July 2022

Creating tomorrow, together: Consulting on our methodology for PR24

# Appendix 7 – Performance commitment definitions

Ofwat

# About this document

In this appendix we provide more detail on draft definitions for the common performance commitments that we are proposing for PR24. Some aspects of the definitions are still being developed, and some have key provisions 'to be confirmed' (TBC). We welcome feedback on all of the definitions and will continue to develop these in consultation with stakeholders as we move towards our final methodology.

Further information on our proposed approach to the common performance commitments is in the 'Delivering outcomes for customers', chapter 5 of the consultation document and Appendix 6 on 'Performance commitments'.

This version of the document was published on 22 July 2022 to correct the incentive type shown for Unplanned outage (page 141) and Sewer collapses (page 144).

# 1. Introduction

The appendix provides information on each proposed performance commitment. Where we are consulting on alternatives, such as for water demand, we are presenting definitions for all aspects. The performance commitment definitions include the following:

- the name of the performance commitment;
- a summary of the purpose and benefits of the performance commitment. The definitions and other terms set out in the performance commitment should be considered to be authoritative in determining a company's commitments under the performance commitment;
- the detailed definition of the performance commitment. Where these refer to, and incorporate, referenced or linked materials as part of the description of any aspect of these definitions (for example documents on the Ofwat or another organisation's website, or an attachment to the performance commitment), the referenced or linked materials are authoritative in interpreting the definitions of the performance commitment, unless otherwise stated. It is the company's responsibility to report accurate and complete information and it must have adequate processes in place to do this. Any direction on reporting and assurance is specific to the commitment and in addition to the company meeting other obligations;
- the form and type of the outcome delivery incentive;
- the allocation of the performance commitment to a company's applicable price controls; and
- any other additional details on the measure, as required.

Notwithstanding these definitions, companies should commit that their outcome delivery incentive payments will only relate to real performance changes and not definitional, methodological or data changes in the performance commitment. We will be mindful of these points when we are assessing companies' performance against their commitments and outcome delivery incentives during the 2025-30 period.

The outcomes framework sits in the broader context of a company's statutory and licence requirements for service delivery. Independently of the outcomes framework, each company also has to ensure that it complies with its legal obligations, or risk enforcement action. If a company's performance falls below the level set for a performance commitment (irrespective of the existence of any deadband or collar), we will consider whether this is indicative of wider compliance issues to the detriment of consumers and whether enforcement action, with the potential for remedial and fining measures, is warranted.

# 2. Customers receiving excellent service everyday

**Table 2.1 Proposed definitions of PR24 direct customer service common performance commitments**

| Water and wastewater | Water only | Wastewater only |
|---|---|---|
| C-MeX (residential customer measure of experience)<br>D-MeX (developer measure of experience)<br>BR-MeX (business customer measure of experience) [England]<br>Business customer experience in Wales | Water supply interruptions<br>Compliance risk index (CRI)<br>Customer contacts about water quality | Internal sewer flooding<br>External sewer flooding |

## 2.1 Customer Measure of Experience (C-MeX)

**Purpose:** This performance commitment is designed to incentivise companies to provide an excellent customer experience to residential customers.

**Benefits:** This performance commitment should encourage companies to improve customer experiences, innovate, enhance their handling of customer contacts and enable performance to be measured across companies consistently, reliably and fairly.

## Performance commitment definition and parameters

### 2.1.1 Detailed definition of performance measure

The customer measure of experience (C-MeX) is a gauge of customer satisfaction. A company's C-MeX score is calculated based on the combined scores from two surveys, as the weighted average of customer satisfaction (CSAT) score:

- a customer service survey of customers who have contacted their companies – this will incentivise companies to improve their handling of customer contacts and complaints (CSS); and
- a customer experience survey of customers selected at random (which may include those who have contacted their company) – this will incentivise companies to

improve the overall customer experience for all their customers, for example in relation to street works, and not just those who have made direct contact with their companies (CES).

Both survey scores contribute equally to the overall C-MeX score for each company. Each survey also includes a 'likelihood to recommend' question, the responses to which will make up the net promoter score for each company. The net promoter score will not contribute to the overall C-MeX score but will be recorded separately.

Ofwat will publish an annual league table of the overall annual C-MeX scores, and a separate net promoter score, for all companies. Each company can receive outperformance payments or incur underperformance payments based on its annual C-MeX score compared to other companies.

C-MeX is based on an annual survey of 200 interviews per survey per company per quarter – or 800 interviews per survey per company per year or 1,600 interviews per company per year (both surveys combined).

Standard and higher performance payments under C-MeX depend on a company's performance relative to those of other companies. Companies are ranked annually based on their C-MeX scores and the results published. Higher performance payments are available if the company passes each of the following three 'gates':

- a company is one of the top three performers by C-MeX score;
- it performs at or above the cross-sector threshold (of customer satisfaction performance based on the all-sector upper quartile (ASUQ) of the UK Customer Satisfaction Index (UKCSI)); and
- the company has lower than the industry average number of household complaints (per 10,000 connections).

### 2.1.2 Additional detail on measurement units

The company's C-MeX score (determined before the application of any adjustment for the number of channels offered) is calculated using the following formula:

*C-MeX score = 50% CSS-CSAT + 50% CES-CSAT*

Each CSAT score is rescaled to be out of 100. Three points are deducted from the C-MeX score if the company does not offer at least [number TBC] communication channels, including [number TBC] online channels, to receive contacts from customers.

The above formula is incorporated into the C-MeX reconciliation model where it is automatically applied to the company's C-MeX performance data, generating a target score or 'threshold' that companies C-MeX scores must exceed in order to have passed the cross-sector threshold for higher performance payments.

## Standard payments

The company's C-MeX incentive rate (determined before the application of any higher performance payment for passing the three gates) depends on its C-MeX score relative to those of other companies. Specifically, it depends on the company's score relative to the median company's score and either the highest or lowest performing company's score. This is demonstrated as follows:

$$if\ score > median: \quad (score - median) * (\text{TBC\%}/(maximum - median))$$

$$if\ score < median: \quad (score - median) * (\text{TBC\%}/(median - minimum))$$

$$if\ score = median: \quad 0\%$$

where:

- 'score' is the company's C-MeX score in the reporting year.
- 'median' is the median score of all companies' C-MeX scores in the reporting year.
- 'maximum' is the highest score achieved by a company in the reporting year.
- 'minimum' is the lowest score achieved by a company in the reporting year.

## Higher performance payments

Up to three companies could receive higher performance payments. [The company with the highest score that passes the three gates receives an additional [X%] of that year's annual allowed residential retail revenue, potentially taking its total outperformance payments to [X%]. If a second company qualifies, it will receive an additional [X%] and if a third company qualifies it will receive an additional [X%]. For the avoidance of doubt, if only one company passes the three gates it will receive an additional [X%] regardless of whether it is has the highest C-MeX score across all companies.]

The 'C-MeX ASUQ' threshold referred to in the three gates for higher rewards, above, is calculated using the following formula:

$$C\text{-}MeX\ ASUQ = C\text{-}MeX\ Mean + (UKCSI\ ASUQ - UKCSI\ Mean)\ /\ UKCSI\ SD * C\text{-}MeX\ SD$$

where:

- 'C-MeX Mean' is the mean average of all water companies' C-MeX scores.
- 'UKCSI ASUQ' is the upper quartile of the CSI scores of all companies in the UKCSI report relating to the relevant year (eg for C-MeX in 2025-26, the UKCSI ASUQ would be based on data from the July 2026 UKCSI surveys).
- 'UKCSI Mean' is the mean average score of water companies in the UKCSI report relating to the relevant year.
- 'UKCSI SD' is the standard deviation of water companies' scores in the UKCSI report relating to the relevant year.
- 'C-MeX SD' is the standard deviation of the C-MeX scores of all water companies.

The underlying methodology for the UKCSI may change during the 2025-30 period. We will continue to use future iterations of the UKCSI upper quartile, mean and standard deviation for the purposes of C-MeX. However, if the UKCSI methodology moves away from a league table approach such that we cannot quantify an upper quartile or no longer has a sufficient number of water companies in its sample, we will use the last appropriate UKCSI results instead in our in-period determinations

## Definitions

- Agent – the contractor appointed by Ofwat to run the C-MeX surveys
- Channel – any route by which a customer or consumer can contact their water company including non-online channels and online channels (see other definitions).
- Company Do Not Contacts (DNCs) – a customer or customer representative who has told the company that they do not want to be contacted for marketing or other purposes.
- Contactor – A contactor is defined as an identifiable customer who makes direct inbound contact with their water company. It includes representatives such as Members of Parliament, Citizens Advice advisers and solicitors, where they are acting on a customer's behalf. It also includes contacts from people (including local authority staff or non-household customers acting on behalf of household customers) who may not directly be customers and make contact about services. For example, a person may contact a water company to report a defective manhole cover or a leaking pipe. As self-serve customers (i.e. those who carry out a transaction or provide information through their online customer account not those who are just visiting the website or viewing information) have had an interaction with their water company, albeit an electronic one, these should be included as contactors.
- Customer or consumer – any household user of water and wastewater services, not only account holders.

- Data Protection Laws - the General Data Protection Regulation ((EU) 2016/679), the Data Protection Act 2018 and the Privacy and Electronic Communications (EC Directive) Regulations 2003 and related statutory instruments in force or as amended from time to time; and any other applicable data protection law.
- Designated period – the period of time specified by the Agent when requesting a customer service survey sample from the companies. It is usually the previous week. Where a company's operational contact rate yields a small weekly sample size, the company will be asked for contacts from the previous two weeks instead.
- Identifiable – where a customer or consumer provides sufficient information as to be directly or indirectly identifiable for the company to either:
    - be able to respond to them by telephone or email; or
    - link details of the contact to a customer's file or account; or
    - have to store the information securely within its systems.
- Ofwat DNC – a customer or customer representative who has told Ofwat or any agent of Ofwat that they do not want to be contacted regarding the C-MeX incentive mechanism.
- Online channels
    - Email – incoming contact via email.
    - Social media – any platform used by consumers and businesses for the purpose of publishing comments, photos, media and text on which the company has a presence. It is expected this will include, but not be limited to, platforms such as Facebook, Twitter and Instagram. A customer should only be included where they have contacted the company directly using the company social media handle, the company can identify the customer and the customer has provided further details in order for the company to follow-up with the customer.
    - Webform
    - Live chat
    - App – where the App provides a direct means of contacting the company, rather than only signposting other contact channels.
    - Customers carrying out a transaction using their water company online account – where customers carry out a transaction or provide information e.g. bill payments, setting up a direct debit, applying for a meter, reporting an incident, submitting meter readings etc (this does not include simple online views).
- Non-online channels
    - phone (including fully automated – for example, a bill payment)
    - post
    - in person by visit
    - short message service
    - automated telephony

- Usable contacts or sample – the sample of customer contacts that are able to be used in fieldwork after the deduplication process has been applied.

## Customer Service survey

### Overview

The customer service survey measures the satisfaction of customers who have had dealings with their company, not only through the company's main contact centre but also via any part of the business or with a contractor, and through any channel including online channels. It is intended to capture views on how the contact was handled using the same broad channel by which it was made (i.e. using an online channel for digital contactors or a non-online channel for non-digital contactors).

The survey is carried out every month for all companies with a sample of customers or consumers that contacted their company during the 'designated period'. Respondents must be 18 or over and do not have to be the account holder but should be the person who raised the originating issue with their company.

The questionnaire is short and focused, covering the customer's reason for contact, the contact channel used, whether the issue was resolved, their satisfaction with the way the contact was handled, and their likelihood to recommend the company.

The surveys are based on contact data that the company provides to the Agent. The data for all inbound contacts (whether or not the issue has been resolved) for the designated period is sent to the Agent each month when requested by the Agent.

The Agent will carry out the surveys for all companies.

### Sampling dates

The Agent will select a single week each calendar month to be the designated period. Weeks including a bank holiday may be selected and the timings set out below will change accordingly. Companies will be given reasonable notice if the sampling week falls over the Christmas and/or New Year period.

Water companies will be notified, by email, by 10am on the Monday morning of the week following the designated period that customer contacts for the previous week (or two weeks of operational contacts for companies where 10% of usable contacts from a single week would represent less than the target sample size) are to be provided to the Agent by all companies by 5pm on the Tuesday of that week.

Ofwat and the Agent are to be notified immediately if, for any reason, there are difficulties in providing contact data to deadlines.

## Collation of contact data

The company will supply the Agent with details of the service type of the contact (i.e. billing, water operations or wastewater operations, as applicable) and where available the customer's telephone number (or telephone number of any representative calling on their behalf) for non-digital contacts and also the customer's email address for digital contacts.

The full list of information to be included is set out the table below.

### Table 2.2 Contact data provision template (for the customer service survey)

| Field |
|---|
| Parent water company |
| Water company brand |
| Account number/unique reference number |
| Name |
| Telephone number (for all contactors) |
| Postcode |
| Email address (for digital contactors) |
| Service type (billing, water or wastewater) |
| Contact channel |
| Date of contact |
| Lower level reason for contact |

Companies will allocate each customer contact to a specific service type (billing, water or wastewater) based on a list of common queries, which is set out in table 2.3. This ensures consistent measurement across companies and so enhances comparability across companies. Companies are to ensure all contacts are allocated to a service type. There may be types of queries that are not included in table 2.3. Where there is doubt about the appropriate allocation, companies should first liaise with the Agent. Where necessary, Ofwat will make the final decision.

Where a company uses regional company names or frequently used third party organisations who act on behalf of the company, these should also be indicated in the data provision so customers can more readily associate with and recall the company

contact. For example, South Staffs Water may include 'Cambridge Water' in the data provision for its relevant customers.

Internal jargon or codes should not be used for 'reason for call' field in the data provision because customers may not necessarily understand them.

### Table 2.3 Categorising by service type in the customer service survey

| Billing | Water operations | Wastewater operations |
|---|---|---|
| A query about a bill | About a connection to the water supply network | About a blockage in the sewer/drains |
| A query about a payment | About a faulty meter | About a connection to the sewer, wastewater network |
| Amend personal details on account | About a leak on my meter | About faulty wastewater equipment or sewer pipes |
| Asking for a bill reduction or discount | About a meter installation | About finding the location of sewers, drains etc |
| Direct debit query | About defective/ dangerous water equipment ie stop taps, manhole covers, hydrants, raised/sunken chambers | About flooding or foul water |
| Direct debit set up | About finding the location of water equipment (incl. pipes/meter/stopcock) | About smells from sewers and sewage treatment works |
| Due to a recent move, or planning to move | About flooding with clean/drinking water | Empty septic tank |
| Online account problem/setting up | About the colour of the tap water | Toilet query |
| Payment card query | About the hardness of the water | |
| Payment plan set up | About the Lead and Common Supply Pipe Scheme | |
| The bill seemed too high | About the taste or smell of the tap water (quality) | |
| To advise that I'm unable to pay | Asking for water supply to be turned on or off | |
| To apply for/to get a water meter | Because of a water leak/burst on my property | |
| To give/request a water meter reading | Because of a water leak/burst on the road | |

| | | |
|---|---|---|
| To make a payment | Because the tap water is/was making me feel ill | |
| To notify of a customer having died | High pressure from my tap | |
| To query a reminder or debt collection activity | No supply/water gone off | |
| To report a problem with my meter/ meter query | Regarding a poor reinstatement | |
| To request a refund | Regarding low pressure of tap water | |

## Eligibility of customers for the survey

Companies are to provide data for all contacts received from all channels. This includes both online and non-online channels (see full definitions above):

- Online channels – email, social media, webform, live chat, apps or online accounts.
- Non-online channels – phone, post, in person, short message service or automated telephony.

This includes all calls to all lines, 24 hours a day, 7 days a week, regardless of whether the line is a principal advertised contact point. It also includes contacts to automated systems and agencies working on behalf of the company, such as debt collection agencies. It may potentially also include contacts from customer representatives, as outlined in the definition of Contactor above. However if the customer representative cannot answer the survey their responses to the survey will not be used by the Agent.

Where the contactor's name in a completed interview does not match the account holder's name but confirmation has been sought and obtained in the interview that they were the one who contacted the water company, the date, type and reason for contact must be confirmed with the contactor by the Agent.

Where a 'nominated speaker' communicates on behalf of a vulnerable person the nominated speaker will communicate between the interviewer and the vulnerable person regarding their contact with the water company.

Where a company offers a call back via their website or telephony system, then the company call back is to be treated as an inbound telephone contact rather than a digital contact in the data provided by companies.

Only household queries should be included in the data provided by companies.

## Contact data provision

It is essential that the contact data provided is as accurate and up-to-date as possible, and that the appropriate fields are completed correctly, according to the template in table 2.2 of this document.

Companies are not to remove duplicate contacts from their contact data. The Agent will do this.

Each company will send the Agent data files containing all Contactors in the designated period (whether resolved or not). Data files are to be uploaded by means of a secure online portal (it is the responsibility of the Agent to set up, secure and operate the online portal). Customer files are not to be sent by email, even if password protected.

Companies are to complete an audit sheet as specified by the Agent each time sample details are sent, outlining the total number of contacts received through each contact channel in the designated period, the number of customers excluded from the contact data provided and the reasons for any exclusions.

Companies are to capture customer email addresses for all contacts made through an online channel. Companies are to use every endeavour to capture these email addresses.

## Sampling approach for common service providers

Some companies have an arrangement where customers of multiple companies are served by the same provider (for example, a common billing centre). In these cases customers may have the same experience regardless of which company they are a customer.

Where companies have a shared service model, they can propose that one of the following sampling approaches for C-MeX is applied. Affected companies can request to receive either:

- the same score for the relevant service (for example, a service type in the customer service survey) with the annual quota across the affected companies equal to the relevant annual quota for a single company; or
- separate scores for the relevant service with the annual quota for each affected company equal to the relevant annual quota for a single company.

Based on the proposal and taking all relevant circumstances into account, Ofwat will decide whether it is appropriate to apply an alternative sample approach, considering

factors such as whether the approach supports consistency across companies and the level of available sample for a particular service type. The Agent will report on the sampling approach that is undertaken in its annual report.

## Sample preparation

The Agent will produce an audit sheet in order to assess the extent and types of exclusions in the data submitted by companies. The Agent will examine and monitor this over time, reporting any discrepancies or potential issues of concern to Ofwat.

The Agent will remove duplicates from the data provided by companies and select a randomised sample reflecting the relevant quotas. The Agent will remove customers who have responded to either the customer service survey or the customer experience survey in the last six months – this is to avoid the same customers being contacted excessively. The Agent will aim to include those contacts that are not allocated to a service type when preparing its sample, and on the basis of the interview allocate it to an appropriate service type.

Where customers have made multiple contacts during the designated period, when de-duplicating the data, the Agent is to retain only the most recent contact details as these will be the most up to date. The exception is that if a third-party organisation contacts (on one or multiple occasions) a company on behalf of several different customers; these contacts will remain as separate records in the dataset.

Contacts from online and non-online channels are to be separated with each set of data sorted by service type (i.e. billing, water operations and/or wastewater operations) and then contact channel. A random sampling procedure is to be carried out to extract a representative sample of customers to approach to take part in the survey.

All interviews will need to be recorded for monitoring purposes and stored securely.

The Agent will check the data submitted by companies against its list of Ofwat DNCs. The details of customers who request no further contact from the Agent on behalf of Ofwat for the purposes of the C-MeX incentive mechanism (Ofwat DNCs) will be passed on to the relevant water companies on completion of each quarter's fieldwork. Ofwat DNCs' data must no longer be processed for the purposes of the CMeX survey, i.e. they must no longer be contacted for these purposes. Therefore, each company, upon receipt of this information, must maintain an up-to-date record of Ofwat DNCs and, when providing customer information to the Agent, must ensure all Ofwat DNCs are excluded.

## Fieldwork

Customers in the selected sample who contacted water companies via online channels will be sent an email invitation to participate online via a unique link. Customers in the selected sample who contacted companies via non-online channels will be contacted via telephone to participate.

## Interview questions

When conducting fieldwork for the customer service survey, the Agent will base its interviews on the questionnaires in annex 2. Ofwat may change the questions from time to time during the period having regard to factors such as survey duration (i.e. the time taken for customers to complete the survey) and the effectiveness of C-MeX.

## Quotas and weights

The quotas for the fieldwork carried out by the Agent will be aligned to the weightings for the customer service survey. The Agent will ensure the quotas are met each quarter as a whole, and where possible aim to achieve this in each month's fieldwork.

When calculating scores, the Agent will apply weights for the different service types of contacts so that billing contributes 50% and operations 50% to the customer service survey results. For companies providing both water and wastewater services, the agent will instead apply weightings of 50% for billing, 25% for water operations and 25% for wastewater operations.

Within each of these components of the customer service survey (billing, water operations and wastewater operations) the results of the interviews are weighted further by the proportion of contact channel (online and non-online) in the usable sample for that service type.

## Online responses adjustment

Based on experience in the C-MeX testing phase, online responses to surveys were found on average to be less positive than those collected by telephone. This was due to the relatively low response rates of those customers that used online channels compared to those who used non-online channels and so resulted in online response scores that were less representative of the contactor population than non-online response scores.

To address this, the Agent will apply an adjustment of +5% to online results in the customer service survey. For instance a score of 8.0 out of 10 would be multiplied by

105% to become 8.4. This shall be the case regardless of the score provided (i.e. at a customer level, scores could go up to 10.5).

### Calculating scores for Hafren Dyfrdwy and Severn Trent Water

Because Hafren Dyfrdwy has relatively few wastewater customers, it is unlikely to have many wastewater contacts in the customer service survey and so will struggle to achieve survey quotas for this service type. As set out in the PR19 final determinations, to address this the wastewater operations scores for Hafren Dyfrdwy and Severn Trent Water are to be combined.

The Agent will conduct fieldwork for both companies separately with the aim to achieve the relevant quotas. The Agent will combine the interview responses from both companies to calculate each company's wastewater operations score.

## Customer experience survey

### Overview

The customer experience survey measures the satisfaction of water users aged 18 or over with their water and/or wastewater company. Respondents **do not** have to be the account holder. Customers to be surveyed are randomly selected by the Agent, and interviews are either conducted face-to-face or over the telephone.

The survey is carried out for all companies over the course of the quarter in order to mitigate against any one-off events which otherwise might bias results. The Agent will need to ask the respondent to identify which water company supplies them. If a customer has different providers of water and wastewater services, they are asked about the company that provides their water services.

The questionnaire is short and focused, covering the customer's satisfaction with their company, their likelihood to recommend it, and reasons for their responses.

### Guidance for companies

There are no requirements for companies in relation to the customer experience survey.

### Fieldwork

The Agent will carry out 200 interviews for each company over the course of the quarter using a mixture of face-to-face and telephone interviews.

Telephone interviews will use a combination of random digit dial (RDD) and available lists, e.g. mobile phone number lists, lifestyle lists (that come with age data to help target quotas) and other potential list-sources such as electoral roll samples.

Face-to-face interviews are to be carried out in at least two different locations for each water company each quarter (subject to the feasibility of this given the size of each company's geographic footprint or other external factors) and interviewing locations will be rotated across the company's region from quarter to quarter. Where possible, when choosing locations, a mixture of larger and smaller urban centres are to be used for interviewing.

#### Quotas and weights

Quotas for the age and gender of respondents will be set by the Agent based on the latest available census data using mid-year estimates released by the Office for National Statistics prior to the commencement of each reporting year (during the 2020-25 period). Figures for England and Wales will be used, with no companyspecific quotas.

Once a quota is achieved for a particular water company, subsequent interviews beyond the quota are screened out. Final data may be weighted slightly by age or gender to account for any discrepancies in profile compared to the quota.

#### Interview questions

When conducting fieldwork for the customer experience survey, the Agent will base its interviews on the questionnaires in annex 2. Ofwat may change the questions from time to time during the period having regard to factors such as survey duration (i.e. the time taken for customers to complete the survey) and the effectiveness of CMeX.

### 2.1.3 Specific exclusions

#### Customer service survey

The company may exclude from the contact data provided to the Agent:

a) contacts made to advise that a customer is deceased, or in relation to a deceased customer;
b) non-customer contacts – for example, calls from contractors, suppliers and employees (unless on behalf of a customer as per the definition of Contactor);

c) non-household or private network[1] customers;
d) contacts dealt with by or with regard to developer services;
e) wrong numbers, including calls where a customer is referred to another company (that is, where the customer has contacted the wrong company); where the customer is calling about a non-appointed activity and the call has no connection with the appointed business – for example, insurance services and plumbing; private septic tanks/cesspits; highway gullies; hot water issues where it is confirmed there is no issue on the cold water supply;
f) contacts about recreational and amenity activities e.g. water skiing or angling facilities at visitor sites;
g) contacts with organisations acting as agents for the water company – for example, local authority wastewater agencies, contractors and debt collection agencies can be excluded where the number of customer calls to an individual agency or contractor is below 0.5% of the total number received by the company for that particular operational area. The 0.5% is calculated using a denominator of total calls for that particular operational area including the agency calls, e.g. a debt collection agency's contacts would be compared against the total number of billing contacts received including any agents dealing with billing contacts. This is to avoid an undue data burden.
h) contacts in response to feedback requests – returned in response to or alongside customer satisfaction survey questionnaires/ texts / calls / webforms / cards or research exercises where the outgoing company contact is solely a survey;
i) for social media postings, customer comments exclusively about another customer's posting should not be included;
j) enquiries from CCW on behalf of a customer;
k) if Ofwat agrees that there are other exceptional circumstances where it would not be in the best interests of the customer to be contacted (e.g. customers who are part of an ongoing legal case / litigation process).

In exceptional circumstances, Ofwat may ask companies to exclude some customers from the samples they provide. Ofwat intends to keep its exclusions policy under review and may change its policy from time to time, to ensure the effective functioning of the survey.

## Do not contacts (DNCs)

Ofwat, via the Agent, is able to contact Company DNC customers for the survey as long as these customers have not expressly opted out of receiving surveys from Ofwat.

[1] ie not supplied by one of the water companies to which C-MeX applies.

Consequently, companies must include Company DNCs in the contact data provided to the Agent in the 2025-30 period.

To support the effectiveness of C-MeX, companies should articulate the benefits of participating in the customer service survey to customers. Companies should make clear that this survey is an important part of Ofwat's activity in regulating the performance of companies and the services they provide to customers and is neither marketing nor market research. Companies should ensure this information is easily accessible on company websites, ideally being well-signposted from relevant sections such as complaints or contact pages.

#### Customer experience survey

To take part, survey respondents must be aware of who their water company is, demonstrated with or without prompting. If customers are not aware of their company, they are to be asked for their home postcode so the Agent can identify which company provides clean water services to their household and ask them if they are aware of that company. The interview will close if the respondent is not aware of their water company (or identifies an incorrect company) upon prompting. If an incorrect identification is found after the call, respondents will be removed from the sample.

