigated by the deadband outlined above. Additionally, poor performance in respect of supply interruptions, continues to fall under Guaranteed Standards of Service (GSS) meaning customers directly impacted by a supply interruption will continue to be eligible for compensation.

  The way that we have now applied the collar is compliant with page 22 of IAP technical appendix 1: Delivering Outcomes for customers, as the underperformance payment collar is set at a level where underperformance payments would comfortably exceed the 10% threshold if the collar was not in place.

- Leakage: Following Ofwat IAP feedback, we have amended our underperformance collar but not removed it. We have set it symmetrically in line with the outperformance cap i.e. both the collar and cap set to apply 0.5 Ml/d beyond P10 and P90 performance forecasts. This addresses the Ofwat challenge and exposes the company to more risk.

  The way that we have now applied the collar is compliant with page 22 of IAP technical appendix 1: Delivering Outcomes for customers, as the underperformance payment collar is set at a level where underperformance payments would exceed the 10% threshold if the collar was not in place.

  We think that this draws an appropriate balance between the customer and company interest with strong incentives for delivery.

  Please also note that for 2020/21, the target is best understood by looking at App2, line 5, which is now 156.2 Ml/d compared to 157.3 Ml/d in the September Plan. The target for 2020/2021, as shown in App1 has been adjusted to account for the forecast result in 2018/2019. Because the 2020/2021 target, as shown in App1, is a three year average, the outcome in 2020/2021 will be the average of 2018/2019; 2019/2020 and 2020/2021. We have not changed the forecast for 2019/2020 and the 2020/2021 target is now lower than it was in September 2018, reflecting the new more stretching leakage target. (156.2 instead of 157.3). So the target (and collar) for leakage in App1 are in fact more challenging than they were in September 2018, despite the apparent increase (which is caused by the three year averaging, not by an underlying increase in target leakage for 2020/2021). The collar has been adjusted to take account of the higher target.

- Compliance Risk Index (CRI): We have amended our underperformance collar in our Revised Plan but not removed it. Given the underlying increase in incentive rates by adopting the Ofwat average rate, any operational underperformance now carries significantly more financial risk. Our proposal is to set the penalty collar at a CRI score of 6, equivalent to 3.2 points above the deadband. This makes the maximum financial exposure equivalent more than our September Plan (2.8 deadband and 4.0 collar) but less than Ofwat's proposal (1.5 deadband and 9.5 collar).

  We have set the collar so that we are compliant with page 22 of IAP technical appendix 1: Delivering Outcomes for customers, as the underperformance payment collar is set at a level where underperformance payments would comfortably exceed the 10% threshold if the collar was not in place. This also ensures that the overall balance of incentives across the PC and ODI framework are aligned with customer priorities.

- Number of burst mains: Our approach has considered the balance of incentives across the whole PC framework and the alignment with customer priorities. Given this we have amended our underperformance collar in our Revised Plan but not removed it. Our proposal is to set the penalty collar at 200 busts per 1,000km consistent just beyond our P10 performance scenario. This means that in the event we experience a P10 performance we will incur the full underperformance incentive before the collar would take effect.

New PC:

- Properties experiencing longer or repeated instances of low pressure (DG2): We have introduced a penalty collar at the P10 level. Our P10 constitutes a significant financial risk to the company, so there is a very strong incentive to avoid reaching the collar.

Unchanged from September Plan

- PCC: we have set a collar on the basis that under our P10 scenario our underperformance penalty would far exceed 3% of RoRE, exposing us to significant risk. We have set the collar at 5 l/h/d above the target in each year so that in any individual year the maximum underperformance penalty is £1.44m.
- Unplanned outage: we have set a collar at the P10 level of 4.3%.

Columns CA-CE - Underperformance penalty deadband

We have followed the Ofwat guidance in not setting caps, collars and dead bands for the majority of our ODIs. We have set a standard under performance penalty collar for some PCs.

Unchanged from September Plan

- Compliance Risk Index (CRI): Following Ofwat IAP feedback, we have decided to maintain the deadband in our original BP submission which was set at 2.8. The CRI is still a relatively new measure and not sufficiently well established and we believe this deadband is appropriate to mitigate the risk from the transition to a new measure.

- Supply interruptions greater than 3 hours: Following Ofwat IAP feedback, we have decided to maintain the deadbands in our original BP submission. The deadband is worth 43 seconds in 2020/21, 32 seconds in 2021/22, 20 seconds in 2022/23, 8 seconds in 2023/24. Our September Plan included a target of 3:00 minutes for 2024/25 so the deadband we have retained only applies for the first four years of AMP7.

  We have retained the deadband to partially mitigate the additional risk from the transition in measure, from number of properties impacted for greater than 12 hours to average minutes interrupted greater than 3 hours. Unlike all other companies, our base funding

and effort if AMP6 has been focused on achieving a different measure to the rest of the industry. We anticipate, that despite our efforts, we could find the move to the new measure challenging and so seek some mitigation that reduces over time as we become familiar with operating and measuring performance against the common PC definition.

Columns CF-CJ - Outperformance payment deadband

We have followed the Ofwat guidance in not setting caps, collars and deadbands for the majority of our ODIs. We have set an outperformance deadband for one PC.

Change from September Plan

- Compliance Risk Index (CRI): we have removed outperformance deadband of zero, as it is not possible to outperform zero so there is no need to include it.

We have removed the outperformance deadband for supply interruptions over 3 hours, as per Ofwat IAP feedback

Columns CK-CO - Standard outperformance payment cap

We have followed the Ofwat guidance in not setting caps, collars and deadbands for the majority of our ODIs. We have set outperformance payment caps for some PCs.

Change from September Plan

- River restoration: we have set an outperformance payment cap at 4 project schemes beyond the (cumulative) PC target.

Unchanged from September Plan

- Leakage: we have set an outperformance payment cap just above our P90 performance, effectively capping any outperformance should we, in the unlikely event, do better than projected in the P90 scenario. The cap is set at 0.5 ML/d better than the P90.
- Per capita consumption: we have set an outperformance payment cap just above our P90 performance, effectively capping any outperformance should we, in the unlikely event, do better than projected in the P90 scenario. The cap is set at 1 l/h/d better than P90.

Columns CP-CT - Enhanced outperformance cap

We have no enhanced ODIs or outperformance payment caps.

Columns CU-DB - Underperformance penalty and Outperformance payment incentive rates

Following Ofwat's IAP feedback, we have decided to set the penalty and (where applicable) reward rates for the following PCs in-line with Ofwat's results from "Technical appendix 1: Delivering outcomes for customers" January 2019.

PC	Source
Leakage	Mean from page 28, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019, converted into £/ML/d.
PCC	Mean from page 29, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/l/h/d.
CRI	Mean from page 30, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/point of score.
Supply Interruptions	Mean from page 31, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/min/property.

Mains Repairs	Median from page 32, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/repair.
Unplanned outage	Upper quartile from page 33, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/% of production capacity.

Under the Ofwat IAP, we are not being funded for any of the projects under "Environmental innovation - delivery of community projects". However, we note that customers were very positive about them, so we are proposing that we recover the costs for each project unit we deliver. We have simply set the ODI to have an outperformance payment sufficient to cover the project costs as they are completed.

For "Customer contacts for discolouration" we have simply rolled over the AMP6 penalty for this PC.

For "Strategic resource development", the companies involved are working together and with Ofwat to develop an agreed set of projects and gateways, but will not conclude this work before 1st April, so we are not able to fill in these lines of App1 yet.

For all other financial ODIs have used the standard Ofwat ODI formulae (Delivering Water 2020: Our final methodology for the 2019 price review, Ofwat, December 2017, Appendix 2 (page 91)) to calculate all our ODI rates:

- ODI underperformance (penalty) = Incremental benefit – (incremental cost x p)
- ODI outperformance (reward) = Incremental benefit x (1–p)
- The "p" value is the sharing rate, which we have set at 50% for all of our financial ODIs.

Please also note that only the ODI rates for the following existing PCs have remained unchanged since our original BP submission:

- Gap Sites;
- River Restoration.

Columns DC-DE - Standard ODI calculation, Standard ODI operandi and Standard ODI operandi note

We have selected "No" for supply interruptions and manually entered the calculation in columns DL to DP due to the format of the information being presented in a time format.

Please note that there appears to be an error in the way the formula is calculated. If there is no deadband, the formula applies the penalty for the entire performance up to the collar (or cap), e.g. from zero up to the level of the collar, rather than from the target level to the cap/collar. This results in extremely high penalties/rewards for any PCs without deadbands. For this reason, we have also entered "no" and manually entered the data for the following PCs:

- **Leakage**
- **Per capita consumption**
- **Unplanned outage**
- **Number of burst mains**
- **River restoration**
- **Properties experiencing longer or repeated instances of low pressure (DG2)**

Columns DF-EC: Maximum enhanced underperformance penalties, Maximum standard underperformance penalties, Maximum standard outperformance payments and Maximum enhanced outperformance payments

All these cells (coloured blue) are automatic calculations based on data entries earlier in the spreadsheet.

For row 7 "Supply interruptions greater than 3 hours" columns DL to DP we have manually entered the data due to the form of the information being presented in a time format.

Please note that there appears to be an error in the way the formula is calculated. If there is no deadband, the formula applies the penalty for the entire performance up to the collar (or cap), e.g. from zero up to the level of the collar, rather than from the target level to the cap/collar. This results in extremely high penalties/rewards for any PCs without deadbands. For this reason, we have also manually entered the data for the following PCs:

- **Leakage**
- **Per capita consumption**
- **Unplanned outage**
- **Number of burst mains**
- **River restoration**
- **Properties experiencing longer or repeated instances of low pressure (DG2)**

Column ED to EI - P10 underperformance penalties

We have inserted calculated values for the P10 performance without the application of any caps, collars or deadbands assuming that this information will be used to directly compare to the calculated maximum values with caps, collars and deadbands applied.

Column EJ to EN - P10 associated performance commitment levels

We have inserted forecast values for P10 without the application of any caps, collars or deadbands assuming that this information will be used to directly compare to the calculated maximum values with caps, collars and deadbands applied.

Column EO to ET - P90 outperformance payments

We have inserted calculated values for the P90 performance without the application of any caps, collars or deadbands assuming that this information will be used to directly compare to the calculated maximum values with caps, collars and deadbands applied.

Column EU to EY - P90 associated performance commitment levels

We have inserted forecast values for P90 without the application of any caps, collars or deadbands assuming that this information will be used to directly compare to the calculated maximum values with caps, collars and deadbands applied.

Column EZ to FJ - Marginal cost, Marginal benefits valuation method 1 and Marginal benefits valuation method 1 (£ per unit per household)

We have used the following approach to calculate our marginal costs. For the purpose of meeting the Ofwat reporting requirement, the figures we have entered in App1 are our "per unit" costs, divided by our number of billed households (1,458,000).

Please note that following our decision to adopt the Ofwat rates as set out in "Technical appendix 1: Delivering outcomes for customers", the marginal costs and benefit rates do not affect the outturn ODI rates for the following PCs:

- Leakage
- PCC
- CRI
- Supply Interruptions
- Mains Repairs
- Unplanned outage

We have however kept the marginal cost and benefit details for these PCs in the section below, as marginal cost and benefit figures for all financial ODIs in App1 are required for the calculations in App1a.

Components of the individual ODIs

Supply interruptions greater than 3 hours

In order to deliver our reduced supply interruptions target from the current level of 12 minutes average supply interruption greater than three hours per property, to 3 minutes, we will need to make significant OPEX investments.

As this is OPEX-only, we do not assume a level of depreciation.

We treat the reduction delta of 9 minutes as the denominator.

This gives a cost of £544,333.33 per minute per property interrupted.

	CAPEX (£)	OPEX (£)
Risk Mitigation (reducing SI from 12 to 3 mins)	OPEX only used for SI	24,495,000

Table 2: Business plan investment - Supply interruptions

Leakage

To reduce our leakage, we will need to undertake a combination of both OPEX and CAPEX activities. Operational costs involve the labour costs incurred in going out to detect the leaks, and the capital costs include the installation of district meters, pressure reducing valves and purchasing leakage detection equipment.

	CAPEX (£)	OPEX (£)
Leakage	-	48,585,720
Leakage Infrastructure and Maintenance	14,170,000	-
Network Ancillaries	40,000,000	-
Total	54,170,000	48,585,720

Table 3: Business plan investment – Leakage

One year of OPEX is £9,717,144.

We assume that the assets involved in this measure have a lifespan of 60 years on average. This gives a one-year depreciation of £902,833.

The return on capital is calculated as £1,245,910.

Following Ofwat's IAP feedback, we have set our target as an 18.5% reduction on our assumed AMP6 end position (three-year average) of 167.4 ML/d. This equates to a 30.10ML/d reduction over AMP7. We use this as the denominator.

Category	Value
Depreciation (1 year)	£902,833
Return on Capital	£1,245,910
OPEX (1 year)	£9,717,144
Total	£11,865,887
Denominator	30.10
Unit cost	£394,216

Table 4: Leakage cost calculations

The unit cost is £394,216 per ML/d.

Per capita consumption

A significant amount our investment in reducing consumption will be in installing boundary boxes and meters. There are a number of other investments that will be required as well, which are CAPEX-heavy.

	CAPEX (£)	OPEX (£)

Fast data	12,300,000	0
Water Efficiency Schemes	14,140,000	0
Water Reuse Schemes	28,040,000	0
National water efficiency campaign	3,000,000	0
Unmeasured non-household meters	7,530,000	0
Baseline Water Saving	69,350,000	5,865,000
Total	134,360,000	5,865,000

Table 5: Business plan investment - PCC

We assume that on average, these assets have a lifespan of 30 years. This gives a one-year depreciation of £4,478,667.

One year of OPEX is £1,173,000.

The return on capital is calculated as £2,955,920.

Our target is a (three-year average) reduction to 133 l/h/d by end of AMP7, and our starting position at the beginning of AMP7 is forecast to be 149 l/h/d. This equates to a reduction of 17 l/h/d over the period.

Category	Value
Depreciation (1 year)	£4,478,667
Return on Capital	£2,955,920
OPEX (1 year)	£1,173,000
Total	£8,607,587
Denominator	18.2
Unit cost	£467,803.62

Table 6: Business plan investment – PCC cost calculations

This gives a unit cost of £467,803.62 per l/h/d reduction.

Unplanned outage

We plan to spend £11,000,000 on CAPEX per annum in AMP7 to maintain our unplanned outage level of 3.5% (lost capacity as % of total company maximum production capacity). This equates to a total cost over AMP7 of £55,000,000.

These investments include repairing and replacing long-life non-infrastructure assets such as reservoirs and pumping stations, but mainly involve shorter-lived M&E work. We therefore assume an average asset lifespan of 30 years. This gives a one-year depreciation of £1,833,333.

The return on capital is calculated as £1,210,000.

We assume that if we did not make the CAPEX investment, our unplanned outage level of 3.5% would increase by an additional 25% over AMP7. This would translate to an additional 0.875 percentage points. We therefore use 0.875 as the denominator.

Category	Value
Depreciation (1 year)	£1,833,333
Return on Capital	£1,210,000
OPEX (1 year)	£0
Total	£3,043,333
Denominator	0.875

Unit cost	£3,478,095

Table 7: Unplanned outage cost calculations

This gives a cost of £3,478,095 per percentage point of lost capacity as % of total company maximum production capacity.

Number of burst mains

To proactively prevent bursts, we need to renew the network of mains that supply our customers.

	CAPEX (£)	OPEX (£)
Distribution Mains Renewals	38,000,000	-
Total	38,000,000	-

Table 8: Business plan investment - Mains bursts

Mains are long-life assets with an assumed average lifespan of 100 years. This gives a one-year depreciation of £380,000.

The return on capital is calculated as £889,200.

We are proposing that our target is to main the AMP6 level of 186 burst mains per 1,000 km of pipe (per year). However, we do not think it is plausible that, without investment, our number of mains bursts would increase so sharply over the AMP, so we instead use our Pioneer model to assess the real effect of not making this investment.

The Pioneer model output shows that without this investment, we would see a rise in absolute mains bursts of 118 over the AMP. Normalised by 1,000km of mains (16.68), this gives a figure of 7.074. We use 7.074 as the delta for the cost figure.

Category	Value
Depreciation (1 year)	£380,000
Return on Capital	£889,200
OPEX (1 year)	£0
Total	£1,269,200
Denominator	7.074
Unit cost	£179,418

Table 9: Mains bursts cost calculations

This gives a cost of £179,418 per mains burst per prevented per 1,000km of main.

Compliance Risk Index (CRI)

There are numerous activities which a water company undertakes in order to preserve water quality, which are fundamental to maintaining a CRI score of zero.

	CAPEX (£)	OPEX (£)
Nitrates Management	9,955,677	-
Other Pollutants - Disinfections Compliance	889,385	-
Egham aluminium management	640,200	1,950,000
Disinfection in Dour	3,000,000	-
GAC	7,151,531	-
Iver aluminium management	2,324,400	1,950,000
North Mymms Turbidity	3,849,000	-
Egham Chertsey Walton Ozone	1,898,000	-
Iver Ozone	4,798,000	-

Disinfection at Denge	286,877	-
Total	**34,793,070**	**3,900,000**

Table 10: Business plan investment – CRI

One year of OPEX is £780,000.

We assume that the assets involved in this measure have a lifespan of 30 years on average. This gives a one-year depreciation of £1,159,769.

The return on capital is calculated as £765,448.

We are targeting a CRI score of zero, however given that this is a new measure and there is a possibility of scoring and measurement errors, we are proposing a deadband set at the level of the current shadow reporting average of 2.8. We use this as the denominator.

Category	Value
Depreciation (1 year)	£1,159,769
Return on Capital	£765,448
OPEX (1 year)	£780,000
Total	£2,705,217
Denominator	2.8
Unit cost	£966,149

Table 11: CRI cost calculations

This gives a cost of £966,149 per point of CRI.

Properties experiencing longer or repeated instances of low pressure (DG2 register)

Our total cost figure is based on the estimated expenditure for 8 projects to resolve the 280 most difficult properties on the DG2 register.

The general activities to tackle low water pressure involve installing booster pumps, laying reinforcements, new district meters and installing pressure control valves.

	CAPEX (£)	**OPEX (£)**
Low Pressure	1,143,000	-

Table 12: Business plan investment - Resolving persistent low pressure

These are all CAPEX-heavy solutions with an overall assumed average lifespan of 60 years. This gives a one-year depreciation of £41,667.

The return on capital is calculated as £57,500.

We are aiming to remove 70 properties from the DG2 register over AMP7. The measure is “number of properties removed from DG2, per 10,000 connected properties”, so we use the forecast average of “total connected properties over AMP7” (1,520,213) divided by 10,000 to give a value of 152.021. Dividing 70 by 152.0214 gives the denominator 0.46, or removing 70 properties per 10,000 connections from DG2. This is the denominator we use to create the “per unit” cost for this PC.

Category	Value
Depreciation (1 year)	£19,050
Return on Capital	£26,289
OPEX (1 year)	-
Total	£45,339.00
Denominator	0.46
Unit cost	£24,641

Table 13: Low pressure cost calculations

This gives a cost of £24,641 per 1 property per 10,000 connections removed from DG2.

Environmental innovation - delivery of community projects

Under the Ofwat IAP, we are not being funded for any of these projects. However, we note that customers were very positive about them, so we are proposing that we recover the costs for each project unit we deliver.

We are planning to implement eight pilot projects over AMP7, all of which are assumed to be CAPEX-only investments.

	CAPEX (£)	OPEX (£)
Resilience and Environment Community Pilot schemes	2,000,000	0

Table 14: Business plan investment - Environmental innovation

Given that these projects vary in size and cost, with one project in particular accounting for around half the total budget, we propose that the cost is calculated as 1/14th of the total project cost. This weighting is based on 7 projects being worth half the total project budget, and the other half (7 units) of the budget being assigned to the remaining project. We therefore use 14 as the denominator.

This gives a cost of £142,857 per unit of project completed.

Reducing the total number of void properties by identifying false voids

The cost for locating a false void are entirely OPEX based. We have calculated a cost of £28.27 per void detected.

This figure needs to be expressed as "voids as a % of total household billed properties". To do this, we take our total property number (1,458,000) and divide by 100. This gives a 1% of total billed properties figure of 14,580.

We multiply the cost figure of £28.27 by 14,258, giving a "total cost for 1% of void reduction" of £412,104.

Given the value is entirely OPEX-based and within-year, we do not annualise it.

Number of occupied properties not billed (Gap sites)

We do not have a specific cost associated with gap site detection, so we have set costs equal to benefits (calculation of benefits shown below).

River restoration

In order to improve the quality of our rivers, we need to invest in schemes such as rerouting rivers and streams (morphological works).

	CAPEX (£)	OPEX (£)
Ivel river support scheme	500,000	-
Morphological Works	18,536,654	-
Total	19,036,654	-

Table 15: Business plan investment - River quality improvements

We assume these are long-life assets, with a lifespan of 60 years. This gives a one-year depreciation of £317,278.

The return on capital is calculated as £437,843.

Our target is to complete 36 projects, these are the projects designated with a "green" status, opposed to the total of 84 "green" and "amber" projects. We are only using the 36 "green" projects for the purposes of the ODI and so we use this number as the denominator.

Category	Value

Depreciation (1 year)	£317,278
Return on Capital	£437,843
OPEX (1 year)	£0
Total	£755,121
Denominator	36
Unit cost	£20,976

Table 16: River quality improvements cost calculations

This gives a cost of £20,976 per project.

Abstraction reduction

In order to reduce our abstractions from groundwater sources, we need to invest in assets that will enable us to source water from alternative surface water supplies. These involve building new treatment works (Sundon) or creating new water connections.

	CAPEX (£)	OPEX (£)
Sundon Reservoir	27,887,000	2,118,000
Sustainability Reduction: Digswell	5,941,592	-
Sustainability Reduction: 33MLD	44,987,424	19,565,509
Sustainability Reduction: St Albans	7,490,208	-
Total	**86,306,224**	**21,683,509**

Table 17: Business plan investment - Sustainability reductions

We assume that on average, these assets have an assumed lifespan of 60 years. This gives a one-year depreciation of £1,438,437.

The return on capital is calculated as £1,985,043.

One year of OPEX is £4,336,702.

Our target is 36.3 million litres per day reduction (ML/d) in DO over AMP7, so we treat this as the denominator.

Category	Value
Depreciation (1 year)	£1,438,437
Return on Capital	£1,985,043
OPEX (1 year)	£4,336,702
Total	£7,760,182
Denominator	36.3
Unit cost	£213,779.12

Table 18: Sustainability reductions cost calculations

This gives a cost of £213,779 per ML/d reduction. Subsequent to this analysis we have been asked to include an additional 2.36 Ml/d of sustainability reductions in our Brett community. We have not included these costs in the above calculation as we estimate they are broadly allowed for in the costs listed above which have been reduced since we conducted this analysis. We have chosen to keep the original costs estimate and calculations for the purposes of the final incentive rate.

Number of sources operating under the Abstraction Incentive Mechanism

Operating AIM always has a greater cost associated with it than doing nothing. This is because the alternative sources of water available (Grafham or more expensive groundwater sources) are always costlier than using locally sourced groundwater.

We assume an indicative average groundwater cost of £60 per ML. When operating AIM, we instead need to draw water from an alternative source, and for the sake of simplicity we assume that this is Grafham. This has a higher cost of £217 per ML. The delta between these two sources, £157, is assumed to be the marginal cost of operating AIM.

Customer contacts for discolouration

We have not computed a marginal cost for this measure as we have simply rolled over the AMP6 penalty for this PC (£0.438m), and adjusted it for inflation from 2012/13 price base to 2017/18 price base. This gives a per unit penalty of £0.492m.

Strategic resource development

The companies involved in the strategic Resource Development are working together, and with Ofwat to develop an agreed set of projects and gateways, but will not conclude this work before 1st April, so we are not able to fill in these lines of App1 yet.

Approach to calculating benefits

Views on WTP research and valuing benefits

We have been concerned about the known weaknesses of willingness to pay (WTP) research in developing our business plan and therefore took a more innovative and wide-ranging approach to understanding the views and preferences of our customers. In particular, WTP research tends to overestimate the willingness of customers to pay for 'siloed' improvements in performance. We think that the right approach to understanding customer preferences is to consider as wide an evidence base as possible. Excessive weight should not be given to any single view or numerical estimate that has been produced. We have taken account of not only our own research, but also the research of other companies and the research and views of other organisations that represent the views of customers such as Ofwat, CC Water, the EA, and our own CCG.

The one exception was in the case of supply interruptions. We feel that the issue of supply interruptions is the aspect of a water company's service that is most suitable for WTP research. Customers are directly affected by supply interruptions and can therefore easily estimate the true value of the inconvenience that arises. We commissioned an innovative piece of research from Accent that asked customers to choose between an interruption and several different levels of compensation.[1] This allowed us to assess the level of compensation that was required to make the customer positively choose to have the supply interruption (because they think the compensation is greater than the inconvenience).

We also do not wish to reject the use of WTP data altogether. We have therefore used WTP metadata produced by Accent as an input into the calculation of our ODI rates.[2] We feel that this data is more reliable, statistically and methodologically robust than any study that we could have commissioned. We feel that this course of action is both efficient (remembering that half of all such costs are borne by customers), and gives a more nuanced and robust result than we could have obtained by over-relying on WTP research.

How we set the benefit levels

In setting our benefit valuations, we have endeavoured to make sure that they satisfy the Ofwat formulas such that our penalties are always higher than our rewards for the majority of our ODIs. We believe that this condition is necessary for where we are seeking to improve our performance, as it ensures the penalty of not meeting the target will always exceed the reward for beating it, maintaining the concept that our target will always be the minimum standard we seek to reach.

[1] Accent and PJM Economics report for Affinity Water, "*Exploration of Supply Outage Compensation Levels*", June 2018.
[2] Accent and PJM Economics, "*Comparative Review of PR19 WTP Results: Final Report*", June 2018.

In order for this relationship between rewards and penalties to hold, the Ofwat equation requires that benefits exceed costs (as indeed common sense would demand). In computing the benefits, we have sought to follow this principle that benefits should always exceed the costs. We have instead calibrated our costs against external benefit valuation approaches, and then set the benefits at such a level that:

1. They cover the costs;
2. They are plausible and within the range of other similar external valuations of benefits.

It should also be noted that there are some instances where we have not been able to obtain appropriate external valuations:

- Unplanned outage
- Mains bursts
- CRI
- Environmental innovation

In these cases, we have simply set the benefits equal to the costs.

For unplanned outage and mains bursts, these are penalty-only ODIs where we are seeking to maintain our performance. This is to preserve intergenerational fairness, as a significant improvement now would be paid for by current customers but future customers would realise more of the benefits. We also believe that attempting to value these benefits is not appropriate as customers cannot place value in exceeding these targets as the outcomes are not transparent to them. Customers will see interruptions or low pressure. Such outcomes could result from a burst or an outage, but most bursts and most outages will not have any affect on customer service at all. The interruption or low pressure are measured by other ODIs which can be based on customer valuations.

In the case of CRI, we are targeting a score of 0, therefore we cannot outperform on this measure and so it does not make sense to assess the benefits of outperformance.

Our projects for environmental innovation were developed with continued and direct customer input into their scope and goals. Prospective projects were presented as options to customers along with the attendant costs, therefore costs of the final selection represent a true "WTP" value. We have therefore set benefits equal to costs for this measure.

As previously discussed, we have taken a variety of approaches to calibrating the benefit values for our ODIs. We have listed these below.

PC	Source of benefit valuation
Supply interruptions	Accent and PJM Economics report for Affinity Water, "*Exploration of Supply Outage Compensation Levels*", June 2018.
Leakage	Accent and PJM Economics, "*Comparative Review of PR19 WTP Results: Final Report*", June 2018.
PCC	Environment Agency, "*Operational Catchment Economic Appraisal - Final Appraisal Report and Audit Trail: Colne*", February 2018 Environment Agency, "*Operational Catchment Economic Appraisal - Final Appraisal Report and Audit Trail: Upper Lee*", February 2018
Unplanned outage	We have not sought to get a WTP value for this measure, as we are proposing to main current target. Penalty only, so benefits set equal to costs.

	Penalty only, so benefits set equal to costs.
Mains bursts	We have not sought to get a WTP value for this measure, as we are proposing to main current target. Penalty only, so benefits set equal to costs. Penalty only, so benefits set equal to costs.
CRI	We have not sought to get a WTP value for this measure, as we believe that customers expect us to produce the highest quality possible, and therefore minimise the CRI score. Penalty only, so benefits set equal to costs.
Low water pressure	Accent and PJM Economics, "*Comparative Review of PR19 WTP Results: Final Report*", June 2018.
Environmental innovation	Benefits set equal to costs.
False void	Affinity assessment
Gap	Affinity assessment
River quality improvements	Environment Agency, "*Water pollution natural capital calculator*", April 2018.
Sustainability reductions	Environment Agency, "*Operational Catchment Economic Appraisal - Final Appraisal Report and Audit Trail: Colne*", February 2018 Environment Agency, "*Operational Catchment Economic Appraisal - Final Appraisal Report and Audit Trail: Upper Lee*", February 2018
AIM	Ofwat suggested multiplier

Table 19: List of benefit sources

Components of the individual ODIs

Supply interruptions greater than 3 hours

We commissioned Accent to conduct research with our customers to discover the level at which respondents would prefer "interruption plus compensation" to "no interruption".[3] This effectively gave a willingness-to-pay (WTP) estimate per avoided interruption.

As Figure 1 shows, 70% of customers chose an "interruption plus compensation" level of £25.20 per hour of supply interruption.

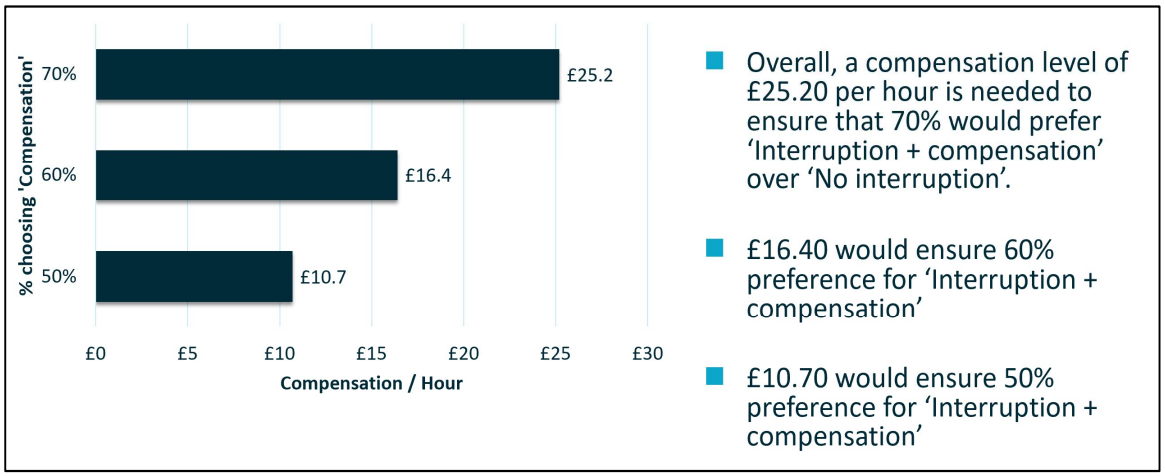


Figure 1: Supply interruptions - AFW results

We also note that, using Accent's industry wide survey results, our WTP figure is in the lower range of the industry figures on WTP for supply interruptions greater than 3 hours, and between 3 to 6 hours.[4] To convert from the "per property" figure to the "per hour" figure, we take the data shown in Table 12, and in the case of interruptions=>3hrs we divide by 3, and for 3-6 hour interruptions we divide by the median of 3-6, which is 4.5. This then gives the results in Table 20.

Study	Unit	Unit value (£/unit/year)		
		HH	NHH	Total
Supply interruptions >3 hours				
Q	1 property affected by a planned supply interruption (> 3 hours)	23		
G	1 property affected by unexpected interruptions to supply lasting 3 hours or longer	132	961	177
Q	1 property affected by an unexpected supply interruption (> 3 hours)	632		
I	1 property affected by planned or unplanned interruptions (<12 hours)	1,312	5,161	1,528
Supply interruptions 3-6 hours				

[3] Accent and PJM Economics report for Affinity Water, "*Exploration of Supply Outage Compensation Levels*", June 2018.
[4] Accent and PJM Economics, "Comparative Review of PR19 WTP Results: Final Report", June 2018.

L	1 property affected by a planned interruption (3-6 hours)	91	706	120
L	1 property affected by an unplanned interruption (3-6 hours)	136	1,565	203
M	1 property affected by a planned interruption (3-6 hours)	157	1,586	232
M	1 property affected by an unexpected interruption (3-6 hours)	282	4,224	488
E	1 property affected (3-6 hours)	310	701	329
T	1 property affected by unplanned service interruptions (typically lasting around 6 hours)	319	10,840	895
J	1 property affected by a short-term interruption to supply (3-6 hours)	515	2,524	636

Table 20: All-industry WTP on supply interruptions

Study	WTP unit value (£/hr lost) - 2017/18 prices	Position
Q	7.94	Quartile 1
G	27.62	Quartile 1
Q	46.72	Quartile 1
I	53.40	Quartile 2
L	61.11	Quartile 2
M	5.72	Quartile 3
L	112.32	Quartile 3
E	146.38	Quartile 3
M	205.99	Quartile 4
T	218.19	Quartile 4
J	527.53	Quartile 4

Table 21: All-industry WTP for supply interruption (per hour)

Whilst these surveys will have had different methodological approaches to ours, we are nevertheless satisfied that the valuation from our WTP research of £25.20 per hour of supply interruption compares well with these other industry findings. It also meets our requirement of exceeding our costs, so we therefore choose this in preference to the lower valuations given by 60% and 50% of customers.

