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# **PR24 Final Methodology submission table guidance – section 3: Costs (wholesale) – water**

## About this document

### Version control

Version	Date published	Description
V1	7/7/2022	Draft methodology
V2	12/2022	<p>Final methodology</p> <p><b>Changes from V1;</b></p> <p>CW1 and CW1a – swapped the tables round so that costs reported in CW1 are post RPE and frontier shift and costs in CW1a are pre RPE and frontier shift.</p> <p>CW6.13 – Added a calculated cell for 'The number of lead communication pipes replaced or relined that are owned by the company for other reasons (low pressure, leakage, mains rehab work)'.</p> <p>CW20 – new table 'Water mains – asset condition'</p> <p>CW21 – new table 'Water – net zero enhancement schemes'</p> <p>CW1a – updated commentary requirement for equity issuance costs</p> <p>CW2 – updated commentary requirement for equity issuance costs</p>
V3	7/2/2023	<p>Changes from V2:</p> <p>CW1 and CW1a – updated line definitions for cross references to other tables and to RAG4.</p> <p>CW3 - Changes to WINEP/NEP investigations and addition of NEP driver codes Investigations has been separated out to capture those that are desk-based, those that require a survey, some monitoring or simple modelling, or those requiring multiple surveys and/or monitoring, and/or complex modelling.</p> <p>CW3 – Changes to residential and business AMI and AMR metering upgrades</p> <p>CW5 – Addition of water balance and components of total leakage (post MLE) tables. This has added new lines and moved 3 existing data lines in table CW5 and split an existing line into sub-components. Definitions of existing lines have been adjusted where necessary in order to remove any double counting of water. Tables have been added to enable companies that have sub-company regional performance commitment levels to provide water balance and leakage component data on a regional basis.</p> <p>CW6 - Repositioning of Treated water distribution – mains age profile to follow Treated water distribution – mains analysis</p> <p>CW7 - Additional lines added to provide greater clarity in reporting when reporting changes in meter technology at existing meter installations. Lines to capture both the numbers and benefits of technology change added. Lines added to capture unit cost and benefits of typical metering activities.</p> <p>CW12 -transition expenditure – updated commentary to reflect final methodology guidance.</p> <p>CW13 – updated commentary to reflect final methodology guidance.</p> <p>CW14 – updated commentary to reflect final methodology guidance.</p> <p>CW15 – updated commentary to reflect final methodology guidance.</p> <p>CW16 - updated commentary to reflect final methodology guidance. Additional note added with regards to units.</p> <p>CW17 – new table "accelerated programme expenditure – water resources and water network+"</p> <p>CW18 – updated commentary to provide additional guidance.</p>

PR24 business plan table guidance part 3; Costs (wholesale) – water

		<p>CW19 – Guidance added based on data request <a href="#">'IN 22/02 Cost assessment data requests'</a></p> <p>CW20 – guidance added.</p>
V4	31/5/2023	<p>CW1 and CW1a – links to developer services and third party services tables corrected. CW2 – cross references updated</p> <p>CW3 – added strategic regional water resource solution line.</p> <p>CW4 – updated to clarify 'Peak week production capacity' (PWPC) references. Additional commentary requirement included in relation to items relevant to PR24 cost assessment.</p> <p>Separate lines for WTWs treatment type data and WTWs size band data.</p> <p>CW5 – additional commentary requirement included in relation to items relevant to PR24 cost assessment.</p> <p>CW6 – duplicate numbering .9 to .18 rectified and updated 6C.17 to clarify 'during and after 2021'. Clarifications added to water balance and leakage lines. Additional commentary requirement included in relation to items relevant to PR24 cost assessment.</p> <p>CW8 – updated to clarify reporting against each line.</p> <p>CW10 – updated definition for line 1.</p> <p>CW11 – developer services expenditure added, and removed from DS2.</p> <p>CW14 – updated commentary to clarify scope of data being requested.</p> <p>CW15 - Additional note added with regards to units.</p> <p>CW16 – updated commentary to clarify scope of data being requested. Additional note added with regards to units.</p> <p>CW20 – additional guidance added specifically in relation to completion of the cohort analysis supporting excel file. This includes a link to an example excel file. Correction of an error in the line guidance for C20.13 (now C20.12), and deletion of C20.9 due to duplication.</p>

## Contents

1. Summary purpose of the data tables	5
2. General guidance	6
3. CW1 – Totex analysis - water resources and water network+ (post frontier shift and real price effects)	8
4. CW1a – Totex analysis - water resources and water network+ (pre frontier shift and real price effects)	12
5. CW2 – Base expenditure analysis – water resources and water network plus	15
6. CW3 – Enhancement expenditure analysis – water resources and water network plus	18
7. CW4 – Raw water transport, raw water storage and water treatment	27
8. CW5 – Treated water distribution – assets and operations	34
9. CW6 – Water network+ - Mains, communication pipes and other data	51
10. CW7 – Demand management - Metering and leakage activities	55
11. CW8 – WRMP schemes (excluding leakage and metering activities)	66
12. CW9 – Enhancement expenditure analysis (cumulative) – water resources and water network plus	71
13. CW10 – Wholesale water local authority rates	72
14. CW11 – Third party costs by business unit for the wholesale water service	74
15. CW12 – Transitional spending in the wholesale water service	77
16. CW13 – Best value analysis; enhancement expenditure - water resources and water network+	79
17. CW14 – Best value analysis; enhancement expenditure of least cost options - water resources and water network+	82

18. CW15 - Best value analysis; enhancement benefits - water resources and water network+	85
19. CW16 - Best value analysis; enhancement benefits of least cost options - water resources and water network+	88
20. CW17 - Accelerated programme expenditure - water resources and water network+	91
21. CW18 - Cost adjustment claims - base expenditure: water resources and water network+	92
22. CW19 - Leakage expenditure and activity data	95
23. CW20 - Distribution mains condition	111
24. CW21 - Net zero enhancement schemes	118

## **1. Summary purpose of the data tables**

### **What data are we collecting?**

- 1.1 In this section we are collecting companies' forecast costs and associated drivers from 2022-23 onwards. Some tables cover the period 2022-30 while others ask for longer-term forecasts. This reflects our approach to long-term delivery strategies.

### **Why are we collecting the data?**

- 1.2 This data forms the basis for us to set cost allowances at PR24. It covers base, enhancement, developer services and best value data which we will use in our cost assessment models.

### **How is the data aligned with the annual performance report (APR)?**

- 1.3 Where possible tables in this section are the same as the equivalent APR tables and, as such, we expect 2022-23 data to reflect companies' 2022-23 APRs. In some case we have included additional lines. This is primarily to reflect changing requirements, such as WINEP obligations, and associated drivers. These tables will then form the basis of APR tables from 2025 onwards.
- 1.4 Some tables are not included within the APR as we only need this information at price reviews, such as table CW12 – transition expenditure.

## 2. General guidance

### Jointly used or owned assets – Reporting guidance change for 2025–26 onwards

- 2.1 Following concerns we have received over different reporting of expenditure on joint use assets (assets that are owned jointly or operated on a joint agreement) and requests for clarity in this area we propose to introduce guidance into RAG2 and RAG4 which will apply from 2025–26 onwards. **It should therefore also be followed when preparing your PR24 business plan.**
- 2.2 For both capex and opex, we require that in the cost tables (ie APR sections 4–8 and 10) companies report only their share of the totex.
- 2.3 This means that where a company takes the lead on any expenditure and is due a corresponding payment from the asset partner, that such income effectively 'nets off' the gross cost of the expenditure. Accordingly, we also require that such income is adjusted in table 1A from the statutory treatment of income and is instead recognised as a negative adjustment to costs in the regulatory accounts. This ensures that any such income will not become a component of actual regulatory income and so will not impact on reconciliation mechanisms.
- 2.4 The other company, who is simply making a payment to the lead company for its share of the costs, will show this as a regular totex cost as if the payment was to any ordinary supplier.

### Direct procurement for customers

- 2.5 We expect companies to include in their business plans forecasts of expenditure they will incur in the planning and administration of their expected DPC schemes. These are the development, procurement and contract management costs. These costs should be included in tables CW1, CW2, CW3 and CW12 as appropriate. Companies should not include in the wholesale expenditure tables any costs forecast to be incurred by the competitively appointed provider.

### **Price base and Indexation**

The base year for the business plan is 2022-23.

The price base for financial cost information is base year prices indexed using the financial year average Consumer Price Index (including housing costs) ie 2022-23 prices FYA (CPIH deflated).



### 3. CW1 – Totex analysis – water resources and water network+ (post frontier shift and real price effects)

Table CW1 line definitions

Line	Title	Definition	RAG 4.10 line reference
<b>CW1.1</b>	Base operating expenditure	Operating expenditure excluding third party opex to deliver base levels of service.	4D.1
<b>CW1.2</b>	Enhancement operating expenditure	Enhancement operating expenditure excluding third party opex.	4D.2
<b>CW1.3</b>	Developer services operating expenditure	Total developer services operating expenditure excluding diversions. This line should equal DS2e.10 (opex) or DS2w.9 (opex).	4D.3
<b>CW1.4</b>	Total operating expenditure excluding third party services	Total operating costs excluding base and enhancement third party services. The sum of lines CW1.1 to CW1.3.	4D.4
<b>CW1.5</b>	Third party services	Operating expenditure for providing third party services including developer services third party services. See RAG4 appendix 1.	4D.5
<b>CW1.6</b>	Total operating expenditure	Total operating expenditure for the wholesale business only within each business category. The sum of lines CW1.4 and CW1.5. This should reconcile to wholesale operating expenditure in APR table 2A line 5 and 2B line 14 for 2022-23.	4D.6
<b>CW1.7</b>	Grants and contributions – operating expenditure	Grants and contributions – operating expenditure. The operating expenditure element of the water n+ developer services revenue reported in DS1e.15 or DS1w.14. Input as a positive number.	4D.7
<b>CW1.8</b>	Base capital expenditure	Capital expenditure excluding third party capex to maintain the long-term capability of assets and to deliver base levels of service. Where projects have drivers both of enhancement and capital maintenance, companies should apply a method of proportional allocation to allocate costs between enhancement and capital maintenance.	4D.8
<b>CW1.9</b>	Enhancement capital expenditure	Total enhancement capital expenditure excluding third party capex.	4D.9
<b>CW1.10</b>	Developer services capital expenditure	Total developer services operating expenditure excluding diversions. This line should equal DS2e.10 (capex) or DS2w.9 (capex)	4D.10
<b>CW1.11</b>	Total gross capital expenditure excluding third party services	Total gross capital expenditure excluding base and enhancement third party services – the sum of lines CW1.8 to CW1.10	4D.11
<b>CW1.12</b>	Third party services	Capital expenditure for providing third party services including developer services third party services. See RAG4 appendix 1.	4D.12
<b>CW1.13</b>	Total gross capital expenditure	The sum of lines CW1.11 and CW1.12.	4D.13

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.10 line reference
<b>CW1.14</b>	Grants & contributions – capital expenditure	Grants and contributions – capital expenditure. The capital expenditure element of water n+ grants and contributions reported in DS1e.15 or DS1w.14. Input as a positive number.	4D.14
<b>CW1.15</b>	Net totex	The sum of lines CW1.6 and CW1.13 less the sum of CW1.7 and CW1.14.	4D.15
<b>CW1.16</b>	Pension deficit recovery payments	2022–23 to 2024–25 – Actual pension deficit recovery payments including costs capitalised and any group recharges for pension deficit costs. Companies that report under FRS102 should include the element of the statutory charge attributable to deficit payments in this line rather than block A above. 2025–26 to 2029–30 – Pension deficit recovery payments to be funded through price limits, in accordance with <a href="#">IN 13/17</a> .	4D.16
<b>CW1.17</b>	Other cash items	Other cash items not included in totex.	4D.17
<b>CW1.18</b>	Totex including cash items	The sum of lines CW1.15 to CW1.17.	4D.18
<b>CW1.19</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in. Costs should be entered as a positive number and any income/rebates entered as a negative number.	4D.19
<b>CW1.20</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in. Costs should be entered as a positive number and any income/rebates entered as a negative number.	4D.20
<b>CW1.21</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in. Costs should be entered as a positive number and any income/rebates entered as a negative number.	4D.21
<b>CW1.22</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in. Costs should be entered as a positive number and any income/rebates entered as a negative number.	4D.22

Line	Title	Definition	RAG 4.10 line reference
<b>CW1.23</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in. Costs should be entered as a positive number and any income/rebates entered as a negative number.	4D.23
<b>CW1.24</b>	Total atypical expenditure	Total atypical expenditure. Calculated as the sum of lines CW1.19 to CW1.23.	4D.24

## CW1 Additional guidance

- 3.1 This table mirrors CW1a but includes the impact of the frontier shift and real price effects assumptions included in table SUP11.
- 3.2 Operating expenditure should be reported **net of the principal use recharges** between the price control units so that the costs at a price control level can be properly recorded.
- 3.3 If companies choose to forecast atypical items they must provide details in their commentary. Companies must also clearly explain whether the nature of the atypical item is an operating or capital expense. For forecast years (2023–24 onwards) companies must clearly explain why the item disclosed in Block D is atypical and why it is appropriate not to include it in the previous lines.
- 3.4 Where applicable please ensure values are consistent elsewhere within the cost assessment wholesale water tables.
- 3.5 This table contains inputs needed for populating the PR19 Cost reconciliation model and calculating the end of period revenue and RCV adjustments to be applied at PR24.

## CW1 Commentary requirement

- 3.6 Companies should include the following commentary to this table;
  - An explanation of any costs categorised as atypical, and which cost line(s) they are included in (eg atypical cost item 1 is included in CW1.1).

- An explanation of the nature and extent of 'principal use' recharges between business units.
- An explanation for any significant changes in costs over the period.
- A breakdown of which lines and business units any equity issuance costs (from table RR4 line 72) have been included in.

## 4. CW1a – Totex analysis – water resources and water network+ (pre frontier shift and real price effects)

Line	Title	Definition	RAG 4.10 line reference
<b>CW1a.1</b>	Base operating expenditure	Operating expenditure excluding third party opex to deliver base levels of service. This line should equal line CW2.14	
<b>CW1a.2</b>	Enhancement operating expenditure	Enhancement operating expenditure excluding third party opex. This line should equal line CW3.142.	
<b>CW1a.3</b>	Developer services operating expenditure	Total developer services operating expenditure excluding diversions.	
<b>CW1a.4</b>	Total operating expenditure excluding third party services	Total operating costs excluding base and enhancement third party services but including developer services third party services. The sum of lines CW1.1 to CW1.3.	
<b>CW1a.5</b>	Third party services	Operating expenditure for providing third party services including developer services third party services. See RAG4 appendix 1. The sum of lines CW11.11 and CW11.15.	
<b>CW1a.6</b>	Total operating expenditure	Total operating expenditure for the wholesale business only within each business category. The sum of lines CW1.4 and CW1.5. This should reconcile to wholesale operating expenditure in APR table 2A line 5 and 2B line 14 for 2022–23.	
<b>CW1a.7</b>	Grants and contributions – operating expenditure	Grants and contributions – operating expenditure. Input as a positive number.	
<b>CW1a.8</b>	Base capital expenditure	Capital expenditure excluding third party capex to maintain the long-term capability of assets and to deliver base levels of service. Where projects have drivers both of enhancement and capital maintenance, companies should apply a method of proportional allocation to allocate costs between enhancement and capital maintenance. This line should equal line CW2.17	
<b>CW1a.9</b>	Enhancement capital expenditure	Total enhancement capital expenditure excluding third party capex. This line should equal line CW3.141.	
<b>CW1a.10</b>	Developer services capital expenditure	Total developer services operating expenditure excluding diversions.	
<b>CW1a.11</b>	Total gross capital expenditure excluding third party services	Total gross capital expenditure excluding base and enhancement third party services but including developer services third party services – the sum of lines CW1.8 to CW1.10	
<b>CW1a.12</b>	Third party services	Capital expenditure for providing third party services, including developer services third party services. See appendix 1. The sum of lines CW11.26 and CW11.30.	
<b>CW1a.13</b>	Total gross capital expenditure	The sum of lines CW1.11 and CW1.12.	
<b>CW1a.14</b>	Grants & contributions – capital expenditure	Grants and contributions – capital expenditure. Input as a positive number.	
<b>CW1a.15</b>	Net totex	The sum of lines CW1.6 and CW1.13 less the sum of CW1.7 and CW1.14.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.10 line reference
<b>CW1a.16</b>	Pension deficit recovery payments	2022-23 to 2024-25 – Actual pension deficit recovery payments including costs capitalised and any group recharges for pension deficit costs. Companies that report under FRS102 should include the element of the statutory charge attributable to deficit payments in this line rather than block A above.  2025-26 to 2029-30 – Pension deficit recovery payments to be funded through price limits, in accordance with <a href="#">IN 13/17</a> .	
<b>CW1a.17</b>	Other cash items	Other cash items not included in totex.	
<b>CW1a.18</b>	Totex including cash items	The sum of lines CW1.15 to CW1.17.	
<b>CW1a.19</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in.  Costs should be entered as a positive number and any income/rebates entered as a negative number.	
<b>CW1a.20</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in.  Costs should be entered as a positive number and any income/rebates entered as a negative number.	
<b>CW1a.21</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in.  Costs should be entered as a positive number and any income/rebates entered as a negative number.	
<b>CW1a.22</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in.  Costs should be entered as a positive number and any income/rebates entered as a negative number.	
<b>CW1a.23</b>	Atypical expenditure items	Please specify atypical items in the lines CW1.19 to CW1.23. Atypical items are defined as unusual items outside ordinary activities. This would include items such as office moves and one-off reorganisations. For avoidance of doubt these items should be included in lines 1 to 18 above but in the item description state the line that it is included in.	

Line	Title	Definition	RAG 4.10 line reference
		Costs should be entered as a positive number and any income/rebates entered as a negative number.	
<b>CW1a.24</b>	Total atypical expenditure	Total atypical expenditure. Calculated as the sum of lines CW1.19 to CW1.23.	

## CW1a Additional guidance

- 4.1 Operating expenditure should be reported **net of the principal use recharges** between the price control units so that the costs at a price control level can be properly recorded.
- 4.2 If companies choose to forecast atypical items they must provide details in their commentary. Companies must also clearly explain whether the nature of the atypical item is an operating or capital expense. For forecast years (2023–24 onwards) companies must clearly explain why the item disclosed in Block D is atypical and why it is appropriate not to include it in the previous lines.
- 4.3 Where applicable please ensure values are consistent elsewhere within the cost assessment wholesale water tables.

## CW1a Commentary requirement

- 4.4 Companies should include the following commentary to this table;
- An explanation of any costs categorised as atypical, and which cost line(s) they are included in (eg atypical cost item 1 is included in CW1.1).
  - An explanation of the nature and extent of 'principal use' recharges between business units.
  - An explanation for any significant changes in costs over the period.
  - A breakdown of which lines and business units any equity issuance costs (from table RR4 line 72) have been included in.

## 5. CW2 – Base expenditure analysis – water resources and water network plus

Table CW2 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW2.1</b>	Power	All energy costs, including the climate change levy and the carbon reduction commitment. Any cost savings from power generated internally should be netted off these costs.	4J.1
<b>CW2.2</b>	Income treated as negative expenditure	Income received from sales which are external to the appointed business and which directly relate to the water and wastewater processes. It should be input as a negative number. This will include; <ul style="list-style-type: none"> <li>Electricity sales from sources such as Hydro, PV, wind and CHP to external parties.</li> <li>Electricity sales from back-up generators under arrangements such as the National Grid ‘STOR’, “frequency response” and “dynamic demand”.</li> <li>Bio-methane gas sales to the National Grid.</li> </ul> Sludge and sludge products such as cake, granules etc. to external parties.	4J.2
<b>CW2.3</b>	Bulk Supply/Bulk discharge	Total payments for bulk imports/exports. Where a company jointly owns a supply, the costs associated with it should not be reported here but in the appropriate cost line.	4J.3
<b>CW2.4</b>	Renewals expensed in year (Infrastructure)	Infrastructure renewals which are expensed rather than capitalised in the statutory accounts. ‘Renewals’ are generally planned activities to replace significant lengths of pipework or parts of an asset. These are targeted at improving network performance or solving ongoing problems and restores an asset to full capability.	4J.4
<b>CW2.5</b>	Renewals expensed in year (Non- Infrastructure)	Non-infrastructure renewals which are expensed rather than capitalised in the statutory accounts. ‘Renewals’ are generally planned activities targeted at improving network performance or solving ongoing problems and restores an asset to full capability.	4J.5
<b>CW2.6</b>	Other operating expenditure	Other operating costs not covered by CW2.4 and CW2.5. This should exclude finance charges associated with operating leases.	4J.6
<b>CW2.7</b>	Local authority and Cumulo rates	The cost of local authority rates. This should include both the local authority rates, cumulo rates and sewerage site rates (where appropriate).	4J.7
<b>CW2.8</b>	Canal & River Trust abstraction charges/ discharge consents	Costs associated with the Canal & River Trust service charges and discharge consents.	4J.8
<b>CW2.9</b>	EA / NRW abstraction charges/ discharge consents	Costs associated with Environment Agency / Natural Resources Wales service charges/ discharge consents.	4J.9



PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW2.10</b>	Other abstraction charges/ discharge consents	Costs associated with other service charges/ discharge consents.	4J.10
<b>CW2.11</b>	Costs associated with Traffic Management Act	Costs directly related to permit schemes made pursuant to the Traffic Management Act (TMA) excluding penalties or fines incurred by the company. TMA costs incurred in the delivery of developer services should be included in developer services expenditure (CW1.3 and DS2) and not in this line.	4J.11
<b>CW2.12</b>	Costs associated with lane rental schemes	Costs directly associated with lane rental schemes excluding penalties or fines incurred by the company. Lane rental scheme costs incurred in the delivery of developer services should be included in developer services expenditure (CW1.3 and DS2) and not in this line.	4J.12
<b>CW2.13</b>	Statutory water softening	Costs associated with statutory requirements for the softening of water as directed by the relevant legislation.	4J.13
<b>CW2.14</b>	Total base operating expenditure	The sum of lines CW2.1 to CW2.13.	4J.14
<b>CW2.15</b>	Maintaining the long term capability of the assets – infra	Capital expenditure on infrastructure assets excluding third party capex to maintain the long term capability of assets and to deliver base levels of service. Where projects have drivers both of enhancement and capital maintenance, companies should apply a method of proportional allocation to allocate costs between enhancement and capital maintenance.	4J.15
<b>CW2.16</b>	Maintaining the long term capability of the assets – non-infra	Capital expenditure on non-infrastructure assets excluding third party capex to maintain the long term capability of assets and to deliver base levels of service. Where projects have drivers both of enhancement and capital maintenance, companies should apply a method of proportional allocation to allocate costs between enhancement and capital maintenance.	4J.16
<b>CW2.17</b>	Total base capital expenditure	The sum of lines CW2.15 and CW2.16.	4J.17
<b>CW2.18</b>	Projects incurring costs associated with Traffic Management Act	The number of jobs that required a permit for which the costs that have been reported in CW2.11 have been incurred.	4J.18

## CW2 Additional guidance

- 5.1 Operating expenditure should be reported **net of the principal use recharges** between the price control units so that the costs at a price control level can be properly recorded.

## **CW2 Commentary requirement**

5.2 Companies should include the following commentary to this table;

- An explanation for any significant changes between actual and forecast costs.
- An explanation of any material year-on-year variations in costs.
- An explanation of any changes in reporting methods / assumptions that have led to a material change in reported figures from previous reporting years.
- A breakdown of which lines and business units any equity issuance costs (from table RR4 line 72) have been included in.

