



Commission for Energy Regulation  
An Coimisiún um Rialáil Fuinnimh

# Irish Water's Capital Investment Outputs 2016

## Information Note

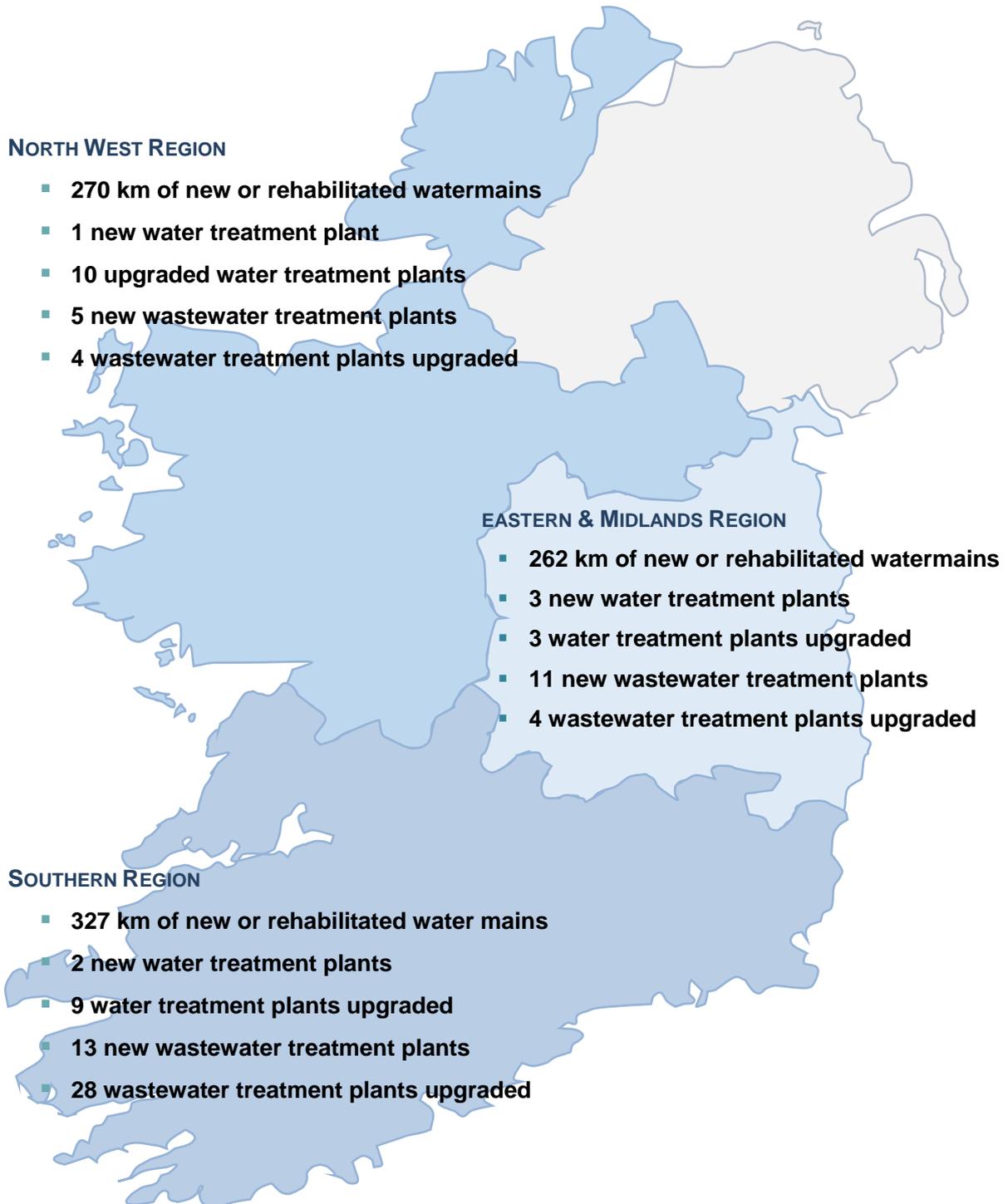
Reference:	CER/17/120	Date Published:	13/06/2017	Closing Date:	N/A
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*Regulating Water, Energy and Energy Safety in the Public Interest*

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# Key Outputs Delivered in 2014-2016

Irish Water carries out its activities across three regions, as highlighted below. Irish Water has delivered outputs across the regions relating to both water and wastewater services.



# Summary

The Commission for Energy Regulation (CER) is the independent economic regulator of Irish Water. The CER's primary aim is to protect the interests of customers of Irish Water.

The CER seeks to ensure that Irish Water is run as efficiently as possible while providing appropriate water and wastewater services to its customers.

One of the key ways in which the CER does this is through the revenue control process. As part of the revenue control, Irish Water submits its proposed operating costs and its capital investment plan to the CER. The CER reviews the submissions and allows Irish Water an efficient level of revenue to finance its activities and corrects for over or under spends in previous revenue control periods.

Irish Water's capital investment plan sets out what it proposes to deliver for a proposed budget. Having reviewed these proposals the CER allows Irish Water to recover revenue to support necessary, efficient investment in water and wastewater infrastructure. Irish Water must then report on what it has delivered for the monies allowed by the CER. The CER may disallow revenue where outputs have not been delivered as planned.

