An Coimisiún um Rialáil Fóntas
Commission for Regulation of Utilities

Irish Water Performance Assessment Framework

2018 Implementation Update

Information Paper

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Summary

This report provides an update on the implementation of the Commission for Regulation of Utilities' (CRU) Performance Assessment Framework (the Framework) for Irish Water.

The Framework, set out in a CRU decision paper in December 2016, 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 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 three reports to the CRU under the Framework which are published, along with a CRU implementation report on the CRU's website[1]. This is the CRU's fourth implementation report under the Framework. Irish Water's fourth report under the Framework regarding 2018 is published alongside this report (CRU19146a).

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. Irish Water is now reporting on eleven of the nineteen metrics set out in the CRU's 2016 decision on the Framework compared to eight in its 2017 report.

Irish Water reported on all seven customer service metrics for the first time in its fourth report under the Framework. Performance across these customer service metrics in 2018 was mixed. The number of calls abandoned by customers waiting in the queue to speak to an agent has increased each year since 2016. Performance in terms of speed of response to customer calls and Irish Water's customer satisfaction scores in their customer call handling surveys have declined relative to 2017. However, Irish Water's performance has improved under other metrics, for example the rate of resolving customer queries in one call. For the customer service metrics reported on for the first time in this report, Irish Water's performance either improved in the latter half of the year or remained broadly static across 2018.

Performance across the drinking water quality metrics has improved for two of the five parameters with the further three remaining broadly constant. 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.

[1] https://www.cru.ie/document_group/irish-water-performance-assessment/

Even with good performance across drinking water quality parameters, it was necessary to issue boil water notices and water restrictions during 2018 due to a variety of issues such as disinfection equipment failure, source contamination, inadequate treatment and adverse weather impacts. This highlights the importance of appropriate asset maintenance and operational practices and of measures to protect drinking water sources such as Drinking Water Safety Plans.

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 2018. This volume has increased from 2017. This is particularly concerning since the volume was already high and had already increased between 2016 and 2017. Irish Water completed the national rollout of its Leakage Management System in October of this year and is on track to report on national leakage under the Framework in 2020.

Investment by Irish Water in wastewater infrastructure is evident in reductions in the number of agglomerations with no wastewater treatment and in the number of agglomerations that are non-compliant with the UWWTD. The former fell from 43 in 2017 to 37 in 2018 with the percentage of non-compliant agglomerations falling from 16% to 12%.

Irish Water will begin reporting on its performance across the sewerage service metrics in 2020.

The CRU will consult in 2020 on the continued appropriateness of the metrics included in the Performance Assessment Framework for the 2020-2024[2] period, to ensure they still reflect key services areas for customers. The CRU will also set out the proposed targets for each of the metrics in that consultation. The subsequent CRU decision will fully establish the Framework. The CRU will then monitor and assess Irish Water's performance under the Framework for the period from 2020.

Public Impact Statement

This paper provides an overview of Irish Water's performance to the end of 2018 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. It also promotes openness and transparency regarding the activities of Irish Water and of the CRU. Monitoring also supports the CRU in making evidence-based decisions in the interest of customers.

[2] Irish Water's next Revenue Control (RC3) period is from 2020-2024 (CRU19148).

Table of Contents

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 each 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 basis 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 in order 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 its first update on its collection of data in relation to the metrics set out in that decision. 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 is now reporting on eleven of the nineteen metrics set out in the CRU's 2016 decision on the Framework. For the rest of these metrics, Irish Water has stated that it is putting in place systems and collecting data to facilitate reporting. The CRU requires Irish Water to report on all metrics under this Framework for the period from 1 January 2020.

Further to consultation earlier this year, the CRU recently published a decision regarding the amount of money that Irish Water can spend on defined outcomes, outputs and standards of service for its customers in the period 2020 to 2024 as part of the third Irish Water revenue control process ('RC3').[3] This includes spend on capital investments (capital expenditure) and spend on the day to day running of the organisation (operational expenditure).

It is important that the Framework remains relevant in the context of the CRU's RC3 decision and that it has a continued focus on key areas of service delivery for customers and other stakeholders. The CRU will consult in 2020 on its proposals on the continued appropriateness of the metrics within the Framework, and on any potential new metrics, to allow Irish Water and the CRU to understand the areas its stakeholders consider most important in return for the CRU approved revenues. This will allow the CRU to appropriately reflect any key performance indicators for the period 2020 to 2024 arising from the third revenue control process.

In addition, to fully establish the Performance Assessment Framework the CRU will consult on the associated, proposed targets for the Framework metrics which will be used to assess Irish Water's

[3] Irish Water Revenue Control Revenue Control 3 (2020–2024) Decision Paper (CRU19148)

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, operational expenditure impacts, requirements under the Customer Handbooks and the need for any other targets in the context of any new and/or revised Framework metrics.

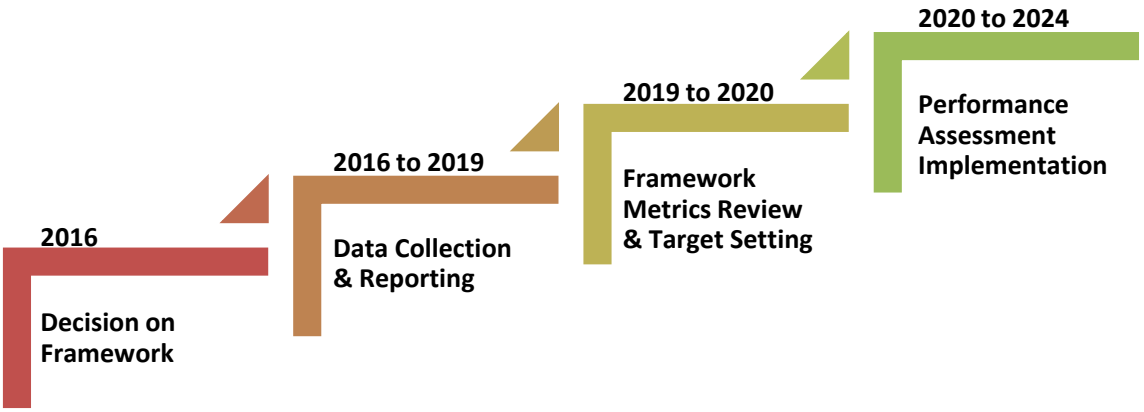

Figure 1 - Performance Assessment Implementation

1.1.4 The Fourth Performance Assessment Implementation Report

Irish Water is currently reporting on eleven of the nineteen metrics set out in the CRU's 2016 decision on the Framework. For the rest of these metrics, Irish Water has stated that it is putting in place systems and collecting data to facilitate reporting. Updates regarding these metrics is provided in section 2 of this paper.