## 6. CW3 – Enhancement expenditure analysis – water resources and water network plus

Table CW3 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.1- CW3.3</b>	Biodiversity and conservation	Expenditure on schemes listed in WINEP/NEP to deliver biodiversity improvement (NERC/W_BIOD driver code) to restore or prevent deterioration of Sites of Special Scientific Interest (SSSI/W_SSSI driver code) and/ or ensure European sites (HD/W_HR driver code) are in a favourable condition. This is for expenditure over and above any required to be reported in other lines. Line 3 is the sum of lines 1 and 2.	
<b>CW3.4- CW3.6</b>	Eels/fish entrainment screens	Expenditure on schemes listed in WINEP/NEP to prevent the entrainment of eels (EE/W_EEL or WFD/W_WFD driver codes) and migratory fish in existing abstraction intakes and outfalls (SAFFA/W_FISH/W_FISHMIT or WFD/W_WFD driver codes). Line 6 is the sum of lines 4 and 5.	
<b>CW3.7- CW3.9</b>	Eels/fish passes	Expenditure on schemes listed in WINEP/NEP to address physical barriers to the passage of eels (EE/W_EEL or WFD/W_WFD driver codes) and migratory fish (SAFFA/W_WFD/W_FISHMIT or WFD/W_WFD driver codes). Line 9 is the sum of lines 7 and 8.	
<b>CW3.10- CW3.12</b>	Invasive non-native species	Expenditure on schemes listed in WINEP/NEP for surveillance, action to prevent deterioration and improvement schemes (INNS/W_INNS driver code) to reduce risk of spread and impacts of invasive non-native species. Line 12 is the sum of lines 10 and 11.	4L.7- 4L.9
<b>CW3.13- CW3.15</b>	Drinking Water Protected Areas	Expenditure on schemes listed in WINEP/NEP for the implementation of catchment schemes to prevent deterioration (DrWPA/W_DrWPA driver code) or to make improvements following a deterioration in water quality to avoid an increase in the level of water treatment. Line 15 is the sum of lines 13 and 14.	4L.10- 4L.12
<b>CW3.16- CW3.18</b>	Water Framework Directive	Expenditure on schemes listed in WINEP/NEP for action to improve/achieve/protect/prevent deterioration of water body objective or ecological status within a catchment (WFD/W_WFD and WFDGW/W_WFD_GW driver codes) due to water company assets and operations. Ensure any related WFD/W_WFD driver code expenditure for wetland creation, eels/fish entrainment screens or passes are reported under other appropriate lines. This should not include any expenditure to improve the supply-demand balance as justified through a WRMP. Line 18 is the sum of lines 16 and 17.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.19- CW3.21</b>	Wetland creation	Expenditure on schemes listed in WINEP/NEP for wetland creation to improve/achieve/protect/prevent deterioration of water body objective or ecological status within a catchment (HD/W_HR, NERC/W_BIOD, SSSI/W_SSSI, WFDGW/W_WRD_GW driver codes) due to water company assets and operations. Line 21 is the sum of lines 19 and 20.	
<b>CW3.22- CW3.24</b>	Trade effluent discharge flow monitoring	Expenditure on schemes listed in WINEP/NEP for MCERTS flow monitoring to protect the environment from the effects of water treatment works trade effluent discharges (EPR/W_U driver code). Line 24 is the sum of lines 22 and 23.	
<b>CW3.25- CW3.27</b>	25 Year Environment Plan	Expenditure on schemes listed in WINEP/NEP for locally significant environmental measures (25YEP driver code) not eligible under any other driver, but with clear evidence of customer support. Line 27 is the sum of lines 25 and 26.	
<b>CW3.28- CW3.30</b>	Investigations – desk based study only	Expenditure on schemes listed in WINEP/NEP for investigations and/or options appraisals (INV/W_INV1 and NDINV/W_NDINV1 driver codes) to confirm/identify actions/determine impacts or the costs and technical feasibility of meeting targets. Investigations has been separated out to capture those that are desk-based, those that require a survey, some monitoring or simple modelling, or those requiring multiple surveys and/or monitoring, and/or complex modelling. Line 30 is the sum of lines 28 and 29.	4L.16- 4L.18
<b>CW3.31- CW3.33</b>	Investigations – survey, monitoring or simple modelling	Expenditure on schemes listed in WINEP/NEP for investigations and/or options appraisals (INV/W_INV1 and NDINV/W_NDINV1 driver codes) to confirm/identify actions/determine impacts or the costs and technical feasibility of meeting targets. Investigations has been separated out to capture those that are desk-based, those that require a survey, some monitoring or simple modelling, or those requiring multiple surveys and/or monitoring, and/or complex modelling. Line 33 is the sum of lines 31 and 32.	
<b>CW3.34- CW3.36</b>	Investigations – multiple surveys, and/or monitoring locations, and/or complex modelling	Expenditure on schemes listed in WINEP/NEP for investigations and/or options appraisals (INV/W_INV and NDINV/W_NDINV driver codes) to confirm/identify actions/determine impacts or the costs and technical feasibility of meeting targets. Investigations has been separated out to capture those that are desk-based, those that require a survey, some monitoring or simple modelling, or those requiring multiple surveys and/or monitoring, and/or complex modelling. Line 36 is the sum of lines 34 and 35.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.37- CW3.39</b>	Investigations – total	Calculated totals for capex, opex and totex for all investigations Line 37 is the sum of lines 28, 31 and 34. Line 38 is the sum of lines 29, 32 and 35. Line 39 is the sum of lines 37 and 38.	
<b>CW3.40</b>	Total environmental programme expenditure	The sum of WINEP/NEP lines CW3.3, CW3.6, CW3.9, CW3.12, CW3.15, CW3.18, CW3.21, CW3.24, CW3.27, CW3.30, CW3.33 and CW3.36.	4L.19
<b>CW3.41- CW3.43</b>	Supply-side improvements delivering benefits in 2025-2030	Expenditure that enhances the supply-demand balance in 2025-30. Includes expenditure associated with schemes delivering supply-side (resource and production options) enhancements in 2025-30. The benefits (Ml/d) associated with this expenditure are reported in table CW8. Line 43 is the sum of lines 41 and 42.	4L.20- 4L.22
<b>CW3.44- CW3.46</b>	Demand-side improvements delivering benefits in 2025-2030 (excl leakage and metering)	Expenditure that enhances the supply-demand balance in 2025-30. Includes expenditure associated with schemes delivering demand-side (water efficiency options) enhancements in 2025-30. This excludes benefits from leakage and metering activities. The benefits (Ml/d) associated with this expenditure are reported in table CW8. Line 46 is the sum of lines 44 and 45.	4L.23- 4L.25
<b>CW3.47- CW3.49</b>	Leakage improvements delivering benefits in 2025-2030	Expenditure that enhances the supply-demand balance in 2025-30. Includes expenditure associated with schemes delivering leakage enhancements in 2025-30. Line 49 is the sum of lines 47 and 48.	4L.26- 4L.28
<b>CW3.50- CW3.52</b>	Interconnectors delivering benefits in 2025-2030	Expenditure that enhances the supply-demand balance in 2025-30. Includes expenditure associated with connections delivering benefits through interconnectivity in 2025-2030. The benefits (Ml/d) associated with this expenditure are reported in table CW8. Line 52 is the sum of lines 50 and 51.	4L.29- 4L.31
<b>CW3.53- CW3.55</b>	Supply demand balance improvements delivering benefits starting from 2031	Expenditure that enhances the supply-demand balance in the longer term (providing benefits from 2031 onwards). Includes expenditure associated with connections delivering interconnectivity benefits from 2031. The benefits (Ml/d) associated with this expenditure are reported in table CW8. Line 55 is the sum of lines 53 and 54.	4L.32- 4L.34
<b>CW3.56- CW3.58</b>	Strategic regional water resource solutions	Expenditure associated with the strategic regional water resource solutions development programme. For development funding we expect the funding envelope for the future development requirements in PR24 to be limited and targeted at delivering large infrastructure solutions to be ready when they are needed (based on agreed final WRMP24). Line 58 is the sum of lines 56 and 57.	4L.35- 4L.37
<b>CW3.59</b>	Total supply demand expenditure	The sum of lines CW3.43, CW3.46, CW3.49, CW3.52, CW3.55 and CW3.58	4L.38

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.60- CW3.62</b>	New meters requested by existing customers (optants)	Expenditure related to metering (excluding cost of providing metering to new service connections) for provision of meters requested by existing customers (optants). This does not include costs related to smart meter infrastructure assets such as telemetry. Costs associated with meter readings for retail activities are reported in line RET1.5 Line 62 is the sum of lines 60 and 61.	4L.39- 4L.41
<b>CW3.63- CW3.65</b>	New meters introduced by companies for existing customers	Expenditure related to the provision of meters introduced by companies (excluding cost of providing metering to new service connections), irrespective of whether these meters are used for charging. This does not include costs related to smart meter infrastructure assets such as telemetry. Costs associated with meter readings for retail activities are reported in line RET1.5. Line 65 is the sum of lines 63 and 64.	4L.42- 4L.44
<b>CW3.66- CW3.68</b>	New meters for existing customers - business	Expenditure related to the provision of meters to businesses and other non-household customers (excluding cost of providing metering to new service connections). This does not include costs related to smart meter infrastructure assets such as telemetry. Costs associated with meter readings for retail activities are reported in line RET1.5. Line 68 is the sum of lines 66 and 67.	4L.45- 4L.47
<b>CW3.69- CW3.71</b>	Replacement of existing basic meters with AMR meters for residential customers	The enhancement element of the expenditure relating to the activity of replacing basic meters for existing residential customer basic meter installations with/to AMR meters. This does not include costs related to smart meter infrastructure assets such as telemetry. This line should only be completed by companies who were allocated enhancement expenditure to replace basic meters with smart meters in the PR19 final determinations or as part of our green economic recovery final decisions Line 71 should equal the sum of lines 69 and 70.	4L.48-4L.50
<b>CW3.72- CW3.74</b>	Replacement of existing basic meters with AMI meters for residential customers	The enhancement element of the expenditure relating to the activity of upgrading to/or replacing existing residential customer basic meter installations with/to AMI meters. This does not include costs related to smart meter infrastructure assets such as telemetry. This line should only be completed by companies who were allocated enhancement expenditure to replace basic meters with smart meters in the PR19 final determinations or as part of our green economic recovery final decisions.  Line 74 should equal the sum of lines 72 and 73.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.75- CW3.77</b>	Replacement of existing AMR meters with AMI meters for residential customers	<p>The enhancement element of the expenditure relating to the activity of upgrading to/or replacing existing residential customer AMR meter installations with/to AMI meters. This does not include costs related to smart meter infrastructure assets such as telemetry. This line should only be completed by companies who were allocated enhancement expenditure to replace basic meters with smart meters in the PR19 final determinations or as part of our green economic recovery final decisions.</p> <p>Line 77 should equal the sum of lines 75 and 76.</p>	
<b>CW3.78- CW3.80</b>	Replacement of existing basic meters with AMR meters for business customers	<p>The enhancement element of the expenditure relating to the activity of upgrading to/or replacing existing business customer basic meter installations with/to AMR meters. This does not include costs related to smart meter infrastructure assets such as telemetry. This line should only be completed by companies who were allocated enhancement expenditure to replace basic meters with smart meters in the PR19 final determinations or as part of our green economic recovery final decisions.</p> <p>Line 80 should equal the sum of lines 78 and 79.</p>	
<b>CW3.81- CW3.83</b>	Replacement of existing basic meters with AMI meters for business customers	<p>The enhancement element of the expenditure relating to the activity of upgrading to/or replacing existing business customer basic meter installations with/to AMI meters. This does not include costs related to smart meter infrastructure assets such as telemetry. This line should only be completed by companies who were allocated enhancement expenditure to replace basic meters with smart meters in the PR19 final determinations or as part of our green economic recovery final decisions.</p> <p>Line 83 should equal the sum of lines 81 and 82.</p>	
<b>CW3.84- CW3.86</b>	Replacement of existing AMR meters with AMI meters for business customers	<p>The enhancement element of the expenditure relating to the activity of upgrading to/or replacing existing business customer AMR meter installations with/to AMI meters. This does not include costs related to smart meter infrastructure assets such as telemetry. This line should only be completed by companies who were allocated enhancement expenditure to replace basic meters with smart meters in the PR19 final determinations or as part of our green economic recovery final decisions.</p> <p>Line 86 should equal the sum of lines 84 and 85.</p>	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.87- CW3.89</b>	Smart metering infrastructure	Expenditure related to the provision of infrastructure such as telemetry to support the residential and business smart meter network. In this context the use of the term infrastructure is not intended to signify a split between non-infrastructure and infrastructure in regulatory reporting terms. It is rather capturing expenditure relating to smart meter programme assets outside of the meter and meter installation costs captured in the lines above. Line 89 should equal the sum of lines 87 and 88.	4L.51- 4L.53
<b>CW3.90</b>	Total metering expenditure	The sum of lines, CW3.62, CW3.65, CW3.68, CW3.71, CW3.74, CW3.77, CW3.80, CW3.83, CW3.86 and CW3.89.	4L.54
<b>CW3.91- CW3.93</b>	Improvements to taste, odour, colour (grey solutions)	Expenditure to deliver improvements to consumer acceptability of the drinking water (relating to taste, odour and colour) through grey solutions (conventional). Line 93 should equal the sum of lines 91 and 92.	4L.55- 4L.57
<b>CW3.94- CW.96</b>	Improvements to taste, odour and colour (green solutions)	Expenditure to deliver improvements to consumer acceptability of the drinking water (relating to taste, odour and colour) through green solutions (eg nature-based solutions/non-conventional). Line 96 should equal the sum of lines 94 and 95.	
<b>CW3.97- CW3.99</b>	Addressing raw water quality deterioration (grey solution)	Expenditure on grey solutions to address raw water deterioration (THM, nitrates, Crypto, pesticides, others). Line 99 should equal the sum of lines 97 and 98.	
<b>CW3.100- CW3.1029</b>	Addressing raw water quality deterioration (green solution)	Expenditure on green solutions to address raw water deterioration (THM, nitrates, Crypto, pesticides, others). Line 102 should equal the sum of lines 100 and 101.	
<b>CW3.103- CW3.1052</b>	Conditioning water to reduce plumbosolvency	Expenditure to deal with conditioning of water entering distribution system. Line 105 should equal the sum of lines 103 and 104.	
<b>CW3.106- CW3.108</b>	Lead communication pipes replaced or relined for water quality	Expenditure on replaced or relined lead communication pipes that are owned by the company for water quality reasons. Costs are only associated with CW6.21 – Number of lead communication pipes replaced or relined for water quality Line 108 should equal the sum of lines 106 and 107.	
<b>CW3.109- CW3.111</b>	External lead supply pipes replaced or relined	Expenditure on external lead pipes replaced or relined from the underground boundary box or property boundary to the internal stop tap or above ground boundary box (if fitted). Line 111 should equal the sum of lines 109 and 110.	
<b>CW3.112- CW3.114</b>	Internal lead supply pipes replaced or relined	Expenditure on internal lead supply pipes replaced or relined from the internal stop tap or above ground boundary box to the compliance point (kitchen tap). Line 114 should equal the sum of lines 112 and 113.	



PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW3.115- CW3.117</b>	Other lead reduction related activity	This includes any investigation costs and other lead reduction costs not directly associated with water conditioning or the replacement or relining of communication pipes, and external and internal supply pipes. Line 117 should equal the sum of lines 115 and 116.	
<b>CW3.118- CW3.120</b>	Resilience	Expenditure to enhance resilience. This relates to expenditure to manage increasing risks of failing to give consumers an appropriate level of service and protection from events caused by hazards that are beyond company control, excluding those covered by other areas of enhancement and base expenditure (CW2). Line 120 should equal the sum of lines 118 and 119.	
<b>CW3.121- CW3.123</b>	Security – SEMD	Expenditure to comply with the requirements of Security and Emergency Measures Direction (SEMD) 2022. To include schemes to protect CNI and NI assets and assessments of further improvements to comply with industry protective security and emergency planning guidance documents. Line 123 should equal the sum of lines 121 and 122.	4L.70- 4L.72
<b>CW3.124- CW3.126</b>	Security – Cyber	Expenditure on schemes to enhance the security of network and information systems to comply with NIS Regulation 2018. Line 126 should equal the sum of lines 124 and 125.	
<b>CW3.127- CW3.129</b>	Greenhouse gas reduction (net zero)	Expenditure on schemes where the primary driver is to reduce greenhouse gas emissions. Line 129 should equal the sum of lines 127 and 128.	
<b>CW3.130- CW3.139</b>	Additional lines 1-5	Other expenditure by purpose. Where possible companies should maintain consistency with corresponding lines in previous data submissions when using these lines.	4L.76- 4L.85
<b>CW3.140</b>	Total other enhancement expenditure	The sum of freeform lines CW3.130 to 139.	4L.86
<b>CW3.141</b>	Total enhancement expenditure – capex	The sum of lines 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 41, 44, 47, 50, 53, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 91, 94, 97, 100, 103, 106, 109, 112, 115, 118, 121, 124, 127, 130, 132, 134, 136 and 138. Total enhancement capital expenditure should equal line CW1a.9	4L.87
<b>CW3.142</b>	Total enhancement expenditure – opex	The sum of lines 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38, 42, 45, 48, 51, 54, 58, 61, 64, 67, 70, 73, 76, 79, 82, 85, 88, 92, 95, 98, 101, 104, 107, 110, 113, 116, 119, 122, 125, 128, 131, 133, 135, 137 and 139. Total enhancement operating expenditure should equal line CW1a.2	4L.88
<b>CW3.143</b>	Total enhancement expenditure	The sum of lines CW3.141 and CW3.142.	4L.89

### **CW3 Additional guidance**

- 6.1 Where a quality enhancement scheme (or the proportionally allocated component of a quality enhancement scheme) has more than one cost driver, companies should allocate the expenditure attributable to the primary driver to the relevant line. Any net additional cost for delivering any further drivers should be included in the relevant line.
- 6.2 The table (and other similar expenditure tables for the water and wastewater controls) allows companies to identify i) other purpose categories of expenditure not covered by those listed in the table or ii) expenditure which is covered by the standard lines in the table but which the company considers beneficial to distinguish separately.
- 6.3 Assuming no atypical costs we expect the total operating capital expenditure to agree to the sum to table CW1.
- 6.4 Transition expenditure in table CW12 should be included in 2025–30 forecasts in this table and not in 2024–25 expenditure.
- 6.5 For strategic regional water resource solution development funding any spend in this programme for 2020–25 should be reported against this enhancement line. For forecast development funding costs from 2025–26 the relevant enhancement line that reflects the activity (eg interconnector) should be used. This applies to CW3 and other business plan data tables that use the same line descriptors (eg LS3). The data line commentary should explain what proportion of costs relate to strategic regional water resource solution development funding.

### **Resilience enhancement**

- 6.6 We have refined the resilience enhancement line definition for PR24 to mitigate some of the issues faced at PR19. For example, the PR19 resilience definition overlapped with other enhancement areas and was not explicit on what hazards this covers.
- 6.7 Companies can request investment under the resilience enhancement line to manage increasing risks from hazards that are beyond their control and not covered by other enhancement areas.
- 6.8 Examples of hazards include source water pollution, fluvial flooding of company assets and mitigating failures of other infrastructure systems such as power networks. It is essential that the company fully sets out the hazard the investment is addressing.
- 6.9 This investment category does not cover the failure of assets that are managed through maintenance. These are funded through base costs and are not within scope.

6.10 We provide additional guidance below for companies to follow when developing their PR24 business plans:

(1) The two specific categories of hazards we are open to consider for funding in this area are **natural hazards** (eg fluvial flooding) and **cascading failures of supporting systems** (eg power, source water pollution, or third party impacts).

- Therefore, asset failures, that are managed through maintenance, are funded through base (capital maintenance) expenditure and are not within scope.
- Adaptions for climate change are included, where relevant to the specified hazards. However, this is not a ‘catch-all’ for climate change expenditure. Funding to address the impact of climate change for other hazards should be factored into the relevant investment area and associated enhancement line.

(2) **Proportionally allocating cost for investments that mitigate multiple risks** both within and beyond company control.

- Solutions such as removing single points of failure can **mitigate multiple hazards**. These will include hazards relevant to this line, such as those arising from climate change, and inappropriate ones such as inadequate maintenance or delivering performance commitment improvements. These can be expected to directly impact common performance commitments and thus a proportion should be considered as **implicit within base costs**.

## CW3 Commentary requirement

6.11 Companies should include the following commentary to this table;

- An explanation of whether any costs have been proportionally allocated between expenditure categories in tables CW3 and CWW3 or between enhancement and base expenditure. Companies should include details of how much has been subject to proportional allocation and which cost drivers they have used.
- An explanation of the reasons for using the additional lines.
- If total operating and capital expenditure does not agree to table CW1 companies should provide a reconciliation so that the difference is explained.
- Clear descriptions of where further commentary, related business cases or evidence for costs in this table are included elsewhere in the business plan.

## 7. CW4 – Raw water transport, raw water storage and water treatment

Table CW4 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW4.1</b>	Total number of balancing reservoirs	All reservoirs used for holding transported raw water. See RAG4 – Appendix 2 (Water resources further guidance)	6A.1
<b>CW4.2</b>	Total volumetric capacity of balancing reservoirs	Total design/construction capacity of all balancing reservoirs used for holding transported raw water.	6A.2
<b>CW4.3</b>	Total number of raw water transport stations	Total number of raw water transport stations. For the avoidance of doubt this is the number of sites as opposed to the number of individual pumps.	6A.3
<b>CW4.4</b>	Total installed power capacity of raw water transport pumping stations	Total installed power of all raw water transport pumpsets (duty, assist and standby – irrespective of the number that may be working at any one time)	6A.4
<b>CW4.5</b>	Total length of raw water transport mains and other conveyors	The length of all mains or other conveyors associated with raw water transport between water resources defined assets (eg a river intake pumping station and a surface water reservoir) and raw water storage and/or water treatment defined assets.  Include all amber coloured pipework in the examples given in Appendix 2 of RAG 4.	6A.5
<b>CW4.6</b>	Average pumping head ~ raw water transport	Average pumping head for the raw water transport business unit as defined in RAG4 and RAG2. This is to be calculated using actual pumping head rather than the rating of the pumps.	6A.6
<b>CW4.7</b>	Energy consumption – raw water transport (MWh)	Measure of energy usage (electricity, gas, liquid fuels) by the raw water transport business unit (irrespective of the power source). Energy usage should be measured as that which is either imported or self-generated and used in relevant business unit. No account should be taken of self-generated energy that is exported from the business unit where it is generated. Fleet transport and standby generation should be included as should an allowance for administrative buildings and head office function.	6A.7
<b>CW4.8</b>	Total number of raw water transport imports	Total number of raw water transport import points. Points not used in the year should still be included.	6A.8
<b>CW4.9</b>	Water imported from 3rd parties to raw water transport systems	The average daily water imported from 3rd parties to raw water transport systems.	6A.9
<b>CW4.10</b>	Total number of raw water transport exports	Total number of raw water transport export points. Points not used in the year should still be included.	6A.10
<b>CW4.11</b>	Water exported to 3rd parties from raw water transport systems	The average daily water exported to 3rd parties from raw water transport systems.	6A.11

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW4.12</b>	Total length of raw and pre-treated (non-potable) water transport mains for supplying customers	<p>The length of all dedicated raw and pre-treated (non-potable) water mains for supplying customers. Include;</p> <ul style="list-style-type: none"> <li>raw water and pre-treated (non-potable) mains which deliver non-potable water to the end customer or a 3rd party water company, and</li> <li>partially treated water mains which deliver non-potable water to the end customer (eg industrial process water and fire-fighting mains) or a 3rd party water company.</li> </ul> <p>Exclude raw water abstraction and transport mains and other conveyors reported in RES1.22 and CW4.5, and raw and partially treated water mains that are situated within the boundaries of the water treatment works.</p>	6A.12

Line	Title	Definition	RAG 4.11 line reference
<b>CW4.13</b>	All simple disinfection works - Number of works	Total number of simple disinfection water treatment works providing simple disinfection and pre-aeration only.	6A.13
<b>CW4.14</b>	All simple disinfection works - Water treated	<p>The average daily distribution input derived from simple disinfection water treatment works providing simple disinfection and pre-aeration only.</p> <p>Bulk supplies received should be included and bulk exports should be omitted.</p>	
<b>CW4.15</b>	W1 works - Number of works	Total number of W1 water treatment works providing simple physical treatment and/or blending only.	6A.14
<b>CW4.16</b>	W1 works - Water treated	<p>The average daily distribution input derived from W1 water treatment works providing simple physical treatment and/or blending only.</p> <p>Bulk supplies received should be included and bulk exports should be omitted.</p>	
<b>CW4.17</b>	W2 works - Number of works	Total number of W2 water treatment works providing single stage complex physical or chemical treatment but excluding processes in W4, W5 & W6.	6A.15
<b>CW4.18</b>	W2 works - Water treated	<p>The average daily distribution input derived from W2 water treatment works providing single stage complex physical or chemical treatment but excluding processes in W4, W5 &amp; W6.</p> <p>Bulk supplies received should be included and bulk exports should be omitted.</p>	
<b>CW4.19</b>	W3 works - Number of works	Total number of W3 water treatment works providing more than one stage of complex treatment but excluding processes in W4, W5 & W6.	6A.16

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW4.20</b>	W3 works – Water treated	The average daily distribution input derived from W3 water treatment works providing more than one stage of complex treatment but excluding processes in W4, W5 & W6. Bulk supplies received should be included and bulk exports should be omitted.	
<b>CW4.21</b>	W4 works – Number of works	Total number of W4 water treatment works providing one of the processes with very high operating costs	6A.17
<b>CW4.22</b>	W4 works – Water treated	The average daily distribution input derived from W4 water treatment works providing one of the processes with very high operating costs. Bulk supplies received should be included and bulk exports should be omitted.	
<b>CW4.23</b>	W5 works – Number of works	Total number of W5 water treatment works providing two or more of the processes with very high operating costs.	6A.18
<b>CW4.24</b>	W5 works – Water treated	The average daily distribution input derived from W5 water treatment works providing two or more of the processes with very high operating costs. Bulk supplies received should be included and bulk exports should be omitted.	
<b>CW4.25</b>	W6 works – Number of works	Total number of W6 water treatment works providing processes with extremely high operating costs.	6A.19
<b>CW4.26</b>	W6 works – Water treated	The average daily distribution input derived from W6 water treatment works providing processes with extremely high operating costs. Bulk supplies received should be included and bulk exports should be omitted.	

Line	Title	Definition	RAG 4.11 line reference
<b>CW4.27</b>	WTWs in size band 1 – Number of works	Please disclose the number of WTWs for band 1. See Additional Guidance	6A.20
<b>CW4.28</b>	WTWs in size band 1 – % of DI	Please disclose the proportion (%) of total DI for band 1. See additional guidance below.	
<b>CW4.29</b>	WTWs in size band 2 – Number of works	Please disclose the number of WTWs for band 2. See Additional Guidance	6A.21
<b>CW4.30</b>	WTWs in size band 2 – % of DI	Please disclose the proportion (%) of total DI for band 2. See additional guidance below.	
<b>CW4.31</b>	WTWs in size band 3 – Number of works	Please disclose the number of WTWs for band 3. See Additional Guidance	6A.22
<b>CW4.32</b>	WTWs in size band 3 – % of DI	Please disclose the proportion (%) of total DI for band 3. See additional guidance below.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

<b>CW4.33</b>	WTWs in size band 4 – Number of works	Please disclose the number of WTWs for band 4. See Additional Guidance	6A.23
<b>CW4.34</b>	WTWs in size band 4 – % of DI	Please disclose the proportion (%) of total DI for band 4. See additional guidance below.	
<b>CW4.35</b>	WTWs in size band 5 – Number of works	Please disclose the number of WTWs for band 5. See Additional Guidance	6A.24
<b>CW4.36</b>	WTWs in size band 5 – % of DI	Please disclose the proportion (%) of total DI for band 5. See additional guidance below.	
<b>CW4.37</b>	WTWs in size band 6 – Number of works	Please disclose the number of WTWs for band 6. See Additional Guidance	6A.25
<b>CW4.38</b>	WTWs in size band 6 – % of DI	Please disclose the proportion (%) of total DI for band 6. See additional guidance below.	
<b>CW4.39</b>	WTWs in size band 7 – Number of works	Please disclose the number of WTWs for band 7. See Additional Guidance	6A.26
<b>CW4.40</b>	WTWs in size band 7 – % of DI	Please disclose the proportion (%) of total DI for band 7. See additional guidance below.	
<b>CW4.41</b>	WTWs in size band 8 – Number of works	Please disclose the number of WTWs for band 8. See Additional Guidance	6A.27
<b>CW4.42</b>	WTWs in size band 8 – % of DI	Please disclose the proportion (%) of total DI for band 8. See additional guidance below.	