Respondents do not have to be account holders, only water users of that water company. All respondents must answer the questions based on their personal experience of household (rather than non-household) supply.

### 2.1.4 Reporting and assurance

#### Calculating the C-MeX score

The Agent will calculate the customer satisfaction scores for each of the customer experience survey and customer service survey.

A downward adjustment of three points will be applied to a company's overall C-MeX score should the company have provided fewer than [number TBC] contact channels (or [number TBC] online) throughout the year. While the channels on offer are not prescribed, social media is expected to be offered as a mechanism to receive contacts and complaints This adjustment will apply to the company's annual C-MeX score only. The adjustment will not be applied by the Agent – instead each company will apply this adjustment while providing appropriate assurance in its annual performance report.

Ofwat will determine the outperformance or underperformance payments earned by companies in its annual in-period determination. This process will apply to all performance commitments with in-period financial incentives. Ofwat will also base its determination of higher performance payments on information provided by CCW on water company household complaints and the latest available and relevant data for the UK Customer Satisfaction Index (UKCSI).

[Further reporting and assurance should be in the form and manner as specified from time to time in the relevant regulatory accounting guidelines (RAGs) during the 2025-30 period.]

## Calculating the net promoter score

The Agent will calculate the net promoter score for each company using the same weights as the C-MeX score. The communication channels adjustment will not apply.

The Agent will report the net promoter score as follows:

Net promoter score = % promoters - % detractors

where:

- promoters are those customers that give a rating of 9 or 10;
- detractors are those customers that give a rating of 0, 1, 2, 3, 4, 5 or 6; and
- customers that rate 7 or 8 are excluded.

As a result, for each company the Agent will report its net promoter score between -100 and +100.

## Reporting to water companies

## Quarterly company scores

Each quarter, the Agent will provide companies with their own interim scores for the customer experience survey, the customer service survey and their overall C-MeX score. These quarterly scores will be weighted and presented on:

- that quarter's results; and
- year-to-date results on a rolling basis, for example the first quarter will be based on data and weightings for the first three months of the year, the second quarter on the first six months of the year and so on.

The Agent will supply the company's net promoter score on the same basis.

### Quarterly league tables

The Agent will provide ranked league tables of all companies' qualitative survey scores with all companies identified, broken down by the customer service survey, customer experience survey and overall C-MeX score as follows:

- that quarter's results; and
- year-to-date results on a rolling basis, for example the first quarter will be based on data for the first three months of the year, the second quarter on the first six months of the year and so on.

The Agent will supply net promoter scores on the same basis.

### Annual company scores

The Agent will provide companies with their own scores for the customer experience survey, the customer service survey and their overall C-MeX score. This will be based on annual survey results for the entire reporting year, with weightings applied on an annual basis.

The Agent will supply each company's net promoter score on the same basis.

### Survey data

Each quarter the Agent will provide each company with:

- customer level data from their own customer interviews from the customer service survey – this will contain personal data unless the customer objects, in which case the data will be anonymised;
- anonymised customer level data from their own customer interviews from the customer experience survey.

### Reporting to Ofwat

### Company scores and league tables

The Agent will provide company scores and league tables to Ofwat each quarter and annually on the same basis as for companies.

## Annual report to Ofwat

The Agent will provide a consolidated annual survey report to Ofwat, with:

- an overall summary of results, scores and rankings;
- company-specific summaries;
- analysis of the data;
- median/mean results for the industry for comparison;
- key conclusions, trends or emerging issues, including any data issues and the extent and types of exclusions;
- an overview of the extent and outcome of the check and challenge process; and
- any recommendations for potential efficiencies and improvements;
- copies of the questionnaires used during the year, noting and explaining any differences with the copy in annex 2.

## Survey data

The Agent will provide the underlying anonymised customer level survey data to Ofwat upon request.

| Parameters | |
|---|---|
| Measurement unit and decimal places | Score out of 100 to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% residential retail |
| Frequency of reporting | Annual |
| Any other relevant information | The company's C-MeX payments are calculated by multiplying its incentive rate by its annual allowed residential retail revenue (as described in the company's 'Allowed revenue appendix' or as updated following any interim determinations or in-period ODI adjustments in the 2025-30 period). |
| Links to relevant external documents | |

## 2.2 Developer Measure of Experience (D-MeX)

**Purpose:** This performance commitment is designed to incentivise companies to improve the experience they provide to developer services (new connections) customers, including property developers, self-lay providers and those with new appointments and variations (NAVs).

**Benefits:** This performance commitment should increase developer customer satisfaction, by improving the overall customer experience for all developer services customers.

## Performance commitment definition and parameters

### 2.2.1 Detailed definition of performance measure

D-MeX is a measure of customer satisfaction. A company's overall D-MeX score is calculated from two components that contribute equally:

- qualitative D-MeX score, based on the ratings provided by developer services customers who transacted with the company throughout the reporting year to a customer satisfaction survey; and
- quantitative D-MeX score, based on the company's performance against a set of selected Water UK performance metrics throughout the reporting year.

The survey results which are used to calculate the qualitative component of the company's D-MeX score will be supplied by a survey agent (the Agent) appointed by Ofwat. This is supplied out of 100 to form the score for the qualitative component of D-MeX.

#### Qualitative component

The qualitative component of D-MeX is based on a survey which measures the satisfaction of developer services customers who have transacted with a company. Each month companies provide the Agent with a list of contact details for customers who have completed relevant transactions with the company in the previous month. A selection of Water UK metrics are the source of these transactions.

A sample is taken by the Agent of these customers each month, and those customers are interviewed by telephone questionnaire (see Annex 3 D-MeX survey) to collect feedback and a satisfaction rating out of 10 relating to the transaction.

## Reporting requirements

### Provision of contact details and finalised Water UK returns

By the 10th day of each month (the reporting date)[2], each company must provide to the Agent, in relation to the previous calendar month (the relevant month),[3] a list of relevant transactions completed in the relevant month, contact details for the customers associated with each of those transactions, and a copy of the company's finalised Water UK return for the relevant month for auditing purposes.

The Water UK return for the relevant month may, by agreement with the Agent, be sent after the reporting date. The Agent will set appropriate timescales for the provision of finalised Water UK returns throughout the 2025-30 period.

### Relevant transactions

For the purpose of the qualitative survey, all customers that transact with a company for a relevant transaction are to be included in the contacts list provided to the Agent. This includes but is not exclusively transactions with:

- individual developers, regardless of size;
- housebuilders;
- end customers, such as those requesting new mains installations or enquiring about developer services;
- self-lay providers;
- new appointees; and
- agents, intermediaries, or consultants.

The number of records provided for each metric should tally with the total volume of transactions completed which is reported to Water UK each month (rather than the volume delivered within the target for that metric). This will ensure a comprehensive

[2] If the Water UK reporting deadline is brought forward to a date earlier than the 10th of the month, the reporting date will be brought forward to the same date.

[3] For example, for the reporting date of 10 May 2025, the relevant month is April 2025.

sampling frame for the survey, and that the results reflect the spread of all day-to-day work undertaken for all customer types. If there is a discrepancy between the number of records sent to the Agent and the number reported to Water UK, companies should submit an explanatory note along with their submission.

All records must be transferred to the Agent using a secure file transfer system and not as email attachments.

## Data provision

Companies should not remove any records where any of the contact details are incomplete or not available – this will be done by the Agent as part of the sample auditing and data cleaning process.

To facilitate the Agent's process of compiling, checking and preparing the contact lists from which to survey as efficiently as possible, companies should provide all data in a single Excel worksheet, one row per transaction. Companies should not separate out the file into one worksheet per transaction, or any other format.

For each transaction, companies should provide the information set out in the qualitative data submission fields table (table 2.3 below).

## Identifying the appropriate customer contact

In some cases, there may be more than one customer contact that could be provided in relation to a transaction. This would be the case where one person in an administrative role submitted relevant documents to a water company for a particular developer service transaction on behalf of another person who subsequently dealt with the company during the delivery of the physical work stage. In such cases, the company should provide the contact details of the person who dealt with the company on this issue / delivery of this piece of work relevant to the metric.

## Sampling approach for common service providers

Some companies have an arrangement where customers of multiple companies are served by the same provider (for example, a common billing centre). In these cases customers may have the same experience regardless of which company they are a customer.

Where companies have a shared service model, they can propose that one of the following sampling approaches for D-MeX is applied. Affected companies can request to receive either:

- the same score for the qualitative component of D-MeX with the annual quota across the affected companies equal to the relevant annual quota for a single company; or
- separate scores for the qualitative component of D-MeX with the annual quota for each affected company equal to the relevant annual quota for a single company.

Based on the proposal and taking all relevant circumstances into account, Ofwat will decide whether it is appropriate to apply an alternative sample approach, considering factors such as whether the approach supports consistency across companies and the level of available sample for a particular service type. The Agent will report on the sampling approach that is undertaken in its annual report.

## Sample preparation

The Agent will prepare the data submissions files for use in the survey. Except where the Water UK return has not been finalised, on receipt of each water company's file, the Agent should:

- Compare the quantity of transactions per metric with the company's Water UK return. If the data submission does not tally appropriately and is insufficiently explained by the company, this will be queried. The company may resubmit the file; if this is not possible, the Agent will assess and determine (in conjunction with Ofwat, if appropriate) the validity of their reason for the discrepancy and whether to proceed with the file as submitted.

On receipt of each water company's file, the Agent should:

- Review the contact name and phone number fields for any missing data or data in a format other than that requested; note the number of cases where this has happened (which will be reported to the company for future reference) and clean the data where necessary. Only records with both a valid contact name and phone number can be used.
- De-duplicate the records within each company's file, removing cases where an individual customer contact appears more than once (multiple separate contacts at a single firm are acceptable). Where duplicates exist, removal of such duplicates should be done at random.

On completion of cleaning and de-duplicating the individual files, the Agent should:

- Combine the individual files into one single file. Run a pivot table on transactions by company; calculate the proportion of records remaining after the initial cleaning of the individual files, for each company.

- Cross-refer against the master exclusions list (see below) and remove any customer contacts from the current month's sample that have taken part in the survey within the relevant exclusion period or are identified as an Ofwat DNC[4].
- De-duplicate the records within the whole file (i.e. between the records provided by the companies). Because they represent different transactions, multiple separate contacts at a single firm are not treated as duplicates. Where duplicates exist, removal of such duplicates should be done at random. Run a further pivot table on transactions by company and calculate the proportion of records remaining for each company after the final cleaning stage.
- Each month update a tracking report that shows the proportion of usable contacts able to be surveyed for each company at each stage of the process and the final numbers available for the survey.
- Calculate quotas for the month.
- Randomise the file.
- Proceed to fieldwork.

## Calculating survey quotas

The sample size for most companies will be based on 20% of those customers that transact with the company in a month. For each company, where 20% of the sample is expected to be more than 1,000 in a year, the sample will be capped at 1,000; where 20% of the sample is expected to be less than 100 in a year, the sample will be increased to at least 100 in a year.

## Master sample exclusions list

On completion of each month's fieldwork, the Agent will add the details of customers who have been surveyed or identified as an Ofwat DNC to a master list of previous contacts, flagged according to the relevant water company and month.

This master list is to be used solely by the Agent for the purposes of D-MeX sample management and is not shared with the water companies.

Each month's sample file will be checked against this, and any contacts appearing in the master list as having been interviewed within the relevant exclusion period or are identified as an Ofwat DNC will be removed from the sample to be used that month. After the relevant exclusion period, their record will be removed from the master exclusions list, and they may be contacted again.

[4] Ofwat DNC – a customer or customer representative who has told Ofwat or any agent of Ofwat that they do not want to be contacted regarding the D-MeX incentive mechanism.

This list will be monitored by the Agent through the course of the year. It will be important to ensure that this process of avoiding re-contact within the exclusion period does not mean the survey ends up asking regular customers about only one type of transaction each time, but instead achieves a spread of feedback on the various work stages they experience.

This list will also record any Ofwat DNCs. These records should not be deleted from the list. Ofwat DNCs will be passed on to the relevant water companies on completion of each quarter's fieldwork. In order to comply with data protection law, and to ensure that Ofwat DNC data is no longer processed for the purposes of the D-MeX survey, i.e. that they are no longer contacted for these purposes, each company, upon receipt of this information, is required to maintain an up-to-date record of Ofwat DNCs and, when providing customer information to the Agent, must follow the process for exclusions set out in the specific exclusions section.

## Interview questions

Ofwat may change the questions from time to time during the period having regard to factors such as survey duration (i.e. the time taken for customers to complete the survey) and the effectiveness of D-MeX.

## Quantitative Component

To calculate a company's score for the quantitative component of D-MeX, a simple average is taken of the scores applying to each metric for that year. This is rescaled to be out of 100 to form the score for the quantitative component of D-MeX. Metrics which do not have activity recorded against them are excluded from the calculation for that company.

## Reporting requirements

## Assurance

The level of assurance associated with reporting of the selected metrics that apply to D-MeX should be aligned to the approach companies currently employ for other performance commitments in their annual performance reports.

Companies are required to report the process they have taken to assure themselves that their performance against the selected metrics in D-MeX is an accurate reflection of their underlying performance in the reporting year, as well as any findings that indicate this was not the case.

### Data submission

Data for the quantitative element of the D-MeX score is required to be provided on an annual basis at the end of the reporting year, as specified from time to time in the relevant regulatory accounting guidelines (RAGs) during the 2025-30 period.

## 2.2.2 Additional detail on measurement units

The company's D-MeX score is calculated using the following formula:

$$D\text{-}MeX\ score = 50\% * Qual + 50\% * Quant$$

where:

- 'Qual' is a simple average of satisfaction scores given by developer customers surveyed in the developer customer satisfaction survey in the reporting year;
- 'Quant' is a simple average of the selected Water UK performance metrics which have non-zero volumes in the reporting year.

### Outperformance and underperformance payments

The company's D-MeX incentive rate depends on its D-MeX score relative to those of other companies. Specifically, it depends on the company's score relative to the median company's score and either the highest or lowest performing company's score. This is demonstrated as follows:

$$if\ score > median: \quad (score - median) * (6\%/(maximum - median))$$

$$if\ score < median: \quad (score - median) * (12\%/(median - minimum))$$

$$if\ score = median: \quad 0\%$$

where:

- 'score' is the company's D-MeX score in the reporting year
- 'median' is the median score of all companies' D-MeX scores in the reporting year
- 'maximum' is the highest score achieved by a company in the reporting year
- 'minimum' is the lowest score achieved by a company in the reporting year.

D-MeX applies to water company performance in relation to both contestable and non-contestable services.

D-MeX applies to 'developer' services' (or new connections) customers, which consists of developers, SLPs and NAVs. In this performance commitment, the term 'connections' means an instance where a customer requires:

- access to the existing public water supply or wastewater system by means of a service pipe or lateral drain and/or
- a new water main or public sewer

This includes where the statutory water/ sewerage company:

- adopts a new infrastructure that SLPs or developers have provided and
- enables a point of connection to a NAV for a development to be served by them.

## Qualitative Metrics

For all companies:

- W1.1 Pre-development enquiry – reports issued within target
- W3.1 s45 quotations – within target
- W4.1 s45 service pipe connections – within target
- W6.1 Mains design 500 plots – quotations within target
- W8.1 Mains construction within target
- W17.1 Mains diversions (without constraints) – quotations within target
- W17.2 Mains diversions (with constraints) – quotations within target
- W18.1 Mains diversions - construction/commissioning within target
- S1.1 Pre-development enquiry – reports issued within target
- S3.1 Sewer requisition design – offers issued within target
- S4.1 Sewer requisition – constructed and commissioned within agreed extension
- S6.1 Technical vetting of adoptions & diversions – approval or rejection letters within target
- S7.1 Adoption legal agreement – draft agreements issued within target
- S8.1 s106 sewer connection – approval letters issued within target
- S9.1 s106 sewer connection – rejection letters issued within target
- WN1.1 % of confirmations issued to the applicant within target period
- WN2.2 % Bulk supply offer letters issued to the applicant within target period

- WN3.1 % Bulk water supply agreement signed and issued to the applicant within target period
- WN4.1 % of main laying schemes constructed and commissioned within the target period
- WN4.2 % of testing supplies provided within target period
- WN4.3 % of permanent supplies made available within the target period
- SN2.2 % Bulk discharge offer letters issued to the applicant within target period
- SN3.1 % Bulk discharge agreement signed and issued to the applicant within target period
- SN4.1 % of main laying schemes constructed and commissioned within the target period
- SLPM – S1/2 – Review PoC proposal
- SLPM – S2/1b – Water Company to Review SLP design application
- SLPM - S2/2a – Provide design
- SLPM - S2/2b – Water Company to Provide design acceptance
- SLPM – S3 – Review / revise Water Adoption Agreement
- SLPM – S4/1 – Source of Water Delivery Date
- SLPM – S5/1a – Review request and carry out Final Connection
- SLPM – S5/1b – Review application and agree date of Final Connection
- SLPM – S6 – Issue vesting certificate
- SLPM – S7/1 – Validate notification and provide consent to progress with connection

For companies wholly or mainly in England, in addition to the list above:

- SAM 1/2 Review pre-design application
- SAM 2/2 Review Design Step 1: Full design review and response
- SAM 2/3 Review Design Step 2: Design acceptance
- SAM 3/1 Update draft agreement
- SAM 4/1 Inspections & construction period
- SAM 5/1 Request for pre maintenance inspections
- SAM 5/2 Issue pre maintenance certificate/provisional certificate
- SAM 6/2 Issue vesting certificate

## Quantitative metrics

When calculating the quantitative component of D-MeX, metrics that have zero activities reported against them do not affect the D-MeX score.

The set of Water UK performance metrics which are used to calculate the quantitative component of the company's D-MeX score are as follows:

For companies wholly or mainly in England:

- W1.1 Pre-development enquiry – reports issued within target
- W3.1 s45 quotations – within target
- W4.1 s45 service pipe connections – within target
- W6.1 Mains design 500 plots – quotations within target
- W8.1 Mains construction within target
- W17.1 Mains diversions (without constraints) – quotations within target
- W17.2 Mains diversions (with constraints) – quotations within target
- W18.1 Mains diversions – construction/commissioning within target
- W20.1 Self lay Point of Connection report < 500 plots etc – reports issued within target
- W21.1 Self lay Point of Connection reports >500 plots etc – reports issued within target
- W23.1 Self lay design and terms request 500 plots etc – quotations within target
- W26.1 Self lay water for pressure/bacteriological testing – provided within target
- W27.1 Self lay permanent water supply – provided within target
- W30.1 Self lay plot references and costing details – issued within target
- S1.1 Pre-development enquiry – reports issued within target
- S3.1 Sewer requisition design – offers issued within target
- S4.1 Sewer requisition – constructed and commissioned within agreed extension
- S7.1 Adoption legal agreement – draft agreements issued within target
- WN1.1 % of confirmations issued to the applicant within target period
- WN2.2 % Bulk supply offer letters issued to the applicant within target period
- WN4.1 % of main laying schemes constructed and commissioned within the target period

- WN4.2 % of testing supplies provided within target period
- WN4.3 % of permanent supplies made available within the target period
- SN2.2 % Bulk discharge offer letters issued to the applicant within target period
- SN4.1 % of main laying schemes constructed and commissioned within the target period
- SAM 3/1 Update draft agreement
- SAM 4/1 Inspections and construction period
- SLPM – S1/2 – Review PoC proposal
- SLPM - S2/2a – Provide design
- SLPM - S2/2b – Water Company to Provide design acceptance
- SLPM – S3 – Review / revise Water Adoption Agreement
- SLPM – S4/1 – Source of Water Delivery Date
- SLPM – S5/1a – Review request and carry out Final Connection
- SLPM – S7/1 – Validate notification and provide consent to progress with connection

For companies wholly or mainly in Wales:

- W1.1 Pre-development enquiry – reports issued within target
- W3.1 s45 quotations – within target
- W4.1 s45 service pipe connections – within target
- W6.1 Mains design 500 plots – quotations within target
- W8.1 Mains construction within target
- W17.1 Mains diversions (without constraints) – quotations within target
- W17.2 Mains diversions (with constraints) – quotations within target
- W18.1 Mains diversions – construction/commissioning within target
- W20.1 Self lay Point of Connection report < 500 plots etc – reports issued within target
- W21.1 Self lay Point of Connection reports >500 plots etc – reports issued within target
- W23.1 Self lay design and terms request 500 plots etc – quotations within target
- W26.1 Self lay water for pressure/bacteriological testing – provided within target
- W27.1 Self lay permanent water supply – provided within target
- W30.1 Self lay plot references and costing details – issued within target

- S1.1 Pre-development enquiry – reports issued within target
- S3.1 Sewer requisition design – offers issued within target
- S4.1 Sewer requisition – constructed and commissioned within agreed extension
- S7.1 Adoption legal agreement – draft agreements issued within target
- WN1.1 % of confirmations issued to the applicant within target period
- WN2.2 % Bulk supply offer letters issued to the applicant within target period
- WN4.1 % of main laying schemes constructed and commissioned within the target period
- WN4.2 % of testing supplies provided within target period
- WN4.3 % of permanent supplies made available within the target period
- SN2.2 % Bulk discharge offer letters issued to the applicant within target period
- SN4.1 % of main laying schemes constructed and commissioned within the target period

## Data fields for the qualitative survey

### Table 2.4 Qualitative data submission fields

| Excel worksheet column | Column header | Notes |
|---|---|---|
| A | Water company | Please enter in this field the version of your company or regional brand name by which this customer will know you as having dealt with this transaction (e.g. Essex & Suffolk Water rather than Northumbrian Water). |
| B | Water UK Metric | Please provide the Water UK metric that applies to the transaction. |
| C | Date completed | Please provide the transaction completion date. |
| D | Site | Please provide the name and/or address of the site to which this transaction relates. |
| E | Plots | Please provide the number of plots at this site to which this transaction relates.<br>This is only required for three metrics (W3.1, W4.1 and W30.1), all others can be left blank. |
| F | Customer's organisation | Please provide the name of the customer's organisation, if applicable. If the customer is a private homeowner acting on their own behalf, leave this field blank. Also include details on whether the customer has offices across several regions. |

| | | |
|---|---|---|
| G | Customer contact name | Please provide first name and surname, in one single field. Please do not provide any additional titles - e.g. enter the name as Steve Jones, not Mr S Jones or Mr Steve Jones. However, if you do not have a first name for this contact, then provide what information you can. |
| H | Customer contact job title | Please provide the job title of this contact, where applicable and known. Otherwise leave this field blank. |
| I | Landline number | If you have a landline and mobile number, please provide both, but in separate columns as shown. For landlines, if you have both a switchboard and a direct line number for this contact, please provide the direct line number. If you do not have a landline number for this customer contact, leave this field blank.<br>Any extension numbers should be provided in column N. Only numbers to be provided in this column. |
| J | Mobile number | Please provide a mobile number for this contact, where available. If you do not have a mobile number for this customer contact, leave this field blank. |
| K | Customer type | Customer type Please enter in this field whether the customer details provided are for:<br>• The end-customer – i.e. either the owner of the property where the work is being carried out, or a builder or developer undertaking the development of a new site – enter 'End-customer', or if known otherwise, one of the below:<br>• An intermediary (agent) acting on the end-customer's behalf in relation to this particular piece of work, such as a utilities or engineering consultant, architect, lawyer etc. – enter 'Agent',<br>• SLP; or<br>• NAV.<br>All customers should be allocated to one of these four types. If customer type is unknown, please leave blank. |
| L | End-customer | If the customer's organisation and/or contact is an agent acting on behalf of a builder or developer, enter the name of the end-customer builder or developer here, if known. |
| M | Do not contact (DNC) reason | If you consider this customer should not be approached for a D-MeX survey, provide your reason here. Please refer to Specific exclusions section when completing this field. |
| N | Extension number | If available please provide an extension number for the contact, otherwise leave this field blank.<br>Only numbers are to be provided in this column. |

The rationale for requesting these fields is:

- to identify the appropriate individual customer contact to provide feedback on the relevant transaction.
- to facilitate de-duplication within and between companies' files (so that customers are not contacted multiple times).
- to facilitate contact with these individuals by phone.
- for clarity in defining the transaction to be asked about, in the survey introduction (e.g. 'I'm ringing about the recent [TRANSACTION] completed for you by [WATER COMPANY] on [DATE] for your site at [SITE]) – to ensure that the results relate to the correct piece of work; and
- to enable the Agent to audit the transactions data against the Water UK return.

In cases of large/national customers who have offices across several regions, we recognise that there is a need to understand the quality of customer service across the different offices or sites that are in development.

To capture this detail and to ensure that organisations with multiple offices are adequately represented in the sample, companies are to enter these details in column F.

### 2.2.3 Specific Exclusions

To ensure appropriate representation, the contact data should include all developer services customers that transact with water companies. Companies should not ask customers to opt in or out of being contacted in relation to the D-MeX survey, as doing so could have a detrimental impact on the representativeness of the sample that would be achieved. Therefore, all customer contacts related to the relevant transactions are to be provided.

Companies should not exclude Company DNCs[5] from the data provided to the Agent. This means that for Company DNCs, water companies are to provide the transaction details as described in the Data fields for the qualitative survey table, above, and still provide the customer's personal data (in columns G, H, I, and J of that table. Where an

[5] Company Do Not Contact (DNC) – means an individual representing a developer services customer who has told the company that they do not want to be contacted for marketing or other purposes.

individual employee of a developer services customer is a Company DNC or an Ofwat DNC[6] this applies to that specific individual and not to the whole organisation.

Apart from Ofwat DNCs, the only circumstances under which companies may flag an individual customer as not to be contacted in relation to D-MeX would be where there is an ongoing dispute with the customer of such severity that approaching this customer to take part in a satisfaction survey may not be appropriate. For instance, this could include those customers where the water company is in litigation with the customer or where the case has been referred to Ofwat. In any such cases, companies should still provide the data pertaining to the transaction data but should exclude the customer's personal data (in columns G, H, I, and J of the Data fields for the qualitative survey table). Companies should also insert a note in the Excel data submission in row M to indicate that this particular customer should not be contacted, together with the reason why.

Ofwat intends to keep its exclusions policy under review and may change its policy from time to time, to ensure the effective functioning of the survey.

### 2.2.4 Reporting and assurance

The company will report the process the company has taken to assure itself that its performance against the selected Water UK metrics in D-MeX are an accurate reflection of its underlying performance in the reporting year, and any findings that indicate this is not the case.

#### Reporting to water companies

Quarterly company scores

Each quarter, the Agent will provide companies with their own interim scores for the D-MeX qualitative survey. These quarterly scores will be:

- that quarter's results; and
- year-to-date results on a rolling basis, for example the first quarter will be based on data for the first three months of the year, the second quarter on the first six months of the year and so on.

[6] Ofwat DNC – a customer or customer representative who has told Ofwat or any agent of Ofwat that they do not want to be contacted regarding the D-MeX incentive mechanism.