In carrying out its functions, including deciding on Irish Water's allowed revenue as above, the CER must have regard to the need to ensure that Irish Water performs its functions in an open and transparent manner.

At the time of Irish Water's establishment in 2013 significant investment was required to upgrade water and wastewater services in Ireland. At that time it was estimated that 49% of treated water was being lost through leaks. The EPA has reported that during 2014 there were 199 boil water notices and 15 water restriction notices active in 17 counties affecting over 200,000 people. 121 supplies, serving almost one million people, were classed as requiring remedial action by the EPA at the end of 2014. In the same year, sewage was being discharged at 44 locations across the country with either no treatment or preliminary treatment only and over 150 wastewater treatment plants were overloaded.

In the first revenue control, the CER challenged Irish Water to reduce capital expenditure that had not yet been committed to contract by 13.5% by the end of 2016. The CER allowed Irish Water a capital investment budget of over €1.9bn in the period 2014 to 2016. Irish Water has stated that it has remained within this allowance and delivered improvements for customers.

By the end of 2016 Irish Water has confirmed to the CER that it has:

- Delivered 6 new and 22 upgraded water treatment plants.
- Completed work at 66 supplies on the EPA's remedial action list in 2015 and 2016.
- Removed Boil Water Notices that had been in place at the start of 2014 for more than 200 days for over 20,000 people.
- Delivered 29 new and 36 upgraded wastewater treatment plants.
- Provided wastewater treatment at 5 agglomerations previously discharging raw sewage.
- Delivered over 850 km of new or rehabilitated watermains.
- Reduced leakage through the First Fix Free Scheme, mains replacement and pressure management activities.

In addition to the projects that have been completed by the end of 2016 Irish Water has progressed over 200 water and wastewater projects through various stages of concept, design and construction. These projects have carried through to the current investment plan for the years 2017 to 2021.

Irish Water has delivered some key projects and benefits for customers since its establishment. However, progress in delivering upgrades to wastewater treatment plants has been slower than forecast by Irish Water. Irish Water has advised that many of these projects will be complete in 2017. Delays will be taken into account when the CER looks back at Irish Water's actual delivery of capital investments in the third revenue control. The CER will continue to monitor the delivery of Irish Water's capital investments in 2017 and beyond.

Building on the work carried out to date, the CER is currently working on an enduring monitoring and reporting regime which will be put in place in 2017. This will ensure that Irish Water's progression of capital investments for the revenue allowed by the CER is transparently reported to customers and taxpayers who fund these investments. It will also support the CER in assessing Irish Water's delivery of plans committed to for the revenue allowed by the CER.

## Public Impact Statement

The CER allows Irish Water revenue to support necessary and efficient investment in capital projects and programmes in order to support delivery of appropriate services to its customers. The CER then reviews Irish Water's delivery of capital investments against those committed to by the utility for the revenue allowed. Where Irish Water has not delivered to plan, the CER may disallow revenue.

In carrying out its functions, including deciding on Irish Water's allowed revenue as above, the CER must have regard to the need to ensure that Irish Water performs its functions in an open and transparent manner.

This paper provides a transparent overview of Irish Water's performance in delivering its capital investment plan in the period 2014 to 2016. It provides an overview of key outputs and outcomes delivered by Irish Water and funded by customers and taxpayers since the establishment of the utility to the end of 2016.

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# 1 Introduction

The Commission for Energy Regulation (the CER) is the independent economic regulator of Irish Water. The CER's primary aim is to protect the interests of customers of Irish Water. In carrying out this role the CER seeks to ensure that Irish Water is run as efficiently as possible while providing appropriate water and wastewater services to the public. In carrying out its functions the CER must have regard to the need to ensure that Irish Water performs its functions in an open and transparent manner.

The Environmental Protection Agency (EPA) is the environmental regulator of Irish Water. The EPA authorises, monitors and audits wastewater discharges by Irish Water. As the drinking water quality regulator for public supplies, the EPA works to ensure that drinking water supplied by Irish Water meets the standards of the European Union (Drinking Water) Regulations. The CER has a memorandum of understanding with the EPA and regularly engages with the EPA regarding Irish Water's performance in fulfilling its obligations.

This document sets out the key outputs and outcomes confirmed by Irish Water as delivered during the period from its establishment to the end of 2016 for the revenue allowed by the CER.

The CER is currently working on an enduring monitoring and reporting regime which will be put in place in 2017. This will ensure that Irish Water's progression of capital investments for the revenue allowed by the CER to the utility is transparently and regularly reported to customers and taxpayers who fund these investments. It will also support the CER in assessing Irish Water's delivery of the plans committed to for the revenue allowed by the CER.

## 1.1 Capital Investment

It is widely recognised that at the time of Irish Water's establishment in 2013 significant investment was required to upgrade water and wastewater services in Ireland. At that time it was estimated that 49% of treated water was being lost through leaks. The EPA has reported that during 2014 there were 199 boil water notices and 15 water restriction notices active in 17 counties affecting over 200,000 people. 121 supplies, serving almost one million people, were classed as requiring remedial action by the EPA at the end of 2014. In the same year, sewage was being discharged at 44 locations across the country with either no treatment or preliminary treatment only and over 150 wastewater treatment plants were overloaded.

In October 2014 the CER allowed Irish Water expenditure of over €1.9bn for capital investments in the period 2014-2016. The allowed capital investment provided for expenditure in upgrading water and wastewater assets and expenditure to establish the single, national utility.