We convert our WTP figure £25.20 per hour of supply interruption to a per minute value by dividing by 60, and then multiply by the number of Affinity Water's billed customers (1,425,795). This gives a value of £598,833.90 per minute of interruption per property.

Leakage

We have used Accent's WTP report for the whole of the water industry to set our WTP level.[5]

To do this, we have conducted quartile analysis of the WTP data for Leakage (expressed as £/ML/d) shown on page 12 of the report, with the quartiles arranged as lowest WTP = upper quartile. We also adjust the WTP values for inflation to express them in 2017/18 prices (from 2016/17 prices).

As our target is based on % reduction from the AMP6 end position, we need to convert one unit of ML/d into an equivalent percentage. This is simply done by dividing the ML/d reduction by the percentage point reduction, giving a conversion factor of 1.6225ML/d = 1%. We adjust the WTP values by these numbers.

Our leakage cost of £785,820.35 sits in the third quartile, so we use the third to fourth quartile boundary of £1,212,583.18 as our benefit value.

Study	WTP unit value (1 Ml/d of water lost through leakage) (£)	Position	WTP unit value (Converted to 1% reduction) (£)	Position
Q	25,160.94	Quartile 1	40,823.62	Quartile 1
C	132,921.17	Quartile 1	215,664.60	Quartile 1
A	155,027.75	Quartile 1	251,532.52	Quartile 1
D	246,818.09	Quartile 2	400,462.35	Quartile 2
E	304,484.31	Quartile 2	494,025.80	Quartile 2
G	493,644.47	Quartile 3	800,938.15	Quartile 3
P	680,262.95	Quartile 3	1,103,726.64	Quartile 3
U	769,718.77	Quartile 4	1,248,868.70	Quartile 4
I	1,068,379.18	Quartile 4	1,733,445.22	Quartile 4
B	1,174,770.18	Quartile 4	1,906,064.62	Quartile 4
			Quartile 1	£288,764.98
			Quartile 2	£647,481.97
			Quartile 3	£1,212,583.18

Table 22: Leakage WTP metadata in 2017/18 prices

Per capita consumption

We set our benefit level by assuming that a reduction in consumption is equivalent to a reduction in abstraction. We therefore use the Environment Agency's Benefit Cost Ratio for Sustainability Reductions. To do this, we take the average of the BCR in the Upper Lee and Colne area (1.76 and 1.29, so 1.52) and multiply the cost for PCC by this number. This gives a benefit of £713,400.53 per ML/d reduction.

Unplanned outage

We have been unable to ascertain a WTP value for this measure. As this measure is penalty-only, we have set the benefits equal to the costs.

Number of burst mains

We have been unable to ascertain a WTP value for this measure. As this measure is penalty-only, we have set the benefits equal to the costs.

[5] Accent and PJM Economics, "Comparative Review of PR19 WTP Results: Final Report", June 2018.

Compliance Risk Index (CRI)

We have not sought to obtain a WTP value for this measure, as we believe that customers expect us to produce the highest quality possible, and therefore minimise the CRI score. As this measure is penalty-only, we have set the benefits equal to the costs.

Environmental innovation - delivery of community projects

We have developed this measure with continued and direct customer input into its scope and goals. Prospective projects were presented as options to customers, along with the attendant costs, therefore costs of the final selection represent a true "WTP" value. We have therefore set benefits equal to costs for this measure.

Properties experiencing longer or repeated instances of low pressure

We have used Accent's WTP report for the whole of the water industry to set our WTP level.[6]

Given that this measure relates to "persistent low pressure", we take the valuations from studies M and J which specifically relate to "persistent low water pressure". We adjust these figures for inflation and then take the average, as shown in the table below.

Study	Unit	WTP unit value (£/unit) - 2017/17 prices
M	1 property affected by persistent low water pressure	£436
J	1 property affected by persistent low water pressure	£1,102
Average		£769

Table 23: Low water pressure WTP metadata

This calculation gives a £ per property (on DG2) of £769. We then multiply this figure by the average of forecast connected properties over AMP7 (1,520,214) divided by 10,000. This gives a £ per 10,000 connected properties figure of **£116,909**.

Reducing the total number of void properties by identifying false voids

We compute the false void benefit using "avoided loss of wholesale revenue". To do this, we take our current average water bill (£175) and net off the cost to serve (retail) component, approximately £20. This gives a "wholesale revenue" water bill of £155. We then take Thames' current sewerage bill (£180) and net off the cost to serve (we assume this is also £20), giving a "wholesale revenue" sewerage bill of £155. We add these two numbers together to get an indicative total wholesale revenue bill of £315. This figure represents one year of lost revenue for one false void.

Given that we are aware of voids, and we will eventually detect them, we make the conservative assumption that each false void only equates to one year of lost revenue.

This figure needs to be expressed as "voids as a % of total household billed properties". To do this, we take our total property number (1,458,000) and divide by 100. This gives a 1% of total billed properties figure of 14,580.

We multiply the benefit figure of £315 by 14,258, giving a "benefit for 1% of void reduction" of £4,592,700.

Number of occupied properties not billed (Gap sites)

A gap site may go unnoticed forever, meaning the attendant loss of revenue is potentially infinite. However, to match the five-year price control period, we measure the benefits over five years. This ensures that benefits of additional gap detection achieved in AMP7 are shared with customers in AMP7.

[6] Accent and PJM Economics, "Comparative Review of PR19 WTP Results: Final Report", June 2018.

To calculate this figure, we take our current average water bill (£175) and net off the cost to serve (retail) component, approximately £20. This gives a "wholesale revenue" water bill of £155. We then take Thames' current sewerage bill (£180) and net off the cost to serve (we assume this is also £20), giving a "wholesale revenue" sewerage bill of £155. We add these two numbers together to get an indicative total wholesale revenue bill of £315. This figure represents one year of lost revenue for one gap site.

Given that we assume that each gap site represents 5 years of lost revenue, we calculate an NPV over AMP7 (5 years), with a discount rate of 2.4%, on the revenue figure of £315. As shown in Table 24, we compute the NPV of £315 from this year (to account for the fact that by 2020/21 we will already have lost two years of discounted revenue). We take the sum only for the AMP7 period however, as this represents the period for which the ODIs will be calculated.

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	AMP7 Sum
NPV calculation	£315.00	£307.62	£300.41	£293.37	£286.49	£279.78	£273.22	**£1,433.26**
Discount rate	2.4%							

Table 24: NPV of lost revenue from a gap site (5 years)

This gives a benefit figure, in NPV terms, of £1,433.26 per gap site detected. We do also note that a gap site found after 2020/21 would have a different five-year NPV. However, we have chosen to make the simplifying assumption that when we find a gap site it must have been in existence at least from 2020. The NPV therefore reflects the approximate benefits foregone by there being a gap site in existence.

River restoration

We take the list of rivers covered by the AMP7 "green" morphological projects, alongside the km of the rivers benefitting from the work. These are shown in Table 25. We do not use the Sustainability Reduction effects as these will be covered under the separate PC for that measure.

River	Action Type	2020-21	2021-22	2022-23	2023-24	2024-25	Total (km)
Ver	SR	0	0	0	0	21.430	**21.430**
	Morph	0.763	0.763	0.763	0.763	0	**3.052**
Beane	Morph	0.763	0.763	0.763	0.763	0	**3.052**
Upper Lea	SR	0	0	0	0	10.300	**10.300**
	Morph	0.763	0.763	0.763	0.763	0	**3.052**
Mimram	SR	0	0	0.000	0	10.300	**10.300**
	Morph	0.763	0.763	0.763	0.763	0	**3.052**
Misbourne	SR	0	0	0	0	16.900	**16.900**
	Morph	0.763	0.763	0.763	0.763	0	**3.052**
Gade	Morph	0.763	0.763	0	0.763	0.763	**3.052**
Cam	SR (ND)	0	0	0	0	46.828	**43.828**
Ivel	SR (ND)	0	0	0	0	1.200	**1.200**
Total		**4.578**	**4.578**	**3.815**	**4.578**	**107.721**	**125.270**

Table 25: "Green" river projects for AMP7

We then put these rivers and "km improved" through the EA water pollution natural capital calculator.[7] We assume a "benefit" lifetime of 100 years.

The EA's model computes the cost of a river going from an initial state to a worse state. We take each of our rivers and assess them as going from "good" to their current state. The assumption is that this is equivalent to the benefit of going in the opposite direction.

[7] Environment Agency, "*Water pollution natural capital calculator*", April 2018. https://www.gov.uk/government/publications/water-pollution-natural-capital-calculator

Table 26: EA model output - Ver

Water pollution natural capital calculator

Catchment		Colne
Waterbody		Ver
Length of impact		
	distance to next tributary	3.052 km
Duration of impact to:		
	Fish	100 years
	Invertebrates	100 years
	Plants	100 years
Condition before incident		
	Fish	Good or better
	Invertebrates	Good or better
	Plants	Good or better
Condition after incident		
	Fish	Moderate
	Invertebrates	Moderate
	Plants	Moderate
	Scaling factor (1=default)	1.0

Results 2016£	Central	High
Total	1,664,000	1,961,000

Table 27: EA model output - Beane

Water pollution natural capital calculator

Catchment		Upper Lee
Waterbody		Beane
Length of impact		
	distance to next tributary	3.052 km
Duration of impact to:		
	Fish	100 years
	Invertebrates	100 years
	Plants	100 years
Condition before incident		
	Fish	Good or better
	Invertebrates	Good or better
	Plants	Good or better
Condition after incident		
	Fish	Poor
	Invertebrates	Poor
	Plants	Poor
	Scaling factor (1=default)	1.0

Results 2016£	Central	High
Total	2,445,000	2,881,000

Table 28: EA model output - Upper Lea

Water pollution natural capital calculator

Catchment		Upper Lee
Waterbody		Upper Lea
Length of impact		
	distance to next tributary	3.052 km
Duration of impact to:		
	Fish	100 years
	Invertebrates	100 years
	Plants	100 years
Condition before incident		
	Fish	Good or better
	Invertebrates	Good or better
	Plants	Good or better
Condition after incident		
	Fish	Bad
	Invertebrates	Bad
	Plants	Bad
	Scaling factor (1=default)	1.0

Results 2016£	Central	High
Total	3,388,000	3,992,000

Table 29: EA model output - Mimram

Water pollution natural capital calculator

Catchment		Upper Lee
Waterbody		Mimram
Length of impact		
	distance to next tributary	3.052 km
Duration of impact to:		
	Fish	100 years
	Invertebrates	100 years
	Plants	100 years
Condition before incident		
	Fish	Good or better
	Invertebrates	Good or better
	Plants	Good or better
Condition after incident		
	Fish	Moderate
	Invertebrates	Moderate
	Plants	Moderate
	Scaling factor (1=default)	1.0

Results 2016£	Central	High
Total	1,327,000	1,563,000

Table 30: EA model output - Misbourne

Water pollution natural capital calculator

Catchment		Colne	
Waterbody		Misbourne	
Length of impact			
	distance to next tributary	3.052	km
Duration of impact to:			
	Fish	100	years
	Invertebrates	100	years
	Plants	100	years
Condition before incident			
	Fish	Good or better	
	Invertebrates	Good or better	
	Plants	Good or better	
Condition after incident			
	Fish	Moderate	
	Invertebrates	Moderate	
	Plants	Moderate	
	Scaling factor (1=default)	1.0	

Results	2016£	
	Central	High
Total	1,664,000	1,961,000

Table 31: EA model output - Gade

Water pollution natural capital calculator

Catchment		Colne	
		Gade	
Length of impact			
	distance to next tributary	3.052	km
Duration of impact to:			
	Fish	100	years
	Invertebrates	100	years
	Plants	100	years
Condition before incident			
	Fish	Good or better	
	Invertebrates	Good or better	
	Plants	Good or better	
Condition after incident			
	Fish	Bad	
	Invertebrates	Bad	
	Plants	Bad	
	Scaling factor (1=default)	1.0	

Results	2016£	
	Central	High
Total	4,236,000	4,992,000

The sum of these values is then divided by the total number of projects (36) to give a benefit per project.

This gives a per project benefit of £431,150.87.

Abstraction reduction

We calculate the benefit for reducing the water we take from the environment by using the Environment Agency's Benefit Cost Ratio for Sustainability Reductions. To do this, we take the average of the BCR in the Upper Lee and Colne area (1.76 and 1.29, so 1.52) and multiply the cost for Sustainability Reductions by this number. This gives a benefit of £326,013.16 per ML/d reduction.

Number of sources operating under the Abstraction Incentive Mechanism

We have attempted to compute a benefit valuation for AIM using an average value per river catchment affected in AMP7. Each catchment's NWEBS value per kilometre per day was multiplied by the potential length of river that may benefit through the operation of AIM. These figures were then averaged to give a weighted average, accounting for the fact that one catchment may be of a higher natural capital value than another or in some catchments a particularly long length of river could benefit. This gave a benefit per ML of £1,489.63.

However, we felt that given our high performance in AMP6 for AIM, this benefit valuation could lead to extremely high rewards. We have instead used Ofwat's suggested "AIM multiplier" of 1.2 times the marginal cost.[8] This gives a benefit of £188.81 per ML.

Customer contacts for discolouration

We have not computed a marginal benefit for this measure as we have simply rolled over the AMP6 penalty for this PC.

[8] Delivering Water 2020: Our final methodology for the 2019 price review, Ofwat, December 2017, Appendix 2, p.37

Strategic resource development

This PC is designed to recover the financial allowance Ofwat has given us in the event we do not complete the necessary projects. A marginal benefit has therefore not calculated for this measure.

App1a – Performance commitments (PCs) and outcome delivery incentives (ODIs)

Columns B-O - PC information

Populated by Ofwat from App1 table.

Columns P-Q - ODI Determinants

Reference to relevant sections in App1.

Column R - Number of households

Populated by Ofwat.

Column S -Totex sharing rate

Assumption of 50% sharing rate as set out by Ofwat in App1a guide.

Column T - Type of ODI rate formula

Populated based on whether we are using Ofwat formula.

Following Ofwat's IAP feedback, we have decided to set the penalty and (where applicable) reward rates for the following PCs in-line with Ofwat's results from "Technical appendix 1: Delivering outcomes for customers" January 2019.

PC	Source
Leakage	Mean from page 28, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019, converted into £/ML/d.
PCC	Mean from page 29, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/l/h/d.
CRI	Mean from page 30, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/point of score.
Supply Interruptions	Mean from page 31, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/min/property.
Mains Repairs	Median from page 32, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/repair.
Unplanned outage	Upper quartile from page 33, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/% of production capacity.

Under the Ofwat IAP, we are not being funded for any of the projects under "Environmental innovation - delivery of community projects". However, we note that customers were very positive about them, so we are proposing that we recover the costs for each project unit we deliver. As a consequence, we have simply set the ODI to have an outperformance payment sufficient to cover the project costs as they are completed.

For "Customer contacts for discolouration" we have simply rolled over the AMP6 penalty for this PC.

For "Strategic resource development", the ODI will have an underperformance payment to recover the financial allowance Ofwat has given us in the event we do not complete the necessary projects. The companies involved in the strategic Resource Development are

working together, and with Ofwat to develop an agreed set of projects and gateways, but will not conclude this work before 1st April, so we are not able to fill in these lines of App1a yet.

For all other financial ODIs have used the standard Ofwat ODI formulae (Delivering Water 2020: Our final methodology for the 2019 price review, Ofwat, December 2017, Appendix 2 (page 91)) to calculate all our ODI rates:

- ODI underperformance (penalty) = Incremental benefit – (incremental cost x p)
- ODI outperformance (reward) = Incremental benefit x (1–p)
- The "p" value is the sharing rate, which we have set at 50% for all of our financial ODIs.

Column U - Reason for using alternative formula

We have selected "Other Reason" for all non-standard ODI calculation, as no other drop-down options fit.

Column V - Alternative formulae

N/A

Column W - Chosen underperformance penalty incentive rate

Reference to relevant sections in App1.

Column X - Standard formula underperformance penalty incentive rate

Populated by Ofwat using standard ODI formula.

Column Y - Reasons for any differences between columns 21 and 22

Reasons for deviation from standard ODI formula given.

Column Z - Reasons for any differences between ODI rate in this table and app1

N/A

Column AA - Type of ODI rate formula

Populated based on whether we are using Ofwat formula.

Following Ofwat's IAP feedback, we have decided to set the penalty and (where applicable) reward rates for the following PCs in-line with Ofwat's results from "Technical appendix 1: Delivering outcomes for customers" January 2019.

PC	Source
Leakage	Mean from page 28, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019, converted into £/ML/d.
PCC	Mean from page 29, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/l/h/d.
CRI	Mean from page 30, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/point of score.
Supply Interruptions	Mean from page 31, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/min/property.
Mains Repairs	Median from page 32, Ofwat, "Technical appendix 1: Delivering outcomes for customers" January 2019 converted into £/repair.
Unplanned outage	Upper quartile from page 33, Ofwat, "Technical appendix 1: Delivering outcomes for customers"

	January 2019 converted into £/% of production capacity.

Under the Ofwat IAP, we are not being funded for any of the projects under "Environmental innovation - delivery of community projects". However, we note that customers were very positive about them, so we are proposing that we recover the costs for each project unit we deliver. As a consequence, we have simply set the ODI to have an outperformance payment sufficient to cover the project costs as they are completed.

For "Customer contacts for discolouration" we have simply rolled over the AMP6 penalty for this PC.

For "Strategic resource development", the ODI will have an underperformance payment to recover the financial allowance Ofwat has given us in the event we do not complete the necessary projects. The companies involved in the strategic Resource Development are working together, and with Ofwat to develop an agreed set of projects and gateways, but will not conclude this work before 1st April, so we are not able to fill in these lines of App1a yet.

For all other financial ODIs have used the standard Ofwat ODI formulae (Delivering Water 2020: Our final methodology for the 2019 price review, Ofwat, December 2017, Appendix 2 (page 91)) to calculate all our ODI rates:

- ODI underperformance (penalty) = Incremental benefit – (incremental cost x p)
- ODI outperformance (reward) = Incremental benefit x (1–p)
- The "p" value is the sharing rate, which we have set at 50% for all of our financial ODIs.

Column AB - Reason for using alternative formula

Have selected "Other Reason" for all non-standard ODI calculation, as no other dropdown options fit.

Column AC - Alternative formulae (where applicable)

N/A

Column AD - Chosen outperformance payment incentive rate

Reference to relevant sections in App1.

Column AE - Standard formula outperformance payment incentive rate

Populated by Ofwat using standard ODI formula.

Column AF - Reasons for differences between columns 28 and 29

Reasons for deviation from standard ODI formula given.

Column AG - Reasons for differences between ODI rate in this table and App1

N/A

Column AH - Other standard ODI rates proposed by the company

N/A

App1b – Performance commitments (PCs) and outcome delivery incentives (ODIs)

Our PC and ODI data uses standardised performance measures and definitions and so we have not needed to complete this table to convert our performance data to allow for cross-industry comparisons.

App2 – Leakage additional information and old definition reporting

Line 1 – Leakage region 1 or whole company

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 2 - Upper limit of sustainable economic level of leakage (SELL)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 3 - Central point of sustainable economic level of leakage (SELL)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 4 - Lower limit of sustainable economic level of leakage (SELL)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 5 - WRMP leakage targets

Changes since September Plan

- Revised AMP7 leakage forecast as per rdWRMP19 to reflect revised reduction of 18.5% reduction in AMP7 (30Ml/d).
- The 2018/19 leakage figure has changed. It was previously reflective of the ODI target, it is now reflective of our estimated end of year leakage forecast.

For 2016/17 and 2017/18 we have used actual data for Leakage (as per relevant Annual Performance report) rather than the line definition. Similarly, for 2018/19 we have used a combination of actual and then expected values to derive an estimated end of year value.

For 2019/20 and beyond, we use the leakage delivery profile; this is different to WN2 line 25 from 2019/20 to 2024/25, where we use the modelled outputs of our revised dWRMP.

Line 6 - Leakage/property/day

Changes since September Plan

- Due to changes in our AMP6 performance and AMP7 forecast we have changed this line in accordance with line 5.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 7 - Leakage/km of main/day

Changes since September Plan

- Due to changes in our AMP6 performance and AMP7 forecast we have changed this line in accordance with line 5.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 8 – Total Connected Properties at Year End

Changes since September Plan

- Changed since previous submission in accordance with WS3.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 9 – Total Length of Potable Mains as at 31st March

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 38 – Leakage

Changes since September Plan

- The 2018/19 leakage figure has changed to reflect our estimated end of year leakage forecast.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 39 - Central point of sustainable economic level of leakage (SELL)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 49 - Per capita consumption (PCC)

Changes since September Plan

- 2016/17 and 2017/18 are now reflective of the relevant Annual Return published figures from table 10, line 5. The value for 2016/17 has been rounded down by one decimal place to 154.7 (exact PCC value is 154.74952)
- 2018/19 is reflective of our estimated end of year PCC value.
- 2019/20 onwards is reflective of our rdWRMP19 submission, derived specifically from our demand forecast. There will be no change to the end of AMP7 PCC target of 129 l/p/d.

For 2016/17 and 2017/18 we have used actual values for PCC (as per relevant Annual Return submission) rather than the line definition. Similarly, for 2018/19 we have used a combination of actual and then forecast to derive an estimated end of year value.

For 2019/20 and beyond, we are compliant with Ofwat's line guidance.

Line 50 - Average minutes per property for supply interruption greater and equal to three hours

Changes since September Plan

- The metric in this line has changed from reporting 'W-C1 Unplanned supply interruptions greater than 12 hours' to our performance for 'Average minutes per property for supply interruption greater and equal to three hours'.
- Although this was not an AMP6 PC for Affinity Water, we have continued to track performance and have reported annually through WaterUK's 'Discover Water'.
- Our current methodology for interruptions ≥ 3 hours differs only very slightly from the common performance measure (new methodology) to be used for AMP7. Our current methodology treats an interruption as occurring when pressure in the main is less than 3m head, whereas the new measure specifies an interruption as being when pressure is equal or less than 3m head. The difference is not material.
- Forecasts for the remaining two years of AMP 6 and into AMP 7 are as reported in App 1 under the common performance measure methodology.

The numbers entered in this line relate to the old methodology DG3 definition of supply interruptions (i.e. number of properties affected by unplanned interruptions to supply over 12 hours).

Performance for this measure has not been forecast past the end of AMP6 as we will be changing for AMP7 to the common performance commitment for supply interruptions (i.e. average minutes per property for supply interruption greater and equal to three hours).

In line 42 we have provided forecasts against the current PC for years 2018/19 and 2019/20. The basis of the significant improvement in performance in these two years, when compared to the first three years of the AMP, is given in our Accounting for Past Delivery Test Area Submission (Ofwat References AFW.PD.A1-6, AFW.PD.B1-4, AFW.PD.A1, AFW.PD.A2, AFW.PD.A3, AFW.PD.A4, AFW.PD.A5, AFW.PD.A6, AFW.PD.B1, AFW.PD.B2, AFW.PD.B3 and AFW.PD.B4).

The table below shows our historic performance for average minutes for interruptions ≥ 3 hours' duration. Although this was not an AMP6 PC for Affinity Water, we have continued to track performance and have reported annually through WaterUK's 'Discover Water' website.

Description	Unit	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Interruptions - minutes per property served	Min:Sec	19:27	22:42	27:03	17:55	21:06	32:54

Our current methodology for interruptions ≥ 3 hours differs only very slightly from the common performance measure (new methodology) to be used for AMP7. Our current methodology treats an interruption as occurring when pressure in the main is less than 3m head, whereas the new measure specifies an interruption as being when pressure is equal or less than 3m head. The difference is not material.

Our overall improvement in supply interruptions this year (as at mid-Feb'19) allows us to forecast a significant improvement for interruptions ≥ 3 hours for 2018/19 and 2019/20, as below:

Description	Unit	2018-19	2019-20
Forecast: Interruptions - minutes per property served	Min:Sec	12:00	06:00

Line 51 - [ID and name of PR14 internal sewer flooding performance commitment]

n/a

App3 – Abstraction Incentive Mechanism - surface and ground water abstractions under the AIM threshold

Changes since September Plan

- Increase of the incentive rate by 20p from £94.20 per Ml to £94.40 per Ml to be consistent with OFWAT formula (column 41)
- Include penalty of £110.14 per Ml following comment AFW.OC.A43 from OFWAT(column 40).
- Update forecast for financial year 2018-2019 from zero Ml based on the performance this year to date, from the period 1 April 2018 to 31 January 2019 (column 9 and 14).
- Update cumulative AMP6 forecast to include performance to date this financial year (column 13 and 18).

Because App3 has columns rather than rows, we have tabulated the commentary with bespoke comments per column regarding compliance and providing additional information where needed. Compliance of columns within the App3 table and non-compliances are set out in the table below. We assume the guidance for lines 27 and 33 which refers to the period 2020-2021 to 2024-2026 should read 2020-2021 to 2024-2025.

Column	Column reference	Item Reference	Column descriptor from APP3	Explanation
C	1	APP3001	"The unique ID of the associated performance commitment in table App1 (performance commitments and outcome delivery incentives)	Complies with OFWAT definition.
D	2	AIMAMP6_AS	For example: PR19XXX_ABC01"	Complies with OFWAT definition.
E	3	APP3002	Name of the abstraction site. This can be anonymised if necessary for national security reasons.	Complies with OFWAT definition.
F	4	APP3004	Select 'Surface water' or 'Ground water' from the drop-down menu	Complies with OFWAT definition.
G	5	APP3005	Name of the affected surface water body. This should be entered	Complies with OFWAT definition.

Column	Column reference	Item Reference	Column descriptor from APP3	Explanation
			for all surface water and groundwater abstraction sites within scope.	
H	6	APP3006	Enter the baseline average abstraction relating to the trigger threshold as used in the 2016/17 to 2019/20 period (megalitres per day)	Does not comply with OFWAT definition. Numbers stated are the AIM baselines as of April 2016. Since then, some have changed, where sustainability reductions have not reduced the deployable output of AIM sites to zero Ml/d. Where this has happened, the new AIM baseline (and one used for the assessments) is the average licensed rate of the source. Where the sustainability reduction has reduced the source output to zero Ml/d, the source has been removed from AIM. Slip End source now has an AIM baseline which is 95% of the licensed abstraction when the flow constraint is in effect. See methodology for more details.
I	7	APP3007	Enter the measurement unit for the trigger threshold (river flow metric or groundwater level metric)	Complies with OFWAT definition.
J	8	APP3008	For the 2016/17 to 2019/20 period: enter the trigger threshold for the river flow or groundwater level value. The AIM is 'switched on' when the flow rate of the river or groundwater level is at or below this threshold.	Complies with OFWAT definition.
K-N	9	AIMAMP6_AP	For the four years 2016/17 to 2019/20: enter the AIM performance (Ml)	Does not comply with OFWAT definition. 2018/2019 performance has been estimated by completing the AIM score analysis from April 2018 until the end of January 2019 in line with the AIM methodology. As low river flows and high demand are not forecastable, the score for the remainder of the year (February to March) has been estimated as zero Ml, and so the estimated score for the year as a whole is what it was at the end of January 2019.

Column	Column reference	Item Reference	Column descriptor from APP3	Explanation
O	13	AIMAMP6_CAP	For the four years 2016/17 to 2019/20: enter the cumulative AIM performance (Ml)	Complies with OFWAT definition and includes forecast 2018/19 performance as per column 9.
P-S	14	AIMAMP6_NAP_PR19	For the four years 2016/17 to 2019/20: enter the normalised AIM performance (percentage) Use the February 2016 AIM guidance to calculate normalised AIM performance and then multiply by 100 to convert to a percentage (this represents the percentage reduction in abstraction compared to the baseline).	Does not comply with OFWAT definition. 2018/19 performance has been estimated by completing the AIM score analysis from April 2018 until the end of January 2019 in line with the AIM methodology. As low river flows and high demand are not forecastable, the score for the remainder of the year (February to March) has been estimated as zero, and so the estimated score for the year as a whole is what it was at the end of January 2019.
T	18	AIMAMP6_CNAP_PR19	For the four years 2016/17 to 2019/20: enter the cumulative normalised AIM performance (percentage)	Complies with OFWAT definition and includes forecast 2018/19 performance as per column 14.
U	19	APP3009	For the 2020/21 to 2024/25 period: enter the baseline average abstraction relating to the trigger threshold (megalitres per day)	Does not comply with OFWAT definition. Sustainability reduction sites which have not had the deployable output reduced to zero Ml/d have new AIM baselines (and one used for the assessments) is the average licensed rate of the source. Where the sustainability reduction has reduced the source output to zero Ml/d, the source has been removed from AIM. Slip End source now has an AIM baseline which is 95% of the licensed abstraction when the flow constraint is in effect. See methodology for more details.
V	20	APP3010	Enter the measurement unit for the trigger threshold (river flow metric or groundwater level metric)	Complies with OFWAT definition.
W	21	APP3011	For the 2020/21 to 2024/25 period: enter the trigger	Complies with OFWAT definition.

Column	Column reference	Item Reference	Column descriptor from APP3	Explanation
			threshold for the river flow or groundwater level value. The AIM is considered to be 'switched on' when the flow rate of the river or groundwater level is at or below this threshold.	
X-AB	22	AIMAMP7_AP	For the five years 2020/21 to 2024/25: enter the AIM performance (Ml)	Complies with OFWAT definition.
AC	27	AIMAMP7_CAP	For the five years 2020/21 to 2024/26: enter the cumulative AIM performance (Ml)	Complies with OFWAT definition.
AD-AH	28	AIMAMP7_NAP_PR19	For the five years 2020/21 to 2024/25: enter the normalised AIM performance (percentage)	Complies with OFWAT definition.
AI	33	AIMAMP7_CNAP_PR19	For the five years 2020/21 to 2024/26: enter the cumulative normalised AIM performance (percentage)	Complies with OFWAT definition.
AJ-AN	34	AIMAMP8_AP	For the five years 2025/26 to 2029/30: enter the AIM performance (Ml)	Complies with OFWAT definition.
AO	39	AIMAMP8_CAP	For the five years 2025/26 to 2029/30: enter the cumulative AIM performance (Ml)	Complies with OFWAT definition.
AP	40	APP3012	Underperformance penalty rate (£m per Ml for the abstraction site, to 6 decimal places)	Complies with OFWAT definition.
AQ	41	APP3013	Outperformance payment rate (£m per Ml for the	Complies with OFWAT definition.

Column	Column reference	Item Reference	Column descriptor from APP3	Explanation
			abstraction site, to 6 decimal places)	
AR-AV	42	APP3014	For the five years 2020/21 to 2024/25: enter the underperformance penalty collar (Ml)	Complies with OFWAT definition.
AW-BA	47	APP3015	For the five years 2020/21 to 2024/25: enter the underperformance penalty deadband (Ml)	Complies with OFWAT definition.
BB-BF	52	APP3016	For the five years 2020/21 to 2024/25: enter the outperformance payment deadband (Ml)	Complies with OFWAT definition.
BG-BK	57	APP3017	For the five years 2020/21 to 2024/25: enter the outperformance payment cap (Ml)	Complies with OFWAT definition.
	62		Contextual information on baseline abstraction period, trigger threshold (for example, flow quartile) and AIM performance	Complies with OFWAT definition.

App4 – Customer metrics

Section A – Affordability

Line 1 - Real bill profile tested with customers from 2020-2021 to 2024-2025

The 2020/21 to 2024/25 bills including inflation are taken from the populated Ofwat PR19 financial model (PR19-14h-for-publication), submitted in September 2018, 'Dashboard' tab cells T54:X54. These annual bills are then converted to 'real' (before inflation) by using the forecast CPIH index submitted in September 2018 (APP23) to revert them to a 2017/18 price base. The base index used is November 2016 CPIH that drives revenues in 2017/18, this approach is in line with the method applied with the 'discoverwater.co.uk' website referenced in Ofwat's methodology for valuing average annual bills before inflation.