Quarterly league tables

The Agent will provide ranked league tables of all companies' qualitative survey scores with all companies identified as follows:

- that quarter's results; and
- year-to-date results on a rolling basis, for example the first quarter will be based on data for the first three months of the year, the second quarter on the first six months of the year and so on.

The Agent will provide companies with their own scores for the qualitative survey. This will be based on annual survey results for the entire reporting year.

Survey data

Each quarter the Agent will provide each company with anonymised customer level data from their own customer interviews. However, in the interests of maintaining respondent confidentiality, data will not be provided to a company where fewer than 20 customer entries relate to a single performance metric for that company.

## Reporting to Ofwat

Company scores and league tables

The Agent will provide company scores and league tables to Ofwat each quarter and annually on the same basis as for companies.

Annual report to Ofwat

The Agent will provide a consolidated annual survey report to Ofwat, with:

- an overall summary of results, scores and rankings
- company-specific summaries
- analysis of the data
- median/mean results for the industry for comparison
- key conclusions, trends or emerging issues, including any data issues and numbers of exclusions
- any recommendations for potential efficiencies and improvements
- copies of the questionnaires used during the year, noting and explaining any differences with the copies appended to this guidance.

## Survey data

The Agent will provide the underlying anonymised customer level survey data to Ofwat upon request.

## Financial Incentive

Ofwat will publish an annual league table of the overall annual D-MeX scores for all companies. Each company can receive outperformance payments of up to 6% of annual developer services revenue or incur underperformance payments of up to 12% of annual developer services revenue, based on its annual D-MeX score compared to other companies. We will apply these performance payments, in keeping with the approach for the other common performance commitments.

| Parameters | |
|---|---|
| Measurement unit and decimal places | Score out of 100 to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | Water network plus and wastewater network plus. The allocation between both controls will vary each reporting year based on the relative outturn developer services revenues collected by the company for water and wastewater services. |
| Frequency of reporting | Annual |
| Any other relevant information | The company's D-MeX payments are calculated by multiplying its incentive rate by its annual actual developer services revenue as reported for the following components (for each of water and wastewater):<br>• connection charges<br>• infrastructure charge receipts – new connections<br>• requisitioned mains<br>• requisitioned sewers<br>• diversions<br>• other contributions (price control). |

| | |
|---|---|
| | The Water UK metrics that form the basis of the quantitative component of D-MeX may change in the 2020-25 period. The Water UK metrics that contribute to the qualitative survey may change as well.<br>In determining whether to make changes to D-MeX as a performance commitment in light of changes to the Water UK metrics, our decision will be based on the principles that revisions are in customer interests, support consistent and fair comparisons between companies and align with our wider duties. We will consult with stakeholders prior to making any changes. |
| **Links to relevant external documents** | |

## 2.3 Business customer Measure of Experience (BR-MeX) [England]

**Purpose:** This performance commitment is designed to incentivise companies which have systems wholly or mainly in England to improve the experience provided to business customers.

**Benefits:** This performance commitment should increase business customer satisfaction, by improving both the wholesale service provided by water companies directly to business customers and that to retailers who in turn will be able to improve their service to business customers.

### Performance commitment definition and parameters

### 2.3.1 Detailed definition of performance measure

To be confirmed

### 2.3.2 Additional detail on measurement units

To be confirmed

### 2.3.3 Specific exclusions

To be confirmed

### 2.3.4 Reporting and assurance

To be confirmed

| Parameters | |
|---|---|
| Measurement unit and decimal places | Score out of 100 to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 50% water network plus<br>50% wastewater network plus |
| Frequency of reporting | Annual |
| Any other relevant information | To be confirmed |
| Links to relevant external documents | To be confirmed |

## 2.4 Business customer experience in Wales

**Purpose:** This performance commitment is designed to incentivise companies which have systems wholly or mainly in Wales to provide an excellent customer experience to business customers.

**Benefits:** This performance commitment should encourage companies in Wales to improve business customer experiences, innovate, enhance their handling of customer contacts and enable performance to be measured across companies consistently, reliably and fairly.

## Performance commitment definition and parameters

### 2.4.1 Detailed definition of performance measure

To be confirmed

### 2.4.2 Additional detail on measurement units

To be confirmed

### 2.4.3 Specific exclusions

To be confirmed

### 2.4.4 Reporting and assurance

To be confirmed

| Parameters | |
|---|---|
| Measurement unit and decimal places | To be confirmed |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% business retail |
| Frequency of reporting | Annual |
| Any other relevant information | To be confirmed |

| | |
|---|---|
| **Links to relevant external documents** | To be confirmed |

## 2.5 Water supply interruptions

**Purpose:** This performance commitment is designed to incentivise companies to minimise the number and duration of supply interruptions.

**Benefits:** Reducing the number and duration of interruption events improves the reliability of supply and reduces negative social and public health impacts on customers.

### Performance commitment definition and parameters

### 2.5.1 Detailed definition of performance measure

The average number of minutes lost per customer for the whole customer base for interruptions that lasted three hours or more.

Output should be presented as average minutes lost. Calculation of performance is carried out using the following equation:

$$\frac{((Properties\ with\ interrupted\ supply \geq 180\ mins) \times Full\ duration\ of\ interruption)}{Total\ number\ of\ properties\ supplied\ (year\ end)}$$

= average number of minutes lost per customer

#### Property counts

Property counts shall use the best available information. This should be from the geographic information system (GIS), but paper records and district meter area (DMA) or similar data can be used where recently connected properties have not yet been input to the GIS. Properties shall count as having lost supply whether or not occupied. Properties permanently disconnected will be excluded from the count.

Attention should be paid to the incremental nature of supply loss. For example, for a burst when supply is lost progressively across an affected area, the time/properties

affected relationship should be established. Where the loss is gradual, the supply interruption should be considered incrementally.

### Properties affected by more than one interruption during the report year

Properties which are affected by more than one interruption during the report year should be reported separately for each interruption. This means, for example, that a property affected by three supply interruptions would be reported three times, once for each interruption.

### Short term restoration of supply

For the cumulative effect of an interruption to be ignored and interruptions to be treated as separate occurrences, properties must have supplies restored for a minimum period of 1 hour. When shorter gaps occur the duration is counted from the start of the first interruption until the last restoration of supply.

## 2.5.2 Additional detail on measurement units

[Process diagram will be inserted from PR19 guidance for final methodology.]

To ensure consistency of reporting, the following regularly used terms are defined below:

### Properties

Shall include billed mains pressure fed household and non-household properties connected to the company's water supply system. This includes properties that are connected, but not billed (for example temporarily unoccupied), but should exclude properties which have been permanently disconnected. A group of properties supplied by a single connection shall be considered as several properties. They should only be considered as a single property if a single bill covers the whole property. The total connected properties figure shall be those connected at the end of the report year.[7] Cattle troughs are excluded.

### Supply interruptions

[7] RAG 4.10 – Guideline for table definitions in the annual performance report, March 2022

Are defined as when properties are without a continuous supply of water. The property shall be considered as without a supply when water is lost from the first cold water tap – taken as being operationally equivalent to ≤3m pressure at the main (adjusted for any difference in ground or property level). This can be inferred from local logging, network modelling or a customer contact indicating a loss of supply which was caused by the company operation and has not been demonstrably restored. Multiple-storey buildings shall be considered on a case-by-case and floor by floor basis, with properties on a particular floor being considered as receiving the same pressure.

### Duration

Is defined as the length of time for which properties are without a continuous supply of water. The duration shall only be considered in the calculation of the metric where the duration is 3 hours or greater.

### Start time

Is when water is lost from the first cold water tap at a property – taken as being operationally equivalent to ≤3m pressure at the main (adjusted for any difference in ground or property level). In the event of applicable telemetry data or logging being unavailable, the time should be determined from the earliest of:

- As advised by 'no water' contact from customer (where not due to a customer side issue);
- Indications from flow or pressure monitoring to infer a change in supply; or
- Verified modelled data (calibrated, maintained, reflective of the network at the time of the incident and validated with contemporaneous flow and/or pressure data).

The company shall gain confirmation by consulting complainants (if any) and/or customers at high points on the system.

### Stop time

Is when water is restored to the first cold water tap at a property – taken as being operational equivalent to >3m head of pressure at the main. In the event of pressure logging being unavailable, the time should be determined from the latest of:

- As advised by notification from customer.
- Indications from flow or pressure monitoring to indicate return to normal supply conditions; or

- Verified modelled data (calibrated, maintained, reflective of the network at the time of the incident and validated with contemporaneous flow and/or pressure data).

It is the responsibility of the company to demonstrate that supply conditions have been restored and available to all previously affected customers from the time determined from the above. In the absence of physical evidence, the company shall gain confirmation by consulting complainants (if any) and/or customers at high points on the system.

The company shall apply the precautionary principle, using the start and finish times and the properties affected that will give the highest supply interruption value in the event of uncorroborated or conflicting data.

### 2.5.3 Specific exclusions

None

### 2.5.4 Reporting and assurance

It should be possible to correlate and reconcile the company's reported figures for this measure and customer services data relating to reports of and complaints about interruptions to supply. Customer service data should also include social media contact with customers.

Evidence for subsequent challenge shall, as a minimum, be stored where the loss of supply lasted greater than 150 minutes and for split time events, with the purpose of being available for assurance audit. Water companies should store supporting evidence for the quantification of the supply interruption metric for a minimum period of 10 years.

Companies must maintain records of all reportable incidents of supply interruption in the form of a supply interruptions dataset. The aim of the dataset is to allow verification and audit of the reported information and to enable the identification of the properties affected. It should contain information on the timing, duration and sufficient information to enable all properties affected by interruptions lasting three hours or more to be identified. The dataset should include:

- Properties affected (by name and location or number and street or GIS polygon);
- Date and time of interruption(s), including the source of information

- Duration of each interruption and time supply restored, including the source of the information; and
- The name of the person responsible for entering records in the system.

The information in the supply interruptions dataset should be available for verification of incidents and evaluation of ODI underperformance and outperformance payments.

Companies shall maintain a methodology statement, which shall be used as a decision support tool for this performance commitment. It should record any changes in approach compared to previous years and will be reviewed as part of a company's assurance process.

## Compliance checklist

A company is requested to complete the checklist below and report by exception to Ofwat if any element is not green. See annex 1 for assessment rules for each element.

Alongside their performance, companies should report on what proportion of their start/stop times has been informed by each data source (customer contact/pressure and flow data/modelled data/valve operation). This could help inform assessments of the validity of comparing different companies.

### Table 2.5 Water supply interruptions compliance checklist

| | Component | Component R/A/G | Reason for any non-compliant component | Confidence grade |
|---|---|---|---|---|
| 1 | **Property Counts** | | | |
| 2 | **Start Time** | | | |
| a | Evidence to support start time | | | |
| b | Treatment of 3m pressure definition | | | |
| c | Treatment of blocks of flats | | | |
| 3 | **Stop Time** | | | |
| a | Evidence to support stop time | | | |
| b | Treatment of 3m pressure definition | | | |
| c | Treatment of blocks of flats | | | |
| 4 | **Short Term Restoration of Supply** | | | |
| 5 | **Exclusions** | | | |
| 6 | **Calculation of Performance** | | | |

| | | | | |
|---|---|---|---|---|
| 7 | **Application of Precautionary Principle** | | | |
| 8 | **Records** | | | |
| 9 | **Properties affected >1 interruption in year** | | | |

For each component on the checklist, and for the overall performance measure, companies will report a confidence grade.

| Parameters | |
|---|---|
| Measurement unit and decimal places | Hours:minutes:seconds (HH:MM:SS) per property per year, reported to zero decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% water network plus |
| Frequency of reporting | Annual |
| Any other relevant information | ODI rate applies on a per minute basis |
| Links to relevant external documents | N/A |

## 2.6 Compliance risk index (CRI)

**Purpose:** The performance commitment incentivises the company to fully comply with statutory obligations and to mitigate any issues affecting performance.

**Benefits:** This performance commitment incentives companies to fully comply with statutory obligations which promotes customer confidence that water is clean and safe to drink.

### Performance commitment definition and parameters

### 2.6.1 Detailed definition of performance measure

The definition for this performance commitment is set by the Drinking Water Inspectorate (DWI) in collaboration with the industry. It is a measure designed to illustrate the risk arising from treated water compliance failures, and it aligns with the current risk based approach to regulation of water supplies used by the Drinking Water Inspectorate (DWI).

This is published as DWI Compliance Risk Index (CRI), August 2018.

### 2.6.2 Additional detail on measurement units

A CRI score is calculated for every individual compliance failure at water supply zones, supply points and treatment works, and service reservoirs. The annual CRI for a company, for any given calendar year, is the sum of the individual CRI scores for every compliance failure reported during the year (see the DWI Compliance Risk Index for further detail on the full calculations).

### 2.6.3 Specific exclusions

See DWI definition.

### 2.6.4 Reporting and assurance

No specific requirements.

| Parameters | |
|---|---|
| Measurement unit and decimal places | Numerical CRI score, reported to two decimal places. |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% water network plus |

| | |
|---|---|
| **Frequency of reporting** | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, whereas 2029-30 assessment will be based on the calendar year 2029. |
| **Any other relevant information** | N/A |
| **Links to relevant external documents** | N/A |

## 2.7 Customer contacts about water quality

**Purpose:** This performance commitment incentivises companies to measure the number of water quality contacts from customers relating to taste, odour and appearance.

**Benefits:** A reduction in the number of contacts relating to appearance, taste and odour of drinking water indicates an increase in the acceptability of water to customers and a reduction in disruption and other negative social impacts for customers.

### Performance commitment definition and parameters

### 2.7.1 Detailed definition of performance measure

The number of times the company is contacted by consumers due to the taste and odour of drinking water or because the drinking water is not clear, reported per 10,000 population. Calculation is the number of contacts for all appearance, taste and odour contacts multiplied by 10,000 divided by the resident population as reported to the Drinking Water Inspectorate (DWI).

### 2.7.2 Additional detail on measurement units

The consumer contact classification guidance is defined by the DWI in Information Letter 1/2006, 6 January 2006.

Consumers contact a water company for various water quality reasons. Only consumer contacts that are about appearance, taste and odour will be included in this measure.

### 2.7.3 Specific exclusions

See the DWI guidance above for a full list of exclusions.

### 2.7.4 Reporting and assurance

The company is also expected to report consumer contacts separately for appearance, taste and odour for the Discover Water website.

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of consumer contacts per 10,000 population, reported to two decimal places. |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% water network plus |
| Frequency of reporting | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on data from the calendar year 2025. |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

## 2.8 Internal sewer flooding

**Purpose:** This performance commitment incentivises the company to reduce the number of internal sewer flooding incidents.

**Benefits:** A reduction in internal sewer flooding reduces disruption and other negative social impacts for customers.

#### Performance commitment definition and parameters

### 2.8.1 Detailed definition of performance measure

The measure is calculated as the number of internal sewer flooding incidents normalised per 10,000 sewer connections.

This measure includes flooding due to overloaded sewers (hydraulic flooding) and due to other causes (Flooding Other Causes - FOC). It includes sewer flooding due to severe weather events.

For the purpose of this performance commitment, flooding event means any escape of water from a sewerage system, irrespective of size, as evidenced by standing water, running water or visible deposits of silt or sewage solids.

For the purpose of this performance commitment, a flooding incident means the total number of properties (or curtilages) flooded during each flooding event from a public sewer. For example, five properties which suffered two flooding events during a year, would count as ten incidents. Where a property floods both internally and externally during the same event it shall only be recorded as an internal flooding incident.

Companies should also report how many incidents have been included as a result of activities that were carried out to determine neighbouring properties affected.

[Process diagram will be inserted from PR19 guidance for final methodology.]

#### Assets causing flooding

All flooding incidents caused by an escape from public sewers (whether foul, combined or surface water); including pumping stations, sewage treatment works and other assets under the control of the sewerage undertaker shall be reported.

Incidents caused by sewers and lateral drains transferred under the Transfer of Private Sewers Regulations 2011 and pumping stations transferred in 2016 shall be included.

#### Internal flooding

For the purpose of this performance commitment, internal flooding means a flooding event which enters a building or passes below a suspended floor. In this context, buildings are defined as those normally used for residential, public, community, commercial, business, or industrial purposes. The following list gives examples of what parts of buildings shall be included in the internal flooding category. It is not designed to be exhaustive:

- The main parts of the building
- Conservatories
- Basements and cellars (even if unoccupied)
- Areas below suspended floors
- Lift shafts
- Stairwell/lobby area of flats (to be counted as 1 flooded property)
- Any shared car parking areas beneath the main building where access to the parking area is from within the building (to be counted as 1 flooded property)
- Studios and workshops, which are an integral part of the main building.
- Porches
- Garages which are an integral part of the house with an adjoining door to the occupied building.

## 2.8.2 Additional detail on measurement units

### Repeat incidents

Where a flooding event has occurred and flooding subsides, any subsequent flooding event shall be counted as a separate incident. This shall be regardless of the time between events and if any investigation or follow on work has started or been completed.

### Further clarification

Flooding incidents due to third party action shall be included in all cases. Any flooding event due to jetting shall be included unless the water is fully contained within a toilet bowl. Damp patches caused by seepage through walls or floors shall be excluded, but any area which has visible standing or running water or which has visible deposits of silt or sewage solids shall be included.

### Neighbouring properties

Companies shall make all reasonable efforts to determine the number of properties affected by a flooding event. This should include site visits to the affected property and all properties in the vicinity that may have been affected taking into account factors such as topography and the proximity of adjacent properties. The company shall actively seek evidence of flooding. It should include the use of modelling where this is appropriate. Where the customer of a neighbouring property is not present, the

company should leave a calling card stating that it has enquired about a recent incident and encouraging the customer to make contact with the company. A prescriptive methodology that is appropriate for all circumstances is not defined here. Companies should have clear guidance for operational staff and keep records of attempts that are made to contact the customers of neighbouring properties.

Companies are expected to be able to demonstrate that the processes that they have in place are applied consistently in relation to similar flooding events in similar locations, including where different personnel attend. Neighbouring properties identified by a company, rather than by the customer, should be flagged as such and the percentage found in this way reported. If there is clear site evidence that a neighbouring property has experienced a flooding event then the incident shall be included despite the absence of a customer report, or a denial by a customer that a flooding event occurred.

Companies should be able to break down the information around the percentage of affected properties found by their staff by the particular circumstances of discovery, such as incidents identified following site visit, identified in response to a calling card, and identified through modelling.

### 2.8.3 Specific exclusions

Any flooding events for which responsibility lies outside the company's statutory functions are excluded. As is flooding that originates from assets which are not part of the company's sewerage system. For example:

- Flooding due to surface water run off which has not originated from public sewers:
- Fluvial flooding
- Coastal flooding
- Ground water which has not originated from a public sewer
- Flooding from water mains etc.
- Flooding caused by any highway drainage failure: This includes any flooding incidents caused by the blockage, capacity, or failure of any road gully serving a highway drain connected to a public sewer (e.g., run off from highway gradients where road gullies are unable to intercept flows), including blockage to its grating, or the failure of any pipework above ground.
- Flooding incidents caused by private assets (including drains): For example, A flooding incident shall be excluded where the cause of the incident is the blockage, capacity or failure of: i) a gully serving a single property; or ii) a shared gully, or blockage of a property gully grating, or the failure of any pipework above ground.

The Water UK "Guide to Transfer of Private Sewers Regulations 2011", published on 30th September 2011 shall be applied to assess if the flooding incident should be attributed to the undertaker or a private asset such as a drain.

It should be noted that this is not to be taken as an opinion on the legal status of these aspects of drainage apparatus.

For the purpose of this performance commitment **shared gully** means a gully shared by two or more properties and connected to a public sewer.

If there is a strong suspicion of potentially fraudulent reports of a flooding event made with the intention to gain payments from the guaranteed standards scheme (GSS) or receive increased service, and there is no evidence of flooding, companies should exclude the incident unless the customer provides substantiation that the flooding event occurred. Any proposal for such categorisation must be supported by significant evidence, tested by the company's assurance process, and be fully transparent to customers and regulators.

### 2.8.4 Reporting and assurance

Companies shall maintain verifiable records for all reported flooding incidents irrespective of whether they are included. The aim of the records is to provide an auditable method for identifying specific incidents and shall be subject to each company's assurance process which is applied to all measures reported annually.

Companies shall maintain a methodology statement, which shall be used as a decision support tool for this performance commitment. It should record any changes in approach compared to previous years and will be reviewed as part of a company's assurance process.

This measure will be reported as both the absolute number of internal sewer flooding incidents and a normalised value of internal flooding incidents per 10,000 sewer connections.[8] Any changes to the number of sewer connections that will have a material impact on the performance of this measure should be highlighted in the report commentary.

[8] RAG 4.10 – Guideline for the table definitions in the annual performance report, March 2022

## Compliance Checklist

Each company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

### Table 2.6 Internal sewer flooding compliance checklist

| | Component | Component R/A/G | Reason for any non-compliant component | Confidence grade |
|---|---|---|---|---|
| 1 | Assets causing flooding | | | |
| 2 | Repeat incidents | | | |
| 3 | Neighbouring properties | | | |
| 4 | Records | | | |

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of incidents per 10,000 sewer connections reported to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

## 2.9 External sewer flooding

**Purpose:** This performance commitment is designed to incentivise companies to reduce the number of external sewer flooding events.

**Benefits:** A reduction in external sewer flooding reduces disruption and other negative social impacts for customers.

### Performance commitment definition and parameters

### 2.9.1 Detailed definition of performance measure

The measure is calculated as the number of external sewer flooding incidents normalised per 10,000 sewer connections.

This measure includes flooding due to overloaded sewers (hydraulic flooding) and due to other causes (Flooding Other Causes - FOC). It includes sewer flooding due to severe weather events.

For the purpose of this performance commitment, a flooding event means any escape of water from a sewerage system, irrespective of size, as evidenced by standing water, running water or visible deposits of silt or sewage solids.

For the purpose of this performance commitment, a flooding incident means the total number of properties (including curtilages) flooded during each flooding event from a public sewer. For example, five properties which suffered two flooding events during a year, would count as ten incidents. Where a property floods both internally and externally during the same event it shall only be recorded as an internal flooding incident.

Companies should also report how many incidents have been included as a result of activities that were carried out to determine neighbouring properties affected.

[Process diagram will be inserted from PR19 guidance for final methodology.]

## Assets causing flooding

All flooding incidents caused by an escape from public sewers (whether foul, combined or surface water); including pumping stations, sewage treatment works and other assets under the control of the sewerage undertaker shall be reported.

Incidents caused by sewers and lateral drains transferred under the Transfer of Private Sewers Regulations 2011 and pumping stations transferred in 2016 shall be included.

## External Flooding

For the purpose of this performance commitment, external flooding means a flooding event within the curtilage of a building normally used for residential, public, community and business purposes. It includes buildings in those curtilages which do not comply with the definition for internal flooding. For example:

- buildings where the prime purpose is for storage or installation of domestic appliances and is not accessed from the house by means of an adjoining door to the habitable building
- detached garages (whether situated inside the boundary of the property and separated from the main building or outside the boundary but with common access as in a garage block)
- linked detached garages (i.e., garages which are attached to a property but separated from it by an external passageway)
- sheds and outbuildings (e.g., stables, kennels, coal houses, outside toilets);
- summer houses.

Any sewer flooding not contained within the highway or an open space and enters a property ownership curtilage (e.g. enters a driveway or seeps through a boundary fence/hedge/wall) shall be recorded as curtilage flooding.

In the case of golf clubs or facilities similar in type; flooding of the area immediately adjacent to the club house (paths, patios verandas etc.) and therefore the areas used by people accessing only the facilities in the clubhouse shall be included as external flooding. Each situation needs to be considered on its own merits, but it is unlikely that any greens, fairways or rough would be included.

With respect to farms, if there isn't a defined farmhouse and garden boundary akin to a typical domestic property, an appropriate allowance should be made for land that would equate to a garden.

In the case of a flooding event affecting a multiple use area in the same ownership, such as an industrial park, retail park, hospital site, university site etc., it shall be counted as one incident. This includes sections of car parking (possibly termed overflow carparks) that are separated from the main carpark or a facility by a road.

## 2.9.2 Additional detail on measurement units

### Sewer length

Include the length of the entire sewer network, including sewers that transferred to the company's responsibility under the Water UK "Guide to Transfer of Public Sewers Regulations 2011", published on 30th September 2011. The company should separately record the length of transferred sewers, the calculation of this measure should be based on the latest measurements of the length.

### Repeat incidents

Where a flooding event has occurred, and flooding subsides any subsequent flooding event shall be counted as a separate incident. This shall be regardless of the time between events and if any investigation or follow on work has started or been completed.

### Further clarification

Flooding incidents due to third party action shall be included in all cases. Any flooding event due to jetting shall be included unless the water is fully contained within a toilet bowl. Any area which has visible standing or running water or which has visible deposits of silt or sewage solids shall be included.

### Neighbouring properties

Companies shall make all reasonable efforts to determine the number of properties affected by a flooding event. This should include site visits to the affected property and all properties in the vicinity that may have been affected taking into account factors such as topography and the proximity of adjacent properties. The company shall actively seek evidence of flooding. It should include the use of modelling where this is appropriate. Where the customer of a neighbouring property is not present, the company should leave a calling card stating that it has enquired about a recent incident and encouraging the customer to make contact with the company. A prescriptive methodology that is appropriate for all circumstances is not defined here.

Companies should have clear guidance for operational staff and keep records of attempts that are made to contact the customers of neighbouring properties.

Companies are expected to be able to demonstrate that the processes that they have in place are applied consistently in relation to similar flooding events in similar locations, including where different personnel attend. Neighbouring properties identified by a company, rather than by the customer, should be flagged as such and the percentage found in this way reported. If there is clear site evidence that a neighbouring property has experienced a flooding event, then the incident shall be included despite the absence of a customer report, or a denial by a customer that a flooding event occurred. Where the customer of a neighbouring property is not present, the company should leave a calling card stating that it has enquired about a recent incident and encouraging the customer to make contact with the company.

Companies should be able to break down the information around the percentage of affected properties found by their staff by the particular circumstances of discovery, such as incidents identified following site visit, identified in response to a calling card, and identified through modelling.

### 2.9.3 Specific exclusions

The following areas shall be excluded from the reported numbers:

- ‘highways’ – including footpaths; and
- ‘public’ open space; agricultural land; car parks including overflow carparks.

Any flooding events for which responsibility lies outside the company's statutory functions are excluded. As is flooding that originates from assets which are not part of the company's sewerage system. For example:

- Flooding due to surface water run off which has not originated from public sewers:
- Fluvial flooding
- Coastal flooding
- Ground water which has not originated from a public sewer
- Flooding from water mains etc.
- Flooding caused by any highway drainage failure: This includes any flooding incidents caused by the blockage, capacity, or failure of any road gully serving a highway drain connected to a public sewer (e.g., run off from highway gradients

where road gullies are unable to intercept flows), including blockage to its grating, or the failure of any pipework above ground.