When developing its first capital investment plan submission to the CER, Irish Water did not have comprehensive information regarding the assets it inherited, their condition or their performance. At that time Irish Water was embarking on a phase to establish itself as the national utility and collecting and collating data and information from the 31 local authorities. Irish Water reviewed and prioritised the projects and programmes inherited from the local authorities in order to support the development of the investment plan. The CER reviewed the governance processes and guidelines that Irish Water used for managing its capital programme at that time and considered them to be appropriate.

In December 2015 Irish Water provided the CER with an updated list of projects and programmes and associated outputs to be delivered for capital investments in the years 2014 to 2016. The report contained actual expenditure and outputs up to October 2015 and forecast expenditure and outputs to end 2016. The CER allows expenditure based on Irish Water's forecasts and corrects for actual outputs and incurred investment in subsequent revenue controls.

This report sets out the key outputs and outcomes that Irish Water has recently confirmed were delivered in the period to the end of 2016 against those forecast by Irish Water in December 2015.

The CER allowed Irish Water a capital investment budget of over €1.9bn for the period 2014 to 2016. Irish Water has confirmed that it has remained within this allowance.

### 1.1.1 Related Documents

- [CER16342 CER Decision on Irish Water Revenue for 2017-2018](#)
- [CER16273 Irish Water IRC2 Submission - Executive Summary 2014 to 2016](#)
- [CER16345 Irish Water IRC2 Submission - Capital Investment Submission](#)

## 1.2 Structure of Paper

- **Section 1** provides background information and context for this paper.
- **Section 2** provides an overview of the outputs and outcomes for Irish Water's capital investments in water assets and infrastructure in the period 2014 to 2016. This section is subdivided into water supply and water quality.
- **Section 3** provides an overview of the outputs and outcomes for Irish Water's capital investments in wastewater assets and infrastructure in the period 2014 to 2016.
- **Section 4** provides an overview of other investments and outputs delivered including energy efficiency programmes, IT and facilities.
- **Section 5** outlines the next steps.

## 2 Drinking Water

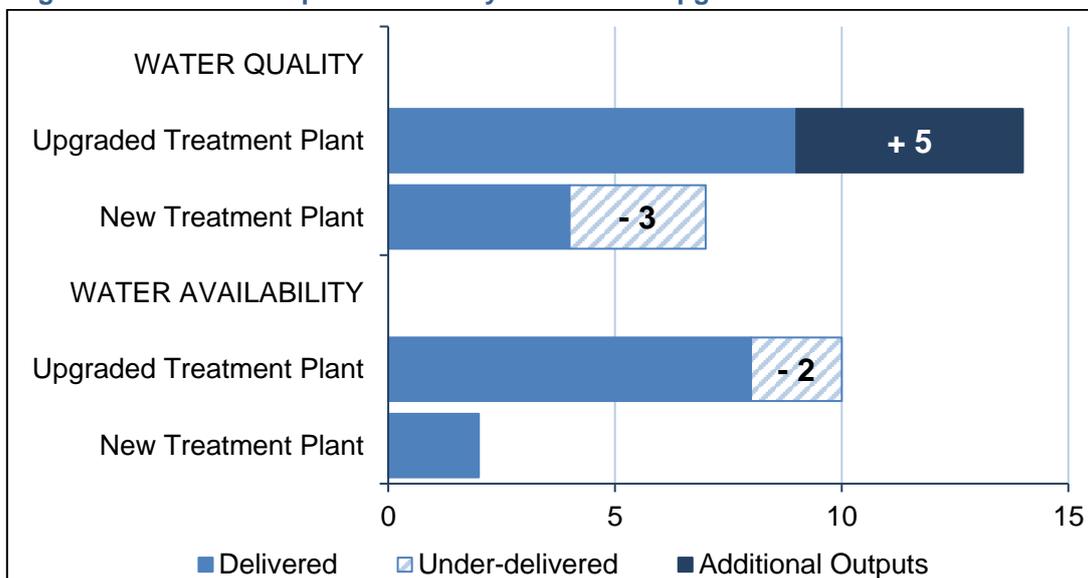
Irish Water has delivered tangible benefits across water treatment and supply throughout the country.

- Long-term boil water notices lifted for over 20,000 people.
- 66 supplies, serving over 350,000 people were removed from the EPA’s Remedial Action List in 2015 and 2016.
- Over 850 km of new or renewed watermains have been laid.

Irish Water’s portfolio of drinking water projects and programmes target improvements in water quality and in water availability. By the end of 2016 Irish Water has stated that it delivered 6 new and 22 upgraded water treatment plants and over 850 km of new and rehabilitated watermains.

As well as those completed in the period, Irish Water has progressed over 100 drinking water projects and programmes through concept, design and/or construction phases that will continue into 2017 and beyond. Irish Water’s actual delivery of new and upgraded treatment plants against that forecast in its submission to the CER in December 2015 is presented below.