We tested the 2020-2025 bill profile for affordability and acceptability with 500 customers via an online survey between the 1st and 8th March. We showed the annual bill amounts for 2017/18-2019/20 to add some context to the scale of the bill changes. We have included actual values from 2013/14 – 2016/17 on the data table for completeness but those weren't tested with customers

Stimulus for water only 2020-25 bill profile excluding inflation:

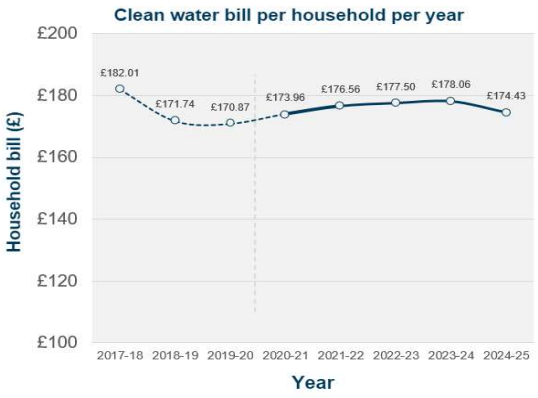
1. 2020-25 Clean Water Plan

Plan outline

Improvement	Detail
1 .Fixing leaks	15% reduction in leaks: reducing by 24.3 meg litres per day
2. Taking less water from the environment	36 million litres less per day
3. Reducing personal water usage	129 litres per person per day (from 147 per day); reducing water usage will reduce metered customers bills
4.Reducing the risk of interruptions to water supply	0.8% chance (1 in 130) per year
5. Reducing the chance of severe drought restrictions	0.5% (1 in 200) per year
6. Investing in environmental pilots – testing new innovations	Investing in 8 new projects (working with schools, housing associations & developers to deliver community-focussed projects)
7. Reducing periods of low water pressure	Maximum of 8.7 hours of low pressure per year

Impact on CLEAN water bills (bill profile)

The average bill for each household is currently £170.90 in 2019-20



1. 2020-25 Clean Water Plan - Profile 1, no inflation

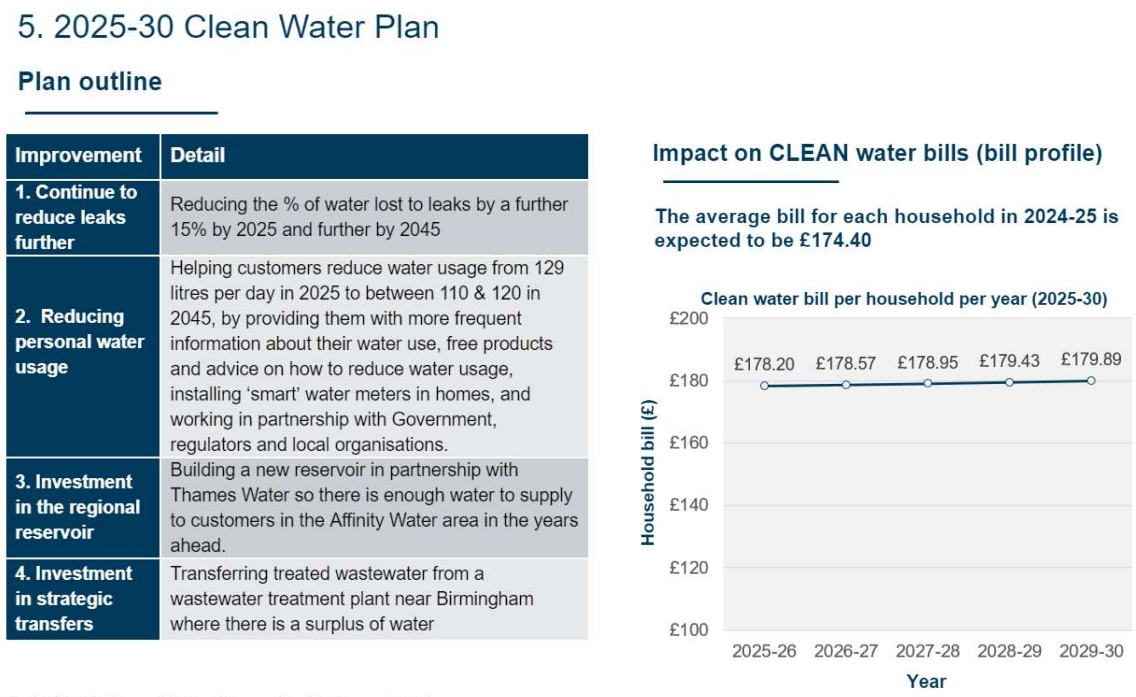
Line 2 - Real bill profile tested with customers beyond 2025

Beyond 2025 annual bills were calculated through a high-level analysis using the 2024/25 bill derived from the method above as the starting point. Regulatory mechanics were assumed to stay consistent with PR19 with an identical WACC and a neutral view was taken towards over/under performance. Incremental capex and opex were taken using the WRMP beyond AMP7 as a basis as well as a cumulative £1m per annum opex efficiency. The approach taken assumes all incremental opex and the cost of funding incremental capex, along with the resulting extra return and run-off associated with that, would impact customer bills. All calculations were carried out in the 2017/18 price base to obtain bills without inflation and the inflation forecast submitted in September 2018 (APP23) was used to increase these to outturn prices including inflation.

We tested the 2025-2030 bill profile for affordability and acceptability with 500 customers via an online survey between the 1st and 8th March, showing the annual bill amounts for 2025/26-2029/30. We tested the 2025-2030 bill profile for affordability and acceptability with 500

customers via an online survey between the 1st and 8th March, showing the annual bill amounts for 2025/26-2029/30.

Stimulus for water only 2025-30 bill profile excluding inflation:



5. 2025-30 Clean Water Plan - Profile 1, no inflation

Line 3 - Customers finding the level of their water bills affordable: (a) for companies who charge for water only (WoCs)

We have submitted responses based on customer surveys conducted by Blue Marble Market Research in the period 2014/15 to 2017/18 (as part of our Value for Money index) using the following question:

Q.52. *How strongly do you agree or disagree with the following statements about your water supply bill? "I worry about being able to afford my water bill"*

The possible question responses were:

Strongly disagree

Tend to disagree

Neither agree nor disagree

Tend to agree

Strongly agree

Don't Know

We have used totals of "strongly disagree" and "tend to disagree" survey responses to generate the scores for water bills being classed as affordable.

The sample sizes were as follows:

2014/15 - 1900 (note – benchmark year over shorter timeframe)

2015/16 - 1941

2016/17 - 1925

2017/18 - 1912

Note that 2014/15 was a benchmark year and the survey was concentrated in October - November 2014, rather than being spread over 4 quarters as has been the case in subsequent years. Also, the survey was not conducted in 2013/14 so we have no data for this year. In the absence of this data we have used 2014/15 results to populate the table for 2013/14. We have projected the 2018/19 to 2024/25 data to be in line with actual survey results for 2017/18.

Line 4 - Customers finding the level of their combined bills affordable: (b) for companies who charge for both water and wastewater (WaSCs)

n/a

Line 5 - Customers finding the level of their combined bills affordable: (c) for companies who charge for water only (WoCs)

We have not historically surveyed customers on affordability of their combined bills. We have replicated the data from line 1 in this line as this is the closest proxy we have available, rather than leave this line blank. This information should therefore be treated with caution for the period as a whole.

Line 6 - Customers finding their water bills acceptable: (a) for companies who charge for water only (WoCs)

We have submitted responses based on customer surveys conducted by Blue Marble Market Research in the period 2014/15 to 2017/18 using the following question:

Q5. *To what extent do you think the water supply to your home provides value for money, where 0 is 'very poor value for money' and 10 is 'excellent value for money'.*

We have treated scores of 7 to 10 as indicating that customers find their water bills acceptable and taken the totals of those responses to calculate relevant percentage scores.

The sample sizes were as follows:

2014/15 - 1900 (note – benchmark year over shorter timeframe)

2015/16 - 1941

2016/17 - 1925

2017/18 - 1912

Note that 2014/15 was a benchmark year and the survey was concentrated in October - November 2014 rather than being spread over 4 quarters as has been the case in subsequent years. Also, the survey was not conducted in 2013/14 so we have no data for this year. In the absence of this data we have used 2014/15 results to populate the table for 2013/14. Again, we have projected results for 2018/19 to 2024/25 in line with actuals for 2017/18.

Line 7 - Customers finding their combined bills acceptable: (b) for companies who charge for both water and wastewater (WaSCs)

n/a

Line 8 - Customers finding their combined bills acceptable: (c) for companies who charge for water only (WoCs)

We have not historically surveyed customers on acceptability of their combined bills. We have, therefore, replicated the data from line 4 in this line as this is the closest proxy we have available, rather than leave this line in the table blank. This information should therefore be treated with caution for the period as a whole.

Line 9 - Total value of social tariff discounts (excluding WaterSure)

We have calculated the total value of social tariff discounts by multiplying the number of customers we supply, or expect to supply in future, by the difference between the average household bill and the average LIFT tariff. The value of cross subsidy has changed since the

September Plan as a consequence of our updating our forecast of customer numbers, our replacement of previous forecast values for average bill and LIFT tariff for 2019/20 with actuals following charges setting and the extension of the forecast period to 2029/30.

Line 10 - Cost of social tariff cross-subsidy (per customer)

We calculate the value per customer by dividing the total £m value of discounts by the number of billed customers not on the LIFT tariff. The value remains within £3.00 per customer (2012/2013 prices) threshold in AMP6 and the £4.50 per customer (2017/18 prices) threshold in AMP7 and 8. The cross subsidy per customer is different from previous submission owing to the changes described in Line 9, and for the re-forecast of customer numbers that changes the denominator for the calculation.

Line 11 - Cost of company contribution to social tariff (per customer)

The company does not contribute to the cross subsidy, which is borne entirely by residential customers. It does however pay for the costs of operating the scheme.

Line 12 - Number of customers receiving social tariffs (excluding WaterSure)

The company projects that the number of social tariff customers will grow from about 49,000 in 2017/18 to 83,000 by the end of the forecast period. The growth in numbers of customers assisted is a result of increasing the maximum cross subsidy value from £3.00 to £4.50, in line with customers' expressed willingness to cross subsidise. This has allowed the company to assist more customers with about 40% discount to bill, as well as offer a 60% discount to 3,000 of its most vulnerable customers.

Line 13 - Total value of WaterSure and WaterSure Plus discounts

For this line we have projected that our average WaterSure customer uses 323m3 per year. The subsidy is therefore the difference between the value of the measured bill at 323m3/year and the average household bill, all multiplied by the number of WaterSure customers. This has changed since the September Plan because of the changes described in Line 9 above.

Line 14 - Cost of WaterSure and WaterSure Plus cross-subsidy (per customer)

We calculate the value per customer by dividing the total £m value of discounts by the number of billed customers not on WaterSsure or the LIFT tariff. The value is falling over time as the number of customers on WaterSure declines. The cross subsidy per customer is different from the September Plan because of the changes described in Line 9 above.

Line 15 - Number of customers receiving WaterSure and WaterSure Plus

We project that the number of customers on Watersure will fall by 2% per year from 2017/18. This reflects the historic trend rate observed in actual data between 2013/14 and 2017/18. The decline in Watersure reflects the switching of customers from Watersure onto LIFT tariff where customers qualify and where it would be more advantageous for them.

We do not have any customers on WatrsurePlus as this is a scheme operated by Thames Water for wastewater customers within our water supply area.

Line 16 - Total value of hardship funds

Changes since September Plan

- Hardship funds are defined as any grant given by a company to a customer to alleviate financial hardship. The company included funds used for hardship that were cross-

subsidised by customers in our September Plan and these have been removed as per the revised definition.

The company will introduce a Trust Fund from 2020/21 with £0.1m per year made available to support customers who are in severe financial hardship. Customers will be identified through Affinity Water's direct engagement so that payments can be made from the Trust Fund directly onto their water bill. In addition, we will work with external partners (such as StepChange, Money Advice Trust and CAP) to identify eligible customers.

The Trust Fund budget has been agreed by the company for the AMP7 period, making a total of £0.5m available to assist customers in severe hardship. The company will evaluate and review the success of the fund during AMP7 before determining the actual level of support for the AMP8 period. The assumption is that the end of AMP7 performance will remain unchanged during AMP8.

Line 17 - Number of customers receiving hardship funds

We project that up to 580 individual households per year will be eligible to receive a Trust Fund payment by the end of the AMP7 period. This is based on average support of 552 customers over AMP7 and 580 customers in AMP8.

Line 18 - Total value of payment matching support

The payment matching scheme has been agreed by the company from 2019/20 with £0.4m available to 2024/25 to assist customers. The budget available for the payment matching scheme will fluctuate each year by +2%/-4% reflecting the increase in water bills over this period.

The assumption is that the end of AMP7 performance will remain unchanged during AMP8.

Line 19 - Cost of payment matching cross-subsidy

The company does not propose to ask customers to cross-subsidise the payment matching scheme. Therefore, the data submitted in this line reflects zero cross-subsidy for the whole period.

Line 20 - Number of customers receiving payment matching support

The payment matching scheme budget has been agreed by the company for period 2019/20 to 2024/25. We have projected that this will assist up to 2,667 from 2019/20, increasing to 3,200 or 20% from 2023/24.

The assumption is that the end of AMP7 performance will remain unchanged during AMP8.

Line 21 - Cost of company contribution to payment matching support (per customer)

The company does not contribute to the payment matching support scheme. Therefore, the data submitted in this line reflects zero company contribution for the whole period.

Section B – Vulnerability

Line 22 - Customers aware of the non-financial vulnerability assistance measures offered

We have used the number of households on our Priority Services Register (PSR) divided by the total number of properties in our supply area. Figures used for the baseline in 2018/19 were as at 25.2.2019 due to the tables being completed before the 31/3/19.

During 2018 a new Priority Services Register database was designed and implemented in January 2019. As part of this project a significant amount of data cleanse work took place, and this has meant that the number of households reported as being on the register is lower than

published in the September 2018 data table. Although the number of households have decreased there is only a slight difference in the number of needs previously reported.

Line 23 - Customers on Special Assistance Register/ Priority Service Register (SAR/PSR)

We have entered the actual volumes of customers on the PSR up to and including 2018/19. The number of households on the register has decreased due to the data cleanse that has taken place during 2018/19. For future years we have projected increases of numbers of customers on the PSR as per below.

Based on our research from publicly available data, we have in the region of 501,345 households with at least one 'need' where there is someone with a long-term disability which affects their day-to-day life.

We have used this category as the basis for our model as this will encompass many different types of disability which are substantial and for 12 months or more. This includes sensory impairments, progressive impairments, organ specific, developmental, learning disabilities, mental health conditions, mental illnesses and body and brain injuries.

We understand that a major source of the data we receive will be from UKPN as the distribution network operator in our geographical area. We will have two initiatives running with UKPN,

- New customers signing up to UKPN PSR will have the option to sign up to Affinity Water 's PSR as part of the 'tell us once' campaign
- As part of UKPN's renewal campaign we will work in collaboration to promote sign up to our PSR at the same time.

Additional initiatives

- Web/Online direct signup to PSR
- Referrals direct through Third Party partnerships
- Email campaigns
- Community events/visits
- Front line team promotion
- IVR promotion

We have forecast growth year-on-year as follows:

Regulatory Year	Increase – year on year	Total Households on PSR
2018/19		22134
2019/20	29%	28552
2020/21	29%	36832
2021/22	30%	47881
2022/23	30%	62245
2023/24	31%	81540
2024/25	31%	106817
2025/26	15%	122839
2026/27	15%	141264

2027/28	15%	162453
2028/29	15%	186820
2029/30	15%	214843

*2018/19 – Figure as of 25th Feb 2019

We have also reviewed the England Indices of Deprivation from 2015 with a view to matching the bottom two indices – bottom 20% for Health and Disability, which means we will be able to have a more segmented approach to promote the Priority Services Register through community events, marketing, social media and our partners.

Line 24 - Customers on Special Assistance Register/ Priority Service Register (SAR/PSR)

During 2018 a new Priority Services Register database was designed and implemented in January 2019. As part of this project a significant amount of data cleanse work took place, and this has meant that the number of households reported as being on the register is lower than published in September 2018 data table. Although the number of households have decreased there is only a slight difference in the number of needs previously reported.

Our entries are based on the number of households on the PSR, as entered on line 13, divided by the number of properties as at 31 March each year. For future projections, we have based the growth on insight into the needs within our communities and the initiatives planned. We have stretched our reach to exceed the common performance commitment set by Ofwat of 7% by 2024/25 to 7.22%. Moving into the AMP 8 we will continue to deliver a stretching target to drive forward the support we offer through our PSR, with a target to nearly double the number of households supported in AMP 7.

NB. 7.22% is to 2 Decimal places.

Lines 25-29

Line 25 - Customers receiving services through the SAR/PSR: (a) support with communication

Line 26 - Customers receiving services through the SAR/PSR: (b) support with mobility and access restrictions

Line 27 - Customers receiving services through the SAR/PSR: (c) support with supply interruption

Line 28 - Customers receiving services through the SAR/PSR: (d) support with security

Line 29 - Customers receiving services through the SAR/PSR: (e) support with 'other needs'

We have used definitions taken from guidance provided by OFWAT, our current categories have been grouped as follows:

- Communication: Visually Impaired, Braille, Large Print, Hearing, Speech Impediment, Learning Difficulty, Audio Tape
- Mobility & Access: Elderly, Wheelchair user, Mobility problems
- Supply Interruption: Mental Health, Unable to fetch water, Dialysis

- Security: Password

Current Position

There are currently 22134 Households on our register, split between the four categories of:

- Communication: 33.78% (7,478)
- Mobility & Access: 29.65% (6,562)
- Supply Interruption: 34.93% (7,732)
- Security: 73.62% (16293)

The number of current classifications (38,065) exceeds the number of households as it is possible for a household to have more than one classification, for example support with communication and security.

For all these lines we have used the following:

Method of Calculation

During the implementation of our new Priority Services Register we conducted a data cleanse which has given a clearer breakdown of the categories and supported our forecasting.

Within the category of 'other' we have included the number of households where we will have third party contact details for an incident. Our aim is to offer notification to a nominated contact during an incident and we have assumed that 1 in 4 of households that we will support during a supply interruption will have a third party for a contact for incidents.

This is a new offering therefore we will be working with our partners and operational teams to deliver and promote this offering.

CATEGORIES CURRENT SPLIT		18/19	19/20 29%	20/21 29%	21/22 30%	22/23 30%	23/24 31%	24/25 31%
HOUSEHOLDS	22134	22134	28552	36832	47881	62245	81540	106817
COMMS (NEEDS) 33.78%	7476	7476	9646	12441	16174	21026	27544	36082
MOBILITY (NEEDS) 29.65%	6562	6562	8465	10920	14196	18455	24176	31671
SUPPLY (NEEDS) 34.93%	7731	7731	9973	12865	16724	21742	28481	37311
SECURITY (NEEDS) 73.62%	16295	16295	21019	27115	35249	45824	60029	78637

OTHER		18/19	19/20	20/21	21/22	22/23	23/24	24/25
PSR	22134	22134	28552	36832	47881	62245	81540	106817
Base	63	63	2493	3216	4181	5435	7120	9327

63 is based on the actual on the 25.2.2019.

Figures used for the baseline in 2018/19 were as at 25/2/2019 due to the tables being completed before the 31/3/19.

Historical Data

The following figures have been reported as part of quarterly requirements to Consumer Council for Water and for account reporting purposes. The figures represent the number of households recorded on the register at the dates noted.

Mar-14	Mar-15	Mar-16	Mar-17
14882	17159	16921	24259

Line 30 - Customers satisfied that the services are easy to access

Changes since September Plan: New data tables required to provide AMP8 forecast.

We have submitted responses based on customer surveys conducted by Blue Marble Market Research in the period 2014/15 to 2017/18 (as part of our Value for Money index) using the following question:

Q24 of the survey: *How easy or difficult was it for you to make contact with Affinity Water?*

Although we have tracked 'ease of effort', this is not bespoke to customers in vulnerable circumstances and therefore the information is not a direct correlation but an indicator to the score. As the survey did not begin until 2014/15 we do not have evidence for 2013/14 and have therefore used 2014/15 result as a baseline.

As the table requires entry of a percentage, the assumption used for the table is based on the Value for Money Survey, the assumption used was a flat profile of the average over 4 years.

In AMP7, we will introduce audits by an independent panel to assess 'ease of effort' as part of an holistic approach to evaluate how we have embedded customer ease into our service. So, for AMP7 AND AMP8 we believe setting a target score of 4.8 will be stretching as the approach to the audit will be robust and tailored to vulnerable circumstances. Scoring is based on Institute of Customer Service scoring whereby 10 represents high effort.

Line 31 – Customers on SAR/PSR contacted over the previous two years to ensure they are still receiving the right support

Data Integratory

Our new platform date stamps when a customer registers and will generate a renewal notification to support the reviewing of customer needs every two years. Up to the implementation of our new PSR, although renewals took place during each year we were unable to evidence renewals and therefore we cannot commit to a submission of figures prior to 18/19.

During 18/19 we have cleansed the data and going forward we will commit to the Ofwat's common performance commitments of checking 90% of data every two years.

App5 – PR14 reconciliation ~ performance commitments

General

- We confirm that the amounts being claimed for ODIs are the same as the outperformance payments/underperformance penalties determined by expected performance. We have not chosen to voluntarily forgo any amounts due.

- We have considered, in line with reporting methodologies, the effect of weather on actual performance against certain ODIs. Considerations on weather or weather adjustments have been made against actual performance to ensure it is directly comparable to the reported PR14 base year.

- We do not believe that there is any ambiguity in the definitions of the ODIs so have not needed to make any interpretations.

- We confirm that there have been no cases where issues with past reporting of data have resulted in adjustments to ODI claims.

- We confirm that we have not made any material refinements to our methodologies for reporting on any of our performance commitments.

Column 4 - PR19 Price Control Allocation (%)

We have allocated all the performance commitments with financial incentives to each respective price control by considering the segment of the business that is responsible for delivering the performance commitment and the nature of the activities that we are undertaking to fulfil the commitments. Accordingly, the performance commitments for Water Available for Use and Sustainable Abstraction are allocated 100% to water resources. The remaining commitments, apart from SIM which is allocated to residential retail, are allocated 100% to water network plus.

Line 1 – Leakage (Ml/d)

Changes since September Plan

- The 2018/19 leakage figure has been updated with the December actual and expected values for January to March 2019. It was previously reflective of the ODI target.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 2 – Average water use (l/p/d)

Changes since September Plan

- The 2018/19 PCC figure has been updated to the latest revised forecast (i.e. December actual and latest forecast for January to March 2019. It was previously reflective of the ODI target, it is now reflective of our estimated end of year PCC forecast.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 3 – Water available for use (Ml/d)

Changes since September Plan

- For the Revised Plan we have used for the reporting year 2018/19 11 months of actual billed consumption and 1 months of provisional and budget.

We calculate the water that is available to be abstracted by subtracting Actual Outage (planned and unplanned) and sustainability reduction volumes from modelled Deployable Output.

Within our drought management plan, upon reaching drought trigger zone 3, we commit to rescheduling planned maintenance, planned capital works and responding to unplanned outage events more quickly. It is at this point water levels could impact abstraction and so W-A3 will be reported against the Dry Year Annual Average (DYAA) Deployable Output (DO). Under less severe drought conditions the Normal Year Annual Average (NYAA) DO will be used to monitor the ODI.

While Sustainability Reductions have reduced the number of locations at which we abstract from the environment, we have consistently achieved our W-A3 targets in the last three years and we are therefore confident that the W-A3 ODI will be met in the remaining years of AMP6.

This is underpinned by our various strategies, including, but not limited to:

Capital Investment Strategy, Asset Maintenance Strategy, Catchment Management Strategy.

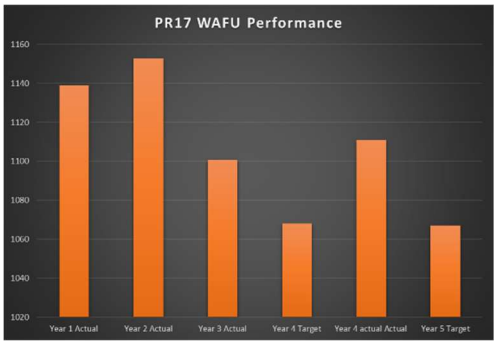


Figure 2: WAFU Performance

Line 4 – Sustainable abstraction reductions (Ml/d)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance. For both 2018-19 and 2019-20 we have reported the cumulative abstraction reductions (42.1Ml/d) for AMP6. Since no further reductions are planned for 2019-20, the cumulative abstraction reduction figure is the same for both reporting periods.

Line 5 – Abstraction incentive mechanism

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

The AIM score is expressed in Megalitres (to 1 decimal place).

Line 6 – Compliance with water quality standards (%)

We expect our mean zonal compliance (MZC) performance to remain stable for the rest of the AMP at 99.96% which is above the PC level of 99.95%. We have delivered an enhancement to our pesticide removal treatment at Iver WTW in December 2018 and this may lead to a small improvement in performance. The installation of metaldehyde removal treatment at

North Mymms WTW will be delivered in June 2020, so will not have an impact on MZC in this AMP.

Line 7 – Customer contacts for discolouration (number per 1000 population)

Changes since September Plan

- We have updated the 2018-19 and 2019-20 forecasts for lines 8-11

We expect our performance with regards to customers contacting us concerning discolouration of their water supply to remain stable for the rest of the AMP at 0.23 which is below the PC level of 0.66. We have now completed the mains cleaning projects in our four highest risk zones and this has helped in reducing customer contacts regarding discoloration. Early indications from 2019 are that contact rates remain low and we are on track to continue to meet this performance commitment.

The 2018/19 figure was predicted to be 0.27 in the September Plan. This figure has been amended to the actual performance figure of 0.23 in the Revised Plan and we have amended our prediction for 2019/20 to 0.30 as we believe this is the level of performance we can maintain.

Line 8 – Unplanned interruptions to supply > 12 hours (no. of properties)

Changes since September Plan

- We have updated the 2018-19 and 2019-20 forecasts
- Following on from an incident on the 27th March on the A3 Wisley, Surrey, it appears approximately 100 properties were affected by an unplanned interruption >12 hours. Our forecast for this performance commitment is now 300 for 2018/19. We have not been able to make this amendment in the table as these have been locked down for submission.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 9 – Number of burst mains (no. of bursts)

Changes since September Plan

- We have updated the 2018-19 and 2019-20 forecasts

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 10 - Affected customers not notified of planned interruptions

Changes since September Plan

- We have updated the 2018/19 and 2019/20 forecasts

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 11 - Planned work taking longer to complete than notified

Changes since September Plan

- We have updated the 2018/19 and 2019/20 forecasts

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 12 - SIM Service Score

Changes since September Plan

- We have an updated SIM score (as per R10 Lines 1-8), but this has not been updated in App 5 data table.
- Forecast for 2018/19 total SIM Service Score is 81 (R10 forecast for 2018/19 has been updated to 82)

For the quantitative element, we expect to see continued reduction in both unwanted contacts and complaints, with a greater reduction in 2nd stage than 1st stage as we continue delivering improvements to customer journeys and targeted training.

For the qualitative element, we expect to continue along the same trajectory we have seen the last 2 years, with improvements to our survey score.

Line 13 - Value for Money Survey

Forecast for 2018/19 is 67.8 and 2019/20 is 67.8.

The index is influenced by various measures. Based on analysis of these measures, we have considered likely performance and how it will feed through to the overall value for money index. Our projection is that the index will be at a similar level over the next two years as we have seen based on historic trends as well as metering roll out plans, future bills, estimated levels of supply interruptions, customer communications activity and the influence of broader economic outlook. The slight improvement is driven by future bills being lower and customer perception improving compared to 2015/16, as well as overall satisfaction levels increasing, following customer journey transformation programmes delivering benefits.

App6 - PR14 reconciliation – sub-measures

General

As we do not have sub-measures this table is a nil return.

App7 - Proposed price limits and average bills

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

App8 - Appointee financing - Section A

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

App9 - Adjustments to RCV from disposals of interest in land

Changes from September Plan

In our Revised Plan submission, we have reforecast our land sales for AMP6, reducing the amount of land to be disposed and therefore the value from our previous forecast. We forecast to dispose of £0.9m of land in 2018-19 and £1.6m of land in 2019-20.

During 2018/19 we established our Land Group. All information relating to the potential disposal of sites is evaluated by our Land Group, which holds bi-monthly meetings. The Land Group has responsibility for our land and property strategy which has been fully revised. The land sale estimates are based on current market conditions and are subject to change. The Land Group works with our land agent to monitor the value of potential disposal sites, with a view to prioritising high value sales in the medium term over low-medium value sales in the short term.

The full review of our Land strategy has resulted in the revision of forecast sales which were reported in our September Plan of £11.2m. This comprised £8.6m for 2018/19 and £2.6m for 2019/20. This change mainly relates to;

- The removal of some candidate sites for disposal as following a detailed review we want to retain them as they continue to offer operational, ecological and resilience benefits or have the potential to offer these benefits in the future
- Delaying some disposals as we review our operating model across our regions as we develop our detailed AMP7 delivery plans
- Changes in valuations with our new land agent using current market value
- Differing some disposals as we will be able to achieve greater proceeds with further work on site or where we believe that we will be able to achieve greater proceeds with different timing of disposals.

General

The table has been completed for the three years to 2017/18, based on the actual figures reported in our Annual Report and Financial Statements. These have been subject to external audit. For the last two years of the period covered by the table, we have entered our forecasts of land sales as required.

At the time that price limits are finalised, the actual figure for the fourth year will be known and can be used in the calculation of price limits.

Any variation between forecast and actuals for year 5 will be adjusted for at the following price review.

App10 - Financial ratios

App11 - Income statement based on the actual company structure

App11a - Income statement based on a notional company structure

App12 - Balance sheet based on the actual company structure

App12a - Balance sheet based on a notional company structure

App13 - Trade receivables

App14 - Trade and other payables

App15 - Cashflow based on the actual company structure

App15a - Cashflow based on a notional company structure

App16 - Tangible fixed assets

App17 - Appointee revenue summary

App18 - Share capital and dividends

App19 - Debt and interest costs

For all of the above please refer to the “Financial Model Based Data Tables” section at the end of this document.

App21 – Direct procurement for customers

Changes since September Plan

- Cost profile for South East Strategic Reservoir has been moved back by one year to be consistent with option delivery year in our revised draft WRMP19
- The costs shown have changed to align with CPIH (deflator)
- We have appended to the commentary our DPC Assessment

Section A to J for each project

Line 1

The data produced for this line complies with the definition provided

Line 2

The data produced for this line complies with the definition provided

Line 3

The data produced for this line complies with the definition provided

Line 4

The data produced for this line complies with the definition provided

Line 5

The data produced for this line complies with the definition provided

Line 6

The data produced for this line complies with the definition provided

Line 7

The data produced for this line complies with the definition provided

Line 8

The data produced for this line complies with the definition provided

An Appendix to this commentary has been added at the end of this document covering the terms of the Direct procurement costs.

App22 – Pensions

Section A

Line 1, 3 and 4 - Charge for DB schemes ~ residential retail, wholesale water resources and wholesale network plus

The total of these three lines added together show the total pension accounting charges under FRS101 for Defined Benefit schemes (Pension Current Service Cost).

Assumptions: -

- 2012/13 to 2017/18 charges are taken from our Annual Report and Financial Statements. (employee cost).
- 2018/19 charge is taken from our financial budget.
- 2019/20 onwards we assume an annual 5% reduction in defined benefit members, based on an assessment of the retirement profile of active members, plus an increase in cost for inflation.

Allocation between Retail, Water Resources and Network Plus has been based on actual and forecast membership of the scheme. We have identified the cost centre for each member and then allocated their cost using the same method as our internal allocation model used to populate tables within the regulatory accounts for 2017/18. Please refer to the Accounting Separation Methodology Statement published on our website.

Section B

Line 10, 12 and 13 - Charge for DC schemes ~ residential retail, wholesale water resources and wholesale network plus

The total of these three lines added together show the total pension accounting charges under FRS101 for Defined Contribution schemes.

Assumptions: -

- 2012/13 to 2017/18 charges are taken from our Annual Report and Financial Statements (employee cost).
- 2018/19 charge is taken from our financial budget.
- 2019/20 onwards: we assume the impact of joiners and leavers will net off against each other hence the charge remains constant apart from an increase in cost for inflation.

Allocation between Retail, Water Resources and Network Plus has been determined on the same basis as for section A – Defined benefit scheme. Please refer to the Accounting Separation Methodology Statement published on our website

Section C

Line 19, 21 and 22 - Cash contributions (DB schemes, ongoing) ~ residential retail, wholesale water resources and wholesale network plus

The total of these three lines added together show the total ongoing cash contributions to Defined Benefit schemes.

Under our current agreement, in 2018/19 the total ongoing cash contributions to the scheme will be £4.2m.

Following negotiations with our pension trustee, we have assumed our ongoing annual contribution will rise to £5m from 2019/20 and for all future years. In AMP7 the contributions have been converted into 2017/18 CPIH.

Allocation between Retail, Water Resources and Network Plus is performed on the same basis as Section A

Section D

Line 19, 21 and 22 - Cash contributions (DB schemes, deficit recovery) ~ residential retail, wholesale water resources and wholesale network plus

The total of these three lines added together show the total deficit recovery contributions to Defined Benefit schemes.

Following negotiations with our pension trustee we have assumed no additional contribution from 2019/20 and for all future years.

Allocation between Retail, Water Resources and Network Plus is performed on the same basis as Section A.

App23 - Inflation measures

Changes since September Plan

- We have revised our projections of RPI and CPIH from the September Plan so that the CPIH is 2.0% and RPI 3.0%. These are equal to the 'early view' projections published by Ofwat. This addresses Ofwat's IAP observation that "The company should revise its business plan and associated financial modelling to be based on our 'early view' of long term CPIH of 2.0% and RPI of 3.0%, or provide compelling evidence why this is not appropriate'

General

We have completed this table with actual values for the inflation indices using the Office for National Statistics publications to January 2019.

App24 - Input proportions

Changes since September Plan

- App24 takes data from WS1 and R1 to calculate proportions of expenditure. As expenditure in WS1 and R1 have changed in our Revised Plan, this will affect the proportions in App24.

General

This table reports forecast proportions of expenditure (operating and capital) for the following input price categories for each business units: -

- Labour
- Energy
- Chemical
- Materials, Plant, Equipment
- Other

Operating Expenditure

We build our operating expenditure forecast by cost types, hence the relevant cost type was allocated to one of the above categories.