- Flooding incidents caused by private assets (including drains): For example, A flooding incident shall be excluded where the cause of the incident is the blockage, capacity or failure of: i) a gully serving a single property; or ii) a shared gully, or blockage of a property gully grating, or the failure of any pipework above ground. The Water UK "Guide to Transfer of Private Sewers Regulations 2011", published on 30th September 2011 shall be applied to assess if the flooding incident should be attributed to the undertaker or a private asset such as a drain.

It should be noted that this is not to be taken as an opinion on the legal status of these aspects of drainage apparatus.

For the purpose of this performance commitment **shared gully** – means a gully shared by two or more properties and connected to a public sewer.

If there is a strong suspicion of potentially fraudulent reports of a flooding event made with the intention to gain payments from the guaranteed standards scheme (GSS) payments or receive increased service, and there is no evidence of flooding, companies should exclude the incident unless the customer provides substantiation that the flooding event occurred. Any proposal for such categorisation must be supported by significant evidence, tested by the company's assurance process, and be fully transparent to customers and regulators.

### 2.9.4 Reporting and assurance

Companies shall maintain verifiable records for all reported flooding incidents irrespective of whether they are included. The aim of the records is to provide an auditable method for identifying specific incidents and shall be subject to each company's assurance process which is applied to all measures reported annually

Companies shall maintain a methodology statement, which shall be used as a decision support tool for this performance commitment. It should record any changes in approach compared to previous years and will be reviewed as part of a company's assurance process.

This measure will be reported as both the absolute number of external sewer flooding incidents and a normalised value of external flooding incidents per 10,000 sewer connections. Any changes to the number of sewer connections that will have a material impact on the performance of this measure should be highlighted in the report commentary.

## Compliance Checklist

A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

### Table 2.7 External sewer flooding compliance checklist

| | Component | Component R/A/G | Reason for any non-compliant component | Confidence grade |
|---|---|---|---|---|
| 1 | Assets causing flooding | | | |
| 2 | Repeat incidents | | | |
| 3 | Neighbouring properties | | | |
| 4 | Records | | | |

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of incidents per 10,000 sewer connections reported to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

# 3. Environmental

### Table 3.1 Proposed PR24 environmental common performance commitments

| Water and wastewater | Water only | Wastewater only |
|---|---|---|
| Biodiversity | PCC (per capita consumption)<br>Leakage<br>Business demand<br>Water demand (leakage and consumption)<br>Operational GHG emissions : - water | Total pollution incidents<br>Serious pollution incidents<br>Discharge permit compliance<br>Bathing water quality<br>River water quality<br>Storm overflows<br>Operational GHG emissions : - wastewater |

## 3.1 Biodiversity

**Purpose:** This performance commitment is designed to incentivise companies to maintain and enhance biodiversity in the exercise of their functions.

**Benefits:** The benefits of improved biodiversity are reduced extinction risk, increased resilience to climatic and water resource changes and enhancements in ecosystem service provision such as water quality, localised climate regulation, pollination, clean air, and physical and mental health service provision.

## Performance commitment definition and parameters

### 3.1.1 Detailed definition of performance measure

The net increase in the number of biodiversity units. This is reported per hectare of company owned land. Increases in biodiversity units can be recorded on both company-owned land and other land where habitat is improved in the process of a water company carrying out its functions.

Biodiversity units will be assessed using a site visit by an independent appropriately qualified person, of each area of land subject to this performance commitment. The survey will use the baseline pre intervention assessment of the Biodiversity Metric 3.1. Surveys will be on a set frequency of four years. The change in biodiversity units will be

that between the latest survey and the original survey. No change can be recorded until the second site visit, four years from the first visit.

For avoidance of doubt, the company may also need for other purposes than for this performance commitment, to measure the change in biodiversity at a site using the full Biodiversity Metric 3.1. This is not directly comparable with the units measured under this performance commitment. The biodiversity metric measures the change between the baseline pre-intervention assessment and the number of 'post-intervention' units which are projected to be provided after the development or change in land management at a future date that may be decades in the future. This performance commitment measures observed changes in habitat.

For the purpose of this performance commitment all habitats will be reported together, including irreplaceable habitats or habitats designated as Sites of Special Scientific Interest. However, companies must also record and report separately the net change in biodiversity units based on

- area;
- hedgerow; and
- river.

The net change in biodiversity associated with a site will be reported for each year until the next survey as long as:

- the change is not reported more than four times without a further baseline pre-intervention assessment;
- where it is company appointed land, that it continues to be appointed land;
- where it is not company appointed land, biodiversity at the site continues to be associated with the water company carrying out its functions on that site;
- appropriate management is in place to, at least, conserve biodiversity; and
- the company has no information that there may have been a loss in biodiversity, that it has not taken proportionate action to address.

Where habitat has been known, or suspected, to have deteriorated before the initial survey, the assessment will be adjusted to reflect the condition of land subject to this performance commitment at its most favourable condition since 2020.

### 3.1.2 Additional detail on measurement units

Where one or more organisations are collaborating on this performance commitment, they will claim units proportionate to their level of financial investment.

### 3.1.3 Specific exclusions

Increases in biodiversity units associated with conditions of planning permission in England are excluded as are biodiversity units associated with credits from the Secretary of State as outlined in Section 101 of the Environment Act 2021. Records of biodiversity units that are excluded that are measured on appointed business land should be recorded separately.

### 3.1.4 Reporting and assurance

TBC

| Parameters | |
|---|---|
| Measurement unit and decimal places | Biodiversity units per hectare of appointed business company land. Measured to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | Split equally between the Water resources, Water network plus and wastewater network plus – for water only companies this will only be water resources and water network plus. |
| Frequency of reporting | Annual |
| Any other relevant information | Reporting to be also provided split across area, river and hedgerow units. The metric uses habitats as a proxy for biodiversity. Although this is a rational means of measuring biodiversity value, it is a simplification of complex ecological processes which are not readily captured. Moreover, in |

| | |
|---|---|
| | this performance commitment, area based biodiversity units, hedgerow biodiversity units and river biodiversity units are summed together which adds further simplification to the original metric. The metric and its outputs should therefore be interpreted, alongside ecological expertise and common sense. It is not a guide on how to best manage a site or to meet statutory duties. Protected and locally important species needs are not considered through the metric, they should be addressed through existing policy and legislation. Management interventions should be guided by appropriate expert ecological advice. |
| **Links to relevant external documents** | N/A |

## 3.2 Operational GHG emissions [Water/Wastewater]

**Purpose:** This performance commitment incentivises the company to reduce greenhouse gas emissions arising from its operational activities.

**Benefits:** In incentivising reductions in company operational greenhouse gas emissions this performance commitment will also support attainment of UK and Welsh Government 2050 and interim net zero targets.

## Performance commitment definition and parameters

### 3.2.1 Detailed definition of performance measure

Operational greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent). This is reported per [normalisation unit TBC and may be different for water and wastewater].

### 3.2.2 Additional detail on measurement units

Emissions are calculated through using the UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook [latest version in November 2024] published [TBC].[9] This approach covers Scope 1, 2 and 3 emissions, which are defined as:

- Scope 1 - Direct emissions from owned or controlled sources
- Scope 2 - Indirect emissions from the generation of purchased energy
- Scope 3 - all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

When measuring Scope 2 emissions, companies should adopt a location and market-based approach for determining their GHG emissions from electricity used. In demonstrating improvements in company performance, companies need to demonstrate reductions in GHG emissions that go beyond reductions brought about by changes in electricity supply, for instance those via green tariffs. In particular, companies should be clear how enhanced monitoring, innovations in the management of process emissions, innovations in the supply chain, and product substitution, are bringing about a reduction in GHG emissions.

### 3.2.3 Specific exclusions

TBC

### 3.2.4 Reporting and assurance

Companies will report in line with the UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook [latest version in November 2024] published [TBC]. This reporting should be complemented by external third party independent verification focused on the quantification and reporting of greenhouse gas emissions and removals (i.e. ISO 14064). Data will be assured following an audit by an appropriately qualified independent third party. For avoidance of doubt the scope of assurance excludes data sourced from the carbon accounting workbook. If there are any areas in which the

[9] As third party documents may be updated between now and the start of the Price control period (2025-2030), we will utilise the latest version published for performance commitment definitions. This is indicated throughout this document by [ ].

company is not yet compliant it should note this and set out plans to achieve compliance when reporting.

Companies will also report this measure in absolute terms, using both a 2019-20 baseline grid emissions factor and the actual year grid emissions factor, to provide transparency on reductions achieved through their own activities and those through decarbonisation of the national grid. When reporting changes in their GHG emissions, companies are expected to be clear if reductions in company emissions are delivering net zero in line with national government targets. Companies should be mindful of how the robustness of their approach can be demonstrated to external stakeholders and how such approaches, for instance Science Based Targets initiative (SBTi), deliver reductions of GHG emissions in line with national government net zero targets.

Companies shall maintain a methodology statement, which shall be used as a decision support tool for this performance commitment. It should record any changes in approach compared to previous years and will be reviewed as part of a company's assurance process.

| Parameters | |
|---|---|
| Measurement unit and decimal places | Tonnes CO2e per [unit TBC] reported to two decimal places. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | TBC |
| Frequency of reporting | Annual |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

## 3.3 Per capita consumption

**Purpose:** This performance commitment is designed to incentivise companies to help customers reduce their consumption.

**Benefits:** The benefit of reduced per capita consumption (PCC) is to improve long term water resources supply/demand balance and reduce need for water abstraction.

## Performance commitment definition and parameters

### 3.3.1 Detailed definition of performance measure

The percentage reduction of three-year average PCC in litres per property per day (l/prop/d) from the 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in l/prop/d.

Annual average PCC means the sum of measured household consumption and unmeasured household consumption divided by the total household population.

$$\frac{\textit{Measured household consumption} + \textit{Unmeasured household consumption}}{\textit{Total household population}}$$

The measure uses post MLE [10](maximum likelihood estimation) data for measured household consumption and unmeasured household consumption.

Companies are required to report PCC to the Environment Agency or Natural Resources Wales in the Annual Review of Water Resources Management Plans, and this is reported at water resource zone (WRZ) level. Companies should refer to the regulators reporting guidance for the Annual Review to ensure compliance with that when preparing their Annual Reviews.

The company should provide a commentary in its Annual Performance Report submission if there are any differences in its 2019-20 baseline three year average PCC expressed in litres per person per day (l/p/d) in comparison with its business plan.

[10] MLE is a technique used in the estimation of leakage and is described under the definition for reporting the leakage performance commitment for PR24.

Reasons for any differences should be clearly explained and their volumetric impacts on the baseline quantified.

Outcome delivery incentives will be applied on a litres per person per day basis. The performance commitment levels expressed as a percentage reduction will be applied to the 2019-20 baseline. The difference between this value to one decimal place and actual three year average per capita consumption will be used to calculate outcome delivery incentives.

A company is required to report against this definition and:

- Disclose where its methodology does not comply, using the compliance checklist below.
- Explain the reasons for any non-compliance
- Set out its plans and programme to comply
- Disclose any other factors which have an impact on the methodology for reporting per capita consumption.
- Set out any differences with the PCC figures reported in the WRMP.

### 3.3.2 Additional detail on measurement units

#### Properties

Measured household properties are needed to derive measured household metered volumes from a company billing system. Unmeasured household properties are used in the unmeasured household consumption monitor calculations and for extrapolation to company area. A company is expected to:

- Ensure the classification of properties as either household or non-household is consistent with the retail market definition of eligibility.
- Update property data at least annually.
- Exclude properties that are defined as void unless a company can evidence any use or losses from illegal occupation.
- Justify the number of void properties each year and how this is derived.

## Population

Total household population is the denominator in the equation. A company is expected to:

- Produce a total household population estimate every year based on the Water Resources Management Plan definition of household population as set out in the guidelines[11] and the UKWIR methodology for estimation of population.[12]
- Provide evidence to justify any adjustments made to population estimates for unaccounted for population (clandestine population such as migrant workers, tourists, holiday home owners).
- Demonstrate that the estimate is for household population only (non-household population is either estimated separately or deducted if the estimate obtained is total population for the area of supply). A company should set out its approach to excluding non-household population and demonstrate that this is consistent with the WRMP guidelines.

## Measured household consumption

The volume of measured household consumption should include water used by each measured household including meter under-registration but excluding supply pipe leakage. Measured data shall be derived from the meter readings within the company's billing system including estimated reads and an adjustment for meter under-registration should be applied.

For externally metered households an allowance for supply pipe leakage should be deducted from the metered volumes.

Companies must undertake a process of accruing consumption at year end to account for meter reading frequency cycles. A company should justify its approach to accruals and estimated reads.

Guidance on the estimation of unmeasured household consumption[13] proposes a measured household monitor to enable the nature of consumption patterns to be

[11] WRMP guidelines, gov.uk, April 2022
[12] UKWIR methodology for estimation of population, 15/WR/02/8, UKWIR 2015
[13] Future Estimation of Unmeasured Household Consumption, 17/WR/01/16, UKWIR 2017, Improved Understanding of Current and Future Household Consumption 21/WR/01/17, UKWIR 2021

better understood. If a company uses a measured household consumption monitor it must set out its approach and justify its use in this methodology.

A company is expected to derive measured household consumption using the following criteria.

- Metered data taken from a company's own billing system, including actual reads and estimated reads.
- A deduction for supply pipe losses for externally metered properties consistent with the company's own current assessment of supply pipe losses.
- Adjustments to metered data for leakage allowances applied to individual customers can be included where a rebate has been applied to a customer's bill
- Meter under-registration shall be applied consistent with a company's own estimates.

## Unmeasured Household Consumption

The volume of unmeasured household consumption should include water used by each unmeasured household excluding supply pipe leakage. Dependent on the level of meter penetration a company has this can be a significant component of the water balance and therefore needs continual focus to maintain and improve the estimate. For the purposes of this performance commitment unmeasured household consumption should be derived from PHC.

In general, companies are expected to use company specific data for unmeasured household consumption except for companies with high meter penetration where it may be impractical to establish and maintain a sufficiently robust sample of unmeasured properties. In this case sharing of unmeasured data with neighbouring companies or companies with similar demographics may be appropriate. Companies with high meter penetration must set out their approach to estimating unmeasured household consumption.

In most cases (except where a company's meter penetration is high and there are insufficient unmeasured households remaining) it is expected that unmeasured household consumption shall be estimated from a company's own consumption monitor following good practice as defined in the UKWIR Report 'Best Practice for unmeasured per-capita consumption monitors 1999'. Good practice has improved since this report with innovation and new technologies now available although the basic principles of the monitors is unchanged. Companies can use individual household monitors (IHMs) or Small Area Monitors (SAMs).

Further work is required to determine current good practice for sample size and stratification for IHMs and SAMs. Until this is concluded companies should continue to base their approach on a sample of at least 1000 for IHMs. Representation may be by demographic group, property type or other recognised statistical group. Companies must set out the evidence to demonstrate their sample is representative of their area.

Individual monitors should have a high resolution meter and associated logger to transmit data to a control centre. Data is expected to be collected more frequently than hourly intervals and companies should use 'fast logging' or similar. The IHM needs continual monitoring to limit the level of any supply pipe losses or other continuous flows. Any other continuous flows are attributable to customer use or plumbing losses and should be included in estimates for consumption at household level.

While an allowance is made for meter under-registration it is expected that meters used for these consumption monitors will have an enhanced specification compared with normal domestic meters and as they are continually monitored meter failures and drift will be identified earlier than for normal domestic meters. Meters are expected to be selected and maintained to minimise meter under-registration. A phased meter replacement programme should be in place.

Until further guidance is developed companies should continue to base SAMs on a representative sample of areas of DMAs (District Meter Area) or smaller whole DMAs which are specifically designed with one meter and permanent data loggers. They should include minimal numbers of non-household properties and have minimal measured households (no more than 50% where practical).

- Consumption for non-household properties within SAMs should be deducted from the area total consumption based on metered data or where unmeasured non-households are included using the unmeasured non-household consumption allowance. Companies should set out how they have deducted non-household consumption.
- Consumption for measured households within SAMs should be deducted from the area total consumption based on metered data. Companies should set out how they have deducted household consumption.

The total sample size for SAMs is dependent on the acceptable uncertainty applied to consumption estimates and assumptions on SAM outage. There is currently no specification for number of properties included in SAMs for consumption estimates. This should be included in future guidance following further work. In the meantime, a company should set out its evidence to demonstrate the representativeness of its sample.

The IHM monitoring requirements for continual monitoring and meter under-registration shall be equally applied to SAMs.

A company is expected to derive unmeasured household consumption using the following criteria:

- Unmeasured household consumption (Ml/d) for the whole company shall be calculated from average unmeasured per household consumption (PHC expressed in litres/household/day) multiplied by the number of unmeasured households.
- Average unmeasured household consumption shall be derived from a company's own IHM or SAM except where meter penetration is high, and this makes this impractical.
- The PHC for the IHM or SAM sample shall be extrapolated to an average for the whole company based on stratification.
- The IHM or SAM shall follow the principles set out in the UKWIR Report 'Best Practice for unmeasured per-capita consumption monitors' 1999 and the more recent report 'Future Estimation of Unmeasured Household Consumption', UKWIR 2017.
- IHMs and SAM monitors shall be continually monitored and maintained.
- A company shall demonstrate that its IHM or SAM is representative of the company as a whole; disaggregation of the sample by demographic factors, property type or similar factors represents good practice. Valid data from the survey shall be from at least 80% of monitors as an annual average measure. A company may develop and use an alternative monitor as defined in the 2017 UKWIR Report but it must set out the approach taken and demonstrate why this is appropriate.
- In general, it is expected that where the proportion of metered properties in a SAM exceeds 50% of total properties then the area should not be included in the estimation of unmeasured consumption. Companies with high meter penetration may not be able to comply with this and this should be considered when deciding their approach to estimating unmeasured household consumption.
- Quantify the uncertainty allocated to unmeasured household consumption and provide evidence to justify the uncertainty value used.
- Meters shall be selected to provide sufficient granularity to detect low continuous flows indicative of plumbing losses or leakage short duration flow variations. The value of meter under registration should be less than the company's average meter stock.
- Estimates of supply pipe leakage shall be based on a company's own data which is updated annually.

- Estimates of meter under-registration shall be based on a company's own data which is updated annually.

Guidance on the estimation of unmeasured household consumption[14] provides further guidance on monitoring processes. In particular, the impact of adopting models to increasing meter penetration. The report sets out several potential options for estimating unmeasured households and a framework for selection of an alternative method. For companies with high meter penetration their approach to estimating unmeasured household consumption must be consistent with this guidance and they should set out their approach.

## Data Infilling

Data will not always be available from IHMs or SAMs for a range of reasons. In these cases, data can be infilled using the following guiding principles; where a SAM or IHM property is inoperable data can be infilled using historic data from the same SAM or IHM property or average data from a SAM or IHM property with similar characteristics (from the same stratification).

## Meter under-registration (MUR)

Within the calculation of per capita consumption metered data is taken from:

- Customer meters;
- SAMs for unmeasured household consumption monitor meters; or
- Meters on IHM properties

There is potential for MUR to impact on the estimates.

For meters where there is a bias for under registration then this should be accounted for in calculations.

A company should include estimates of meter under-registration for all meters where there is a bias for under registration. A company is expected to use its own data on under-registration and should justify the MUR figure used and how it has been derived. MUR should be reviewed annually.

Where a metering programme has recently been completed or ongoing, a company is expected to revise its assumptions. It is recognised that information on under-

[14] Future Estimation of Unmeasured Household Consumption, 17/WR/01/16, UKWIR 2017

registration is limited and there is a need for further work to derive statistically representative values. It is expected that meter under-registration greater than 3% would need compelling evidence.

While an allowance is made for meter under-registration for monitor meters (SAMs and IHMs) it is expected that these meters will have an enhanced specification compared with normal domestic meters and as they are continually monitored meter failures and drift will be identified earlier than for normal domestic meters. Therefore, it is expected that MUR for monitor meters will be less than for all meters.

- A company should set out its approach to estimating MUR for revenue meters and demonstrate annual updates.
- A company should set out its approach to estimating MUR for monitor meters and demonstrate annual updates.
- A company should set out its approach to stopped meters and demonstrate that there is no double counting between stopped meters in consumption from billing data and MUR.

### 3.3.3 Specific exclusions

#### Supply pipe leakage (SPL) and plumbing losses

Supply pipe leakage should be excluded from consumption data. For measured households which are externally metered supply pipe leakage allowances should be deducted from the metered data. For unmeasured households externally metered as part of IHM surveys supply pipe leakage should also be excluded from the data. For SAMs estimates of supply pipe leakage must also be removed from the data.

A company should use its own estimates of supply pipe leakage and must set out its approach to deriving these estimates and how it excludes supply pipe leakage from metered household consumption and IHM or SAM data used in the PCC calculation. This is also linked to estimates of plumbing losses. A robust methodology to determining this is required. The 2020 UKWIR study examining plumbing losses[15] may help with this.

A company is expected to:

[15] 'Understanding the Balance between Customer Use, Supply Pipe Leakage and Plumbing Losses in Water Delivered to Household Properties', 20/WM/08/72, UKWIR 2020

- take account of supply pipe leakage in the estimation of both measured household consumption and unmeasured household consumption;
- use its own estimates of supply pipe leakage which are annually updated; and
- demonstrate how these estimates have been derived.

### 3.3.4 Reporting and assurance

The components of PCC are described in the following sections. The process for deriving average PCC is shown below.

[Process diagram will be inserted from PR19 guidance for final methodology.]

The company will also report per capita consumption as a three year average in litres per person per day to one decimal place, corresponding to the percentage reduction reported.

The PCC performance commitment should be broken down into its constituent elements for assessment of compliance for reporting purposes. The compliance checklist identifies the elements in average per capita consumption to be considered. This should be consistent with some of the elements in the water delivered components of the water balance for leakage shadow reporting.

#### Compliance checklist

A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

**Table 3.2 PCC compliance checklist**

| | **Component** / Element | **Component R/A/G** | **Element R/A/G** | **Reason for any non- compliant component** | **Confidence grade** |
|---|---|---|---|---|---|
| **1** | **Household population estimates** | | | | |
| 1a | Household population derived using WRMP methodology | | | | |
| 1b | Evidence for adjustments for clandestine population if any | | | | |
| 1c | Household population updated annually | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1d | Exclusion of non-household population in accordance with WRMP methods | | | | |
| **2** | **Household property estimates** | | | | |
| 2a | Definition of household/ non-household consistent with eligibility under market separation. | | | | |
| 2b | Evidence of void properties updated annually | | | | |
| 2c | Property figures annually updated | | | | |
| **3** | **Measured household consumption (Based on leakage performance commitment RAG elements)** | | | | |
| 3a | Metered data is derived from own billing system | | | | |
| 3b | If leakage allowances are applied the process and evidence for this is clearly set out. | | | | |
| 3c | Average SPL deductions for externally metered households using company own data updated annually. | | | | |
| 3d | Company own estimate of MUR for revenue meters which is updated annually. | | | | |
| 3e | Meter replacement consistent with own replacement programme. | | | | |
| **4** | **Unmeasured household consumption (Based on leakage performance commitment RAG elements)** | | | | |
| 4a | Monitors follow principles set out in the UKWIR report 'Best Practice for unmeasured per capita consumption monitors 1999' and the more recent report 'Future Estimation of Unmeasured Household Consumption', UKWIR 2017. | | | | |
| 4b | Consumption is derived from own IHM or SAM or evidence to support other method appropriate for high meter penetration companies. | | | | |
| 4c | Evidence that survey is representative (based on demography, property type or other factors) of the company as a whole; Valid | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | data available from at least 80% of monitors as an annual average measure. | | | | |
| 4d | For companies using SAMs - SAM comprises a representative sample of customer' characteristics. The sample size is sufficient to provide a statistically representative sample after allowing for outages. Where the proportion of metered properties in an area exceeds 50% of total properties then further data validity tests are applied. For companies using IHMs – IHM comprises representative sample of customer characteristics. The sample is at least 1000 properties. | | | | |
| 4e | Uncertainty allocated to unmeasured household consumption is estimated and justified. | | | | |
| 4f | There is continual monitoring and maintenance of IHMs and SAM monitors. | | | | |
| 4g | Meters are selected to provide sufficient granularity to detect low continuous flows indicative of plumbing losses or leakage short duration flow variations. The value of meter under registration is less than the company's average meter stock. | | | | |
| 4h | Estimate of plumbing losses is based on own data. | | | | |
| 4i | Where unmeasured non-household reported volume is less than 2% of total non-household demand, data from a per property consumption study is refreshed every five years. | | | | |
| 4j | Where unmeasured non-household reported volumes are greater than 2% of non-household demand, data from a property study is refreshed every two years. | | | | |
| 4k | Company own estimate of MUR for monitor meters which is updated annually. | | | | |
| 4l | Meter replacement consistent with own replacement programme. | | | | |

| Parameters | |
|---|---|
| Measurement unit and decimal places | Percentage reduction from 2019-20 baseline, reported to one decimal place.<br>The volumetric levels resulting from the application of the percentage reduction in litres/person/day (l/p/d) reported to one decimal place. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 50% Water resources<br>50% Water network plus |
| Frequency of reporting | Annual |
| Any other relevant information | Performance commitment levels are set as percentage reduction from 2019-20 baseline.<br>Incentive payments relate to performance changes expressed in litres/person/day (l/p/d). |
| Links to relevant external documents | N/A |

## 3.4 Leakage

**Purpose:** This performance commitment is designed to incentivise companies to reduce leakage.

**Benefits:** The benefits of reduced leakage are improved water resources supply/demand balance, reduced need for water abstraction and increased water supply network resilience.

## Performance commitment definition and parameters

### 3.4.1 Detailed definition of performance measure

The percentage reduction of three year average leakage in Ml/d from the 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in Ml/d.

Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses and trunk main leakage plus customer supply pipe leakage. It is reported as the annual arithmetic mean (referred to as 'average') daily leakage expressed in mega-litres per day (Ml/d). It is reported as a post-MLE figure. Reporting of annual average leakage forms part of each company's assurance process. Where expected ranges are specified for estimates, this does not preclude the need for a company to justify all estimates used.

The percentage reduction of three year average leakage in Ml/d from the 2024-25 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years and expressed in Ml/d.

The company should provide a commentary in its Annual Performance Report submission if there are any differences in its 2019-20 baseline three year average total leakage level expressed in Ml/d in comparison with its business plan. Reasons for any differences should be clearly explained and their volumetric impacts on the baseline quantified.

Outcome delivery incentives will be applied on a Ml/d. The performance commitment levels expressed as percentage reduction will be applied to 2019-20 baseline. The difference between this value to one decimal place and actual three year average leakage will be used to calculate outcome delivery incentives.

