



An Coimisiún  
um Rialáil Fóntas  
**Commission for  
Regulation of Utilities**

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**Commission for Regulation of Utilities**

# Irish Water Performance Assessment Framework

## 2017 Implementation Update

### Information Paper

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## Summary

In December 2016 the Commission for Regulation of Utilities (the CRU) published a paper setting out the Performance Assessment Framework for Irish Water (the Framework). The Framework is designed to assess Irish Water's overall performance in delivering defined services to its customers for the money it is allowed to spend by the CRU. It sets out a number of areas and associated metrics that Irish Water must report on to the CRU. The Framework is not yet fully in place as Irish Water is not yet providing data to the CRU under all of metrics. In addition, the CRU has yet to set targets for Irish Water's performance under those metrics to support assessment of the utility's performance by the CRU.

During the period to full reporting the CRU requires Irish Water to report on metrics where it can and to report on its progress in collecting data in other areas. Irish Water has submitted two reports to the CRU under the Framework which are published, along with a CRU commentary, on the CRU's [website](#)<sup>1</sup>.

This is the CRU's third report under the Framework. Irish Water's third report under the Framework regarding 2017 is published alongside this report (CRU19090). This CRU report should be read in conjunction with the CRU's report *Irish Water Capital Investment Plan 2017-2021 Monitoring Report No. 2* (CRU19026) which provides an overview of Irish Water's progression, delivery and forecast delivery of its Investment Plan as at the end of March 2018.<sup>2</sup> Reading both reports provides an overview of Irish Water's performance, including collation of data for future performance assessments, for the year 2017 for the expenditure, both operational and capital, that the CRU allows it to recover from charges.<sup>3</sup>

The Framework provides for Irish Water reporting on a number of metrics under five categories: customer service, environmental performance, water supply – quality of service, security of water supply and wastewater (sewerage) service. For 2017, Irish Water reported on four of the seven customer service metrics.<sup>4</sup> The four all relate to ease of telephone contact. Performance across these customer service metrics has shown improvement. The number of calls abandoned by customers waiting in the queue has increased. Similarly, performance in terms of speed of response has fallen when compared with 2016 but Irish Water's customer satisfaction scores in their customer call handling surveys have increased year on year in 2015 to 2017.

In terms of environmental performance, there have been improvements in compliance for the wastewater metrics included in the Performance Assessment.

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<sup>1</sup> [https://www.cru.ie/document\\_group/irish-water-performance-assessment/](https://www.cru.ie/document_group/irish-water-performance-assessment/)

<sup>2</sup> Irish Water Capital Investment Plan 2017-2021 Monitoring Report No. 2, CRU/19/026, April 29<sup>th</sup>, 2019

<sup>3</sup> This includes charges for normal domestic water services use as set by the CRU which are recovered from the Exchequer.

<sup>4</sup> Irish Water are planning on reporting on the remaining metrics by the end of 2019.

Irish Water has also recorded increased performance across the drinking water quality metrics. Improvements in compliance with the trihalomethane and lead parameters remains a priority for the Environmental Protection Agency (the EPA), in its capacity as drinking water regulator. Irish Water has also made substantial improvements in reducing the number of boil water notices in place.

Irish Water is not yet reporting an estimate of the amount of water being lost to leaks. In its place the volume of ‘unaccounted for water’, which includes leakage among other factors, is included in this report for 2017. This has increased when compared with 2016. This is particularly concerning since the volume was already high. Irish Water has indicated that they will be reporting on leakage in 2020.

Irish Water will begin reporting on its performance across the sewerage service metrics in 2019.

The CRU will consult later this year on the continued appropriateness of the metrics included in the Performance Assessment Framework for the 2020-2024 period to ensure they still reflect key services areas for customers. The CRU will also set out the targets for each of the metrics in that consultation. The subsequent CRU decision will fully establish the Framework. The CRU will then monitor Irish Water’s performance under the Framework from 2020.

## **Public Impact Statement**

This paper provides an overview of Irish Water’s performance to the end of 2017 across some of the metrics included in the CRU’s Performance Assessment Framework. This paper is published to support openness, transparency and accountability.

Publishing this report helps to keep the public, and other key stakeholders, informed of Irish Water’s performance. Publicly reporting on delivery provides Irish Water with a reputational incentive to deliver the outputs and outcomes expected of it. Monitoring also supports the CRU in making evidence-based decisions in the interest of customers.

# Table of Contents

<b>Summary</b> .....	<b>i</b>
<b>Public Impact Statement</b> .....	<b>ii</b>
<b>Table of Contents</b> .....	<b>iii</b>
<b>1. Introduction</b> .....	<b>1</b>
<b>1.1 Performance Reporting</b> .....	<b>1</b>
1.1.1 The CRU's Role.....	1
1.1.2 The Performance Assessment Framework.....	1
1.1.3 Implementation of the Performance Assessment Framework .....	2
1.1.4 The Third Performance Assessment Report.....	3
1.1.5 Related Documents .....	4
<b>2. Irish Water's Reported Performance in 2017</b> .....	<b>5</b>
<b>2.1 Customer Service</b> .....	<b>5</b>
2.1.1 Ease of telephone contact – Call abandonment rate .....	5
2.1.2 Ease of telephone contact: customer call-back survey .....	6
2.1.3 Ease of telephone contact – Speed of telephone response.....	6
2.1.4 Ease of telephone contact – First call resolution .....	7
<b>2.2 Environmental Performance</b> .....	<b>7</b>
2.2.1 Pollution Incidents Relating to Wastewater.....	7
2.2.2 Sludge Disposal.....	8
2.2.3 Wastewater Agglomerations Meeting Treatment Requirements.....	8
<b>2.3 Water Supply – Quality of Service</b> .....	<b>10</b>
2.3.1 Properties Subject to Unplanned Interruptions .....	10
2.3.2 Water Quality .....	10
2.3.3 Water Supplies on Boil Water Notices and Water Restrictions .....	12
<b>2.4 Security of Water Supply</b> .....	<b>13</b>
2.4.1 Leakage .....	13
2.4.2 Security of Supply .....	15
<b>2.5 Sewerage Service</b> .....	<b>15</b>
<b>3. Next Steps</b> .....	<b>16</b>
<b>Appendix</b> .....	<b>17</b>
<b>Leakage Reporting</b> .....	<b>17</b>

# 1. Introduction

## 1.1 Performance Reporting

### 1.1.1 The CRU's Role

The CRU sets the money that Irish Water can spend in an upcoming period, termed a 'revenue control period', on defined outputs and outcomes for its customers and then looks back to see if it was spent efficiently and effectively. This includes the money that Irish Water needs to efficiently abstract, treat and distribute water and to collect and treat wastewater and return it safely to the environment. The revenue that the CRU allows also enables Irish Water to carry out sampling and monitoring of the water it provides and the wastewater it treats. It allows Irish Water to respond to incidents, to provide an appropriate level of customer service and to fund its capital investments.