Capital Expenditure

We looked at each individual investment portfolio and assessed this against the above categories.

App24a - Real price effects (RPEs) and efficiency gains

Changes since September Plan

Sections B & C – Wholesale real price effects
We have updated our estimates of Real Price Effects (RPEs) to reflect

- changes to the proportions of expenditure for each input category in table App24 which are weights in the RPE calculation
- changes in our projection of CPIH from 1.87% to 2.0%.

We have changed real price effects estimates for capital expenditure from 0.18% in September to 0.31%. This reflects the change in inflation and is calculated by subtracting CPIH inflation of 2.0% from our estimate of capital expenditure input price increase, 1.69% per year, leaving 0.31%.

Sections H & I – Assumed efficiency gains

We have followed the same methodological approach for these cells as in the September Plan, and this leads to updates of the efficiency percentages as a consequence of our updating the expenditure projections in table WS1.

Sections B & C Wholesale real price effects

We have considered our wholesale costs and how input price inflation may alter those costs in the period 2020-25. Although there are multiple input prices that influence wholesale business costs, we have concentrated on those we consider most material:

- Power
- Labour
- Materials and consumables
- Construction Output Price Inflation

Power

Our power costs arise predominantly from purchasing electricity supplies for our operations. We have projected input prices for electricity using the Department of Business, Energy and Industrial Strategy's *Updated Energy and Emissions Projections, 2017 Annex M Growth and Price Projections.* This statistical bulletin presents a range of energy price scenarios corresponding, for example, to high and low economic growth and high and low prices for primary fuels used in power generation. We have taken an unweighted average of the published industrial electricity price scenarios to produce average/mean estimates of electricity prices. The BEIS projections predict real terms growth in electricity prices averaging 1.8% per year, as in the table below. As these prices are already published in real terms, we have not further deflated them by CPIH:

	2020/21	2021/22	2022/23	2023/24	2024/25
Real 2017 price p/kWh	11.57	11.83	11.81	11.95	12.24
Real Growth Rate (%)	3.2%	2.3%	-0.2%	1.2%	2.5%

Labour

We have studied the evolution of labour costs and made use of a report prepared for us by Economic Insight to project labour costs. Economic Insight projected that nominal wage inflation could be expected to be in the range 2.1% to 2.9% per year, with an average/mean estimate of 2.4%.

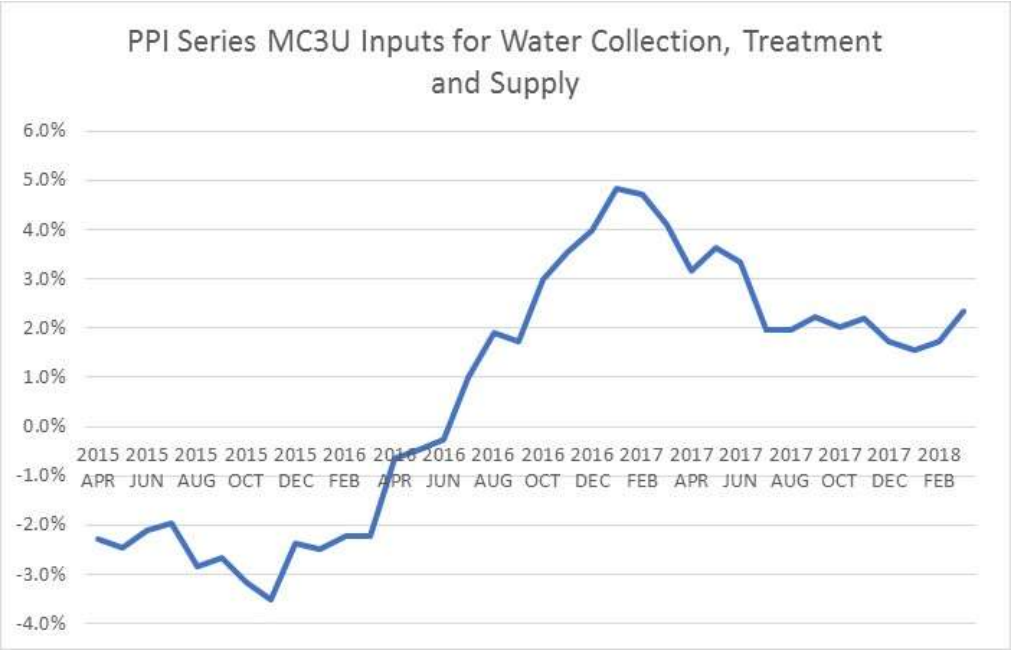
To produce their estimates, Economic Insight considered a range of evidence, based on:

- Econometric modelling
- Extrapolation of existing trends in labour market statistics
- Projections made by independent forecasters

We have chosen to use Economic Insight's advice, taking their average/mean case, 2.4% per year as the nominal labour input price increase.

Materials and consumables, including chemicals

We have measured the price of input materials and consumables to the water industry using the MC3U Series, which is a component of the ONS Producer Price Inflation series. Since 2015, when input prices were undergoing deflation, input prices have recovered and are running at a nominal rate of about 2.0% per year. Extrapolating from past data, we project that materials and consumables input prices will increase by 2.0% per year, in line with recent trends in the PPI evidence.

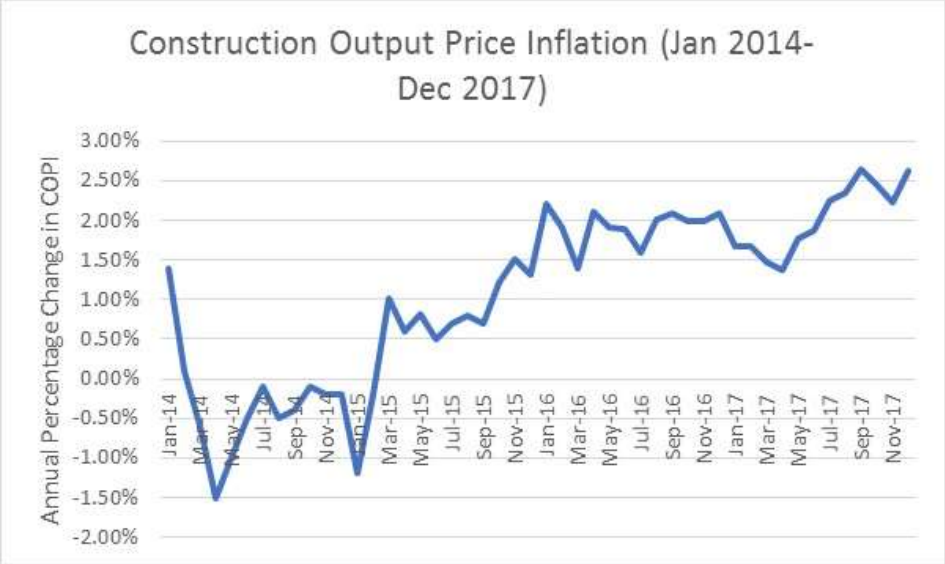


Source: ONS

Construction Output Price Inflation

We have studied Construction Output Price Index (COPI) data published quarterly by the ONS since 2015, and by extrapolation of this data, have produced our forecast of COPI.

We have found that since April 2015, COPI has been running at a nominal annual average rate of 1.69%. The rate of inflation has increased since mid-2015, following a period of falling construction prices. Our projection is 1.69% nominal construction output price inflation, the average rate observed over the period January 2014 to November 2017.


Construction Output Price Inflation (Jan 2014-Dec 2017)
Annual Percentage Change in COPI
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
-0.50%
-1.00%
-1.50%
-2.00%
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
May-15
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17

Source: ONS

Real Price Effect

Not including electricity, for the reason noted above, we converted nominal values for inflation into real terms, by dividing by CPIH as projected in Table App23 and in accordance with the formula in the Final Guidance on Business Plan Data Tables. For real price effects, we calculated the weighted average real inflation, by multiplying the projected real terms input price inflation for each expenditure category by the weights in Table App24, which show the contribution of each category to wholesale Totex. The results of this calculation form the entries for the table.

Sections F & G - Input price pressures included in residential retail and business retail

We commissioned Economic Insight to estimate input price inflation for our retail business. They have calculated a bespoke Affinity Water retail inflation index based on the proportionate contributions of input costs to our total retail expenditure and projected movements in the following input price series:

- Labour cost
- Bad debt
- Postage costs
- Information Technology
- Property
- Meter reading

Economic Insight's report concludes that an average/mean estimate of nominal input price inflation for our retail business would be 1.89% per year on average as below:

	2020/21	2021/22	2022/23	2023/24	2024/25
Forecast of Gross Retail IPP (%)	1.68%	1.95%	1.91%	1.93%	1.96%

Source: Economic Insight

For depreciation charges, Economic Insight recommend that we use the nominal input price inflation index they calculated for Information Technology, on the basis that most investment in the retail business can be thought of as arising in IT activities.

	2020/21	2021/22	2022/23	2023/24	2024/25
Forecast of Gross Retail IPP (%)	0.72%	0.73%	0.74%	0.74%	0.74%

Source: Economic Insight

Sections H & I: Wholesale assumed efficiency

The guidance to the table requires that efficiency gains be expressed as the difference in expenditure between what the company expects to spend in year 't' and what it would have had to spend in year 't-1' to deliver the same level of services. It further notes that 'the assumed efficiency gain should be expressed as a percentage reduction relative to the year before.'

Lines 26 and 31

Starting with our total operating expenditure recorded in Table WS1, we deducted enhancement operating expenditure to produce our 'base opex' line, corresponding to what we would have had to spend in opex to deliver the same level of services as in the prior year. Our assumed efficiency gains are then the real terms percentage reductions in base opex expenditure each year, relative to the prior year.

Line 27

There is no expenditure projected for maintaining the long-term capability of assets in water resources, so this line is zero.

Lines 28, 29, 30 and 32, 33, 34 and 35

It has been more difficult to produce efficiency gain assumptions for capital expenditure as required by the guidance - 'the difference in expenditure between what the company expects to spend in year 't' and what it would have had to spend in year 't-1' to deliver the same level of services'. This is because for maintenance expenditure, whilst we maintain the same level of service, our capital expenditure profile is not smoothed through the period. Instead it reflects our choices about the timing of maintenance investments and the effects on expenditure in individual years, of large maintenance projects. The annual variability of capital expenditure means that in some years, expenditure is rising relative to its prior year. This does not automatically mean that we have become less efficient, but that the size and nature of the investments we propose are different to prior years.

Enhancement expenditure, by its very nature, is changing the level of service. As such, it is not readily possible to compare one year's expenditure with its prior year whilst at the same time, holding the level of service constant. Enhancement expenditure tends also to be unevenly phased so subject to year on year fluctuations unrelated to efficiency improvement.

Therefore, for the capital expenditure lines we have derived our exposition of assumed efficiency gains in capital expenditure activities by comparing our projection of capital expenditure priced in real 2017/18 terms, at our current costs, with the post efficiency expenditure we propose in our plan (Table WS1) which includes our planned efficiencies. The figures we present then are the year-on-year percentage changes in capital expenditure resulting from the efficiency improvements we have included in our plan.

Sections L & M: Assumed efficiency gains in residential retail and business retail

Section L

Lines 46 & 47

Starting with operating expenditure and capital expenditure as reported in table R1, we derived assumed efficiency gains in retail by removing input price inflation and growth in customer numbers to produce our underlying real terms opex and capex projection that holds the level of service constant. We have considered that providing retail services to a growing number of customers over the period constitutes an enhancement to service levels. We have then calculated our assumed efficiency targets as the percentage change in expenditure each year relative to its prior year.

Section M

We have entered zeroes for this Section as we have exited the non-residential retail market.

App25 - PR14 reconciliation adjustments summary

General

The inputs to this table are the final adjustments to prices for the 2010 to 2015 (AMP5) period arising from:

- true-up of actual capex spend in 2014/15 compared to the expected expenditure at the time of the PR14 determination
- correction to indexation of RCV.

We have used the values published by Ofwat, in Updated 2010/15 Reconciliation (December 2017) to populate this table, after making the necessary indexation adjustments using the RCV Feeder Model and the Revenue Feeder Model.

App26 - RoRE Scenarios

Changes since September Plan

- As per Ofwat's IAP guidance we have updated the financial models used to underpin the RORE analysis that is required to populate App26, details of this update can be found in the model-based output tables commentary.
- Sections A & B Revenue – we have changed our approach in line with Ofwat's IAP guidance to consider the impact of the WFRIM mechanic used to true up wholesale revenues for over/under collection in any given year. The scenario now shows the downside impact only for penalties incurred for overcollection of revenues above the 2% threshold up to a level of 2.5%. The assumptions around water trading revenues have been modified after re-assessment to now include the potential of new regional water trading arrangements in the upside scenario.
- Sections C & D Totex – We have re-assessed the modelled level of over/under performance on totex and adjusted the scenario to a 10% over or under spend for a downside or upside scenario respectively. The upside impact of modification to the approach on water trading mentioned above has also been reflected in the upside for costs. As part of the IAP actions we have now included the impact of the retained uncertainty mechanism associated with the potential increased sustainability reductions needed in the Brett region.

General

App26 was completed in line with Ofwat's guidance contained within the published document 'Delivering Water 2020: Our methodology for the 2019 price review, Appendix 12: Aligning risk and return', within Section 3 titled 'Scenario analysis and risk assessment'. The pre-tax economic impact, in a 2017/18 CPIH year average price base, of an upside and downside case for each of the prescribed scenarios listed in the guidance has been assessed and modelled. We felt that the prescribed scenarios in the guidance covered the relevant attributes to our business so chose not to include any additional scenarios. The upside and downside scenarios applied to the base business plan submission for each of the variables below were assessed to be within the P90/P10 probability range as per the guidance.

Sections A & B - Revenue

These sections were completed by using past data and expert opinion to derive the suitably probable economic impact of movements in review for each of the price controls while also considering the impact of water trading incentives. It was assessed that the supply/demand pressures driven by weather related activity would be the main area of impact and this was suitably modelled for each of the price controls. This was applied through a 3% increase or decrease on the modelled revenue in the base business plan submission to represent the economic impact for an upside and downside scenario respectively.

Sections C & D – Totex

Within each wholesale price control, the level of economic impact associated with the suitable probability of increased/decreased costs after a sharing mechanism has been modelled and represented. Using past data and expert opinion, the main factors considered within this modelling were the economic impact of asset failures and demand/supply pressures. The suitable level impact applied was an increase of 4% in all totex for a downside scenario and a decrease of 4% for an upside scenario. A sharing rate of 50% was applied within each period to ascertain the economic impact of this movement.

Sections E & F – Residential Retail Costs

The level of economic impact driven by the movement in costs within the residential retail price control has been modelled focusing on the movement in bad debt as the key contributing factor.

Sections G & H – Business Retail – no input required for AWL

Sections I & J – ODI

The economic impact for penalties/rewards in each proposed ODI was modelled based on a suitable level of probability and assigned to the relevant price control.

Sections K & L – WaterworCX

This section examines the economic impact of a resulting reward/penalty within the C-MeX and D-MeX mechanics as per guidance issued by Ofwat. The impact from C-MeX was attached to the residential retail price control and the impact from D-MeX was attached to the Water Network price control. For C-MeX, the level of reward/penalty was applied to modelled Residential Retail revenue within each period to ascertain the economic impact of an upside and downside scenario. The upside scenario applied a 1.2% reward against modelled revenue of £29.4m while a downside scenario was assessed as a 2.4% penalty. The economic impact of D-MeX was calculated using the level of reward/penalty applied to modelled Developer Services income within each period. The upside scenario of a 2.5% award was used while a downside scenario of a 5% penalty was applied.

Sections M & N – Financing

Forward curves for gilts and libor were used to assess the suitable upside and downside scenarios to apply to the assumptions around new debt raised within the AMP. The economic impact was spread across the wholesale price controls using the RCV allocation amounts as shown in App8. This was applied by increasing the interest rate assumption for all new debt raised in the AMP within our financial modelling by 2% for the downside scenario and reducing the assumption by 2% for the upside scenario.

Section O – Tax rate – linked to input from App29.

App27 - PR14 reconciliation - financial outcome delivery incentives summary

Changes since September Plan

- Compared to its September Plan, the company forecasts that it will incur ODI penalties in respect of year 4 for its Leakage ODI. Further information on its performance level is given in the commentary to Table App5.

General

We confirm that the entries we have made in Table App27 are consistent with those in Table App5. We also confirm that as an AMP6 'enhanced' company, the +/1 to 2% RoRE aggregate collar/cap is not applicable.

App28 - Developer Services (wholesale)

Changes since September Plan

Section C - App28 - Developer services (wholesale)

2016/17 diversions (s185) contributions include £1.618m of payments received for costs incurred in relation to the HS2 rail programme. As disclosed in our Annual Performance Report ('APR') for the year-ending 31 March 2017, these payments were included in the diversions line within the analysis of capital contributions and land sales table (table 2E of our APR) to offset the expenditure incurred (included within tables 2B, 4B and 4D of our APR). £7.639m of HS2 payments received relating to 2017/18 included in table 2E our APR for the year-ending 31 March 2018 have not been included within this table and the diversions (s185) contributions figures for the remaining years of AMP6 and for AMP7 also exclude forecast receipts. These contributions have been net against the related expenditure in table WS1 Line 14.

£1.533m and £0.383m of contributions in 2016/17 and 2015/16 have been reclassified from other contributions (as presented in the APRs for the years ending 31 March 2017 and 31 March 2016 respectively) to requisitioned mains to bring the presentation of these contributions in line with the regulatory accounting requirements updated for 2017/18 annual reporting for table 2E of APRs.

On review of this table originally submitted it was noted that connection charges presented for 2017/18 did not agree to table 2E of the APR for the year ended 31 March 2018. This has been corrected in this resubmitted table, reducing connection charges by £0.726m. Please note our APR for 2017/18 correctly reflects all grants and contributions.

In line with the updated IAP queries guidance from Ofwat (published 18/03/2019) we confirm that line C11 includes contributions from local and highway authority schemes under the New Roads and Street Works Act 1991. That is, line C11 is the total contributions received from local authorities, highway authorities and private companies to divert water mains (Water Industry Act s185).

AMP6 connection volumes on lines A1 and A2 are as per WS3 lines 14 and 13 respectively. The 2018/19 and 2019/20 years have been updated to align with our WRMP submission.

Unchanged from September Plan

General

The following are key to the completion of App28.

- The submission as presented has been wholly derived from the supporting schedules contained within the workbook
- The broad balance between bill-paying customers and developers has been maintained in line with our Charging Arrangements for New Connections Services 2018/2019.
- Costs and output are in base year 2017/18 and are forecast according to the change in volumes of connected properties.
- Infrastructure charges for new connections have been prepared in accordance with Ofwat's final rules 'New connections charges for the future - England in November 2017', in that the total value of income offset allowances has been included within our company's redefined water infrastructure charge.
- The strategic infrastructure programme expenditure is the result of a comprehensive zonal review of the future developments in our operational area and validated against our WRMP forecast.
- We can confirm, where necessary, actual figures are consistent with those published in our Annual Performance Reports.

Section A, Line 1 - Total number of new residential connections and 2 - Total number of new business connections

Lines A1 and A2 are as per WS3 lines 14 and 13 respectively and show a significant increase in new residential connections and an associated decrease in new business connections in year 2020-21. This is the result of a data cleansing exercise linked to the reallocation of properties incorrectly transferred to the non-household (NHH) market during the seeding of the market. The net effect on total new connections is unchanged and therefore so is the overall impact on costs and contributions as costs and contributions are forecast on a per property basis using actual costs and numbers of properties connected from 2017/18.

Section C – Line 11 - Diversions (s185)

2016/17 diversions (s185) contributions include £1.618m of payments received for costs incurred in relation to the HS2 rail programme. As disclosed in our Annual Performance Report ('APR') for the year-ending 31 March 2017, these payments were included in the diversions line within the analysis of capital contributions and land sales table (table 2E of our APR) to offset the expenditure incurred (included within tables 2B, 4B and 4D of our APR). £7.639m of HS2 payments received relating to 2017/18 included in table 2E of our APR for the year-ending 31 March 2018 have not been included within this table and the diversions (s185) contributions figures for the remaining years of AMP6 and for AMP7 also exclude forecast receipts.

Section I Line 36 - Band A – grants and contributions received during the year – for non-contestable works

With respect to new mains, the proportion of non-contestable works has been set at 5% and reflects the cost of carrying out the connection to our existing mains.

Commentary in addition to September Plan

Section I Line 38 - Band A – forecast contestable services expenditure

We note that the label of this item does not correspond with the definition included further down within the template (forecast expenditure each year for non-contestable water infrastructure works, within the company's A banding). We have assumed this to be a typographical error within the template provided. To confirm, when completing this form, we have deemed this line item to be the contestable expenditure incurred by us in relation to the installation of s45 service connections. Contributions received in relation to this work is reported within Section C Line 7 – connection charges (s45).

Section I Line 39 - Band A – infrastructure expenditure forecast

We note that the label of this item does not correspond with the definition included further down within the template (forecast expenditure each year for contestable water developer services, within the company's A banding). We have assumed this to be a typographical error within the template provided. To confirm, when completing this form, we have deemed this line item to be the expenditure incurred by us in relation to requisitioned mains (s43, s55 & s56) and diversions s185). Contributions received in relation to this work is reported within Section C Line 7 – connection charges (s45).

App29 - Wholesale tax

Changes since September Plan

Section A, Lines 1&2 - Brought forward capital allowance pool – General 18%

We have updated the total balance of the Plant & Machinery pool to reflect the latest forecast.

Section B, Lines 7&8 - Brought forward capital allowance pool - Longlife 6%

We have updated the total balance of the long life asset pool to reflect the latest forecast.

The rate of capital allowances for long life assets will reduce from 8% to 6% with effect from 1 April 2019. The forecast capital allowances claim for the year ended 31 March 2020 is therefore reduced, and the forecast balance of the long life asset pool at 1 April 2020 has increased. We have updated the balance at 1 April 2020 to include the impact of the rate change in the previous year.

Section D, Lines 19,20,21,22,24,26,27,28,29&31 – New capital expenditure

We have updated the percentage allocation of new capital expenditure to reflect changes in AMP7 capital expenditure.

Section E, Lines 69&70 – Disallowable expenditure

We have updated allowable depreciation on capitalised revenue expenditure to reflect changes in the amount of new capital expenditure qualifying for a tax deduction based on depreciation (Section D, Lines 24 and 31).

We have also updated the apportionment of brought forward capitalised revenue expenditure between Water Resources and Water Network Plus, to reflect a small change in the RCV split. This does not change the total amount of allowable depreciation; however, it does change the allocation of allowable depreciation between Water Resources and Water Network Plus.

Section A, Lines 1&2 - Brought forward capital allowance pool – General 18%

We have forecast the balance of the main Plant & Machinery pool (assets with an expected useful life of less than 25 years) at 31 March 2020 by rolling forward the actual pool balance as at 31 March 2017. We have apportioned the brought forward balance between Water Resources and Water Network Plus on the basis of the RCV split.

We have not disclaimed any capital allowances in previous periods.

Section B, Lines 7&8 - Brought forward capital allowance pool - Longlife 6%

We have forecast the balance of the main long life asset pool (assets with an expected useful life of 25 years or more) at 31 March 2020 by rolling forward the actual pool balance as at 31 March 2017. We have apportioned the brought forward balance between Water Resources and Water Network Plus on the basis of the RCV split.

We have not disclaimed any capital allowances in previous periods.

Section C, Lines 13&14 - Brought forward capital allowance pool - Structures and buildings 2%

The Structures & Buildings Allowance (SBA) is available on qualifying costs of new non-residential buildings where the contract was entered into on or after 29 October 2018.

Details of how the SBA will be applied have not yet been published, however we expect the balance of the Structures & Buildings pool at 1 April 2020 to be insignificant.

Section D, General – New capital expenditure

We calculated the percentage allocations in Section D by analysing gross (i.e. before deducting contributions) new capital expenditure on a project-by-project basis. We analysed

the projects in-house, and engaged Chandler KBS, our capital allowances adviser, to review our assessment of the tax treatment of large and/or complex projects.

Section D, Lines 23&30 - Proportion of new capital expenditure qualifying for a full deduction in the year

We claim Research & Development Allowance (RDA) for capital expenditure on qualifying Research & Development. It is not possible at this stage to forecast the amount of AMP7 capital expenditure that will qualify for RDA.

We currently also claim Enhanced Capital Allowances (ECA) on qualifying water and energy efficient plant and equipment, however the ECA scheme ends on 31 March 2020 and will therefore not be available during AMP7.

Section E, lines 54&55 - P&L expenditure not allowable as a deduction from taxable trading profits

We have estimated disallowable expenditure, which is mainly business entertaining, car lease rental restriction and legal fees related to capital transactions.

Section E, lines 59&60 - P&L expenditure relating to renewals not allowable as a deduction from taxable trading profits

All P&L expenditure relating to renewals is allowable as a deduction from taxable trading profit.

Section E, lines 64&65 – Change in general provisions

We have no forecast general provisions at 31 March 2020.

Section F, lines 74&75 – Finance lease depreciation

There are two elements to finance lease depreciation:

- Depreciation of assets held under finance leases that are subject to tax in accordance with Statement of Practice 3/91;
- Depreciation of the right-of-use asset in respect of leases that were that were accounted for as operating leases prior to the introduction of IFRS 16.

We are not expecting a significant transitional adjustment on adoption of IFRS 16, therefore no further tax adjustments are required in respect of finance leases.

Section G, lines 79&80 – Grants and contributions taxable on receipt

The tax treatment of all grants and contributions that are taxed on receipt follows the accounting treatment, therefore we do not make any adjustments in the tax computation in respect of these grants and contributions.

Section G, lines 84&85 – Amortisation on grants and contributions

We account for contributions to mains extensions and diversions as deferred revenue, however for tax purposes we treat these contributions as capital items. Contributions are deducted from the long life asset pool when received, thereby reducing the capital allowances claimed. Amortisation of the deferred revenue is treated as non-taxable income, in order to avoid taxing the contributions twice.

Section I, line 99 – Statutory corporation tax rate

This is the main corporation tax rate of 17% with effect from 1 April 2020 (Section 46, Finance Act 2016).

App 30 - Void properties

Changes since September Plan

- Following the initial assessment of our September BP, we benchmarked our residential voids performance against the rest of the industry. We found that our original target, 2.3% would have left us below upper quartile in 2024/25. Therefore, we have reset our targets to reach 2.1% target in 2024/25 – industry upper quartile performance. The table below shows that the upper quartile is 2.14% (Southern Water)
- Benchmarking of voids from companies' PR19 submissions:

Name	Line #	Line description	Units	31/03/2019	31/03/2020	31/03/2021	31/03/2022	31/03/2023	31/03/2024	31/03/2025
Anglian Water	1	residential voids / Household connected	%	3.28%	3.24%	3.24%	3.24%	3.24%	3.25%	3.26%
				8	9	9	9	9	10	10
Bristol Water	1	residential voids / Household connected	%	1.94%	1.91%	1.92%	1.88%	1.85%	1.82%	1.80%
				1	1	1	1	1	1	1
Dwr Cymru	1	residential voids / Household connected	%	3.90%	3.84%	3.67%	3.61%	3.54%	3.48%	3.41%
				10	10	10	10	11	11	12
Hafren Dyfrdwy	1	residential voids / Household connected	%	6.48%	6.45%	6.40%	6.36%	6.31%	6.26%	6.22%
				15	15	15	15	15	15	15
Northumbrian Water	1	residential voids / Household connected	%	5.01%	4.95%	4.62%	4.57%	4.51%	4.45%	4.41%
				14	14	13	13	13	13	14
Portsmouth Water	1	residential voids / Household connected	%	2.47%	2.31%	2.30%	2.28%	2.26%	2.24%	2.22%
				4	4	3	3	4	6	6
SES Water	1	residential voids / Household connected	%	3.00%	2.79%	2.60%	2.42%	2.26%	2.10%	1.96%
				7	7	8	6	3	3	4
Severn Trent	1	residential voids / Household connected	%	4.28%	4.18%	3.98%	3.73%	3.48%	3.24%	2.99%
				12	12	12	11	10	9	9
South East Water	1	residential voids / Household connected	%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%
				3	3	4	4	6	7	8
South Staffs Water	1	residential voids / Household connected	%	2.88%	2.68%	2.55%	2.43%	2.32%	2.11%	1.89%
				6	6	6	8	7	4	2
Southern Water	1	residential voids / Household connected	%	3.39%	2.86%	2.58%	2.39%	2.29%	2.20%	2.14%
				9	8	7	5	5	5	5
Thames Water	1	residential voids / Household connected	%	4.06%	3.98%	3.90%	3.90%	3.77%	3.77%	3.73%
				11	11	11	12	12	12	13
United Utilities	1	residential voids / Household connected	%	7.13%	7.09%	7.05%	7.00%	6.96%	6.92%	6.88%
				16	16	16	16	16	16	16
Wessex Water	1	residential voids / Household connected	%	2.14%	2.03%	1.93%	1.93%	1.93%	1.93%	1.93%
				2	2	2	2	2	2	3
Yorkshire Water	1	residential voids / Household connected	%	4.79%	4.73%	4.65%	4.61%	4.56%	4.52%	3.37%
				13	13	14	14	14	14	11

Figure 3:Voids benchmarking

Line 1 - Number of void properties ~ residential

The forecast number of measured and unmeasured billed residential properties are from Table R1 and Table WS3 of the plan. We project unmeasured voids will continue at the same rate as observed in 2017/18, however, as the number of unmeasured properties is falling, due to metering, this equates to the total number of unmeasured voids falling.

We have set a performance commitment to reduce residential voids to 2.1% by 2024/25, compared to the 2.3% submitted in September 2018.We have projected with the high level of transients (second highest in the Industry) we would reach this from last year's actual performance in 2017/18 to 2024/25. We have set a stretching target, rather than accomplishing this in a straight line, we have increased the pace within the first two years, so that 45% of the improvement is made over the first two years of AMP7.

To achieve our proposed commitments, we continue to work with third parties, using data to validate customer occupancy, proactive contact to empty properties, promoting our digital self-service home move journey and Landlord Tap (this is an easy to use website that allows landlords of residential properties of England and Wales to provide water companies with details of those responsible for the payment of charges) will enable customers to register at addresses in an efficient way reducing the time properties remain empty. Where data and customer responses have not been successful we intend to physically visit the properties to capture occupier details.

As we continue our universal metering programme we will be able to identify potential false voids quickly and focus attention to where water is being used.

Line 2 - Number of void properties ~ business

For non-household voids, we obtained the number of billed non-household properties from Table WS3 of the plan. Non-household voids were projected forward at a base level, using the same void rates as in 2017/18.

In addition, we project that 200 properties currently classed as void could be considered as returned to charge in AMP7 as MOSL records show that the retailer is paying for volumetric consumption. Furthermore, further investigation will take place on meters that are currently not being read and therefore we believe we will be able to identify and bring into charge 400 properties over AMP7.

The number of NHH void properties is also influenced by demographic changes, which alters the stock and mix of properties connected. Since our September plan we have re-forecast the number of properties as part of Water Resources Management Planning, and this has resulted in a lower number of expected NHH void properties than before. This is particularly in evidence between 2019/20 and 2020/21.

App32 – Weighted average cost of capital for the Appointee

General

Section A was completed using Ofwat's published early view and guidance on WACC. The notional gearing assumption of 60% was used with the WACC calculation as per the document linked above.

The inputs for the 2025-2030 range take the WACC assumption for 2020-2025 driven by the linked document above and adjusts the cost of debt for the debt profiled at the end of AMP7 as per the guidance assumption.

Section B uses the guidance from Section A as a basis and applies the dividend policy for our actual gearing of 80% thus reflecting our target actual structure. The actual cost of debt from App20 is applied to the embedded cost of debt calculation and new debt is assumed to target a similar level of cost to the current capital structure, maintaining current cost of debt.

App33 – Wholesale operating leases reclassified under IFRS16

General

The lease of our main office (the Hub), all vehicle leases and the Data Centre lease will be reclassified under IFRS 16. Leases for printers and other facilities items will not be reclassified.

Allocation of leases between Retail, Water Resources and Water Network Plus has been based on the designated user of the lease. We have identified which cost centre they are paid from and then allocated their cost using the same method as our internal allocation model used to populate tables within the regulatory accounts for 2017/18. Please refer to the Accounting Separation Methodology Statement published on our website.

Where more than one business unit utilises an asset, it is allocated on the basis of principal use. Using this methodology, all of our leases are allocated to either Retail (outside the scope of App33) or Water Network Plus.

Assumptions

- The Hub lease expires in 2025/26. It will be renewed, but the new lease is outside the scope of App33.
- The size of our fleet will remain constant. When a vehicle lease ends, another lease will be taken out immediately and on the same terms (length and cost of lease).
- The lease of server space for our Data Centre will cease on (if not before) 31 December 2020. The maximum cash payment will be £177k. We intend not to renew this lease, but even if it is renewed, the new lease is outside the scope of App33.
- Leases for printers and other facilities items will not be reclassified as they are of low value. Their future opex value will remain constant at 2017/18 levels.
- A cost of capital of 4.5% has been used to determine capex value (NPV of the lease over its lifetime). This differs to the discount rate of 3.17% used to calculate the opening RCV adjustment on leases in existence at the start of AMP7.

Section A – Water resources

None of our leases reclassified under IFRS 16 have been allocated to Water Resources on a principal use basis.