A company is required to report against this definition and:

- report a post-MLE average leakage value expressed as Ml/d to one decimal place;
- disclose where its methodology does not comply, using the checklist below; and
- disclose any other factors which have an impact on the methodology for reporting leakage.

The guidance is structured in the way that leakage is normally estimated and comprises:

- Components of leakage estimation (commonly referred to as bottom-up).
- Components of the water balance (commonly referred to as top-down).
- The water balance reconciliation using the MLE methodology and adjustments.

[Process diagram will be inserted from PR19 guidance for final methodology .]

## 3.4.2 Additional detail on measurement units

### Components of Leakage Estimation

### Reporting level

The main objective is to achieve and maintain a high level of valid data to report a statistically robust measure of annual average leakage.

A company can select to estimate leakage based on different reporting levels:

- District Meter Area (DMA) using district meters;
- Water resource zone level using distribution input meters; or
- An intermediate zone level using meters installed on reservoir outlets or trunk mains within the distribution network.

It is for a company to decide the level of reporting based on its own network characteristics and risk of meeting operability targets as defined below.

The subsequent sections are addressed mainly to DMA monitoring although the principles may equally apply to reporting at zone level.

### Night Flow Monitoring

Reporting of leakage from water networks is based on the concept of monitoring flows at a time when demand is at a minimum which is normally during the night. Allowance is made for legitimate night use for household and non-household customers. Companies have configured their networks to be able to continuously monitor night flows using district meters. Flow data is recorded on meters and normally transmitted daily to a data centre. Data is analysed to confirm its validity and used to derive continuous night flow in each monitored area. Software systems have been developed to analyse this data, apply adjustments for legitimate night use and report daily

leakage. Companies are able to set assumptions for this analysis within the software packages.

A company is expected to comply with the essential principles of the leakage reporting process for estimates of annual average leakage:

- at least 95% coverage of all properties served by a company within networks having continuous night flow monitoring through the year;
- at least 90% of all properties within continuous night flow monitoring networks shall be available for reporting night flow data through the year;
- valid data for reporting leakage shall be derived using available night flow data and estimates of legitimate night use and a company's own validity assessments;
- assessments of legitimate night use for households and non-households shall be applied as detailed in sections below;
- the statistical assumptions for determining night flows, legitimate night use and hence leakage shall be based on good practice statistics and consistently applied; and
- the components of reporting shall be based on a company's own data.

To apply these principles, definitions of 'Coverage' and 'Availability' need to be applied. For the purpose of this performance commitment:

**Coverage** means the percentage of a company's billed households and non-households within designated network areas where night flows can be continuously monitored and reported on a regular frequency. Coverage is measured as an annual average for the whole company. This represents the extent of the coverage of networks with designed import and export meters, boundary valves, counts of households and non-households and other asset and performance data.

**Availability** means where the designated network area is available to report a reliable estimate of night flow for leakage reporting; the installed meters and loggers are working correctly; the boundary is watertight and continuous data is provided.' Availability is measured as a property-weighted annual average for the whole company. Trunk mains should not be included in the measure of availability.

A company is expected to apply its own automated validity checks, or Operability tests, within its leakage analysis software to accept or reject data for reporting. This is expected to be supported with manual detailed checks to detect any data inconsistencies on at least a weekly basis. A company must set out the operability rules

(the methods and thresholds) they use and provide supporting justification for these during annual assurance.

For the purpose of this performance commitment, **Operability** means where leakage data derived from night flow monitoring and the application of legitimate night use data is within a company's accepted validity criteria for use in leakage reporting.

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.

An estimate of leakage in areas not covered by continuous monitoring can be extrapolated using leakage per property from the adjacent monitored area on the assumption that a similar level of leakage management activity is applied in these areas; otherwise a separate assessment is needed. Leakage in monitored areas failing validity checks is expected to be infilled in accordance with the 'Data Infilling' section below.

## Properties

Household and non-household properties are used in the estimation of total night use in any DMA or zone. Properties are also used as a denominator in leakage comparisons and for data infilling where DMAs or zones are not operable. Any inconsistencies could impact on DMA or zone operability and hence reliable reporting.

A company is expected to:

- map all properties to defined zones or DMAs using geo-location or similar methods available in the industry;
- check the consistency of property numbers contained within DMAs or zones against its company's billing system to minimise any under- or over- counting. Valid differences shall be explained;
- exclude properties that are defined as void from night use allowances unless a company can evidence any use or losses from illegal occupation;
- apply leakage allowance for properties not within DMAs or monitored zones consistent with other leakage estimates;
- update property data at least annually; and
- ensure the classification of properties as either household or non-household is consistent with the retail market definition of eligibility.

Void properties should be accounted for consistently in all aspects of the leakage calculation.

A company should justify the number of void properties each year and how this is derived. If consumption is assigned to a proportion of void properties (illegal occupation) then the evidence base to support this must be considered during the assurance process. Estimates of void properties should be updated annually.

## Night Flow and Leakage

## Night Flow Period

There is a requirement to analyse night flow at a time when it is possible to apportion flow with confidence between leakage and customer use using consistent and valid statistical methods. This analysis can be achieved at a time during the night when customer use is predictable and relatively low. This may not necessarily be at a time of minimum night flow into a DMA or zone.

Estimates of DMA or zone night inflow and household (HHNU) and non-household (NHHNU) customer night use need to be aligned. The UKWIR Report 'Managing Leakage 2011'[16] recommended using a fixed hour period. This approach allows average flows to be compared with average night use. While this may give rise to exceptional low or high values of leakage in particular periods, over the reporting year these are expected to average out.

For current good practice, the only practical way is to use a fixed-hour statistic for both night flow and HH and NHH night use. This was confirmed in an UKWIR Report[17] . A company may extend this period to two hours. A company must justify its choice of fixed hour or fixed two hours, ensuring it aligns with the NU period, and demonstrate why this period is appropriate for its circumstances.

A company is expected to derive night flow data using the following criteria:

- night flow data frequency shall be at least every 15 minutes;
- leakage shall be derived from a fixed period during the night of at least a one hour period although up to two hours may be used; and

[16] 'Managing Leakage 2011', 10/WM/08/42, UKWIR 2011
[17] 'Improved Household Night Use Allowances', 14/WM/08/53, UKWIR 2014

- the fixed period can be varied during the year for some or all DMAs or zones to address significant changes to night use patterns such as during Ramadan. Changes to the fixed period must be justified.

## Night Flow Analysis

The analysis of night flow needs to be carried out using a consistent and valid statistical methodology. Both household and non-household night use are used to derive estimates of daily leakage. The estimates of HHNU and NHHNU night use are based on average (arithmetic mean) values over time and applied to night flows. Night flows therefore also need to be average (arithmetic mean) values to derive statistically valid estimates of leakage. The use of any alternative percentile assumption is not statistically valid.

A company is expected to apply the following assumptions for night flow analysis:

- the average values of night flow data over the period defined above shall be used with average values of HHNU and NHHNU data for the same time period to derive an estimate of leakage representative for the DMA or zone;
- the value of HHNU shall be derived using methods set out in the 'Household Night Use' section below and the number of properties defined within the DMA or zone;
- the value of NHHNU shall be derived from estimates of night use by group and the number of properties in each group defined as within the DMA or zone as set out in the 'Non-Household Night Use' section below; and
- apply leakage allowance for properties not within DMAs or monitored zones consistent with other leakage estimates.

The analysis will derive values of leakage for each DMA or zone expressed as leakage per hour for every day of the year. Leakage is then expressed as leakage per day following the methodology set out in the 'Hour to Day Conversion' section below.

## Data Infilling

Where a DMA or zone is inoperable, a software package will normally infill data following defined rules using historic data from the same DMA or zone or average data from adjacent DMAs. To achieve a high operability target, infilling of weekly values shall be limited to short periods of preferably no more than a month and certainly no greater than six months. While rules vary across companies, for consistency a company is expected to follow the following guideline or disclose where it has not been able to comply.

- Data infilling for a single DMA or zone shall not use more than six months of historic data before moving to area average;
- Data infilling taking the area average in which the DMA is located is valid if historic data is not available;
- When a DMA is restored to operability, for the purposes of annual average reporting, the subsequent leakage data should be used to update retrospectively the data infilling interpolating between pre- and post- data over at least one month. This is because a non-operable DMA is unlikely to be subject to detection processes and there is likely to be a natural rise in leakage over time. It is recognised that this may take time to achieve, as and when leakage software packages are updated. There is one exception where a DMA is inoperable at the end of a reporting year where alternative data infilling, using the last valid weekly value may be used; and
- Where NHH properties are continuously monitored, the actual values of flow over the night flow period shall be used in place of estimates within the night flow analysis.

## Seasonal Variation in Night Use

Fixed night use allowances are not appropriate for many companies who observe rising night flows during warm summer periods or spring planting. There is clear evidence that customer night use increases over these periods due to a small proportion of households using overnight sprinklers or night time irrigation of golf courses and plant nurseries. A fixed night use allowance through the year is not appropriate in capturing variations in night flow. Some companies may use advanced modelling or enhanced logging methods to improve estimates of night use although this is not a requirement for current good practice. A company is expected to make allowance for seasonal variance in night use:

- The night use allowance shall be adjusted regularly through summer months to allow for variable customer night use based on sample logging over the period or night use models; and
- Weekly leakage estimates shall be used for annual reporting with no exclusions for summer months.

A company must justify any seasonal adjustments they make. Evidence based on data and or studies should support this.

## Negative Leakage Values

Average customer night use is normally applied equally to all DMAs although actual use can be higher or lower than across individual DMAs. The impact, particularly in small or low leakage DMAs, is that negative calculated leakage values may be reported. While this may appear anomalous, combining leakage values at zone or company level will offset these negative values while maintaining the overall value of average household use. It is therefore appropriate to include negative leakage in collating leakage data to area or company level. Capping leakage to zero would artificially reduce the resulting average value of night use and is not appropriate. This issue is not observed in larger DMAs or zones.

A company is expected to make allowance for negative leakage values:

- Where average night use values are applied across all DMAs, it is appropriate to include negative leakage values when compiling values of annual average leakage; and
- The reasons for any prolonged periods of negative leakage need to be investigated and explained.

## Household Night Use

Estimates of household night use are deducted from measured night flows in estimating of leakage using the method described above in the 'Night Flow Analysis' section. A company can estimate night use using either an Individual Household Monitor (IHM) or a Small Area Monitor (SAM) or a combination of both. The choice of method is likely to be related to the preferred method for deriving estimates of unmeasured household consumption.

A company shall use its own data and application of national default values is not valid. This is because these default values were derived from limited data over 25 years ago. In addition, ‘Socrates’ loggers are no longer maintained or supported and hence are not best practice.

In the case of IHMs, these were originally designed to derive estimates of unmeasured per capita consumption and usually comprise about 1000 selected properties. This is a relatively small sample for night use assessments given the likely frequency and flow of intermittent and high volume large night use customers. The IHM needs to be continually monitored to ensure any failed meters are replaced and periods of continuous night flow are quickly identified and resolved to minimise any supply pipe leakage.

SAMs normally provide a larger household sample size than IHMs and are appropriate for night use and unmeasured household consumption assessments. SAMS may be

part or full DMAs; whatever size, they shall be selected and designed to give substantial coverage of households and minimise non-household properties. A company using SAMs for the estimation of HHNU should apply the recommendations of the recent UKWIR report[18] on the application of a fast logging methodology for continuing monitoring and maintenance.

The HHNU survey needs to have a sufficient number of samples, representative of a company's demographic factors, to identify both continuous and a significant number of intermittent flow events. The sample size of an IHM is unlikely to be sufficient to capture intermittent use with sufficient frequency. This is because intermittent use could be attributable to a small number of customers.

A company is expected to derive weekly or monthly values of HHNU and shall retrospectively recalculate leakage each week or month as new data becomes available. Some software systems automate this process within their existing leakage data analysis.

HHNU has a significant impact on reported leakage. There is a need to continually improve the coverage of properties with a focus on the factors having greatest impact on night use; for example the impact of seasonal variations in use, increasing SAMs coverage and use of enhanced metering methods.

A company is expected to derive an estimate of average (arithmetic mean) household night use applying the following criteria:

- The values of HHNU night flow shall be used with values of night flow and NHHNU for the same time period and on the same statistical basis to derive an estimate of leakage representative for the DMA or zone;
- It shall use its own data or shared data with proximate companies. National default values are not valid;
- Plumbing losses shall be included and based on the company's own data;
- It shall demonstrate that its survey is representative of the company as a whole; disaggregation of the sample by demographic factors, property type or similar represents good practice;
- It shall demonstrate that the sample size is sufficient to capture continuous and intermittent night use with reasonable confidence;

[18] 'Fast Logging for improved estimation of household night use', 17/WM/08/66, UKWIR 2017

- The application of IHMs, SAMS or a combination of both. It is unlikely that the IHM on its own will be of sufficient size to capture a valid sample of intermittent use;
- Continual monitoring and maintenance of IHM and SAMs monitors; and
- HHNU shall be derived daily with regular, adjustment of values on a weekly or monthly frequency to reflect actual seasonal use. This may need to be done retrospectively.

## Non-Household Night Use

Estimates of non-household night use are deducted from measured night flows in estimating leakage using the method described above in the 'Night Flow Analysis' section. Most companies use the 1999 UKWIR methodology[19] which sets out a methodology for deriving relationships between average night use and annual billed volume (ABV). Some companies are reviewing the form of this relationship to improve the confidence of this methodology.

The methodology stratifies non-household customers by groups of industry types and range of consumption. A representative sample of the variable characteristics of non-households by group and consumption shall be identified. Data logging of these sample customers shall be carried out for at least two weeks to derive model coefficients for each group.

Continuous monitoring of some non-households is carried out although companies apply varying thresholds of consumption above which they will install continuous monitoring. The objective for leakage reporting is to take full account of water use in the night flow analysis where total flow is significant in relation to DMA night flows or the likely variation in flow has a significant impact on DMA analysis and presents a risk to deriving valid data. The target threshold for continuous monitoring is where average demand of an individual non-household is greater than 24 to 48 m3 /day (or night flow >1000 to 2000 l/hr) or 25% of a DMA night flow. A company should define its criteria, reflecting the impact of night use on the ability of a DMA to produce consistent and valid leakage estimates.

For water and sewerage companies, the 1999 UKWIR methodology[20] shall also be applied to sewage treatment works and other company sites using significant water volumes. The guidance for continuous monitoring of non-households shall be similarly applied to these sites.

[19] 'Estimating Legitimate Non-household Night Use Allowances', 99/WM/06/26, UKWIR 1999
[20] 'Estimating Legitimate Non-household Night Use Allowances', 99/WM/06/26, UKWIR 1999

A company is expected to derive estimates of non-household night use applying the following criteria:

- The values of NHHNU night flow shall be used with values of night flow and HHNU for the same time period and on the same statistical basis to derive an estimate of leakage representative for the DMA or zone;
- It shall use its own data or shared data with proximate companies. National default values are not valid;
- Application of the 1999 UKWIR methodology with the appropriate time window as used for the night flow and the published outcome of further methodology development;
- It shall demonstrate that the stratification of non-households to a number of groups and consumption bands is representative of the varying characteristics of commercial and industrial properties;
- It shall demonstrate that the sample size is sufficient to capture night use by stratification with reasonable confidence;
- Development of a reliable and representative average billed volume (ABV) model based on data logging of the representative sample sufficient to capture demand variations with further seasonal logging where relevant. Continuously logged properties are unlikely to form part of the sample as these generally have greater consumption than the stratified samples;
- Direct linkage of the ABV model to a company's billing system or replacement database of billed volumes. Update the average billed volumes at least annually;
- Continuous monitoring of selected non-households shall be carried out where average demand of an individual non-household has a material impact on the ability for a DMA or zone to provide valid and consistent data within operability limits; and
- For water and sewerage companies, apply the same ABV methodology as a separate group and continuously monitor sewage treatment works and other sites using the same criteria as for non-households.

## Supply pipe leakage

HHNU and other components of the water balance are sensitive to the supply pipe losses estimate used. There is inconsistency in how companies estimate SPL and how they keep the estimates up to date. Some use separate allowances for internally metered properties and others just use one estimate for all properties. A robust methodology to determine this is required. In the meantime a company must state the

supply pipe leakage allowances it uses and present the evidence on which this is based.

## Hour to Day Conversion

An hour to day correction is required to take account of diurnal pressure variation in each DMA or zone. Leakage is monitored during the night when actual pressure is normally greater than other parts of the day. Daily leakage is estimated from night flow when actual pressure is likely to be greater than the average for a defined DMA unless pressure management is in place. Night leakage therefore needs a correction factor to convert to the average daily leakage rate. As leakage varies with pressure, the daily leakage flow needs to reflect the diurnal variation in flow.

A company shall take into account the findings from the UKWIR Report 'Assessment of Key parameters for Leakage Analysis[21] which addresses average zone pressure, average zone night pressure (AZNP) and hour to day factor (HDF).

A company is expected to derive the hour-to-day conversion using the following criteria:

- The hour-to-day factor shall be derived separately for each DMA or zone using pressure logging within each DMA. The factors shall be updated at least annually or where there are any significant changes to pressure regimes;
- As an alternative, hydraulic models can be used provided they have been updated to reflect the latest network reconfiguration and any pressure changes, and provided it is dis-aggregated in sufficient detail at sub-zone level; and
- An N1 value of 1.0 to 1.2 in the leakage – pressure power law relationship[22] unless a company is able to demonstrate a higher or lower value would be more appropriate using its own data. A company should set out its approach to deriving its N1 value.

## Annual Distribution Leakage

Annual average distribution leakage expressed in Ml/d shall be derived from operable data with minimal data infilling. Historically there have been various rules used to derive annual average leakage expressed as Ml/d using a variety of statistical assumptions applied to weekly or monthly data. The approach set out below is to make best use of operable data. It takes into account variable daily data, captures weekly

[21] 'Assessment of Key Parameter for Leakage Analysis', 17/WM/08/59, UKWIR 2017
[22] Leakage (L) is proportional to pressure PN1 where N1 can vary locally between 0.5 and 1.5, but at DMA level is typically between 1.0 and 1.2.

trends and minimises the extent of statistical adjustments. The weekly leakage value is used as the base measure taking an average value of daily data in the week. There may be outliers in the data which is expected in taking average values. Over the reporting year these outliers should be balanced and not impact on average annual leakage. The method captures the variance in weekly data through an average of the 52 weekly values. Monthly reporting may be appropriate for internal reporting but has no value in moving from weekly to annual average values.

A company is expected to derive the annual average distribution leakage using the following criteria:

- The average weekly data shall be derived from all available valid daily values of leakage using data points which are representative of the week. Valid data must be available for at least 3 days of the week for the DMA to be considered operable. In this instance the weekly data should be backfilled using the methods described previously – night flow analysis. Where there is less than 3 days of valid data for the week then that DMA data is not considered operable and should not be used. In this instance the DMA data should be estimated; and
- The annual value of leakage expressed as Ml/d shall be derived from an average of the 52 week data.

## Trunk Main and Service Reservoir Losses

### Trunk Mains

For some companies who monitor leakage at zone level, trunk mains losses are included in reported leakage. A separate assessment of trunk main losses is therefore not required.

For companies estimating leakage at DMA level they must derive estimates of trunk mains leakage and service reservoir losses separately.

A proportional approach in estimating leakage shall be applied. A company with a relatively high proportion of trunk main losses to total leakage should take a proactive leakage monitoring approach with a combination of field inspections, analytical techniques, and flow balancing methods. Other companies with relatively low proportions of estimated trunk main leakage (<5% of total leakage) may apply less intensive methods but all should use their own data and not rely on national default values. It is recognised that trunk main leakage is difficult to measure; the relatively low confidence of this estimate shall be reflected in the confidence intervals applied in the MLE methodology.

Compilation of flow balances within sections of the trunk mains network is an important element to the proactive approach. Flow balances may identify either meter error or unknown connections, but in some instances, they may identify significant trunk mains leakage. Flow balances should be carried out between upstream and downstream meters or groups of meters, where:

- The upstream meters may be distribution input meters or trunk main network meters, or groups of such meters; and
- The downstream meters may be trunk main network meters or district meters, or groups of such meters.

Companies should follow the advice given in UKWIR report 'Leakage Upstream of District Meters'[23] , which describes two alternative methods for quantification of trunk main leakage:

(i) A flow balance approach, as described above. This method is dependent on sufficient operational meters being installed. The method allows for a sample of meters and for the findings to be extrapolated. The disadvantage of this method is that it is using the difference between two or more meters with potential meter inaccuracies; or

(ii) A bursts and background estimate (BABE) component approach, using data on numbers of leakage with estimated flow rates and durations, together with an estimate of background leakage.

The choice between these two methods depends on what data is available to a company. If one of these methods can be applied meaningfully on a sample of the trunk mains network, this can be extrapolated to the whole network. Company-specific data shall be used to assess the value of trunk main leakage; national default values should not be used.

A company is expected to derive values of trunk main leakage using the following criteria:

- Company-specific data shall be used to assess the value of trunk main leakage;
- A proactive leakage monitoring approach shall be applied where trunk main losses form a significant element (>5%) of total leakage or the MLE water balance gap is greater than +/-2%. This approach shall be a combination of field inspections, analytical techniques, and flow balance methods. The selection of methodology and

[23] Leakage Upstream of District Meters, 15/WM/08/55, UKWIR 2015

level of leakage monitoring activities shall reflect the proportion of estimated losses in relation to total leakage and the characteristics of the network; and

- Companies with trunk main losses greater than 5% of total leakage shall review and refresh estimates annually.

Companies who do not employ physical survey or mass balance should justify their approach including explaining how it provides an estimate of sufficient accuracy.

### Service Reservoir Losses

The ideal approach is a mass balance approach with inlet and outlets metered. However, circumstances can mean that other approaches to estimating losses are appropriate but should be justified. Leakage can occur through the structure and valves; overflows may be passing water. Losses are generally less than other areas of leakage, hence the lower frequency of leakage surveys. Drop tests have been used for many years and can be an acceptable and proportionate method for identifying any material leakage. Estimates are expected to be updated annually but this does not require, for example, a company to undertake annual drop tests of all service reservoirs. Where a new drop test has been done that year, the results should be included in the overall estimate.

A company is expected to estimate service reservoir leakage using the following criteria:

- Company-specific data shall be used to assess the value of service reservoir losses;
- Reservoirs with known high leakage, structural deficiencies or are at risk of water quality failures shall be investigated on an individual basis;
- Drop tests are an appropriate approach and normally carried out every five or ten years in parallel with ongoing routine reservoir inspection programmes. Drop tests shall be carried out for at least 12 hours depending on the size of the reservoir. All valves should be checked to ensure they are closed tight; and
- The extent of losses through reservoirs overflows should be investigated. Where reservoirs are shown to be at risk of overflowing, appropriate monitoring arrangements shall be put in place to control and minimise overflow events.

### Annual Average Leakage

Annual average leakage is reported as the sum of distribution leakage from continuous DMA or zone monitoring, areas not covered by continuous monitoring, trunk main

leakage and service reservoir leakage. These values shall be applied with differing confidence intervals in the MLE methodology.

### Water Balance Components

Water balance components shall be consistent across the four water demand measures that the company reports.

### Unmeasured non-households

Unmeasured non-household consumption should be derived from a study of the consumption of measured non-households of similar categories and applying a recognised statistical approach.

A company is expected to report unmeasured non-household consumption using the following criteria:

- Where the reported volume is less than 2% of total non-household demand, data from a per property consumption study shall be refreshed every five years; and
- Where reported volumes are greater than 2% of non-household demand, data from a property study shall be refreshed every two years.

### Company Own Water Use

Many water and sewerage companies have significant water use at their sewage treatment works and other major assets. The driver for metering is not only accounting for water in the balance but to allow use as part of leakage monitoring and reporting. Many companies have water efficiency targets to meet and metering is an enabler to achieve these.

Distribution system operational use comprises water knowingly used by a company to meet its statutory obligations particularly those related to drinking water quality. This includes, amongst other things, mains flushing, air scouring, swabbing, service reservoir cleaning, discharge to control pH and other chemical parameters in distribution. Water taken for commissioning of assets or as part of other legitimate network use shall be included. A proportionate approach is appropriate. An industry average can be applied. A company must justify and evidence the estimate it uses.

A company is expected to report using the following criteria:

- All sewage treatment sites and other key assets using greater than 10 m3 /d (0.01 Ml/d) shall be metered;

- An estimate of total company own use shall be included in the water balance, based on a clear methodology and actual data; and
- Where an estimate of distribution operational use is greater than 0.6% of distribution input then this value needs to be clearly stated and justified. There should be no change to current assumptions unless clearly evidenced.

## Other Water Use

This component comprises water delivered both legally and illegally.

Water taken legally unbilled shall include all water supplied to customers that is unbilled and not reported as water delivered to billed customers. It can include public supplies for which no charge is made such as some sewer flushing, uncharged church and other supplies, firefighting and training where not charged. The measure excludes leakage allowance rebates for measured customers. A proportionate approach is appropriate. An industry average can be applied. Where use is greater than 1.2% of distribution input (based on 20% above current industry average) this is to be clearly evidenced and justified.

Water taken illegally unbilled should only be reported here if it is based on actual occurrences using sound and auditable identification and recording procedures. This includes water use in void properties. A proportionate approach is appropriate. An industry average can be applied. Where use is greater than 0.6% of distribution input (based on 20% above current industry average) this is to be clearly evidenced and justified.

A company is expected to report Other Water Use using the following criteria:

- Other use components should be based on a company's own data;
- A company must justify and evidence the estimate it uses; and
- Estimates should be updated when there is a material increase or decrease to volumes.

## Meter under-registration (MUR)

Within the calculation of leakage metered data is taken from:

- Distribution Input (DI) meters
- Customer meters
- Night use monitor meters

- PCC monitor meters; and
- Night flow meters

Therefore, there is potential for MUR to impact on estimates for night flow, HHNU, NHHNU, unmeasured consumption, measured consumption and the water balance.

Dependant on meter technology and flow through the meter there may be no bias in either direction and therefore there should be no MUR applied. Calibration and verification should still be undertaken. For other meters where there is a bias for under registration then this should be accounted for in calculations.

A company should include estimates of meter under-registration for all meters where there is a bias for under registration. A company should justify the MUR figure used and how it has been derived. MUR should be reviewed annually.

For water delivered measured meter under-registration can be applied to measured volumes. A company is expected to use its own data on under-registration. Where a metering programme has recently been completed or ongoing, a company is expected to revise its assumptions. It is recognised that information on under-registration is limited and there is a need for further work to derive statistically representative values. It is expected that meter under-registration greater than 3% would need to have compelling evidence.

A company should set out its approach to stopped meters and demonstrate that there is no double counting between stopped meters in consumption from billing data and MUR.