During the revenue control period, the CRU monitors Irish Water's performance and delivery. This includes monitoring Irish Water's compliance with the CRU's Customer Handbooks, monitoring Irish Water's delivery of its Investment Plan and assessing Irish Water's performance against the metrics set out under the Performance Assessment Framework. The CRU reports on Irish Water's delivery and performance based on the findings of its monitoring activities.

### 1.1.2 The Performance Assessment Framework

The CRU published its decision on the Performance Assessment Framework that would apply to Irish Water in November 2016. This followed a review of how economic regulators in neighbouring jurisdictions assess the overall performance of regulated water and wastewater utilities and consultation on the CRU's proposed framework. The Framework provides a structured and clear way for the CRU to assess Irish Water's performance for its customers, supporting due oversight of the utility and evidence-based decisions by the CRU. The publication of reports under the Framework incentivises Irish water to improve its performance and service delivery for its customers and allows customers and other stakeholders of the utility to monitor that performance.

The Framework provides for the CRU's assessment of Irish Water's performance across five categories: customer service, environmental performance, quality of water supply, security of water supply and wastewater (sewerage) service. Reporting metrics have been identified for each category (see Table 1 below). The CRU's monitoring of Irish Water's progression and delivery of the Investment Plan, including associated outputs and outcomes, and of its compliance with the Domestic and Non-domestic Customer Handbooks supports the CRU's assessment of the utility's overall performance under the Framework.

The CRU keeps the Framework under review to ensure that it continues to be fit for purpose. Here,

the categories and metrics should be reflective of outputs and outcomes, including standards of service, that the CRU requires Irish Water to deliver for its customers for the money it allows it to spend on capital investments and on the day to day running of the utility.

The Framework is not yet fully in place as Irish Water is not yet providing data to the CRU under all of the metrics. In addition, the CRU has yet to set targets for Irish Water's performance under those metrics. In the period prior to CRU target setting and full implementation of the Framework, Irish Water provides updates to the CRU regarding its collection of data to support reporting under the Framework and reports annually on metrics where data is available. Implementation of the Framework is discussed further below.

### **1.1.3 Implementation of the Performance Assessment Framework**

Further to the CRU's publication of its decision on the Framework in November 2016, Irish Water provided an update on its collection of data in relation to the metrics set out in the November 2016 decision paper. It showed that Irish Water was collecting information for eight of the nineteen metrics and that it was targeting reporting on all metrics by 2022. Irish Water now notes that all data under the Performance Assessment Framework is due to be provided by 2020, with a further three of the customer service metrics due to be available in 2019.

During the engagement with Irish Water on the submission of its third report under the Framework the CRU set out what it required from Irish Water and made some adjustments to the metrics to streamline reporting requirements to align with metrics reported to the EPA and to increase the relevance of the Framework.

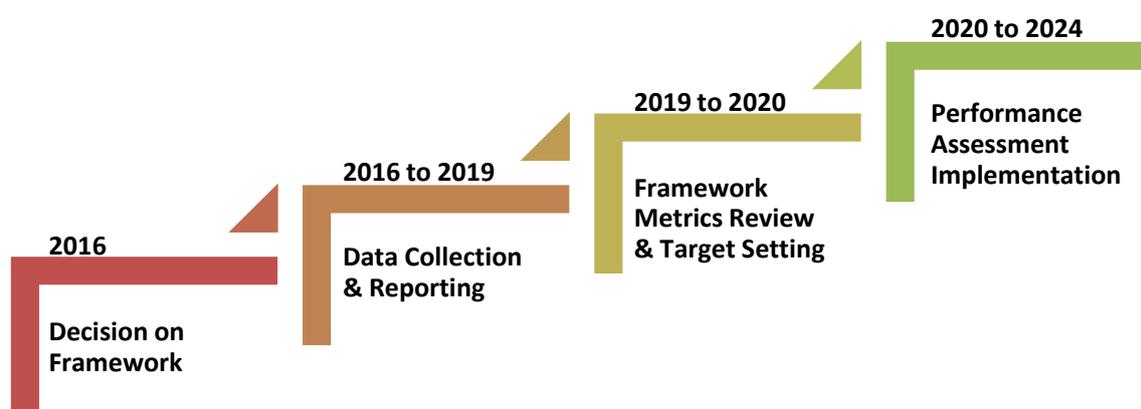
The CRU requires Irish Water to report on all metrics under this Framework for the period from 1 January 2020.

Later this year the CRU will consult and decide on the amount of money that Irish Water can spend on defined outcomes and outputs for its customers in the period 2020 to 2024 as part of the third Irish Water revenue control process ('RC3'). This includes spend on capital investments (capital expenditure) and spend on the day to day running of the organisation (operational expenditure). To make sure Irish Water is spending money efficiently and effectively the CRU needs to understand what Irish Water is planning to deliver and, at the end of the period, determine whether it was delivered. This consultation will examine and seek comments on the defined, targeted outputs and outcomes that Irish Water is proposing to deliver for that expenditure.

It is important that the Framework remains relevant and has a continued focus on key areas of service delivery for customers and other stakeholders. In tandem with the outputs and outcomes included in the revenue control process, the CRU will consult later this year on its proposals on the continued appropriateness of the metrics within the Framework and potential new metrics, to allow

Irish Water and the CRU to understand the areas its stakeholders consider most important and the level of service they expect, in return for the approved revenues.

In addition, to fully establish the Performance Assessment Framework the CRU will consult on the associated targets for the Framework metrics which will be used to assess Irish Water's overall performance in delivering water and wastewater services to its customers during the period 2020 to 2024. This will take account of relevant RC3 targets, requirements under the Customer Handbooks and the need for any other targets in the context of new and/or revised Framework metrics.



**Figure 1 - Performance Assessment Implementation**

#### **1.1.4 The Third Performance Assessment Report**

This report, and the accompanying Irish Water's third Performance Assessment report, should be read in conjunction with the CRU's report *Irish Water Capital Investment Plan 2017-2021 Monitoring Report No. 2 (CER/19/026)* which provides an overview of Irish Water's progression, delivery and forecast delivery of its Investment Plan as at the end of March 2018. Reading both reports provides an overview of Irish Water's performance and collation of data for future performance assessment for the year 2017 for the expenditure, both operational and capital, that the CRU allows it to recover from charges.<sup>5</sup>

Irish Water, for 2017 outcomes, reported on eight of the nineteen metrics. For the rest of the metrics, Irish Water has stated that it is putting in place systems and collecting data to facilitate reporting. An update of these metrics is provided in section 2. Irish Water notes that data for each of the metrics under the Performance Assessment Framework is due to be provided by 2020, with three of the customer service metrics due to be available in 2019.

<sup>5</sup> This includes charges for normal domestic water services use as set by the CRU which are recovered from the Exchequer.