**Figure 1 - Actual vs Expected Delivery of New and Upgraded Water Treatment Plants**



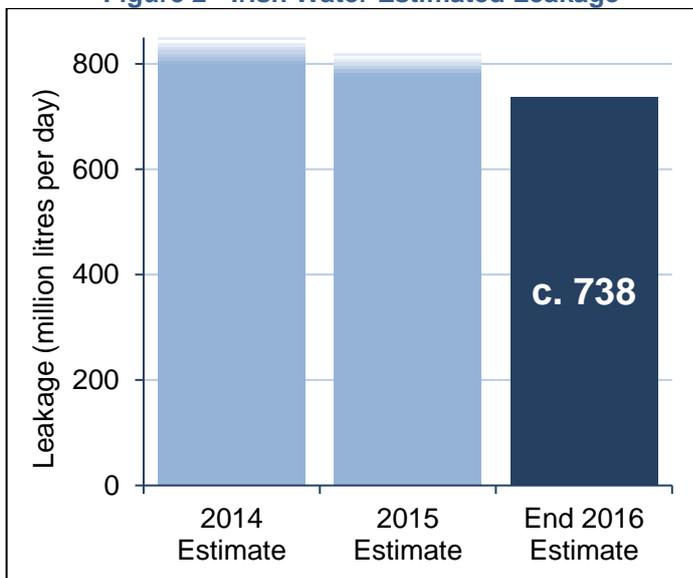
In its submission regarding outputs and outcomes delivered by the end of 2016, Irish Water advised that of the outputs not delivered at the end of 2016, two new water treatment plants and one upgraded water treatment plant are now due to be delivered in the first six months of 2017.

## 2.1 Water Supply

### 2.1.1 Leakage

Reducing leakage levels helps to protect the environment by reducing: the amount of water that needs to be abstracted; the amount of sludge produced during water treatment, and; the energy that is needed to treat and distribute the water. Reducing the water lost through leaks requires replacing the mains and pipes currently leaking while also responding to new leaks and bursts on the network and pre-emptively addressing potential leaks through pressure management programmes.

**Figure 2 - Irish Water Estimated Leakage**



Investment in district, domestic and non-domestic meters has allowed Irish Water to make progressively more accurate estimates of the amount of water lost through leaks.

Irish Water's programme of water conservation projects including watermains replacement, pressure management and the First Fix Free Scheme has seen a reduction in the amount of drinking water lost through leaks.

### 2.1.2 District Meter Areas

District meters are located across Irish Water's 63,000 km water network and break down that network into smaller district metered areas (DMAs) of which there are 4,407. District meters record the water that flows into and out of DMAs. This covers the vast majority of the network, with an average number of premises per DMA at 408 connections. This varies with density of connections between urban and rural locations. In rural areas, the number of connections is

lower - typically under 100 - for relatively long lengths of mains. In urban areas, the typical number of connections is estimated at between 1,000 and 1,500.

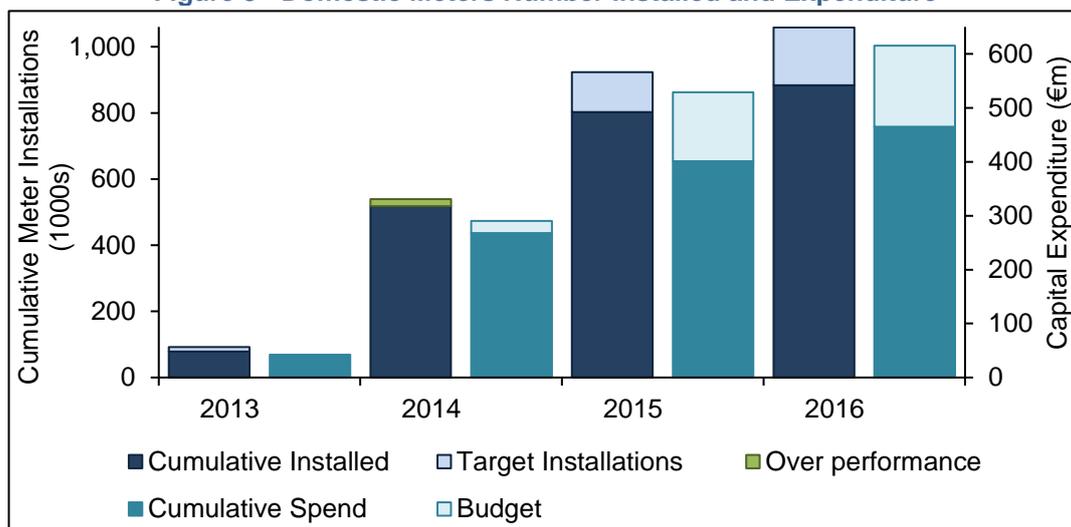
In 2014, Irish Water carried out a national survey to identify the condition and performance of key assets used in the identification of leaks. The survey revealed that 50% of district meters in the network, installed prior to the establishment of Irish Water, were broken.

Irish Water has estimated that it has increased operability of its DMAs to 73% in the period. Irish Water has repaired or replaced thousands of broken meters, sluice valves, and flow logging devices during 2014 to 2016. This investment will provide Irish Water with a more accurate picture of leakage within DMAs across the water network. DMA's do not provide data on specific locations of leaks. These need to be found within a prioritised DMA through traditional methods, step testing, listening sticks and leak noise correlators and, where in place, with the data available from meters at individual connections.

### 2.1.3 Domestic Metering Programme

The Programme for Government 2011-2016 included a policy decision to install water meters in Ireland coupled with domestic water charges as part of the Water Sector Reform Programme. The objective was to achieve universal metering and move to a charging system based on use above a free allowance. In line with that policy, work to progress the procurement and installation of domestic metering commenced prior to the establishment of Irish Water.