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

Category	Metric	Data Reporting
Customer Service	Response to billing contacts	✓
	Response to complaints	✓
	Billing of metered customers	✓
	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	✓
Environmental Performance	Pollution incidents relating to wastewater	✓
	Sludge disposal – drinking water and wastewater sludge	2020 (Drinking Water) 2022 (Wastewater)
	Wastewater agglomerations meeting treatment requirements	✓
Water Supply – Quality of Service	Properties subject to unplanned interruptions	2020
	Water quality	✓
	Water supplies on Boil Water Notices and Water Restrictions	✓
Security of Water Supply	Leakage	2020
	Security of supply – Absolute performance	2020
	Security of supply – Performance against target	2020
Sewerage Service	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
- CRU19090 Irish Water Performance Assessment Report No. 3 – November 2018
- CRU19089 Irish Water Performance Assessment 2017 Implementation Update – June 2019
- CRU19146a Irish Water Performance Assessment Report No. 4 – November 2019
- EPA, 2019. Drinking Water Report for Public Supplies 2018
- EPA, 2019. Urban Waste Water Treatment in 2018

Information on the CRU's role can be found on the CRU's website at www.cru.ie**.**

2. Irish Water's Reported Performance in 2018

This section provides a summary overview of the information reported by Irish Water in its fourth report to the CRU under the Performance Assessment 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 reported on all seven customer service metrics for the first time in its fourth report to the CRU under the Framework. For those metrics that are reported on for the first time for 2018, results are presented by quarter.

2.1.1 Response to billing contacts

Irish Water's response to billing contacts is reported on for the first time here. Billing contacts refers to any communication from a customer related to a bill, credit and collections, payments, or meter readings. This metric only represents billing contacts from non-domestic (business) customers at present, as domestic customers (households) currently do not receive bills from Irish Water. This metric will include domestic customers in future as Excess Use Charges[4] come into effect.

Irish Water's achieved an annual average of 96.2% under this metric across 2018, with an increasing trend towards the end of the year.

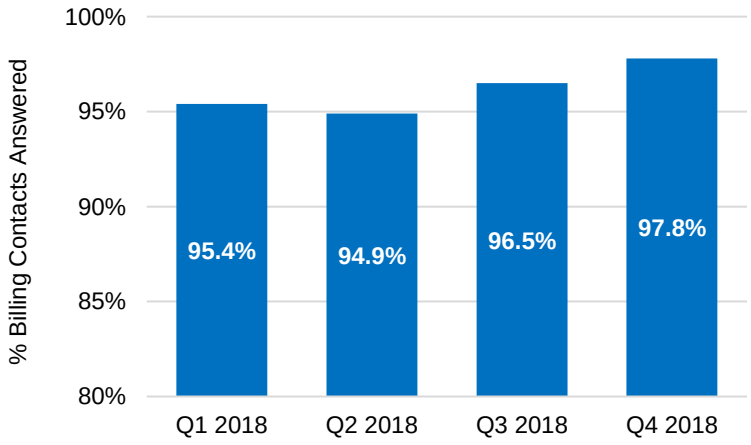

Figure 2 - Response to Billing Contacts

[4] CRU/19/086 Irish Water's Household Water Conservation Proposal (Excess Use Charges)

2.1.2 Response to complaints

Irish Water's response to complaints is reported on for the first time here. For complaints responded to within five days, with either a resolution or an outline plan of the proposed resolution, data is provided from Q2 2018. The response to complaints is relatively matched between domestic and non-domestic customers across all quarters. Irish Water's efficiency at responding to complaints within five working days increased after Q2 and maintained a rate of approximately 99% for the second half of the year.

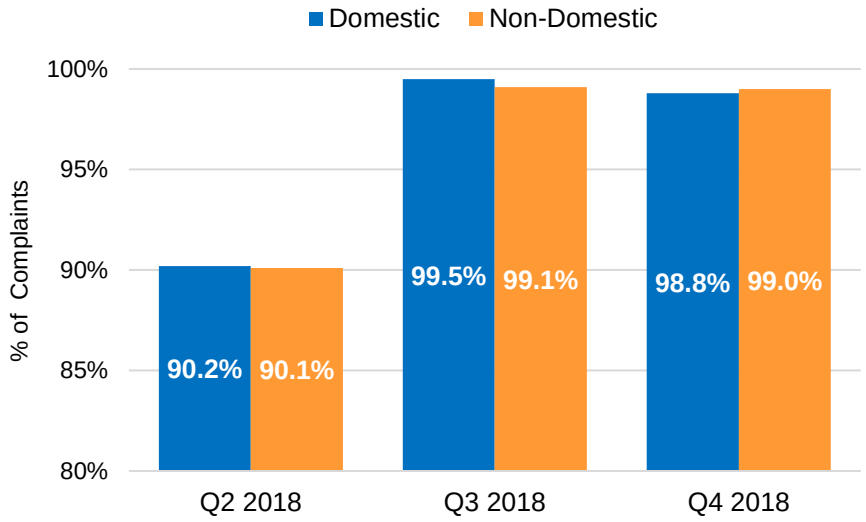

Figure 3 - Response to Complaints 5 Working Days

Complaints to which a final decision is issued within two months are reported on for the entire year 2018. Again, the percentage of complaints responded to are relatively similar across domestic and non-domestic customers. Irish Water issued a final decision within two months to over 90% of complaints over 2018. Irish Water's annual average under this metric for 2018 was 94.6% for domestic customers and 94.1% for non-domestic customers.

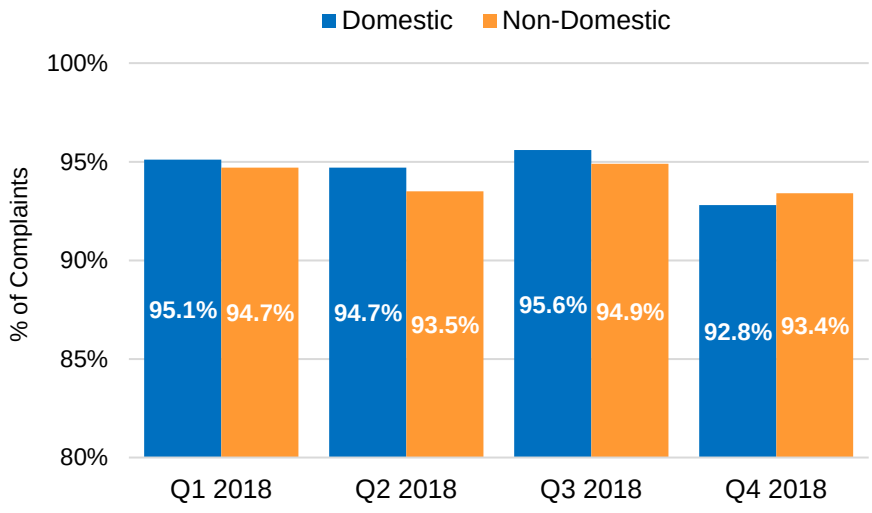

Figure 4 - Response to Complaints 2 Months

The CRU provides a free and independent complaints resolution service for energy customers and customers of Irish Water. Where a customer complaint remains unresolved at the end of Irish Water's complaint handling process, a formal complaint can be lodged with the CRU.[5] The CRU publishes an annual report setting out the level and types of complaints made by customers to the CRU's Customer Care Team each year.[6]

2.1.3 Billing of metered customers

Irish Water's performance regarding the billing of metered customers is reported on for the first time here. Irish Water issues bills to customers based on one of the following:

I. actual meter readings conducted by Irish Water Staff or its agents;
II. customer meter readings;
III. assumed or calculated charges (where water meters are not yet installed or cannot be installed for technical reasons);
IV. estimated readings (where Irish Water has not been able to visit and/or read meter an estimated bill can be issued based on historic or assessed consumption volumes for the account holder's premises).