**Table 1 - Data Reporting by Irish Water under the Performance Assessment Framework**

Category	Metric	Data Reporting
<b>Customer Service</b>	Response to billing contacts	2019 (covering 2018 data)
	Response to complaints	2019 (covering 2018 data)
	Billing of metered customers	2019 (covering 2018 data)
	Ease of telephone contact – Call abandonment rate	✓
	Ease of telephone contact – Customer call-back survey	✓
	Ease of telephone contact – Speed of telephone response	✓
	Ease of telephone contact – First call resolution	✓
<b>Environmental Performance</b>	Pollution incidents relating to wastewater	✓
	Sludge disposal – drinking water and wastewater sludge	2020 (Drinking Water) 2022 (Wastewater)
	Wastewater agglomerations meeting treatment requirements	✓
<b>Water Supply – Quality of Service</b>	Properties subject to unplanned interruptions	2020
	Water quality	✓
	Water supplies on Boil Water Notices and Water Restrictions	✓
<b>Security of Water Supply</b>	Leakage	2020
	Security of supply – Absolute performance	2020
	Security of supply – Performance against target	2020
<b>Sewerage Service</b>	Sewer incidents (overload)	2020
	Sewer incidents (other causes)	2020
	Sewer incidents (at risk)	2020

### 1.1.5 Related Documents

- [CER16308](#) Irish Water Performance Assessment: Framework of Reporting Metrics
- [CER17257a](#) Irish Water Performance Assessment: CER Commentary on Irish Water Report
- [CER17257b](#) Irish Water Performance Assessment Report – Q2 2017
- [CRU18034](#) Irish Water Performance Assessment Report – February 2018
- [CRU18035](#) Irish Water Performance Assessment: CRU Commentary – February 2018
- [CRU19026](#) Irish Water Capital Investment Plan 2017-2021 Monitoring Report No. 2
- EPA, 2018. [Drinking Water Report for Public Supplies 2017.](#)
- EPA, 2018. [Urban Waste Water Treatment in 2017](#)

Information on the CRU's role can be found on the CRU's website at [www.cru.ie](http://www.cru.ie).

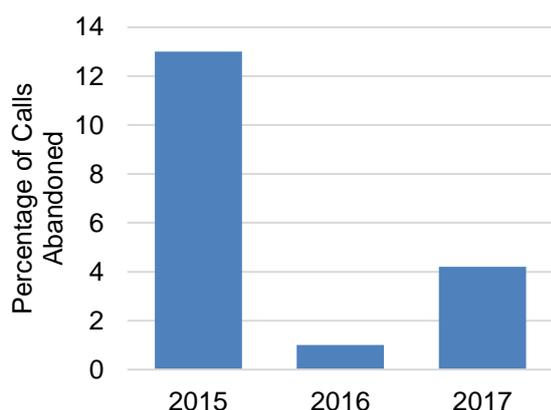
## 2. Irish Water’s Reported Performance in 2017

This section provides a summary overview of the information reported by Irish Water in its third report to the CRU under the Framework. It should be noted that the CRU has not yet set targets for performance here and hence no formal assessment of performance by the CRU is provided. In cases where Irish Water is reporting under a metric, this information is presented. In cases where Irish Water is not yet providing data regarding a metric, an update on the timelines for provision of this data to the CRU is provided.

### 2.1 Customer Service

Irish Water has stated that it will be reporting on all Customer Service metrics by the end of 2019. Irish Water is not yet reporting on performance across the response to billing contacts, response to complaints and billing of metered customers metrics. Performance across the other four metrics is highlighted below. With respect to the response to complaints metric, Irish Water does continue to provide complaints data to the CRU as part of its reporting requirements under the CRU Irish Water Customer Handbook

#### 2.1.1 Ease of telephone contact – Call abandonment rate

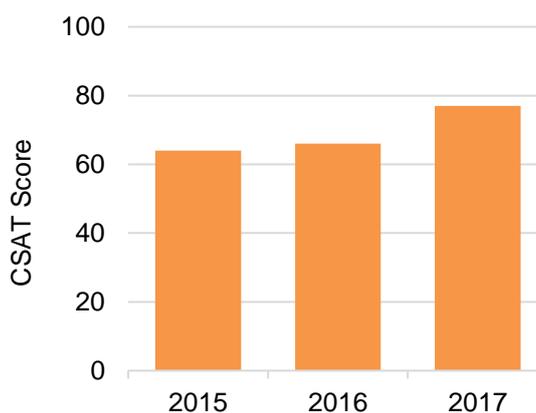


**Figure 2 - Ease of telephone contact – Call abandonment rate**

In 2017, 4.2% of calls to Irish Water were abandoned while a caller was waiting in the queue to speak to an agent. This is an increase from 1% in 2016 but came during a period of increased customer contact with Irish Water due to Storm Ophelia, and the refunds of payments made by customers to Irish Water. This 2017 figure is within Irish Water’s own internal criteria of less than 5%. For comparison, the UK Contact Centre Decision-Makers’ Guide 2017-18 (15th edition) reported an industry median of 4% and mean of 5.3% in the UK.

### 2.1.2 Ease of telephone contact: customer call-back survey

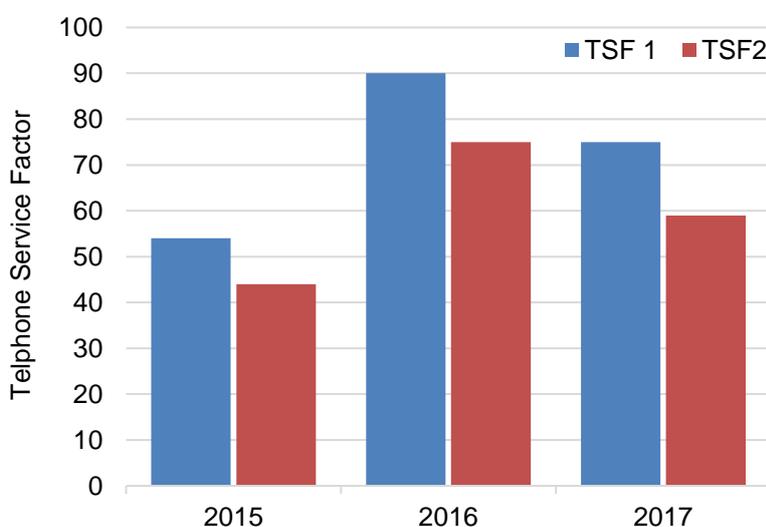
Irish Water’s customer satisfaction scores, in relation to call handling taken from surveys of a random sample of customers, have increased steadily since 2015, from 64% to 77%.