**Figure 3 - Domestic Meters Number Installed and Expenditure**



The contracts for Phase 1 of the National Metering Programme were novated to Irish Water when the utility was established. Phase 1 planned the installation of 1,058,275 meters between 2013 and 2016.

By the end of 2016 Irish Water has installed over 884,000 domestic meters at a reduced cost per meter than originally forecasted as a result of fewer boundary boxes and fewer abortive excavations being required than was originally assumed.

#### 2.1.4 First Fix Free Scheme

**The First Fix Free Scheme has saved 89 million litres of water per day.**

In 2015 Irish Water implemented a First Fix Free Scheme in line with Government policy. Under the scheme Irish Water notifies metered 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. Leaks which are identified on the external supply pipe serving a property are offered a free leak repair by Irish Water. 46 million litres per day have been saved through fixes provided by Irish Water by the end of 2016.

Repairs carried out and funded by customers have made a significant contribution to reducing leaks. 26,748 customers have repaired leaks on their property after being advised by Irish Water that the leak alarm on their meter had been triggered. Customer repairs have contributed to a leakage reduction of 43 million litres per day. In total the First Fix Free Scheme has saved 89 million litres of water per day.

#### 2.1.5 Mains Replacement

Irish Water has targeted the replacement of the worst performing mains nationally in terms of interruptions to customer supply, low pressure, water quality and leakage. Over the period 2014 to 2016 Irish Water has delivered 719 km of new or rehabilitated watermains through its portfolio of water quality, water supply and conservation projects. An additional 140 km of mains have been replaced through Irish Water's small mains rehabilitation programme.

**Irish Water has delivered 859 km of new or rehabilitated watermains.**

## 2.2 Water Quality

### 2.2.1 Boil Water Notices

Irish Water has completed works to remove boil water notices for over 20,000 people who were being supplied by a public water supply where a boil water notice had been in place for over 200 days at the start of 2014.

Where Irish Water (and previously the local authorities) identifies that the drinking water it is supplying may pose a health risk to its customers it must consult with the Health Service Executive (the HSE). If this consultative process concludes that public health may have been compromised, then Irish Water may be required to issue a water restriction or boil water notice.

Boil water notices can be issued where microorganisms such as *E. coli* or *Cryptosporidium* are detected. Boil water notices can also be issued as a precaution where there is, as an example, a temporary process failure at a water treatment plant. In this context, the number of supplies with a boil water notice in place can fluctuate throughout the year. Irish Water has invested in and continues to invest in upgrading plants to reduce the risk of water being produced that is unfit for human consumption.

### 2.2.2 The EPA's Remedial Action List

**The number of supplies on the EPA's RAL has been reduced to 99. This is the first time the RAL has been below 100 since it was first prepared by the EPA in 2008.**

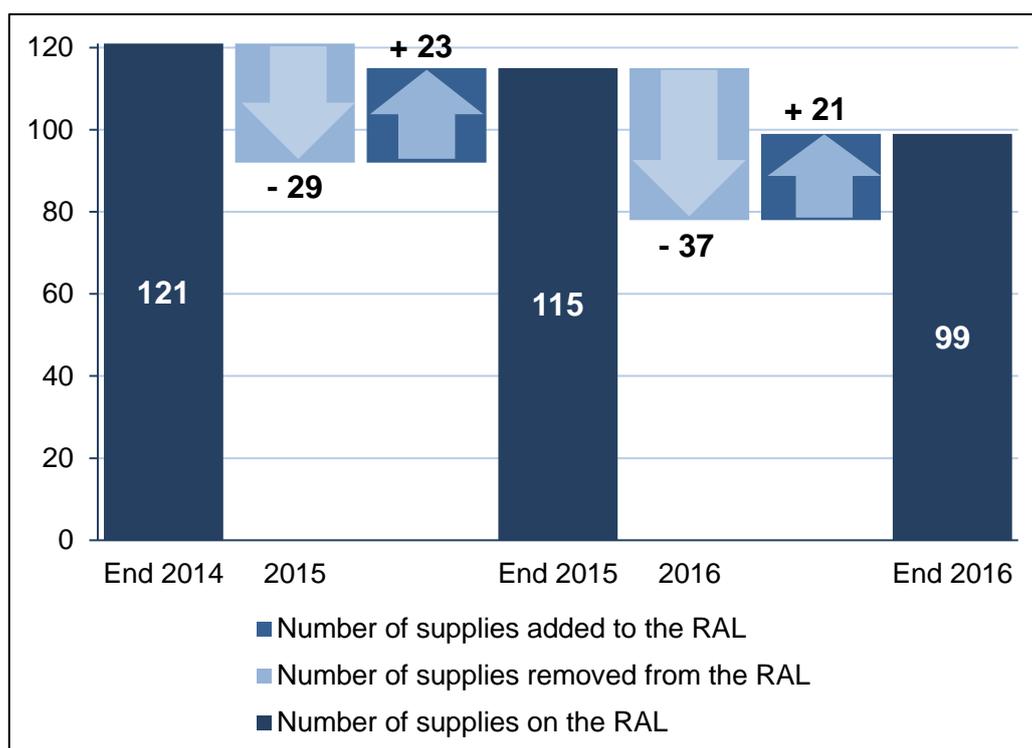
The EPA's Remedial Action List (RAL) includes public supplies where water quality issues arise as a result of the performance of the water treatment plant. The RAL is a dynamic list of public water supplies requiring action to improve performance. Supplies are added to the RAL where the EPA deem there to be a treatment deficiency, or operational / management issues that may result in persistent failures of key water quality parameters,

for example, *E. coli*, nitrate, trihalomethanes, *Cryptosporidium*, aluminium, and turbidity.