<b>Line</b>	<b>Title</b>	<b>Definition</b>	<b>RAG 4.11 line reference</b>
<b>CW4.43</b>	Peak week production capacity (PWPC)	Peak week production capacity (PWPC) is equivalent to the maximum volume of water which can be put into supply and sustained over a period of one week	
<b>CW4.44</b>	Total peak week production capacity (PWPC) having enhancement expenditure for grey solution improvements to address raw water quality deterioration	The amount of total PWPC that has benefited from having enhancement expenditure for grey solution improvements to address raw water quality deterioration, on a WTW's basis.	
<b>CW4.45</b>	Total peak week production capacity (PWPC) having enhancement expenditure for green solutions improvements to address raw water quality deterioration	The amount of total PWPC that has benefitted from having enhancement expenditure for green solution improvements to address raw water quality deterioration, on a WTW's basis.	
<b>CW4.46</b>	Total water treated at more than one type of works	Where water is treated at more than one type of works shown in lines CW4.13 to CW4.19 above, the average daily input which is recorded more than once in rows CW4.13 to CW4.19 above, entered as a negative.	6A.28

PR24 business plan table guidance part 3; Costs (wholesale) – water

<b>CW4.47</b>	Number of treatment works requiring remedial action because of raw water deterioration	The number of water treatment works that require remedial action because of raw water deterioration. All works should be supported by the drinking water inspectorate (DWI) or in the case of planned activity be proposed to the DWI. The works should be included in the year the substantive activity is planned to take place.	6A.29
<b>CW4.48</b>	Zonal population receiving water treated with orthophosphate	Zonal population receiving water treated with orthophosphate, in thousands	6A.30
<b>CW4.49</b>	Average pumping head – water treatment	Average pumping head for the water treatment business unit as defined in RAG 4 and RAG 2. This is to be calculated using actual pumping head rather than the rating of the pumps.	6A.31
<b>CW4.50</b>	Energy consumption - water treatment (MWh)	Measure of energy usage (electricity, gas, liquid fuels) by the water treatment wholesale business unit (irrespective of the power source). Energy usage should be measured as that which is either imported or self-generated and used in relevant business unit. No account should be taken of self-generated energy that is exported from the business unit where it is generated. Fleet transport and standby generation should be included as should an allowance for administrative buildings and head office function.	6A.32
<b>CW4.51</b>	Total number of water treatment imports	Total number of water treatment import points. Points not used in the year should still be included.	6A.33
<b>CW4.52</b>	Water imported from 3rd parties to water treatment works	The average daily water imported from 3rd parties to water treatment systems.	6A.34
<b>CW4.53</b>	Total number of water treatment exports	Total number of water treatment export points. Points not used in the year should still be included.	6A.35
<b>CW4.54</b>	Water exported to 3rd parties from water treatment works	The average daily water exported to 3rd parties from water treatment systems.	6A.36
<b>CW4.55</b>	Total number of water treatment works effluent discharges requiring new MCERTS flow monitoring	Total number of water treatment works effluent discharges requiring new MCERTS flow monitoring (EPR/W_U driver code).	

## CW4 Additional guidance

- 7.1 For both groundwater and surface water, a works is here defined as an individual location which receives raw or partially treated water for treatment (excluding secondary disinfection) and direct delivery to customers.
- 7.2 If the output of a site needs to be blended so as to become potable, then that site in itself is not defined as a works. However, where the total treatment process is split between a number of sites, the DI entering treated distribution should be split pro rata between bands based on the volumes treated at the individual sites. The pre-aeration of deep borehole water is included in category SD.



7.3 Companies should include water treatment works that have not been used in the year but have not been decommissioned and state in their commentary any instances where this is the case.

Categories of treatment types	Examples
<b>SD: Works providing simple disinfection only</b>	Marginal chlorination Pre-aeration
<b>W1: Simple disinfection plus simple physical treatment and/or blending only</b>	Rapid gravity filtration Slow sand filtration Pressure filtration Aeration (solvent removal)
<b>W2: Single stage complex physical or chemical treatment</b> <b>W3: More than one stage of complex treatment but excluding processes in W4, W5 or W6</b>	Super chlorination Coagulation Flocculation Biofiltration pH correction Softening
<b>W4: Single stage complex physical or chemical treatment with significantly higher operating costs than in W2/ W3</b> <b>W5: More than one stage of complex, high cost treatment</b>	Membrane filtration (excluding desalination) Ozone treatment Activated carbon/ pesticide removal UV treatment Adsorption treatment
<b>W6: Works with one or more very high cost processes</b>	Desalination Re-use

7.4 Line CW4.35 relates to the energy costs associated with operating costs only. For consistency within the APR (Line 2B.1) this line should include all energy costs (including electricity, gas and fuel for vehicles, plant and machinery). These lines are intended to capture energy consumed; energy exported should not be included.

#### Band Guidance CW4.20 to CW4.27

Size band	Peak week production capacity (PWPC) MI/d
<b>Band 1</b>	< 2
<b>Band 2</b>	≥ 2 and < 4
<b>Band 3</b>	≥4 and < 8
<b>Band 4</b>	≥8 and < 16
<b>Band 5</b>	≥16 and < 32
<b>Band 6</b>	≥32 and < 64
<b>Band 7</b>	≥64 and < 128

<b>Band 8</b>	≥ 128
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## **CW4 Commentary requirement**

7.5 Companies should include the following commentary to this table;

- An explanation of instances where water treatment works have not been used in the year but have not been decommissioned.
- An explanation of any material year-on-year variations.
- An explanation of any changes in reporting methods / assumptions that have led to a material change in reported figures.
- An indication of the quality of data provided.

7.6 Companies should also include more detailed evidence in relation to line items that are used as cost drivers in PR24 cost assessment including:

- Average pumping head – raw water transport (CW4.6);
- Water treatment type analysis (CW4.13 to CW4.19);
- Average pumping head – water treatment (CW4.34).

7.7 This should include a comparison of forecasts with historical growth rates.

## 8. CW5 – Treated water distribution – assets and operations

Table CW5 line definitions

Line	Title	Definition	RAG 4.11 line reference
CW5.1	Total installed power capacity of potable water pumping stations	Total installed power of all potable treated water pumpsets (duty, assist and standby – irrespective of the number that may be working at any one time) associated with treated water distribution (into and within). Refer to RAG 2 A2 for proportional allocation.	6B.1
CW5.2	Total volumetric capacity of service reservoirs	The installed design/constructed capacity of treated water service reservoirs within the water supply system including treated water reservoirs at water treatment works and any secondary disinfection plant on reservoir sites. Include break pressure tanks. Exclude decommissioned assets.	6B.2
CW5.3	Total volumetric capacity of water towers	The installed design/constructed capacity of treated water storage towers within the water supply system. Exclude decommissioned assets.	6B.3
CW5.4	Water delivered (non- potable)	All non-potable water supplied as part of the appointed business. Include all non-potable water charged at standard and non-standard rates.	6B.4
CW5.5	Water delivered (potable)	All potable water supplied as part of the appointed business. This includes: <ul style="list-style-type: none"> <li>the average volume of water delivered for billed measured residential and businesses;</li> <li>the estimated volume of water delivered for billed unmeasured residential and business properties;</li> <li>supply pipe leakage;</li> <li>meter under registration for water delivered which is measured</li> <li>unbilled water taken legally for legitimate purposes (public supplies for which no charge is made eg some sewer flushing, uncharged church supplies, fire training and fire-fighting supplies where these are not charged irrespective of whether or not they are metered). Do not include volumes associated with leakage allowance rebates to metered customers;</li> <li>water taken illegally providing it is based on actual occurrences using sound and auditable identification and recording procedures (if not this should be treated as distribution losses and excluded from this line).</li> </ul>	6B.5

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.6</b>	Water delivered (billed measured residential properties)	Average volume of water delivered to residential properties which is measured (Ml/d). This is to include supply pipe leakage and meter under-registration. Additional meters fitted to measured residential properties for ancillary supplies (eg external hosepipes) which are non-commercial are to be included, as should any fitted to unmeasured residential properties if this is how revenue is allocated. Exclude miscellaneous use (Distribution system operational use, water taken legally unbilled and water taken illegally unbilled).	6B.6
<b>CW5.7</b>	Water delivered (billed measured businesses)	Average volume of water delivered to businesses which is measured (Ml/d). This is to include supply pipe leakage and meter under-registration. Additional meters fitted to measured businesses for ancillary supplies (eg external hosepipes) which are non-commercial are to be included, as should any fitted to unmeasured businesses if this is how revenue is allocated. Exclude miscellaneous use (Distribution system operational use, Water taken legally unbilled and Water taken illegally unbilled).	6B.7
<b>CW5.8</b>	Proportion of distribution input derived from impounding reservoirs	Proportion of distribution input derived from impounding (gravity fed) reservoirs, including bulk supply. Operational sources from which no water has been obtained in the report year should not be included in the number of sources.	6B.8
<b>CW5.9</b>	Proportion of distribution input derived from pumped storage reservoirs	Proportion of distribution input derived from pumped storage reservoirs including bulk supply. Operational sources from which no water has been obtained in the report year should not be included in the number of sources. Please refer to additional guidance relating to number of sources.  Pumped storage reservoirs will receive an element of gravity flow. If this flow makes a material contribution (>20%) to the volume of the reservoir the distribution input from this source should be allocated proportionally between the two reservoir types. When reporting source numbers the source should be allocated according to the type of flow that delivers the larger part of the reservoir's input. For example, if 60% of the reservoir's volume is pumped river water the source should be counted as a pumped storage source.	6B.9
<b>CW5.10</b>	Proportion of distribution input derived from river abstractions	Proportion of distribution input derived from river abstractions including bulk supply. Operational sources from which no water has been obtained in the report year should not be included in the number of sources. Please refer to additional guidance relating to number of sources.	6B.10
<b>CW5.11</b>	Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	Proportion of distribution input derived from groundwater works including bulk supply, but excluding managed aquifer recharge (MAR) water supply schemes. Operational sources from which no water has been obtained in the report year should not be included in the number of sources. Please refer to additional guidance relating to number of sources.	6B.11

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.12</b>	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	Proportion of distribution input derived from AR supply schemes including bulk supply. AR schemes are a subset of managed aquifer recharge (MAR) schemes, which functions by recharging an aquifer before or after abstraction. The water abstracted is not necessarily the water that has been recharged, so the water can be of natural quality and require more complex treatment. This excludes aquifer storage and recovery (ASR) water supply schemes (see line below).	6B.12
<b>CW5.13</b>	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	Proportion of distribution input derived from ASR supply schemes including bulk supply. ASR schemes are a subset of managed aquifer recharge (MAR) schemes, which functions by recharging an aquifer, storing that water and maintaining its quality. The aim is to enable simple and less costly treatment of the re-abstracted water, and that the water recharged is predominantly the water that is re- abstracted. This excludes artificial recharge (AR) water supply schemes (see line above).	6B.13
<b>CW5.14</b>	Proportion of distribution input derived from saline abstractions	Proportion of distribution input derived from saline abstractions including bulk supply. Operational sources from which no water has been obtained in the report year should not be included in the number of sources.	6B.14
<b>CW5.15</b>	Proportion of distribution input derived from water reuse schemes	Proportion of distribution input derived from reuse schemes. Direct effluent reuse, not returned to the environment.	6B.15
<b>CW5.16</b>	Total number of potable water pumping stations that pump into and within the treated water distribution system	The sum of owned and operated groundwater, surface water, re-pumping and import pumping stations that pump into and within the treated water distribution system (potable water).	6B.16
<b>CW5.17</b>	Number of potable water pumping stations delivering treated groundwater into the treated water distribution system	The number of potable water pumping stations delivering treated groundwater into the treated water distribution system. Groundwater stations are to be counted as 1, regardless if it has single lift or split lift / tandem pumping arrangements. Groundwater stations are to be counted as 1 for each separate site, where the pumped output is blended 'within' the treated water distribution system. See Example 3 in additional guidance below. Do not include stations where water enters the treated distribution system by gravity alone.	6B.17
<b>CW5.18</b>	Number of potable water pumping stations delivering surface water into the treated water distribution system	The number of potable water pumping stations delivering surface water into the treated water distribution system. Do not include stations where water enters the treated distribution system by gravity alone.	6B.18

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.19</b>	Number of potable water pumping stations that re-pump water already within the treated water distribution system	The number of potable water pumping stations that re-pump water already within the treated water distribution system. Do not include single property boosters which are bespoke single customer (residential or business) solutions to overcome localised pressure and flow complaints.	6B.19
<b>CW5.20</b>	Number of potable water pumping stations that pump water imported from a 3rd party supply into the treated water distribution system	The number of potable water pumping stations that pump water imported from a 3rd party supply into the treated water distribution system. Do not include stations where water enters the treated distribution system by gravity alone.	6B.20
<b>CW5.21</b>	Total number of service reservoirs	The number of treated water service reservoirs within the water supply system including treated water reservoirs at water treatment works and any secondary disinfection plant on reservoir sites. Include break pressure tanks. Exclude decommissioned assets. A single structure divided into separate cells counts as one reservoir.	6B.21
<b>CW5.22</b>	Number of water towers	The number of treated water service towers within the water supply system. Exclude decommissioned assets.	6B.22
<b>CW5.23</b>	Energy consumption – treated water distribution (MWh)	Measure of energy usage (electricity, gas, liquid fuels) by the treated water distribution wholesale business unit (irrespective of the power source). Energy usage should be measured as that which is either imported or self-generated and used in relevant business unit. No account should be taken of self-generated energy that is exported from the business unit where it is generated. Fleet transport and standby generation should be included as should an allowance for administrative buildings and head office function.	6B.23
<b>CW5.24</b>	Average pumping head – treated water distribution	Average pumping head for the treated water distribution business unit as defined in RAG 4 and RAG 2. This is to be calculated using actual pumping head rather than the rating of the pumps.	6B.24
<b>CW5.25</b>	Total number of treated water distribution imports	Total number of treated water distribution import points. Points not used in the year should be included.	6B.25
<b>CW5.26</b>	Water imported from 3rd parties to treated water distribution systems	The average daily water imported from 3rd parties to treated water distribution systems.	6B.26
<b>CW5.27</b>	Total number of treated water distribution exports	Total number of treated water distribution export points. Points not used in the year should still be included.	6B.27
<b>CW5.28</b>	Water exported to 3rd parties from treated water distribution systems	The average daily water exported to 3rd parties from treated water distribution systems.	6B.28

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.29</b>	Peak 7 day rolling average distribution input	The peak 7 day rolling average distribution input (DI) is the average daily DI of the 7 consecutive days within the charging year 1 April - 31 March with the highest DI. Please include appropriate commentary identifying the 7 day period when the peak 7 day rolling average occurred. For the avoidance of doubt this figure is reported prior to any MLE adjustments and represents the volume of potable water input to the distribution network at treatment works, boreholes and bulk potable supply imports, with any bulk potable supply exports deducted.	6B.29
<b>CW5.30</b>	Peak 7 day rolling average distribution input /annual average distribution input	This is calculated as a percentage at the company level as follows:  [Peak 7 day rolling average distribution input (CW.5.29) / Distribution input (CW.5.38)] * 100	6B.30

For water balance and leakage component data we provide three tables for company level, region 1 and region 2 level reporting. The majority of companies will only need to complete the company level tables. The regional tables are provided for companies that have regional performance commitment levels relating to demand components. We add the regional line references in brackets in the table below ie company level reference, (region 1 reference, region 2 reference). Where necessary we have added information relating to region 1 and region 2 calculations in brackets in the line description rather than repeat lines multiple times.

For water balance components:

- Lines CW5.31 to CW5.39 should be used for company level reporting
- Lines CW5.40 to CW5.48 should be for region 1 level reporting
- Lines CW5.49 to CW5.57 should be for region 2 level reporting

For leakage components:

- Lines CW5.58 to CW5.67 should be used for company level reporting
- Lines CW5.68 to CW5.77 should be for region 1 level reporting
- Lines CW5.78 to CW5.87 should be for region 2 level reporting

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.31</b> <b>(CW5.40,</b> <b>CW5.49)</b>	Measured household consumption (excluding supply pipe leakage)	<p>Measured household consumption (excluding supply pipe leakage) for the reporting year. Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.31 for company level reporting, line CW5.40 for region 1 level reporting and line CW5.49 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40–5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49–5.55 should sum to the total reported in line CW5.56).</p>	6B.31 (6B.40, 6B.49)
<b>CW5.32</b> <b>(CW5.41,</b> <b>CW5.50)</b>	Unmeasured household consumption (excluding supply pipe leakage)	<p>Unmeasured household consumption (excluding supply pipe leakage) for the reporting year. Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.32 for company level reporting, line CW5.41 for region 1 level reporting and line CW5.50 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40–5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49–5.55 should sum to the total reported in line CW5.56).</p>	6B.32 (6B.41, 6B.50)
<b>CW5.33</b> <b>(CW5.42,</b> <b>CW5.51)</b>	Measured non-household consumption (excluding supply pipe leakage)	<p>Measured non-household consumption (excluding supply pipe leakage). Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.33 for company level reporting, line CW5.42 for region 1 level reporting and line CW5.51 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40–5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49–5.55 should sum to the total reported in line CW5.56).</p>	6B.33 (6B.42, 6B.51)
<b>CW5.34</b> <b>(CW5.43,</b> <b>CW5.52)</b>	Unmeasured non-household consumption (excluding supply pipe leakage)	<p>Unmeasured non-household consumption (excluding supply pipe leakage). Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.34 for company level reporting, line CW5.43 for region 1 level reporting and line CW5.52 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40–5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49–5.55 should sum to the total reported in line CW5.56).</p>	6B.34 (6B.43, 6B.52)



PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.35</b> <b>(CW5.44,</b> <b>CW5.53)</b>	Total annual leakage	<p>Total annual leakage measures the sum of distribution losses and supply pipe losses in megalitres per day (Ml/d). It includes any uncontrolled losses between the treatment works and the customer’s stop tap. It does not include internal plumbing losses. Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.35 for company level reporting, line CW5.44 for region 1 level reporting and line CW5.53 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40-5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49-5.55 should sum to the total reported in line CW5.56).</p>	6B.35 (6B.44, 6B.53)
<b>CW5.36</b> <b>(CW5.45,</b> <b>CW5.54)</b>	Distribution system operational use	<p>Distribution system operational use includes water used by a company to meet its statutory obligations particularly those relating to water quality. Examples include mains flushing and air scouring. Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.36 for company level reporting, line CW5.45 for region 1 level reporting and line CW5.54 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40-5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49-5.55 should sum to the total reported in line CW5.56).</p>	6B.36 (6B.45, 6B.54)
<b>CW5.37</b> <b>(CW5.46,</b> <b>CW5.55)</b>	Water taken unbilled	<p>Total water taken unbilled (whether legally or illegally). Water used by the company for mains tests, flushing, washouts, running to waste, or incurred through burst mains or other leakage should be excluded. Reported post MLE. This is a component of water balance reporting.</p> <p>Use line CW5.37 for company level reporting, line CW5.46 for region 1 level reporting and line CW5.55 for region 2 level reporting.</p> <p>Leakage losses resulting from supply pipe leakage on void properties should not be included in this line as it is reported within the total leakage component of the water balance (line CW.36 for company level reporting, line CW5.45 for region 1 level reporting and line CW5.54 for region 2 level reporting respectively).</p> <p>Supply pipe leakage on void properties is also identified separately in the leakage components included in lines CW5.64 to CW5.67 for company level reporting, lines CW5.74 to CW5.77 for region 1 reporting and lines CW5.84 to CW5.87 for region 2 reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40-5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49-5.55 should sum to the total reported in line CW5.56).</p>	6B.37 (6B.46, 6B.55)

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.38</b> <b>(CW5.47,</b> <b>CW5.56)</b>	Distribution input	<p>Distribution input is the average amount of potable water entering the distribution system. Please refer to the additional guidance for a diagrammatic representation of the components this should include. Distribution input is reported as an annual average MI/d figure and in this line should be reported post MLE. Use line CW5.38 for company level reporting, line CW5.47 for region 1 level reporting and line CW5.56 for region 2 level reporting.</p> <p>At a company level lines CW5.31 – 5.37 should sum to the total reported in line CW5.38 (For region 1, lines CW5.40-5.46 should sum to the total reported in line CW5.47 and for region 2 CW5.49-5.55 should sum to the total reported in line CW5.56).</p>	6B.38 (6B.47, 6B.56)
<b>CW5.39</b> <b>(CW5.48,</b> <b>CW5.57)</b>	Distribution input (pre-MLE)	<p>Distribution input (pre-MLE) is a measure of the volume of potable water input to the distribution network at ground water and surface water treatment works, and bulk potable supply imports, with any bulk potable supply exports deducted. Distribution input is reported as an annual average MI/d and in this line should be reported as a pre-MLE figure following the criteria defined in the PR19 performance commitment reporting guidance – Ofwat, '<a href="#">Reporting guidance – leakage</a>', 2018, p. 14. Use line CW5.39 for company level reporting, line CW5.48 for region 1 level reporting and line CW5.57 for region 2 level reporting.</p>	6B.39 (6B.48, 6B.57)
<b>CW5.58</b> <b>(CW5.68,</b> <b>CW5.78)</b>	Leakage upstream of DMAs	<p>Represents the losses between distribution input (DI) meters and the zonal or DMA meters used for operational leakage management (i.e., network upstream of DMA meters used for leakage targeting, including any trunk mains and service reservoirs). Post MLE estimates should be used for this reporting line. For companies that use zonal reporting that includes trunk mains and service reservoirs as part of reporting total leakage, this line should be the difference between total leakage and DMA/sub zonal leakage.</p> <p>For companies that report total leakage using DMAs plus other estimates for trunk mains and service reservoir leakage, these post MLE estimates should be used to derive this line.</p> <p>Use line CW5.58 for company level reporting, line CW5.68 for region 1 level reporting and line CW5.78 for region 2 level reporting.</p> <p>For company level reporting line CW5.58 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.68 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.78 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53.</p>	6B.58 (6B.68, 6B.78)

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<p><b>CW5.59</b> (<b>CW5.69,</b> <b>CW5.79)</b></p>	<p>Distribution main losses</p>	<p>Distribution main losses represents the losses from the company's potable water distribution mains downstream of DMA meters, excluding any customer supply pipe losses. Reported as a post MLE figure.</p> <p>Use line CW5.59 for company level reporting, line CW5.69 for region 1 level reporting and line CW5.79 for region 2 level reporting.</p> <p>For company level reporting line CW5.59 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.69 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.79 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53</p> <p>For company level reporting lines CW5.58 and CW5.59 replace the line 'Distribution losses' previously used in annual performance reporting. The sum of CW5.58 and CW5.59 providing the equivalent 'Distribution losses' figure.</p> <p>For region 1 level reporting lines CW5.68 and CW5.69 replace the line 'Distribution losses' previously used in annual performance reporting. The sum of CW5.68 and CW5.69 providing the equivalent 'Distribution losses' figure.</p> <p>For region 2 level reporting lines CW5.78 and CW5.79 replace the line 'Distribution losses' previously used in annual performance reporting. The sum of CW5.78 and CW5.79 providing the equivalent 'Distribution losses' figure.</p>	<p>6B.59 (6B.69, 6B.79)</p>
<p><b>CW5.60</b> (<b>CW5.70,</b> <b>CW5.80)</b></p>	<p>Customer supply pipe losses – measured households excluding void properties</p>	<p>Losses on the customer supply pipe of measured household customers. It does not include internal plumbing losses. Reported as a post MLE figure.</p> <p>Use line CW5.60 for company level reporting, line CW5.70 for region 1 level reporting and line CW5.80 for region 2 level reporting.</p> <p>This excludes losses from supply-pipes on void measured household properties which are included are included below in line CW5.64 for company level reporting, line CW5.74 for region 1 level reporting and line CW5.84 for region 2 level reporting.</p> <p>For company level reporting line CW5.60 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.70 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.80 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53</p>	<p>6B.60 (6B.70, 6B.80)</p>

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<p><b>CW5.61</b> (CW5.71, CW5.81)</p>	<p>Customer supply pipe losses – unmeasured households excluding void properties</p>	<p>Losses on the supply pipe of unmeasured household customers. It does not include internal plumbing losses. Reported as a post MLE figure.</p> <p>Use line CW5.61 for company level reporting, line CW5.71 for region 1 level reporting and line CW5.81 for region 2 level reporting.</p> <p>This excludes losses from supply-pipes on void unmeasured household properties which are included below in line CW5.65 for company level reporting, line CW5.75 for region 1 level reporting and line CW5.85 for region 2 level reporting.</p> <p>For company level reporting line CW5.61 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.71 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.81 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53.</p>	<p>6B.61 (6B.71, 6B.81)</p>
<p><b>CW5.62</b> (CW5.72, CW5.82)</p>	<p>Customer supply pipe losses – measured non-households excluding void properties</p>	<p>Losses on the supply pipe of measured non-household customers. It does not include internal plumbing losses. Reported as a post MLE figure.</p> <p>Use line CW5.62 for company level reporting, line CW5.72 for region 1 level reporting and line CW5.82 for region 2 level reporting.</p> <p>This excludes losses from supply-pipes on void measured non-household properties which are included below in line CW5.66 for company level reporting, line CW5.76 for region 1 level reporting and line CW5.86 for region 2 level reporting.</p> <p>For company level reporting line CW5.62 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.72 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.82 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53</p>	<p>6B.62 (6B.72, 6B.82)</p>

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<p><b>CW5.63</b> (<b>CW5.73,</b> <b>CW5.83)</b></p>	<p>Customer supply pipe losses – unmeasured non-households excluding void properties</p>	<p>Losses on the supply pipe of unmeasured non-household customers. It does not include internal plumbing losses. Reported as a post MLE figure.</p> <p>Use line CW5.63 for company level reporting, line CW5.73 for region 1 level reporting and line CW5.83 for region 2 level reporting.</p> <p>This excludes losses from supply-pipes on void unmeasured non-household properties which are included below in line CW5.67 for company level reporting, line CW5.77 for region 1 level reporting and line CW5.87 for region 2 level reporting.</p> <p>For company level reporting line CW5.63 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.73 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.83 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53</p>	<p>6B.63 (6B.73, 6B.83)</p>
<p><b>CW5.64</b> (<b>CW5.74,</b> <b>CW5.84)</b></p>	<p>Customer supply pipe losses – void measured households</p>	<p>Losses on the customer supply pipe of void measured household properties. It does not include internal plumbing losses. Reported as a post MLE figure.</p> <p>Use line CW5.64 for company level reporting, line CW5.74 for region 1 level reporting and line CW5.84 for region 2 level reporting.</p> <p>For company level reporting line CW5.64 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.74 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.84 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53</p>	<p>6B.64 (6B.74, 6B.84)</p>
<p><b>CW5.65</b> (<b>CW5.75,</b> <b>CW5.85)</b></p>	<p>Customer supply pipe losses – void unmeasured households</p>	<p>Losses on the customer supply pipe of void unmeasured household properties. It does not include internal plumbing losses. Reported as a post MLE figure.</p> <p>Use line CW5.65 for company level reporting, line CW5.75 for region 1 level reporting and line CW5.85 for region 2 level reporting.</p> <p>For company level reporting line CW5.65 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35.</p> <p>For region 1 level reporting line CW5.75 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44.</p> <p>For region 2 level reporting line CW5.85 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53</p>	<p>6B.65 (6B.75, 6B.85)</p>

Line	Title	Definition	RAG 4.11 line reference
<b>CW5.66</b> <b>(CW5.76, CW5.86)</b>	Customer supply pipe losses – void measured non-households	Losses on the customer supply pipe of void measured non-household properties. Reported as a post MLE figure. Use line CW5.66 for company level reporting, line CW5.76 for region 1 level reporting and line CW5.86 for region 2 level reporting. For company level reporting line CW5.66 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35. For region 1 level reporting line CW5.76 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44. For region 2 level reporting line CW5.86 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53.	6B.66 (6B.76, 6B.86)
<b>CW5.67</b> <b>(CW5.77, CW5.87)</b>	Customer supply pipe losses – void unmeasured non-households	Losses on the customer supply pipe of void unmeasured non-household properties. Reported as a post MLE figure. Use line CW5.67 for company level reporting, line CW5.77 for region 1 level reporting and line CW5.87 for region 2 level reporting. For company level reporting line CW5.67 is a subcomponent of CW5.35 and lines CW5.58 to CW5.67 should sum to the total in CW5.35. For region 1 level reporting line CW5.77 is a subcomponent of CW5.44 and lines CW5.68 to CW5.77 should sum to the total in CW5.44. For region 2 level reporting line CW5.87 is a subcomponent of CW5.53 and lines CW5.78 to CW5.87 should sum to the total in CW5.53.	6B.67 (6B.77, 6B.87)

## CW5 Additional guidance

- 8.1 Measured volumes supplied to NAVs should be reported as bulk exports under CW5.28, Water exported to 3rd parties' from treated water distribution systems.