**Figure 3 - Ease of telephone contact – customer call-back survey**

### 2.1.3 Ease of telephone contact – Speed of telephone response

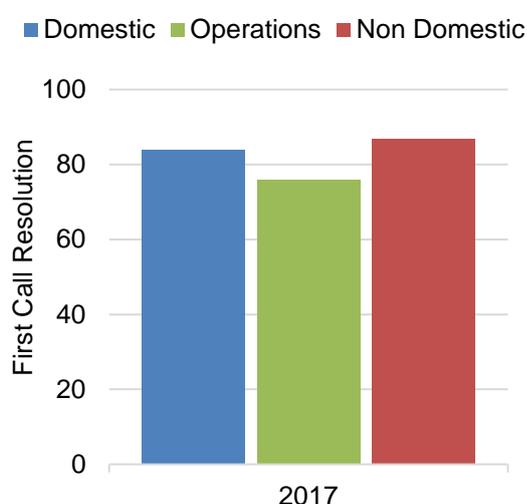
Two metrics known as Telephone Service Factors (TSF) are used to assess Irish Water’s performance here. TSF1 is a measure of the time taken to pick up calls that are in the queue to speak to an agent, and TSF2 is a measure of service in the Interactive Voice Recognition system.



**Figure 4 - Ease of telephone contact – Speed of telephone response**

Irish Water’s performance across both metrics is lower in 2017 when compared with 2016. Irish Water failed to hit its own internal target of 80% for TSF1. For comparison Gas Networks Ireland reported a TSF1 of 93.4% in 2017. As noted above under the call abandonment metric, this increase came during a time of increased customer interaction with Irish Water.

## 2.1.4 Ease of telephone contact – First call resolution



**Figure 5 - Ease of telephone contact – First call resolution**

This metric has been changed from ‘First contact referral’ to ‘First call resolution’ which is a more commonly used measure of performance. Irish Water had been reporting this metric in the first two Performance Assessments and the CRU had stated in both of its reports that it would consider if this was an acceptable change. It measures the percentage of contacts that are dealt with on the initial call. Irish Water is reporting performance separately across its domestic, non-domestic and operations lines. Irish Water implemented reporting on this metric in 2017, hence no trend data is reported at this time.

## 2.2 Environmental Performance

### 2.2.1 Pollution Incidents Relating to Wastewater

The CRU monitors two metrics relating to pollution incidents. The first looks at the number of pollution incidents resulting from wastewater collection and treatment activities, broken down by category and, the second looks at the number of recurring incidents.

The Environmental Protection Agency (EPA) classifies<sup>6</sup> an incident as:

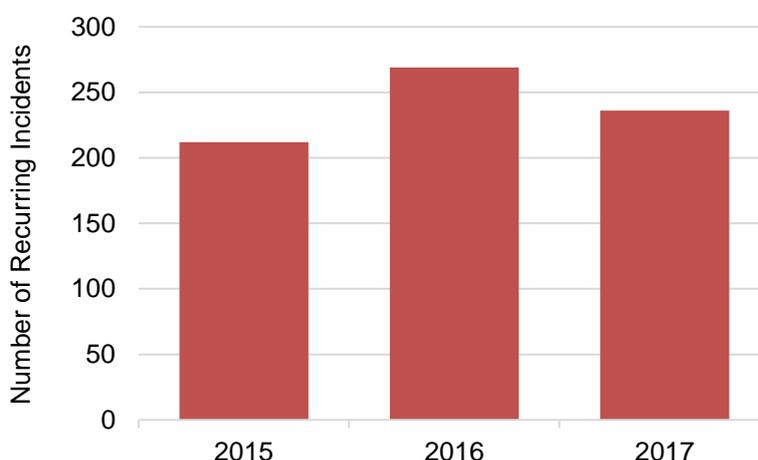
- any discharge that does not comply with the requirements of a waste water discharge licence, or;
- any occurrence at a waste water works with the potential for environmental contamination or requiring an emergency response.

Incidents are categorised from 1 (minor) to 5 (catastrophic) depending on the potential impact to the receiving environment and/or human health.

In 2017, Irish Water reported improved performance under these metrics. There was, once again, no reported Category 4 or 5 pollution incidents relating to wastewater. There were also fewer category 1, 2 and 3 incidents when compared with previous years.

<sup>6</sup> Urban Waste Water Treatment in 2017 available at: [www.epa.ie/pubs/reports/water/wastewater/Final%20report%20for%20website.pdf](http://www.epa.ie/pubs/reports/water/wastewater/Final%20report%20for%20website.pdf)

At the end of 2017 there were 236 incidents that were either ongoing or were likely to recur until the underlying cause of the incident is resolved. The EPA refers to these as ‘recurring incidents’.<sup>7</sup> This figure was lower than the corresponding value in 2016.



**Figure 6 - Recurring Pollution Incidents at Year End (Source: EPA)**

### **2.2.2 Sludge Disposal**

This metric will measure the percentage of drinking water and wastewater sludge that is disposed of in an unsatisfactory manner. In its Performance Assessment report, Irish Water has stated that it will be reporting on these metrics in Q2 2019 for drinking water sludge and Q4 2021 for wastewater sludge.

The CRU will engage with Irish Water to ensure that a meaningful metric is in place regarding the disposal of wastewater sludge.

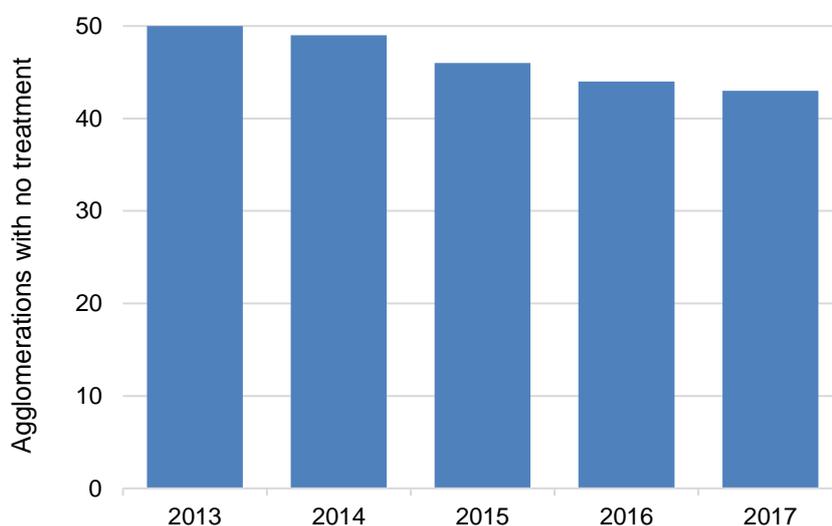
### **2.2.3 Wastewater Agglomerations Meeting Treatment Requirements**

This metric was previously named ‘Wastewater Treatment Works Meeting Requirements’ and has been renamed to better reflect what it measures. This metric consists of the two sub-metrics: Agglomerations with no wastewater treatment or preliminary treatment only, and Agglomerations not compliant with the treatment and effluent quality standards of the Urban Waste Water Treatment Directive.