This metric monitors the number of bills issued based on a meter reading as a percentage of metered accounts. This is to encourage Irish Water to issue bills based on a meter read as opposed to an estimate for customers who have meter installed. As with *2.1.1 Response to Billing Contacts*, this metric refers only to non-domestic (business) customers at present, as domestic customers (households) currently do not receive bills from Irish Water. Irish Water sustained a rate of over 65% under this metric across 2018, with an annual average of 68.6%. During 2018 differing billing and meter reading cycles were in place for non-domestic customers across Local Authorities which may have impacted on performance under this metric.

[5] Please note that complaints regarding water quality or pollution incidents are a matter for the Environmental Protection Agency (EPA).
[6] Customer Care Team Annual Report 2018 (CRU19081)

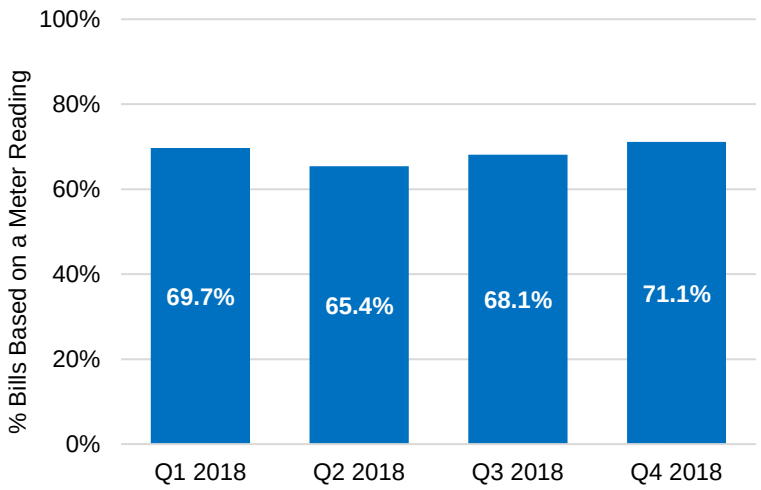

Figure 5 - Billing of Metered Customers

2.1.4 Ease of telephone contact

The following four metrics all monitor ease of telephone contact. Call volumes during 2018 were affected by weather events such as Storm Eleanor in January, Storm Emma in March, and the drought experienced over the summer months. Irish Water's domestic refunds campaign also increased call volumes in January.

2.1.4.1 Ease of telephone contact - Call abandonment rate

The rate of calls abandoned increased from 4% in 2017 to 6% in 2018. For comparison, *The UK Contact Centre Decision-Maker's Guide 2018-19 (16th edition)*, reported an industry median average of 4.4% and mean average of 5.7%. Calls to Irish Water that were abandoned in 2018 peaked at 11% in January and steadily reduced to 2% by December. The CRU notes that performance under this metric has declined each year since 2016. The CRU will continue to monitor performance under this metric and will consult on a proposed target for Irish Water here when consulting on the full establishment of the Framework next year.

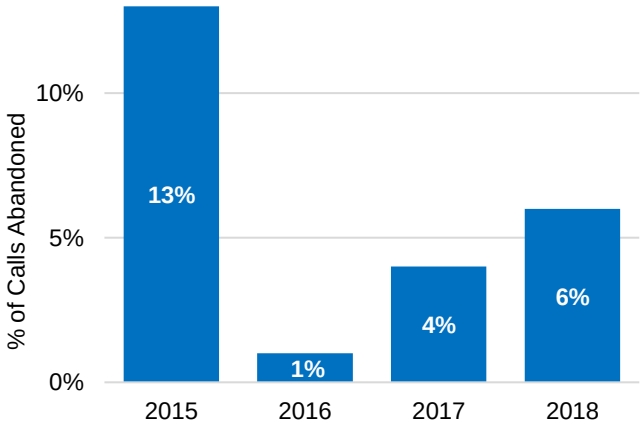

Figure 6 - Call Abandonment Rate

2.1.4.2 Ease of telephone contact - Call handling survey

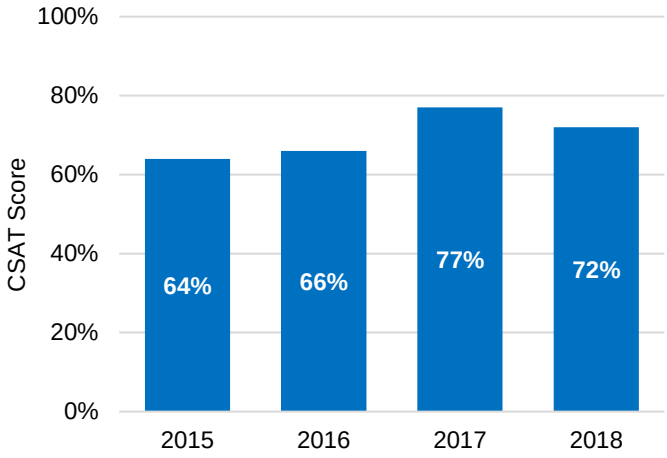

Figure 7 - Call Handling Survey

Customer satisfaction with Irish Water is determined via a survey of customers who have contacted Irish Water via telephone during the year. This is represented as a customer satisfaction (CSAT) score. Irish Water received a customer satisfaction rating of 72% in 2018 compared to 77% customer satisfaction in 2017.

2.1.4.3 Ease of telephone contact – Speed of telephone response

Two metrics known as Telephone Service Factors (TSFs) are used to monitor Irish Water's performance here. TSF1 is a measure of the time taken to pick up calls in the queue to speak to an agent. It calculates the percentage of calls in the queue to speak to an agent that are answered within 20 seconds. TSF2 is a measure of service in the Interactive Voice Recognition (IVR) system. It calculates the percentage of total calls that were either dealt with by the Interactive Voice Recognition System or progressed to the queue and answered within 20 seconds by an agent.

Irish Water's performance across both TSF metrics was lower in 2018 when compared with 2017. For comparison, Gas Networks Ireland reported a TSF1 score of 94.4% in 2018. The CRU notes the downward trend in performance under TSF1 since 2016. This is also the case for TSF2, however, the CRU acknowledges that the TSF2 metric may not accurately reflect Irish Water's performance here. For example, Irish Water provides scripted recordings related to specific outages and drinking water notices ahead of customers hearing the IVR menu. A customer may disconnect prior to reaching the IVR menu as their query has been addressed on hearing the recorded updates but this is recorded a fail under the TSF2 metric. The CRU will consider this in its review of the continued appropriateness of the metrics in the Framework in 2020.