## Component analysis as a proportion of distribution input – not to scale

Distribution Input						
Distribution system ←-----	Customers' installations -----▶					
	Water Delivered – billed	Water Delivered – billed measured business	Water Delivered – billed	Water Delivered – billed	Water taken legally unbilled	Water taken illegally unbilled

PR24 business plan table guidance part 3; Costs (wholesale) – water

		measured residential		unmeasured residential	unmeasured business			
		Water Delivered – billed measured		Water Delivered – billed unmeasured		Water taken unbilled		
		Water Delivered – billed						
Water not delivered		Water Delivered to customers						
Distribution system operational use	Distribution Losses	Underground supply pipe losses	Total plumbing losses		Customer use			
			Above ground supply pipe losses	Internal plumbing losses				
		Total leakage		Consumption				

8.2 The proportions entered in lines CW5.8 to CW5.15 should sum to unity. The proportion of water in each source category is a measure of how difficult a company's water is to treat. When classifying the water into one of the categories, the following guidelines should be followed.

- Water abstracted from boreholes or springs and pumped directly to a treatment works should be classified as groundwater water.
- Water abstracted from a river and transported directly to a treatment works (either by pumping or by gravity) should be classified as river water.
- Water that is transported directly to a treatment works from a reservoir which has been filled by a river should be classified as water from reservoirs (this is because, in general, while the water is stored in the reservoir, sediments will settle making the water easier to treat).
- Water that is transported from a reservoir, via a river, to a treatment works should be classified as water from a river.

8.3 If multiple sources feed a works (for example a river and a number of boreholes) and the flow from these sources is combined prior to treatment, then all of the flow entering the works can be categorised as the more difficult to treat water. (In this example, all of the water would be categorised as river water.)

- 8.4 For lines CW5.64 to CW5.87 if companies generate a single figure for supply pipe losses on all void properties they should highlight this in their narrative and any assumptions they have made to distribute this loss between the four lines in their reporting.
- 8.5 MLE refers to the maximum likelihood estimation adjustments used to reconcile the water balance gap between distribution input and the sum of water delivered to customers, a company's own water use, water delivered unbilled, distribution system use and leakage.<sup>1</sup> When we reference pre-MLE figures in the context of distribution input we are referring to the volume of water that has been directly measured as entering the company's distribution system through flow monitoring.
- 8.6 Forecast demand components of the water balance in table CW5 should be reported consistently with the line definitions. Values should also match the relevant annual average lines in table OUT4 that companies have used to produce their performance trend forecasts for performance commitments such as leakage, per capita consumption, and business demand. We do not expect any variances between the forecast water balance components presented in the business plan (eg demand reduction proposals) in the those in companies final WRMPs.

### **Guidance for calculating the total number of pumping stations that pump into and within the treated water distribution service (potable water)**

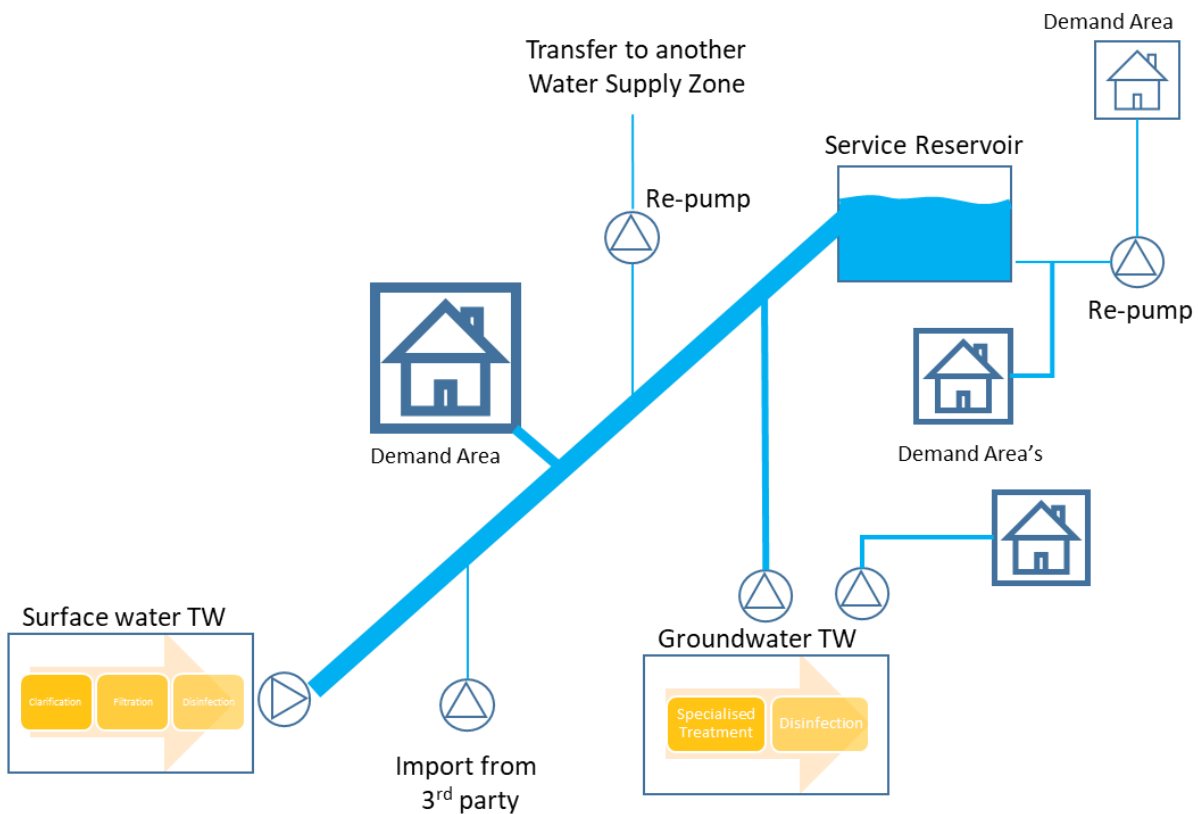
- 8.7 When calculating the number of pumping stations note that this is not the number of individual pumps.
- 8.8 Include all pumping stations that have been operationally available, regardless of whether they have been used in the reporting year, as this applies to all types of pumping stations, not just those lines related to 'proportion of distribution input'.
- 8.9 Do not count more than once where a common source water is pumped to separate pressures at the same site (ie high lift and low lift), see example 2
- 8.10 Pumping stations solely for exporting water to a 3rd party are to be excluded, as per RAG2 A1.

### **Definition of average pumping head**

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<sup>1</sup> See Ofwat, ['Reporting guidance – leakage'](#), 2018, p. 14.

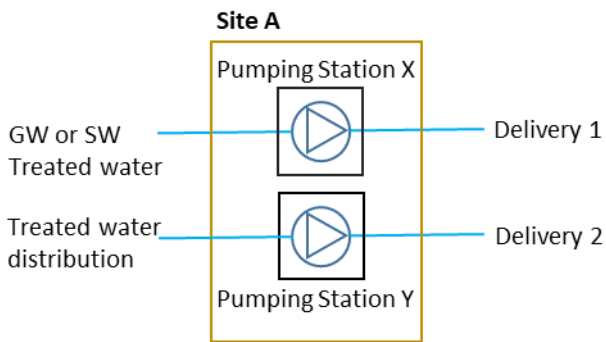




**Note:** Pumping stations solely for exporting to a 3<sup>rd</sup> party are to be excluded

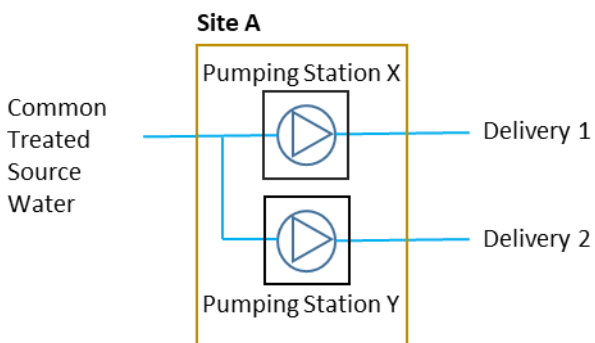
### Example 1

This is where a pumping station (Y) that re-pumps water already within the Treated Water Distribution System is located at the same site (A) as a groundwater or surface water pumping station (X). This counts as two pumping stations (one in CW5.19 and one in CW5.17 or CW.18).



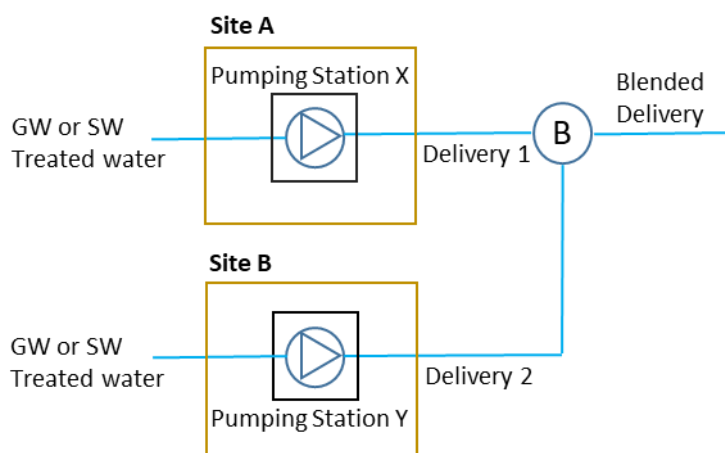
### Example 2

This is where multiple pumping stations may be located at the same site where a common source water (groundwater or surface water) is pumped to separate pressures at the same site (ie high lift and low lift). This counts as **one pumping station**.



### Example 3

This is where two separate Groundwater or Surface water pumping stations at different sites are blended in treated water distribution. This counts as **two pumping stations**.



8.11 Pumping stations solely for the exporting water to a 3rd party are to be **excluded**, as per RAG2 A1.

## CW5 Commentary requirement

8.12 Companies should include the following commentary to this table;

- An explanation of any material year-on-year variations.
- An explanation of any changes in reporting methods / assumptions that have led to a material change in reported figures.
- An indication of the quality of data provided.

8.13 Companies should also include more detailed evidence in relation to line items that are used as cost drivers in PR24 cost assessment including:

- Number of potable water pumping stations (CW5.16 to CW.20);
- Average pumping head – treated water distribution (CW5.24).

8.14 This should include a comparison of forecasts with historical growth rates.

8.15 Companies should include appropriate commentary for Peak 7 day rolling average distribution input in line CW5.29 identifying the 7 day period when the peak 7 day rolling average occurred.

## 9. CW6 – Water network+ – Mains, communication pipes and other data

Table CW6 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW6.1</b>	Total length of potable mains as at 31 March	The total length of potable water mains on 31 March of report year	6C.1
<b>CW6.2</b>	Total length of potable mains relined	Total length of potable mains relined in report year. Include all spray applied lining.	6C.2
<b>CW6.3</b>	Total length of potable mains renewed	Total length of potable mains renewed in report year. Include mains whose prime purpose is renewal of an existing main, even where existing main remains in service (ie is not abandoned immediately on commissioning of new main). Include mains sleeving/pipe cracking/slip lining where used for this category of work.	6C.3
<b>CW6.4</b>	Total length of new potable mains	Total length of new potable mains laid in report year. Include new mains and mains renewals involving upsizing, whose prime justification is the requirement for additional capacity.	6C.4
<b>CW6.5</b>	Total length of potable water mains ( $\leq 320\text{mm}$ )	The length of all potable water mains less than or equal to 320mm. Include all elements of trunk and distribution assets and system ancillaries. Include facilities intended for standby and emergency supplies.	6C.5
<b>CW6.6</b>	Total length of potable water mains ( $>320\text{mm}$ and $\leq 450\text{mm}$ )	The total length of all potable water mains greater than 320mm up to and including 450mm. Include all elements of trunk and distribution assets and system ancillaries. Include facilities intended for standby and emergency supplies.	6C.6
<b>CW6.7</b>	Total length of potable water mains ( $>450\text{mm}$ and $\leq 610\text{mm}$ )	The total length of all potable water mains greater than 450mm up to and including 610mm. Include all elements of trunk and distribution assets and system ancillaries. Include facilities intended for standby and emergency supplies.	6C.7
<b>CW6.8</b>	Total length of potable water mains ( $> 610\text{mm}$ )	The length of all potable water mains greater than 610mm. Include all elements of trunk and distribution assets and system ancillaries. Include facilities intended for standby and emergency supplies.	6C.8
<b>CW6.9</b>	Total length of potable mains laid or structurally refurbished pre-1880	Total length of potable mains laid or structurally refurbished pre- 1880	6C.12
<b>CW6.10</b>	Total length of potable mains laid or structurally refurbished between 1881 and 1900	Total length of potable mains laid or structurally refurbished between 1881 and 1900	6C.13

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW6.11</b>	Total length of potable mains laid or structurally refurbished between 1901 and 1920	Total length of potable mains laid or structurally refurbished between 1901 and 1920	6C.14
<b>CW6.12</b>	Total length of potable mains laid or structurally refurbished between 1921 and 1940	Total length of potable mains laid or structurally refurbished between 1921 and 1940	6C.15
<b>CW6.13</b>	Total length of potable mains laid or structurally refurbished between 1941 and 1960	Total length of potable mains laid or structurally refurbished between 1941 and 1960	6C.16
<b>CW6.14</b>	Total length of potable mains laid or structurally refurbished between 1961 and 1980	Total length of potable mains laid or structurally refurbished between 1961 and 1980	6C.17
<b>CW6.15</b>	Total length of potable mains laid or structurally refurbished between 1981 and 2000	Total length of potable mains laid or structurally refurbished between 1981 and 2000	6C.18
<b>CW6.16</b>	Total length of potable mains laid or structurally refurbished between 2001 and 2020	Total length of potable mains laid or structurally refurbished between 2001 and 2020	6C.19
<b>CW6.17</b>	Total length of potable mains laid or structurally refurbished during and after 2021	Total length of potable mains laid or structurally refurbished during and after 2021	
<b>CW6.18</b>	Number of lead communication pipes	The total number of lead communication pipes within the undertaker's supply area.	6C.9
<b>CW6.19</b>	Number of galvanised iron communication pipes	The total number of galvanised iron communication pipes within the undertaker's supply area.	6C.10
<b>CW6.20</b>	Number of other communication pipes	The total number of other (excluding lead & galvanised iron) communication pipes within the undertaker's supply area.	6C.11
<b>CW6.21</b>	Number of lead communication pipes replaced or relined for water quality	The number of lead communication pipes replaced or relined that are owned by the company for water quality reasons.	6C.21
<b>CW6.22</b>	Number of lead communication pipes replaced or relined for other reasons	The number of lead communication pipes replaced or relined that are owned by the company for other reasons (low pressure, leakage, mains rehab work)	
<b>CW6.23</b>	Total length of lead communication pipes replaced or relined	The length of lead pipe replaced or relined from the water main to the underground boundary box or the property boundary.	
<b>CW6.24</b>	Number of external lead supply pipes replaced or relined	Number of external lead supply pipes replaced or relined from the underground boundary box or property boundary to the internal stop tap or above ground boundary box (if fitted).	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW6.25</b>	Total length of external lead supply pipes replaced or relined	Total length of external lead supply pipes replaced or relined from the underground boundary box or property boundary to the internal stop tap or above ground boundary box (if fitted).	
<b>CW6.26</b>	Number of internal lead supply pipes replaced or relined	Number of internal lead supply pipes replaced or relined from the internal stop tap or above ground boundary box to the compliance point (kitchen tap).	
<b>CW6.27</b>	Total length of internal lead supply pipes replaced or relined	Total length of internal lead supply pipes replaced or relined from the internal stop tap or above ground boundary box to the compliance point (kitchen tap).	
<b>CW6.28</b>	Company area	Area of company in km <sup>2</sup> . No adjustment should be made to take account of areas supplied by NAVs.	6C.20
<b>CW6.29</b>	Compliance Risk Index	DWI measure of Compliance Risk. The Compliance Risk Index (CRI) is a measure designed to illustrate the risk arising from treated water compliance failures during the previous calendar year. It is calculated by assessment of the: the significance of the parameter failing the standards in the Regulations (the Parameter score); the cause of the failure; the manner of the investigation of the failure by the company; and any mitigation put in place by the company (the Assessment score); and the location of the failure within the supply system taking into account the proportion of the company's consumers affected. <a href="#">See <u>DWI-Compliance-Risk-Index-CRI-definition.pdf</u> (ofwat.gov.uk)</a> for more information	6C.22
<b>CW6.30</b>	Event Risk Index	DWI measure of Event Risk. The Event Risk Index (ERI) is a measure designed to illustrate the risk arising from water quality events during the previous calendar year. It is calculated by assessment of the: seriousness of the event; company performance in managing the event; impact of the event; and total population served by the company. <a href="#">See <u>DWI-Event-Risk-Index-ERI.pdf</u></a> for more information.	6C.23

## CW6 Additional guidance

9.1 Not applicable.

## CW6 Commentary requirement

9.2 Companies should include the following commentary to this table;

- An explanation of any material year-on-year variations.
- An explanation of any changes in reporting methods / assumptions that have led to a material change in reported figures.
- An indication of the quality of data provided.

9.3 Companies should also include more detailed evidence in relation to line items that are used as cost drivers in PR24 cost assessment including:

- Total length of potable mains as at 31 March (CW6.1).
- Number and length of lead communication and supply pipes replaced or relined (CW6.21 to CW.27).

9.4 This should include a comparison of forecasts with historical growth rates. In addition, companies should explain how forecast population growth across their areas impacts expected mains length growth.

## 10. CW7 – Demand management – Metering and leakage activities

Table CW7 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.1</b>	New optant meter installation for existing customers	Total capital and operating expenditure (excluding cost of providing metering to new service connections) for provision of meters requested by optants during the reporting year. This excludes meters installed at properties with an existing meter installation. These costs do not include costs related to smart meter infrastructure assets such as telemetry. These costs are associated with the meter numbers identified in line CW7.6. We expect companies to explain any variation between the costs reported in this line and line CW3.62 in their supportive narrative.	6D.1
<b>CW7.2</b>	New selective meter installation for existing customers	Total capital and operating expenditure (excluding cost of providing metering to new service connections) for provision of meters introduced by companies during the reporting year (irrespective of whether these meters are used for charging). This excludes meters installed at properties with an existing meter installation. These costs do not include costs related to smart meter infrastructure assets such as telemetry. These costs are associated with the meter numbers identified in line CW7.7. We expect companies to explain any variation between the costs reported in this line and line CW3.65 in their supportive narrative.	6D.2
<b>CW7.3</b>	New business meter installation for existing customers	Total capital and operating expenditure (excluding cost of providing metering to new service connections) for provision of new meters for businesses and other non-household customers during the reporting year. This excludes meters installed at properties with an existing meter installation. These costs do not include costs related to smart meter infrastructure assets such as telemetry. These costs are associated with the meter numbers identified in line CW7.8. We expect companies to explain any variation between the costs reported in this line and line CW3.68 in their supportive narrative.	6D.3
<b>CW7.4</b>	Residential meters renewed	Total capital and operational expenditure for the renewal of existing residential meter installations (basic or smart) with meters during the reporting year. This includes both meter installations renewed with the same type of meter (basic, AMR, AMI) on a like for like basis and replacement of an existing meter with a different type of meter. These costs do not include costs related to smart meter infrastructure assets such as telemetry. These costs are associated with the meter numbers identified in line CW7.9.	6D.4
<b>CW7.5</b>	Business meters renewed	Total capital and operational expenditure for renewal of existing business meter installations (basic or smart) with meters during the reporting year. This includes both meter installations renewed with the same type of meter (basic, AMR, AMI) on a like for like basis and replacement of an existing meter with a different type of meter. These costs do not include costs related to smart meter infrastructure assets such as telemetry. These costs are associated with the meter numbers identified in line CW7.10	6D.5



PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.6</b>	New optant meters installed for existing customers	The total number of meters installed at the request of the optants at existing residential properties during the reporting year (including where a company has installed a meter for social tariff purposes). Include meters installed at residential properties fitted in any location (eg internal, external in garden, external at boundary etc). Exclude all meters installed at the company's behest. For clarity and to avoid possible double counting, this should exclude basic meters installed at properties where the resident subsequently becomes an optant by virtue of switching to measured charges. These meters should be reported in line CW7.7. This excludes meters installed at properties with an existing meter installation, which is defined as a renewal, and should be recorded in line CW7.9.	6D.6
<b>CW7.7</b>	New selective meters installed for existing customers	The number of meters installed during the reporting year at existing billed residential properties at the behest of the company (irrespective of whether these meters are used for charging). Include meters installed at residential properties fitted in any location (eg internal, external in garden, external at boundary etc). Exclude all meters installed for meter optants or following property conversions. This excludes meters installed at properties with an existing meter installation, which is defined as a renewal, and should be recorded in line CW7.9.	6D.7
<b>CW7.8</b>	New business meters installed for existing customers	The number of meters installed during the reporting year at existing business properties. This excludes meters installed at properties with an existing meter installation, which is defined as a renewal, and should be recorded in line CW7.10.	6D.8
<b>CW7.9</b>	Residential meters renewed	The number of existing residential property meter installations renewed during the reporting year. This includes both meter installations renewed with the same type of meter (basic, AMR, AMI) on a like for like basis and replacement of an existing meter with a different type of meter.	6D.9
<b>CW7.10</b>	Business meters renewed	The number of existing business property meter installations renewed during the reporting year. This includes both meter installations renewed with the same type of meter (basic, AMR, AMI) on a like for like basis and replacement of an existing meter with a different type of meter.	6D.10
<b>CW7.11</b>	Replacement of basic meters with smart meters for residential customers	The number of existing residential customer basic meter installations where meters were upgraded to/or replaced with AMR or AMI meters during the reporting year. Reported separately for AMR and AMI meter types.	6D.11
<b>CW7.12</b>	Replacement of AMR meters with AMI meters for residential customers	The number of existing residential customer AMR meter installations where meters were upgraded to/or replaced with AMI meters during the reporting year.	6D.12

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.13</b>	Replacement of basic meters with smart meters for business customers	The number of existing business customer basic meter installations where meters were upgraded to/or replaced with AMR or AMI meters during the reporting year. Reported separately for AMR and AMI meter types.	6D.13
<b>CW7.14</b>	Replacement of AMR meters with AMI meters for business customers	The number of existing business customer AMR meter installations where meters were upgraded to/or replaced with AMI meters during the reporting year.	6D.14
<b>CW7.15</b>	New residential meters installed for existing customers – supply-demand balance benefit	The supply-demand balance benefit (demand saving) associated with the installation of the meters defined in lines CW7.6 and CW7.7. The benefit is assumed to be a reduction in consumption and is recorded as a positive figure. Benefits relating to leakage reduction are excluded from this line.	6D.15
<b>CW7.16</b>	New business meters installed for existing customers – supply-demand balance benefit	The supply-demand balance benefit (demand saving) associated with the installation of the meters defined in line CW7.8 The benefit is assumed to be a reduction in consumption and is recorded as a positive figure. Benefits relating to leakage reduction are excluded from this line.	6D.16
<b>CW7.17</b>	Replacement of basic meter with smart meters for residential customers – supply-demand balance benefit	The supply-demand balance benefit (demand saving) associated with the upgrade/replacement of existing residential customer basic meter installations to AMR or AMI meters. This relates to the meters defined in line CW7.11. The benefit is assumed to be a reduction in consumption and is recorded as a positive figure. Benefits relating to leakage reduction are excluded from this line.	6D.17
<b>CW7.18</b>	Replacement of AMR meter with AMI meter for residential customers – supply-demand balance benefit	The supply-demand balance benefit (demand saving) associated with the upgrade/replacement of existing residential customer AMR meter installations to AMI meters. This relates to the meters defined in line CW7.12. The benefit is assumed to be a reduction in consumption and is recorded as a positive figure. Benefits relating to leakage reduction are excluded from this line.	6D.18