Supplies may be added to the RAL as a result of audits from the EPA, notifications of exceedances, or information gathered from Irish Water or the HSE.

During 2015 and 2016, Irish Water has removed 66 water supplies from the RAL in total. In 2015 and 2016 the EPA added 44 supplies to the RAL.

Figure 4 – Public Water Supplies on the EPA's Remedial Action List



Of the 121 supplies identified by the EPA as requiring remedial action at the end of 2014, Irish Water had targeted removing 50 of these supplies from the RAL by the end of 2016. Irish Water is ahead of schedule having removed 53 of these supplies from the RAL by the end of 2016.

### 2.2.3 Lead in Drinking Water

Lead in drinking water can pose a health risk and in 2013 the European Union (Drinking Water) Regulations stated that the maximum allowable lead concentration in drinking water was 10 micrograms per litre. The drinking water produced at Irish Water's treatment plants does not contain lead but lead can be dissolved in low concentrations from pipework and fittings. Irish Water has advised that there are no lead watermains in its network however, lead pipework exists in service connections and shared "backyard" lead service pipes. Backyard service pipes loop off the mains and supply a number of properties.

Lead pipework was used in water service connections and plumbing in properties built up to and including the 1970s. Irish Water has estimated that 140,000 properties are served by individual lead connection pipes with a further estimated 40,000 properties served by shared "backyard" lead service pipes.

Irish Water published its draft Lead in Drinking Water Mitigation Plan for consultation in July 2016 in response to the Government's National Strategy to Reduce Exposure to Lead in Drinking Water. The final Plan was published in May 2017. The plan proposes prioritising public water supplies at risk of failing to meet the lead standards and areas serving higher risk customers groups and then implementing the most appropriate action to reduce exposure to lead in those prioritised areas. These actions include: replacing lead service pipes on the public side; increased customer communication and advice, and; pH control and orthophosphate dosing of treated water to reduce the ability of the water to dissolve lead from lead pipes.

By the end of 2016 Irish Water had replaced 2,145 backyard lead shared service pipes and 920 individual lead service connection pipes.

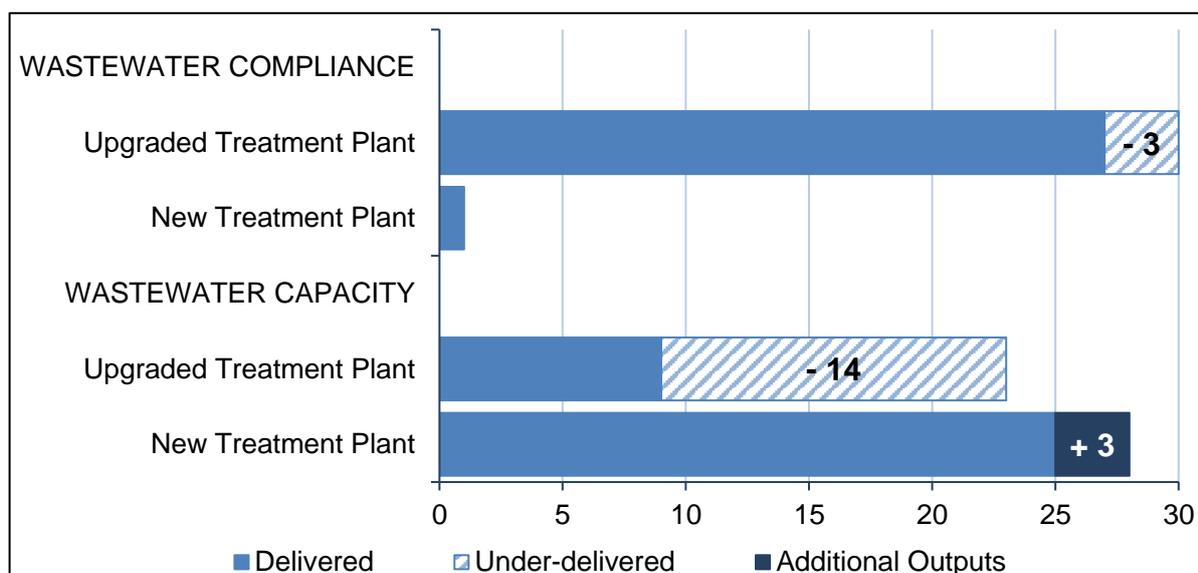
### 3 Wastewater

Completion of wastewater projects has been slower than forecast but Irish Water has delivered some key improvements.

- 5 sites no longer discharging untreated sewage.
- In 2013 the European Commission began infringement proceedings against Ireland for failure to collect or treat wastewater adequately in 71 agglomerations. At the end of 2016 the number requiring work has been reduced to 29.