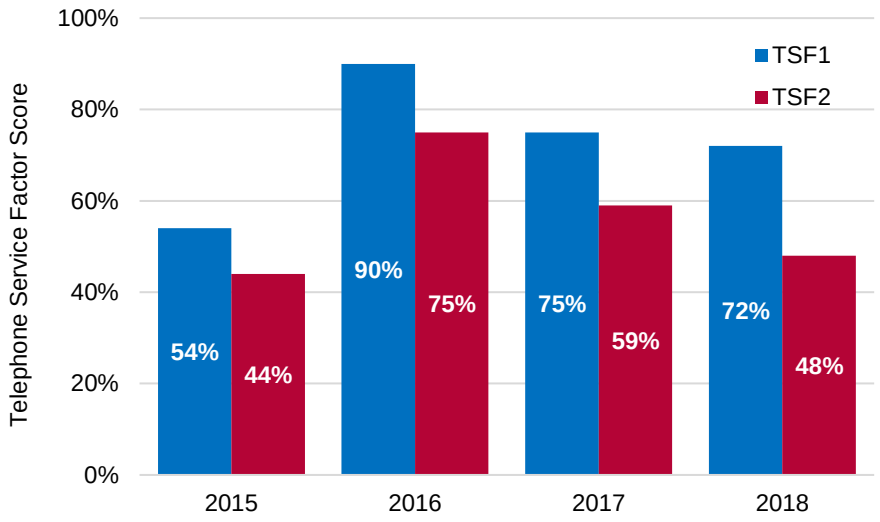

Figure 8 - Speed of Telephone Response

2.1.4.4 Ease of telephone contact – First call resolution

This metric is a measure of Irish Water's ability to deal with a contact on the first call without Irish Water having to call the customer back. Irish Water's performance under this metric increased in 2018 across all call lines when compared to 2017. The domestic line saw the greatest improvement, from 84% in 2017 to 96% in 2018.

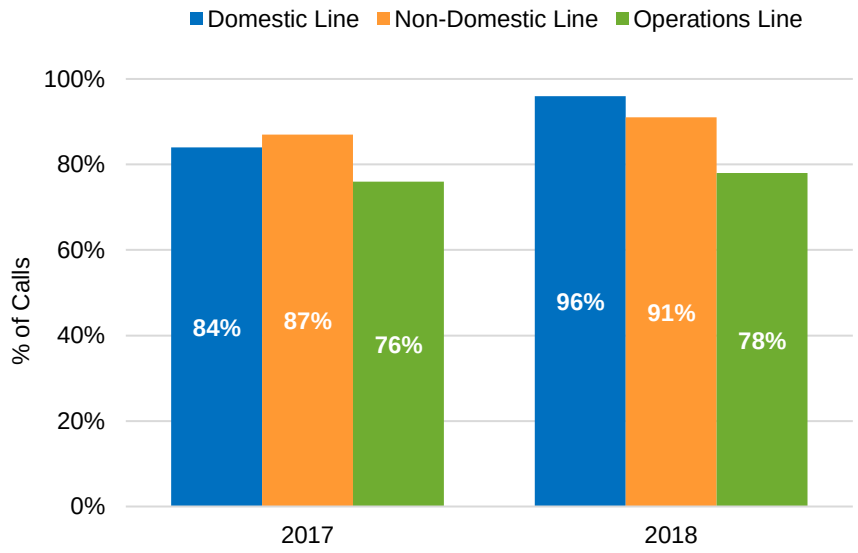

Figure 9 - First Call Resolution

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[7] an incident as:

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

The EPA categorises incidents from 1 (minor) to 5 (catastrophic) depending on the potential impact to the receiving environment and/or human health.

Irish Water's performance in 2018 was relatively in line with that of 2017, although there was an increase in the total number of pollution incidents relating to wastewater from 904 in 2017 to 930 in 2018. The number of Category 1 and 2 incidents increased from 2017 but remained lower than those reported in 2014, 2015 and 2016. The number of Category 3 incidents in 2018 was 3, an increase from 1 in 2017. There was, once again, no reported Category 4 or 5 pollution incidents relating to wastewater.

Irish Water has advised that the most common causes of Category 1 and 2 incidents included plant equipment breakdown at wastewater treatment plants, sewer blockages and adverse weather conditions.

Irish Water provides the CRU with the percentage of pollution incidents that occurred due to operational issues at Wastewater Treatment Plants. These incidents are reported to the EPA. This percentage increased from 45% in 2017 to 52% in 2018.

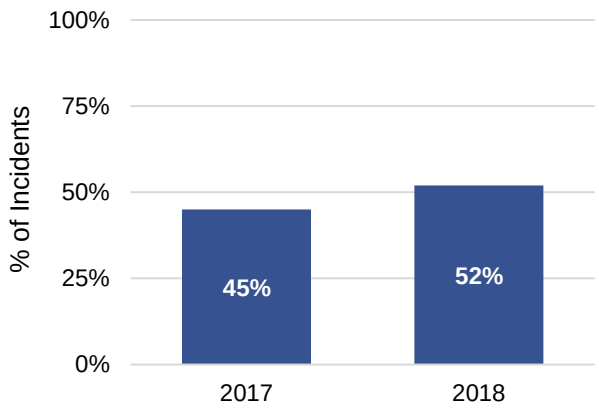

Figure 10 - Incidents Reported to EPA due to Operational Issues

[7] EPA Urban Waste Water Treatment in 2018, Appendix H: Environmental Incidents.

At the end of 2018, there were 244 incidents either ongoing or likely to recur until the underlying cause of the incident is resolved. The EPA refers to these as 'recurring incidents'. The EPA reports that 45 of the long term recurring incidents at the end of 2018 can be fixed by improving how the existing treatment plants are run.

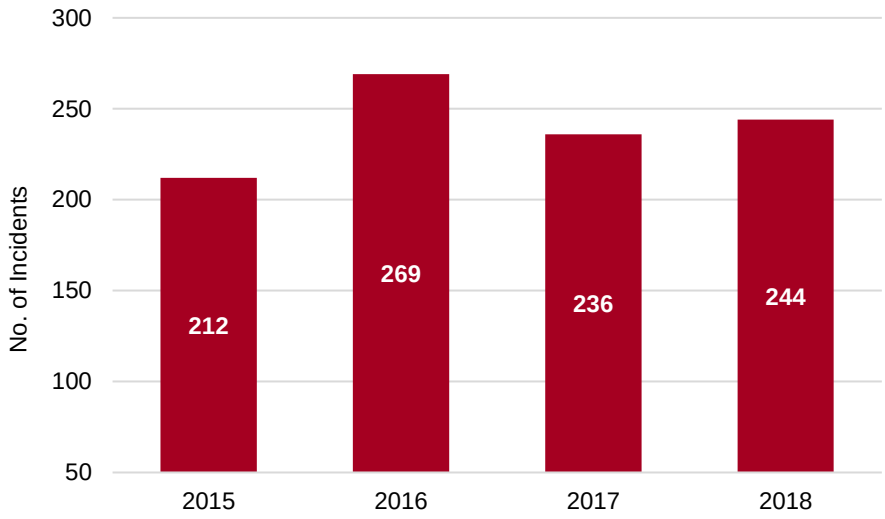

Figure 11 – EPA Recurring Pollution Incidents at Year End

2.2.2 Sludge Disposal

Wastewater sludge is a treated by-product of the wastewater treatment process. Inappropriate disposal of this residue could cause harmful environmental impacts and hence safe disposal or re-use is required. Drinking water sludge refers to the silt, clay, other suspended solids and organic or inorganic compounds that are removed from the water during the drinking water treatment process.