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.19</b>	Replacement of basic meter with smart meters for business customers – supply-demand balance benefit	The supply-demand balance benefit (demand saving) associated with the upgrade/replacement of existing business customer basic meter installations to AMR or AMI meters. This relates to the meters defined in line CW7.13. The benefit is assumed to be a reduction in consumption and is recorded as a positive figure. Benefits relating to leakage reduction are excluded from this line.	6D.19
<b>CW7.20</b>	Replacement of AMR meter with AMI meter for business customers– supply-demand balance benefit	The supply-demand balance benefit (demand saving) associated with the upgrade/replacement of existing business customer AMR meter installations to AMI meters. This relates to the meters defined in line CW7.14. The benefit is assumed to be a reduction in consumption and is recorded as a positive figure. Benefits relating to leakage reduction are excluded from this line.	6D.20
<b>CW7.21</b>	Residential properties – meter penetration	The percentage of total residential properties that are measured with a water meter. This excludes void properties as no-one is present to use water. Calculated as measured residential properties divided by the sum of measured residential properties (excluding voids) and unmeasured residential properties (excluding voids). This is equivalent to the calculation of 'total household metering penetration (excl. voids)' in water resource management plans.	6D.21
<b>CW7.22</b>	Per capita consumption (measured)	Estimated per capita consumption of households that are supplied with measured water. This figure applies to billed measured households and excludes underground supply pipe leakage. Underground supply pipe leakage is any loss of water from the underground supply pipe. We expect companies to ensure the classification of properties as either household or non-household is consistent with the retail market definition of eligibility.	6D.24
<b>CW7.23</b>	Per capita consumption (unmeasured)	Estimated per capita consumption of households that are supplied with unmeasured water. This figure applies to billed unmeasured households and excludes underground supply pipe leakage. Underground supply pipe leakage is any loss of water from the underground supply pipe. We expect companies to ensure the classification of properties as either household or non-household is consistent with the retail market definition of eligibility.	6D.25
<b>CW7.24</b>	New meter installation – residential property – cost per property	Company figures for the average cost per property for new basic, AMR and AMI meter installations at residential properties. This should be aligned with its proposed metering programme for the 2025-30 period. This excludes meters installed at properties with an existing meter installation. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.25</b>	New meter installation - business property - cost per property	Company figures for the average cost per property for new basic, AMR and AMI meter installations at business properties. This should be aligned with its proposed metering programme for the 2025-30 period. This excludes meters installed at properties with an existing meter installation. This should exclude any costs associated with smart meter infrastructure assets such as telemetry	
<b>CW7.26</b>	Replacement of existing basic meter - residential property - cost per property - total cost	Company figures for the average cost per property for replacing existing basic meters at residential properties with basic, AMR and AMI meter installations aligned with its proposed metering programme for the 2025-30 period. This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.	
<b>CW7.27</b>	Replacement of existing basic meter - residential property - cost per property – enhancement element of total cost	The element of the total cost identified in line CW7.26 which the company is identifying as enhancement expenditure.	
<b>CW7.28</b>	Replacement of existing basic meter - business property - cost per property - total cost	Company figures for the average cost per property for replacing existing basic meters at business properties with basic, AMR and AMI meter installations aligned with its proposed metering programme for the 2025-30 period. This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.	
<b>CW7.29</b>	Replacement of existing basic meter - business property - cost per property – enhancement element of total cost	The element of the total cost identified in line CW7.28 which the company is identifying as enhancement expenditure.	
<b>CW7.30</b>	Replacement of existing AMR meter - residential property - cost per property - total cost	Company figures for the average cost per property for replacement of existing AMR meters, and replacement of existing AMR meters to AMI meters at residential properties based on its proposed metering programme for the 2025-30 period. This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.31</b>	Replacement of existing AMR meter – residential property – enhancement element of total cost	The element of the total cost identified in line CW7.30 which the company is identifying as enhancement expenditure.	
<b>CW7.32</b>	Replacement of existing AMR meter – business property – cost per property – total cost	Company figures for the average cost per property for replacement of existing AMR meters, and replacement of existing AMR meters with AMI meters at business properties based on its proposed metering programme for the 2025-30 period. This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.	
<b>CW7.33</b>	Replacement of existing AMR meter – business property – enhancement element of total cost	The element of the total cost identified in line CW7.32 which the company is identifying as enhancement expenditure.	
<b>CW7.34</b>	Upgrade of existing basic meter – residential property – cost per property – total cost	Company figures for the average cost per property for upgrading existing basic meters at residential properties to AMR and AMI meter installations aligned with its proposed metering programme for the 2025-30 period. This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry. Note in this context we are identifying an upgrade separately to a replacement in line CW7.26, An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.	
<b>CW7.35</b>	Upgrade of existing basic meter – residential property – enhancement element of total cost	The element of the total cost identified in line CW7.34 which the company is identifying as enhancement expenditure.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.36</b>	Upgrade of existing basic meter – business property - cost per property - total cost	<p>Company figures for the average cost per property for upgrading existing basic meters at business properties to AMR and AMI meter installations aligned with its proposed metering programme for the 2025-30 period.</p> <p>This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.</p> <p>Note in this context we are identifying an upgrade separately to a replacement in line CW7.28. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.</p>	
<b>CW7.37</b>	Upgrade of existing basic meter - business property - enhancement element of total cost	The element of the total cost identified in line CW7.36 which the company is identifying as enhancement expenditure.	
<b>CW7.38</b>	Upgrade of existing AMR meter - residential property - cost per property - total cost	<p>Company figures for the average cost per property for upgrading existing AMR meters at residential properties to AMI meter installations. This should be aligned with its proposed metering programme for the 2025-30 period.</p> <p>This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.</p> <p>Note in this context we are identifying an upgrade separately to a replacement in line CW7.30. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.</p>	
<b>CW7.39</b>	Upgrade of existing AMR meter - residential property - enhancement element of total cost	The element of the total cost identified in line CW7.38 which the company is identifying as enhancement expenditure.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
CW7.40	Upgrade of existing AMR meter - business property - cost per property - total cost	<p>Company figures for the average cost per property for upgrading existing AMR meters at business properties to AMI meter installations. This should be aligned with its proposed metering programme for the 2025-30 period.</p> <p>This cost should represent the total cost of the activity and include costs allocated to both base and enhancement expenditure. This should exclude any costs associated with smart meter infrastructure assets such as telemetry.</p> <p>Note in this context we are identifying an upgrade separately to a replacement in line CW7.32. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.</p>	
CW7.41	Upgrade of existing basic meter - business property - enhancement element of total cost	The element of the total cost identified in line CW7.40 which the company is identifying as enhancement expenditure.	
CW7.42	New meter installation - residential property - benefits per meter installation	The average benefits associated with installing a new basic, AMR and AMI meters at a residential property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with its proposed metering programme for the 2025-30 period. This excludes meters installed at properties with an existing meter installation.	
CW7.43	New meter installation - business property - benefits per meter installation	The average benefits associated with installing a new basic, AMR and AMI meters at a business property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with its proposed metering programme for the 2025-30 period. This should be aligned with the companies proposed metering programme for the 2025-30 period.	
CW7.44	Replacement of existing basic meter - residential property benefits per meter installation	The average benefits associated with replacing an existing basic meter installation with an AMR or AMI meter at a residential property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period.	
CW7.45	Replacement of existing basic meter - business property benefits per meter installation	The average benefits associated with replacing an existing basic meter installation with an AMR or AMI meter at a residential property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW7.46</b>	Replacement of existing AMR meter – residential property benefits per meter installation	The average benefits associated with replacing an existing AMR meter installation with an AMI meter at a residential property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period.	
<b>CW7.47</b>	Replacement of existing AMR meter – business property benefits per meter installation	The average benefits associated with replacing an existing AMR meter installation with an AMI meter at a business property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period.	
<b>CW7.48</b>	Upgrade of existing basic meter – residential property benefits per meter installation	The average benefits associated with upgrading an existing basic meter installation with to an AMR or AMI meter at a residential property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period. Note in this context we are identifying an upgrade separately to a replacement in line CW7.44. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.	
<b>CW7.49</b>	Upgrade of existing basic meter – business property benefits per meter installation	The average benefits associated with upgrading an existing basic meter installation with to an AMR or AMI meter at a business property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period. Note in this context we are identifying an upgrade separately to a replacement in line CW7.45. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.	
<b>CW7.50</b>	Upgrade of existing AMR meter – residential property benefits per meter installation	The average benefits associated with upgrading an existing AMR meter installation to an AMI meter at a residential property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period. Note in this context we are identifying an upgrade separately to a replacement in line CW7.46. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.	



Line	Title	Definition	RAG 4.11 line reference
<b>CW7.51</b>	Upgrade of existing AMR meter – business property benefits per meter installation	<p>The average benefits associated with upgrading an existing AMR meter installation to an AMI meter at a business property. Benefits should be expressed in terms of leakage, consumption, and total savings. This should be aligned with the companies proposed metering programme for the 2025-30 period.</p> <p>Note in this context we are identifying an upgrade separately to a replacement in line CW7.47. An upgrade retains the existing meter asset, modifying it to enable smarter functionality. A replacement removes the existing meter asset and installs a new meter asset.</p>	

## CW7 Additional guidance

- 10.1 For a definition of basic, automated meter read (AMR) and advanced metering infrastructure (AMI) meters please see guidance for tables SUP1A and SUP1B.
- 10.2 For avoidance of doubt the expenditure lines in table CW7 should include any allocation of general and support costs to these activities. Any assumptions necessary to derive figures at the level of granularity requested in this table and an associated assessment of confidence in the data should be included in your supporting narrative.
- 10.3 Unless specified otherwise in the line description reporting of lines CW7.1 to CW7.51 should be split by meter type, basic meter, AMR meter or AMI meter.
- 10.4 Lines CW7.24 to CW7.51 should be completed by companies based upon the activities they are proposing to undertake within their proposed metering programme for the 2025-30 period. Where a company is not planning to undertake an activity, it should leave the appropriate cell blank and clearly identify this in the commentary.
- 10.5 Benefits of metering installation in terms of reduction in leakage or consumption should be recorded in accordance with the PR24 performance commitment definitions for per capita consumption (PCC) and leakage. As such reducing leakage that occurs in the customers property beyond the underground customer supply pipe will lead to a consumption rather than a leakage benefit.

## CW7 Commentary requirement

- 10.6 Companies should include the following commentary to this table;
  - An explanation of any material year-on-year variations.

- An explanation of any changes in reporting methods / assumptions that have led to a material change in reported figures.
- An indication of the quality of data provided.

10.7 The company should provide details of how the figures in lines CW7.24 to CW7.51 have been calculated and clearly reference where these figures have been derived using figures reported in other lines of the business plan tables.

## 11. CW8 – WRMP schemes (excluding leakage and metering activities)

Table CW8 line definitions

Line	Title	Classification and delivery year	Expenditure	Benefits	RAG 4.11 line reference
<b>CW8.1- CW8.50</b>	WRMP scheme	<p>'Classification' of water resources management plan (WRMP) schemes included in the business plan should be one of the following four categories;</p> <ul style="list-style-type: none"> <li>• Supply-side improvements delivering benefits in 2025-30</li> <li>• Demand-side improvements delivering benefits in 2025-2030 (excl leakage and metering)</li> <li>• Interconnectors delivering benefits in 2025-2030</li> <li>• Supply-demand balance improvements delivering benefits starting from 2031</li> </ul> <p>The delivery year is the first year in which the scheme is due to provide water resource benefits.</p>	<p>The capital and operating expenditure incurred each year for each scheme to delivered as aligned with the company's water resources management plan (WRMP). Expenditure in millions to three decimal places.</p> <p>Total expenditure for each 'classification' should reconcile with the expenditure reported in table CW3.</p>	<p>Supply-demand balance zonal water available for use (WAFU) benefits for each scheme in megalitres (Ml/d) to one decimal place. This should align with the reported zonal WAFU benefit of the scheme in the final WRMP24.</p> <p>For schemes delivering WAFU benefits in the 2025-30 period include the forecast cumulative benefits delivered in each year eg for a supply scheme delivering 7 Ml/d benefits in 2027-28; 7 in 2027-28, 2028-29, 2029-30 and after '2029-30'. For a 5-year demand scheme delivering an additional 2 Ml/d reduction per annum from 2025-26 input 2,4,6,8,10 from 2025-26 to 2029-30.</p> <p>For interconnectors list the WAFU benefit in the benefit block and the maximum transfer capacity delivered in the interconnector only block eg for a 10 Ml/d interconnector delivered in 2028-29 input 10 Ml/d in 2028-29 and 10 Ml/d in 2029-30.</p> <p>Length in kilometres to one decimal place, pipe diameter in millimetres to zero decimal places, pipe material (freeform text), pumping capacity installed in kilowatts to zero decimal places and associated asset storage capacity in cubic meters to zero decimal places are additionally required to be reported for interconnector schemes.</p> <p>For Supply demand balance improvements delivering benefits starting from 2031 the annualised benefits should be recorded in the after 2029-30 column.</p>	6F.1- 6F.50

Line	Title	Classification and delivery year	Expenditure	Benefits	RAG 4.11 line reference
<b>CW8.51</b>	Total	Not applicable	The sum of lines CW8.1 to CW8.50.	The sum of lines CW8.1 to CW8.50. Note the interconnector specific elements are not summated.	6F.51

## CW8 Additional guidance

- 11.1 The scheme name and reference should be consistent with that used in the company's final WRMP24.
- 11.2 We require forecast costs and cost drivers to be reported for every scheme in every year. Annual forecast costs are required and not cumulative costs. Where appropriate the method used to apportion or estimate costs should be set out in table commentary.
- 11.3 Forecast costs to be incurred beyond the reporting year 2029-30 should be given in total in the column 'After 2029-30'. For operating costs, the average annual forecast cost should be given. This should be based upon the average scheme utilisation forecast. For the avoidance of doubt the capital costs should be the costs incurred prior to the scheme entering use. Future refurbishment and replacement costs should not be included in the 'After 2029-30' column.
- 11.4 For schemes with a long lead in time we have included a 'pre-2025-26' expenditure column to capture capital expenditure to date.
- 11.5 Forecast benefits incurred beyond the reporting year 2029-30 should be given in total in the column 'After 2029-30'.
- 11.6 For the avoidance of doubt the 'Demand-side improvements' captured in this table exclude the costs and benefits of metering and leakage management that are captured in tables CW7, OUT4 and CW19. Therefore, table CW8 should not duplicate these costs and benefits but should record the cost and benefits of other demand-side (water efficiency) activities.
- 11.7 For the avoidance of doubt the requirement to report storage capacity for interconnector schemes relates to network storage assets such as service reservoirs. We are not requesting that the volumetric capacity of the pipeline is reported.

## Examples

11.8 The following 3 examples show how the table should be populated.

- Scheme 1 is a supply-side scheme, forecast to be available between 2025–30 with a total capital cost of £6.5 million. The site is forecast to be fully commissioned and enter service part way through 2027–28 and has an annual opex cost of £246,000. Note in 2027–28 it is expected to incur £50,000 of opex costs operating over a less than 12-month period. The investment provides 7 Ml/d of additional zonal WAFU benefit.
- Scheme 2 is an interconnector forecast to be available between 2025–30 with a maximum capacity of 10 Ml/d and zonal WAFU benefit of 9Ml/d. The scheme is a polyethylene (PE) pipeline of 18.32km, of 500mm diameter with an installed pumping capacity of 75kW and no additional storage. Operating costs are forecast to be £40,000 per annum, within minimal use in the first year. Construction to take place between 2026–27 and 2028–29 total capital cost is forecast to be £13.05 million.
- For scheme 3 is a new reservoir development providing 50 Ml/d. Spend on the project commenced in 2024–25 but is not expected to complete until 2034–35. The total forecast scheme capital cost is £475 million. A future forecast operational cost of £200,000 per annum is identified.

PR24 business plan table guidance part 3; Costs (wholesale) - water

Note we have split the table in two to improve readability on the page

Scheme name	WRMP scheme reference	Units	DPs	Classification	Delivery year (in use)	Capital expenditure (£m)							Opex costs (£m)						
						pre-2025-26	2025-26	2026-27	2027-28	2028-29	2029-30	After 2029-30	2025-26	2026-27	2027-28	2028-29	2029-30	After 2029-30	
New WTW	WTW1A	see column heading	3	Supply-side improvements delivering benefits in 2025-30	2027-28	0.000	1.300	3.900	1.300	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.246	0.246	0.246
Interconnector	INTB3	see column heading	3	Interconnectors delivering benefits in 2025-2030	2028-29	0.000	0.000	1.800	8.000	3.250	0.000	0.000	0.000	0.000	0.000	0.005	0.040	0.040	0.040
New reservoir	RES2A	see column heading	3	Supply-demand balance improvements delivering benefits starting from 2031	2034-35	5.000	11.000	24.753	28.782	71.356	82.588	251.521	0.000	0.000	0.000	0.000	0.000	0.200	0.200

Scheme name	WRMP scheme reference	Units	DPs	Classification	Delivery year (in use)	Benefits (Ml/d)						Complete for interconnectors only						
						2025-26	2026-27	2027-28	2028-29	2029-30	After 2029-30	Length (km)	Diameter (mm)	Pipe material (text-freeform)	Pumping capacity installed (kW)	Storage capacity installed (m <sup>3</sup> )	Transfer capacity (Ml/d)	
New WTW	WTW1A	see column heading	3	Supply-side improvements delivering benefits in 2025-30	2027-28	0.000	0.000	7.000	7.000	7.000	7.000							
Interconnector	INTB3	see column heading	3	Interconnectors delivering benefits in 2025-2030	2028-29	0.000	0.000	0.000	9.000	9.000	9.000	18.320	500.000	Polyethylene (PE)	75.000	0.000	10.000	
New reservoir	RES2A	see column heading	3	Supply-demand balance improvements delivering benefits starting from 2031	2034-35	0.000	0.000	0.000	0.000	0.000	50.000							

## CW8 Commentary requirement

11.9 Companies should include the following commentary to this table;

- Description for how the schemes agreed in the company final WRMP24 at both an option and programme level (for example WRMP24 data tables 4, 5 and 8) align with the enhancement totex presented in CW3 and CW8. Schemes should use the same reference in C8 as in the final WRMP24 for ease of tracking.
- Description of how the costs have been uplifted to the correct price base for business plan submission. All costs in the business plan data tables, data table commentary and narrative should be consistently presented in the 2022-23 price base. Companies should inflate costs to 2022-23 prices using financial-year average CPIH.
- Explanation and justification for any other variation in schemes from those presented in the company's WRMP24. This should cover any variation in proposed schemes, their costs, benefits and delivery year. Note aligned with the final PR24 methodology this should be justified with compelling evidence in the company business plan.
- Clear identification of schemes delivered as part of the green recovery programme and those commenced as part of the accelerated infrastructure delivery programme.
- For schemes entering use prior to 2029-30 there may be years where the forecast operating costs are representative of a period less than 12 months. In such cases the commentary should clearly identify this and the annual average operating cost for a 12-month period.
- We recognise there may be situations where operating costs recorded in 'After 2029-30' column could include costs incurred prior to the scheme entering use and the annual average operating cost. In such cases the annual average operating cost should be clearly indicated in the commentary. We expect the annual average operating cost to be calculated based upon the expected long-term average totex expenditure per annum for the option to the end of the WRMP planning period (or to decommissioning/end of life of option). This is calculated based on the average option utilisation for the period.

## 12. CW9 – Enhancement expenditure analysis (cumulative) – water resources and water network plus

### Table CW9 line definitions

This table will collect the cumulative expenditure on schemes completed in the year. It will mirror the categories of expenditure in table CW3.

### CW9 Additional guidance

- 12.1 Where a quality enhancement scheme (or the proportionally allocated component of a quality enhancement scheme) has more than one cost driver, companies should allocate the expenditure attributable to the primary driver to the relevant line. Any net additional cost for delivering any further drivers should be included in the relevant line.
- 12.2 This table contains inputs needed for populating the PR19 Strategic regional water resources reconciliation model and calculating the end of period revenue and RCV adjustments to be applied at PR24.
- 12.3 Expenditure included within third party services in table CW1a should not be included in this table.

### Cumulative expenditure on schemes completed in the report year

- 12.4 Companies should report schemes as completed when they come into beneficial use which may not always be the same as the financial close of a scheme. If companies incur additional expenditure on schemes already reported as completed (for example, additional snagging costs or landscaping), the expenditure should be reported in the relevant line in the report year but not restated in the cumulative expenditure on schemes completed in the report year columns. RAG4 appendix 4 contains guidance on reporting cumulative costs on schemes completed in the year.



## 13. CW10 – Wholesale water local authority rates

Table CW10 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW10.1</b>	Rateable value	Rateable value. This should be the absolute amount as provided by the Valuation Office Agency or Local Authority, or company forecast, and does not need to be indexed to 2022-23 prices.	
<b>CW10.2</b>	Wholesale Water business rates charge for current year before transitional relief	Local authority rates charged to the water wholesale business in respect of the (then) current year, before the application of any transitional relief.	
<b>CW10.3</b>	Wholesale Water business rates transitional relief	The impact of any transitional relief on the local authority rates charged to the wholesale water business in respect of the (then) current year, entered as a negative.	
<b>CW10.4</b>	Wholesale Water business rates charge for current year after transitional relief	Local authority rates charged to the wholesale water business in respect of the (then) current year, after the application of any transitional relief. Calculated as the sum of CW10 lines 2 and 3.	
<b>CW10.5</b>	Adjustments to wholesale water business rates charge for prior years	Any adjustments to the local authority rates charged to the wholesale water business in respect of previous years	
<b>CW10.6</b>	[Other wholesale water business rates adjustments 1]	Any further adjustments made to reconcile to the local authority rates charge for the wholesale water business reported in the APR 4J.7 (please specify)	
<b>CW10.7</b>	[Other wholesale water business rates adjustments 2]	Any further adjustments made to reconcile to the local authority rates charge for the wholesale water business reported in the APR, 4J.7 (please specify)	
<b>CW10.8</b>	[Other wholesale water business rates adjustments 3]	Any further adjustments made to reconcile to the local authority rates charge for the wholesale water business reported in the APR, Schedule 4D line 6 (please specify)	
<b>CW10.9</b>	Wholesale Water business rates forecast for Business Plan	Local authority rates charged to the wholesale water business, as reported in the APR 4J.7. Equals the sum of CW10 lines 4 to 8.	
<b>CW10.10</b>	Change in wholesale water business rates costs from prior year	The year-on-year change in local authority rates charged to the wholesale water business in respect of the (then) current year before the application of any transitional relief. Calculated as the change in CW10 line 1 as compared to the previous year.	
<b>CW10.11</b>	Change in wholesale water business rates costs due to the impact of any revaluation	The change in local authority rates charged to the wholesale water business arising from any expected revaluation, before the impact of any transitional relief.	
<b>CW10.12</b>	Change in wholesale water business rates costs due to change in asset stock	The change in local authority rates charged to the wholesale water business arising from changes in the asset stock of the wholesale wastewater business before the impact of any transitional relief.	

Line	Title	Definition	RAG 4.11 line reference
<b>CW10.13</b>	[Change in wholesale water business rates costs due to other 1]	Any further changes to the local authority rates charge for the wholesale water business, before the impact of transitional relief (please specify)	
<b>CW10.14</b>	[Change in wholesale water business rates costs due to other 2]	Any further changes to the local authority rates charge for the wholesale water business, before the impact of transitional relief (please specify)	
<b>CW10.15</b>	[Change in wholesale water business rates costs due to other 3]	Any further changes to the local authority rates charge for the wholesale water business, before the impact of transitional relief (please specify)	
<b>CW10.16</b>	Change in wholesale water business rates charge before transitional relief	The sum of changes in local authority rates charged to the wholesale water business before transitional relief – calculated as the sum of CW10 lines 11 to 15.	
<b>CW10.17</b>	Check difference	Check difference – CW10 line 16 should equal line 10, with a check difference of zero	

## CW10 Additional guidance

- 13.1 This table seeks to understand the causes and pace of changes over time in reported local authority rates charges for the wholesale water business unit, as currently reported in APR table 4J line 7.
- 13.2 This table asks for actual and forecast business rates for the water service for the period 2022–23 to 2029–30. Companies can use an additional 3 lines to cover other types of adjustment to their wholesale water business rates.

## CW10 Commentary requirement

13.3 Companies should include the following commentary to this table.

- An explanation of the rateable values included in line one, including whether they are actual, draft or company forecast.
- An explanation of the basis of the calculation of any transitional relief included in line 3.
- An explanation for the of the calculation used to derive the change in business rates due to revaluation in line 11.