For DI, a company should set out its approach to meter verification. As a minimum, flow checks shall be carried out on DI meters consistent with the principles of the document 'EA Abstraction Good Metering Guide'[24] and in particular the frequency of flow checking defined in Table 6.2 of the Environment Agency guide. This does not require all DI meters to be verified annually: there may be a rolling programme which feeds into overall MUR where a portion of meters are verified each year.

## MLE Adjustment

### Concept

[24] 'EA Abstraction Good Metering Guide', Environment Agency, version 3.4, February 2014

The basic assumption is that: Distribution Input shall equal the sum of water delivered to customers or used for other purposes and leakage from a company's network.

As this is averaged over a year, any change in service reservoir storage is not material.

The methodology for estimating water balances set out in the Demand Forecasting Methodology report[25] shall be applied. An initial balance of all components shall be applied to identify the extent of any water balance gap. The distribution is carried out by reference to the size and uncertainty surrounding each component of the water balance.

The water balance gap is defined as: 'The difference 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. The water balance gap is positive where distribution input is >the sum of components and negative where distribution input is < the sum of components.'

A gap of ±2% is considered good practice. A water balance gap >5% or < -5% indicates a significant inconsistency in one or more of the major components. A company is required to explain the reasons for any water balance gap of greater than a lower threshold of +/-3%. A water balance gap >5% or < -5% is too wide for a valid MLE adjustment to be carried out. In this instance, any water balance gap in excess of the +5% gap, expressed as Ml/d, shall be added to the leakage component. In addition, for any water balance gap >5% or < -5% a review of all material components of the water balance is required.

A company is expected to:

- Set out its approach to MLE
- Apply the MLE methodology and identify any water balance gap;
- Disclose and explain the reasons for any water balance gap exceeding 3% of distribution input;
- Any water balance gap in excess of the +5% gap, expressed as Ml/d, shall be added to the leakage component; and
- Revisit all material components of the water balance where the water balance gap is >5% or < -5%

[25] 'Demand Forecasting Methodology', 95/WR/01/1, NRA for UKWIR 1995

No elements of the water balance should be excluded from the MLE. The expected components of the MLE are as listed below:

For companies estimating leakage at DMA level:

- Measured household consumption (excl. SPL)
- Unmeasured household consumption (excl. SPL)
- Measured non-household consumption (excl. SPL)
- Unmeasured non-household consumption (excl. SPL)
- Distribution system operational use
- Water taken legally unbilled consumption (excl. SPL)
- Water taken illegally unbilled
- DMA leakage
- Supply pipe leakage (SPL)
- Trunk mains leakage
- Service reservoir leakage
- Distribution input

For companies estimating leakage at zonal level:

- Measured household consumption (excl. SPL)
- Unmeasured household consumption (excl. SPL)
- Measured non-household consumption (excl. SPL)
- Unmeasured non-household consumption (excl. SPL)
- Distribution system operational use
- Water taken legally unbilled consumption (excl. SPL)
- Water taken illegally unbilled
- Distribution losses
- Supply pipe leakage (SPL)
- Distribution input

## Confidence Intervals

The MLE methodology applies a confidence interval to each component of the water balance. This is to reflect the accuracy of each of the components. Best practice is to derive a statistical measure of accuracy for each component although this is difficult in practice. Applying a relative accuracy is an alternative approach.

Applying differing confidence intervals very often has a significant impact on the water balance, particularly for leakage and per capita consumption. There is therefore a need to be more prescriptive in the approach to defining the range of confidence intervals. A range of confidence intervals can be applied to each group of components.

A company must have sufficient justification for the confidence intervals it uses and provide evidence of how these have been derived. It is expected that most companies' confidence intervals will fall within the following ranges:

Fully measured components such as distribution input should have a range from 2% to 4%;

- Mainly measured with some estimated adjustments such as measured volumes with supply pipe losses and meter under-registration: from 2.5% to 5%;
- Estimated using detailed and reliable methods such as distribution leakage and unmeasured household (including PCC): from 8% to 12%; and
- Broad estimates not fully detailed or reliable such as trunk main leakage and water delivered unbilled components: from 20% to 50%.

### Reported Total Leakage

Total leakage is taken as the sum of the post MLE values for distribution leakage, including supply pipe leakage, and trunk main / service reservoir leakage. It is expressed as an annual average Ml/d value to one decimal place, consistent with the performance commitment measure.

## 3.4.3 Specific exclusions

None.

## 3.4.4 Reporting and assurance

A company needs to have a written methodology or procedure in place for reporting total leakage. This procedure is reviewed annually and updated as required. Guidance

for annual average leakage reporting is set out as a consistent good practice baseline for the industry, which companies should achieve now or in the short and medium term. The measure assumes a clear approach to be applied through defined regulatory periods.

The company will also report leakage as a three year average in Ml/d to one decimal place, corresponding to the percentage reduction reported.

## Compliance checklist

A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

### Table 3.3 Compliance checklist for leakage

| | **Component** / Element | **Component R/A/G** | **Element R/A/G** | **Reason for any non-compliant component** | **Confidence grade** |
|---|---|---|---|---|---|
| **1** | **Coverage** | | | | |
| 1a | 95% of all properties have continuous night flow monitoring throughout the year | | | | |
| **2** | **Availability** | | | | |
| 2a | At least 90% of all properties within continuous night flow monitoring networks available for reporting night data throughout the year. | | | | |
| **3** | **Properties** | | | | |
| 3a | All properties mapped to defined zones or DMAs (District Meter Area) using geo-location or similar methods | | | | |
| 3b | Consistency of property numbers contained within DMAs or zones within company billing system. Valid differences explained. | | | | |
| 3c | Properties that are defined as void excluded from night use allowances unless evidence for use of losses from illegal occupation is available. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 3d | Leakage allowance for properties not within DMAs or monitored zones consistent with other leakage estimates. | | | | |
| 3e | Property data updated at least annually. | | | | |
| **4** | **Night flow period and analysis** | | | | |
| 4a | Night flow data frequency at least every 15 minutes | | | | |
| 4b | Leakage derived from a fixed period during the night of at least a one hour period and up to two hours. | | | | |
| 4c | If the fixed period is varied during the year for some or all DMAs or zones to address significant changes to night use patterns, such as during Ramadan, evidence for this is provided. | | | | |
| 4d | Leakage allowance applied for properties not within DMAs or monitored zones consistent with other leakage estimates. | | | | |
| 4e | Data infilling for a single DMA or zone does not use more than six months of historic data before moving to area average | | | | |
| 4f | Data infilling where historic data is not available uses the area average in which the DMA is located. | | | | |
| 4g | When a DMA is restored to operability, the subsequent leakage data is used to retrospectively update the data infilling interpolating between pre- and post- data over at least one month. | | | | |
| 4h | Where NHH (non-household) properties are continuously monitored, the actual values of flow over the night flow period are used in place of estimates within the night flow analysis. | | | | |
| 4i | Weekly leakage estimates are used for annual reporting with no exclusions for summer months | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 4j | Negative leakage values are used in compiling values of annual average leakage | | | | |
| 4k | The reasons for any prolonged periods of negative leakage are investigated and explained. | | | | |
| **5** | **Household night use (HHNU)** | | | | |
| 5a | The night time period for HHNU is the same time period as used for night flow and NHHNU. | | | | |
| 5b | Own data or shared data with proximate companies is used for HHNU. | | | | |
| 5c | Plumbing losses are included and based on own data. | | | | |
| 5d | Evidence that survey is representative (based on demography, property type or other factors) of the company as a whole. | | | | |
| 5e | Sample size is sufficient to capture continuous and intermittent night use with reasonable confidence. | | | | |
| 5f | Continual monitoring and maintenance of IHM (individual household monitor) and SAMs (small area monitors) monitors. | | | | |
| 5g | HHNU is derived daily with regular adjustment of values on a weekly or monthly frequency to reflect actual seasonal use. This may be done retrospectively. | | | | |
| **6** | **Non household night use (NHHNU)** | | | | |
| 6a | The time period for NHHNU is the same time period as used for night flow and HHNU. | | | | |
| 6b | Own data or shared data with proximate companies is used for NHHNU. | | | | |
| 6c | 1999 UKWIR methodology with the appropriate time window as used for the night flow and the published outcome of further methodology development is applied. | | | | |
| 6d | Stratification of non-households to a number of groups and consumption bands is | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | representative of the varying characteristics of commercial and industrial properties. | | | | |
| 6e | Sample size is sufficient to capture night use by stratification with reasonable confidence. | | | | |
| 6f | Reliable and representative average billed volume (ABV) model based on data logging of the representative sample sufficient to capture demand variations with further seasonal logging where relevant. Continuously logged properties not part of the sample. | | | | |
| 6g | ABV model linked to billing system or replacement database of billed volumes. Average billed volumes updated at least annually. | | | | |
| 6h | Continuous monitoring of selected NHH is carried out where average demand of an individual non-household has a material impact on the ability for a DMA or zones to provide valid and consistent data within operability limits. | | | | |
| **7** | **Hour to day conversion** | | | | |
| 7a | The hour-to-day factor is derived separately for each DMA or zone using pressure logging within each DMA or zone. The factors are updated at least annually or where there are any significant changes to pressure regimes. | | | | |
| 7b | As an alternative, hydraulic models reflecting latest network configuration and pressure changes, are used if they disaggregate in sufficient detail at sub-zone level. | | | | |
| 7c | Evidence based N1 value used. Expected range is 1.0 to 1.20 | | | | |
| **8** | **Annual distribution leakage** | | | | |
| 8a | Average weekly data is derived from valid daily values of leakage using data points which are representative of the week. Backfilling using the methods described in | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | night flow analysis – is done when valid data is not available for three or more data points. | | | | |
| 8b | The annual value of leakage expressed as Ml/d (Mega-litres per day) is to be derived from an average of the 52 week data. | | | | |
| **9** | **Trunk main losses (only applicable if DMA level leakage assessment used).** | | | | |
| 9a | Company-specific data is used to assess the value of trunk main leakage, using either physical surveys and inspections or a mass balance approach. | | | | |
| 9b | Proactive leakage monitoring approach applied where trunk main losses form a significant element of total leakage, or the MLE (maximum likelihood estimation) water balance gap is greater than +/-2%. | | | | |
| 9c | If trunk main losses greater than 5% of total leakage estimates reviewed annually. | | | | |
| **10** | **Service reservoir losses (only applicable if DMA level leakage assessment used).** | | | | |
| 10a | Company specific data is used to assess the value of service reservoir losses. | | | | |
| 10b | Reservoirs with known high leakage, structural deficiencies or at risk of water quality failures are investigated on an individual basis. | | | | |
| 10c | Drop tests (12 hour duration depending on size) carried out every five or ten years. All valves checked for tight close; and losses through overflows investigated. Appropriate monitoring arrangements in place to control and minimise overflow events. | | | | |
| **11** | **Distribution input (DI)** | | | | |
| 11a | Distribution input to the system is metered with at least daily readings at all defined locations | | | | |
| 11b | Meters are appropriate size for the flow to be measured and located at appropriate inputs to the network confirmed by record plans. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Any treatment works take-off downstream of a meter are excluded from the DI calculations. | | | | |
| 11c | Data validity checks are carried out at least monthly. | | | | |
| 11d | Missing data is infilled using both pre- and post- data for the location over at least one month, extrapolated from pump hours or used of upstream or downstream meters. | | | | |
| 11e | The data transfer systems from meter output to central database are checked and validated on a risk-based frequency from one up to two years. | | | | |
| 11f | Flow checks are carried out on DI meters consistent with the principles of the document 'EA Abstraction Good Metering Guide' and in particular the frequency of flow checking defined in Table 6.2 of the Environment Agency guide. | | | | |
| **12** | **Measured consumption** | | | | |
| 12a | Metered data is derived from own billing system or from CMOS for non-households | | | | |
| 12b | Estimate of supply pipe losses is included for internally metered properties consistent with own current assumption of supply pip losses. | | | | |
| 12c | Inclusion of any leakage allowance is included where a rebate has been applied to a customer's bill | | | | |
| 12d | Meter under-registration (MUR) is applied consistent with own estimates. Evidence of MUR available especially for MUR above 3%. | | | | |
| **13** | **Unmeasured consumption** | | | | |
| 13a | PMonitors follow principles set out in the UKWIR Report 'Best Practice for unmeasured per-capita consumption monitors 1999' and the more recent report 'Future Estimation of Unmeasured Household Consumption', UKWIR 2017. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 13b | Consumption is derived from own individual household monitor or small area surveys. | | | | |
| 13c | Evidence that survey is representative (based on demography, property type or other factors) of the company as a whole; Valid data available from at least 80% of monitors as an annual average measure. | | | | |
| 13d | For companies using SAMs – SAM comprises a representative sample of customer' characteristics. The samples size is sufficient to provide a statistically representative sample after allowing for outages. Where the proportion of metered properties in an area exceeds 50% of total properties then further data validity tests are applied.<br>For companies using IHMs – IHM comprises representative sample of customer characteristics. The sample is at least 1000 properties. | | | | |
| 13e | Uncertainty allocated to unmeasured household consumption us estimated and justified. | | | | |
| 13f | There is continual monitoring and maintenance of IHMs and SAM monitors. | | | | |
| 13g | Meters are selected to provide sufficient granularity to detect low continuous flows indicative of plumbing losses or leakage short duration flow variations. The value of meter under registration is less than the company's average meter stock. | | | | |
| 13h | Estimate of plumbing losses is based on own data. | | | | |
| 13i | Where unmeasured non-household reported volume is less than 2% of total non-household demand, data from a per property consumption study is refreshed every five years. | | | | |
| 13j | Where unmeasured non-household reported volumes are greater than 2% of non- | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | household demand, data from a property study is refreshed every two years. | | | | |
| **14** | **Company own water use** | | | | |
| 14a | All sewage treatment sites, and other sites and assets supplied downstream of the DI meters using greater than 10m3/d (0.01 Ml/d) are metered. | | | | |
| 14b | An estimate of total company own use is included in the water balance, based on a clear methodology and actual data. | | | | |
| 14c | Estimate of distribution operational use is evidence based and not greater than 0.6% of distribution input. | | | | |
| **15** | **Other water use** | | | | |
| 15a | Other use components are based on own data. | | | | |
| 15b | Estimate of water delivered unbilled (legally and illegally) is evidence based and not greater than 1.8% of distribution input. | | | | |
| 15c | Estimates are updated when there is a material increase or decrease to volumes. | | | | |
| **16** | **Water balance and MLE** | | | | |
| 16a | Fully measured components have a range from 2% to 4% | | | | |
| 16b | Mainly measured with some estimated adjustments have a range from 2.5% to 5% | | | | |
| 16c | Estimated using detailed and reliable methods have a range from 8% to 12% | | | | |
| 16d | Broad estimates not fully detailed or reliable have a range from 2% to 50%. | | | | |
| 16e | Water balance discrepancy: <2% = G, >2% and <3% = A, >3% =R | | | | |

| **Parameters** | |
|---|---|

| | |
|---|---|
| **Measurement unit and decimal places** | Percentage reduction from 2019-20 baseline, reported to one decimal place. The volumetric levels resulting from the application of the percentage reduction in megalitres per day (Ml/d) reported to one decimal place. |
| **Measurement timing** | Reporting year |
| **Incentive form** | Revenue |
| **Incentive type** | Outperformance and underperformance payments |
| **Timing of underperformance and outperformance payments** | In-period |
| **Price control allocation** | 100% water network plus |
| **Frequency of reporting** | Annual |
| **Any other relevant information** | Performance commitment levels are set as percentage reduction from 2019-20 baseline. Incentive payments relate to performance changes expressed in megalitres per day (Ml/d). |
| **Links to relevant external documents** | N/A |

## 3.5 Business demand

**Purpose:** This performance commitment is designed to incentivise companies to promote water efficiency of business customers.

**Benefits:** The benefit of reduced business demand is to improve long term water resources supply/demand balance and reduce need for water abstraction.

## Performance commitment definition and parameters

### 3.5.1 Detailed definition of performance measure

The percentage reduction of three year average business demand in Ml/d from the 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in Ml/d.

The measure uses post MLE [26](maximum likelihood estimation) data.

Companies are required to report business demand to the Environment Agency in the Annual Review of Water Resources Management Plans, and this is reported at water resource zone (WRZ) level. Companies should refer to Environment Agency reporting guidance for the Annual Review to ensure compliance with that when preparing their Annual Reviews.

The company should provide commentary in its Annual Performance Report submission if there are any differences in its 2019-20 baseline three year average business demand expressed in Ml/d in comparison with its business plan. Reasons for any differences should be clearly explained and their volumetric impacts on the baseline quantified.

Outcome delivery incentives will be applied on a Ml/d basis. The performance commitment levels expressed as percentage reduction will be applied to 2019- 20 baseline. The difference between this value to one decimal place and actual three year average leakage will be used to calculate outcome delivery incentives.

A company is required to report against this definition and set out any differences with the business demand figures reported in the WRMP

### 3.5.2 Additional detail on measurement units

#### Properties

Measured business properties are needed to derive measured business metered volumes from a company billing system. Unmeasured business properties are used in the unmeasured business demand monitor calculations and for extrapolation to company area. A company is expected to:

- Ensure the classification of properties as either household or non-household is consistent with the retail market definition of eligibility.
- Update property data at least annually.
- Exclude properties that are defined as void unless a company can evidence any use or losses from illegal occupation.
- Justify the number of void properties each year and how this is derived.

[26] MLE is a technique used in the estimation of leakage and is described under the definition for reporting the leakage performance commitment for PR24.

## Measured business demand

The volume of measured business demand should include water used by each measured business including meter under-registration but excluding supply pipe leakage. Measured data shall be derived from meters including estimated reads and an adjustment for meter under-registration should be applied.

For externally metered businesses an allowance for supply pipe leakage should be deducted from the metered volumes.

Companies must undertake a process of accruing demand at year end to account for meter reading frequency cycles. A company should justify its approach to accruals and estimated reads.

A company is expected to derive measured business demand using the following criteria.

- Central market operating system (CMOS) metered data, including actual reads and estimated reads.
- A deduction for supply pipe losses for externally metered properties consistent with the company's own current assessment of supply pipe losses, which is updated annually.
- Adjustments to metered data for leakage allowances applied to individual customers can be included where a rebate has been applied to a customer's bill
- Meter under-registration shall be applied consistent with a company's own estimates, which is updated annually.

## Meter under-registration (MUR)

Within the calculation of business demand metered data is taken from customer meters, there is potential for MUR to impact on the estimates.

For meters where there is a bias for under-registration then this should be accounted for in calculations.

A company should include estimates of meter under-registration for all meters where there is a bias for under-registration. A company is expected to use its own data on under-registration and should justify the MUR figure used and how it has been derived. MUR should be reviewed annually.

Where a metering programme has recently been completed or ongoing, a company is expected to revise its assumptions. It is recognised that information on under-registration is limited and there is a need for further work to derive statistically representative values. It is expected that meter under-registration greater than 3% would need compelling evidence.

- A company should set out its approach to estimating MUR for revenue meters and demonstrate annual updates.
- A company should set out its approach to estimating MUR for monitor meters and demonstrate annual updates.
- A company should set out its approach to stopped meters and demonstrate that there is no double counting between stopped meters in consumption from billing data and MUR.

#### Unmeasured business demand

Unmeasured non-household consumption should be derived from a study of the consumption of measured non-households of similar categories and applying a recognised statistical approach.

A company is expected to report unmeasured non-household consumption using the following criteria:

- Where the reported volume is less than 2% of total non-household demand, data from a per property consumption study shall be refreshed every five years; and
- Where reported volumes are greater than 2% of non-household demand, data from a property study shall be refreshed every two years.

### 3.5.3 Specific exclusions

#### Supply pipe leakage (SPL) and plumbing losses

Supply pipe leakage should be excluded from demand data. For measured businesses which are externally metered supply pipe leakage allowances should be deducted from the metered data.

A company should use its own estimates of supply pipe leakage and must set out its approach to deriving these estimates and how it excludes supply pipe leakage from metered business demand calculation. This is also linked to estimates of plumbing losses. A sufficient and convincing methodology to determine this is required.

A company is expected to:

- Take account of supply pipe leakage in the estimation of both measured business demand and unmeasured business demand.
- Use its own estimates of supply pipe leakage which are annually updated.
- Demonstrate how these estimates have been derived.

### 3.5.4 Reporting and assurance

The company will also report business demand as a three year average in Mega litres per day (Ml/d) to one decimal place, corresponding to the percentage reduction reported.

The business demand performance commitment should be broken down into its constituent elements for assessment of compliance for reporting purposes. The compliance checklist identifies the elements in average business demand to be considered. This should be consistent with some of the elements in the water delivered components of the water balance for leakage shadow reporting.

#### Compliance checklist

A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

**Table 3.4 Compliance checklist for business demand**

| | **Component** / Element | **Component R/A/G** | **Element R/A/G** | **Reason for any non- compliant component** | **Confidence grade** |
|---|---|---|---|---|---|
| **1** | **Business property estimates** | | | | |
| 1a | Definition of household/ business consistent with eligibility under market separation. | | | | |
| 1b | Evidence of void properties updated annually | | | | |
| 1c | Property figures annually updated | | | | |
| **2** | **Measured business demand (Based on leakage performance commitment RAG elements)** | | | | |
| 2a | Metered data is derived from source | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 2b | If leakage allowances are applied the process and evidence for this is clearly set out. | | | | |
| 2c | Average SPL deductions for externally metered business demand using company own data updated annually. | | | | |
| 2d | Company own estimate of MUR for revenue meters which is updated annually. | | | | |
| 2e | Meter replacement consistent with own replacement programme. | | | | |
| **3** | **Unmeasured business demand (Based on leakage performance commitment RAG elements)** | | | | |
| 3a | Company has used a study of the consumption of measured non-households of similar categories and applying a recognised statistical approach | | | | |
| 3b | Uncertainty allocated to unmeasured business demand is estimated and justified. | | | | |
| 3c | Where unmeasured business reported volume is less than 2% of total business demand, data from a per property consumption study is refreshed every five years. Where unmeasured business reported volumes are greater than 2% of business demand, data from a property study is refreshed every two years. | | | | |

| **Parameters** | |
|---|---|
| **Measurement unit and decimal places** | Percentage reduction from 2019-20 baseline, reported to one decimal place. The volumetric levels resulting from the application of the percentage reduction in megalitres per day (Ml/d) reported to one decimal place. |
| **Measurement timing** | Reporting year |
| **Incentive form** | Revenue |
| **Incentive type** | Outperformance and underperformance payments |

| | |
|---|---|
| **Timing of underperformance and outperformance payments** | In-period |
| **Price control allocation** | 50% Water resources<br>50% Water network plus |
| **Frequency of reporting** | Annual. |
| **Any other relevant information** | Performance commitment levels are set as percentage reduction from 2019-20 baseline.<br>Incentive payments relate to performance changes expressed in Mega litres/day (Ml/d). |
| **Links to relevant external documents** | N/A |

## 3.6 Water demand (Leakage and consumption)

**Purpose:** This performance commitment is designed to incentivise companies to reduce demand by reducing leakage and promoting water efficiency of both residential and business customers.

**Benefits:** The benefits of reduced water demand are improved water resources supply/ demand balance, reduced need for water abstraction and as leakage reduces increased water supply network resilience.

## Performance commitment definition and parameters

### 3.6.1 Detailed definition of performance measure

The percentage reduction of three year average water demand in Ml/d from the 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in Ml/d.

Water demand is measured as 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, using the water companies' flow monitoring. It is reported as a post-MLE figure.

The company should provide a commentary in its Annual Performance Report submission if there are any differences in its 2019-20 baseline three-year average water demand expressed in Ml/d in comparison with its business plan. Reasons for any differences should be clearly explained and their volumetric impacts on the baseline quantified.

Outcome delivery incentives will be applied on a Ml/d. The performance commitment levels expressed as percentage reduction will be applied to 2019- 20 baseline. The difference between this value to one decimal place and actual three-year average water demand will be used to calculate outcome delivery incentives.

A company is expected to report using the following criteria:

- Distribution input to the system shall be metered with at least daily readings at all defined locations;
- Meters shall be an appropriate size for the flow to be measured and located at appropriate inputs to the network confirmed by record plans. Any treatment works take-off downstream of a meter shall be excluded from the distribution input calculations;
- Data validity checks shall be carried out at least monthly;
- Any missing data shall be infilled using both pre- and post- data for the location over at least one month, extrapolated from pump hours or use of upstream or downstream meters; and
- The data transfer systems from meter output to central database shall be checked and validated on a risk-based frequency from one up to two years.

### 3.6.2 Additional detail on measurement units

None

### 3.6.3 Specific exclusions

None

### 3.6.4 Reporting and assurance

The company will report water demand as a three-year average in mega litres per day to one decimal place, corresponding to the percentage reduction reported.

The compliance checklist identifies the elements in average water demand to be considered. A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

**Table 3.5 Compliance checklist for water demand**

| | **Component** / Element | **Component R/A/G** | **Element R/A/G** | **Reason for any non-compliant component** | **Confidence grade** |
|---|---|---|---|---|---|
| **1** | **Water demand** | | | | |
| 1a | Meters have at least daily readings at all defined locations | | | | |
| 1b | Data validity checks have been carried out at least monthly. | | | | |
| 1c | Meters are an appropriate size for the flow to be measured and located at appropriate inputs to the network confirmed by record plans. | | | | |
| 1d | Treatment works take-off downstream of a meter have been excluded from the distribution input DI calculations. | | | | |
| 1e | Any missing data has been infilled using both pre- and post- data for the location over at least one month, extrapolated from pump | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | hours or use of upstream or downstream meters. | | | | |
| 1f | The data transfer systems from meter output to central database has been checked and validated in line with the risk-based frequency which is not more than two years. | | | | |
| 1g | Any MLE adjustment to water demand is less than 0.1% of the reported value. | | | | |

| Parameters | |
|---|---|
| Measurement unit and decimal places | Percentage reduction from 2019-20 baseline, reported to one decimal place. The volumetric levels resulting from the application of the percentage reduction in megalitres per day (Ml/d) reported to one decimal place. |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 25% Water resources<br>75% Water network plus |
| Frequency of reporting | Annual. |
| Any other relevant information | Performance commitment levels are set as percentage reduction from 2019-20 baseline. |
| Links to relevant external documents | N/A |

## 3.7 Total pollution incidents

**Purpose:** This performance commitment is designed to incentivise companies to reduce the number of pollution incidents that impact the environment.

**Benefits:** Delivery of this performance commitment will improve the quality of the environment by reducing the number of pollution incidents that occur.

## Performance commitment definition and parameters

### 3.7.1 Detailed definition of performance measure

For companies operating mainly in England (i.e. Anglian Water, Northumbrian Water, Southern Water, Severn Trent Water, South West Water, Thames Water, United Utilities, Wessex Water and Yorkshire Water) pollution incidents is defined in the reporting guidance for Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology version [latest version in November 2024] released by the Environment Agency in [ ] .