This metric will measure the percentage of drinking water and wastewater sludge that is disposed of in an unsatisfactory manner.

In its 2018 Performance Assessment report Irish Water states that it is on track to report on drinking water sludge in 2020 and on wastewater sludge in 2022. The CRU will engage with Irish Water to ensure that a meaningful metric is in place regarding the disposal of wastewater sludge and to support reporting in 2021.

2.2.3 Wastewater Agglomerations Meeting Treatment Requirements

A wastewater agglomeration is an area where the population or economic activities (or both) are sufficiently concentrated for a wastewater works to have been put in place.

This metric consists of 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 (UWWTD).[8] The objective of UWWTD is to protect the environment from the adverse effects of urban waste water discharges.

In 2013 there were 50 agglomerations in Ireland discharging untreated wastewater into the environment. Between 2014 and 2018, Irish Water had completed work at a total of thirteen sites to reduce this number to 37.

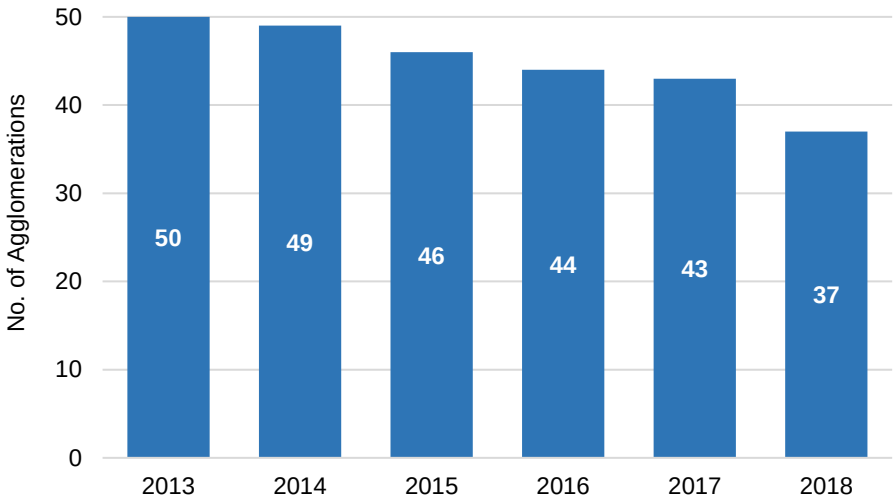

Figure 12 - Agglomerations with no Wastewater Treatment

The UWWTD sets requirements for the collection and treatment of wastewater from large urban areas to protect the environment. It also 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 UWWTD varies on an annual basis. There were 169 agglomerations subject to the UWWTD in 2018, a reduction from 179 agglomerations in 2017. Of these, 148 were compliant with the treatment and effluent quality standards of the Directive and 21 agglomerations remained non-compliant (see Figure 13 below). 12% of the agglomerations subject to the Directive were non-compliant in 2018. This is an improvement on the 16% of agglomerations subject to the Directive that were non-compliant in 2017.

Investment by Irish Water in wastewater infrastructure is evident in reductions in the number of agglomerations with no wastewater treatment and in the number of agglomerations that are non-compliant with the UWWTD.

[8] Council Directive 91/271/EEC

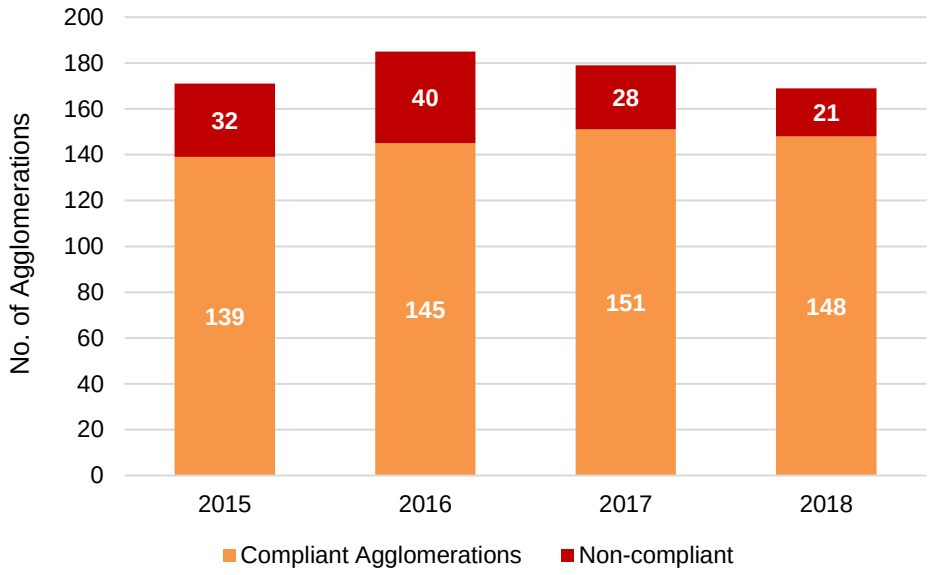

Figure 13 - Agglomerations Compliant with UWWTD

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 in 2020.

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 and 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 2018 highlighted that water quality across the microbiological and chemical parameter categories has remained consistent since Irish Water

became responsible for public water supplies in 2014. As reported by both Irish Water and the EPA, microbiological compliance was 99.9% in 2018 and chemical compliance was 99.6%.

Trihalomethanes are formed when organic matter in water reacts with chlorine used in the disinfection process. Figure 14 below shows that there has been a general increasing trend in trihalomethane compliance. Compliance with this metric, as reported by Irish Water and the EPA, in 2018 was 95.1%. This is an increase from 94.3%[9] compliance in 2017.

Lead is found in drinking water if it dissolves from lead pipework, fittings and connections. In 2017, Irish Water estimated that there were approximately 180,000 residential properties at risk of lead non-compliance.[10] Of this, 40,000 were backyard lead service connections which loop off the mains and run through backyards serving several houses. The remaining 140,000 were individual lead service connections from water mains which run under the roads.

Compliance with the lead parameter, which is 10 µg/l, has fluctuated between 97.8% and 98.7% from 2014-2017 and peaked at 98.9% in 2018. 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.