## 14. CW11 – Third party costs by business unit for the wholesale water service

Table CW11 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW11.1</b>	Non potable water (which are not bulk supplies)	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.2</b>	Rechargeable opex - Fluoridation	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.3</b>	Rechargeable opex - Fire hydrant install & repair	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.4</b>	Rechargeable opex - third party damage	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.5</b>	Rechargeable opex - build over	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.6</b>	Other rechargeable opex	Other third party water service opex costs (price control) included in RAG 4.11 Appendix 1 not covered in lines 1 to 5.	
<b>CW11.7</b>	Third party water price control opex excluding developer services	Sum of lines 1 to 6.	
<b>CW11.8</b>	Diversions - s185 – opex	Opex related to the diversion of mains under the provision of section 185 of the Water Industry Act 1991. Expenditure reported in this line should be the same categories of expenditure that was used to calculate diversion charges for English companies as reported in DS1e.1.	
<b>CW11.9</b>	Diversions - NRSWA – opex	Opex incurred in relation to the alteration or removal of any relevant pipe (as defined in section 158 of the Water Industry Act 1991) or other apparatus that the Appointee is required to carry out under the New Roads and Streets Works Act 1991.	
<b>CW11.10</b>	Diversions - other non-section 185 diversions – opex	Opex incurred in relation to the alteration or removal of any relevant pipe (as defined in section 158 of the Water Industry Act 1991) or other apparatus that the Appointee is required to carry out under a statutory provision except a provision of the Water Industry Act 1991 or a provision of the New Roads and Streets Works Act 1991.	
<b>CW11.11</b>	Total third party water service costs ~ price control (operating expenditure)	Sum of lines 7 to 10.	
<b>CW11.12</b>	Bulk supplies	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW11.13</b>	Reservoir operating agreements	Opex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.14</b>	Other excluded charge opex	Other third party water service opex costs (non-price control) included in RAG 4.11 Appendix 1 not covered in lines 12 and 13.	
<b>CW11.15</b>	Total third party water service costs ~ non price control (operating expenditure)	Sum of lines 12 to 14.	
<b>CW11.16</b>	Non potable water (which are not bulk supplies)	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.17</b>	Rechargeable capex - Fluoridation	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.18</b>	Rechargeable capex - Fire hydrant install & repair	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.19</b>	Rechargeable capex - third party damage	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.20</b>	Rechargeable capex - build over	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.21</b>	Other rechargeable capex	Other third party water service capex costs (price control) included in RAG 4.11 Appendix 1 not covered in lines 16 to 20.	
<b>CW11.22</b>	Third party water price control capex excluding developer services	Sum of lines 16 to 21.	
<b>CW11.23</b>	Diversions - s185 – capex	Capex related to the diversion of mains under the provision of section 185 of the Water Industry Act 1991. Expenditure reported in this line should be the same categories of expenditure that was used to calculate diversion charges for English companies as reported in DS1e.1.	
<b>CW11.24</b>	Diversions - NRSWA – capex	Capex incurred in relation to the alteration or removal of any relevant pipe (as defined in section 158 of the Water Industry Act 1991) or other apparatus that the Appointee is required to carry out under the New Roads and Streets Works Act 1991.	
<b>CW11.25</b>	Diversions - other non-section 185 diversions – capex	Capex incurred in relation to the alteration or removal of any relevant pipe (as defined in section 158 of the Water Industry Act 1991) or other apparatus that the Appointee is required to carry out under a statutory provision except a provision of the Water Industry Act 1991 or a provision of the New Roads and Streets Works Act 1991.	
<b>CW11.26</b>	Total third party water service costs ~ price control (capital expenditure)	Sum of lines 22 to 25.	

Line	Title	Definition	RAG 4.11 line reference
<b>CW11.27</b>	Bulk supplies	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.28</b>	Reservoir operating agreements	Capex costs relating to activities set out in RAG 4.11, Appendix 1.	
<b>CW11.29</b>	Other excluded charge capex	Other third party water service capex costs (non-price control) included in RAG 4.11 Appendix 1 not covered in lines 27 or 28.	
<b>CW11.30</b>	Total third party water service costs ~ non price control (capital expenditure)	Sum of lines 27 to 29.	

## CW11 Additional guidance

14.1 This table reports third party water service costs split between operating and capital expenditure and between those included in the price control and those outside of the price control.

## CW11 Commentary requirement

14.1 Companies should include the following commentary to this table;

- An explanation of any material year-on-year variations.

## 15. CW12 – Transitional spending in the wholesale water service

### Table CW12 line definitions

The line definitions for this table are the same as for table CW3 but for 2023-24 and 2024-25 only. Any investment expected between 2023-24 and 2024-25 which relates to a scheme we have approved for transition funding as part of Defra's accelerated process should be included in table CW17 and **not** included in this table.

### CW12 Additional guidance

- 15.1 The purpose of this table is for companies to identify the planned ('transition') water service capital and operating expenditure they would like to make in the final two years of the current price control period (2020-25) in preparation for the early delivery of their outcomes in the next price control period (2025-30).
- 15.2 We expect companies to justify any proposals to bring forward investments to 2023-24 and/or 2024-25. See 'Appendix 9 – Setting expenditure allowances' of the PR24 final methodology for guidance on the criteria that proposals for transition funding should meet.<sup>2</sup> For the avoidance of the doubt, the transition funding programme should **not** be used to propose investments that have deliverables that are already required in this price control period (2020-25) or that have been previously funded, or to propose base cost investments.
- 15.3 Any expenditure we approve under the transition programme will be excluded from the totex reconciliation for 2020-25 (AMP7) but included in 2025-30 (AMP8) as a midnight adjustment to the RCV. A time value of money adjustment will also be implemented for transitional expenditure that occurs in 2023-24 only. See 'Appendix 9 – Setting expenditure allowances' of the PR24 final methodology for further details.
- 15.4 To ensure consistency, companies should ensure their estimates of forecast transition expenditure are compiled on the same basis, using the same process and approaches, as the forecasts of expenditure reported in tables CW1, CW2 and CW3.
- 15.5 Expenditure in this table should be included in 2025-30 forecast expenditure and **not** in 2023-24 or 2024-25 expenditure in table CW3.

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<sup>2</sup> Ofwat, '[Creating tomorrow, together: Our final methodology for PR24: Appendix 9 – Setting expenditure allowances](#)', December 2022, pp. 115-118.

- 15.6 Any investment expected between 2023–24 and 2024–25 which relates to a scheme we have approved for transition funding as part of Defra's accelerated process should be included in table CW17 and **not** included in this table.

## **CW12 Commentary requirement**

- 15.7 Where companies propose transition expenditure, we expect them to make the case for why it is efficient to bring the investment forward, and why it was not part of its outcomes and long-term planning in PR19. Companies should provide evidence that the proposed transition expenditure meets the criteria set out in Appendix 9 of our PR24 final methodology.<sup>3</sup>
- 15.8 Companies should make clear that they are on track with their PR19 enhancement programme.
- 15.9 In each case, an appropriate level of table commentary is expected to explain the company's allocation approaches.

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<sup>3</sup> Ofwat, '[Creating tomorrow, together: Our final methodology for PR24: Appendix 9 – Setting expenditure allowances](#)', December 2022, pp. 115–118.

## 16. CW13 – Best value analysis; enhancement expenditure – water resources and water network+

### Table CW13 line definitions

- 16.1 This table collects expenditure data that will aid the calculation of benefit to cost ratios for the proposed enhancement projects. It requests information on capex, opex and third-party contributions associated with these projects. It also requests information on the present value of the stream of capex and opex of the proposed enhancement projects over the appraisal period. The table requests this information for each category of expenditure set out in table CW3.
- 16.2 The information requested in this table should be provided for all categories of expenditure for which the company is requesting enhancement allowances.

### CW13 Additional guidance

- 16.3 Expenditure and third-party contribution figures presented in this table should only refer to those enhancement projects which are expected to start in AMP8. Therefore, figures in this table may not align with other tables that collect long-term costs. Cost figures presented for AMP8 period should align with costs presented in table CW3.
- 16.4 Cost figures presented in Table CW13 should capture all the incremental costs resulting from the proposed enhancement projects starting in AMP8, including one-off and recurring costs. This will ensure that the benefit to cost ratios calculated using this data are indicative of whether the proposed expenditure is cost beneficial.
- 16.5 Figures presented in Table CW13 should reflect mean forecasts. This is the expenditure and third-party contributions that companies expect to achieve over the specified period in relation to the proposed enhancement projects.
- 16.6 Costs and third-party contributions should be adjusted to 2022–23 prices using the CPIH Index financial year average.

### Third-party contributions

- 16.7 Third-party contributions should capture the financial and non-financial contributions that third-parties are expected to make towards the costs of the proposed enhancement projects.



16.8 Non-financial contributions are those which are expected to translate into cost savings for companies. These may include fee waivers and in-kind contributions (such as land and staff resources). Companies should include the financial cost savings that non-financial contributions are expected to deliver for the project. The costs that will be avoided due to non-financial contributions should be captured in the capex and/or opex figures presented in the same table. This means that once third-party contributions are netted off from totex – the remainder of the costs should reflect the contribution that the company is expected to make towards the project cost. For example, if a local authority is making land available for the development of wetlands, companies should include the cost of land acquisition in the capex or opex figures where relevant. Companies should also include the corresponding cost savings due to land contribution from local authority as third-party contribution for the same category of cost.

### Present value

16.9 Present value figures aim to capture the whole-life costs of the proposed enhancement projects starting in AMP8.

16.10 To calculate the present value of costs, companies should apply the social time preference rate as set out in the ['The Green Book'](#) (HM Treasury, 2020).<sup>4</sup> To calculate the present value of capex, costs should be converted to a stream of annual costs over the appraisal period, where the annual cost is made up of depreciation costs plus the allowed return on capital. Depreciation (or run-off) costs should be calculated using straight-line depreciation during the whole life of the asset. The allowed returns should be calculated using the allowed return on capital rate specified in [PR24 Final Methodology](#).

16.11 Companies should provide present value of cost figures for a 30-year appraisal period as a minimum. Companies can also provide present value of costs over a longer appraisal period if judged appropriate (e.g. if there are significant additional costs/benefits to be realised beyond the 30-year period). A free-form column is available for companies to present these figures where relevant.

16.12 There is no need to provide present value figures for third-party contributions.

### CW13 Commentary requirement

16.13 Companies should include the following commentary to this table;

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<sup>4</sup> See paragraphs 2.23, and 5.32 to 5.39.

- A breakdown of financial and non-financial third-party contributions and explanation of how non-financial contributions were valued.
- An explanation of key assumptions made to calculate present value of cost figures (e.g., asset lifetimes, WACC rate, risks, uncertainties).
- An indication of the level of uncertainty and sensitivity of the present value and third-party contribution figures.
- A justification for including present value figures for a period longer than 30 years where company chooses to present these figures. Company should specify length of the appraisal period used.

## 17. CW14 – Best value analysis; enhancement expenditure of least cost options – water resources and water network+

### Table CW14 line definitions

- 17.1 This table collects expenditure data that will aid the calculation of benefit to cost ratios for the least cost enhancement options against which the proposed enhancement projects (captured in tables CW3 and CW13) are assessed. The table requests information on the capex, opex and third-party contributions associated with these least cost options. It also requests the present value of the stream of capex and opex of the alternative least cost options over the appraisal period. The table requests this information for each category of expenditure set out in table CW3.
- 17.2 Companies should provide this data for all categories of expenditure for which enhancement allowances are being claimed. The data presented in this table can be the same as the one presented in table CW13 where the proposed solutions are least costs. Where data is not provided for specific categories of expenditure, we will assume that the company is taking forward least cost options and therefore we will treat and assess the expenditure requested within these cost categories as such.

### CW14 Additional guidance

- 17.3 Least cost options are those that minimise the whole life expenditure required to meet a statutory obligation. These options can be best value. They can also be those that the company is proposing in its business plan, in which case the same expenditure and third-party contribution figures used to populate Table CW13 should be used in this table where relevant.
- 17.4 Cost figures presented in Table CW13 should capture all the incremental costs resulting from the alternative least cost options starting in AMP8, including one-off and recurring costs. This will ensure that the benefit to cost ratios calculated using this data will be indicative of whether these options are cost beneficial.
- 17.5 Expenditure and third-party contribution figures presented in this table should refer to least cost options which would be expected to start in AMP8 if the company decides to take them forwards.

- 17.6 Figures presented in Table CW14 should reflect mean forecasts. This is the expenditure and third-party contributions that companies would expect to achieve over the specified period if the least cost options are adopted.
- 17.7 Cost and third-party contribution figures should be adjusted to 2022-23 prices using the CPIH Index financial year average.

### Third-party contributions

- 17.8 Third-party contributions should capture the financial and non-financial contributions that third-parties are expected to make towards the costs of the appraised least cost options.
- 17.9 Non-financial contributions are those which are expected to translate into cost savings for companies. These may include fee waivers and in-kind contributions (such as land and staff resources). Companies should include the financial cost savings that non-financial contributions are expected to deliver for the project. The costs that will be avoided due to non-financial contributions should be captured in the capex and/or opex figures presented in the same table. This means that once third-party contributions are netted off from totex – the remainder of the costs should reflect the contribution that the company is expected to make towards the project cost. For example, if a local authority is making land available for the development of wetlands, companies should include the cost of land acquisition in the capex or opex figures where relevant. Companies should also include the corresponding cost savings due to land contribution from local authority as third-party contribution for the same category of cost.

### Present value

- 17.10 To calculate the present value of costs, companies should apply the social time preference rate as set out in the ['The Green Book'](#) (HM Treasury, 2020).<sup>5</sup> To calculate the present value of capex, costs should be converted to a stream of annual costs over the appraisal period, where the annual cost is made up of depreciation costs plus the allowed return on capital. Depreciation (or run-off) costs should be calculated using straight-line depreciation during the whole life of the asset. The allowed returns should be calculated using the allowed return on capital rate specified in [PR24 Final Methodology](#).
- 17.11 Companies should provide present value of costs for a 30-year appraisal period as a minimum. Companies should also provide present value of costs for a longer appraisal period if also provided in Table CW13. The longer appraisal period should be consistent

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<sup>5</sup> See paragraphs 2.23, and 5.32 to 5.39.

to that used in Table CW13. A free-form column is available for companies to present these figures where relevant.

17.12 There is no need to provide present value figures for third-party contributions.

### **CW14 Commentary requirement**

17.13 Companies should include the following commentary to this table;

- A breakdown of financial and non-financial third-party contributions and explanation of how non-financial contributions were valued.
- An explanation of the least cost solutions underpinning the expenditure in each cost category.
- An explanation of key assumptions made to calculate present value of cost figures (e.g., asset lifetimes, WACC rate, risks, uncertainties).
- An indication of the level of uncertainty and sensitivity of the present value and third-party contribution figures.

## 18. CW15 – Best value analysis; enhancement benefits – water resources and water network+

### Table CW15 line definitions

- 18.1 This table collects benefit data that will aid the calculation of benefit to cost ratios for the proposed enhancement schemes. It requests information on the number of units of benefit which are expected to be created by these schemes and the associated monetary benefit values. It also requests information on the present value of the estimated benefits over the appraisal period. The table requests this information for each category of expenditure set out in table CW3.
- 18.2 The data provided on number of units of benefit created will be used to map the impact of the proposed enhancement schemes onto performance commitment levels. This mapping occurs in table OUT3.
- 18.3 The information requested in this table should be provided for all categories of expenditure for which the company is requesting enhancement allowances.

### CW15 Additional guidance

- 18.4 Companies should provide the requested benefit information by benefit type. There are ten lines available for each category of expenditure. Companies need to select the benefit types that are relevant to each expenditure category. These types can be selected from the drop-down list in the 'benefit type' column. Companies should specify the unit of measurement for each 'selected' benefit. Companies should fill out the requested information for all 'selected' benefit lines.
- 18.5 Benefit figures should be stated on an annual basis rather than cumulative basis.
- 18.6 The benefits presented should refer to those enhancement projects which are expected to start in AMP8. These are the benefits associated with the expenditure figures presented in table CW13.
- 18.7 Figures presented in this table should reflect mean forecasts. These are the benefits that the company expects to deliver through the proposed enhancement projects over the specified period.

## Units

- 18.8 When a benefit type is selected from the drop down menu in column C, for common and bespoke performance commitments columns F and G will be pre-populated with the units and decimal places used for reporting.
- 18.9 If 'Other' or 'Access, recreation and amenity (ARA)' are selected as benefit types in column C we expect companies to provide detail of the units and decimal places used for reporting in the freeform column E.
- 18.10 Companies will need to ensure they appropriately format data entered in columns H-L or N-R to ensure data is correctly recorded. For the majority of benefits this will be as an integer value or a decimal to the appropriate number of decimal places. Where the benefit type is water supply interruptions, the format 'hh:mm:ss' under the customer menu should be used. This is equivalent to the format used in OUT1, OUT2 and OUT 4 for this performance commitment.

## Benefit valuations

- 18.11 To inform benefit value impacts, companies should use the valuations identified by the collaborative research on indicative outcome delivery incentives. Where the collaborative outcome delivery incentive rates research cannot be used to derive a monetary value, companies should use the WINEP options development guidance which provides recommended values for a range of environmental and social outcomes. Where the company considers that the standardised values set out by the collaborative research and WINEP guidance are not suitable or applicable to the benefits that are expected from company actions, then the company can use alternative benefit unit values. If so, compelling evidence supporting these alternative values should be presented and the present value of the benefits using the standardised unit values should be reported alongside for comparison. A free-form column is available for companies to report these values where relevant. Sources of evidence used to support alternative unit values must be considered robust, sufficiently detailed and be openly available for us to verify if required.
- 18.12 The impact of the proposed enhancement projects on GHG emissions should be reported in the table. The impact should be measured in line with the methodology defined for the GHG performance commitment. The estimated impact should take account of both the generation and savings of GHG emissions which would result from the enhancement project, relative to a 'do nothing' scenario.
- 18.13 Monetary benefit values should be adjusted to reflect 2022-23 prices using the CPIH Index financial year average.

## Present value

18.14 To calculate the present value of benefits, companies should apply the social time preference rate as set out in the ['The Green Book'](#) (HM Treasury, 2020).<sup>6</sup>

18.15 Companies should provide present value of benefit figures over a 30-year appraisal period as a minimum. Where company provides present value information over a longer appraisal period in Table CW13, it should also provide present value of benefit figures over this longer appraisal period in this table for comparison. A free-form column is available for companies to present this additional information. The longer appraisal period (if used) should be consistent to that used in Table CW13 to allow like for like comparisons.

## CW15 Commentary requirement

18.16 Companies should include the following commentary to this table;

- An explanation of the key assumptions underpinning the benefit and present value figures (e.g., unit benefit values, benefit impacts, risks, uncertainties).
- An explanation of the sources of evidence used to inform benefit impacts and unit benefit values.
- An indication of the level of uncertainty and sensitivity of benefit impact and present value figures.

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<sup>6</sup> See paragraphs 2.23, and 5.32 to 5.39.



## 19. CW16 – Best value analysis; enhancement benefits of least cost options – water resources and water network+

### Table CW16 line definitions

- 19.1 This table collects benefit data that will aid the calculation of benefit to cost ratios for the least cost options against which the proposed enhancement schemes are assessed. It requests information on the number of units of benefit which are expected to be created by these schemes and the associated monetary benefit values. It also requests information on the present value of these benefits. This table requests this information for each category of expenditure set out in table CW3.
- 19.2 Companies should provide this data for all categories of expenditure for which enhancement allowances are being claimed. The data presented in this table can be the same as the one presented in table CW15 where the proposed solutions are least costs. Where data is not provided for specific categories of expenditure, we will assume that company is taking forward least cost options and therefore we will treat and assess the requested expenditure within these cost categories as such.

### CW16 Additional guidance

- 19.3 Least cost options are those which minimise the whole life expenditure required to meet a statutory obligation. These options can be best value. They can also be those being proposed in the company business plan in which case the same benefit information used to inform Table CW15 should be used in this table where relevant.
- 19.4 Companies should provide the requested benefit information by benefit type. There are ten lines available for each cost category. Companies should select the benefit types that are relevant to the least cost options considered and appraised in each cost category. These types can be selected from the drop-down list in the 'benefit type' column. Companies should specify the unit of measurement for each 'selected' benefit. Companies should fill out the benefit information requested for all 'selected' benefit lines.
- 19.5 Benefit figures should be stated on an annual basis rather than cumulative basis.
- 19.6 Benefit figures presented should refer to those least cost projects which are expected to start in AMP8 if taken forwards by the company.

19.7 Benefit figures presented in this table should reflect mean forecasts. These are the benefits that companies are expecting to deliver through the least cost options over the specified period.

## Units

19.8 When a benefit type is selected from the drop down menu in column C, for common and bespoke performance commitments columns F and G will be pre-populated with the units and decimal places used for reporting.

19.9 If 'Other' or 'Access, recreation and amenity (ARA)' are selected as benefit types in column C we expect companies to provide detail of the units and decimal places used for reporting in the freeform column E.

19.10 Companies will need to ensure they appropriately format data entered in columns H-L or N-R to ensure data is correctly recorded. For the majority of benefits this will be as an integer value or a decimal to the appropriate number of decimal places. Where the benefit type is water supply interruptions, the format 'hh:mm:ss' under the customer menu should be used. This is equivalent to the format used in OUT1, OUT2 and OUT 4 for this performance commitment.

## Benefit valuations

19.11 To inform benefit value impacts, companies should use the valuations identified by the collaborative research on indicative outcome delivery incentives. Where the collaborative outcome delivery incentive rates research cannot be used to derive a monetary value, companies should use the WINEP options development guidance which provides recommended values for a range of environmental and social outcomes. Where the company considers that the standardised values set out by the collaborative research and WINEP guidance are not suitable or applicable to the benefits that are expected from company actions, then the company can use alternative benefit unit values. If so, compelling evidence supporting these alternative values should be presented and the present value of the benefits using the standardised unit values should be reported alongside for comparison. A free-form column is available for companies to report these values where relevant. Sources of evidence used to support alternative unit values must be considered robust, sufficiently detailed and be openly available for us to verify if required.

19.12 The impact of the proposed enhancement projects on GHG emissions should be reported in the table. The impact should be measured in line with the methodology defined for the GHG performance commitment. The estimated impact should take

account of both the generation and savings of GHG emissions which would result from the enhancement project, relative to a 'do nothing' scenario.

19.13 Monetary benefit values should be adjusted to reflect 2022-23 prices using the CPIH Index financial year average.

### **Present value**

19.14 To calculate the present value of benefits, companies should apply the social time preference rate as set out in the ['The Green Book'](#) (HM Treasury, 2020).<sup>7</sup>

Companies should provide present value of benefit figures over a 30-year appraisal period as a minimum. Where company provides present value information over a longer appraisal period in Table CW14, it should also provide present value of benefit figures over this longer appraisal period in this table for comparison. A free-form column is available for companies to present this additional information. The longer appraisal period (if used) should be consistent to that used in Table CW14 to allow like for like comparisons.

### **CW16 Commentary requirement**

19.15 Companies should include the following commentary to this table;

- An explanation of the key assumptions made to derive benefit and present value figures (e.g., unit benefit values, benefit impacts, risks, uncertainties).
- An explanation of the sources of evidence used to inform benefit impacts and unit benefit values.
- An indication of the level of uncertainty and sensitivity of benefit impact and present value figures.

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<sup>7</sup> See paragraphs 2.23, and 5.32 to 5.39.

## 20. CW17 – Accelerated programme expenditure – water resources and water network+

### Table CW17 line definitions

The line definitions for this table are the same as for table CW3 but for 2023–24 and 2024–25 only.

### CW17 Additional guidance

- 20.1 The purpose of this table is for companies to identify water service capital and operating expenditure for approved accelerated schemes in both, the final two years of the current price control (2023–24 and 2024–25) and 2025–30 (AMP8)
- 20.2 Expenditure in this table, which relates to an approved accelerated scheme, between 2023–24 and 2024–25 will be classed as transitional expenditure. As such any expenditure expected either in 2023–24 or 2024–25 should be included in the 2025–30 forecast expenditure and not in the 2024–25 expenditure in table CW3.
- 20.3 Although expenditure between 2023–24 and 2024–25, for an approved accelerated scheme, will be classed as transitional expenditure, it should **not** be included in table CW12 but instead included in table CW17.
- 20.4 Given 2023–24 and 2024–25 accelerated expenditure will be classed as transitional expenditure, the properties of the transition funding programme will still apply. As such, following review, Ofwat will then exclude this early expenditure from the totex reconciliation for 2020–25 (AMP7) but include this expenditure in 2025–30 (AMP8) as a midnight adjustment to the RCV (see appendix 9 of the PR24 final methodology for more details).

### CW17 Commentary requirement

20.5 Companies should include the following commentary to this table;

- An explanation as to which approved scheme the expenditure relates to
- An explanation of why it is efficient to bring the investment forward
- An explanation as to which Defra priority the expenditure aims to tackle
- Where costs differ to those proposed through the acceleration process, for both 2023–25 and the entire scheme, an explanation as to why this is the case

## 21. CW18 – Cost adjustment claims – base expenditure: water resources and water network+

Table CW18 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW18.1</b>	Description of cost adjustment claim	Description of costs being put forward for a cost adjustment claim. A separate block should be filled in for each cost adjustment claim.	n/a
<b>CW18.2</b>	Type of cost adjustment claim	Type of cost adjustment claim proposed. This will be one of 'atypically large investment', 'new legal requirements', 'regional operating circumstances', or 'other (specify)'. See Appendix 9 to the PR24 final methodology for identification of what can be considered as a cost adjustment claim.	n/a
<b>CW18.3</b>	Symmetrical or non-symmetrical	Indication of whether the proposed cost adjustment claim is symmetrical (ie the upward adjustment proposed for the company is offset by downward adjustments to the other companies) or non-symmetrical.	n/a
<b>CW18.4</b>	Reference to business plan supporting evidence	Reference to the business plan supporting documents that set out the case to the cost adjustment claim.	n/a
<b>CW18.5</b>	Total gross value of the claim	Base expenditure claimed on the proposed cost adjustment. The expenditure should be gross of any implicit allowance (ie the proportion of the claim that is covered by our modelled cost baselines), and should be gross of any contributions or grants. The value of the claim should be calculated after the application of the catch-up efficiency challenge, but before the application of frontier shift and real price effects.	n/a
<b>CW18.6</b>	Implicit allowance	Value of the implicit allowance calculated for the cost adjustment claim (ie the proportion of the claim that is covered by our modelled cost baselines). The implicit allowance should be calculated after the application of the catch-up efficiency challenge, but before the application of frontier shift and real price effects.	n/a
<b>CW18.7</b>	Total net value of the claim	The difference between CW18.5 and CW18.6.	n/a
<b>CW18.8</b>	Historic base expenditure	Historic base expenditure related to the proposed cost adjustment claim. This should be gross of any capital contributions or grants.	n/a
<b>CW18.9</b>	Totex for the control	This line should be equal to 'net totex' line CW1a.15 for the relevant control (net totex before frontier shift and real price effects).	n/a
<b>CW18.10</b>	Materiality	The ratio between CW18.7 and CW18.9. Materiality of the cost adjustment claim should be assessed against the materiality thresholds indicated in Appendix 9 to the PR24 final methodology.	n/a

## CW18 Additional guidance

- 21.1 Please see Appendix 9 to the PR24 final methodology for further details on the base cost adjustment claim process.<sup>8</sup>
- 21.2 A separate block should be filled in for each cost adjustment claim. The description should clearly identify the reference to the relevant business plan documents setting out the supporting evidence, to assist the review of the claim.
- 21.3 The gross value of the claim should be calculated before the application of the implicit allowance, and should also be gross of any contributions and grants. It should be calculated after the application of the catch-up efficiency challenge, but before the application of frontier shift and real price effects. Companies should clearly set out the assumption used for the catch-up efficiency challenge.
- 21.4 Where relevant, we expect companies to calculate a value for the implicit allowance related to the claim they are putting forward. Implicit allowances can be estimated using various approaches. There is no single correct approach. It may be appropriate to use a range of approaches to come to a robust estimate of the implicit allowance. We set out additional guidance on this in Appendix 9 to the PR24 final methodology.
- 21.5 The value of the implicit allowance should be calculated after the application of the catch-up efficiency challenge, but before the application of frontier shift and real price effects. Companies should clearly set out the assumption used for the catch-up efficiency challenge.
- 21.6 Companies should assess the materiality of the claim, and put forward only claims that are material. See Appendix 9 to the PR24 final methodology for an indication of the materiality thresholds applied at PR24.
- 21.7 To input the totex for the control in line 9, companies should select the relevant control using the drop down provided.