Section B – Water network plus

Lines 22, 24, 26, 28 – Existing leases are those which commenced before 1 April 2018. All of our vehicle leases are between 2 and 5 years, such that all leases will expire by 31 March 2023.

Lines 23, 25 – New leases are those commencing between 1 April 2018 and 31 March 2020. No new leases will expire before 31 March 2022.

Lines 27, 29, 31, 33 – New leases are those commencing between 1 April 2018 and 31 March 2020. All of our vehicle leases are between 2 and 5 years such that all leases will expire by 31 March 2025.

Line 34 – The Hub lease is the only existing lease which expires after 1 April 2025.

Lines 35, 36 – No existing or new leases (commencing before 1 April 2018) will expire after 31 March 2030.

Line 38 – The discount rate of 3.17% is our wholesale cost of capital on a blended 50:50 RPI/CPIH basis.

Section C – Bioresources

None of our leases reclassified under IFRS 16 have been allocated to Bioresources as we do not operate in this market.

Section D – Wastewater network plus

None of our leases reclassified under IFRS 16 have been allocated to Wastewater Network Plus as we do not operate in this market.

Section E - Dummy

None of our leases reclassified under IFRS 16 have been allocated to Dummy on a principal use basis.

Section F - Summary of IFRS16 impact

Line 107 – Current treatment of the Hub leases and vehicle leases.

Line 108 – Current and future treatment of leases for printers and other miscellaneous leases.

Line 110 – A capex value of £15.1m will be recognised on transition with a further £1.1m - £2.8m of additions each year thereafter (due to profiling of the replacement of vehicles).

Lines 111, 112 – There are no finance leases included on the balance sheet.

Wholesale water service tables

WS1a - Wholesale water operating and capital expenditure by business unit

Changes since September Plan

AMP6 has been updated to reflect the latest totex positions for 2018/19 and 2019/20.

AMP7 has been updated to reflect post IAP and Ofwat actions changes to totex which effect lines: -

Line 7 ~ Other operating expenditure excluding renewals

Line 8 Local authority and Cumulo rates

Line 13 Maintaining the long term capability of the assets ~ non-infra

Line 14 Other capital expenditure ~ infra

Line 15 Other capital expenditure ~ non-infra

Line 20 Grants and contributions ~ operating expenditure

Line 21 Grants and contributions ~ capital expenditure

This table breaks down actual and forecast wholesale operating and capital expenditure by business units for the periods of 2017/18 to 2024/25.

The 2017/18 figures are taken from our published regulation accounts table 4D. Along with the regulatory accounts we are required to publish our methodology statement on cost allocation. Please refer to the Accounting Separation Methodology Statement published on our website.

General

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

For further details on the items in the Portfolio, please refer to the Wholesale Technical Appendix.

PLEASE NOTE THIS TABLE HAS BEEN COMPLETED BASED ON CURRENT ACCOUNTING STANDARDS AND DOES NOT INCLUDE ANY RECLASSIFICATION FOR OPERATING LEASES IFRS16.

Section A - Operating expenditure (excluding Atypical expenditure)

Lines 1 – 4 and 7 – 9

AMP6 year 4 and 5 operating expenditure is based on our latest board approved forecast. We have used our actual operating expenditure in 2017/18 as the base year to allocate costs between wholesale business units in all future years. Therefore, AMP6 year 4 and 5 costs are allocated across business units based of the same proportion as 2017/18.

Our AMP7 forecast for operating expenditure takes our exit position for AMP6 and adjusts for known operational differences (some results of investment portfolios) during the next five years. We have also in built many efficiencies for improvements during the AMP.

Following the IAP further changes have been made to due reassessment of enhanced opex and removing RPI link in Business Rates.

Similarly, in AMP7 our forecast of operating expenditure has been allocated across business units based of the same proportion as 2017/18.

Line 5 - Renewals expensed in year (Infrastructure)

Renewals expenditure is forecast as total infrastructure renewal expenditure along with the rest of our investment portfolios. We then calculate and element to expense based of various drivers. We assume all renewals expenditure is treated water distribution.

Line 10 - Third party services

This line shows the cost we incur of exporting treated water to a South East Water and other small rechargeable work. We have assumed our cost (and income) from third party services will at the same level as 2017/18 and remaining constant throughout AMP7.

Section B: Capital Expenditure (excluding Atypical expenditure)

Lines 12 – 16

Changes since September Plan

Update to AMP6 Year 4 and Year 5 forecasts.

- Lines 12, 13, 14, 15

Ofwat action AFW.CE.A1 – amendment of costs in response to Ofwat's cost efficiency challenge and our own external audits.

- Lines 12, 13, 14, 15

Ofwat action AFW.CE.A2 – revised the Portfolio to account for the additional £52.4m allowance for regional strategic solution development.

- Line 14

Section C - Totex

Line 20 - Grants and contributions ~ Operating expenditure

This includes contributions from developer for new connections.

Line 21 - Grants and contributions ~ capital expenditure

This includes contributions from developer for diversions and requisitioned mains.

In 2017/18, we included £7.6m of contributions from HS2 within the total figure. However, from 2018/19 onwards we have assumed any contributions from HS2 is netted off against cost within above lines (12-19) and therefore no HS2 contributions are included within this line. The only element remaining in totex will be the company's contribution for betterment cost during this project.

Section D - Cash Expenditure (excluding Atypical expenditure)

Line 23 - Pension deficit recovery payments

This line converts pension accounting charge (which is included within operating expenditure - Section A) into total cash contributions (ongoing plus deficit recovery payments). For a split between ongoing and deficit recovery payment please see Table App 22.

Following negotiations with our pension trustee we have assumed no additional deficit contributions from 2018/19

Line 24 – Other Cash Items

This line converts pension accounting charge (which is included within operating expenditure - Section A) into total cash contributions (ongoing contribution).

Please note for 2018/19 **we have not included** an additional cost of £1.5m relating to Guaranteed Minimum Pension Equalisation (which will hit line 7 ~ Other operating expenditure excluding renewals in our APR 2018/19). As this is not a cash adjustment it would be trued up within line 24 when we bring pension accounting charge (Current Service Cost) to total cash contributions.

Section E - Atypical expenditure

We are not expecting any Atypical expenditure in AMP7.

WS1 - Wholesale water operating and capital expenditure by business unit

Changes since September Plan

AMP6 has been updated to reflect a latest totex positions for 2018/19 and 2019/20.

AMP7 has been updated to reflect post IAP and Ofwat actions changes to totex which effect lines: -

Line 7 ~ Other operating expenditure excluding renewals

Line 8 Local authority and Cumulo rates

Line 13 Maintaining the long term capability of the assets ~ non-infra

Line 14 Other capital expenditure ~ infra

Line 15 Other capital expenditure ~ non-infra

Line 20 Grants and contributions ~ operating expenditure

Line 21 Grants and contributions ~ capital expenditure

All lease assumptions/figures made below have not changed.

The lease of our head office, all vehicle leases and the data centre lease will be reclassified under IFRS 16. Leases for printers and other facilities items will not be reclassified. Please refer to Table App33 and commentaries for further detail.

All figures in this table are equal to WS1a apart from the following adjustments: -

1. **Lease for our head office**.

   Our lease cost per year is £1.547m. We have removed the element which related to wholesale from our opex (line 7 ~ Other operating expenditure excluding renewals) from 2019/20 onwards.

   This lease expires in 2025-26. It will be renewed, but the additional capex will occur in AMP8.

2. **Vehicle leases**

   Our vehicle cost is approx. £2.400m per year across the whole business. We have removed the element which related to wholesale from our opex (line 7 ~ Other operating expenditure excluding renewals) from 2019/20 onwards.

   The size of our fleet will remain constant. When a vehicle lease ends, another lease will be taken out immediately and on the same terms (length and cost of lease), hence additional capex has been added to reflect the change (on line 13 Maintaining the long term capability of the assets ~ non-infra).

3. **Data Centre**

   The annual charge for our data centre is £0.237m. We have removed the element which related to wholesale from our opex (line 7 ~ Other operating expenditure excluding renewals) in 2019/20.

   This lease is due to cease on 31/12/2018. We do not intend to renew this lease hence no additional capex is needed under IFRS 16.

The net effect of all the adjustment is reduction to totex by £6.7m as our head office lease will be renewed in AMP8.

WS2 - Wholesale water capital and operating enhancement expenditure by purpose

General

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Most items in the Portfolio map to lines 1 to 23 inclusive. We have assigned £70.9m to line 24 "strategic regional solutions" as per Ofwat's instruction received by email on 7th March 2019.

For further details on the items in the Portfolio, please refer to the Wholesale Technical Appendix.

Section A: Enhancement expenditure by purpose ~ capital

Changes since September Plan

- Update to AMP6 Year 4 and Year 5 forecasts.
    - Lines 1, 6, 11, 13, 14, 15, 17, 18, 19, 22
- Ofwat action AFW.CE.A1 – amendment of costs in response to Ofwat's cost efficiency challenge and our own external audits.
    - Lines 1, 3, 4, 5, 6, 8, 10, 11, 13, 14, 18, 19, 21, 22, 23
- Ofwat action AFW.CE.A1 – reallocation of £2.0m for our proposed resilience and environment community pilot schemes from line 10 to line 14 as directed by Ofwat in the Initial Assessment of Plans. Costs subsequently disallowed.
    - Lines 10, 14.
- Ofwat action AFW.CE.A1 – reallocation of 4% from the Water Savings Programme from line 10 to line 22 as directed by Ofwat in the Initial Assessment of Plans.
    - Lines 10, 22.
- Ofwat action AFW.CE.A2 – revised the Portfolio to account for the additional £52.4m allowance for regional strategic solution development. £18.5m has been removed from line 8 and included on line 24 "strategic regional solutions" with the additional £52.4m as per Ofwat's instruction received by email on 7th March 2019. The total included on this line is £70.9m.
    - Lines 8, 24.
- Revised draft WRMP – revision of schemes to balance supply and demand.
    - Lines 8, 10

Section B: Enhancement expenditure by purpose ~ operating

Changes since September Plan

- Update to AMP6 Year 4 and Year 5 forecasts.
    - Line 51.
- Ofwat action AFW.OC.A11 – leakage costs increased to respond to Ofwat's challenge to increase leakage reduction.
    - Line 49.
- Ofwat action AFW.CE.A1 – amendment of costs associated with the home water audits linked to our Water Savings Programme, reducing to match the unit rate of Ofwat's feeder model for supply / demand schemes.
    - Line 49.

WS2a - Wholesale water cumulative capital enhancement expenditure by purpose

General

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Most items in the Portfolio map to lines 1 to 23 inclusive. We have assigned £70.9m to line 24 "strategic regional solutions" as per Ofwat's instruction received by email on 7th March 2019.

For further details on the items in the Portfolio, please refer to the Wholesale Technical Appendix.

Section A: Cumulative capital enhancement expenditure by purpose

Changes since September Plan

- Update to AMP6 Year 4 and Year 5 forecasts.
    - Lines 1, 6, 11, 13, 14, 15, 17, 18, 19, 22
- Ofwat action AFW.CE.A1 – amendment of costs in response to Ofwat's cost efficiency challenge and our own external audits.
    - Lines 1, 3, 4, 5, 6, 8, 10, 11, 13, 14, 18, 19, 21, 22, 23
- Ofwat action AFW.CE.A1 – reallocation of £2.0m for our proposed resilience and environment community pilot schemes from line 10 to line 14 as directed by Ofwat in the Initial Assessment of Plans. Costs subsequently disallowed.
    - Lines 10, 14.
- Ofwat action AFW.CE.A1 – reallocation of 4% from the Water Savings Programme from line 10 to line 22 as directed by Ofwat in the Initial Assessment of Plans.
    - Lines 10, 22.
- Ofwat action AFW.CE.A2 – revised the Portfolio to account for the additional £52.4m allowance for regional strategic solution development. £18.5m has been removed from line 8 and included on line 24 "strategic regional solutions" with the additional £52.4m as per Ofwat's instruction received by email on 7th March 2019. The total included on this line is £70.9m.
    - Lines 8, 24.
- Revised draft WRMP – revision of schemes to balance supply and demand.
    - Lines 8, 10

WS3 Wholesale water properties and population

Lines 1 to 7:

Changes since September Plan

- Lines 1 – 5 now include social tariffs where applicable. (As per Ofwat query AFW-IAP-CA-007).
- Lines 6 & 7 now include voids (As per Ofwat guidance) - The methodology clearly explains the difference in figures between AMP6 and AMP7. It is also worth noting that the company will undertake an internal re-classification of its non-household properties in 2020-21, which has been applied in Lines 3 and 5 but hasn't been applied to the WRMP in Line 6 due to timing of the WRMP modelling.
- Lines 3, 5, 6 & 7 are now consistent with the 2017/18 APR submission
- Line 1 - 5 for AMP7 were updated to be consistent with our revised draft WRMP property forecast – this in turn has impacted on WS18 which is further explained in the commentary for WS18.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 8 -Total connected properties at year end

This is a calculated field. Compliant with appropriate line guidance.

Line 9 - Number of residential meters renewed

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 10 - Number of business meters renewed

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 11 - Number of meters installed at the request of optants

Changes since September Plan

- 2017/18 has been updated due to change in methodology which provides a more accurate number of optants as used in our water savings programme; 2018/19 actuals and 2018/19 to 2024/25 forecast have also been updated as a result.
- The table reflects our revised 2018/19 and 2019/20 forecast for our Water Savings Programme.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 12 - Number of selective meters installed

Changes since September Plan

- The table reflects our revised 2018/19 and 2019/20 forecast for our Water Savings Programme.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 13 - Total number of new business connections

Changes since September Plan

- We have used year to date information from our software SWIM to improve our assessment for 2018/19

Changes for future years have been made to reflect our revised draft WRMP19

Line 14 - Total number of new residential connections

Changes since September Plan

- We have used year to date information for 2018/19
- Changes to 2020-21 have been made to reflect our revised draft WRMP19

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 15 - Total population served

Changes since September Plan

- Change since previous submission to reflect updated WRMP19 forecast.

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

The total population served does not come from the APR published 2017/18 figure but, instead, from the revised draft WRMP19. We felt appropriate to use this figure as it reflects our latest assessment of the average occupancy rates in our supply area (2.54 for measured households, 2.65 for unmeasured households). Please refer to Ofwat query AFW-IAP-CA-002.

For 2018/19 we have used the Q3 water balance in the absence of an AR19 due to the time of submission. For 2019/20 and beyond, we have used the rdWRMP19 final plan demand forecast.

Line 16 - Number of business meters (billed properties):

Changes since September Plan

- Ofwat query AFW.CE.010 – amendment of billed business properties measured to line up with APR submission (56,278)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Line 17 - Number of residential meters (billed properties)

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Differences to APR 2018

The figures differ from APR18 figure Table 8 Line 12a because of change in definition which means that void properties and metered properties on a changeover tariff are excluded.

Line 18 - Company area

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

WS4 - Wholesale water other (explanatory variables)

Line 1 - Number of lead communication pipes replaced for water quality

- 2017/18 figure is taken from the Lead Pipe Replacement Programme (LPRP) team's progress report and does not include the 304 lead communication pipes that were lined.
- The figures for 2018/19 and 2019/20 are taken from the current LPRP projections for the rest of the AMP. At this time, it is assumed that all lead communication pipes will be replaced, not lined.
- The figures for AMP7 are taken from the Company's drinking water quality submission to DWI in December 2017 which proposed removing/lining all lead communication and supply pipes in Z075, Underground Zone 1 in the Brett community. The projection is for the work to be spread evenly across AMP7. For the purpose of this report it is assumed that all lead communication pipes will be replaced, not lined.

Lines 2-5 – Demand and supply side enhancements to the water balance

Changes since September Plan

- Enhancements for AMP7 (2020/21 – 2024/25) have been updated to be consistent with our revised draft WRMP option selection.
- Yield of Runley Wood Lower Greensand option has increased from 3 Ml/d to 5 Ml/d

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Lines 6-8 – Energy Consumption

Changes since September 2019 submission

- Since the September Plan we have used for the reporting year 2018/19 ten months of actual billed consumption and 2 months of provisional or budget for Gas and Electricity. For our SEW exclusion we have used eight months of actual consumption and average for four months.

Our Energy 2030 strategy sets out our ambition for energy optimisation and renewable energy strategy up to 2030.

The strategy document refers to an industry standard Cornwall report which anticipates increases in unit cost rates hence and influences our mix of energy sources. Allocation between water resources and network plus is based upon percentage allocation in APH and factors in costs from vehicles and offices as a contributing percentage.

Combined consumption Growth Rate is 0.25% per year in line with our strategy and we have factored in the effects of new asset investments phased by anticipated delivery date.

Further net increases in energy consumption are embedded in the number as we reflect the essential changes in water movement around our network as sustainability reductions impact supply/demand balance.

Benefits which are in-line with our Energy 2030 strategy have been deducted, broadly split between, firstly, capital maintenance and focused pump efficiency alterations and, secondly, site and process optimisation.

Line 9 – Mean Zonal Compliance

We expect our Mean Zonal Compliance (MZC) performance to remain steady for the rest of AMP6 at 99.96%. We have delivered our pesticide treatment project at Iver WTW, continue with our pesticide treatment project at North Mymms WTW (due for completion by June 2020) and our lead communication pipe replacement programme in Watford and Finchley. These

projects will improve water quality in the respective supply areas and reduce the likelihood of exceedances of the relevant standards in the future. This will lead to slight improvements in MZC, that are not sufficiently significant to change our predicted performance.

Line 10 – Compliance Risk Index

Compliance Risk Index (CRI) is a relatively new measure which is calculated and published by DWI using a methodology that includes an interpretive element by DWI. The 2018/19 performance level has been updated from the September Plan. Our predicted performance in September 2018 was 3.27 based on our average performance for the past four years (2014-17). Our latest estimation of performance in 2018/19 (based on our assessment of all the water quality data reported to DWI for 2018) is 4.78. DWI will issue the CRI figures for 2018 in May 2019.

For forecasting performance in 2019/20 and AMP7 we have assessed the improvements to CRI of completing the construction of the additional GAC filters at Iver WTW, installing the Actiflo Carb treatment at North Mymms WTW, other capital expenditure at treatment works, our "Zero coliform" initiative and the transformation we are making to our overall water quality strategy. We are forecasting that these actions together should improve our CRI performance to 3.04 in 2019/2020 and 2.8 during AMP7.

Line 11 – Event Risk Index

Event Risk Index (ERI) is a relatively new measure which is calculated and published by DWI using a methodology that includes interpretive elements by DWI. Our predicted performance in September 2018 was 100 based on performance levels of 2016 (102.24) and 2017 (104.076) which we approximated to 100. Our latest estimation of performance in 2018/19 (based on our assessment of all the water quality events reported to DWI for 2018) is 137.21. DWI will issue the final ERI figures for 2018 in July 2019.

For forecasting performance in 2019/20 and AMP7 we believe our estimation of an ERI score of 100 is still valid based on our experience of the last three years. We are looking to improve our performance, thereby reducing any impact on customers, through review of failure modes, training of staff, our "Zero coliform" initiative and the transformation we are making to our overall water quality strategy.

Line 12 - Volume of leakage above or below the sustainable economic level

Changes since September Plan

- We have changed the 17/18 and 2018/19 value as we have revised our total leakage in App2 for 2018/19 to reflect expected performance.
- We have changed the values for 2020/21 and beyond as a result of a revised WRMP19 demand forecast to meet more ambitious levels of leakage reduction (18.5% AMP7 reduction).

The data produced for these lines complies with the line guidance.

WS5 – Other wholesale water expenditure

Changes since September Plan

AMP6 has been updated to reflect a latest abstraction charge for 2018/19 and 2019/20 which effects lines: -

- Line 7 Environment Agency service charges/ discharge consents
- Line 8 Other service charges / permits

General

The 2017/18 figures differ from our published regulatory accounts (table 4V). As part of the PR19 process we have refined the methodology of allocating direct and indirect employment costs. This has resulted in a shift of costs and FTE from indirect to direct.

Section A - Other total expenditure

Lines 1 – 4 - Employment costs and FTE ~ directly and indirectly attributable

Please note we have populated these lines on a Total Expenditure basis, based on the "as is" insource/outsource model through AMP7.

For 2017/18 the data has been derived from our accounting separation model. Each cost centre has been allocated to direct or indirect employment and apportioned across the business unit accordingly.

For the remaining years of AMP6 we have used our latest board approved forecast to determine the employment costs and FTEs.

During AMP7 we have identified efficiencies which can be achieved and reflected this with the employment cost and FTEs.

As you will see our unit cost for direct employment is dropping across the years as we are reviewing are favourable terms & conditions which will result in a lower cost to employ per FTE. Our indirect unit cost is increasing throughout AMP7. This is because are aiming to employ specialist skills people to support the business achieve the outcomes.

Line 5 - Costs associated with Traffic Management Act

For 2017/18 this cost is equal to our published regulatory accounts table 4V. The cost is directly picked up from the general ledger.

We assume this cost will remain constant throughout AMP7.

Section B - Service charges

Lines 7 – 8 Environment Agency service charges/ discharge consents and Other service charges / permits

The total of these lines equal WS1 line 3 Abstraction Charges / Discharge consent.

For 2017/18 this cost is equal to our published regulatory accounts table 4V. The cost is directly picked up from the general ledger.

We have used the same apportionment split for the remaining years.

WS7 - Wholesale water local authority rates

Changes since September Plan

- After receiving confirmation from Ofwat on their methodology of calculating business rates within their feeder model, we have adjusted our cost to increase in line with CPIH instead of RPI. We knowledge that from 2018 the business rates multiplier would no longer be indexed by RPI and would change to CPIH.
- This has resulted in business rates reducing to £71.68m (reduction of £2.32m during AMP7 when compared to our original submission of £74.00m).
- We have also noted that Ofwat have not included any local authority rates in the allowance. We are charged a rates bill for our leased head office building for approximately £0.40m per year (2017-18 FYA - CPIH deflated). This totals £2.0m for AMP7. This amount is included in our submission for business rates of £71.68m in AMP7.

Section A

Line 1 - Wholesale Water business rates charge for current year before transitional relief

The charge includes Cumulo rates and local authority rates (Hub Rates – charge for our head office building).

- **Cumulo Rates**

The Cumulo rates have been calculated by multiplying the Rateable Value (RV) by the Non-Domestic Multiplier. We have an RV of £29.194m from 2017/18 following the revaluation exercise in 2017.

We have assumed our Non-Domestic Multiplier increases with RPI of 2.61% each year from 2019/20.

- **Local Authority Rates**

We have assumed local authority rates increase with CPIH of 2% each year from 2019/20.

Line 2 - Wholesale Water business rates transitional relief

This charge calculates the limit to how much our bill can change for Cumulo rates each year following the revaluation exercise in 2017. Our bills will gradually phase to the correct amount by 2020/21.

Section B

Line 12 - Change in wholesale water business rates costs due to Inflation (RPI)

Cumulo rates - shows the effect of an increasing non-domestic multiplier due to inflation. We have assumed RV rates remain the same at £29.194m in AMP7.

Local authority rates - shows the effect of inflation.

Line 13 - Change in wholesale water business rates costs due to CPIH deflator

Shows the effect of moving from Outturn (nominal) to 2017-18 FYA (CPIH deflated) from 2019/20 to 2020/21

WS8 – Third part costs by business unit for the wholesale water services

Section A

Not Applicable

Section B

Line 5 – Bulk Supplies

This line shows the cost associated with us exporting treated water to South East Water and other rechargeable work. This line is equal to table WS1 line 10 Third party services.

We have assumed our cost (and income) from third party services will remain at the same level as 2017/18 and remain constant throughout AMP7.

Section C

Not Applicable

Section D

Not Applicable

WS10 – Transitional spending in the wholesale water service

This table is intentionally left blank as we are not proposing any transitional spending in the wholesale water service.

WS12 - RCV allocation in the wholesale water service

Changes since September Plan

- The percentage share of RCV we propose to allocate to water resources is 11.00%, the same as in the September Plan and compares to 11.01% in the January 2018 valuation, so there is no material change.
- We have taken the opportunity to update table WS12 for our latest view of additions and depreciation charges in 2018/19 and 2019/20, consistent with the update of values for table WS1.

General

This table has been compiled by taking figures from audited accounts and in the case of forecast information, table WS1 of the current business plan. When accounting by service was introduced, we used the categorisation of our latest MEAV (Modern Equivalent Asset Value) exercise to allocate the current cost value across the services as we do not possess a current cost asset register. This allocation method was used in our regulatory accounts until March 2015. Since then we have been coding additions specifically by service type.

This methodology underpins all the figures in table WS12.

Changes from the September Plan are in Lines 11 to 14 (and associated totals) only. These reflect the updated forecasts within the resubmitted table WS1.

Line Commentary

Line 1 - Net MEAV per regulatory accounts as at 31 March 2015

The balance brought forward from 31 March 2015 has been lifted directly from note 6 of our 2014/15 Regulatory Accounts (Non-infrastructure Assets plus Infrastructure Assets). The split between Water Resources tariffs and Network Plus is per the introduction above.

Line 2 - Disposals

Disposals in 2015/16 and 2016/17 were solely vehicles (all fully depreciated and sold with a NBV of zero) and mains. The only impact seen is therefore within Network Plus. The current cost of the mains has been calculated by inflating the NBV from the original "date laid "to March 2017 prices.

Line 3 - Reclassification

We have not made any reclassifications.

Line 4 – Inflation

Inflation has been applied to line 1 lifting the values from March 2015 to March 2017 prices.

Line 5 – Additions

Additions are taken from Table 4D of the March 2016 Regulatory Accounts (inflated to March 2017 prices) and Table 4D of the March 2017 Regulatory Accounts. The column for Raw Water Abstraction has been allocated to Water Resources and the remainder to Network Plus.

Line 6 – Depreciation

Current cost depreciation for March 2016 and March 2017 was calculated and included within Table 4G of the regulatory accounts. In the absence of a current cost asset register, in line with the guidance within RAG 1.06 (2.1.5), we indexed the March 2015 value (per note 6 in the Regulatory Accounts) and adjusted for additions. To this we added the average non-expensed IRE over the AMP.

We also made a small allowance for assets that have already been depreciated to zero NBV since the previous year. For non-infrastructure assets, this was based on the annual falloff of the historic values found in table 33 of the June Return (line 7) which we have taken to be a suitable proxy for this. For infrastructure assets, we assumed an overall average life of 100 years and reduced the CCD by 1%.

The allocation between Water Resources and Network Plus is brought forward from note 6 with CCD on new additions within 2015/16 and 2016/17 being calculated specifically by asset into the appropriate category.

Line 7 – Other adjustments

We have not made any other adjustments.

Line 9 – Additions 2017-18

Additions for 2017/18 are taken from Table 2D of the 2018 Regulatory Accounts and converted to March 2017 prices.

Line 10 – Depreciation 2017-18

Depreciation for 2017/18 is taken from the calculation of CCD within table 4G of the 2018 Regulatory Accounts and converted to March 2017 prices.

Lines 11 & 13 – Additions 2018-19 and 2019-20

Additions are taken from Table WS1 of the 2019 Business Plan and adjusted to March 2017 prices.

Lines 12 & 14 – Depreciation 2018-19 and 2019-20

Depreciation has been calculated in a similar way to Line 6. New additions are depreciated using the average asset life derived from the CCD on new additions in 2015/16 and 2016/17. The allocation between Water Resources and Network Plus is assumed to be in the same proportion as per Line 6.

Line 15 – Other forecast adjustments 2017-2020

There are no other forecast adjustments.

Line 18 - Proposed RCV allocation 31 March 2020 (pre-midnight adjustments)

We considered all of the options set out by Ofwat on pages 5&6 of its Technical guidance (Jan 2017) – this gives guidance on how Ofwat want the calculations to be done and what aspects they would like companies to consider. The following table gives our reflections on these methods and estimates the outcome of using those methodologies.

The method that seemed most appropriate was the fourth one, as this reflects the way in which RCV has been constructed. However, this would give a very low allocation to water resources. The reason for this is that we, like other WoCs had a very low initial RCV at privatisation, due to the methodology which Ofwat used in order to calculate initial RCVs. After privatisation, the company has not built any significant new resources assets, so the amount of capex spent on water resources is relatively low, and this would lead to a very low allocation using this method.

We took a pragmatic view and decided to use the net MEAV methodology, which Ofwat's documents showed a strong preference for, and has a reasonable logic to it (it reflects the replacement value of the assets). Most of the other methodologies give a similar answer to the net MEAV approach, with the exception of capital maintenance. We believe that capital maintenance is not suitable as a basis of allocation as it is not stable over time.

Approaches/cross checks	Observations/Ofwat comments	Allocation estimate
Net MEAV approach to RCV allocation	Companies can consider a roll forward of the 2014/15 Net MEAV (based on the full revaluation of assets carried out at PR09)	11.4%
Gross MEAV approach to RCV allocation	This may not be totally unfocussed as assets existing in privatisation would be less represented than those that have been replaced more recently	12.9%
Splitting pre-privatisation assets at a discount to the RCV and post privatisation assets at full value	This may be difficult to calculate given changes to asset records and accounting classification since privatisation.	0.5%-4% estimate (depends on detail of method)
Historic expenditure –e.g. proportion of past expenditure, or operating costs and accounting charges, incurred on water resources	Depending on the data and the life of the assets, this may provide a good crosscheck or alternative approach to net MEAVs.	11.1% (14/15)
Totex	There is some logic for this, but perhaps an average over several years would be appropriate as the capex element of this may be 'lumpy'. This calculation is based on 2015/16 figures	12.1%
Capital Maintenance	There is logic to this, but it could be skewed by the age profile of assets, and could be 'lumpy'	20.4%
Projected expenditure –e.g. proportion of future expenditure expected on water resources	The proportion of future expenditure expected on water resources could be tested. Given the long life of water resource assets, the period of time that would need to be considered may be longer than company planning horizons.	This would naturally be based on Business Plan 2018 expenditure projections, which are unknown, but expected to be in the 10-15% range (lower end of the range more likely)

Approaches/cross checks	Observations/Ofwat comments	Allocation estimate
Economic value	The revenue stream from prices for water resources and other aspects of water supply set on a consistent long run basis. The historic and future expenditure considerations associated with the access price and compensation payments could be considered with this approach, building on Water Resource Management Plans	It doesn't seem possible estimate this today with any accuracy, as the value depends upon the methodology adopted at PR19. 15% +/- 5% would appear to be a reasonable estimate.
Averaged or hybrid approaches	In arriving at the RCV allocation, the choice between different approaches	Any combination of the above

The commentary for this line is specifically designed to reflect the feedback Ofwat gave to our January 2018 submission.

WS12a - Change in RCV allocation in the wholesale water service

Changes since September Plan

- The percentage allocation to water resources remains the same, 11.00% as in the September Plan. There are some minor changes to the reconciliation values in Lines 5-7, but these are not material being confined to the third decimal place.

General

The percentage share of RCV we propose to allocate to Water Resources has changed modestly, from 11.01% in our January 2018 submission to 11.00% now.

The change reflects the influence on Net MEAV of revisions we have made to our projected additions and capital maintenance charges, along with the effects of an additional year of inflation. As we are using the unfocused Net MEAV approach to RCV allocation, changes to our Net MEAV projection result directly in changes to RCV allocation.

Lines 5-7 – Explanation of changes

To value each of the reasons for change we began with the January 2018 submission, and made successive, stepwise changes to the calculations, holding all other variables constant. This allowed us to isolate the effects on the value of RCV in each business unit for each of the following:

- Changes due to an extra year of inflation that increases RCV in water resources by £4.17m, and increases RCV in network plus by £33.74m
- Changes in the level of additions in 2017/18 and 2019/20 that increase water resources RCV by £0.06m, and reduce network plus RCV by £0.06m
- Changes in the level of capital maintenance charges in 2017/18 – 2019/20 which increase water resources RCV by £0.094m and decrease network plus RCV by £0.094m.

Line 8 – Changes to allocation of assets between business units

We confirm that we have not made any re-allocations of assets between business units.

WS13 - PR14 wholesale revenue forecast incentive mechanism for the water service

Changes since September Plan

Lines 15-20 – Revenue recovered

Since submission of the Business Plan in September, the company has prepared and published its charges for 2019/20 charging year along with its Board Assurance statements. As part of this work it has updated its forecasts of revenue in Lines 15-20.

Measured revenue in year 4 is elevated as a result of the dry summer weather in 2018 that has primed measured water demand. The trend in projected revenues shows a drop in year 5 that appears inconsistent with trends over the previous years. In year 5, we project that unmeasured residential revenue will drop by about £12m, whilst measured revenue increases by about £8m.These are larger movements than typically seen in prior years.

This effect is caused by the operation of our Water Savings Programme of selective metering where we offer customers a 2-year transition period post meter installation, to switch to metered charging. Whilst about 20% of customers switch to metered charging in the period following meter installation, the remaining customers use the allowed transition period. At the end of the 2-year period, we transfer the customers to measured charging. From study of past meter installation jobs and records of the numbers of customers electing to switch, we can predict that there will be a cohort of 55,000 customers for whom the 2-year transition period will expire between the 2018/19 and 2019/20 charging years. Revenue from these customers would have shown as unmeasured revenue in 2018/19 but will be measured revenue in 2019/20. The discontinuity in revenue trends reflects then our switching of a sizeable cohort of customers, built up over 2 years of meter installation activity, from unmeasured to measured charging as their transition arrangements expire.