Irish Water has delivered 29 new wastewater treatment plants and upgraded 36 existing plants to provide increased capacity and improved treatment. As well as those completed in the period, Irish Water has progressed over 100 wastewater projects and programmes through concept, design and/or construction phases that will continue into 2017 and beyond.

Figure 5 - Actual vs Expected Delivery of New and Upgraded Wastewater Treatment Plants



However, delivery of upgrades to wastewater treatment plants is behind that forecasted by Irish Water in its submission to the CER in December 2015, as highlighted above. In its submission regarding outputs and outcomes delivered by the end of 2016, Irish Water advised that of the upgrades not complete at the end of 2016, ten are due to be completed in the first six months of 2017. Five of which were operational and delivering for customers by the end of 2016. The CER will continue to monitor delivery of outputs from capital investments in 2017.

## 3.1 Wastewater Treatment and Capacity

### 3.1.1 Compliance with the Urban Waste Water Treatment Directive

The EPA monitors and audits wastewater discharges by Irish Water and publishes annual reports on urban wastewater quality<sup>1</sup>. The Urban Waste Water Treatment Directive sets requirements for the collection and treatment of wastewater discharges from large urban areas to the environment. 46% of the national wastewater load from large urban areas was treated to the degree necessary to be compliant with the effluent quality standards set out in the Directive in 2014 and 2015.

The wastewater treatment plant at Ringsend treats approximately 40% of the national wastewater load and significant improvements in Ireland's compliance will only be possible once the necessary upgrades are complete here. Irish Water has entered the design and planning stages of this major project to provide increased capacity and appropriate nutrient removal at the plant. Irish Water has stated that works required to achieve compliance will be completed by 2021.

### 3.1.2 European Commission Infringement Case

In September 2013 the European Commission initiated an infringement case against Ireland in relation to its implementation of the Urban Waste Water Treatment Directive. The infringement case cited 71 agglomerations with inadequate collection and/or treatment of wastewater.

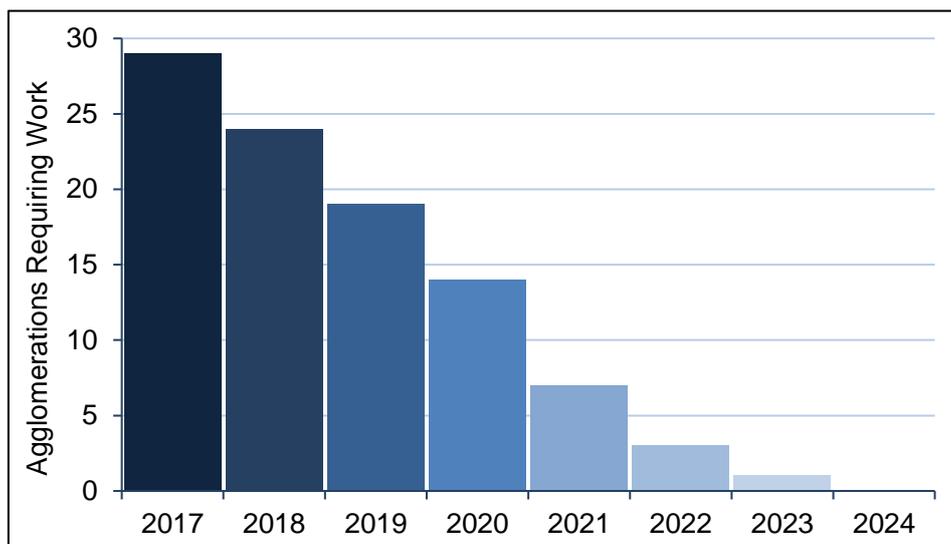
In September 2016 the European Commission issued its reasoned opinion that 38 agglomerations remained in breach of the Directive and referred Ireland to the European Court of Justice in February 2017.

At the end of 2016, Irish Water has confirmed that 29 agglomerations required investment to achieve compliance. Irish Water has targeted completing works at all 29 agglomerations by the end of 2023. The CER will continue to monitor Irish Water's delivery of interventions at these sites under the enduring monitoring framework currently being developed. The CER will continue to engage with the EPA who, as the environmental regulator, determines whether Irish Water's treatment plants and networks are compliant with statutory obligations.

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<sup>1</sup> See <http://www.epa.ie/pubs/reports/water/wastewater/>

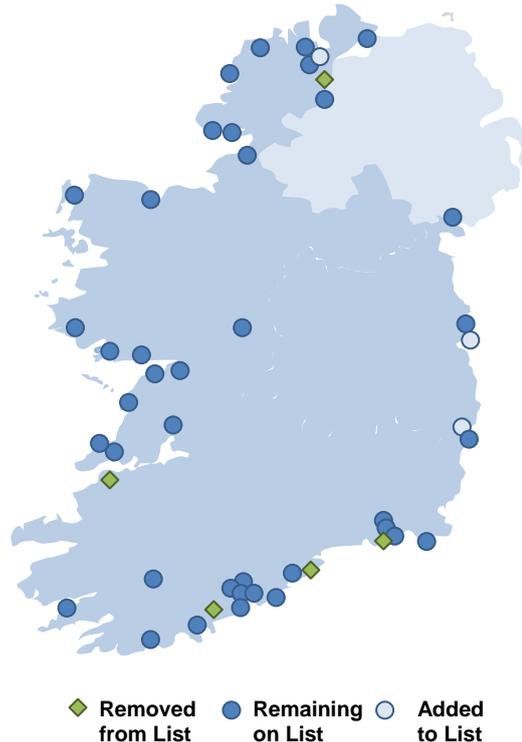
**Figure 6 - Number of Agglomerations identified in the European Commission Infringement Case Requiring Works**