EPA version [ ] is published on our website here: [ ]

For companies operating mainly in Wales (i.e. Hafren Dyfrdwy and Dŵr Cymru) pollution incidents is defined in the reporting guidance for Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology version [latest version in November 2024] released by Natural Resources Wales in [ ].

EPA version [ ] is published on our website here: [ ]

Pollution incidents is reported as the total number of pollution incidents (categories 1 to 3) per 10,000km of sewer length from wastewater assets for which the company is responsible in a calendar year.

### 3.7.2 Additional detail on measurement units

As defined in the EPA methodology document [latest version in November 2024].

### 3.7.3 Specific exclusions

As defined in the EPA methodology document [latest version in November 2024].

### 3.7.4 Reporting and assurance

Any changes to the length of the wastewater network that will have a material impact on the performance of this measure should be highlighted in the report commentary. As defined in the EPA methodology document [latest version in November 2024].

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of pollution incidents per 10,000 km of the wastewater network reported to two decimal places. |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, whereas 2029-30 assessment will be based on the calendar year 2029. |
| Any other relevant information | N/A |
| Links to relevant external documents | These documents will be updated to reflect the latest version in November 2024 released by the Environment Agency and Natural Resources Wales.<br>Incidents and their classification: the Common Incident Classification Scheme (CICS), Ref: 04_01, Issued 23/9/2016 by the Environment Agency<br>Natural Resources Wales – Incident categorisation, October 2017<br>Natural Resources Wales – Briefing Note, October 2017 |

## 3.8 Serious pollution incidents

**Purpose:** This performance commitment is designed to incentivise companies to reduce the number of serious pollution incidents that impact the environment.

**Benefits:** Delivery of this performance commitment will improve the quality of the environment by reducing the number of serious pollution incidents that occur.

## Performance commitment definition and parameters

### 3.8.1 Detailed definition of performance measure

For companies operating mainly in England (i.e. Anglian Water, Northumbrian Water, Southern Water, Severn Trent Water, South West Water, Thames Water, United Utilities, Wessex Water and Yorkshire Water) pollution incidents is defined in the reporting guidance for Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology version [latest version in November 2024] released by the Environment Agency in [ ].

EPA version [ ] is published on our website here: [ ]

For companies operating mainly in Wales (i.e. Hafren Dyfrdwy and Dŵr Cymru) pollution incidents is defined in the reporting guidance for Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology version [latest version in November 2024] released by Natural Resources Wales in [ ] .

EPA version [ ] is published on our website here: [ ]

Serious pollution incidents is reported as the number of serious pollution incidents (categories 1 to 2) from water or wastewater assets for which the company is responsible in a calendar year.

### 3.8.2 Additional detail on measurement units

As defined in the EPA methodology document [latest version in November 2024].

### 3.8.3 Specific exclusions

As defined in the EPA methodology document [latest version in November 2024].

### 3.8.4 Reporting and assurance

As defined in the EPA methodology document [latest version in November 2024].

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of serious pollution incidents |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, whereas 2029-30 assessment will be based on the calendar year 2029. |
| Any other relevant information | N/A |
| Links to relevant external documents | These documents will be updated to reflect the latest version in November 2024 released by the Environment Agency and Natural Resources Wales.<br>Incidents and their classification: the Common Incident Classification Scheme (CICS), Ref: 04_01, Issued 23/9/2016 by the Environment Agency<br>Natural Resources Wales – Incident categorisation, October 2017<br>Natural Resources Wales – Briefing Note, October 2017 |

## 3.9 Discharge permit compliance

**Purpose:** This performance commitment is designed to incentivise the company to fully meet its discharge permits.

**Benefits:** Meeting discharge permits protects the environment. It is a necessary part of improving the status of the water bodies into which the water company discharges.

## Performance commitment definition and parameters

### 3.9.1 Detailed definition of performance measure

For companies operating mainly in England (i.e. Anglian Water, Northumbrian Water, Southern Water, Severn Trent Water, South West Water, Thames Water, United Utilities, Wessex Water and Yorkshire Water) treatment works compliance is defined in the reporting guidance for Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology version [ ] released by the Environment Agency in [ ] .

EPA version [ ] is published on our website here: [ ]

For companies operating mainly in Wales (i.e. Hafren Dyfrdwy and Dŵr Cymru) treatment works compliance is defined in the reporting guidance for Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology version [ ] released by Natural Resources Wales in [ ].

EPA version [ ] is published on our website here: [ ]

There are no differences between methodologies which result in different impacts on reporting of treatment works compliance performance commitments for companies operating in England or Wales.

The discharge permit compliance metric is reported as the number of failing sites (as a percentage of the total number of discharges) and not the number of failing discharges.

### 3.9.2 Additional detail on measurement units

A discharge can be confirmed as failing for a number of breaches of a numeric permit at wastewater treatment works and water treatment works. These are set out in the Environment Agency EPA methodology document [latest version in November 2024].

### 3.9.3 Specific exclusions

As defined in the EPA methodology document [latest version in November 2024].

### 3.9.4 Reporting and assurance

As defined in the EPA methodology document [latest version in November 2024].

| Parameters | |
|---|---|
| Measurement unit and decimal places | Percentage compliance, reported to two decimal places. |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, whereas 2029-30 assessment will be based on the calendar year 2029. |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

## 3.10 Bathing water

**Purpose:** The purpose of this performance commitment is to incentivise the company to improve water quality at the beaches designated for swimming within its region.

**Benefits:** By encouraging the improvement of bathing water quality, this performance commitment will enhance coastal environments, improve bathing water quality, and also support the continued development of the leisure and tourism industries in the company's region.

## Performance commitment definition and parameters

### 3.10.1 Detailed definition of performance measure

To be confirmed

### 3.10.2 Additional detail on measurement units

To be confirmed

### 3.10.3 Specific exclusions

To be confirmed

### 3.10.4 Reporting and assurance

To be confirmed

| Parameters | |
|---|---|
| Measurement unit and decimal places | Percentage, reported to one decimal place. |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

## 3.11 River water

**Purpose:** The purpose of this performance commitment is to incentivise the company to improve water quality in the rivers within its region.

**Benefits:** By encouraging water companies to limit adverse impacts on the water environment and demonstrate how they are contributing to tangible progress towards good ecological status of water bodies as part of their statutory functions.

## Performance commitment definition and parameters

### 3.11.1 Detailed definition of performance measure

To be confirmed

### 3.11.2 Additional detail on measurement units

To be confirmed

### 3.11.3 Specific exclusions

To be confirmed

### 3.11.4 Reporting and assurance

To be confirmed

| Parameters | |
|---|---|
| Measurement unit and decimal places | TBC – reduction in kilograms phosphorous per population |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |

| | |
|---|---|
| **Timing of underperformance and outperformance payments** | In-period |
| **Price control allocation** | 100% wastewater network plus |
| **Frequency of reporting** | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, whereas 2029-30 assessment will be based on the calendar year 2029. |
| **Any other relevant information** | N/A |
| **Links to relevant external documents** | N/A |

## 3.12 Storm overflows

**Purpose:** This performance commitment is designed to incentivise a progressive reduction in the adverse impacts of discharges from the company's storm overflows.

**Benefits:** This performance commitment helps to ensure that storm overflows are used by exception, rather than as a norm. It encourages water companies to maintain their networks and equipment in such a way as to minimise any impact on storm overflow use. Fewer and less frequent discharges will help to improve the quality of the environment.

## Performance commitment definition and parameters

### 3.12.1 Detailed definition of performance measure

To be confirmed

### 3.12.2 Additional detail on measurement units

To be confirmed

### 3.12.3 Specific exclusions

To be confirmed

### 3.12.4 Reporting and assurance

To be confirmed

| Parameters | |
|---|---|
| Measurement unit and decimal places | Average number of spills per overflow, reported to two decimal places |
| Measurement timing | Calendar year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |
| Price control allocation | 100% wastewater network plus |
| Frequency of reporting | Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, whereas 2029-30 assessment will be based on the calendar year 2029. |
| Any other relevant information | N/A |
| Links to relevant external documents | N/A |

# 4. Asset health and operational resilience

**Table 4.1 PR24 asset health performance commitments**

| Water and wastewater | Water only | Wastewater only |
|---|---|---|
| | Mains repairs<br>Unplanned outage | Sewer collapses |

## 4.1 Mains Repairs

**Purpose:** This performance commitment is designed to incentivise the company to appropriately maintain and improve the asset health of the infrastructure and below ground water mains network and demonstrate its commitment to its asset stewardship responsibility.

**Benefits:** This performance commitment helps to ensure that the overall asset health of the water mains network is maintained and improved for the benefit of current and future generations.

## Performance commitment definition and parameters

### 4.1.1 Detailed definition of performance measure

It is reported as the number of mains repairs per thousand kilometres of the company's entire water main network (excluding communication and supply pipes).

[Process diagram will be inserted from PR19 guidance for final methodology.]

Mains bursts include all physical repair work to mains from which water is lost. This is attributable to pipes, joints or joint material failures or movement, or caused or deemed to be caused by conditions or original pipe laying or subsequent changes in ground conditions (such as changes to a road formation, loading, etc. where the costs of repair cannot be recovered from a third party).

Mains repairs include all physical repair work on the water mains from which water is lost (i.e., all pipes conveying treated water around the distribution point but excludes communication pipes or supply pipes).

Any work that is not undertaken on the mains e.g., solely on a ferrule, hydrant, valve and clamp associated with the ancillary which does not involve a repair on the main are excluded. Clamps used to repair the main are included.

All incidents should be included which involve over-pressure or pressure cycling, and surge failures, etc., which reflect the system operating conditions, even where these failures are accidental rather than associated with weaknesses in pipe condition.

Once the main is recharged and customers are back in supply, then a new incident requiring any type of work to take place on the main to restore its full functionality is counted as a separate repair. If there is a secondary burst not at the point at where the repair took place during the recharge, then it should be captured as a separate reported burst.

Self-laid mains, or other mains adopted should be treated as part of the incumbents' network from the time of adoption. If a developer has a burst on its main prior to adoption this is not included within the metric.

### 4.1.2 Additional detail on measurement units

Mains length – This is the length of all pipes conveying treated water around the distribution point but not including communication pipes or supply pipes.

### 4.1.3 Specific exclusions

The default position is that the water company manages the risk of mains bursts and there are no exclusions.

The cause of the mains burst is not relevant to the calculation of the reported figure, with the following exceptions and points of clarification:

- Any work that is not undertaken on the main e.g., solely on a ferrule, hydrant or valve and clamps associated with these ancillaries, which does not involve a repair on the main is excluded. Clamps used to repair the main are included.
- All third party damage should be excluded where costs are potentially (rather than actually) recovered from a third party.

### 4.1.4 Reporting and assurance

Companies shall maintain verifiable records for all mains bursts irrespective of whether they are included. The aim of the records is to provide an auditable method for identifying specific incidents and shall be subject to each company's assurance process which is applied to all measures reported annually

Companies shall maintain a methodology statement, which shall be used as a decision support tool for this performance commitment. It should record any changes in approach compared to previous years and will be reviewed as part of a company's assurance process.

The company should report mains repaired pro-actively and reactively separately. Pro-active repairs are those completed by the company as a result of the company's active leakage control (ALC) or its own leak detection activity. Reactive repairs are those that are completed as a result of a customer contact (made using any communication channel) informing the company of a leak.

#### Compliance checklist

A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

**Table 4.2 Compliance checklist for mains repairs**

| | Component | Component R/A/G | Reason for any non-compliant component | Confidence grade |
|---|---|---|---|---|
| 1 | Mains bursts repair work | | | |
| 2 | Mains length | | | |
| 3 | Records | | | |
| 4 | Methodology statement | | | |

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of repairs per 1000km of mains, reported to one decimal place. |
| Measurement timing | Reporting year |

| | |
|---|---|
| **Incentive form** | Revenue |
| **Incentive type** | Outperformance and underperformance payments |
| **Timing of underperformance and outperformance payments** | In-period |
| **Price control allocation** | 100% water network plus |
| **Frequency of reporting** | Annual |
| **Any other relevant information** | N/A |
| **Links to relevant external documents** | N/A |

## 4.2 Unplanned outage

**Purpose:** This performance commitment is designed to incentivise the company to appropriately maintain and improve the asset health of the non-infrastructure or above-ground water assets and demonstrate its commitment to its asset stewardship responsibility.

**Benefits:** This performance commitment helps to ensure that the overall asset health of the above-ground water assets is maintained and improved for the benefit of current and future generations.

## Performance commitment definition and parameters

### 4.2.1 Detailed definition of performance measure

It measures the unplanned loss of peak week production capacity and reports this loss as a percentage of the overall company peak week production capacity. It provides an appropriate incentive for all companies to ensure that treatment works are maintained to reduce the risk that unplanned outage occurs when capacity is required.

The actual unplanned outage should be reported as the temporary loss of peak week production capacity (PWPC) in the reporting year weighted by the duration of the loss

(in days). Outages arising from planned works should be recorded separately to outages arising from unplanned causes, such as asset failure.

The calculation for both figures is:

$$\frac{Reduction\ in\ peak\ week\ production\ capacity \times Duration\ in\ days}{365}$$

Unplanned outage for each water production site is calculated separately and then summed over the reporting year to give a total actual unplanned outage for the water resource zone.

The company water resource zone weighted outage can then be summed (Ml/d) and normalised based on overall company PWPC to be reported as a percentage.

A calculation example is as follows:

### For a single source works:

A source works has a PWPC of 30 Ml/d

For 15 days the maximum production capacity is reduced to 15Ml/d due to a temporary unplanned outage (pump failure). This is a loss of PWPC of 15 Ml/d for 15 days.

The weighted unplanned outage for this source works = 15 x (15 / 365) = 0.62 Ml/d

Each weighted unplanned outage is then summed over the reporting year to give a total unplanned outage for the water resource zone.

### For a water resource zone:

First source works in zone – weighted unplanned outage = 0.62 Ml/d

Second source works in zone – weighted unplanned outage = 2.58 Ml/d

Third source works in zone – weighted unplanned outage = 3.67 Ml/d

Zonal weighted outage = 6.87 Ml/d

The company water resource zone weighted unplanned outage can then be summed and normalised based on overall company PWPC.

### Company normalising:

Zone 1 weighted unplanned outage = 6.87 Ml/d

Zone 2 weighted unplanned outage = 7.95 Ml/d

Company weighted unplanned outage = 14.82 Ml/d

Company PWPC = 120 Ml/d

Unplanned outage proportion = 12.4%

### 4.2.2 Additional detail on measurement units

The process for deriving planned and unplanned outage is shown in the following diagram.

[Process diagram will be inserted from PR19 guidance for final methodology.]

#### Components of unplanned outage calculation

#### Peak Week Production Capacity

A company should define its PWPC for each water production site or source works included as an input to its latest water resources management plan (WRMP). PWPC for this measure is not expected to be the same number as reported for dry year availability or deployable output (although it is possible that it may be the same).

For this measure, PWPC is equivalent to the maximum volume of water which can be put into supply and sustained over a period of one week measured in Ml/d. This should be at least as great as the highest historic performance that has been sustained for any seven-day period in the last five years (unless a change to assets or process can be evidenced) but could be higher. This should be supported by physical tests to demonstrate capability undertaken at least once every five years.

The value should be reviewed annually and as modifications to assets and processes are completed which impact capacity. PWPC is a fixed value for each production site each year unless a change to assets or process can be evidenced.

PWPC does not account for seasonal changes in yield (most commonly observed at groundwater sources) and allowed abstraction volumes (most commonly observed at river sources) which are weather dependent and not an indicator of asset health.

A company should:

- Define PWPC for each water production site.
- Review PWPC annually.
- Support PWPC with evidence of actual output or of capacity tests undertaken on a rolling programme each five years. This should be based on a risk-based approach for each works and the duration of testing does not need to extend to seven days.
- Support revisions to PWPC with evidence of changes to assets or processes.

## Asset failure / unplanned outage

The failure or deterioration of any asset which impacts on the ability to deliver the PWPC should be recorded as an unplanned outage. This may be a failure which impacts part or all of the production plant which contributes to PWPC.

This can include:

- source abstraction assets (e.g. abstraction pumps, screens, boreholes);
- raw water transport assets (e.g. pumping plant and mains);
- raw water storage assets (e.g. balancing reservoirs);
- water treatment assets;
- treated water storage assets (e.g. contact tanks, pre-distribution storage);
- treated water distribution assets before distribution input meter (e.g. treated water pumping).

In some circumstances the failure of assets upstream of the treated water distribution assets may not impact on the PWPC.

For example, where a river abstraction is pumped to bankside storage and then stored water is pumped onto treatment works, the failure of an abstraction pump may not impact PWPC as water onto the treatment works can be maintained from the raw water storage. The length of time that this asset is unavailable will determine whether the PWPC is reduced and therefore contributes to unplanned outage.

Where asset failures occur at water production sites with standby assets this may also not impact PWPC.

For example, a groundwater site with a PWPC of 10Ml/d may have three boreholes on site, all with capacity of 5Ml/d. Under normal circumstances boreholes 1 and 2 may be operated to provide the site output of 10Ml/d. If the pump in borehole 1 fails, then borehole 3 is switched on to replace the lost capacity. Providing borehole 3 is switched on within 24 hours to replace the failed asset in borehole 1 there would be no unplanned outage recorded.

There may need to be an outage at a later stage to repair or replace the failed pump. Whilst this can be scheduled and planned for a convenient time the reason for the need to make the repair is an unforeseen failure of an asset and therefore the outage for the scheduled repair or replacement should also be classified as unplanned.

Where planned work is undertaken as a result of an asset failure the resultant reduction in PWPC should be recorded as unplanned.

## Planned outages

Where assets are taken out of supply or made unavailable for supply to enable planned maintenance or capital works to be completed then these should be recorded as planned outages. The same principles for work on standby assets apply here as for unplanned outages.

It is expected that a company will have a process whereby planned works on production assets are approved and scheduled. This may be the basis of evidence to demonstrate that the outage is planned.

If planned maintenance or capital works overruns meaning that PWPC is reduced, the overrunning period and subsequent impact on PWPC should be recorded as unplanned outage.

## Duration

Only outage events which exceed 24 hours in duration should be included in this measure. Outage duration should be recorded to the nearest whole day with normal rounding rules applied. For the avoidance of doubt, all outages below 24 hours are excluded, and rounding does not apply. The duration may span a calendar day.

By way of an example of rounding, an unplanned outage of 79 hours would be 3 days whereas an unplanned outage of 115 hours would be 5 days.

A company should identify the start of an outage period using telemetry data wherever possible. If a company uses another source of data to indicate the start of an outage period it should specify the data source and demonstrate auditable record keeping.

The end of the unplanned outage period should be recorded as the time when the asset was returned to a state meaning the availability of PWPC is restored. For the avoidance of doubt this should not be when the individual asset is repaired or work completed but when the recommissioning process is completed, except when there is no immediate requirement to put an asset back into service.

In this case the repair time is taken as the end of the unplanned outage period. If when the asset is next required to be put into service, it operates in a way that would count as an unplanned outage (i.e. not delivering full PWPC as expected), the start time for the reported unplanned outage should be that of the original outage.

For example, if a borehole pump is replaced due to an unexpected failure or planned works the end of the unplanned outage is not when the pump replacement is completed but when any subsequent pumping to waste and water quality testing is finished and full PWPC is restored, if the pump is required in service immediately.

If the pump is not required in service immediately, then repair or replacement time is taken as the end of the unplanned outage. When the pump is next required to be put into service, should it operate in a way that would count as an unplanned outage, the start time for the reported unplanned outage should be that of the original outage.

Where a company chooses not to respond immediately to an unplanned outage such as a failure at the weekend for which alternative water can be deployed the duration may be longer than it might otherwise have been. A company should make no adjustment for this in the measurement of the duration of the unplanned outage. This may result in reporting higher unplanned outage figures but given that alternative sources are available it is unlikely that the unplanned outage in this example would be contributing a large amount to the overall company PWPC and so would therefore have a relatively small impact on the overall measure.

Repeated unplanned outages at the same water production site should be treated as separate events with independent start and finish times unless the initial outage repair and recommissioning was not concluded and there was not full restoration of available PWPC.

## Reduction in Peak Week Production Capacity

For each unplanned outage the impact of the outage is recorded as the reduction in PWPC. For asset failures or programmed work resulting in the total loss of water production from the site then the impact of the outage is recorded as the total PWPC for the site. Some asset failures or programmed work may result in a reduction of PWPC.

For example, a groundwater source with a PWPC of 10Ml/d may have three boreholes on site, all with capacity of 5Ml/d. Under normal circumstances boreholes 1 and 2 may be operated to provide the site output of 10Ml/d. If the pumps in boreholes 1 and 2 fail then borehole 3 is switched on but can only replace half the lost capacity. The lost PWPC in this instance would be 5Ml/d. The replacement of the failed pumps may require the whole output to cease for the period of the works. From the point at which the output is zero the lost capacity would increase to 10Ml/d and would have a separate duration to the initial partial reduction in capacity.

### 4.2.3 Specific exclusions

None

### 4.2.4 Reporting and assurance

Companies shall maintain verifiable records for all unplanned outage irrespective of whether they are included. The aim of the records is to provide an auditable method for identifying specific incidents and shall be subject to each company's assurance process which is applied to all measures reported annually

Companies shall maintain a methodology statement, which shall be used as a decision support tool for this performance commitment. It should record any changes in approach compared to previous years and will be reviewed as part of a company's assurance process.

The company should report unplanned outages and planned outages separately. The company should report its current company level PWPC (Ml/d), the unplanned outage (Ml/d) and planned outage (Ml/d) in its commentary. The company should also provide a summary of data quality and compliance in accordance with the reporting requirements.

A company is expected to:

- Record unplanned outages over 24 hours in duration.
- Record unplanned outages as unplanned even if they result in a programmed outage later.
- Measure duration to the nearest whole day.
- Record the start and end time of an outage using telemetry data.
- Record the end of an unplanned outage as when recommissioning is completed and PWPC is fully restored except when there is no immediate requirement to put an asset back into supply. In this instance the repair time is taken as the end of the unplanned outage. When the asset is next required to be put into service, if it operates in a way that would count as an unplanned outage, the start time for the reported unplanned outage should be that of the original outage
- Make no adjustment for unplanned outages which are not responded to immediately.
- Justify use of data sources other than telemetry.

The compliance checklist below shall be completed and presented with the reported figure.

There is an assumption that there will be continued improvement by all companies in the short and medium term through innovation, new technology, data quality improvements and staff training.

## Compliance checklist

A company is requested to complete the checklist below and report by exception to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

### Table 4.3 Compliance checklist for unplanned outage

| | Component | Component R/A/G | Reason for any non-compliant component | Confidence grade |
|---|---|---|---|---|
| **1** | **PWPC** | | | |
| a | Annual review | | | |
| c | PWPC by production site | | | |
| d | Water resource zone PWPC | | | |
| **2** | **Asset failure /unplanned outage** | | | |
| a | Source data | | | |
| **3** | **Planned outages** | | | |
| a | Source data – programme of works | | | |
| **4** | **Duration** | | | |
| a | Start time | | | |
| b | End time | | | |
| | Rounding reduction in capacity | | | |
| a | Reduced capacity | | | |
| b | Total outage | | | |

| Parameters | |
|---|---|
| **Measurement unit and decimal places** | Percentage of peak week production capacity, reported to two decimal places. |

| | |
|---|---|
| **Measurement timing** | Reporting year |
| **Incentive form** | Revenue |
| **Incentive type** | Outperformance and underperformance payments |
| **Timing of underperformance and outperformance payments** | In-period |
| **Price control allocation** | 100% water network plus |
| **Frequency of reporting** | Annual |
| **Any other relevant information** | N/A |
| **Links to relevant external documents** | N/A |

## 4.3 Sewer collapses

**Purpose:** This performance commitment is designed to incentivise the company to appropriately maintain and improve the asset health of the infrastructure or below-ground wastewater assets and demonstrate its commitment to its asset stewardship responsibility.

**Benefits:** This performance commitment helps to ensure that the overall asset health of the below-ground wastewater assets is maintained and improved for the benefit of current and future generations.

## Performance commitment definition and parameters

### 4.3.1 Detailed definition of performance measure

Sewer collapses are defined as number of sewer collapses per 1000 kilometres of all sewers that have not been identified proactively by the company and causing an impact on service to customers or the environment. This measure seeks to reflect failures, in the asset, causing an impact on service to customers or the environment that requires replacement or repair to reinstate service, while maintaining incentives for companies to proactively investigate asset quality.

A reportable sewer collapse is considered to be where a failure has occurred to the pipe that results in either any contact with the company (i.e. an impact on service has caused someone to contact the company) or any unplanned escape of wastewater and result in the need to replace or repair the pipe to reinstate normal service (as set out in the flow diagram below).

[Process diagram will be inserted from PR19 guidance for final methodology.]

The measure intentionally does not refer to the magnitude of the collapse. The measure includes rising mains pipe bridges, and failures on the infrastructure network, including inputs into the inlet of treatment works and terminal pumping station rising mains (in accordance with RAG guidance 4.10).

Impact on service to customers is the loss of pass forward flow at the location of the collapse. Where there has been no impact on a customer but there has been flooding or pollution there will be deemed to have been an impact on the environment.

### 4.3.2 Additional detail on measurement units

For the purpose of this performance commitment:

**Sewer collapse:** A sewer collapse is where a structural failure has occurred to the pipe that results in a service impact to a customer or the environment and where action is taken to replace or repair the pipe to reinstate normal service. The measure intentionally does not refer to the magnitude of the collapse. The measure includes rising mains. Collapses on the entire network are to be reported.

**Sewer length:** means the length of the entire network, including sewers that transferred to their responsibility under the Transfer of Public Sewers Regs 2011. The company should separately record the length of transferred sewers, the calculation of this measure should be based on the latest measurements of the length.

This measure should include all public sewer and lateral drain collapses recorded by the company inclusive of those incidents that have been reported as flooding or pollution failures, if the primary cause of the flooding or pollution was a sewer collapse.

Multiple incidents on the same length of sewer (manhole to manhole/ valve to valve) count as a single incident if all work is carried out as part of the same remedial job. This assumes that the locations are in close proximity. This would not be the case if separate locations were more than 25m apart.

For clarity, if jetting enables restoration of flow without the need for pipe replacement or repair then the incident is not to be reported as a sewer collapse. However, if pipe replacement or repair is needed to resolve an issue that has been identified as a result of either a contact with a company or any unplanned escape of wastewater, then it is to be reported as a sewer collapse in the reporting year in which the service impact was reported to the company, not when the replacement or repair took place.