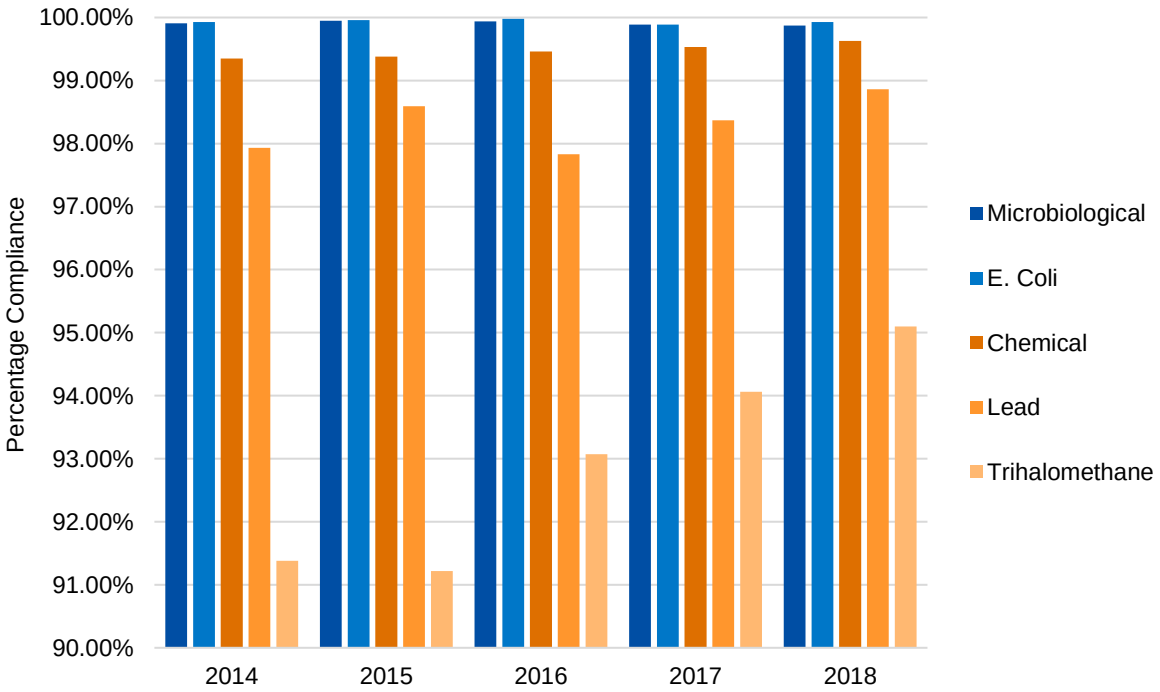

Figure 14 - Drinking Water Quality Metrics

[9] Irish Water's third submission under the Framework to the CRU states that trihalomethane compliance was 94.1% in 2017. The EPA Drinking Water Report for Public Supplies 2017 reported trihalomethane compliance at 94.3%.
[10] Irish Water Lead in Drinking Water Mitigation Plan

2.3.3 Water Supplies on Boil Water Notices and Water Restriction Notices

A boil water notice is a formal notice issued to all properties in an area advising that drinking water from the public mains is not safe to drink unless it is boiled and cooled beforehand. A water restriction notice is an instruction issued to the public if the water supply within a certain area is either not safe to drink or use as boiling it will not remove the contaminant.

Boil water notices and/or water restriction notices are issued by Irish Water in consultation with the HSE when drinking or using the water might endanger people's health.

Monitoring boil water notices is a 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 2018, Irish Water reported that there were 899 people being served by 8 supplies with a boil water notice in place. Compared with 2017, this was an increase on those affected by a boil water notice at the end of the year (19 people at the end of 2017), though the number of people affected by boil water notices at the end of 2018 was still much lower than that at the end of 2016 (5,340). However, the total population served by a supply with a boil water notice in place during 2018 totalled 97,559, which was close to the 98,431 people served by a boil water notice over 2016. Almost two-thirds of all boil water notices issued in 2018 were short-term notices and were lifted within one month.

During 2018 boil water notices were issued due to a variety of reasons including inadequate disinfection, monitoring results failures, source contamination and adverse weather conditions. The main driver for the number of people affected by a boil water notice in 2018 is the imposition of a notice for three days when a disinfection failure occurred at the Vartry Reservoir supply which serves 65,000 people.[11]

11 For more information on supplies affected by a boil water notice in 2018, see the EPA's Drinking Water Quality in Public Supplies Report 2018.

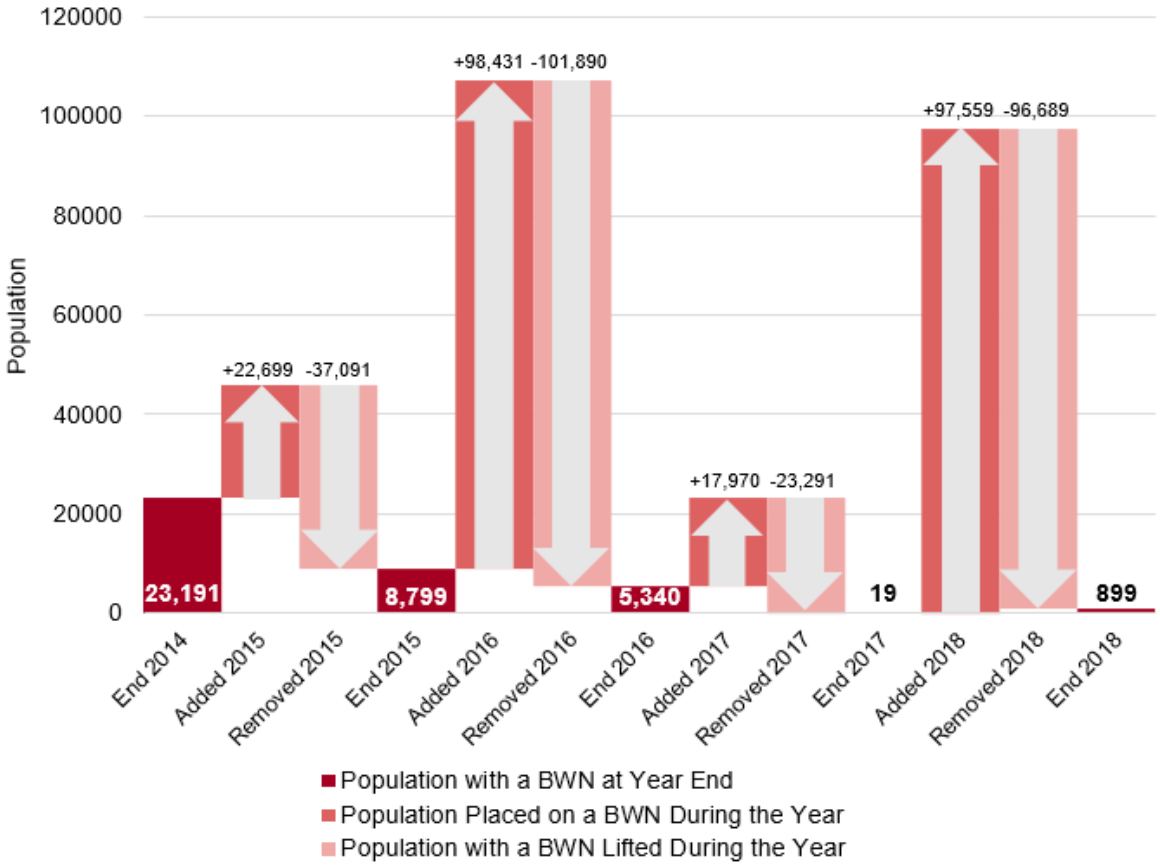

Figure 15 - Population Served by a Supply with a Boil Water Notice in Place[12]

The EPA identified two main causes of water restriction notices issued in 2018: contamination of the source and problems with chlorine dosing. At the end of 2018, the number of people affected by a water restriction (4,384) was higher than any other year since 2014. 2018 also saw an increase in the population served by a supply with a water restriction in place during the year, with a population of 20,624 affected. Of the supplies that had a water restriction imposed during 2018, Fethard was the largest with 6,526 people affected. Here the water supply was contaminated with kerosene.[13]

[12] 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 2018, 10 boil water notices were in place affecting 897 people.