Line 23 – Water revenue recovered

As noted in our September Plan, we have become increasingly concerned with volatility in contributions. Our most recent estimate for 2018/19 is based on 10 months actual and 2 months forecast and exceeds the forecast we made in September. We forecast that contributions will remain elevated in 2019/20. As shown in line 23 and further in line 26, actual and forecast contributions are now more than £21m higher in outturn prices than anticipated at PR14.

This amount of excess contributions is material having reached about 7% of wholesale turnover. Therefore, we have completed the WRFIM Feeder Model and table WS13 assuming that additional revenue has been allowed to compensate for the loss of price controlled tariff revenue caused by growth in connections revenue. We refer to p47 of Setting price controls for 2015-20 : Final price control determination notice: policy chapter A3 – wholesale water and wastewater costs and revenues

> "…although we have decided not to allow automatic adjustments to allowed revenues for demand variations in wholesale controls, if demand for connections is unexpectedly high then we would nevertheless consider allowing extra revenue to compensate for the loss of price control revenue on a case-by-case basis."

We have entered the values for revenue recovered into the WRFIM model as below, to account for the revenue variances caused by excess contributions. As a result, the WRFIM feeder model produces a revenue carry forward amount, £8.303m in 2017/18p that compensates for the loss of price control revenue caused by excess contributions.

		2015/16	2016/17	2017/18	2018/19	2019/20
Revenue Recovered Actual and Forecast	£m nominal	272.473	280.478	284.256	291.907	287.557
Less Excess Contributions	£m nominal	0.310	4.137	4.079	5.927	7.417
Revenue Recovered Input to WRFIM model line 36	£m nominal	272.163	276.341	280.177	285.980	280.140

General

Line 7 – Specified discount rate

We have overwritten the value of 0.00% for the specified discount rate with the value 3.70%. This is in line with the guidance in the PR14 Reconciliation Rulebook, p45.

Line 22 – Water grants and contributions

The entries for line 22 for years 2015/16 and 2016/17 are pre-populated. The guidance to the table says that 'if a company is aware that previous years data has not been correctly reported, they should restate the figure in the pre-populated cells using the definition in the RAGs for 2017/18 reporting'.

In accordance with this guidance, we have over-written the values in these cells to correct previously reported figures.

This correction is needed because we became aware that we had not included mains requisition contributions in the total for Grants and Contributions in Table 2I for the prior years, 2015/16 and 2016/17. The amounts were not included because we had instead entered them under the heading 'other contributions' in table 2E, rather than under the heading 'Requisitioned Mains (s43, s55 and s56)'. As a result, the amounts were not carried forward into the total in table 2I which was used to pre-populate the cells.

The table below shows the figures published in the Annual Report and Financial Statements, and the revised amounts that the we wish to use for the purposes of the Wholesale Revenue Forecasting Incentive Mechanism (WRFIM). The revisions correctly include the contributions received for requisitioned mains. We have populated table WS13 and the WRFIM feeder model accordingly, so that at the price review, the incentives and revenue carry forward can be assessed correctly and at the time of tariff setting for 2019/20, we can adjust our tariffs correctly for accumulated revenue forecast errors.

	2015/16 £000	2016/17 £000
Table 2I Grants and Contributions – Regulatory Accounts	8,816	11,653
Table 2I Grants and Contributions - Revised	9,199	13,185

Line 26 – Water grants and contributions variance

In our 2017/18 annual report, we have recorded an accumulated WRFIM balance of £6.775m. This is predominantly the result of higher receipts from developer contributions than anticipated at the last price review and at the time of tariff setting.

As the current price control period has evolved, we have become increasingly concerned about the effects of volatility in developer contributions on water bills. One of the objectives of the WRFIM mechanism and licence amendment was to prevent large tariff effects from

accumulated revenue forecasting errors. However, as contributions have accelerated in recent years, their inclusion within the single till is having the opposite effect, heightening bill instability. This price review provides an opportunity to review the operation of WRFIM and based on our experience of the mechanism and to further the aim of bill stability, we suggest that in AMP7, developer contributions be taken outside of the coverage of the WRFIM mechanism.

WS15 - PR14 wholesale total expenditure outperformance sharing for the water service

Changes post 15 July submission

- WS15 was updated to replace the forecasted numbers in 2017/18 with actual numbers from the published accounts for line 11 - Water: Third party services (capex) and line 14 - Water: Disallowables. This was run through the feeder models and resulted in a change to the numbers in Table G.

Changes since September Plan

- The forecast for the remainder of AMP6 was amended to show the current forecast and feeds from table WS1. The updated numbers are run through the feeder models and this generates updated numbers for section G.
- The current forecast is applied in line 9 & Section D for 2017-18, 2018-19 and 2019-20 and these cells have been updated in line WS1. As part of this update was to include 'other cash items' shown on WS1 in line 13 of Section D for 2017-18, 2018-19 and 2019-20 which has also been applied through feeder models in order to populate lines 24 to 27.

General

This table was completed by first completing Ofwat's totex menu model available for download from the regulator's website.

This model uses various sources:

- Actual reported figures from our published and audited annual regulatory accounts, the Annual Performance Report (APR).
- The current forecast for the remainder of AMP6 is taken from the Company's board approved financial model 'Tamblin Internal Model v3.35' along with the calculation spreadsheet for converting statutory accounting basis opex to regulatory accounting basis opex.
- Numbers stated in the PR14 Final Determination published on Ofwat's web site are also required to complete the feeder model.

Section D line 15 – Water: Transition expenditure

We have overwritten the 5.006 in the AFW version of the tables released on 25 June 2018 with the figure 2.134. The figure of 2.134 has been used in the feeder models that correspond to previously published numbers relating to Water Transition Expenditure from 2014/15.

Section F - Business rates IDoK

This does not require any inputs as this section is only activated after a successful Interim Determination of K (IDoK) on Water Business Rates which is not the case for AWL.

Lines 26 & 27 – Water: Totex menu revenue adjustment at 2017-18 FYA CPIH deflated price base & Water: Totex menu RCV adjustment at 2017-18 FYA CPIH deflated price base

These lines were completed using Ofwat's Indexation model spreadsheets available for download from Ofwat's website

They required populating with inflation data available from the ONS web site

These lines also required outputs from the totex menu model mentioned above.

WS17 - PR14 water trading incentive reconciliation

Changes since September Plan

- Our position remains that we do not plan to introduce new exports in the period covered by the table. We have not, and do not plan to make material use of new imports in the period to 2020. As a result, there are no values to be input to the table.

The company can confirm that it has a trading and procurement code that has been approved by Ofwat.

General

We have concluded that we do not need to complete this table, as we have not introduced or made material use of new imports in the period 2013 to 2020. The incentive value of water we have imported, that might be argued to relate to new imports, is not material, less than £1,000 in the period 2015/16 to 2017/18.

WS18 - Explaining the 2019 Final Determination for the water service

General

Section A Line 1 – Residential customers metered

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Changes since September Plan

- Residential customers metered percentages has been updated due to property forecast changes in WS3.

Section A Line 2 - Number of contacts about drinking water (taste, odour and discolouration)

We completed our mains cleaning programme in March 2017 and this has resulted in a lower number of contacts from customers regarding discoloration of their water supply. We continue to manage our water supplies so that the aesthetic quality remains stable. The vast majority of customer contacts we receive regarding taste or odour are related to the interaction of the chlorine residual in the water supply with domestic fittings and we continue to provide appropriate advice to customers. Consequently, we believe customer contacts for discoloration, taste or odour will remain, in broad terms, around the 2018/19 performance level of 3000 per year in 2019/20 and throughout AMP7.

The 2018/19 performance level has been updated from the September Plan where we predicted 3000 contacts to the actual performance level of 2911 contacts.

Section B Line 3 - Number of catchment management schemes

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Section C Line 4 – Number of people receiving help with their bill.

Changes from September Plan

- For this line, our September Plan recorded and projected the number of customers receiving the LIFT social tariff. The figures in this April 2019 submission are different because they also include WaterSure customers. They are however unchanged from our November 2018 Affordability table submission.

We have based the calculations on the numbers of customers on our Social Tariff (LIFT) and Watersure. Figures for 2015 to March 2018 have been based on actual reportable figures. To project the number of customers receiving support for 2018/19 to 2024/25, we have used the level of cross subsidy (£4.50 for AMP7) x discount level x the number of households. The number of customers on our LIFT tariff falls slightly towards the end of the period. It has been necessary to restrict the numbers receiving assistance if we are to manage the cross subsidy within the £4.50 willingness to pay limit.

Section D Line 6

Our projections of the total volume of water traded are taken from the sum of lines 44 and 46 of Table Wn2. The total volume of water is lower that we had previously forecast in September because in our revised Water Resources Management Plan we plan to import lower volumes from bulk supplies than previously. This is a consequence of the revised Economics of Balancing Supply and Demand modelling, where cheaper options than imports were selected as part of the economic optimisation.

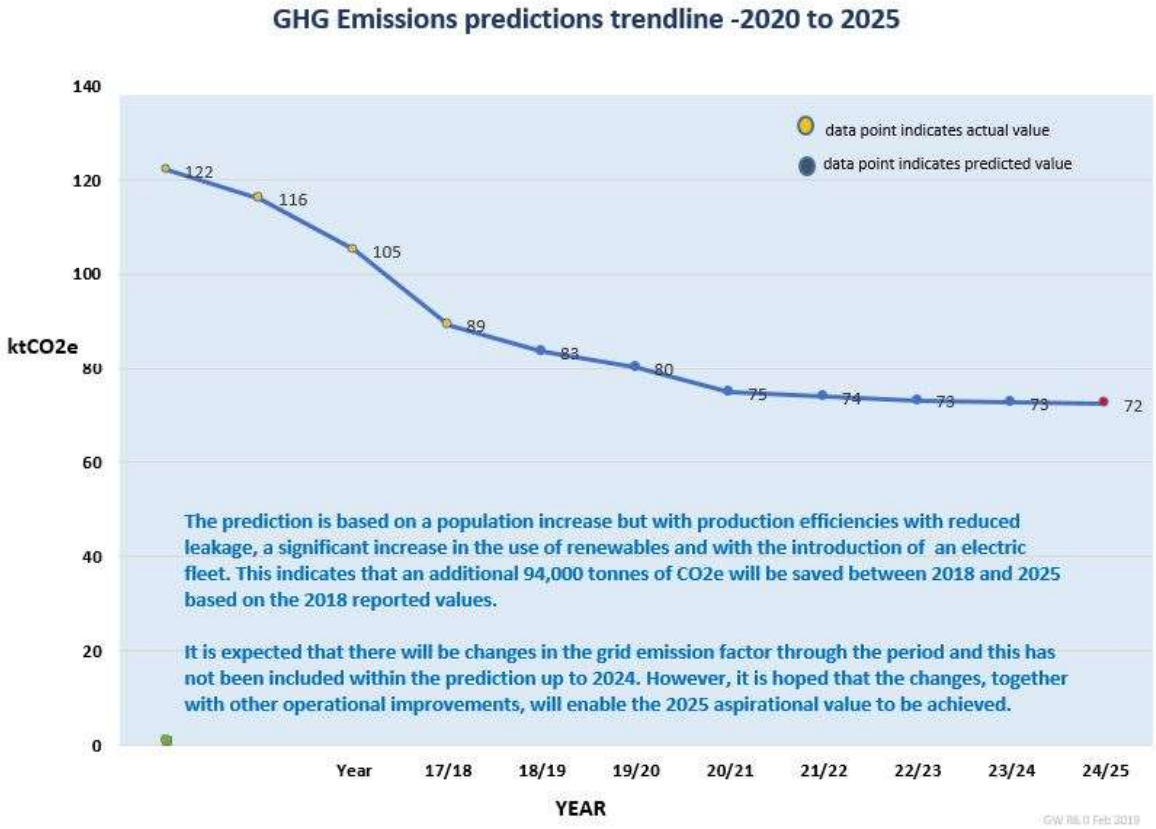
Section E Line 7 - Length of rivers improved as a result of WINEP Water Resource schemes

We comply with Ofwat's guidance for this line and have made no assumptions or interpretations of the guidance.

Section E Line 8 – Greenhouse gas emissions from water operations

Changes since September Plan

- We have reviewed performance and updated values to reflect revised outcomes



Our total gross GHG emissions are expected to continue their downward trend as the emissions associated with our purchased electricity (accounting for over 80% of our total) benefit from more renewable generation. This trend is expected to continue up to 2025 as we improve our leakage rates, implement efficiencies in our water production processes and move towards a fleet of electric vehicles.

We will continue to support the deployment of renewable energy by flexing our electrical demand at times of supply stress and through our participation in the National Grid's Power Responsive Programme. We will also continue the migration of our outsourced IT services to the cloud in a further effort to reduce our IT related GHG emissions.

The additional demand for water from the increase in supplied housing stock and the impact of likely local climate change effects on water sources is likely to affect the rate of decrease in emissions. Our prediction takes these into account based on general improvements and the uptake of technological advances.

Without increasing the use of renewable energy and the adoption of an electric fleet, the decrease in our GHG emissions is likely to become less significant over time due to these impacts and our prediction is based on a best fit trend from our GHG emissions data since 2015. The normal curve indicates that by 2025 our annual GHG emissions will be in the order

of 75ktCO2e whereas the preferred curve that incorporates innovation indicates that our emissions to be at 64ktCO2e with an additional 33,000 tonnes of CO2e to be saved over the period.

Our current reported GHG emission statement is as per the following table.

Greenhouse gas ('GHG') emissions statement[9]

GHG emission source	2017/18		2016/17	
	Gross[10] (tCO_2e)	Intensity[11] ($kgCO_2e/ML$)	Gross (tCO_2e)	Intensity ($kgCO_2e/ML$)
Scope 1	**6,204**	**18.7**	**6,141**	**18.8**
Fuel combustion	1,501	4.5	1,722	5.3
Process and fugitive emissions	2,524	7.6	2,322	7.1
Vehicle fleet	2,179	6.6	2,097	6.4
Scope 2	**75,580**	**228.4**	**89,927**	**275.2**
Purchased electricity	75,580	228.4	89,927	275.2
Statutory total (scope 1 & 2)[12]	81,784	247.1	96,068	294.0
Scope 3	**7,326**	**22.2**	**8,538**	**26.1**
Business travel in other vehicles	33	0.1	40	0.1
Outsourced IT activities	226	0.7	364	1.1
Electricity- transmission and distribution	7,067	21.4	8,134	24.9
Total gross emissions	**89,110**	**269.3**	**104,606**	**320.1**

[9] We report our GHG emissions following the 2015 UK Government's Environmental Reporting Guidelines and using the 2015 UK Government Conversion Factors for Company Reporting. We have included emissions within the direct management responsibility of the company. This is consistent with our financial reporting boundary except for scope 3 emissions, which are off-balance sheet emissions. Significant scope 3 emissions have been quantified for outsourced data support and emissions from the distribution and transmission of grid electricity. The data has been externally verified as part of our regulatory reporting requirements.

[10] We measure our gross GHG emissions in tonnes of carbon dioxide equivalent ('tCO_2e').

[11] We also monitor our relative operational GHG emissions from year to year through expressing our emissions by way of an industry standard intensity ratio, kilograms of CO_2e per megalitre ('$kgCO_2e/ML$') of clean water supplied.

[12] Statutory carbon reporting disclosures required by the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013.

Our CO2e emission predictions based on the two scenarios to 2025 are as follows

Actual		Prediction	Saving p.a.
Year	KtCO2e	ktCO2e	ktCO2e
2014/15	122		
2015/16	116		
2016/17	105		
2017/18	89	89	
2018/19		83	6
2019/20		80	3
2020/21		75	5
2021/22		74	1
2022/23		73	1
2023/24		73	0
2024/25		72	1

Section F Line 9 - Change in the average residential customer water bill over the period

Changes since September Plan

- The same approach below, as used in September 2018, has been applied to the updated and revised business plan submission data.

We have calculated the change in the average residential customer water bill over the period by dividing our forecast average household revenue by the expected number of billed households to produce expected average revenue per household. This is the same method we use to estimate average household bills for the Discover Water website. The average revenue per household we used includes the revenue effects of our forecasts of SIM penalty and gearing benefit sharing. We note that this average bill series differs from the average household bill projections presented in App7 because the latter series does not include the effects of SIM and gearing benefit sharing. To present bill changes in real CPIH 2017/18 price base terms, we have used the November to November movement in inflation indices, to align with the indexation adjustments to allowed revenue in the wholesale price control formula.

Section G Line 10 - Water totex including cash items and atypical expenditure

We have calculated the real value of totex including cash items by extracting the reported figure from our accounts - the last line of Table 2B in each of the years 2015-16 and 2016-17. We index those values using the CPIH Financial Year Average Index (unrounded) for the years 2017/18 and the year in which the expenditure was incurred. This is a slightly different approach to September where we used the CPIH index rounded to 1 decimal place.

Section H – Customer Engagement

Line 13 - Number of residential retail customers engaged with on the business plan

Whilst there were not any required actions for Engaging Customers, we wanted to share with Ofwat additional material in response to the comments within the initial assessment of plans and also outline that we have subsequently undertaken additional customer research, all of which is within other test area documents.

Since receiving the draft determination feedback on 31 January, we have undertaken 6 additional pieces of customer research, engaging with a further 3839 customers taking the total to 19162. This has allowed us to explore various topics further with customers, to support additional support for the business plan.

Customer engagement summary as follow:

Research	Number of customers engaged	Research method
rdWRMP focus groups	81	Focus Group
rdWRMP survey	987	Online
Community Strategy	25	Focus Group
Business Plan WTP	740	Online
Business Plan Bill profile	1000	Online
Performance Commitments	1006	Online

The wholesale water resource tables

Wr1 - Wholesale water resources (explanatory variables)

Lines 1-8

Changes since September Plan

There are very minor differences since APR value and September business plan submission. However, the base data for these lines has remained constant.

Sources / Treatment

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runleywood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Oughton Head to be recommissioned in 2024/25
- Chartridge, Chesham, Periwinkle Lane and Runleywood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)

Demand

- The updated DI projection updated for WN2 – Line 12 has been utilised
- Egham and North Mymms flows are constant to reflect booster installation from 2022/23

We comply with Ofwat's guidance for these lines and have used water into supply as the base data for apportionment and have included the export to South East water in the output of Egham.

Line 9: Number of Impounding Reservoirs

We comply with Ofwat's guidance for this table.

We have interpreted our two natural catchment lakes at Heron lake and Queensmead as being in this category as this is the closest one they could be assigned to. Both are only used for emergency purposes.

We have an Impounding Reservoir at Hillfield park which is maintained as part of our storage estate but is not counted in the tables as it does not put water into supply.

This line has been aligned with Table WR1 line 19.

Line 10: Number of Pumped Storage Reservoirs

We comply with Ofwat's guidance for this table.

This line has been aligned with Table WR1 lines 18-19.

Line 11: Number of River Abstractions

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

This line has been aligned with Table WR1 line 20.

Line 12: Number of Groundwater Works, excluding Managed Aquifer Recharge (MAR) water supply schemes

Changes since September Plan

- 2019/20 shows an increase from the submission as the recommissioning of Little Gaddesden was not envisaged at the time.
- 2024/25 shows an increase from the submission as a change in the rdWRMP has meant that schemes which were assumed to be turned off by 1st Apr 2024 will now be run until 31st Dec 2024.

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Differences from APR2018

- 2017/18 is lower than reported in APR18 as further reviews of the data found that we included two sites that should have been excluded from this line.

Line 13: Number of Artificial Recharge (AR) Water Supply Schemes

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Line 14: Number of Aquifer Storage and Recovery (ASR) Water Supply Schemes

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Line 15: Number of Saline Abstraction Schemes

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Line 16: Total Number of Sources

This figure is the sum of Lines 9 to 15 and any changes to this number are explained in line 12.

Differences from APR2018

The change from APR2018 is explained in line 12.

Line 17: Number of Reuse Schemes

We comply with Ofwat's guidance for this table.

We have made no assumptions or made any interpretations of the guidance.

Line 18: Total Number of Water Reservoirs

The data in this line complies with the definition provided and has been aligned with the number of impounding and pumped storage reservoirs in lines 9-10.

Heron and Queensmead lakes have been included for 2017/18 and 2018/19 as they have already been used due to high demand. They have been excluded for future forecasts as under normal operating conditions they would not be utilised. Chertsey and Walton continue to be excluded as the reservoirs are used for settlement as part of the water treatment process. Hilfield park is also excluded as this is not used operationally.

Differences from APR2018

2017/18 number is one lower than reported in APR18. This is due to Eastbury having been removed as it is a tank, not a raw water reservoir and is used for balancing flow not diurnal storage.

Line 19: Total Capacity of Water Reservoirs

The data in this line complies with the definition provided and is in line with the number of water reservoirs detailed in line 18.

Differences from APR2018

As detailed in line 18

Line 20: Total Number of Intake and Source Pumping Stations

Changes since September Plan

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Tappington south no longer included in revised WRMP schemes going forward from 2022/23
- Oughton head to be recommissioned in 2024/25
- Chartridge, Chesham, Periwinkle and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)

The data in this line has been aligned with the number of impounding and pumped storage reservoirs in lines 9-10 and river abstractions and groundwater works in lines 11-12 as well as the total number of sources in line 16.

We note Ofwat's response on 11/03/19 to a company query, which queried the situation where a borehole pump performs a dual purpose of abstraction and pumping into supply and stated that 'Any site that boosts potable water into the distribution system from that site should be counted in Wn2 Line 31 'Total number of booster pumping stations'. This implies borehole source pumping stations which pump directly into supply should be excluded from this line, however due to the timing of this response we were unable to incorporate this and consequential changes in other lines, and complete the rigorous assurance and governance required. We do however comply with RAG 4.07 which states that the Water Resources – Abstraction Service should include 'Borehole pumping assets – Pumping equipment, buildings and other sundry equipment' and are consistent with the guidance for WR1 line 21 which requires the 'Total kWs of all abstraction Pumpsets'.

Differences from APR2018

A coordinated review of our sources and source pumping stations identified that Stansted should be included as a single source pumping station (not two as previously reported in APR18). Although our Asset Management Information System identified Stansted as two separate pumping stations, they are in fact two boreholes in close proximity on the same site. In accordance with RAG 4.07 guidelines Stansted should therefore only be counted once.

Line 21: Total Capacity of Intake and Source Pumping Stations

Changes since September Plan

As per the changes detailed in line 20 as well as the below, which affect capacity only.

- Chertsey and Iver intake pumps updated to reflect the most current pump configurations on site from 2017/18 onwards
- Batchworth and The Grove increasing capacity from 2020-21 to compensate for Blackford being turned off as part of HS2 project

The data in this line has been aligned with the impounding and pumped storage reservoirs in lines 9-10 and river abstractions and groundwater works in lines 11-12.

We note Ofwat's response on 11/03/19 to a company query, which queried the situation where a borehole pump performs a dual purpose of abstraction and pumping into supply and stated that 'Any site that boosts potable water into the distribution system from that site should be counted in Wn2 Line 31 'Total number of booster pumping stations'. This implies borehole source pumping stations which pump directly into supply should be excluded from this line, however due to the timing of this response we were unable to incorporate this and consequential changes in other lines, and complete the rigorous assurance and governance required. We do however comply with RAG 4.07 which states that the Water Resources – Abstraction Service should include 'Borehole pumping assets – Pumping equipment, buildings and other sundry equipment' and comply with the guidance for which requires the 'Total kWs of all abstraction Pumpsets'.

Line 22 – Total length of raw water mains and other conveyors

We comply with Ofwat's guidance for this table.

Differences from APR2018

For the September Plan we have complied with the Regulatory Accounting Guidance (RAG 4.08) which means there is a difference to the guidance for APR 4P.20 (Total length of raw water mains and conveyors). This has had the effect of transferring all 13.2km of qualifying mains into Wn1 line 8. To be consistent with the current line guidance, we have entered zero km for 2017/18 and have recorded all 13.2km in Wn1 line 8.

Line 23 – Average Pumping Head Raw Water Abstraction

Changes since September Plan

- Egham and North Mymms flows are constant to reflect booster installation from 2022/23

Sources / Treatment

- Little Gaddesden to be re-commissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Oughton head to be recommissioned in 2045/25
- Chartridge, Chesham, Periwinkle and Runley wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)
- DI projection reforecast as aligned to WN2 – Line 12
- Egham and North Mymms have been fixed to reflect capital investment proposals & optimum operational strategy to meet demand

Boosters

- Additional treatment lift has been incorporated to account for treatment processes at surface works from specific onsite re-lift pumping. This redistribution of the previous lift allocation results in a relative reduction in abstraction lift and increase in treatment.

We comply with Ofwat's guidance for this line. The APH projection is baselined on our verified 2017/18 full year figures.

This line has been aligned with Table WN1 lines 3 and 40 and Table WN2 line 42.

Line 24: Total Number of Raw Water Abstraction Imports

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 25: Water Imported from 3rd Parties raw water abstraction systems

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 26: Total Number of Raw Water Abstraction Exports

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 27: Water exported to 3rd parties from raw water abstraction systems

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Wr2 - Wholesale water resources opex

This table provides further analysis of operating expenditure for water resources.

Changes since September 2019 submission

AMP6 has been updated to reflect a latest totex positions for 2018/19 and 2019/20.

AMP7 has been updated to reflect post IAP and Ofwat actions changes to totex which effect lines: -

- Line 3 Local authority and Cumulo rates
- Line 4 and 5 Other direct and indirect

Section A - Opex analysis

Lines 1 – 6

The totals of the lines for power, income treated as negative expenditure and Local Authority and cumulo rates agree with the relevant lines in table WS1.

We have used the below 2017/18 assumptions to allocate the costs between water resources units. This information is collated as a part of cost assessment table 21.

	Impounding Reservoir	Pumped Storage	River Abstractions	Boreholes, excluding MAR water supply	Artificial Recharge (AR) water supply schemes	Other	Source
2017/18	0.2%	0.6%	35.1%	64.1%	0.0%	0.0%	Information in Table 21 of the 2018 cost assessment tables

Line 7 - Historical Cost Depreciation

This line shows the historical cost depreciation for capital expenditure within the Water Resources.

We have taken an average asset life based on existing assets up until 2017/18 of 34.6 years. As our water resources capital expenditure in AMP7 will increase, this will lead to depreciation rising throughout the period.

We have used the same 2017/18 assumptions as above to allocate the costs between water resources units.

Section B - Analysis of abstraction charges (forecast only)

Line 9 - Application charge

We have allocated all our abstraction to application charge.

Wr3 - Wholesale revenue projections for the water resources price control

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

Wr4 - Cost recovery for water resources

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

Wr5 - Weighted average cost of capital for the water resources control

General

We have completed this table using the same values for actual and notional gearing, debt and asset betas as in the table for the appointed business. These values are the same as those published in the PR19 Methodology: Appendix 12: Aligning risk and return ps.16-18.

Wr6 - Water resources capacity forecasts

Changes since September Plan

The entire table has changed since previous submission based on the following:

- Change in WINEP numbers for Sustainability Reduction allocation.
- Supply-side option selection has changed due to alignment with rdWRMP19 submission.
- Existing inter-company transfer volumes have changed to reflect latest rdWRMP19 position following communications with the neighbouring water company.

Lines A1-2, B8-9, C8-9, D8-9, E8-9, F8-9, G8-9, H8-9, I8-9 - Pre-2020 capacity:

The line guidance for pre-2020 capacities asks for capacities based on sources 'forecast forwards to account for any changes'. We have assumed these changes to mean climate change and sustainability reductions.

We have included existing inter-company transfer volumes that are not typically classified as DO, as AFW.CA.A6 requested they were included within the pre-2020 capacity. Similarly, although Grafham requires a new treatment works to remove an existing constraint, the entire volumetric benefit of this source has been included within pre-2020 capacity.

We have included the transfer volumes from the renewal of existing bulk supply agreements within the post-2020 incumbent capacity.

Lines A3-4, B10-11, C10-11, D10-11, E10-11, F10-11, G10-11, H10-11, I10-11 - Post-2020 incumbent capacity:

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Lines A5-6, B12-13, C12-13, D12-13, E12-13, F12-13, G12-13, H12-13, I12-13 - Post-2020 third party bilateral capacity:

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Wr7 - New water resources capacity ~ forecast cost of options beginning in 2020-25

Changes since September Plan

- Asset types and asset lives have been changed to better reflect our revised draft WRMP options appraisal
- Options beginning in 2020/25 have been changed to reflect updated list of options from the revised draft WRMP
- Line 17 that had been incorrectly left blank has now been populated following the guidance and definition
- Schemes that require the renewal of existing bulk supply imports have not been included within Wr7 (These are Barham and Deal WSW imports from South East and Southern Water respectively)

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Wr8 - Wholesale water resources special cost factors

General

This table is intentionally left blank as we are not proposing special cost factors for our water resources functions.

The Wholesale water network plus tables

Wn1 - Wholesale water treatment (explanatory variables)

General

Line 1: Total number of raw water transport stations

We comply with Ofwat's guidance for this line.

We have interpreted this measure as being sites where raw water is either pumped from other Abstraction sites to Treatment sites, or raw water pumped directly to a Customer without undergoing treatment. As such we have not included our intake sites where we use pumps to move the water from river to treatment as we consider these to be intake pumping stations.

Differences from APR2018

At APR2018 we reported on raw water transfer stations which we interpreted to be raw water being transferred between an abstraction site and a treatment works. The subsequent change to the wording for the September Plan meant that we changed our interpretation to that stated above, which increased the number from two to four.

Line 2: Total capacity of raw water transport stations

Changes since September Plan

- The total capacity of the raw water transport systems has reduced from 2017/18 onwards after a recent project changed two of the pumps kW ratings at Eastbury.

We comply with Ofwat's guidance for this table.

This line is based on the same interpretation as line 1 above.

Differences from APR2018

- This line has changed since 2017/18 as a result of the change in line 1 and changes since September Plan for line 2.

Line 3: Average Pumping Head – raw water transport

Changes since September Plan

Sources / Treatment

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Oughton head to be recommissioned in 2045/25
- Chartridge, Chesham, Periwinkle and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024-25)
- DI projection aligned to WN2 – Line 12
- Egham and North Mymms flows are constant to reflect booster installation from 2022/23

Boosters

- Additional treatment lift has been incorporated to account for treatment processes at surface works from specific onsite re-lift pumping. This redistribution of the previous lift allocation results in a relative reduction in abstraction lift and increase in treatment.

We comply with Ofwat's guidance for this line and the APH projection is baselined on verified 2017/18 position.

This line has been aligned with Table WR1 line 23, Table WN1 line 40 and Table WN2 line 42.

Lines 4 -7: Total number of raw water transport imports/exports and Volumes

Changes since September Plan

- We have updated 2018/19 imports and the forward forecast based on actuals to date. There has been an increase in this import since September 2018 primarily due to raw water risk management activity between December 2018 and February 2019. This is because of high pesticides, turbidity and nitrates in the raw water, requiring blending. There was also a minor increase due to summer demand.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 8 - Total length of raw and pre-treated (non-potable) water transport mains for supplying customers

Changes since September Plan

- From 2018/19 there is an addition of 4.5km of process water main supplying to Dungeness Power Station, omitted from September Plan
- From 2022/23 there is an addition of 3.2km non-potable run-to-waste main to be built at Nomansland, omitted from September Plan
- 2017/18 length of main changed from 237.5km to 245.7km to the total of 4P.20, 4P.64 & 4P.63in APR 17/18

We comply with Ofwat's guidance for this table.

Differences from APR2018

- For the Business Plan, 4P.64 (Total length of non-potable and partially treated main for treatment) and 4P.63 (Total length of non-potable and partially treated main for supplying customers) were brought together in this line. Additionally, table 4P.20 (Total length of raw water and conveyors) had changed line guidance, which meant the transfer of 13km of Iver tunnels and 0.2km of raw water mains into this line. We have changed the value for 2017/18 to be consistent with the current line guidance.

Lines 9-23

Changes since September Plan

- There are very minor differences since APR value and September business plan submission in lines 14,16,18,19 and 20. However, the base data for these lines has remained constant.

Sources / Treatment

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley Wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Oughton Head to be recommissioned in 2024/25

- Chartridge, Chesham, Periwinkle Lane and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)

Demand

- The updated DI projection updated for WN2 – Line 12 has been utilised.
- Egham and North Mymms flows are constant to reflect booster installation from 2022/23

We comply with Ofwat's guidance for these lines and have used water into supply 2017/18 as the base data for apportionment. We have not included the export to South East water in the categorisation whilst we have included in the output of Egham.

These lines have been aligned with Table WN1 lines 24-37.

Lines 24-37

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

These lines have been aligned with Table WN1 lines 41-48.