### 4.3.3 Specific exclusions

The following exclusions apply:

- Proactively identified collapses – Should the need to replace or repair a pipe be found as a result of proactive activity (survey or proactive sewer maintenance work) on the network then it should be excluded (see flow diagram above).
- Third party damage – Third party structural damage (including water utility damage) of the sewer is not an indicator of asset health and hence should be excluded. Manhole damage and internal backdrops should be excluded. Displaced joints, cracked pipes, open joints, intruding connections, hard blockages patch repairs and sewer lining do not reflect sufficiently significant structural failure hence should be excluded from the measure. Root ingress is excluded unless it has resulted in a need for pipe replacement.

### 4.3.4 Reporting and assurance

Companies shall maintain verifiable records for all sewer collapses irrespective of whether they are included. The aim of the records is to provide an auditable method for identifying specific incidents and shall be subject to each company's assurance process which is applied to all measures reported annually

Companies shall maintain a methodology statement. It shall be used as a decision support tool to expand on this document as necessary. It should record any changes in approach compared to previous years and will be reviewed as part of companies' assurance process.

The company is also required to report the number of occasions where a failure has occurred to the pipe that results in either any contact with the company (i.e. an impact on service has caused someone to contact the company) or any unplanned escape of wastewater and results in spot repairs or relining.

A sewer collapse should be reported in the reporting year when the service incident was reported to the company, not when the replacement or repair took place. A company is required to report against this definition and:

- Separately record and report the number of exclusions that are attributed to patch repairs and sewer lining.
- Set out its plans and programme to comply with the guidance.
- Disclose any other factors which have an impact on the methodology for reporting collapses.

## Compliance Checklist

A company should complete the checklist below and report to Ofwat if any element is not green. See Annex 1 for assessment rules for each element.

### Table 4.4 Compliance checklist for sewer collapses

| | Component | Component R/A/G | Reason for any non-compliant component | Confidence grade |
|---|---|---|---|---|
| 1 | **Number of collapses** | | | |
| 2 | **Sewer length** | | | |
| a | Length excluding transferred sewers | | | |
| b | Length of sewers transferred under the Private Sewer Regs 2011 | | | |

| Parameters | |
|---|---|
| Measurement unit and decimal places | Number of collapses per 1000km of sewer network, reported to two decimal places |
| Measurement timing | Reporting year |
| Incentive form | Revenue |
| Incentive type | Outperformance and underperformance payments |
| Timing of underperformance and outperformance payments | In-period |

| | |
|---|---|
| **Price control allocation** | 100% wastewater network plus |
| **Frequency of reporting** | Annual |
| **Any other relevant information** | N/A |
| **Links to relevant external documents** | N/A |

# Annex 1 Compliance Checklist

This annex sets out the criteria on which to report checklists where specified in the performance commitment definition.

Compliance for elements is reported against:

| | |
|---|---|
| R | Not compliant with the guidance and having a material impact on reporting |
| A | Not compliant with the guidance and having no material impact on reporting |
| G | Fully compliant with the guidance |

An overall RAG to be assigned for each component based on the following rules: Compliance for overall components is reported against:

| | |
|---|---|
| R | There are one or more red elements in the component, or the combined effect of amber elements is considered to produce a material impact. |
| A | Half or more of the elements in the component are amber and the combined effect of the amber elements is considered not to produce a material impact |
| G | More than half of the elements in the component are green |

For each component on the checklist, and for the overall performance measure, companies will report a confidence grade. Confidence grades provide a reasoned basis for companies to qualify the reliability and accuracy of the data.

Companies should employ a quality assured approach in the methodology used to assign confidence grades, particularly if sampling techniques are in place. The confidence grade combines elements of reliability and accuracy, for example:

A2 - Data based on sound records etc. (A, highly reliable) and estimated to be within +/- 5% (accuracy band 2) Reliability and accuracy bands are shown in the tables below.

| Reliability Band | Description |
|---|---|
| A | Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment. |
| B | As A, but with minor shortcomings. Examples include old assessment, some missing documentation, some reliance on unconfirmed reports, some use of extrapolation. |

| | |
|---|---|
| C | Extrapolation from limited sample for which Grade A or B data is available. |
| D | Unconfirmed verbal reports, cursory inspections or analysis. |

| Accuracy band | Accuracy to or within +/- | But outside +/- |
|---|---|---|
| 1 | 1% | - |
| 2 | 5% | 1% |
| 3 | 10% | 5% |
| 4 | 25% | 10% |
| 5 | 50% | 25% |
| 6 | 100% | 50% |
| X | Accuracy outside +/- 100 %, small numbers or otherwise incompatible (see table below) | |

Certain reliability and accuracy band combinations are considered to be incompatible, and these are blocked out in the table below.

| Compatible confidence grades | | | | |
|---|---|---|---|---|
| Accuracy band | Reliability band | | | |
| | A | B | C | D |
| 1 | A1 | | | |
| 2 | A2 | B2 | C2 | |
| 3 | A3 | B3 | C3 | D3 |
| 4 | A4 | B4 | C4 | D4 |
| 5 | | | C5 | D5 |
| 6 | | | | D6 |
| X | AX | BX | CX | DX |

# Annex 2 C-MeX surveys

**C-MeX CSS CATI & ONLINE**

**SYSTEM INFORMATION:**
**Interviewer number:**
**Interviewer name:**
**Date:**
**Time interview started:**

# C-MeX CSS

**CATI** Good morning/afternoon/evening. My name is ..... and I am calling from [The Agent] on behalf of Ofwat, the economic regulator for the water sector in England and Wales. Could I talk to [NAME FROM SAMPLE]?

WHEN TALKING TO RIGHT PERSON: Ofwat would like your help in understanding how water and sewerage companies deal with their customers. I understand that you have been in contact with **[Water Company Name]** and we would like to ask you a few questions about the service you received.

IF NO NAME ON SAMPLE SAY. I understand that someone on this number has been in touch with **[Water Company Name].** Could I talk to the person who was in contact with [Water Company Name]?
**IF TALKING TO CORRECT PERSON, CONTINUE. OTHERWISE ASK TO BE TRANSFERRED OR MAKE APPOINTMENT TO CALL BACK**

WHEN TALKING TO RIGHT PERSON: Ofwat would like your help in understanding how water and sewerage companies deal with their customers and we would like to ask you a few questions about the service you received.

ALL: This information will be used to help Ofwat understand how **[Water Company Name]** is performing.

The survey will take around 5 minutes to complete.

Your responses will be treated in the strictest confidence. [The Agent] abides by data protection laws at all times.

You can find out more information about Ofwat's surveys and what is done with the information that is collected in the Privacy Policy on Ofwat's website https://www.ofwat.gov.uk/publication/privacy-policy

**INTERVIEWER TO DETERMINE IF PARTICIPANT WANTS WEBSITE ADDRESS BEFORE PROVIDING IT OR IF IT IS TO BE SENT VIA EMAIL**

Please note that this call may be monitored or recorded to verify accuracy or for training purposes.

IF NECESSARY:

- You have been selected at random from customers contacting [Water Company Name].
- Ofwat's privacy policy can be accessed using this link: www.ofwat.gov.uk/privacy-policy

Can I confirm that you are happy to participate in the survey?

Yes
No THANK & CLOSE

---

INTCHECK. **INTERVIEWER**: PLEASE CONFIRM YOU HAVE ADVISED THE PARTICIPANT OF:

Calls being recorded

---

INTCHECK2. **INTERVIEWER:** PLEASE CONFIRM YOU HAVE ASKED AND CHECKED THAT THE PARTICIPANT IS **NOT** TAKING THE INTERVIEW ON A MOBILE DEVICE WHILE DRIVING OR OPERATING EQUIPMENT

Yes, it is safe for the participant to proceed
No, it isn't safe – we need to call back later GO TO APPT SCREEN

**ONLINE:** Thank you in advance for your participation. [The Agent] is conducting a survey on behalf of Ofwat, the economic regulator for the water sector in England and Wales.

Ofwat would like your help in understanding how water and sewerage companies deal with their customers and as you have recently contacted **[Water Company Name]** we would like to understand your views about the service you received.

This information will be used to help Ofwat understand how **[Water Company Name]** is performing. The survey will take around 5 minutes to complete.

Just to confirm, your responses will be treated in the strictest confidence. [The Agent] abides by data protection laws at all times.

You can find out more information about Ofwat's surveys and what is done with the information collected in Ofwat's Privacy Policy which is here: https://www.ofwat.gov.uk/publication/privacy-policy

Click here to begin the survey ARROW/ CHECK BOX

By clicking the button you agree to participate in the survey.

## Scoping questions

Q1. **CATI:** Firstly, can I confirm that you were the person who was in contact with [Water Company]? **INTERVIEWER: PROMPT PARTICIPANT WITH DETAILS OF CONTACT IF NECESSARY [CONTACT TYPE] & [LOWER LEVEL REASON FOR CONTACT]**

Yes GO TO **Error! Reference source not found.**
No GO TO 0

Q1. **ONLINE**: According to our records, on [DATE] you dealt with [Water Company]. Please confirm that it was you personally who interacted with your water company, as mentioned above.

Yes GO TO 0
No THANK & CLOSE

Q2. **CATI:** Can I speak to the person who was in contact with [Water Company] please?

Yes
No, they are unavailable MAKE APPOINTMENT OR THANK & CLOSE
No one has contacted the company THANK & CLOSE
Refused THANK & CLOSE

Q3. **CATI**: Could I just check, was this contact in regard to [Water Company] supplying you as a domestic water user?

**ONLINE**: Was this matter in regard to [Water Company] supplying you as a domestic water user?

Yes
No THANK & CLOSE

ONLINE GO TO 0

Q4. **CATI. IF NO REASON FOR CONTACT AVAILABLE ON SAMPLE, GO TO 0. ASK OTHERS**: Can I confirm that you contacted [Water Company] about **[CONTACT TYPE] & [LOWER LEVEL REASON FOR CONTACT]**? **PROBE FULLY**

Yes GO TO 0
No

Q5. IF NO AT 0 ASK: What was the main reason for making contact with [Water Company] on that occasion?

.....

**INTERVIEW ON REASON GIVEN AT THIS QUESTION**

**ENSURE PARTICIPANT IS THINKING ABOUT WATER COMPANY INDICATED IN SAMPLE. IF PARTICIPANT CONFUSED AT ALL ABOUT WHICH ORGANISATION THEY CONTACTED, THANK & CLOSE**

# Main Questionnaire

Q6. **ONLINE** Thank you, I can confirm you are in scope for the survey. The questionnaire will take about 5 minutes to complete.

What was the subject of the matter that you wanted [Water Company] to deal with on this occasion? Please pick the closest that applies.

Anything to do with billing, your account or a general query GO TO 0
Anything to do with their supply of water GO TO 0
Anything to do with their sewerage service GO TO 0

Q7. **ONLINE** BILLING/ACCOUNT RELATED QUERIES. Please pick the closest that applies.

Amend personal details on account
A query about a bill
A query about a payment
Due to a recent move, or planning to move
Direct debit set up
Payment plan set up
Direct debit query
To make a payment
To advise that I'm unable to pay
To apply for/to get a water meter
To give/request a water meter reading
To report a problem with my meter/meter query
To request a refund
To notify of a customer having died
To query a reminder or debt collection activity
The bill seemed too high
Payment card query
Asking for a reduction/discount in bill
Online account problem/setting up
To make a query or complaint about the website
To make a query or complaint about a customer service issue
Other (Please specify)……

GO TO 0**Error! Reference source not found.**

Q8. **ONLINE** WATER RELATED QUERIES. Please pick the closest that applies.

About a faulty meter
About a meter installation
About finding the location of water equipment (incl. pipes/meter/stopcock)
About the taste or smell of the tap water (quality)
About the colour of the tap water
Because the tap water is/was making me feel ill
Because of a water leak/burst on the road
Because of a water leak/burst on my property
Regarding low pressure of tap water
No supply/water gone off
Asking for water supply to be turned on or off
About flooding with clean/drinking water
About a leak on my meter
About a connection to the water supply network

About the Lead and Common Supply Pipe Scheme
About defective/dangerous water equipment ie stop taps, manhole covers, hydrants, raised/sunken chambers
High pressure from my tap
About the hardness of the water
Other (Please specify)……

GO TO 0

Q9. **ONLINE** WASTEWATER (SEWERAGE) RELATED QUERIES. Please pick the closest that applies.

About a blockage in the sewer/drains
About faulty wastewater equipment or sewer pipes
About flooding with sewerage or foul water
About smells from sewers and sewage treatment works
About finding the location of sewers, drains etc
About a connection to the sewer, wastewater network
Empty septic tank
Private sewer query
Regarding a poor reinstatement
Toilet query
Other (Please specify)……

Q10. **CATI:** Thank you, I can confirm you are in scope for the survey. The questionnaire will take about 5 minutes to complete.

**CATI /ONLINE**
Could you confirm how you had contact with [Water Company] on this occasion on [insert date]? **SINGLE CODE ONLY**

I telephoned them
I wrote them a letter
I emailed them
I contacted them through a form on their website
I contacted them through 'live chat' on their website
I contacted them by text
I contacted them through social media (eg Twitter/Facebook/Instagram)
I contacted them through an app
I visited the water company in person
I completed a transaction through my online account with the water company
Other (Please specify)_____

Q11. Is the matter you wanted to be dealt with now fully resolved?

Yes
No

Q12. Taking everything into account how satisfied are you with your recent experience with [Water Company]? Please use a scale of 0-10, where 0 = extremely dissatisfied, 5 = neither satisfied nor dissatisfied and 10 = extremely satisfied.

**INSERT SCORE** _____

**Q13.** **IF 0=9 OR 10 ASK (OTHERS GO TO 0):** What did they do well?

……

**GO TO 0**

**Q14.** **IF 0=7 OR 8 ASK (OTHERS GO TO 0):** What could they have done to improve this score?

……

**GO TO 0**

**Q15.** **IF 0=0 TO 6 ASK (OTHERS GO TO 0):** What could they have done better?

……

Q16. If you could choose your water provider, based on your recent experience, how likely would you be to recommend [Water Company] to friends or family? Please use a scale of 0-10, where 0 = not at all likely and 10 = extremely likely.

**INSERT SCORE _____**

Q17. **CATI:** Whilst this survey is being carried out on behalf of Ofwat, we can share your feedback, including your name, contact details, and survey responses, and a recording of this phone call, with [Water Company] for it to improve its customer service and to make sure that we have accurately recorded your survey feedback. Please let us know if you object to us sharing your feedback for this purpose. If you would like more information about how [Water Company] processes your personal data, please refer to its privacy policy.

**ONLINE:** Whilst this survey is being carried out on behalf of Ofwat, [Water Company] may use your answers to improve its customer service. With this in mind do you object to us sharing your feedback with [Water Company]? If you would like more information about how [Water Company] processes your personal data, please refer to its privacy policy.

No, do not object
ONLINE: Yes, object to identifiable survey responses **GO TO 0**
CATI: Yes, object to identifiable survey responses & recording **GO TO 0**
CATI: Yes, object to call recording **GO TO 0**

Q18. **CATI:** In some cases, [Water Company] may contact you to discuss any issues included in your feedback to improve its customer service. Do you object to being contacted by [Water Company] for this purpose?

Object
Do not object

Q19. **IF 0 = 2 OR 3 SAY:** In that case your responses will only be passed on to [Water Company] in anonymised form and will not be linked to you personally.

**IF 0 = 4 SAY:** In that case your name, contact details, and responses will be passed on to [Water Company], but we will not pass on a recording of this call.

**ALL CATI:** Please can I take a note of your name and where we can contact you for quality control purposes?

Name: [CATI: DP, IMPORT FROM ID]
Telephone: [CATI: DP, IMPORT FROM TELNUMBER]

**CATI:** Thank you for your time and co-operation in this survey. On behalf of Ofwat I would like to thank you for your time and feedback, and I hope you enjoy the rest of your day/evening.
**ONLINE:** Thank you for your time and co-operation in completing this survey. On behalf of Ofwat we would like to thank you for your time and feedback.

## Interviewer Confirmation

I confirm that this interview was properly conducted and is completely confidential

Yes
No

**SYSTEM INFORMATION**
**Time interview completed:**

**C-MeX CES**

**SYSTEM INFORMATION:**
**Interviewer number:**
**Interviewer name:**
**Date:**
**Time interview started:**

# C-MeX CES

**CATI** Good morning/afternoon/evening. My name is ..... and I am calling from [The Agent] on behalf of Ofwat, the economic regulator for the water sector in England and Wales.

We are carrying out a survey about your water company. We would like to ask you a few questions about your experience with your water company. INTERVIEWER IF NECESSARY, SAY: You don't need to be the person responsible for paying the water bill.

This information will be used to help Ofwat understand how your water company is performing.

The survey will take around 5 minutes to complete.

Your responses will be treated in the strictest confidence. [The Agent] abides by data protection laws at all times.

You can find out more information about Ofwat's surveys and what is done with the information collected in the Privacy Notice on Ofwat's website.
.
**INTERVIEWER TO DETERMINE IF PARTICIPANT WANTS WEBSITE ADDRESS BEFORE PROVIDING IT OR IF IT IS TO BE SENT VIA EMAIL**

Please note that this call may be monitored or recorded for training purposes.

IF NECESSARY:

- You have been selected at random.
- Ofwat's privacy policy can be accessed using this link: www.ofwat.gov.uk/privacy-policy

Can I confirm that you are happy to participate in the survey?

Yes
No

---

INTCHECK. **INTERVIEWER**: PLEASE CONFIRM YOU HAVE ADVISED THE PARTICIPANT OF:

Calls being recorded

INTCHECK2. **INTERVIEWER:** PLEASE CONFIRM YOU HAVE ASKED AND CHECKED THAT THE PARTICIPANT IS **NOT** TAKING THE INTERVIEW ON A MOBILE DEVICE WHILE DRIVING OR OPERATING EQUIPMENT

Yes, it is safe for the participant to proceed
No, it isn't safe – we need to call back later GO TO APPT SCREEN

**FACE TO FACE:** Good morning/afternoon/evening. My name is ..... from [The Agent], an independent research agency. We are conducting a survey on behalf of Ofwat, the economic regulator for the water sector in England and Wales. Ofwat would like to understand customer experience with their water company and I'd like to ask you a few questions about your water company.

INTERVIEWER IF NECESSARY, SAY: You don't need to be the person responsible for paying the water bill.

This information will be used to help Ofwat understand how your water company is performing. The survey will take around 5 minutes to complete.

Your responses will be treated in the strictest confidence. [The Agent] abides by data protection laws at all times.

You can find out more information about Ofwat's surveys and what is done with the information collected in the Privacy Policy on Ofwat's website. You can find the details here: INTERVIEWER TO HIGHLIGHT RELEVANT INFORMATION ON LETTER OF AUTHORITY.

IF NECESSARY:

- You have been selected at random.
- Ofwat's privacy policy can be accessed using this link: www.ofwat.gov.uk/privacy-policy

Can I confirm that you are happy to participate in the survey?

Yes
No

## Scoping questions

Q1 Please can I just check which water company supplies water to your home? DO NOT READ OUT. SINGLE CODE.

Affinity Water
Anglian Water
Bournemouth Water
Bristol Water
Cambridge Water
Essex & Suffolk Water
Hafren Dyfrdwy

Hartlepool Water
Northumbrian Water
Portsmouth Water
Severn Trent Water
South East Water
Southern Water
South Staffs Water
South West Water
Sutton & East Surrey (SES) Water
Thames Water
United Utilities
Welsh Water/Dŵr Cymru
Wessex Water
Yorkshire Water
Don't know GO TO Q2

a. CHECK QUOTAS

---

Q2 ASK IF DON'T KNOW AT Q1 (OTHERS GO TO Q3). Please could I have your postcode and I will check who your supplier should be?

INTERVIEWER CHECK WATER COMPANY USING POSTCODE CHECKER. Based on your postcode area, I believe your water supply company should be [Water Company]. Is that correct?

Yes
No/don't know THANK & CLOSE

CHECK QUOTAS

---

Q3 We need to speak to a representative sample of customers of each water company, so before we start can I please check your age?

18-29
30-44
45-64
65+

CHECK QUOTAS

---

Q4 INTERVIEWER: RECORD GENDER

Male
Female

CHECK QUOTAS

## Main Questionnaire

---

Q5 READ OUT: Throughout this survey, please only think about your domestic water services.

I would now like you to think about your experience of [Water Company]. Taking everything into account how satisfied are you with [Water Company]? Please use

a scale of 0-10, where 0 = extremely dissatisfied, 5 = neither satisfied nor dissatisfied and 10 = extremely satisfied.

**INSERT SCORE _____**

---

Q6 **IF** Error! Reference source not found.**=9 OR 10 ASK (OTHERS GO TO 0):** What did they do well?

**GO TO 0**

---

Q7 **IF** Error! Reference source not found.**=7 OR 8 ASK (OTHERS GO TO 0):** What could they have done to improve this score?

**GO TO 0**

---

Q8 **IF** Error! Reference source not found.**=0 TO 6 ASK (OTHERS GO TO 0):** What could they have done better?

---

Q9 If you could choose your water provider, based on your recent experience, how likely would you be to recommend [Water Company] to friends and family? Please use a scale of 0-10, where 0=not at all likely and 10=extremely likely.

**INSERT SCORE _____**

---

Q10 Please can I take a note of your name and where we can contact you for quality control purposes?

Name:
Telephone:

## End

Thank you for your time and co-operation in this survey. On behalf of Ofwat I would like to thank you for your time and feedback, and I hope you enjoy the rest of your day/evening.

FACE-TO-FACE: INTERVIEWER HAND OVER THANK YOU LEAFLET

## Interviewer Confirmation

I confirm that this interview was properly conducted and is completely confidential

Yes
No

**SYSTEM INFORMATION**
**Time interview completed:**

# Annex 3 D-MeX survey

**D-MeX CATI**

**SYSTEM INFORMATION:**
**Interviewer number:**
**Interviewer name:**
**Date:**
**Time interview started:**

# D-MeX

Good morning/afternoon/evening. My name is ..... and I am calling from [The Agent] on behalf of Ofwat, the economic regulator for the water sector in England and Wales. Please could I speak to [NAME FROM SAMPLE]. We are carrying out a survey on behalf of Ofwat to understand how customers rate the service received from the Developer Services team at [Water Company Name].

This information will be used to help Ofwat understand how [Water Company Name] is performing.

I understand that you have recently dealt with [Water Company Name] in relation to a [WATER UK METRIC] – this was in [MONTH], for [SITE]. Please could I ask you some questions about this?

Are you the person who was in contact with [Water Company Name]?
**IF TALKING TO CORRECT PERSON, CONTINUE. OTHERWISE ASK TO BE TRANSFERRED OR MAKE APPOINTMENT TO CALL BACK**

IF ASKED: The survey will take around 10 minutes to complete.

Just to confirm, your responses will be treated in the strictest confidence. [The Agent] abides by data protection laws at all times. Your responses will only be passed on to [Water Company Name] in anonymised form and will not be linked to you personally.

You can find out more information about Ofwat's surveys and what is done with the information collected in the Privacy Policy on Ofwat's website.

**INTERVIEWER TO DETERMINE IF PARTICIPANT WANTS WEBSITE ADDRESS BEFORE PROVIDING IT OR IF IT IS TO BE SENT VIA EMAIL**

Please note that this call may be monitored or recorded for training purposes.

IF NECESSARY:

- You have been selected at random from customers dealing with developer services at [Water Company Name], in [MONTH].
- Your contact details have been provided to us by [Water Company Name]

Can I confirm that you are happy to participate in the survey?

Yes
No THANK & CLOSE

INTCHECK. **INTERVIEWER**: PLEASE CONFIRM YOU HAVE ADVISED THE PARTICIPANT OF:

Calls being recorded

INTCHECK2. **INTERVIEWER:** PLEASE CONFIRM YOU HAVE ASKED AND CHECKED THAT THE PARTICIPANT IS **NOT** TAKING THE INTERVIEW ON A MOBILE DEVICE WHILE DRIVING OR OPERATING EQUIPMENT

Yes, it is safe for the participant to proceed
No, it isn't safe – we need to call back later GO TO APPT SCREEN

## Main questionnaire

Q1 What do you feel that [Water Company] did well, if anything, in relation to this particular transaction? **PROBE FULLY**

Q2 And what do you feel that they could have done better, if anything - again in relation to this particular transaction? **PROBE FULLY**

Q3 I'm now going to read out a number of aspects of service and I'd like you to tell me how satisfied you are, on each of these, still thinking about your dealings with Developer Services at [Water Company Name] in relation to this specific transaction where 0 is extremely dissatisfied and 10 is extremely satisfied.

**DP: SHOW [MONTH], [WATER UK METRIC] AND [SITE] ON SCREEN**
**RANDOMISE. READ OUT**

| | **Extremely dissatisfied** | | | | | **Neither satisfied nor dissatisfied** | | | | | **Extremely satisfied** | **Don't know** | **N/A** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| Ease of contacting them | | | | | | | | | | | | | |
| The quality of the information available on their website | | | | | | | | | | | | | |
| Understanding your needs | | | | | | | | | | | | | |
| Timeliness of response to queries and requests | | | | | | | | | | | | | |
| Keeping you informed on progress, | | | | | | | | | | | | | |

| | **Extremely dissatisfied** | | | | | **Neither satisfied nor dissatisfied** | | | | | **Extremely satisfied** | **Don't know** | **N/A** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| where required | | | | | | | | | | | | | |
| Offering value for money | | | | | | | | | | | | | |
| Completing the work within a timescale that is reasonable | | | | | | | | | | | | | |
| Meeting agreed deadlines | | | | | | | | | | | | | |
| Their efficiency in handling this stage of the work | | | | | | | | | | | | | |
| Accuracy and completeness of any documentation provided (eg quotations, plans, reports etc) | | | | | | | | | | | | | |
| Any advice and guidance they gave you, to help progress the work | | | | | | | | | | | | | |

Q4 How satisfied are you overall with how [Water Company] handled this particular transaction using the same scale where 0 is extremely dissatisfied and 10 is extremely satisfied?

| **Extremely dissatisfied** | | | | | **Neither satisfied nor dissatisfied** | | | | | **Extremely satisfied** | **Don't know** | **N/A** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |

Q5 Thinking more generally about dealing with Developer Services – what would you personally say are the top 3 most important things you are looking for, in terms of how the service is delivered?

……

Don't know

Nothing

Q6 If there was one thing that you'd suggest that the Developer Services team at [Water Company] could do, that would have most impact on how easy you find them to deal with, what would it be?

……

Don't know

Nothing

Q7 Please can I take a note of your name and where we can contact you for quality control purposes?

Name:
Telephone:

Thank you for your time and co-operation in this survey. On behalf of our client Ofwat and ourselves at [The Agent], I would like to thank you for your time and feedback.

## Interviewer Confirmation

I confirm that this interview was properly conducted and is completely confidential

Yes
No

**SYSTEM INFORMATION**
**Time interview completed:**

**Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.**

Ofwat
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7 Hill Street
Birmingham B5 4UA
Phone: 0121 644 7500



This document is also available from our website at www.ofwat.gov.uk.

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OGL