[13] For more information on supplies affected by a water restriction notice in 2018, see the EPA's Drinking Water Quality in Public Supplies Report 2018.

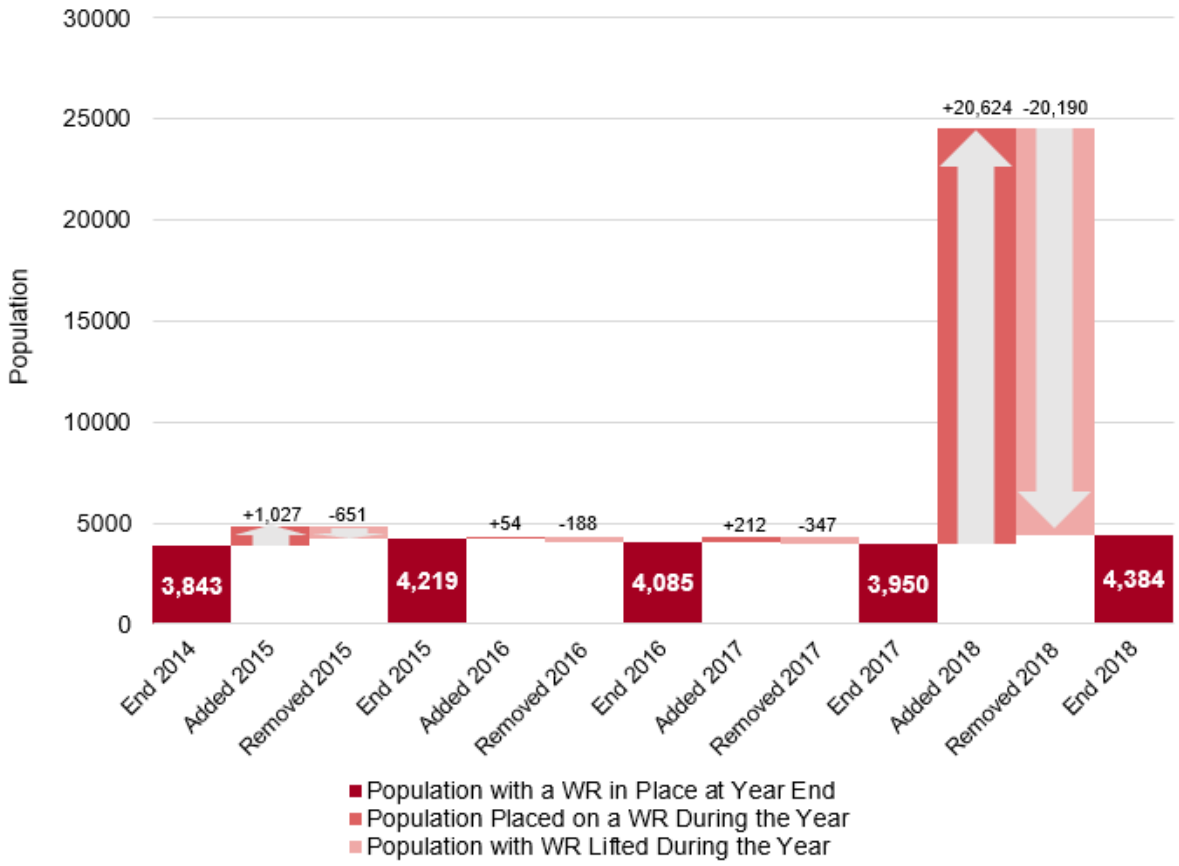

Figure 16 - Population Served by a Supply with a Water Restriction in Place[14]

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 the Appendix. It is measured as an annual average in million litres per day. The CRU has previously set out the basis for Irish Water to report on leakage under this metric.

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 commenced the roll out of its Leakage Management System (LMS) in November 2018. The LMS has been fully operable across all Local Authorities since October of 2019. In that context Irish Water has stated that it will report on

[14] 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. Furthermore, Irish Water has included lead issues in its reporting on water restrictions, the EPA has not. The EPA reports that, at the end of 2018, 3 water restrictions were in place affecting 487 people.

national leakage under the Framework in 2020.

To date, Irish Water has been providing the CRU with a figure for 'Unaccounted-for-Water' on the public network in place of a leakage metric. Irish Water estimates the water it uses on the distribution system by multiplying distribution input by 1% and provides 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' reported by Irish Water 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.

Irish Water's 'Unaccounted-for-Water' figure has risen steadily since 2016. As of 2018, 781 million litres of water per day are classified as 'Unaccounted-for-Water'.

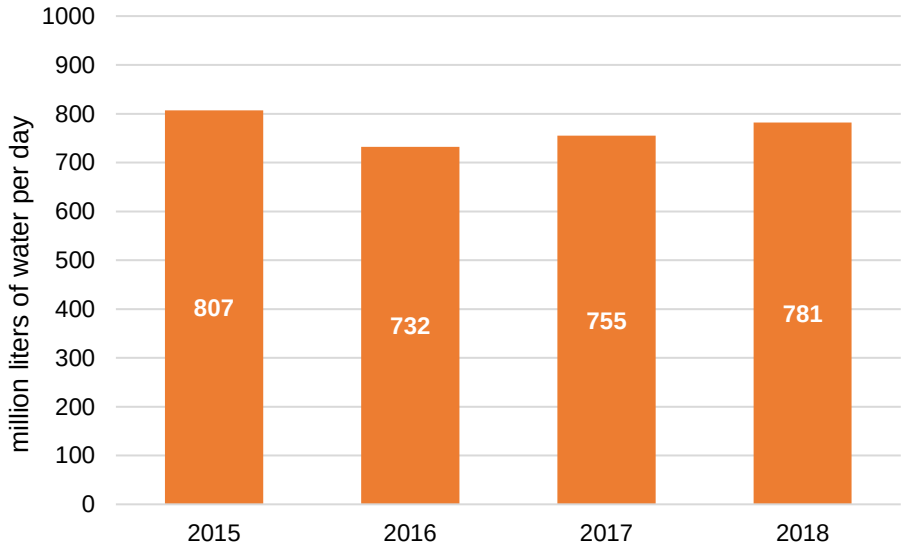

Figure 17 - Unaccounted for Water

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 networks.