In 2013 there were 50 agglomerations in Ireland that were discharging untreated wastewater into

<sup>7</sup> Irish Water, in its report to CRU, has been using a definition of recurring incident that was different to the definition it uses in its reports to the EPA. While the information provided here is useful for the purposes of monitoring trends in Irish Water’s performance, parties that are interested in individual environmental metrics should refer to the published EPA reports which cover these items.

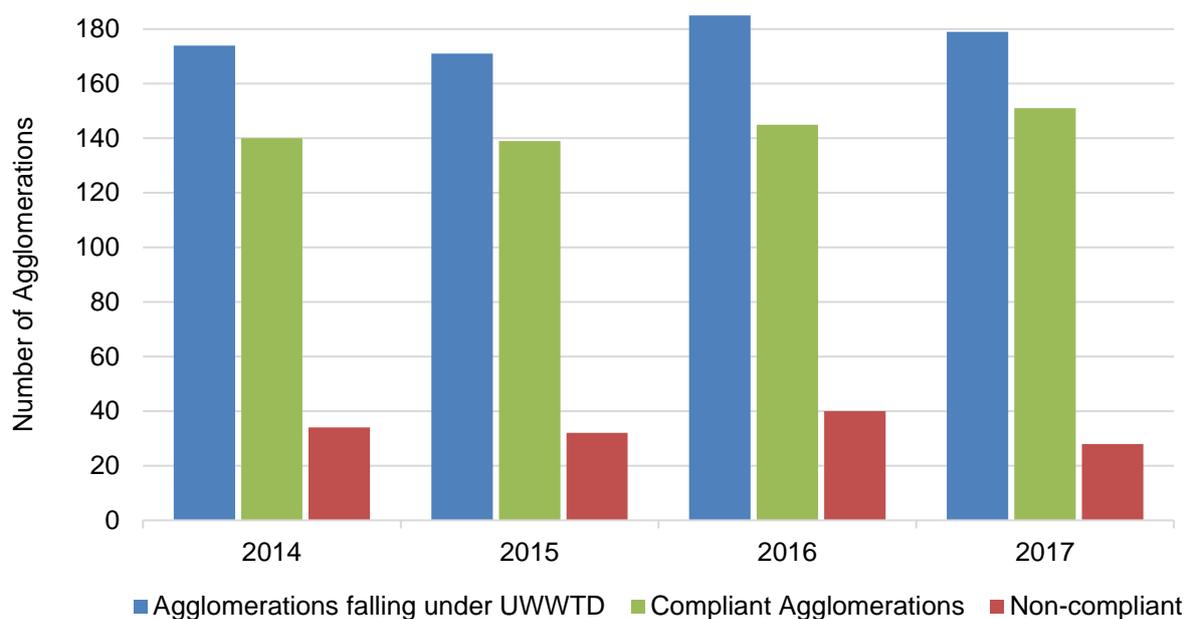
the environment. By the end of 2017 Irish Water had completed work at seven sites to reduce this number to 43.



**Figure 7 - Agglomerations with no Wastewater Treatment**

The Urban Waste Water Treatment Directive sets requirements for the collection and treatment of wastewater from large urban areas to protect the environment. The Directive sets quality limits that the treated wastewater must meet depending on the size of the urban area and the type of water body the treated wastewater is discharged to.

The CRU understands from Irish Water that the number of agglomerations subject to the Urban Waste Water Treatment Directive varies on an annual basis. There were 179 large urban areas in 2017. Of these, 151 large urban areas were compliant with the treatment and effluent quality standards of the Directive. This has been increased from 140 in 2014 (see Figure 8, below).



**Figure 8 - Compliance with the treatment and effluent quality standards of the Urban Waste Water Treatment Directive**

## 2.3 Water Supply – Quality of Service

### 2.3.1 Properties Subject to Unplanned Interruptions

Under this metric the CRU will monitor the number of properties subject to unplanned interruptions to supply, broken down by the length of the interruption. Irish Water has stated that it will be reporting on this metric from the middle of 2019.

### 2.3.2 Water Quality

Irish Water is responsible for ensuring drinking water meets the quality standards set out in the Drinking Water Regulations. Where there is a failure to meet these standards, or where there is a public health risk, Irish Water must consult with the Health Service Executive (HSE). The EPA is the drinking water regulator and enforces the Drinking Water Regulations. Irish Water submits its water quality results to the EPA. The EPA audits Irish Water's monitoring to ensure it is fit for purpose. Where there is a water quality failure, the EPA oversees Irish Water's investigation and action.

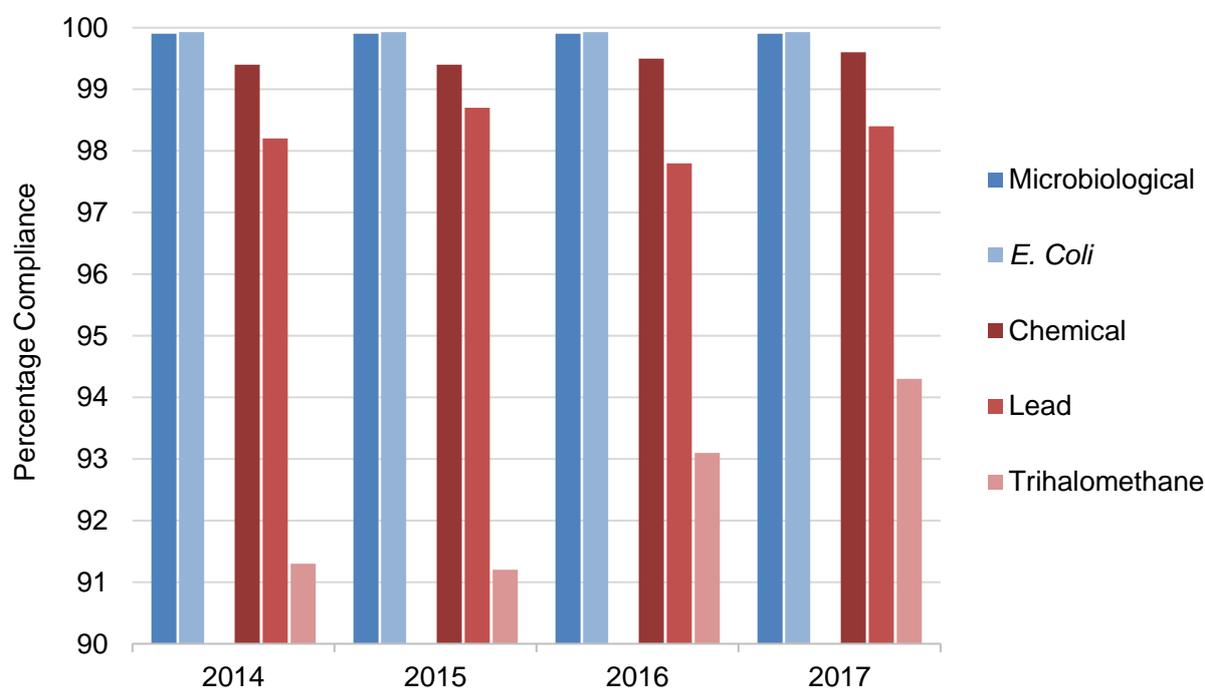
The CRU's Performance Assessment Framework includes metrics regarding Irish Water's performance across five drinking water quality metrics: overall microbiological compliance and *E. coli* compliance, and; overall chemical compliance and lead and trihalomethane compliance.