Line 24: Total number of SW simple disinfection works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 25: Total number of SW1 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 26: Total number of SW2 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 27: Total number of SW3 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 28: Total number of SW4 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 29: Total number of SW5 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 30: Total number of SW6 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 31: Total number of GW simple disinfection works

Changes since September Plan

- 2024/25 shows an increase from the submission as we are only installing UV disinfection at one of our sites (Lighthouse) instead of two.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 32: Total number of GW1 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 33: Total number of GW2 works

Changes since September Plan

- 2022-23 shows an increase from the submission as it was thought that Runley Wood Greensands would be classified as GW3 and not GW2.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 34: Total number of GW3 works

Changes since September Plan

- 2019/20 shows an increase from the submission as the UV disinfection project at Horsley cross is now due to come online in 2020/21.
- 2020/21 shows a decrease from the submission as Blackford is being turned off and The Grove is being upgraded with UV disinfection as part of HS2.
- 2024/25 shows a further decrease from the submission as Stansted is being upgraded with Nitrate Removal

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 35: Total number of GW4 works

Changes since September Plan

- 2019/20 shows a decrease from the submission as two treatment sites (Amersham, Northmoor are having Membranes installed temporarily for the HS2 project classifying them as GW5, as well as a site being recommissioned with UV disinfection (Little Gaddesden) which was not picked up at the time.
- 2020/21 shows a further decrease from the submission as two more treatment sites (West Hyde, Chalfont St. Giles) will be having Membranes installed temporarily for the HS2 project will be classified as GW5 over this period, as well as a Chromium Removal plant being installed at a site (Wheathampstead) which we have classified as being a W4 treatment increasing it to GW5.
- 2023/24 shows an increase from the submission because of the previously mentioned changes and two treatment sites with Membranes installed in 2019/20 having that treatment reverted to the original site configuration.
- 2024/25 shows an increase from the submission as a change in the WRMP has meant that schemes which were assumed to be turned off by 1st Apr 2024 will now be run until 31st Dec 2024 at the latest and Oughton Head being brought back online.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 36: Total number of GW5 works

Changes since September Plan

- 2019-2023 shows an increase from the submission as the four treatment sites with membrane filtration being installed temporarily for the HS2 project will be classified as GW5 over this period as explained in line 35.

- 2020/21 shows an increase from the submission as we have re-evaluated the Chromium Removal plant being installed at Wheathampstead as a W4 treatment type increasing the site to a GW5.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 37: Total number of GW6 works

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 38: Number of treatment works requiring remedial action due to raw water quality deterioration

Changes since September Plan

- The number of sites has increased from five to six, as we now plan to give an Undertaking to DWI for metaldehyde at North Mymms WTW.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 39: Zonal population receiving water dosed with orthophosphate

Changes since September Plan

- The population has been amended in line with changes in Table WS3 Line 15.

The data in this line complies with the definition provided and has been aligned with the forecast population growth trends as reported in Table WS3 Line 15.

Due to rounding of the figure, the total population is expressed as 2.792 Million

Line 40 – Average Pumping Head – Water Treatment

Changes since September Plan

Sources / Treatment

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of our revised draft WRMP
- Oughton Head to be recommissioned in 2045/25
- Chartridge, Chesham, Periwinkle and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)
- The updated DI projection updated for WN2 – Line 12 has been utilised
- Egham and North Mymms flows are constant to reflect booster installation from 2022/23

Boosters

- Additional treatment lift has been incorporated to account for treatment processes at surface works from specific onsite re-lift pumping. This redistribution of the previous lift allocation results in a relative reduction in abstraction lift and increase in treatment.

We comply with Ofwat's guidance for this line and the APH projection is baselined on verified 2017/18 full year data.

This line has been aligned with Table WR1 line 23, WN1 line 3 and Table WN2 line 42.

Lines 41-48 – Band Disclosure

Changes since September Plan

- Following a further review of the definition for this line, sources feeding one treatment works have now been grouped under the relevant treatment works (and not reported as single sources),
- We have included data for East and South East regions and removed Grafham (as now considered as an import).
- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley Wood Greensands to be recommissioned in 2022/23, earlier than anticipated because of our revised draft WRMP
- Tappington south no longer included in revised draft WRMP schemes from 2022/23
- Oughton head to be recommissioned in 2024/25
- Chartridge, Chesham, Periwinkle and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)

The data in these lines complies with the definition provided.

We have used peak DO for individual sources that feed into a treatment works for the maximum production capacity.

Data has been aligned with the water treatment works specified in lines 24-37 and lines 49-56 and updated with water treatment works in line with the revised draft Water Resources Management Plan.

Applicable sustainability reductions have been applied in the final year of AMP7.

Differences from APR2018

2017/18 figures differ as they were based on supply figures. Band guidance changed in RAG 4.08 to specify Maximum Production Capacity instead of Distribution Input so deployable output figures were used instead.

Lines 49-56 – Band Disclosure

Changes since September Plan

- There are very minor differences since APR value and September business plan submission in lines 50,53 and 54. However, the base data for these lines has remained constant.
- Iver is assumed to be running a near capacity at between 210-215 Ml/d from 2018/19 to 2024/25 depending on year.
- Source volumes for Egham and North Mymms have been fixed to reflect capital investment proposals and optimum operational strategy to meet demand.
- From 2018/19 to 2024/25 the updated DI from our rdWRMP has been applied to apportioned volumes, taking to account the latest Sustainability Reductions updates and inclusion of HS2.

Sources / Treatment

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley Wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Oughton head to be recommissioned in 2024/25
- Chartridge, Chesham, Periwinkle and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)

The data in these lines complies with the definition provided for years 2018/19 onwards. Water into supply was used as the base data for 2017/18. In addition, although export to South East water is not included in the categorisation, it is included in the output of Egham. These lines have been aligned with Table WN2, line 12.

Line 57-60: Total number of water treatment imports & exports

We do not have any water treatment imports or exports at present and do not plan to introduce any during AMP7.

Wn2 - Wholesale water distribution (explanatory variables)

Line 1 – Total length of potable mains as at 31 March

Changes since September Plan

- 2018/19 to 2024/25 lengths have been updated with actuals to date and latest forecasts; now includes our Resilience and full Sustainability Reduction programme lengths not previously included.
- 2018/19, additional adjustment of 12km added to account for:
  - 8km of Developer Services self-lay mains added to GIS database, Mains installed prior to April 2016 but not reported until the second half of 2018
  - 4km of existing mains added into the GIS database to improve our records and record the return to service of previously isolated mains

The effect of changes is to increase the net length of our potable network by 12km in AMP6 (from 107 to 119km) and by 58km in AMP7 (from 200 to 258km).

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 2 – Total length of mains relined

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 3 – Total length of mains renewed

Changes since September Plan

- Previously included lengths of mains diversions have now been moved to line 4
- For 2017/18 1.3km of mains diverted by developer services have moved to line 4
- 2018/19 to 2024/25 updated with latest renewal programme forecasts

Effect of changes is to decrease the length of mains to be renewed in AMP6 by 52.8km (from 194.8 to 142km) and in AMP7 by 30.5km (from 260.4 to 230km). This has impacted the length of mains for 17/18, which is now slightly lower than the 17/18 APR value and September business plan submission (from 72.29 to 71 km)

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 4 - Total length of new mains

Changes since September Plan

- Lengths of mains diverted have been added; previously included in line 3
- 2017/18 - 2km new main increase to update previously reported Developer Services and Operations sub-lines and 1.3km of mains diverted moved from line 3.
- 2018/19 to 2024/25 updated with latest forecasts and Sustainability and Resilience programme lengths added which were not previously included.

Effect of changes is to increase the length of new purpose mains in AMP6 by 6.9km (from 169 to 175km) and in AMP7 by 63.5km (from 339.5 to 403km).

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Lines 5-8 – Total lengths of potable mains by diameter

Changes Since September Plan

- 2018/19 to 2024/25 - forecasts updated which also now include Resilience and full Sustainability programme lengths.

The effect of change is to increase the length of main in each diameter grouping over the 2018/19- 2024/25 period by a total of 70km as follows: <= 320mm (L5) by 28km, >320mm <=450mm (L6) by 13km, > 450mm <= 610mm (L7) by 10km and >610mm (L8) by 19km.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 9 - Capacity of booster pumping stations

The data in this line complies with the definition provided and has been aligned with the boosters included in line 42 as part of the Average Pumping Head for treated water distribution.

Jupes Hill, Eastbury and The Grove do not distribute potable water so are excluded. Similarly, two booster stations (Debden road and Dunmow) are part of the water treatment process and therefore are also not distributing potable water so are also excluded. Blackford source is due to be turned off in 2020/21 as part of HS2 project but the boosters will remain on throughout.

- Capacity increase from 2018/19 onwards as Hunton Bridge's boosters to Boxted have been upgraded and new 4th booster has been installed in October 2018 (number and capacity)
- Perivale not previously accounted for as part of HS2 project from 2020/21 onwards (number and capacity)
- Runley Wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP (number and capacity)

Line 10 - Capacity of service reservoirs

The data in this line complies with the definition provided. Data includes additional storage to improve operational resilience and like for like replacements of exiting storage assets.

Line 11 - Capacity of Water towers

The data in this line complies with the definition provided. There are no new water towers proposed for 2018-25 and similarly no proposed decommissioning of existing water towers so capacity remains the same. High Street Green has been removed from 2018/19 onwards as it went offline in March 2018.

Line 12 – Distribution Input

Changes Since September Plan

- 2018/19 figures were forecast from the dWRMP. They have been changed to reflect our latest year end estimate
- AMP7 figures have been changed to reflect our revised draft WRMP submission

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Lines 13-20

Changes since September Plan

- Iver is assumed to be running a near capacity at between 210-215Ml/d from 2018/19 to 2024/25 depending on year.
- Source volumes for Egham and North Mymms have been fixed to reflect capital investment proposals and optimum operational strategy to meet demand.

- From 2018/19 to 2024/25 the DI forecast from Wn2 has been updated which have been applied to apportioned volumes taking to account the latest Sustainability Reductions updates and inclusion of HS2.

Sources / Treatment

There are very minor differences since APR value and September business plan submission in lines 14,16,18,19 and 20. However, the base data for these lines has remained constant.

- Little Gaddesden to be recommissioned in 2019/20
- Blackford being turned off as part of HS2 project in 2020/21
- Runley Wood Greensands to be recommissioned in 2022/23, earlier than anticipated as a result of the revised WRMP
- Oughton Head to be recommissioned in 2024/25
- Chartridge, Chesham, Periwinkle and Runley Wood Chalk to now remain on until 31st December 2024 as part of revised Sustainability Reductions (and are therefore now counted during 2024/25)

We comply with Ofwat's guidance for these lines and have used water into supply as the base data for 2017/18 as it is the last full year. We have included the export to South East water in the output of Egham.

Lines 21 – 27 - Water delivered, total leakage, distribution losses and water taken unbilled

Changes since September Plan

- 2017/18 figures are corrected as per Ofwat query CA-012.
- 2018/19 figures have been changed to reflect our latest year end estimate
- AMP7 figures have been changed to reflect our revised draft WRMP submission

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

The data produced for these lines complies with the definition provided

For total leakage (Line 25), the modelled output of our revised dWRMP are used from 2019-20 to 2024-25. In App2, Line 5, and App5 W-A1, the figures used are our delivery profile from 2019-20 to 2024-25.

Line 28-30 – Number of lead/GI/Other communication pipes

Changes since September Plan

- Figures have changed due to the changes in WS3 Line 13-14, which means there is a slight difference when compared to the 17/18 APR submission.

The data in this line complies with the definition provided and cross-references with WS3 Line 13-14 and WS4 Line 1.

Line 31 - Number of booster pumping stations

Changes Since September Plan

- Perivale accounted for as part of HS2 project from 2020-21 onwards (number and capacity)
- Runley Wood Greensands to be recommissioned in 2022-23, earlier than anticipated as a result of the revised WRMP (number and capacity)

We comply with RAG 4.07 guidance which states that the Water Resources – Abstraction Service should include 'Borehole pumping assets – Pumping equipment, buildings and other sundry equipment' and are consistent with the guidance for WR1 line 21 which requires the 'Total kWs of all abstraction Pumpsets'.

However, we note Ofwat's response on 11/03/19 to a company query, which queried the situation where a borehole pump performs a dual purpose of abstraction and pumping into supply and stated that 'Any site that boosts potable water into the distribution system from that site should be counted in Wn2 Line 31 'Total number of booster pumping stations'. Due to the timing of this response we were unable to incorporate this and consequential changes in other lines, and complete the rigorous assurance and governance required.

The number of booster pumping stations are in line with the booster capacities detailed in line 9.

Line 32 - Total number of service reservoirs

The data in this line complies with the definition provided. The number of service reservoirs are in line with the capacities detailed in line 10.

Line 33 - Number of water towers

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

The number of water towers are in line with the capacities detailed in line 11.

Lines 34 –41 – Total length of mains laid by age banding

Changes since September Plan

- 2018/19 to 2024/25 forecasts have been updated because of changes in our resilience, renewal, HS2, trunk mains, developer services and sustainability reduction programmes.

The effect of changes is:

2018/19 to 2024/25, Lines 34 to 40 inclusive, net increase of 74km of mains

2018/19 to 2024/25, Line 41, net decrease of 3km of mains.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 42 – Average Pumping Head Treated Water Distribution

Changes since September Plan

Demand

- Future forecast has been updated because of revised DI projections in WN2 – Line 12

Boosters

- Increased lift accounted for at Egham and Blackford
- Uplift in Ickenham distribution volume to reflect capital investment proposals & optimum operational strategy

We comply with Ofwat's guidance for this line and the APH projection is baselined on verified 2017/18 position.

Pump rating lift instead of actual has been used for the addition of new distribution sites.

This line has been aligned with Table WR1 line 23, and Table WN1 lines 3 and 40.

Line 43 Total number of treated water distribution import points

Changes since September Plan

- 2018/19 figures have been changed to reflect our latest year end estimate
- AMP7 figures have been changed to reflect our revised draft WRMP submission

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 44 - The average daily water imported from third parties treated water distribution systems

Changes since September Plan

- 2018/19 and 2019/20 figures have been changed to reflect our latest year end estimate and forecast
- AMP7 figures have been changed to reflect our revised draft WRMP submission

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 45 Total number of treated water distribution export points

Changes since September Plan

- 2018/19 figures have been changed to reflect our latest year end estimate
- AMP7 figures have been changed to reflect our revised draft WRMP submission

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Line 46 - The average daily water exported to 3rd parties' treated water distribution systems

Changes since September Plan

- 2018/19 and 2019/20 figures have been changed to reflect our latest year end estimate and revised forecast respectively.

We comply with Ofwat's guidance for this table and have made no assumptions or made any interpretations of the guidance.

Wn3 - Wholesale revenue projections for the water network plus price control

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

Wn4 – Cost recovery for water network plus

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

Wn5 - Weighted average cost of capital for the water network plus control

General

We have entered the same values for actual and notional gearing, debt and asset betas as for the Appointed Business table. These values themselves are the same as published in the PR19 Methodology: Appendix 12: Aligning risk and return, pg. 16-18.

Wn6 - Wholesale water network plus special cost factors

Changes since September Plan

Following IAP publication and the information published by Ofwat in support of its cost assessment, we consider that the econometric models are likely to reflect our costs for high occupancy and treatment complexity. At the time of the September Plan it was not fully clear that this would be the case. In the light of the information now available we have withdrawn our special factor claims for:

- High occupancy
- Treatment complexity

We have not withdrawn our special factor claim for high regional wages and have commissioned a further study in support of our claim. This report, prepared by NERA is titled Response to OFWAT's Approach to Controlling for Regional Labour Differences at IAP and is appended to our submission as CE.A1.13

Section B: Special cost claim 2

Lines 1 to 4

Cost Adjustment Claim Summary Forms, Regional Wages

Name of claim	Regional Wages	
Name and identifier of related claim submitted in May 2018	AFW 002	
Business plan table lines where the Totex value of the claim is reported	Table WN6 Line 3-4	
Total value of claim for AMP7	£14.6m	
Total Opex of claim for AMP7	£14.6m	
Total capex of claim for AMP7	£0.0m	
Depreciation on capex in AMP7 (retail controls only)	£0.00	
Remaining capex required after AMP7 to complete construction	£0.00	
Whole life Totex of claim	Not applicable	
Do you consider that part of the claim should be covered by our cost baselines? If yes please provide an estimate	Our best indication of cost baselines results from study of the Ofwat models released for consultation and the CEPA report. Neither of these have included regional wage adjustments so we do not believe that our claim is covered by cost baselines.	
Materiality of claim for AMP7 as percentage of business plan (5 year) Totex for the relevant controls	1.38%	
Does the claim feature as a Direct Procurement for Customers (DPC) scheme? Please tick	Yes	No
		✓
	Brief summary of evidence to support claim against relevant test	List of accompanying evidence including document references, page or section numbers
1. Need for investment/expenditure	See below	See below
2. Need for the adjustment (if relevant)	See below	See below
3. Outside Management control (if relevant)	See below	See below
4. Best option for customers (if relevant)	See below	See below
5. Robustness and efficiency of claim's costs	See below	See below

6. Customer protection (if relevant)	See below	See below
7. Affordability (if relevant)	See below	See below
8. Board assurance (if relevant)	See below	See below

1. Need for investment/expenditure

As described in appended NERA report (reference CE.A1.13)

2. Need for cost adjustment

Is there persuasive evidence that the cost claim is not included (or, if the models are not known, would be unlikely to be included) in our modelled baseline?

None of the models published by Ofwat include regional wages as an explanatory variable. The appended NERA report addresses reasons why this may be the case and why the special cost claim is still justified.

Is it clear the allowances would, in the round, be insufficient to accommodate special factors without a claim?

Failing to control for regional wages in cost assessments risks underestimating costs for companies in high wage areas, whilst overestimating the costs of companies in lower wage cost areas. Our valuation of the effect of this special cost factor claim is above the materiality threshold, so allowances in the round are unlikely to accommodate the effect without allowance of the claim.

3. Outside Management Control

Is the cost driven by factors beyond management control?

Our employment costs are primarily driven by our need to compete for the skills we need in labour markets. ONS data shows that there are regional differences in labour costs, with the highest cost regions being in and around London, our primary area of operations.

Our managers cannot control the underlying economics that cause high regional wages, but they can manage our responses to the labour market conditions that we face. We have some degree of management control over labour costs, for example:

- Choice of inputs, for example substituting labour for capital
- Managing employees effectively so that they use time productively and perform to high levels of accomplishment
- The outcome of pay negotiations
- For non-location specific employees, the possibility of recruiting or basing operations in lower cost areas
- Choice over whether to buy in services or provide them with directly employed labour
- Choices over non-wage employment costs

These factors are accounted for in NERA's analysis.

Is there persuasive evidence that the company has taken all reasonable steps to control the cost?

NERA's report specifically addresses costs that are beyond the control of management. Any failure to take reasonable steps will therefore lead to inefficiency (and will be no different to any other type of management inefficiency). We are specifically asking Ofwat to allow for the costs that are beyond management control, and have avoided the risk of asking Ofwat to fund

actual costs by commissioning NERA to produce a report that does not rely on the actual costs of the company in any way in making its case.

4. Need for investment

What incremental improvement would the proposal deliver?

Not applicable

Is there persuasive evidence that an investment is required?

Not applicable

Where appropriate, is there evidence – assured by the customer challenge group (CCG) - that customers support the project?

Not applicable

5. Best option for customers

Does the proposal deliver outcomes that reflect customers' priorities, identified through customer engagement? Is there CCG assurance that the company has engaged with customers on the project and this engagement been taken account of?

Not applicable

Does the company consider an appropriate range of options with a robust cost benefit analysis before concluding that the proposed option should be pursued?

Not applicable

Is there persuasive evidence that the proposed solution represents the best value for customers in the long term, including evidence from customer engagement?

Not applicable

6. Robustness and efficiency of costs

Is there persuasive evidence that the cost estimates are robust and efficient?

We have engaged a widely respected independent economic consultancy to provide this evidence.

Is there high-quality third-party assurance for the robustness of the cost estimates?

This work has not been produced by us, but by a third party (NERA) and is therefore not subjected to assurance, although of course all such consultancies have internal review and assurance processes, which we did not participate in.

7. Customer Protection

Are customers protected if the investment is cancelled, delayed or reduced in scope?

Not applicable

Are the customer benefits that relate to the claim linked to outcomes and to a suitable incentive in the company's business plan?

Not applicable

8. Affordability

Has the impact on affordability been considered?

Not applicable

For large investment schemes, is there persuasive evidence that the investment does not raise bill higher than what is affordable?

Not applicable

9. Board Assurance

Does the company's Board provide assurance that investment proposals are robust and deliverable, that a proper appraisal of options has taken place, and that the option proposed is the best one for customers?

Not applicable

The retail tables

R1 - Residential retail

General Overview

This table has been completed in outturn prices.

Line expenditure categories have been produced in accordance with RAG 4.07 using the same assumptions as our 2017/18 regulatory accounts. Any variations on prior regulatory accounts submissions are detailed below.

Changes since September Plan

Following the initial assessment of our plan, we have made the following revisions to our retail totex in table R1:

Allocation of meter reading costs (Section A line 4)

Following circulation of the final 2017/18 APR industry datashare in November 2018, we benchmarked our meter reading costs for the Retail household business unit. We identified that we had the highest meter reading cost per measured customer in 2017/18 across the industry (£3.98 per measured customer compared to an average across the rest of the industry of £2.22 per measured customer). We were even more of an outlier when compared with other water only companies (the average meter reading cost per measured customer for other water only companies in 2017/18 was £1.72).

On reviewing the accounting separation methodology statements for other companies as part of a process to understand further why we were an outlier, we identified that companies procuring meter reading services from other companies within the industry are including the commission paid for these services in their operating expenditure for their Retail household business units. We bill and collect charges in respect of sewerage and infrastructure within our supply area on behalf of Thames Water and Anglian Water, which includes reading the meters of their measured customers. The commission that we receive is allocated to our non-appointed business in line with the RAGs. However, we have not been allocating any of our meter reading costs to our non-appointed business to reflect the treatment of the associated commission, thereby leading to an overstatement of meter reading costs relating to our appointed business and therefore across the industry as a whole.

Recharges from wholesale to retail residential (Section D)

We have re-assessed recharges made from Wholesale to Retail household for the shared use of fixed assets principally used by Wholesale following a benchmarking exercise of the value of Wholesale to Retail household recharges in 2017/18, which indicated that our recharges per customer were above industry average (£1.40 per customer compared to a rest of industry average of £1.06 per customer and other water only company average of £0.63).

On reviewing the assets identified as shared use assets from our fixed asset register to understand further why we were an outlier when compared to water only companies in particular, we identified a few assets that are not being used by the Retail household business unit. These assets included costs capitalised in relation to IT assets associated with the delivery of our Water Saving Programme, our new fieldwork management system and market reform, for which, following the company's exit of the non-household retail market in 2017 there is now greater clarity that these assets are entirely used by the Wholesale business unit.

These assets have now been removed from the calculation, reducing the recharges from Wholesale to Retail household and bringing these more in line with industry averages (for 2017/18 the restated recharge per customer is £0.64, which would have been the sixth lowest in the industry with two companies reporting nil recharges from Wholesale to Retail household). The below table summarises the impact of this methodology change on recharges from Wholesale to Retail household since the start of AMP6:

	2015/16 £m	2016/17 £m	2017/18 £m	2018/19 £m	2019/20 £m	2020/21 £m	2021/22 £m	2022/23 £m	2023/24 £m	2024/25 £m
Recharges per original PR19 submission	1.406	1.028	1.914	2.016	2.261	2.608	2.991	2.41	2.496	2.777
Recharges per revised PR19 submission	1.406	1.028	0.871	0.748	0.424	0.335	0.337	0.207	0.231	0.252
Change	0.000	0.000	-1.043	-1.268	-1.837	-2.273	-2.654	-2.203	-2.265	-2.525
Change (%)	0%	0%	-54%	-63%	-81%	-87%	-89%	-91%	-91%	-91%

We note that we have not changed our methodology of calculating recharges once shared use assets have been identified but have just revisited the assets identified as shared use assets. This reassessment of shared use assets does not impact on our Retail cost to serve, as we understand that these recharges are excluded. However, this reduces Retail household total expenditure for AMP7 by £11.9m. Wholesale total expenditure is not impacted, as the cost of shared use assets are included entirely within Wholesale total expenditure.

Retail efficiencies

Since submitting our plan on 3rd September 2018, we have reviewed and benchmarked our bad debt charge, as a percentage of our revenue. Our intention when submitting our plan was to push into the upper quartile in the industry. We have since benchmarked our plan against the industry's submission and believe we can achieve further reductions and achieve frontier performance on bad debt through introducing a more efficient approach to debt management and increasing the volume of customers who will receive support with affording their bill. This has resulted in changes to lines 2 and 3.

We have also taken to opportunity to review and amend our contact centre teams and back office automation plan which has resulted in changes to section A lines 1 and 5.

Line details

All line expenditure has been produced in accordance with RAG 4.07 using the same assumptions as our 2017/18 regulatory accounts.

Line 1 and 2: Customer Services and Debt management

We have reclassified commission paid to local and housing authorities for collection of water bills in 17/18 to show this as a debt management cost. In previous years this has been shown as a customer services costs and accounted for a movement of £0.7m in 17/18 between these two lines.

Line 3: Doubtful Debts

Line expenditure has been produced in accordance with RAG 4.07 using the same assumptions as our 2017/18 regulatory accounts.

In 17-18 we conducted a data cleanse exercise which focused on the billing accuracy of some of our most in debt customers. This data has allowed us to increase the accuracy of our billed debt going forwards.

This has resulted in a one-off adjustment in 2018/19 to our provision for doubtful debt as we reflect the enhanced billing data we now hold. This change to our provisioning level can be seen in the bad debt charge for 18-19. This one-off adjustment to our bad debt charge reverses in 2019/20 but ensures a lower rate of bad debt expense going forwards into AMP7 driven by our improved billing accuracy.

Line 4: Meter Reading

We have reclassified a proportion of meter reading costs as non-appointed in our April 19 resubmission. More details are at the start of this table commentary.

Line 6 : Local Authority and Cumulo Rates

Local authority rates have been allocated to residential retail based on the floor space that the team and support staff occupy.

This was previously reported in line 5 other operating expenses but has been separated for this table.

Line 7: Pension Deficit Repair costs

Our pension deficit repair cost has been calculated as the total cash contributions for our defined benefit pension scheme, minus the current service cost charges, which are included within our staff costs in lines 1,2 and 5.

Please note that this is a cash contribution value and does not represent an expense recorded in our regulatory income statement.

Only the current service costs of the scheme were included on retail tables in previous submissions of our regulatory accounts, which correctly reflected our retail expense under current accounting standards. We have re-stated our AMP5 and AMP6 residential retail costs to include the additional deficit repair contributions as calculated above.

The large contribution in 2012/13 contained a £16m one-off deficit repair contribution on change of ownership in June 2012, £2.0m of which related to retail.

The scheme is now in a technical provisions surplus position and we do not anticipate any further deficit payments throughout the remainder of AMP6 and 7.

Further details of our residential service costs and deficit repair payments can be seen in App 22.

Line 9: Third party services operating expenditure

We do not provide any residential retail services to third parties and do not anticipate doing so in AMP7.

Line 11: Total depreciation on legacy assets existing at 31 March 2015

The total from Table 2D in the Regulatory Accounts (2016 – 2018) has been further analysed to identify assets existing at 31 March 2015. The figures for 2013 – 2015 have been calculated using the asset register at 31 March 2016.

Line 12: Total depreciation on assets acquired between 1 April 2015 and 31 March 2020

The total from Table 2D in the Regulatory Accounts (2016 – 2018) has been further analysed to identify assets acquired after 1 April 2015.

Line 15: Capital expenditure on assets principally used by retail

The total from Table 2D in the Regulatory Accounts (2016 – 2018) has been adjusted to include intangibles (2017 – 18). The figures for 2014 – 2015 have been taken form Note 6 and in the case of 2013, Note 4.

Section B, line 16: Households connected

Household connected properties are calculated using the same methodology used in our Annual Performance Report.

We have updated our base data in our resubmission to use 18-19 actual numbers from our billing system.

Our assumptions on new properties are based on recent trends and underlying growth in the housing market, and align to WRMP and demand forecast assumptions.

Our universal metering programme is driving the movement between unmeasured and measured customers and is based on our planned meter installations to the end of AMP7. We offer customers two years in which to switch to measured charges and have estimated customers transferring based on historic trends. We have seen 36% of customers opt for measured charges within a year of having a meter installed, with the remainder being transferred at the end of the two year period.

Section C line 18: Demand-side water efficiency ~ expenditure funded by wholesale

This relates to our Home Water Efficiency Checks (HWEC) that the Water Savings Programme (WSP) perform before installing a customer's meter.

Section D line 24: Recharge from wholesale for legacy assets principally used by wholesale (assets existing at 31 March 2015)

The total from Table 2A in the Regulatory Accounts (2016 – 2018) has been further analysed to identify assets existing at 31 March 2015. The depreciation charge on these same assets plus any assets that were fully depreciated in 2013,2014, & 2015 has been used to calculate the recharge for the remaining years (2013 -2015)

The figures for 2017/18 (and future years) have been restated as a few key projects, initially considered part Wholesale and part Retail are now clearly, solely for the benefit of the Wholesale business. These projects are those connected with market reform and our new works management system.

Section D line 26: Recharge from wholesale assets acquired after 1 April 2015 principally used by wholesale

The total from Table 2A in the Regulatory Accounts (2016 – 2018) has been further analysed to identify assets acquired after 1 April 2015

The figures for 2017/18 (and future years) have been restated as a few key projects, initially considered part Wholesale and part Retail are now clearly, solely for the benefit of the Wholesale business. These projects are those connected with market reform and our new works management system.

R2 - Residential retail special cost factors

Changes since September Plan

We are not persuaded that the retail cost assessment published by Ofwat makes any allowance for the additional costs of high transition. We append (CE.A1.15.) a report titled Impact of Transience on Residential Retail Costs prepared for us by Economic Insight that sets out our concerns with Ofwat's assessment.

General

We submitted our draft special cost factors to Ofwat in May 2018. We submitted the following claims:

- Retail Transience (high turnover of customers, leading to increased retail costs)

We carefully reviewed the draft models published by Ofwat March 2018, enabling us to assess the likelihood of our claims being included. None of the models accounted for transience, on this basis we will continue to submit this modelling adjustment claim.

Set out below are the cost adjustment claim summary forms following the format set out in Ofwat information note IN18/11.

Section A: Special cost claim 1

Lines 1 to 4

Cost Adjustment Claim Summary Forms, Retail Transience

Name of claim	Transience	
Name and identifier of related claim submitted in May 2018	AFW 004	
Business plan table lines where the Totex value of the claim is reported	Table R2 Line 3	
Total value of claim for AMP7	£7.80m	
Total Opex of claim for AMP7	£7.80m	
Total capex of claim for AMP7	£0.00	
Depreciation on capex in AMP7 (retail controls only)	£0.00	
Remaining capex required after AMP7 to complete construction	£0.00	
Whole life Totex of claim	Not applicable	
Do you consider that part of the claim should be covered by our cost baselines? If yes please provide an estimate		
Materiality of claim for AMP7 as percentage of business plan (5 year) Totex for the relevant controls	4%	
Does the claim feature as a Direct Procurement for Customers (DPC) scheme? Please tick	Yes	No
		✓

	Brief summary of evidence to support claim against relevant test	List of accompanying evidence including document references, page or section numbers
1. Need for investment/expenditure	See below	See below
2. Need for the adjustment (if relevant)	See below	See below
3. Outside management control (if relevant)	See below	See below
4. Best option for customers (if relevant)	See below	See below
5. Robustness and efficiency of claim's costs	See below	See below
6. Customer protection (if relevant)	See below	See below
7. Affordability (if relevant)	See below	See below
8. Board assurance (if relevant)	See below	See below

1. Need for investment/expenditure

Using data provided for us by our consultants, Economic Insight, we show that transience in our supply area (14.08%) runs at the second highest rate in the industry. It lies above the mean (11.25%) and upper quartile (12.66%). It is more than one standard deviation (2.43%) above the mean.

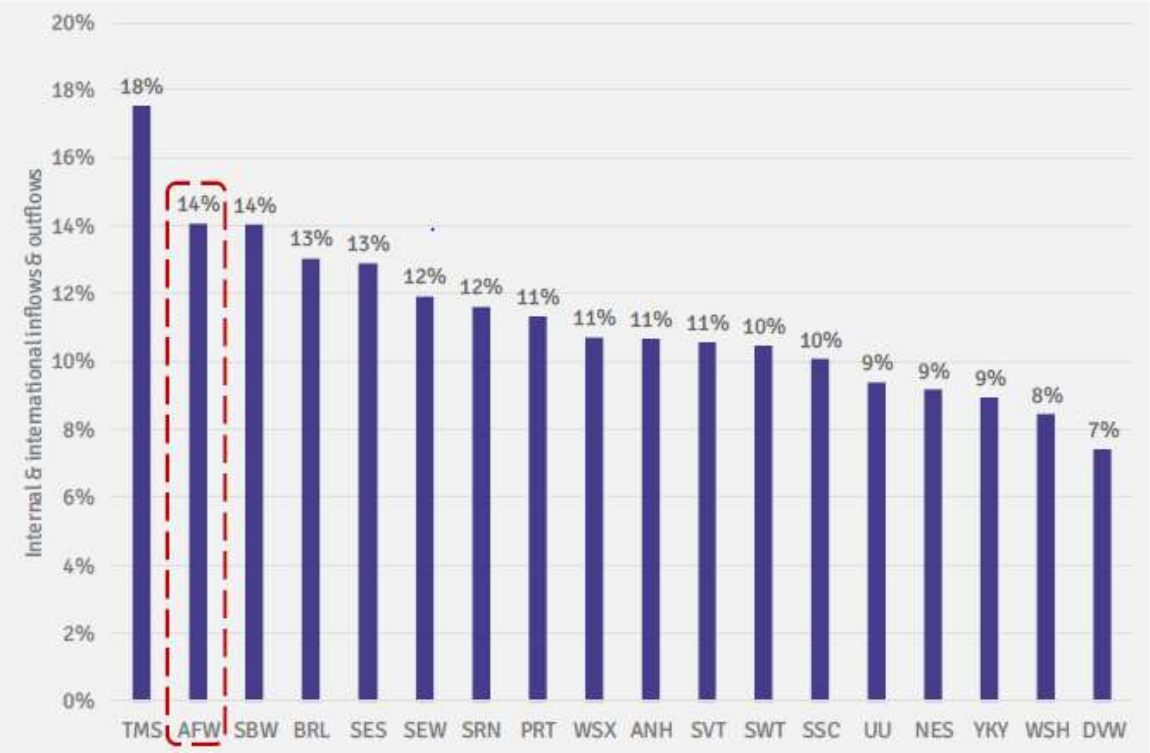
Data on transience in the UK is available for local authority areas from the Office for National Statistics (ONS). These distinguish between inflows and outflows; and between internal flows, which are population movements between UK local authorities, and international flows, to and from locations outside the UK. Data are not available on movements within UK local authorities. This generates nine transience measures, as set out in the table below.