## CW18 Commentary requirement

- 21.8 Please see Appendix 9 to the PR24 final methodology for further details.<sup>9</sup>

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<sup>8</sup> Ofwat, '[Creating tomorrow, together: Our final methodology for PR24. Appendix 9: Setting expenditure allowances](#)', December 2022, Section 2.4.3 and Annex 1.

<sup>9</sup> Ofwat, '[Creating tomorrow, together: Our final methodology for PR24. Appendix 9: Setting expenditure allowances](#)', December 2022, Section 2.4.3 and Annex 1.

21.9 We expect companies' cost adjustment claim submissions to include:

- the compelling evidence in support of the claim, against the relevant assessment criteria;
- where relevant, details of the approach taken to calculate the implicit allowance and key assumptions made, such as the catch-up efficiency challenge applied. Evidence of underlying calculations would also be helpful to ensure we can replicate the results; and
- where relevant, details of the approach taken to calculate the symmetrical adjustment and key assumptions made, such as the catch-up efficiency challenge applied to the adjustment. Companies should provide details of the underlying calculations, to ensure we can replicate the results.

21.10 We consider that in many cases, companies can and should mitigate and avoid the need for cost adjustment claims. We expect companies to use the cost adjustment process responsibly and raise cost adjustment claims only where there is compelling evidence that an adjustment is required. We will consider the quality of claims and a company's approach to the process as part of our quality and ambition assessment (QAA).

## 22. CW19 – Leakage expenditure and activity data

### Table CW19 line definitions

22.1 For leakage expenditure and activities, we provide lines for company level, region 1 and region 2 level reporting. All companies will need to complete the company level tables. The regional tables are provided in addition for companies that have regional performance commitment levels relating to demand components. We add the regional line references in brackets in the table below ie company level reference, (region 1 reference, region 2 reference). The data collected in this table builds upon the leakage data request included in '[IN 22/02 Cost assessment data requests](#)'. The 'PALM' categories, Prevent, Aware, Locate and Mend are further described in the additional guidance and commentary requirements section below.

Line	Title	Definition	IN22/02 reference
<b>CW19.1</b> (19.4, 19.7)	Maintain expenditure	<p>Expenditure associated with maintaining leakage levels split by activity type.</p> <p><b>Maintain – Prevent (rehab) – direct costs:</b> The cost of maintaining leakage through activities associated with asset rehabilitation under the Prevent category in the report year. The costs should relate to asset rehabilitation such as replacement and relining. Costs relating to supply pipe renewal should also be included. Direct costs shall relate to the total cost including scoping studies, design, procurement of assets/equipment, and installation. Where there is a benefit in terms of maintaining leakage levels and helping to mitigate asset deterioration from schemes such as lead replacement, proportional allocation may be used with companies expected to justify any split in supporting commentary.</p> <p><b>Maintain – Prevent (pressure management) – direct cost:</b> The cost of maintaining leakage through activities associated with pressure management under the Prevent category in the report year. Direct costs shall relate to the maintenance of existing schemes to preserve leakage savings such as the replacement and maintenance of assets that would result in an increase in leakage levels if not maintained. Examples may include pressure reducing valves (PRVs) and PRV controller maintenance. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary.</p> <p><b>Maintain – Prevent (calm networks) – direct costs:</b> The cost of maintaining leakage through activities associated with calm networks in the Prevent category in the report year. Direct costs shall relate to the maintenance</p>	LK1.1



Line	Title	Definition	IN22/02 reference
		<p>of existing schemes to preserve leakage savings such as the replacement and maintenance of assets that would result in an increase in leakage levels if not maintained. Examples may include calm networks training, proactive investigations into pressure transients, liaison with major commercial customers and maintenance of assets such as air valves, surge vessels/anticipation valves. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary</p> <p><b>Maintain – Aware – direct costs:</b>                      The cost of maintaining leakage through activities under the Aware category, including District Metered Areas (DMAs), data loggers, permanent noise/acoustic sensors, remote sensing, pressure analytics or other approaches that generate awareness of potential leakage or points of interest in the report year. The costs should relate to the maintenance of assets and equipment that without investment would result in an increase in leakage level. Leakage strategy and reporting activities should be included in this line. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary. Data systems used for leakage reporting and analysis associated should be included in this line.</p> <p><b>Maintain – Locate – direct costs:</b>                      The cost of maintaining leakage through activities under the locate category in the report year. For the purposes of reporting, this category relates to the deployment of field based resources to locate leakage using active leakage control, temporary acoustic/noise sensing or in-pipe investigations. Direct costs shall relate to the total cost in terms of gross operating costs of carrying out these activities, including field-based time, training related to the activities being undertaken, performance management such as time/performance reviews, data analysis and preparation for targeting activities and planning time in relation to field-based work. The total cost for delivery of the activities shall be included for example vehicles, fuel, annual leave/sickness and associated equipment. Costs shall include team leadership roles and direct managers of leakage teams/functions. Where costs are not incurred, for example if sickness time is not paid for when using a contractor, this should not be included. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary. Further information on approaches to proportional allocation is provided below the table.</p> <p><b>Maintain – Mend - direct cost</b>                      The cost of maintaining leakage through activities under the mend category in the report year. For the purposes of</p>	

Line	Title	Definition	IN22/02 reference
		<p>reporting, this category relates to the repair of all leak types including both customer reported/reactive leak repairs and company detected/proactive leak repairs including mains bursts, supply pipes, communication pipes and fittings. The direct costs are to be included for supply pipes where the company has undertaken repairs on behalf of customers and provided either a free repair or a contribution towards the repair. Direct costs shall relate to gross operating costs of carrying out these activities including field-based time, associated training, performance management, scheduling and planning. Where total costs for this activity are collected if required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary.</p> <p><b>Indirect costs – maintain</b></p> <p>Indirect costs across all leakage maintenance activities shall be provided including office space, insurance, tax, overheads, general IT systems that are not solely related to leakage management and any other indirect costs that are accounted for but not related directly to the leakage management activities. This should not include senior management but may include a proportion of time of a department lead or director with responsibility for leakage as part of a wider remit. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary.</p> <p><b>Total maintain leakage expenditure</b></p> <p>This should equal the sum of all the components.</p>	
<p><b>CW19.2</b> <b>(19.5,</b> <b>19.8)</b></p>	<p>Reduce expenditure</p>	<p><b>Reduce – Prevent (rehab) – direct costs</b></p> <p>The cost of reducing leakage through asset rehabilitation activities under the Prevent category in the report year. Costs relating to supply pipe renewal should also be included. The benefits are expected to occur over the longer-term and this definition provides a track of costs that relates to activities that benefit leakage over time. Direct costs shall relate to the total cost including scoping studies, design, procurement of assets/equipment, installation and reflect costs where the driver is part of programmes to reduce leakage. If required companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary. Further information on approaches to proportional allocation is provided below the table.</p> <p><b>Reduce – prevent (pressure management) – direct costs</b></p> <p>The cost of reducing leakage through new pressure management under the Prevent in the report year. The benefits are expected to occur over both the short and longer-term. Direct costs for pressure management shall relate to the total cost including scoping studies, design,</p>	<p>LK1.2</p>

Line	Title	Definition	IN22/02 reference
		<p>procurement of assets/equipment, installation, commissioning, operation and maintenance.</p> <p><b>Reduce – prevent (calm networks) – direct costs</b>                      The cost of reducing leakage through calm networks activities under the Prevent category in the report year. Examples may include operational activities such as calm networks training or investigations into commercial usage patterns and working with commercial customers to reduce transients, pressure transient monitoring, asset and control improvement related to pumps or control valves, for example, and surge protection improvements such as surge vessels or anticipation and relief valves, soft start pump controls or similar activities. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary. Further information on approaches to proportional allocation is provided below the table.</p> <p><b>Reduce – Aware – direct costs</b>                      The cost of reducing leakage through activities under the Aware category, including permanent noise/acoustic sensors, remote sensing, pressure analytics or other approaches that generate awareness of potential leakage or points of interest in the report year. Direct costs shall relate to the total cost including scoping studies, design, procurement of new assets/equipment, installation, and commissioning. Ongoing maintenance costs in future years should then be attributable to maintain costs.</p> <p><b>Reduce – Locate – direct costs</b>                      The cost of reducing leakage through activities under the locate category in the report year. For the purposes of reporting, this category relates to the deployment of field-based resources to locate leakage using active leakage control, temporary acoustic/noise sensing or in-pipe investigations. Direct costs shall relate to the total cost in terms of gross operating costs of carrying out these activities, including field-based time, training related to the activities being undertaken, performance management such as time/performance reviews, data analysis and preparation for targeting activities and planning time in relation to field-based work. The total cost for delivery of the activities shall be included for example vehicles, fuel, annual leave/sickness and associated equipment. Costs shall include team leadership roles and direct managers of leakage teams/functions. Where costs are not incurred, for example, if sickness time is not paid for when using a contractor, this should not be included. Where total costs for this activity are collected, the apportionment between maintain and reduce lines should be undertaken using an appropriate method such as number of leaks found, or repairs carried out. This line should reflect the costs required to reduce leakage in terms of people and</p>	

Line	Title	Definition	IN22/02 reference
		<p>equipment that is over and above the level required to maintain leakage at steady state from the prior reporting year.</p> <p><b>Reduce – Mend – direct costs</b></p> <p>The cost of reducing leakage through activities under the mend category in the report year. For the purposes of reporting, this category relates to the repair of all leak types including both customer reported/reactive leak repairs and company detected/proactive leak repairs including mains bursts, supply pipes, communication pipes and fittings. The direct costs are to be included for supply pipes where the company has undertaken repairs on behalf of customers and provided either a free repair or a contribution towards the repair. Direct costs shall relate to gross operating costs of carrying out these activities including field-based time, associated training, performance management, scheduling and planning. Where total costs for this activity are collected if required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary. Further information on approaches to proportional allocation is provided below the table.</p> <p><b>Indirect costs – reduce – direct costs</b></p> <p>Indirect costs across all leakage reduction activities shall be provided including office space, insurance, tax, overheads, general IT systems that are not solely related to leakage management and any other indirect costs that are accounted for but not related directly to the leakage management activities. This should not include senior management but may include a proportion of time of a department lead or director with responsibility for leakage as part of a wider remit. If required, companies may proportionally allocate between maintain and reduce and set out their rationale in supporting commentary.</p> <p><b>Total reduce leakage expenditure</b></p> <p>This should equal the sum of all the above components.</p>	
<b>CW19.3</b> <b>(19.6, 19.9)</b>	Total leakage expenditure	Total capital and operational expenditure for all leakage activities in the reporting year. This is calculated as the sum of components in lines 19.1 and 19.2 for the company level figures (sum of lines 19.4 and 19.5 for region 1 figures and sum of lines 19.7 and 19.8 for region 2 figures).	LK1.3
<b>CW19.10</b> <b>(19.11, 19.12)</b>	Mend supply pipe cost	Where companies provide free repairs or contribution towards repairs of supply pipes, the total cost should be provided. This should include both direct and indirect costs and includes both reduce and maintain costs together, to represent the total cost of support that companies are providing to customers in terms of supply pipe leakage. This should not include any activity related to internal plumbing systems, or home visits related to	LK1.4

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	IN22/02 reference
		water efficiency.	
<b>CW19.13</b> <b>(19.17,</b> <b>19.21)</b>	Number of properties covered by PMAs with fixed outlet pressure control	The number of total connected properties supplied that are covered through Pressure Managed Areas (PMAs) at the end of the report year. PMAs reflect pressure control through control valves and PRVs where the primary purpose is to reduce and manage pressure for leakage management. Pressure control through pumping shall not be included for the purposes of this definition. Total properties covered are based on the end of the reporting year and should include only PMAs where there is active pressure management with fixed outlet control. Fully open PRVs should not be included, and this definition should reflect operationally active PRVs only.	LK2.1
<b>CW19.14</b> <b>(19.18,</b> <b>19.22)</b>	Number of properties covered by PMAs with active pressure control	The number of total connected properties supplied that are covered through Pressure Managed Areas (PMAs) at the end of the report year. PMAs reflect pressure control through control valves and PRVs where the primary purpose is to reduce and manage pressure for leakage management. Pressure control through pumping shall not be included for the purposes of this definition. Total properties covered are based on the end of the reporting year and should include only PMAs where there is active pressure management with pressure profiles controlled via pressure control systems. Fully open PRVs should not be included, and this definition should reflect operationally active PRVs only.	LK2.2
<b>CW19.15</b> <b>(19.19,</b> <b>19.23)</b>	Number of new PMAs	The number of new PMAs installed and optimised in the report year. For the purposes of this definition, PMAs relate to control valves and PRVs only and not pump control systems.	LK2.3
<b>CW19.16</b> <b>(19.20,</b> <b>19.24)</b>	Number of properties covered by new PMAs	The number of connected properties covered by new PMAs that were installed and optimised in the report year.	LK2.4
<b>CW19.25</b> <b>(19.30,</b> <b>19.35)</b>	Number of fully operating DMAs	The total number of fully operable DMAs in the report year. This refers to operability as defined in the <a href="#">PR24 leakage PC definitions</a> .	LK3.5
<b>CW19.26</b> <b>(19.31,</b> <b>19.36)</b>	25th percentile DMA size	The 25th percentile of DMA size in terms of property coverage (using line SUP1A.16 as the basis in terms of total connected properties), on average over the reporting year.	LK3.6
<b>CW19.27</b> <b>(19.32,</b> <b>19.37)</b>	Mean DMA size	The average size of DMAs in terms of property coverage on average over the reporting year (using line SUP1A.16 as the basis for the definition in terms of total connected properties within DMAs). Where smaller units than DMAs are operational and used for DMA targeting, this should be noted in the commentary response.	LK3.7
<b>CW19.28</b> <b>(19.33,</b> <b>19.38)</b>	75th percentile DMA size	The 75th percentile of DMA size in terms of property coverage (using line SUP1A.16 as the basis in terms of total connected properties) on average over the reporting year	LK3.8
<b>CW19.29</b> <b>(19.34,</b> <b>19.39)</b>	DMA Availability	Available DMAs being the zones/ DMAs or Tiles with data that allow it to be used for regulatory reporting. The company decision whether to include trunk mains in the	n/a

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	IN22/02 reference
		<p>DMA/zone or Tiles should have no effect on this reported figure. Expressed as percentage coverage in terms of total connected properties on average in the reporting year (using line SUP1A.16 as the basis in terms of total connected properties). This differs from DMA operability which is where leakage data is derived from night flow monitoring and the application of legitimate night use data is within the a company's accepted validity criteria for use in leakage.</p> <p>Where a company is not able to meet the availability measure because, for example, of District Meter Area (DMA) or zone remodelling or capital works then it is to disclose this in its supporting statement. It is expected that the company will endeavour to maintain availability in all DMAs/Zones or Tiles used to report bottom-up leakage. The supporting statement shall explain why any DMAs/zones or tiles are not available.</p>	
<b>CW19.40</b> <b>(19.43,</b> <b>19.46)</b>	Length of trunk mains and upstream network in trunk mains balances	The total length of trunk mains and distribution network upstream of leakage reporting areas of primary DMAs that are fed off trunk mains, and downstream of distribution input (DI) meters, used to estimate network leakage at the end of the report year. This represents the length of mains upstream of DMAs, in trunk mains balances where these used for regulatory reporting of trunk mains leakage. Where companies report using zonal reporting, this value should be calculated based on the total length of distribution mains in the zone minus the DMA mains length.	LK4.6
<b>CW19.41</b> <b>(19.44,</b> <b>19.47)</b>	Length of trunk mains	The total length of trunk main, based upon network that is downstream of DI meters and upstream of the zonal or DMA meters used in reporting leakage.	LK4.7
<b>CW19.42</b> <b>(19.45,</b> <b>19.48)</b>	Proportion of trunk mains and upstream network in trunk mains balances.	Calculated as a percentage from above two lines	LK4.8
<b>CW19.49</b> <b>(19.50,</b> <b>19.51)</b>	Smart networks coverage - permanent acoustic/noise loggers	The average percentage in the report year of coverage of properties with permanent acoustic/noise loggers installed within the operating range of sensors, based on total connected properties (using line SUP1B.11) at year end. If a proportion of a DMA is covered to target hotspot areas, the manufacturers guidance or practical experience and evidence may be used to determine the proportion of coverage for that DMA.	LK4.9
<b>CW19.52</b> <b>(19.53,</b> <b>19.54)</b>	Hours on ALC activity per annum	The total hours spent on active leakage control (ALC) activities including temporary acoustic/noise logging. This time shall represent productive time related to active leakage control and include field-based time spent locating hidden leakage and can include office-based time such as accessing data and performance reviews/meetings related to the role of carrying out active leakage control. This time should exclude nonproductive time such as sickness absence, holidays, and non-leakage company meetings or updates. This should exclude any time spent on maintenance of DMAs, PMAs, and flow/pressure and other	LK4.1

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	IN22/02 reference
		network monitoring and other activities that are related to the “aware” activities. This should exclude time spent undertaking managing systems, reporting and targeting of ALC resources. The time in this line should reflect the time spent on active leakage control, and not the office-based activities such as targeting and prioritisation of DMAs for ALC.	
<b>CW19.55</b> <b>(19.59,</b> <b>19.63)</b>	Number of mains repairs – customer reported	The total number of mains repairs excluding mains fittings such as hydrants, washouts, air valves and other network apparatus. Repairs should have been completed in the reporting year and originated through being reported to the company by customers. Completion is defined as the physical repair being undertaken including reinstatement. The number of repairs should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.5
<b>CW19.56</b> <b>(19.60,</b> <b>19.64)</b>	Number of mains repairs – company detected	The total number of mains repairs excluding mains fittings such as hydrants, washouts, air valves and other network apparatus. Repairs should have been completed in the reporting year and originated through being proactively detected by the company. Completion is defined as the physical repair being undertaken including reinstatement. The number of repairs should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.6
<b>CW19.57</b> <b>(19.61,</b> <b>19.65)</b>	Average run time for customer reported mains repairs	The average run time in days* for customer reported mains repairs excluding fittings, that are completed in the reporting year. The run time should be calculated based upon the time between a leak was located (e.g., when it was initially confirmed, pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a customer contact and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.7
<b>CW19.58</b> <b>(19.62,</b> <b>19.66)</b>	Average run time for company detected mains repairs.	The average run time in days* for company detected mains repairs excluding fittings, that are completed in the reporting year. The run time should be calculated based upon the time between a leak was located (e.g. when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a DMA flow rate increase and the time it was located. This time does not include the time after the physical repair was carried out and the time	LK5.8

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	IN22/02 reference
		of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	
<b>CW19.67</b> <b>(19.71,</b> <b>19.75)</b>	Number of mains fittings repairs – customer reported	The total number of mains fittings repairs such as hydrants, washouts, air valves and other network apparatus. Repairs should have been completed in the reporting year and originated through being reported to the company by customers. Completion is defined as the physical repair being undertaken including reinstatement. The number of repairs should reflect the position at the end of the process, i.e., once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.9
<b>CW19.68</b> <b>(19.72,</b> <b>19.76)</b>	Number of mains fittings repairs – company detected.	The total number of mains fitting repairs such as mains fittings such as hydrants, washouts, air valves and other network apparatus. Repairs should have been completed in the reporting year and originated through being proactively detected by the company. Completion is defined as the physical repair being undertaken including reinstatement. The number of repairs should reflect the position at the end of the process, i.e., once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.10
<b>CW19.69</b> <b>(19.73,</b> <b>19.77)</b>	Average run time for customer reported mains fittings repairs	The average run time in days for customer reported mains fittings repairs, that are completed in the reporting year. The run time should be calculated based upon the time between a leak was located (e.g., when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a customer contact and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category. Number of days should be expressed as a decimal to one decimal place	LK5.11
<b>CW19.70</b> <b>(19.74,</b> <b>19.78)</b>	Average run time for company detected mains fittings repairs	The average run time in days for company detected mains fittings repairs, that are completed in the reporting year. The run time should be calculated based upon the time between a leak was located (e.g., when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a DMA flow rate increase and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates	LK5.12



PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	IN22/02 reference
		to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category. Number of days should be expressed as a decimal to one decimal place	
<b>CW19.79</b> <b>(19.83,</b> <b>19.87)</b>	Number of communication pipe repairs – customer reported	The total number of communication pipe repairs carried out including stop taps and boundary boxes. Repairs should have been completed in the reporting year and originated through being reported to the company by customers. Completion is defined as the physical repair being undertaken including reinstatement. The number of repairs should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.13
<b>CW19.80</b> <b>(19.84,</b> <b>19.88)</b>	Number of communication pipe repairs – company detected	The total number of communication pipe repairs carried out including stop taps and boundary boxes. Repairs should have been completed in the reporting year and originated through being proactively detected by the company. Completion is defined as the physical repair being undertaken including reinstatement. The number of repairs should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.14
<b>CW19.81</b> <b>(19.85,</b> <b>19.89)</b>	Average run time for customer reported communication pipe repairs	The average run time in days for customer reported communication pipe repairs, that are completed in the reporting year. The run time should be calculated based upon the time between a leak was located (e.g., when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a customer contact and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category. Number of days should be expressed as a decimal to one decimal place	LK5.15
<b>CW19.82</b> <b>(19.86,</b> <b>19.90)</b>	Average run time for company detected communication pipe repairs	The average run time in days for company detected communication pipe repairs that are completed in the reporting year. The run time should be calculated based upon the time between a leak was located (e.g., when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a DMA flow rate increase and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the	LK5.16

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	IN22/02 reference
		<p>process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.</p> <p>Number of days should be expressed as a decimal to one decimal place</p>	
<b>CW19.91 (19.98, 19.105)</b>	Number of supply pipe repairs – customer reported	The total number of customer reported supply pipe repairs carried out that the company is aware of, either through carrying out repairs on behalf of customers or where they have confirmation that customers have carried out the repair. Repairs should have been completed in the reporting year and originated through being reported to the company by customers. Completion is defined as the physical repair being undertaken. The number of repairs should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.	LK5.17
<b>CW19.92 (19.99, 19.106)</b>	Number of supply pipe repairs – company detected	The total number of company detected supply pipe repairs carried out that the company is aware of, including those where customers have arranged for the repair to be undertaken themselves as well as where the company has undertaken repairs. Repairs should have been completed in the reporting year and originated through being proactively detected by the company. Completion is defined as the physical repair being undertaken. The number of repairs should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category	LK5.18
<b>CW19.93 (19.100, 19.107)</b>	Average run time for customer reported supply pipe repairs	The average run time in days for all customer reported supply pipe repairs, that are completed in the reporting year including those undertaken by customers that the company is aware of. The run time should be calculated based upon the time between a leak was located (e.g., when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of water stopped. This time does not include the time between being made aware of the leak e.g., a customer contact and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category. Number of days should be expressed as a decimal to one decimal place	LK5.19
<b>CW19.94 (19.101, 19.108)</b>	Average run time for company detected supply pipe repairs	The average run time in days for company detected supply pipe repairs that are completed in the reporting year including those undertaken by customers, that the company is aware of. The run time should be calculated based upon the time between a leak was located (e.g., when it was pinpointed or using the date the job was entered onto a works management system, whichever is earliest) and the time the physical repair was completed, and the loss of	LK5.20