The EPA's Drinking Water Report for Public Supplies 2017 highlighted that the quality of drinking water in public supplies remains high. Microbiological compliance was 99.9% in 2017 and chemical compliance was 99.6%<sup>8</sup>.

Trihalomethanes are formed when organic matter in water reacts with chlorine used in the disinfection process. Figure 9, below, shows that there has been a general increasing trend in trihalomethane compliance. Irish Water compliance with this metric, in 2017, was 94.3%<sup>9</sup>, an increase from 93.1% in 2016.

Lead is found in drinking water if it dissolves from lead pipework, fittings and connections. Irish Water has estimated that there are 40,000 backyard lead service connections which loop off the mains and run through backyards serving a number of properties. Irish Water has estimated that there are also 140,000 individual lead service connections.

Compliance with the lead parameter, which is 10 µg/l, has fluctuated between 97.8% and 98.7% in the four years since 2014 and was 98.4% in 2017. As noted in the previous performance assessment report, variations in the data from year to year can be related to the method of sampling which is on a random basis and therefore some difference in compliance figures will be expected.



**Figure 9 - Drinking Water Quality Metrics**

<sup>8</sup> Irish Water's submission to the CRU states that chemical compliance was 99.5% in 2017.

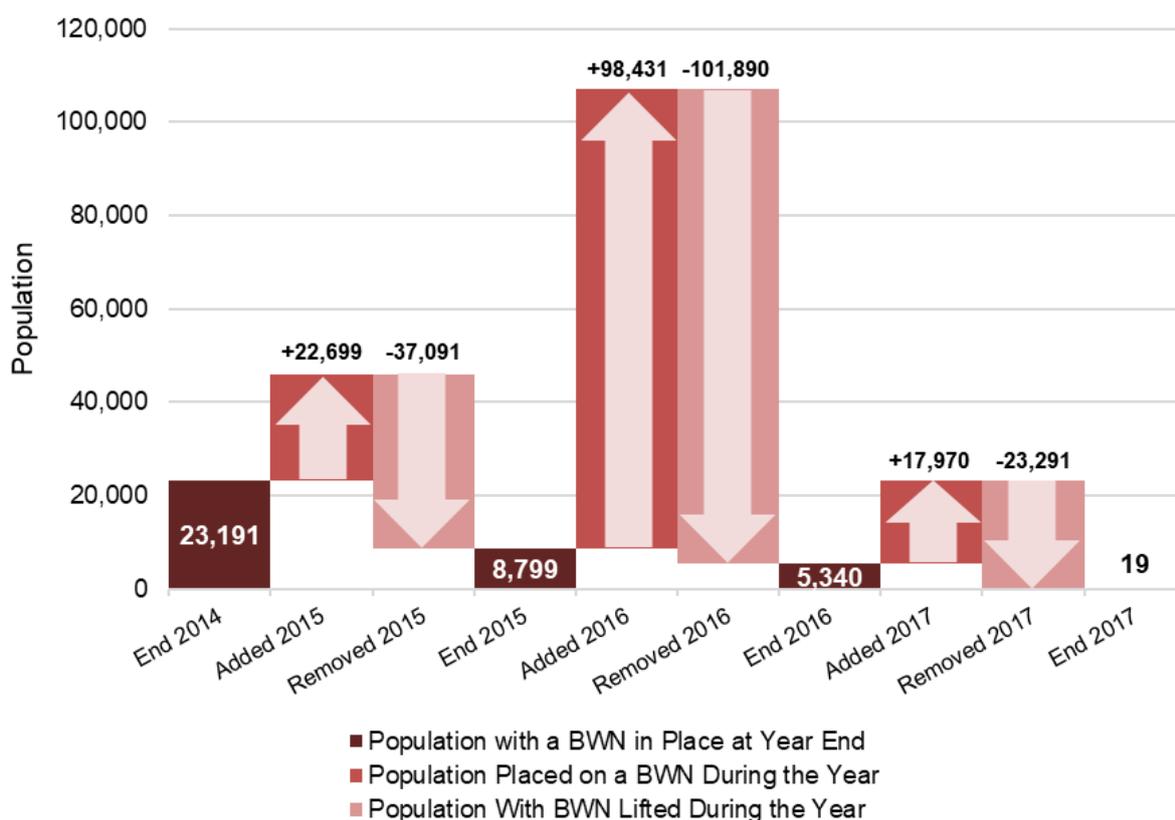
<sup>9</sup> Irish Water's submission to the CRU states that trihalomethane compliance was 94.1% in 2017.

### 2.3.3 Water Supplies on Boil Water Notices and Water Restrictions

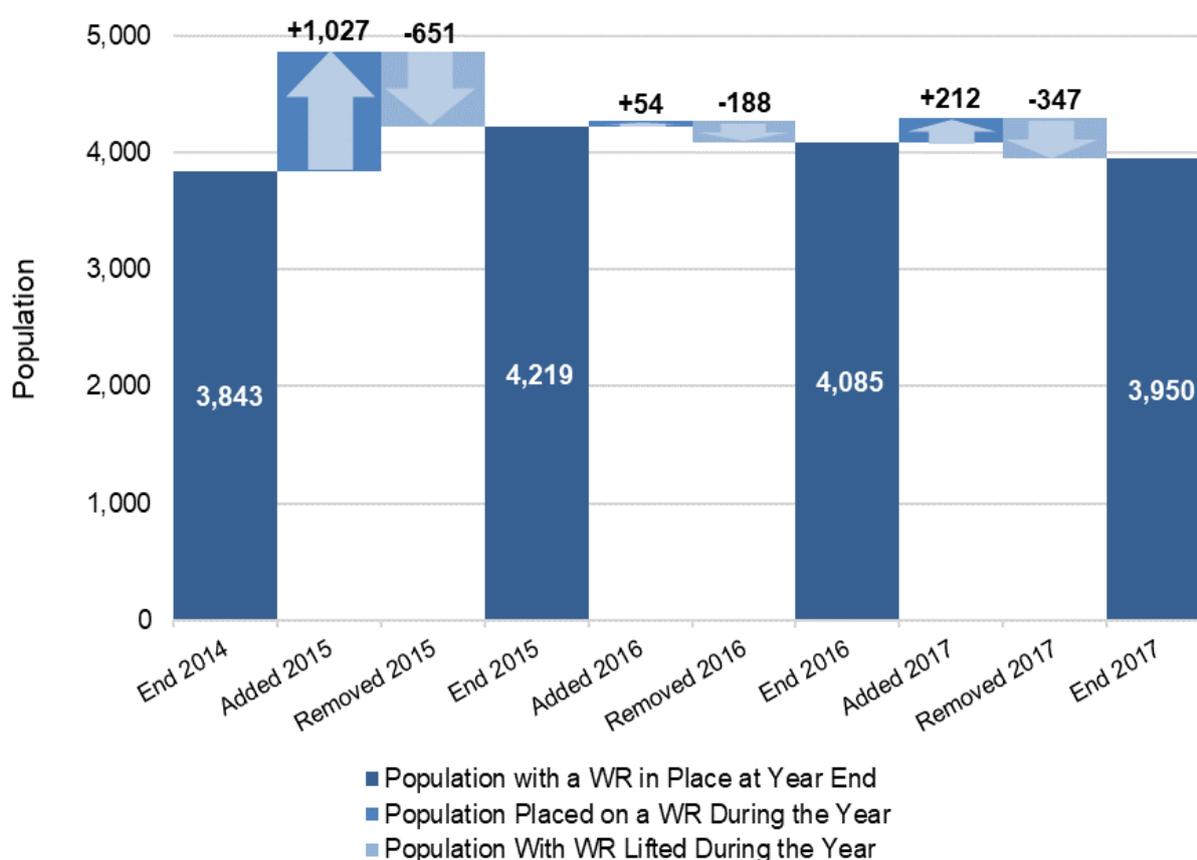
In the decision on the Framework of reporting metrics, the CRU had stated that it would monitor the number of public water supplies with Boil Water Notices and water restrictions in place for greater than 200 days and the populations served.