Transience measures Variable	Description	
A	Internal inflows	Inflows from other UK local authorities
B	Internal outflows	Outflows to other UK local authorities
C	Total internal transience	A + B
D	International inflows	Inflows from locations outside the UK
E	International outflows	Outflows to locations outside the UK
F	Total international transience	D + E
G	Overall inflows	A + D
H	Overall outflows	B + E
I	Overall transience	G + H

By mapping the local authority transience data observations to water company supply areas, it is possible to generate measures of customer inflow and outflows for each water company

area, which provides the basis for company comparisons of transience. This is shown in the table and graph below.

Company	Internal Inflow rate	Internal Outflow rate	International Inflow rate	International Outflow rate	Total Inflow rate	Total outflow rate	Overall flow rate
TMS	6.7%	7.5%	2.3%	1.0%	9.0%	8.6%	17.5%
AFW	5.7%	6.2%	1.5%	0.6%	7.2%	6.9%	14.1%
SBW	6.5%	6.0%	1.0%	0.4%	7.6%	6.5%	14.0%
BRL	5.9%	5.4%	1.0%	0.8%	6.9%	6.2%	13.1%
SES	5.7%	5.9%	0.9%	0.5%	6.6%	6.3%	12.9%
SEW	5.6%	5.3%	0.7%	0.3%	6.3%	5.6%	11.9%
SRN	5.3%	5.0%	0.9%	0.4%	6.2%	5.4%	11.6%
PRT	5.3%	4.9%	0.7%	0.3%	6.1%	5.3%	11.3%
WSX	5.2%	4.6%	0.5%	0.4%	5.7%	5.1%	10.7%
ANH	4.9%	4.6%	0.8%	0.4%	5.7%	5.0%	10.7%
SVT	4.8%	4.6%	0.9%	0.4%	5.6%	5.0%	10.6%
SWT	5.1%	4.4%	0.5%	0.4%	5.7%	4.8%	10.5%
SSC	4.4%	4.5%	0.8%	0.4%	5.2%	4.9%	10.1%
UU	4.2%	4.1%	0.7%	0.4%	4.9%	4.5%	9.4%
NES	4.2%	4.1%	0.6%	0.3%	4.8%	4.3%	9.2%
YKY	3.9%	3.9%	0.8%	0.4%	4.7%	4.3%	8.9%
WSH	3.9%	3.7%	0.6%	0.2%	4.5%	4.0%	8.4%
DVW	3.3%	3.4%	0.4%	0.3%	3.8%	3.7%	7.4%



Transience increases our cost to serve relative to our comparators, principally by increasing bad debt costs since it is more difficult to collect outstanding revenues from customers who have moved out of our area without informing us of their new address. Transience also increases our 'frictional costs', such as the need to take additional closing meter reads when properties become unoccupied, issue additional final bills, manage more customer contacts and set up new accounts for new occupiers.

The 2.83 percentage point higher transience in our area equates to 33,000 more transient customer accounts to manage each year in our area than the industry average. This figure is derived by multiplying the percentage points of excess transience in our area by our number of billed properties.

From management information (see below) we calculate that the additional cost per transient customer is £47.31. By multiplying the additional cost to serve by the number of excess transient customers, we calculate that the additional retail costs of excess transience are £1.56m per year, or £7.80m over AMP7.

Our consultants, Economic Insight are working on an independent valuation of this claim, but it has not been possible to complete this work before 1st April. We will accept Economic Insight's valuation, which may be higher or lower than the £7.80m that we have calculated. For the purposes of the 1st April submission, we have kept our £7.80m valuation even though we expect that number to be superseded.

2. Need for cost adjustment

Is there persuasive evidence that the cost claim is not included (or, if the models are not known, would be unlikely to be included) in our modelled baseline?

Only one of the nine retail models used by Ofwat in the IAP included transience within their explanatory variables, and that one appeared to use the wrong sign (implying the counter-intuitive idea that companies with higher transience should have lower costs)

It seems not to be possible to accurately model this variable using regression modelling – presumably because the number of companies significantly affected is too small.

Is it clear the allowances would, in the round, be insufficient to accommodate special factors without a claim?

Since we value the claim at £7.8m and that this exceeds the materiality threshold, 4% set by Ofwat, we think that the models, in the round, would not accommodate this factor without our claim being allowed.

3. Outside Management Control

Is the cost driven by factors beyond management control?

Transience is a socio-economic phenomenon that depends upon the propensity of customers to move within our area and upon customer inflow and outflow to other water company areas and internationally. Managers cannot control the rate and flows of population migration in any way. All types of customer migration create frictional costs for our retail business, but they are higher for migration in and out of our supply area.

Is there persuasive evidence that the company has taken all reasonable steps to control the cost?

Bad debt – customers that move from a supply address without notifying us or paying an outstanding bill are subject to debt recovery action. The majority of this action is completed by external debt collection agents who charge a commission based on cash collected. Thus, costs incurred are controlled by linking the fixed rate commission to cash recovered i.e. no cash recovered would incur no additional cost.

Home mover / change of hands – Measured customers require a meter reading to ensure accurate final billing. However, where customers can read the meter, or we have sufficient usage data to accurately estimate a bill, we will not proceed with a final meter reading and therefore not incur the associated costs. During 2018/19, we plan to fully automate the on-line process, thus allowing customers to self-serve and register at a new address and complete a new account set-up online without the need for additional process steps involving operational resource. The online self-serve facility will be available 24/7.

In addition, advisors are trained in first time resolution for home movers providing an efficient service by reducing hand-offs and repeat contact and we have a proactive dedicated team focusing on false voids. Third-party data is used to validate responsibility for water charges, ensuring accurate and timely billing. Lastly, we actively use Landlord Tap - the national portal for landlords to advise tenant changes.

Whilst the valuation included at 1st April is based on company data, we expect this issue to be overcome once Economic Insight have completed their independent valuation.

4. Need for investment

What incremental improvement would the proposal deliver?

Not applicable

Is there persuasive evidence that an investment is required?

Not applicable

Where appropriate, is there evidence – assured by the customer challenge group (CCG) - that customers support the project?

Not applicable

5. Best option for customers

Does the proposal deliver outcomes that reflect customers' priorities, identified through customer engagement? Is there CCG assurance that the company has engaged with customers on the project and this engagement been taken account of?

Not applicable

Does the company consider an appropriate range of options with a robust cost benefit analysis before concluding that the proposed option should be pursued?

Not applicable

Is there persuasive evidence that the proposed solution represents the best value for customers in the long term, including evidence from customer engagement?

Not applicable

6. Robustness and efficiency of costs

Is there persuasive evidence that the cost estimates are robust and efficient?

We have valued this special factor claim using management cost information and by studying the extent to which our retail costs to serve are exacerbated by customer transience. Our analysis is shown in the table below which allocates costs between transient and non-transient customers based on:

- The contribution to our bad debt provision of amounts attributable to transient customers versus others, based on our finding that 69% of the value of debt write-offs that we provide for, were attributable to transient customers.
- The cost of additional meter readings needed to issue final bills for transient customers, taking into consideration that ad hoc reads are more expensive (£6/read) than scheduled reads (£2.30) and the volume of ad hoc reads carried out for transient customers versus others.
- The number of contacts, where we found that 27% of customer contacts arose from the 14% of customers that were transient. The contact rate is essentially double that of non-transient customers

From our calculations, summarised below, we find that on average, a transient customer costs £62.43 to serve, 3.9 times as much to serve as a non-transient customer, £15.85.

	Total costs £m	Transient Customer Cost £m	Non-Transient Costs £m	Number of Transient Customers 000s	Number of Non-Transient Customers 000s	Cost to Serve per transient customer £	Cost ot Serve per Non-Transient Customer
Customer services	7.65	2.08	5.57	183	1,182	£ 11.40	£ 4.71
Debt management	2.04	1.23	0.81	183	1,182	£ 6.74	£ 0.68
Doubtful debts	8.63	5.21	3.42	183	1,182	£ 28.49	£ 2.89
Meter reading	2.89	0.46	2.44	91	636	£ 4.99	£ 3.83
Other opex	8.93	2.43	6.50	183	1,182	£ 13.31	£ 5.50
	30.14	11.41	18.73	822.70	5,363.15	£ 62.43	£ 15.85

Is there high-quality third-party assurance for the robustness of the cost estimates?

Our work on this special factor claim has been reviewed by our independent Reporter. The Economic Insight valuation which follows will be independently produced.

Our work on this special factor claim is being reviewed by our independent Reporter.

7. Customer Protection

Are customers protected if the investment is cancelled, delayed or reduced in scope?

Not applicable

Are the customer benefits that relate to the claim linked to outcomes and to a suitable incentive in the company's business plan?

Not applicable

Affordability

Has the impact on affordability been considered?

Not applicable

For large investment schemes, is there persuasive evidence that the investment does not raise bill higher than what is affordable?

Not applicable

8. Board Assurance

Does the company's Board provide assurance that investment proposals are robust and deliverable, that a proper appraisal of options has taken place, and that the option proposed is the best one for customers?

Not applicable

R3 - Residential retail ~ further information on bad debt and customer services

Changes since September Plan

Following the initial assessment of our plan, we have committed to a more challenging bad debt plan in table R1. We have subsequently revised our write of values on line 2 in table R3 to reflect this.

General Overview

This table has been completed in outturn prices.

Section A for 2012/13

During this period, we had three billing systems, one in each of our regulated companies; Affinity Water Central, Affinity Water East and Affinity Water Southeast. Our Southeast billing system was not customised to generate aged debtor reporting and the Central and East systems produced outputs using different age brackets, as debt recovery was managed in each company separately. Any consolidation of these reports will be more misleading than useful for any analytical purposes as they would have to assume large apportionments of data across the defined age brackets. We believe that the seven years of aged debt data provided is sufficient to analyse trends in our recovery performance.

Line 2: Debt written off - residential

AMP6 historic values are as shown in our regulatory accounts for the same year. Future AMP6 years and AMP7 have been projected in line with our expected efficiencies detailed in table R1.

Based on our current systems, it is not possible to exclude court and other debt recovery costs from our write off values

Lines 3-15: Residential revenue outstanding

The above lines have been populated using pre-defined reports from our billing system for data relating to 2013/14 to 2017/18. Years 2018/19 and 2019/20 have been calculated based on our revenue expectations and improved doubtful debt performance as detailed in table R1.

Based on our current systems, it is not possible to exclude court and other debt recovery costs from our outstanding revenue figures

Line 16: Percentage of revenue collected each year

The percentage of revenue collected each year has been calculated based on our revenue expectations and improved doubtful debt performance as detailed in table R1.

Lines 17-21: Cost per channel of inbound contact

In line with table definitions, total contact centre costs have been divided by contact for each channel. As such the values shown on the table are not an accurate representation of the cost we incur for each channel as the same cost figure is divided multiple times across each of the five channels.

Our costs per call, email and letter are increasing each year as fewer customers are expected to call our contact centres as they move to digital channels to contact us.

Our cost per webchat and self-serve is reducing each year as more customers are anticipated to use these channels to contact us in the future.

Lines 22-27: Percentage of inbound contact by channel

Contacts by channel have been taken from our billing system for 2017/18 and projected to 2025 based on historic movement and adjusted for anticipated changes in customers behaviours and digital uptake.

Some of our contacts have been grouped together to ensure the 5 rows provided include the majority of our inbound contact.

Our email contact includes elements of our webforms that are processed manually. The automated elements are included under self-serve.

Webchat includes contact via social media as well as direct webchat on our website.

We receive a low volume of contact via SMS message that has been excluded from the analysis as it does not fit with any of the other contact types detailed. For this reason, our total contact percentages do not add to 100% on line 27.

Line 28: Cost per channel of inbound contact

Annual contact centre has been calculated from our residential retail costs used to populate table R1. The values stated are comprised of total expenditure from our billing, operational and debt contact centres as well as customer facing elements of meter reading, water saving, advanced care, directors office, internal communication and universal metering teams.

Overheads and management costs have been allocated on an FTE basis to each team mentioned above.

R4 - Business retail ~ Welsh companies

R5 - Business retail ~ non-exited companies operating in England

R6 - Business retail special cost factors

All of the above tables have been intentionally left blank as they are nil returns.

R7 - Revenue and cost recovery for retail

Please refer to the “Financial Model Based Data Tables” section at the end of this document.

R8 - Net retail margins

General

Row 1 was completed using the amount retail margin from Ofwat's document 'Delivering Water 2020: Our final methodology for the 2019 price review' issued December 2017 section 10.8.2, page 182-3.

Row 2 does not require any input as we have exited the NHH retail market.

R9 - PR14 reconciliation of household retail revenue

Changes since September Plan

The correct number of unmetered household water customers in 2016/17 is 659.818 (thousand properties). This figure has not changed since the 3rd September Plan, where it was submitted in table R9, line 13.

We acknowledge that there is a difference of 204 households between the number reported in our 2017/18 Annual Performance Return (APR) 659.614 and our September Plan submission 659.818. The difference is due to an improvement in our methodology for correctly classifying household and non-household properties. The improvement was triggered by the opening of the non-household retail market. The old (APR) and improved (September Plan) methodologies are explained below:

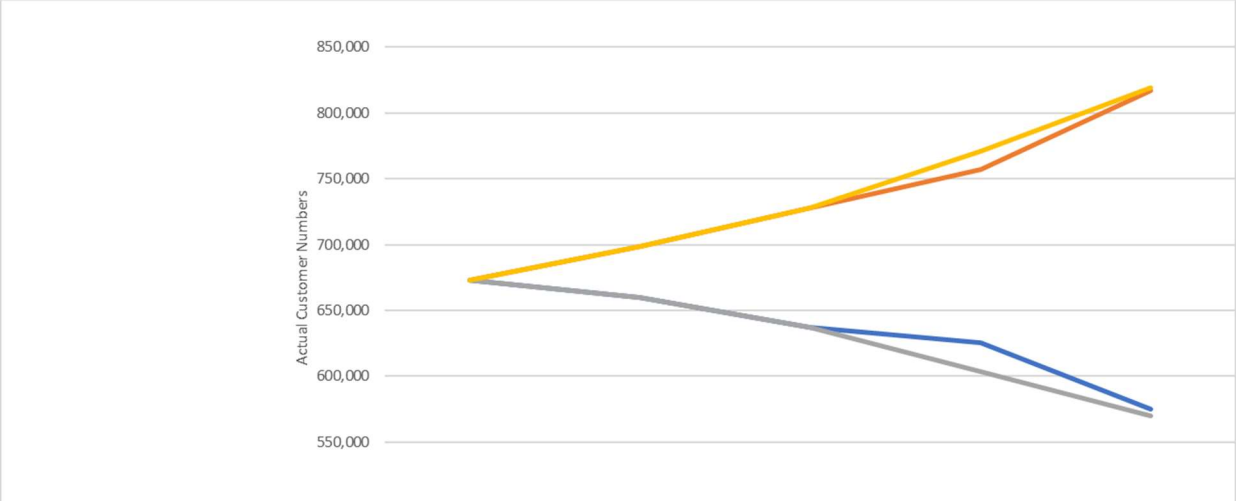
- 2017/18 APR methodology: Our APR property count is calculated by taking the average of the household property numbers at the end of the current year, and the household property numbers at the end of the prior year.
- September Plan methodology: During 2016/17 we followed the above APR methodology. However, during the data cleanse exercise in readiness for non-household (NHH) market opening in Apr-17, 409 unmeasured properties that we previously viewed as NHH were identified as ineligible for the NHH market. As these properties were not in the household numbers reported in our 15-16 APR, the methodology resulted in this number being halved as the average between 0 and 409.
- In both our 2018 Final Report and Accounts and Business Plan submission on 3rd September, we took the view that to use the standard methodology for calculating averages in this instance could be misleading and the definition change should be applied to the whole year or not at all. We therefore reported all 409 NHH customers in our average count in our Final Report and Accounts and Business Plan submission.

Following advice from our auditors Atkins, we have confirmed that the September Plan methodology is appropriate and robust. We will therefore adopt this methodology and will submit an amendment to the 2016-17 Annual Performance Return by July 15th 2019.

In summary we will retrospectively apply Ofwat's market definition of NHH in 2016/17 in our APR because this was the year that we performed our data cleanse in readiness for the market opening. We will not apply this methodology retrospectivity to the years prior to 2016/17 as we used the applicable methodology at the time.

In our September Plan, there was a change from previously observed trends for the number of unmetered water-only customers. Since September, we have revised our forecast for number of unmetered and metered water-only customers. We have updated tables R9 (lines 13 and 16). Our revised forecast is represented graphically in Figure 4 below compared to our forecast on 3rd September.

Actual and forecast number of metered and unmetered water-only customers – September Plan and Revised Plan.



	2015-16	2016-17	2017-18	2018-19	2019-20
Unmetered water-only customer	672,887	659,818	636,973	625,339	575,339
Metered water-only customer	673,267	698,276	727,593	756,991	816,991
Unmetered water-only customer - 01 Apr 2019	672,887	659,818	636,973	603,460	569,575
Metered water-only customer - 01 Apr 2019	673,267	698,276	727,593	770,752	818,957

Figure 4: Actual and forecast number of metered and unmetered water-only customers – September Plan and Revised Plan

Figure 4 shows that the number of metered customers is increasing faster than previously observed trends. This is linked to our Water Savings Programme of selective metering. Under this programme, customers may elect to continue with unmeasured charging for up to 2 years after meter installation, as part of transition to metered charging. During 2018-19 and 2019-20, the 2-year transition will expire for a significant number of customers, who will be transferred to measured charging automatically having not chosen to move onto a measured within the 2-year transition period. The impact of the automatic transfer is shown in the 2018/19 and 2019-20 forecasts as well as the underlying effectiveness of encouraging customers to switch to measured charging within the 2-year transition period.

General

We have populated re-forecast customer numbers from the charges setting models we used at the time of setting tariff charges each year. We have completed actuals from table 2F of our Annual Report and Financial Statements, and in the last two years, taken our forecasts from Table R1 as our most up to date predictions

We note that any differences between our forecasts and actuals that are not taken into account in PR19 price limits, such as the blind year 2019/20, will be accounted for in future reconciling adjustments at the next review.

During the first three years of this price control period, we have under-recovered retail revenue. This principally reflects higher take up of the social tariff than forecast each year when charges were set.

R10 - PR14 Service incentive mechanism

Changes since September Plan

- In the September plan, we used the forecast figures for 2018/19 Wave 1-3, this has now been updated with the actuals. This has affected Line 5 as part of the formula required us to take the average of 4 waves. We have also re-calculated Line 6 and 7 because as we are coming to the year end, we have a better forecast for complaints and unwanted contacts as well as to reflect the number of residential properties in WS3
- Thus, the Total Annual SIM score in Line 8 has slightly changed
- We have deleted the 2019/20 forecast as Ofwat has confirmed that SIM will not run beyond 2018/19
- However, revised SIM numbers within R10 have not been used in the financial modelling, as changes to R10 were completed after the model was run.

General

We have delivered improvements to our SIM score of 3.0% in 2017/18 against 2016/17 and 5.5% against 2015/16. We expect these improvements to continue for the remainder of 2018/19.

R10 Section D

We have calculated our expected SIM incentive as a 6% penalty on allowed retail revenue (household), as per the table below. This figure, £8.362 is calculated in 2017/18 FYA price base using the RPI inflation indices from Table App23. The R10 table shows the equivalent value using CPIH inflation indices, as an output from the Revenue Feeder Model, as required by Ofwat.

In projecting the penalty, within the allowed range -6% to -12%, we considered that customer satisfaction is good in absolute terms despite the fact that relative SIM results place us at the lower end of the industry range. We also considered that our SIM results have been on an improving trajectory over the first three years and we expect this to continue over the last two years. We propose that the penalty be applied by spreading it evenly over the 5 years of the next AMP period.

		2015/16	2016/17	2017/18	2018/19	2019/20	
Penalty	£m o/p	-6%	-6%	-6%	-6%	-6%	
Retail Allowed Revenue (outturn prices)	£m o/p	28.378	28.070	27.617	27.307	27.714	
Incentive	£m o/p	-1.703	-1.684	-1.657	-1.638	-1.663	
RPI	Dec	259.43	264.99	274.91	283.550	292.050	
Incentive 2017/18p	£m 17/18p	-1.804	-1.747	-1.657	-1.589	-1.565	-8.362

Financial Model Based Data Tables

Changes since September Plan

Ofwat PR19 Financial Model – As per IAP instruction AFW.CA.A4 the latest version of Ofwat's financial model PR19-v17z and business plan table mapping tool v8.1 issued in March 2019 will be used.

Notional Model – A version of Ofwat's PR19 Financial Model set to a notional debt structure is now used in the place of the Financial Model; the actual debt structure calculations will continue to be driven through the Financial Model.

Financial Ratios – Errors were identified in the calculation of Ofwat's metrics in the Financial Model which have been corrected and checks are done to make sure the metrics return the same answers as with the Ofwat PR19 Financial Model.

Data – All input data coming from input data tables has been updated to reflect all changes post IAP.

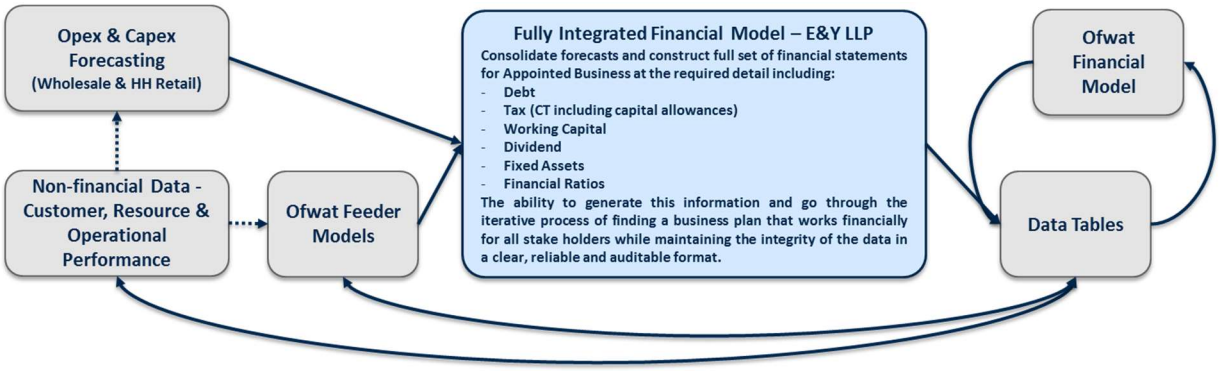
Output Tables – All output tables are now populated via the Ofwat PR19 Financial Model for both actual and notional debt structure settings and business plan.

Table APP13 Trade Receivables – It has been noticed that the Retail Debtor Days Calculation done in Section D of APP13, using revenues calculated in Section C, is done on a different basis to that applied in Ofwat's PR19 Financial Model. This results in a mismatch between inputs of amounts in Section A of APP13 and the amounts calculated by Ofwat's PR19 Financial Model.

General

There are several tables within the submission requirement and input requirements for Ofwat's PR19 Financial Model that rely on us carrying out financial forecasting and modelling for them to be completed. We took the approach to have a fully integrated financial model made for the specific purpose of completing this task; Ernst & Young LLP were commissioned to take on the model build (the Financial Model).

The Financial Model has been built based on regulatory accounting principles and applies financial modelling best practice. The Financial Model uses methods such as consistent and clear structuring and integrated economical and structural checks to ensure the integrity of the data and analysis is maintained and performed in a clear and auditable manner. The Financial Model will interact with Ofwat's published PR19 Financial Model, PR19 Feeder Models, PR19 Data Tables and PR19 Data Table and Financial Model Mapping Tool on a co-dependant basis to fully complete the submission requirement within the Data Tables. The illustration below displays the flow of data between the sources and outputs:



Output Tables

The data tables covered by the financial forecasting and modelling exercise are:

- App7 – Proposed price Limits and average bills

- App8 – Appointee financing – Section A
- App10 – Financial ratios
- App11 – Income statement based on the actual company structure
- App11a – Income statement based on notional company structure
- App12 – Balance sheet based on the actual company structure
- App12a – Balance sheet based on the notional company structure
- App13 – Trade Receivables
- App14 – Trade and other payables
- App15 – Cashflow based on the actual company structure
- App15a – Cashflow based on the actual company structure
- App16 – Tangible fixed assets
- App17 – Appointee revenue summary
- App18 – Share capital and dividends
- App19 – Debt and interest costs
- Wr3 – Wholesale revenue projections for the water resources price control
- Wr4 – Cost recovery for water resources
- Wn3 – Wholesale revenue projections for the water network plus price control
- Wn4 – Cost recovery for water network plus
- R7 – Revenue and cost recovery for retail

Base Year

The base year for the opening balance sheet is 2017/18, figures for this have been taken from the published 2017/18 Regulatory Accounts within the Annual Performance Report (APR).

Forecast Periods

The Financial Model operates on an annual period basis and covers the pre-forecast period which consists of the remainder of AMP6 (2018/19-2019/20), to calculate opening balances for AMP7 to be input into the Data Tables and Ofwat's PR19 Financial Model. The main forecast period is AMP7 (2020/21-2024/25) and extends to cover AMP8 also (2025/26-2029/30).

Regulatory Mechanics

Ofwat's PR19 Financial Model was used as the basis for the price control revenue build calculations and the Financial Model recreates the mechanics established by the Ofwat model. The Financial Model is built specifically for our needs so only covers the Water Resources, Water Network+ and Retail Household price controls.

Financial Calculations

The Financial Model uses financial modelling best practice and applies standard financial accounting principles to build up the financial statements. An income statement, cashflow statement and balance sheet are produced for each price control as well as for the total Appointee. Some key calculations are:

- Working capital – uses a 'days' approach based on the relevant revenue/cost/cashflow line (e.g. Trade debtors balance is calculated as a number of days outstanding based the revenue reflected in the income statement for that period)
- Corporation Tax – the forecast income statement and capital allowance calculations are used to derive profit to be applied for tax purposes and applies an input corporation tax rate to determine the tax charge for each period.
- Fixed Assets – capital assets are added to the opening asset register and depreciated over the input time frame to ascertain the depreciation charge and closing fixed asset balances for each period.
- Net Debt & Dividend – the amount of net debt and cash available for dividend is determined by the target gearing of Net Debt to RCV input into the model.

Data Table Inputs

As a basis for the financial forecast, the Financial Model requires inputs from several data tables, these are:

- WS1 - Wholesale water operating and capital expenditure by business unit
- R1 - Residential retail
- R8 - Net retail margins
- App22 - Pensions
- App23 - Inflation measures
- App25 - PR14 reconciliation adjustments summary
- App29 - Wholesale tax
- App32 - Weighted average cost of capital for the Appointee

Actual and Notional Debt Structures

The process requires that forecasting and testing is done with both the actual and notional debt structures. To be able to fulfil this need, two versions of the Financial Model have been prepared:

- Actual Debt Structure – this incorporates the actual financing structures in place at 31 March 2018 and applies the current financing strategy in forecast future periods
- Notional Debt Structure – this version puts in place a notional debt structure in line with the WACC assumption used (App32 – Weighted average cost of capital for the Appointee).

Price Base & Inflation

A large portion of the submission tables require inputs to be completed using the 2017/18 CPIH year average price base. This price base has been adopted within the Financial Model to fall in line with this requirement and uses the inflation forecast in data table App23 as the basis for conversion of 2017/18 CPIH year average figures to nominal and vice versa.

New Financing

The Financial Model calculates the new debt requirement for each period as the available net debt to RCV gearing capacity with an input target threshold (i.e. 80% net debt/RCV). The calculation will utilise available cash balances before the raising of new debt. New debt is raised using an RCF first and then re-financed into long term bonds when a suitable amount has been accrued.

Financial Analysis & Ratios

As part of assessing the suitability of the business plan it is necessary to examine key financial metrics. The Financial Model contains extensive analysis on the financial outputs and looks at financial metrics from several points of view:

- Securitised Debt Covenants – As part of the securitised debt structure in place around the regulated company there are restrictions specified financial ratios that must be complied with. These include Adjusted Interest Cover Ratios and Net Debt to RCV (gearing) Ratios.
- Rating Agency Key Metrics – We are required to be rated by at least 2 rating agencies who examine the financial performance of the regulated company to determine their ratings. Financial ratios such as Funds from Operations compared to Net Debt and Adjusted Interest Cover Ratios are key parts of this assessment.
- Ofwat's Financial Metrics – The regulator's approach to these financial performance metrics is examined to fall in line with metrics published each year as part of our Annual Performance Report.

Structural & Economic Integrated Checks

The Financial Model has been built to include an integrated audit function consisting of a series of formula and logic based tests that look at both structural and economic elements of its inputs, workings and outputs. This is built on financial modelling best practice principles and is used to ensure that the integrity of the data and cautions is maintained and that key economic tests, referencing the financial analysis and ratios functions, are compliant within tolerance levels. Failures in any of these tests would be brought to the user's attention within the top banner throughout the model which is clearly visible. Structural tests apply financial accounting principles such as:

- checking that the balance sheets balance;
- checking that the movements in cash balances on the balance sheets match the cashflow statements; and
- Checking that the movements in reserves on the balance sheets match the net profit on the income statements.

These checks provide reassurance that the financial calculations are being applied correctly as the data flows through the model. The economic checks allow the user to easily asses the suitability of the business plan inputs when examined against financial tolerance levels.

Table R7 – Revenue and cost recovery for Retail

We would like to note that table R7 has been prepared on the basis that the PR14 SIM forecast revenue adjustment at 2017/18 is not included as we do not believe it is covered by the table and guidance. We have however included this as part of Table R10 – PR14 Service incentive mechanism and included it as a reduction to the numbers in our general modelling and reporting of total retail revenues.

Appendices

Appendix 1 - App 21 - Direct Procurement Assessment

Introduction

Ofwat has set out initial proposals for the DPC of large projects by licenced water carriers. Under these proposals companies would competitively tender major investment projects that were 'discrete' and likely to have a value greater than £100m in whole life Totex.

As part of PR19 Ofwat are testing plans to ensure that eligible schemes have been identified appropriately and included where required to do so for competitive tendering.

Where a scheme is deemed to be eligible the Company will include the scheme within App21 within the tables.

Our assessment of eligibility: Key questions and additional evidence that DPC has been considered

The Affinity Water rdWRMP and our business plan includes an appraisal of the following large-scale strategic supply schemes:

- South East Strategic Reservoir (SESR)
- Regional transfers to AfW Central and treatment
- Grand Union Canal (GUC)
- Eastern transfer scheme to AfW Central
- Sundon Treatment Works (maximising Grafham)

We have considered the eligibility of DPC for these schemes by posing questions to determine if a scheme is appropriate. A scheme is eligible if it meets all four criteria.

Question 1. Is the scheme selected in our plans and does it meet a strategic need?

- All the schemes are selected in our plans except the Eastern transfer scheme to AfW Central

Question 2. Is the scheme technically suitable for DPC?

- All the schemes appear to be technically feasible schemes and therefore potentially suitable (KPMG, 2017)

Question 3. Does the scheme meet the financial threshold (£100m)?

- Only the SESR and GUC options meet the financial threshold

Question 4. Is the scheme selected and requires investment in AMP7 to deliver the scheme?

- The SESR option and Sundon Treatment works schemes are selected and require works in AMP7 which are supported by a rdWRMP supply demand balance need

On the basis of our initial assessment only the SESR scheme meets all four criteria and is therefore the only scheme we have included within App21.

Next Steps

Our initial assessment of eligibility sets out our decision to include only the SESR scheme as a DPC scheme (in App21).

Thames Water have in their chapter CSD-011 - Direct Procurement for Customers provided further detail and Ofwat have responded to them by stating that at this stage Ofwat do not need to take further action.

Value for money will be tested periodically as the project develops so our assumptions may be subject to change. At this stage they are in-line with the benchmarks provider by the Thames Water external advisor and substantively similar to the assumptions laid out by Ofwat in Appendix A of their IAP response to Thames Water.

Conclusions

This Appendix provides the additional evidence that we have considered other large scale strategic schemes and shows our approach to considering the relevance of DPC (and whether schemes meet the cost threshold and other criteria).

Our assessment of eligibility has resulted in the inclusion of the SESR scheme for DPC, which as part of a joint scheme with Thames Water is aligned with the Thames Water plan.

Our understanding of the need to carry out a value for money assessment is aligned with that of Thames Water in that it will be tested periodically as the project develops so our assumptions may be subject to change.

References:

KPMG. Direct Procurement for Customers. A report prepared for Ofwat. December, 2017

Ofwat. Information notice: Direct procurement for customers (DPC): setting expectations

for a high-quality and well-evidenced case. June, 2018.