PR24 business plan table guidance part 3; Costs (wholesale) – water

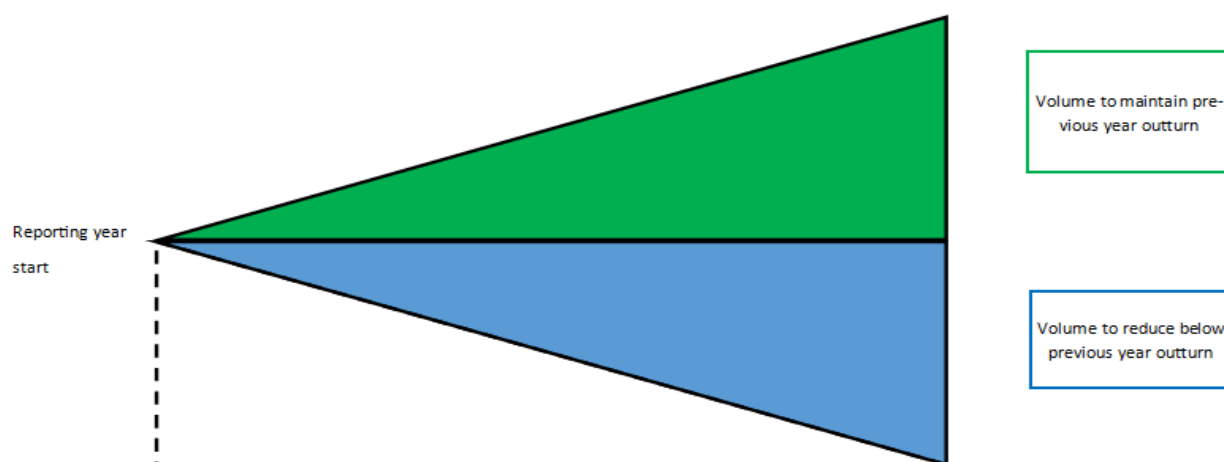
Line	Title	Definition	IN22/02 reference
		<p>water stopped. This time does not include the time between being made aware of the leak e.g., a DMA flow rate increase and the time it was located. This time does not include the time after the physical repair was carried out and the time of reinstatement. The number of repairs this run time relates to should reflect the position at the end of the process, i.e. once a repair has been undertaken as the remedy rather than an initial fault which may then change category.</p> <p>Number of days should be expressed as a decimal to one decimal place</p>	
<b>CW19.95</b> <b>(19.102,</b> <b>19.109)</b>	Number of free supply pipe repairs undertaken	The total number of supply pipe repairs, both customer reported and company detected (including through identification using metering), where the company has undertaken a free repair on behalf of the customer including reinstatement.	LK5.21
<b>CW19.96</b> <b>(19.103,</b> <b>19.110)</b>	Number of supply pipe repairs where financial assistance provided	The total number of supply pipe repairs, including both customer reported and company detected (including through identification using metering), where the company has provided some financial assistance. For example, this could take the form of the company providing the customer with a contribution towards costs or the company may undertake a repair but not offer reinstatement.	LK5.22
<b>CW19.97</b> <b>(19.104,</b> <b>19.111)</b>	Number of supply pipe repairs where other support provided	The total number of supply pipe repairs where no financial support or free repair has been provided to the customer, but other support has been provided, such as leak localisation support or help for the customer in terms of the process e.g. where to obtain approved plumbers.	LK5.23
<b>CW19.112</b> <b>(19.114,</b> <b>116)</b>	Historical minimum achieved level of leakage	A sum of the historical minimum achieved levels of leakage at different dates and times, using the current reporting guidance methodology for bottom-up leakage estimation (as defined in the leakage guidance for PR19 document (27th March 2018). This should be the minimum weekly achieved level over a 5-year period based on an appropriate approach to remove spurious values such as inoperable data or random events, to represent a true minimum achieved level obtained from weekly average leakage values. This shall be calculated at DMA level and extrapolated to company level using an appropriate means.	LK6.1
<b>CW19.113</b> <b>(19.115,</b> <b>19.117)</b>	Volume of leakage that needs to be saved to maintain current level	<p>Calculation of the volume of leakage that needs to be saved in order to maintain the previous reporting year level in MI/d. One of the following three options should be used:</p> <p>A. Apportion maintain/reduce volumes based on assessment of NRR for the reporting year taking into consideration the impact of weather.</p> <p>The assessment shall derive the natural rate of rise (NRR) estimate using nightline approach with at least 50% of DMAs used in the analysis. An update for the reporting year is required using data that includes the reporting year and not just historical information, although this assessment should use historical data from previous report years to ensure the estimation is</p>	LK6.2

Line	Title	Definition	IN22/02 reference
		<p>reflective of the report year as well as making full use of available historical data to derive robust volumes.</p> <p>For the avoidance of doubt the estimate of NRR should include the impact of weather within the report year. Companies should quantify the impact of weather on the NRR within their commentary that accompanies their completed tables. The most appropriate best practice should be used either from UKWIR or the methodology that forms part of leakage management software system and analytical approaches.</p> <p>B. Steady State analysis to determine the volume required to maintain the previous year outturn level of leakage. Companies may apportion maintain/reduce volumes based upon steady state analysis of repairs and using appropriate flow rate and leak growth data along with leak run times to determine the volume required to maintain.</p> <p>Through analysis of periods of equal leakage given a stated tolerance, spanning periods of between 6 months and 24 months to determine the overall number of repairs that were carried out to stand still. Using appropriate estimation of awareness times, locate time and repair time along with flow rates and leak growth factors to calculate a volume in Ml/d.</p> <p>C. Where companies are unable to provide either of the above methods or have an alternative approach to estimating the volume required to maintain leakage this can be provided with a full explanation of the approach taken.</p> <p>For example, companies may take a more advanced approach to estimating the volume required to maintain, factoring in supply pipe deterioration assessments and the benefits of metering programmes into their assessment of the volume required to maintain leakage and may choose to present their approach using option C. A full explanation should be provided in the commentary in relation to their approach.</p> <p>Weather impacts should be included in the volume to maintain, and companies should outline the approach to calculating the impact of weather in the commentary.</p>	

## CW19 Additional guidance and commentary requirements

22.2 The cost to maintain leakage (reference lines CW19.1 to CW19.9) should include both direct and indirect costs associated with the leakage management activities required to maintain the current level of leakage.

**Figure 19.1: Leakage volume split between maintain and reduce**



22.3 There is an expectation that companies should be able to determine the costs and activities that are related to maintaining the current level of leakage. The costs to maintain leakage may be based upon cost information from internal budgets and/or financial accounting systems which relate to the activities that are undertaken to maintain and reduce the level of leakage. The impact of weather should be factored into the cost to maintain the level of leakage. Where needed, costs that span both maintain and reduce may be proportionally allocated between the categories. Costs are required to be provided for both maintain and reduce across the PALM (prevent, aware, locate and mend) categories.

22.4 In summary there are three options we consider that companies could use to proportionally allocate costs between maintain and reduce:

A. Proportionally allocate maintain/reduce costs based on consideration of volumes of leakage required to maintain the previous years reported level and volumes of reduction beyond this achieved in the reporting year. With volume required to

maintain the previous year's level based on an assessment of natural rate of rise (NRR) for the reporting year

B. Proportionally allocate maintain/reduce costs based on consideration of volumes of leakage required to maintain the previous years reported level and volumes of reduction beyond this achieved in the reporting year. With volume required to maintain the previous year's level based upon steady state analysis of repairs and using appropriate flow rate and leak growth data along with leak run times to determine the volume required to maintain.

C. Where companies are unable to provide either of the above methods or have an alternative approach to estimating the volume required to maintain leakage this can be provided with a full explanation of the approach taken. For example, companies may take a more advanced approach to estimating the volume required to maintain, factoring in supply pipe deterioration assessments and the benefits of metering programmes into their assessment of the volume required to maintain leakage and may choose to present their approach using option C. A full explanation should be provided in the commentary in relation to their approach.

22.5 Under all approaches the impact of the weather should be factored into the cost to maintain the level of leakage.

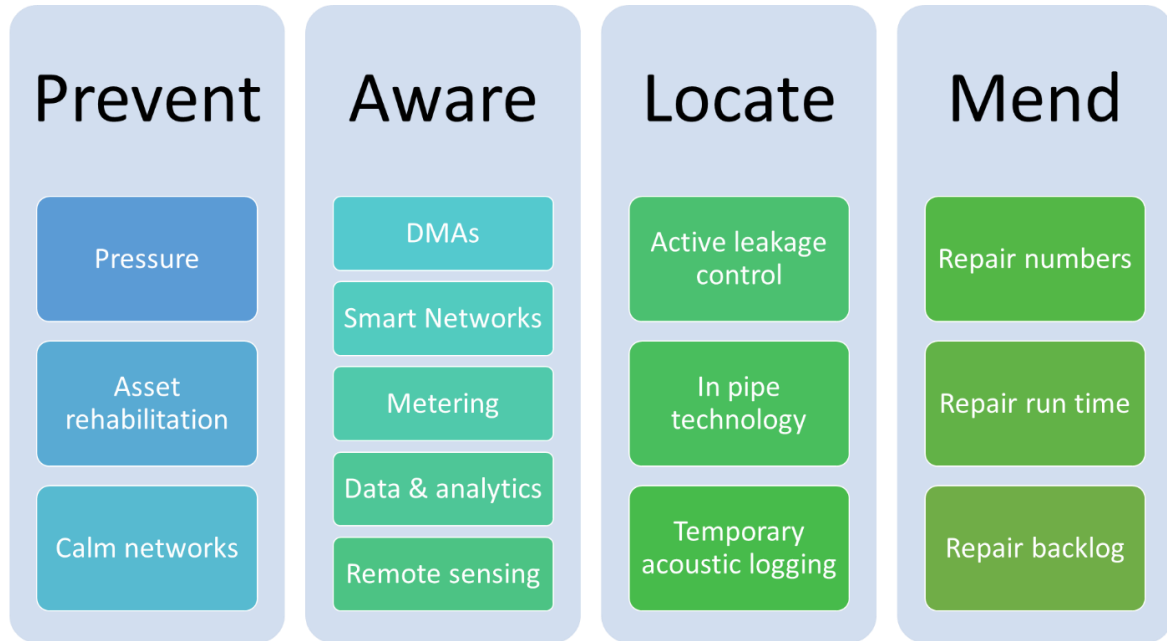
### **PALM categories**

22.6 Leakage activities can be broken down into PALM, (Prevent, Aware, Locate and Mend) categories as a useful framework to describe companies' strategies and approaches to managing leakage. This categorisation has been generally adopted by the industry, and practitioners were supportive of basing a reporting framework on it. Figure 19.2 below shows the activities included under each of the categories. Further discussion of the PALM categories is available in ['Leakage information request 2017-22 – supporting guidance'](#).

22.7 For the purposes of our proposed reporting framework, any leakage reporting, systems and targeting analysis for active leakage control or operational management of DMAs is covered under 'aware'.

22.8 Locate activities for the purpose of this definition relates predominantly to field based active leakage control activities, with the time spent proactively locating hidden leaks. The definition seeks to understand productive time spent in the field. Where any final pinpointing of leaks is undertaken by repair teams for example, or where general network technicians undertake this as part of dealing with customer reported leaks, this time element should also be captured.

Figure 19.2: Activities in each PALM category



## 23. CW20 – Distribution mains condition

### CW20 Additional guidance

- 23.1 This assessment is being undertaken to better understand the potential requirements for asset renewals at PR24. It uses the methodology adopted for PR04 and PR09 to provide additional insight in relation to asset condition. We will use this data as a check as to whether renewals are keeping pace with deterioration and to determine whether it can provide any further insight across companies of emerging asset health risks.
- 23.2 Grading is to be based on numbers of mains repairs (bursts) reported in the APR. It is recognised that bursts are not the only asset observation used to inform infrastructure renewals expenditure. The purpose of limiting the grading by bursts is so that an aggregate position for the industry can be assembled from a more consistent set of data and to facilitate a better comparison among companies of the state of these assets.
- 23.3 The profile of mains length in each grade must reconcile with the average number of bursts per annum repaired over the past five years.
- 23.4 Report separately the condition profile and confidence grade for potable mains for the size groups in lines CW20.1 and CW20.2 respectively.
- 23.5 Further detailed guidance on grading methodology was previously published by UKWIR [Report Number 08/RG/05/22 Volume 2].<sup>10</sup> It remains open to companies to undertake their own additional analyses, for example to sub-divide grade 1 in order to enable 'significant mains' to be monitored more effectively. 'Significant mains' are described in the UKWIR report as 'mains for which the scale of the consequences of failure is significantly greater than for other mains'. Whilst this is proposed in the UKWIR report there are no sub-grade boundary recommendations. Sub-division of grading should be set down in the table CW20 commentary, together with the approach and cohort and grading criteria used to derive it.
- 23.6 The grading methodology is based on aggregations of mains with similar characteristics, termed cohorts. It is important to ensure that the cohort groupings meet certain criteria. Each cohort must be arranged so that its expected total number of bursts per year is within a tolerance of +/- 50% (as far as is practicable) of the

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<sup>10</sup> The approach broadly follows the grading methodology set out in [UKWIR, Review of water mains serviceability indicators and condition grading: Volume II – mains condition grading, 2006](#)



nominal size shown in table CW20.1. For any cohort where it is not considered practical to arrange its size to fall within this tolerance a commentary should be provided.

**Table CW20.1 Cohort Guidance**

Type of mains	Nominal expected total number of bursts per year per cohort
Mains up to 320 mm internal diameter.	2.5
Mains 321 mm internal diameter and over	1.0

- 23.7 This is similar, but different, to the table on page 57 of the UKWIR report. That table has entries described for 'non-significant' and 'significant mains' rather than size banding, which is required to align with previous assessments. The associated nominal expected total bursts per year per cohort for significant and non-significant mains are 2.5 and 1 respectively. Companies may find it necessary to use a period longer than five years, particularly for larger mains sizes, and their approach should be set down in the table commentary.
- 23.8 Note that the nominal sizes are fractional numbers of bursts per year, as these expected figures are to be calculated based on counting bursts over five years. The total length of mains will vary between cohorts.
- 23.9 Whilst the size of any individual cohort may fall within the above tolerance of +/- 50%, it is not acceptable for all cohorts to be at the high end or the low end. Averaged over all cohorts the expected number of bursts must be within a tolerance of +/- 10% of the nominal size shown in the table above.
- 23.10 The cohort approach should be validated using spatial analysis techniques, based on distance between failures along the network. Note that if spatial analysis is made over a period different than five years then the distance between failures for each grade is proportionately different than shown. Companies should include in their commentary a graph of cumulative annual average bursts (y-axis) versus cumulative mains length (x-axis), having first ranked mains by decreasing burst rate of each cohort, taking care to limit the size of each cohort in line with UKWIR recommendation. This should be presented to a suitable scale to affect Pareto and Percentile analyses, together with commentary on salient points.

Figure CW20 Example Graph

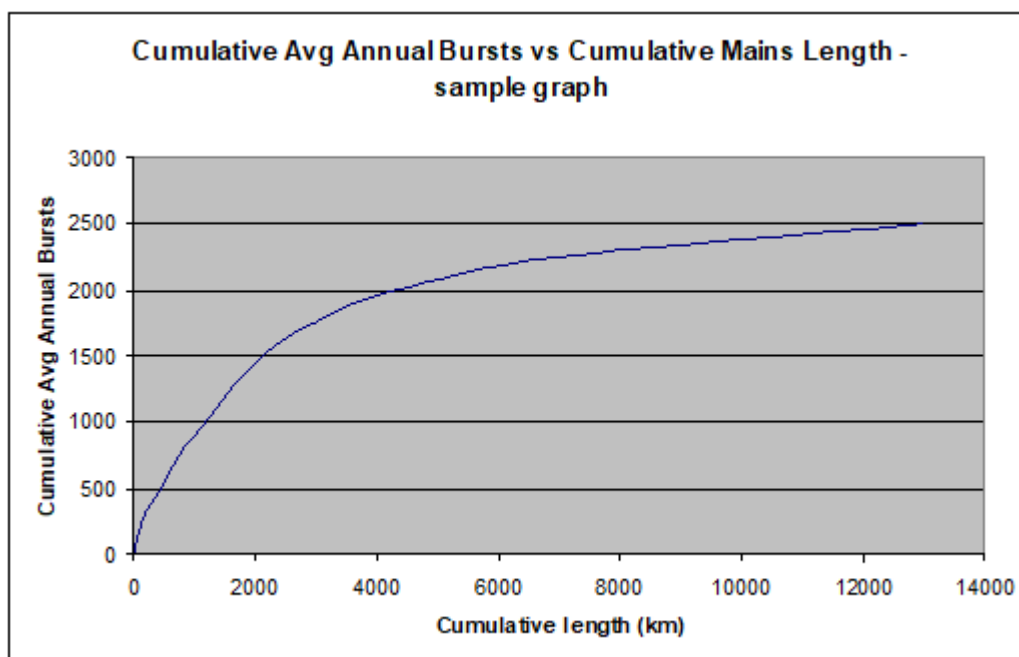


Table CW20.2 Mains Condition Grading

Condition grade	General meaning
1	Excellent Bursts average up to 125/1000km/annum over five years, (equivalent to 1600 metres or more between bursts over the five year period).
2	Good Bursts average greater than 125 up to 250 burst/1000 km/annum over five years, (equivalent to less than 1600 metres down to 800 metres between bursts over the five year period).
3	Adequate Bursts average greater than 250 up to 500 bursts/1000km/annum over five years (equivalent to less than 800 metres down to 400 metres between bursts over the five year period).
4	Poor Bursts average greater than 500 up to 1000/1000 km/annum over five years (equivalent to less than 400 metres down to 200 metres between bursts over the five year period).
5	Very Poor Bursts average greater than 1000/1000 km/annum over five years (equivalent to less than 200 metres between bursts over the five year period).

23.11 A supporting excel file should be provided that includes a full breakdown of cohorts and relative burst rate information. This will support wider analysis and industry comparison.

23.12 Companies should aim to align cohort groupings by using standardised primary variables of material as shown in Table CW20.3 , diameter ( $\leq 320\text{mm}$ ,  $>320\text{mm}$  and  $\leq 450\text{mm}$ ;  $>450\text{mm}$  and  $\leq 610\text{mm}$ ;  $>610\text{mm}$ ) and age (e.g. 20 year bandings). Where cohorts are too large they can be split by secondary variables, including further standardised subdivisions of pipe diameter and age (10 year bandings), and standardised soil type variables (corrosivity and fracture potential), as well as non standardised user defined variables such as DMA, Surveyed condition, Active Pressure Management area, Urban/Rural, alkalinity, pH. To support completion of the excel workbook we have published additional cohort table guidance, which can be accessed [here](#).

**Table CW20.3 Mains Material**

Material	Material Description
VC	Vitrified Clay
VI	Cast Iron
CO	Concrete
GRP	GRP
PVC	PVC
PE	PE
PF	Pitch Fibre
BR	Brick
Other	Other

23.13 Pipelines are subject to varying degrees of capital and operational maintenance over their life, which gives rise to the question as to what age band to put those lengths that have had significant rehabilitation. Only where the pipeline has been effectively replaced by structural refurbishment (for example cured in place structural lining of sewers) should the date of refurbishment be used as the construction date. Where a pipeline has been refurbished, but not structurally (for example cement mortar lining of water mains), then use the original date of construction. The company should, for completeness, state the length and over what period the network has been relined in each of the structural and non-structural categories.

Table CW20 line definitions

Line	Title	Definition	RAG 4.11 line reference
<b>CW20.1</b>	Potable mains length (up to 320mm diameter)	Total length (km's) of main upto and including 320mm diameter classified under each grade. This should add upto the total km of main as of March 2023. Unit is km's	6C.5
<b>CW20.2</b>	Potable mains (greater than 320mm)	Total length (km's) of main greater than 320mm classified under each grade. This should add upto the total km of main. Unit is KM's	6C.6+6C.7+6C.8
<b>CW20.3</b>	Analysed cohort potable mains (up to 320mm)	The length in each condition grade, of potable water mains up to 320mm used in cohort analysis, excluding mains up to 320mm replaced in last five years. The total length should be the length reported in table CW20.1 minus the length of replaced mains up to 320mm from April 2018 to March 2023. Unit is KM's	
<b>CW20.4</b>	Annual average bursts from cohort analysis (5 year average) potable mains (up to 320mm)	Annual average bursts in each condition grade, on potable mains up to 320mm excluding bursts on mains replaced up to 320mm in the last 5 years. Average of five years April 2018 to March 2023. Unit is number of bursts.	
<b>CW20.5</b>	Annual average bursts on analysed cohorts potable mains (up to 320mm)	Annual burst rate, in each condition grade, of analysed cohorts of potable mains up to 320mm excluding bursts on mains replaced up to 320mm. Average of five years April 2018 to March 2023. Burst rates derived by the calculation must align with condition grade definitions set out in table 1 of the guidance. (1000 x line CW20.4 divided by CW20.3)	

PR24 business plan table guidance part 3; Costs (wholesale) – water

Line	Title	Definition	RAG 4.11 line reference
<b>CW20.6</b>	Replaced or relined potable mains up to 320mm	Total km's of mains replaced or relined between April 2018 to March 2023 upto and including 320mm. Total only.	
<b>CW20.7</b>	Annual average bursts on replaced potable mains (5 year average) up to 320mm	Annual bursts on replaced mains up to 320mm. Average of mains replaced between April 2018 to March 2023.	
<b>CW20.8</b>	Annual average bursts (5 year average) on potable mains up to 320mm	Total of bursts on all mains (up to 320mm). Average of 5 years April 2018 to March 2023. (Total of sum of lines 20.4 and 20.7)	
<b>CW20.9</b>	Current annual bursts on potable mains (up to 320mm)	Current annual bursts, by condition grade, of potable water mains up to 320mm, informed by cohort analysis, taking into account mains renewed and deterioration between April 2018 to March 2023.	
<b>CW20.10</b>	Current annual bursts on potable mains (up to 320mm)	Current annual burst rate, by condition grade, of potable mains up to 320mm excluding bursts on mains replaced up to 320mm informed by cohort analysis, taking into account mains renewed and deterioration between April 2018 to March 2023. Burst rates derived by the calculation must align with condition grade definitions set out in table CW20.2 of the guidance. (1,000 x line CW20.10 divided by line CW 20.1)	
<b>CW20.11</b>	Annual bursts on mains (5 year average) greater than 320mm	Annual bursts on mains (5 year average between April 2018 and March 2023) on greater than 320mm, identified in CW20.2.	
<b>CW20.12</b>	Annual bursts on mains (5 year average) on potable mains reported in APR 2019–2023	Annual bursts (5 year average between April 2018 and March 2023) on potable and other mains. Sum of lines CW20.8 and CW20.11. This calculation must be reconciled with bursts reported in the APR2018–2023 (3S.6/3F).	

## CW20 Commentary requirement

23.14 Companies should include the following commentary to this table:

- Confirmation that the profile of mains length in each grade reconciles with the average number of bursts per annum repaired over the past five years
- Sub-division of grading, together with the approach and cohort and grading criteria used to derive it.
- Commentary on any cohort where it is not considered practical to arrange its size to fall within the defined tolerance.
- Companies approach if they have used a period longer than five years.
- a graph of cumulative annual average bursts (y-axis) versus cumulative mains length (x-axis).
- An explanation of any material variations between current and previous percentages of assets in each condition grade (e.g. PR09 data where available).
- An explanation of any changes in reporting methods / assumptions that have led to a material change in reported figures.
- An indication of the quality of data provided.
- Confirm that the condition grading system (set out in the guidance above) used for this submission has been prepared in line with the guidance and explain differences where they are not on the same basis as that used historically.
- Confirmation of any data mapping undertaken to align with the primary or secondary variables of the cohort table. This is particularly relevant to soil corrosivity and/or soil fracture potential.

## 24. CW21 – Net zero enhancement schemes

- 24.1 This table is added for companies to present water net zero schemes that form part of their company level enhancement programme for 2025-30 and to be considered for the industry net zero challenge. The expectations for company net zero enhancement programmes and the net zero challenge are described in the PR24 Final Methodology - Appendix 9 Setting expenditure allowances, pages 88-93.
- 24.2 These schemes should be where enhancement costs will be incurred and reducing net zero greenhouse gas emissions are the primary driver for investment (suitable for net zero challenge). Where the solution has another primary driver but has some additional costs to reduce the impact on greenhouse gas emissions these costs should be included in the standard enhancement line associated with the primary driver as part of a best value programme.
- 24.3 Where the net zero activity overlaps with base maintenance funded activities, such as the replacement of current assets, the base element should be identified and removed from the request together with any future base savings. The assumptions made for this adjustment should be described in the table commentary.
- 24.4 For each discrete scheme or programme present the unique scheme identification (eg CW21\_1), scheme name and a brief description to explain the type of activity the scheme involves and will ultimately deliver. The description should include sufficient detail to understand the scheme.
- 24.5 For the Selected or Feasible data field use the dropdown options to choose Selected for schemes that make up the company level net zero enhancement programme (note that the total cost of these schemes should equal the enhancement costs presented in lines CW3.124 to CW3.126. Those schemes not part of the company level programme but are suitable for consideration in the net zero challenge should be given the Feasible dropdown option.
- 24.6 Commentary on the data including assumptions around implicit allowance of base maintenance costs and how the carbon impact and benefits of schemes have been calculated should be included.

### Table CW21 definitions

Column	Title	Definition
<b>CW21.1 to CW21.15</b>	Scheme capex, scheme opex and scheme totex	Forecast enhancement capex, opex and totex presented each year from 2025-26 to 2029-30.

PR24 business plan table guidance part 3; Costs (wholesale) – water

Column	Title	Definition
<b>CW21.16 to CW21.18</b>	AMP8 capex, AMP8 opex and AMP8 totex totals	Total forecast enhancement capex, opex and totex for the AMP8 period (2025–30).
<b>CW21.19</b>	Water Resources costs (% of AMP 8 Totex)	Percentage of the 2025–30 totex as presented in CW21.18 that is within the Water resources price control.
<b>CW21.20</b>	Water Network + costs (% of AMP 8 Totex)	Percentage of the 2025–30 totex as presented in CW21.18 that is within the Water network plus price control.
<b>CW21.21 to CW21.25</b>	Scheme benefits (cumulative impact on tCO <sub>2</sub> e)	Net operational greenhouse gas emission impact (in tonnes equivalent of CO <sub>2</sub> ) of the scheme delivery presented as a cumulative impact annually from 2025–26 to 2029–30. The net change in operational greenhouse gas emissions should use the definition of emissions as aligned with the PR24 common performance commitment. Positive as an increase and negative for a decrease.
<b>CW21.26</b>	Overall scheme impact on total greenhouse gas emissions (total impact on tCO <sub>2</sub> e)	Net greenhouse gas emission impact (in tonnes equivalent of CO <sub>2</sub> ) of the scheme delivery presented as a cumulative impact by 2029–30. The net change in greenhouse gas emissions include the combined operational and embedded emissions impact of investment. Embedded emissions reporting should be based on capital projects from cradle-to-build. Operational emission should be based on the definition of emissions as aligned with the PR24 common performance commitment. Increased emissions should be given positive value and decreased emissions a negative value.



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