The CRU has revised this metric and will now monitor all boil water notices and water restrictions issued and the populations served. This is a better reflection of Irish Water’s service provision and reflects Irish Water’s work to remove long-term boil water notices and Irish Water’s investment in reducing the risk of new boil water notices being issued.

At the end of 2017 Irish Water has reported that there were 19 people being served by supplies with a boil water notice in place. Compared with 2016, there were significantly fewer people on a boil water notice at the end of the year (5340 at the end of 2016) and fewer people affected by boil water notices issued during 2017. Over half of all boil water notices in 2017 were short term, in place for less than a month.



**Figure 10 - Population Served by a Supply with a Boil Water Notice in Place<sup>10</sup>**



**Figure 11 - Population Served by a Supply with a Water Restriction in Place<sup>10</sup>**

The numbers presented above include supplies where a water restriction is in place because of a lead non-compliance which may arise due to the presence of lead in either the public or private network. At the end of 2017, there were fewer people with a water restriction in place (3,950) compared with 2016 (4,085).

## 2.4 Security of Water Supply

### 2.4.1 Leakage

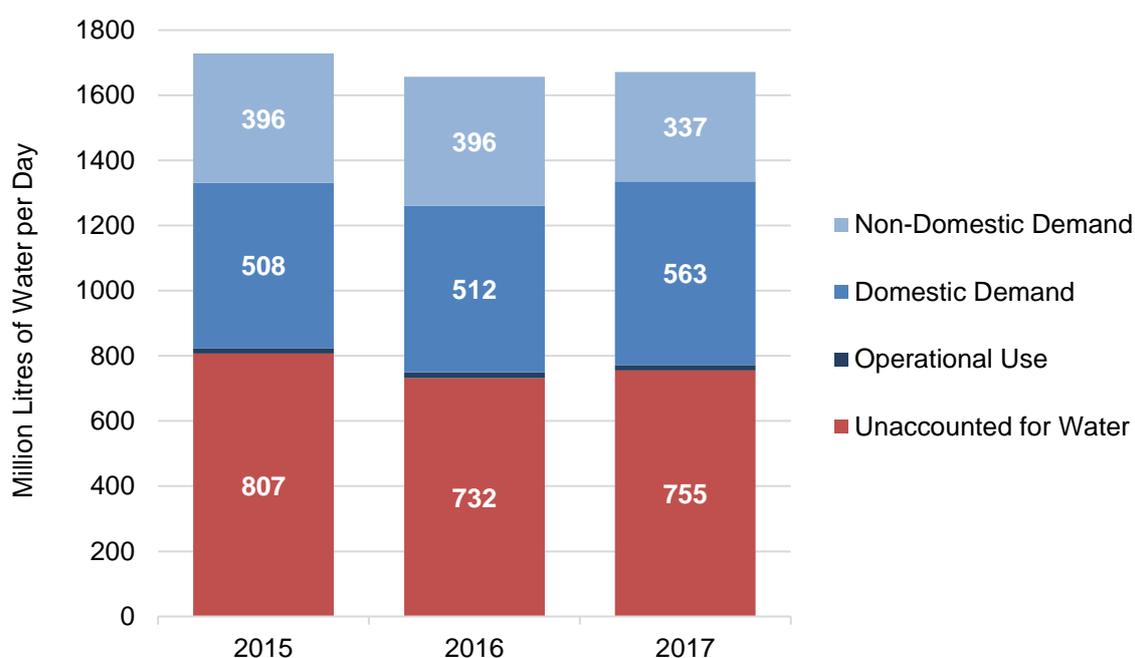
The approach to calculating the amount of water lost to leakage on the public water supply network, also referred to as real water losses, is shown in Appendix 1. It is measured as an annual average in million litres per day.

<sup>10</sup> Irish Water has advised the CRU previously that the numbers presented above differ from those published by the EPA as clarification is required over responsibility for several small supplies. The EPA has included these supplies in its reports, Irish Water has not. The EPA reports that, at the end of 2017, seven boil notices were in place affecting 41 people.

Irish Water is not yet reporting to the CRU on the amount of water being lost to leaks on either the public network or customer supply pipes. Irish Water has stated that it will be able to provide the CRU with an estimate of leakage once its leakage management system has been rolled out. Irish Water is now targeting the end of 2019 to begin reporting on the magnitude of leakage on the public network and customer side.

To date, Irish Water has been providing a figure for ‘unaccounted-for-water’ on the public network, in place of a leakage metric. Irish Water has provided an estimate of the water it uses on the distribution system by multiplying distribution input by 1% and an estimate of the water demanded by domestic and non-domestic customers (this includes water lost to leaks on the customer’s property). Irish Water has labelled the remainder of the water put into the distribution network as unaccounted for water. The unaccounted-for-water metric includes a mix of:

- Unbilled water including;
  - All water used by Irish Water.
  - Other unbilled use including, for example, water used by fire services.
- Apparent losses;
  - Water used at connections not recorded on Irish Water’s system.
  - Under-recorded use by customers because of, for example, broken water meters and data handling errors.
- Real Losses on the public network from leaks and overflows.



**Figure 12 - Annual Average Daily Water Demand**

The volumes for Domestic Demand and Non-Domestic Demand, above, include water lost to leaks on customer properties. The Non-Domestic Demand figures also includes metered water used at Irish Water's wastewater treatment plants and pumping stations.