Annual average daily water demand fluctuates 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.

Irish Water's work to support the upcoming publication of the National Water Resources Plan facilitates reporting under this metric.

2.5 Sewerage Service

Under this category the CRU will monitor 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 in 2020.

3. Next Steps

In 2020 the CRU will consult and issue a decision regarding the continued appropriateness of the metrics included in the Performance Assessment Framework and will set out the proposed targets against which to assess Irish Water's performance under each metric for the period 2020-2024.

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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.

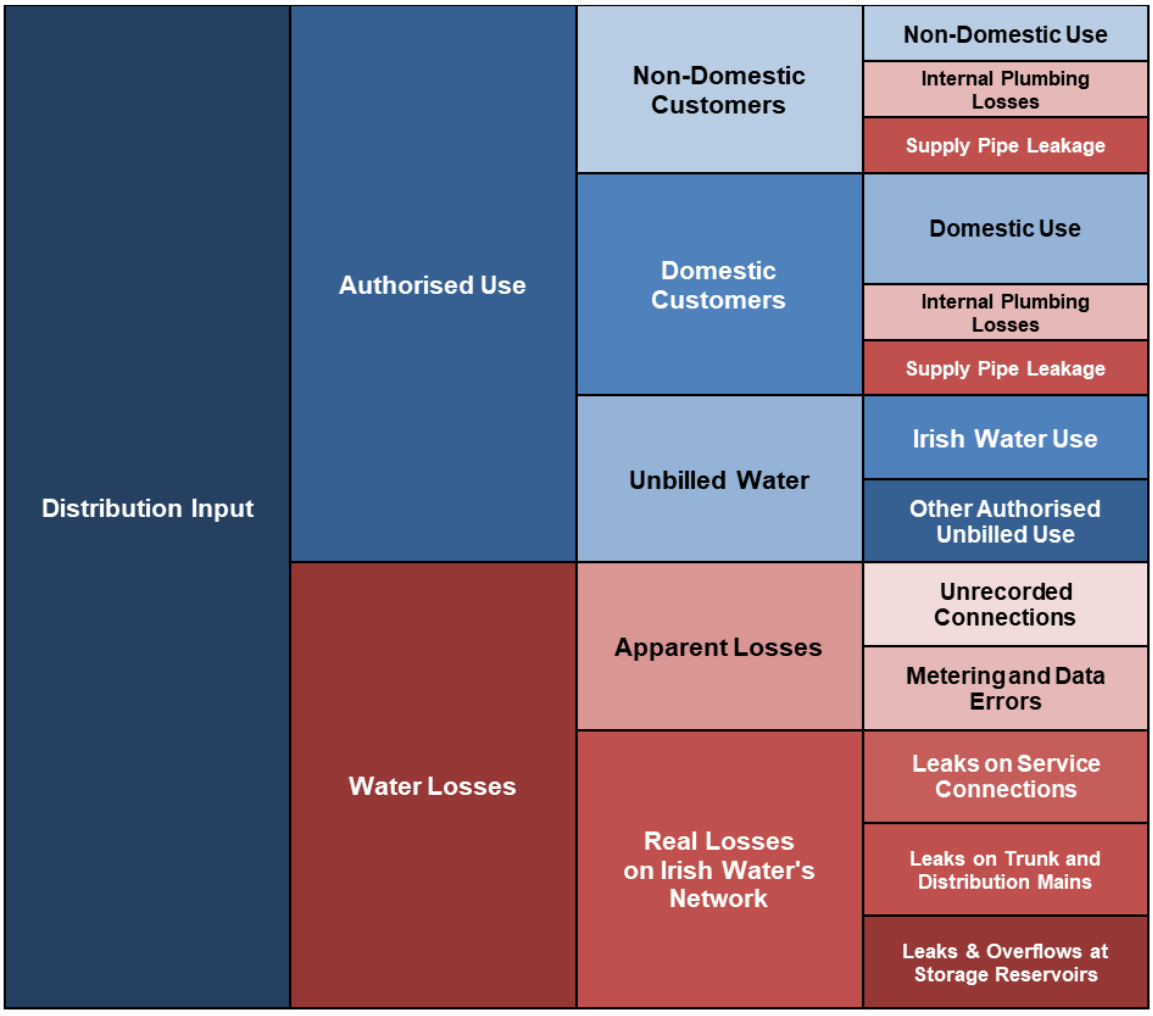

Figure 18 - Components of Water Demand

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.

Leaks on domestic customer's external customer supply pipe (see Figure 19 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. Savings from the scheme results from a mix of repairs on the customer supply pipe carried out by Irish Water and repairs carried out by customers after being informed by Irish Water that the leak alarm on their meter had been triggered.

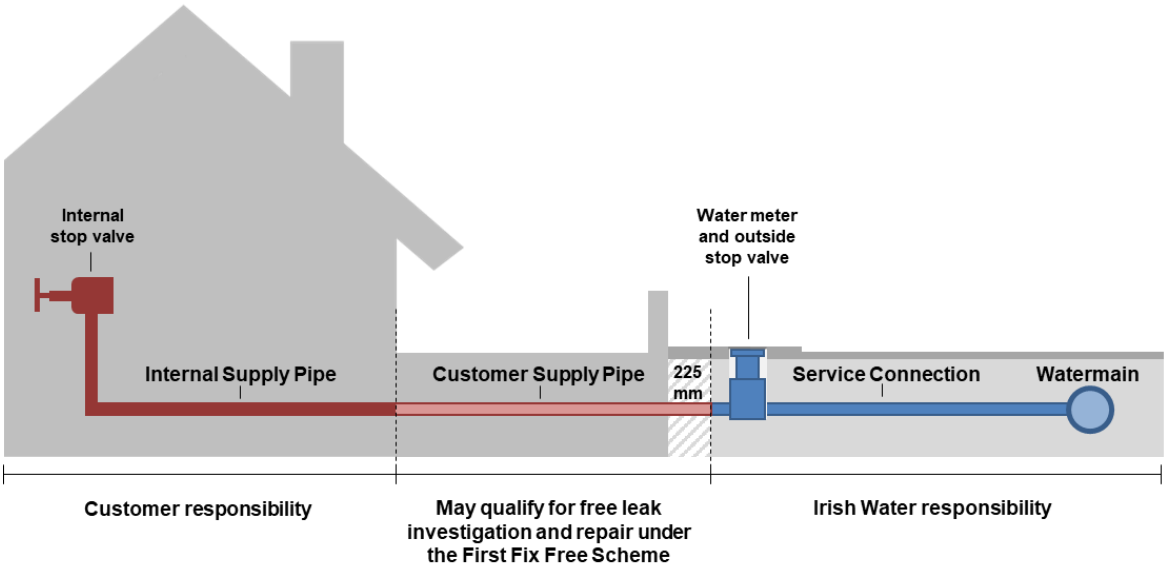

Figure 19 - Pipe Responsibility First Fix Free Scheme