#### **2.4.2 Security of Supply**

One of Irish Water's roles is to ensure that the water available for use in its water resource zones can meet the demand for water. Demand for water comes from households and non-domestic customers, water used by Irish Water and others including fire services and from water losses on the public and private network.

Average annual demand reported by Irish Water is presented in Figure 12, above. These numbers fluctuate during the year with peaks during both the winter and the summer, mainly because of an increase in pipe bursts in the winter and from increased customer demand during hot, dry weather in the summer. For the purposes of water resources planning, Irish Water assesses demand during these peak periods so that it can plan to meet the demand for water throughout the entire year.

In addition to the peaks that occur, Irish Water includes an allowance for headroom to account for risk and uncertainty for water resource planning purposes. This provides a buffer to allow for faster growth than had been expected, poor data, shocks to the system and so on.

The security of supply index is a measure of whether the headroom that Irish Water is targeting in each water resource is available, weighted based on the population served by that resource zone. The security of supply index has been used by utilities and regulators to provide an indication of the degree to which a utility can guarantee continued service to its customers.

The work that Irish Water has completed to support the upcoming publication of the National Water Resources Plan allows it to report under this metric. The CRU therefore envisages reporting under this metric in 2019.

## **2.5 Sewerage Service**

Under this category the CRU will look at the number of properties impacted by events of wastewater entering a building because a sewer is overloaded, and the number of properties impacted by events of wastewater entering a building because of a failure of the sewer such as equipment failure, sewer collapse or a sewer blockage.

The CRU will also monitor the number of properties at risk of having wastewater enter a building more frequently than once every ten years because of an overloaded sewer.

Irish Water has stated that it will be reporting on the sewerage service metrics by the end of 2019.

## 3. Next Steps

In August 2019, Irish Water is required to submit a Performance Assessment report to the CRU which looks back at performance during 2018. The CRU will publish that report along with an associated CRU commentary in Q4 of this year.

The CRU will consult later this year on the continued appropriateness of the metrics included in the Performance Assessment Framework to ensure they still reflect key services areas for customers. The CRU will also set out the targets for each of the metrics in that consultation. The subsequent CRU decision will fully establish the Framework. The CRU will then will monitor Irish Water's performance under the Framework from 2020.

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# Appendix

## Leakage Reporting

Real losses on Irish Water’s network, commonly referred to as leakage, includes leaks on trunk mains and distribution pipes, leaks on service connections and leaks and overflows at storage reservoirs. There are two approaches to determining leakage on the public network. The first looks at a top down water balance where the water entering the network is assigned to water losses and water use based on metering information and well-reasoned estimates.

<b>Distribution Input</b>	<b>Authorised Use</b>	<b>Non-Domestic Customers</b>	<b>Non-Domestic Use</b>
			Internal Plumbing Losses
			Supply Pipe Leakage
		<b>Domestic Customers</b>	<b>Domestic Use</b>
			Internal Plumbing Losses
			Supply Pipe Leakage
	<b>Unbilled Water</b>	<b>Irish Water Use</b>	
		<b>Other Authorised Unbilled Use</b>	
	<b>Water Losses</b>	<b>Apparent Losses</b>	Unrecorded Connections
			Metering and Data Errors
		<b>Real Losses on Irish Water's Network</b>	Leaks on Service Connections
			Leaks on Trunk and Distribution Mains
Leaks & Overflows at Storage Reservoirs			

**Figure 13 - Components of Water Demand**

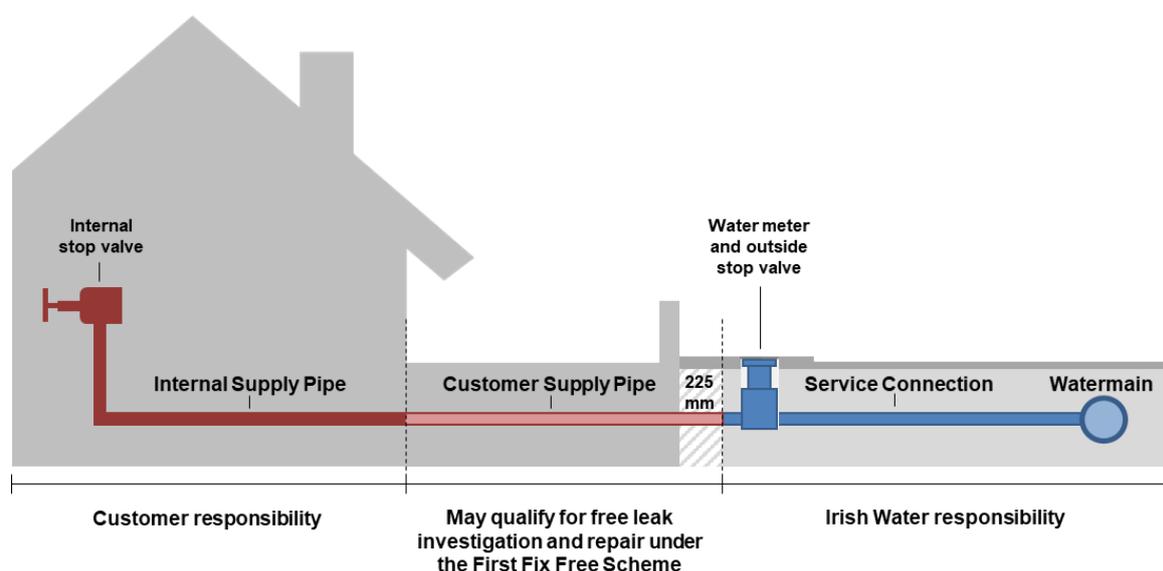
In addition to this, water losses should be estimated using a bottom-up approach by monitoring demand at a time when customer use is low which is typically at night. During a period of low, predictable customer use, flow into District Metered Areas (DMAs) is monitored for a continuous period of at least one hour. This flow is then allocated between public network losses, customer

supply pipe losses and customer use and then converted from hour to day with an adjustment made for variations in pressure between day and night. Estimates of losses on trunk mains and service reservoirs are then added to the calculated DMA losses to provide an estimate of total losses on the public network.

A final leakage number can then be reported by reconciling differences in the top-down and bottom-up approach to leakage estimation and applying robust statistical analysis in line with best international practice.

The CRU has also requested that Irish Water provides an estimate of how much of the water delivered to customer properties is lost to leaks on the private side. Leaks on the private side can occur on the customer supply pipe and in internal plumbing. Note that this is separate from the commonly understood definition of leakage, or real water losses.

Leaks on domestic customer's external customer supply pipe (see Figure 14 below) may qualify for a free repair by Irish Water under the First Fix Free Scheme. Under the scheme Irish Water notifies metered domestic customers when it suspects a leak is occurring within the boundary of their property. A leak alarm notifies Irish Water that there is a constant flow of six or more litres of water per hour for a continuous period of 48 hours or more.



**Figure 14 - Pipe Responsibility First Fix Free Scheme**