### 3.1.3 Agglomerations with No Treatment / Preliminary Treatment Only

**Wastewater treatment is being provided at 5 locations previously discharging raw sewage.**

**Figure 7 - Agglomerations Discharging Raw Sewage**



In 2013 the EPA’s ‘Focus on Urban Wastewater’ reported that 44 agglomerations throughout the country were discharging raw sewage into the environment. Kilmacsimon, Ardmore, Ballylongford, Dunmore East and St. Johnston are now receiving wastewater treatment. It should be noted that the EPA has added three agglomerations to the original list. At the end of 2016 Irish Water raw sewage was being discharged at 42 identified agglomerations. Six of these agglomerations are included in the infringement case outlined in section 3.1.2, above, the remainder are below the European Commission’s thresholds.

## 4 Other Investment

### 4.1 Energy Efficiency Programmes

Irish Water carried out audits of the top energy using sites while also developing a programme to identify energy inefficient equipment that are smaller in energy use but prevalent across the asset base. Irish Water has also carried out training workshops to develop the required skillsets and knowledge to embed sustainability practices across the utility.

Irish Water has targeted energy improvements across water and wastewater assets focussing on significant energy users such as high lift pumping and aeration systems. Investment was based on payback period i.e. balancing capital output with savings from operating cost reductions in the shortest period.

Work across 19 water and 32 wastewater sites has resulted in energy savings of 5.6 GWh/year.

### 4.2 Business Change and Information Technology

The revenues allowed to Irish Water by the CER in the period to the end of 2016 provided for investment to put in place the foundations and implement the technology and training required to move to the single utility model.

The investment included spend on IT infrastructure to support operational work, investment planning and asset management. This includes delivery of SCADA<sup>2</sup> and telemetry technology to support a standardised and systematic approach to operating and maintaining the water and wastewater network and to improve Irish Water's visibility of its assets and their performance. As part of this, Irish Water has rolled out 1,300 handheld devices to local authorities allowing work orders to be raised and completed in the field.

Investment in IT has also allowed Irish Water to: build and develop its customer website; integrate 24 of the 31 local authority non-domestic billing systems into Irish Water's IT infrastructure, and support development of improved EPA regulatory reporting.

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<sup>2</sup> Supervisory Control and Data Acquisition

## 4.3 Facilities

Investment has been made to fit out and upgrade Irish Water's Dublin offices and the National Operations Management Centre and to deliver a regional office in Mallow and satellite offices in Kilkenny, Limerick, Donegal, Cavan and Mullingar. Mechanical and electrical upgrades were required as well as upgrades to staff welfare facilities to comply with statutory obligations.

## 5 Next Steps

Irish Water commits to delivering defined outputs and outcomes for its customers to planned timelines for allowed capital expenditure as part of the CER's revenue control process. As part of its regulatory oversight and building on its work completed to date, the CER is putting in place an enduring framework to monitor Irish Water's delivery of these outputs and outcomes for customers in 2017. The CER will monitor Irish Water's delivery of outputs, timelines and budgets against an agreed baseline and overall outcomes delivered for the allowed revenue. The CER will publish an information note later this year setting out the framework.

Under the enduring framework the CER will publish periodic reports and assessments of Irish Water's performance in delivering planned capital investments. The framework will allow the CER and other interested parties to track Irish Water's performance over time while enabling Irish Water's performance to be compared with that of its peers.

The framework will provide improved transparency and greater oversight of Irish Water's performance and will support the CER in holding Irish Water to account on behalf of its customers.

The information collected under the capital investment monitoring framework will feed into the CER's future revenue controls. Here, the CER will allow Irish Water to recover only efficiently incurred capital costs and may disallow costs where Irish Water has not delivered in line with plans previously submitted to the CER.

# Appendix – List of New and Upgraded Treatment Plants

## Drinking Water

### Water Quality – New Plants

Project	Local Authority
Carrickmacross Water Supply Scheme Water Treatment Plant	Monaghan County
Arklow Water Supply Scheme Ballyduff Water Treatment Plant	Wicklow County
Burncourt & Fethard Regional Water Supply Scheme Water Treatment Plants (2 Plants)	Tipperary County

### Water Quality – Upgraded Plants

Project	Local Authority
Cavan Regional Water Supply Scheme Phase II (H) Water Treatment Plant Upgrade	Cavan County
Bantry Water Supply Scheme-Treatment-Phase 2 (Derryginagh)	Cork County
Dublin City Water Supply Scheme UV Treatment at Stillorgan reservoir	Dublin City
Ballymore Eustace Water Treatment Plant Phase 3 Contract 2 (M&E Works)	Dublin City
RAL 5 South Kerry - WTP Upgrades (6 Plants)	Kerry County
RAL Caragh Lake - WTP Upgrades	Kerry County
Castlerea Temporary WTP	Roscommon County
Leenane Water Supply Scheme	Galway County
Carraroe Water Supply Scheme	Galway County

### Water Availability – New Plants

Project	Local Authority
Barrow Abstraction Scheme Contract 1 (Water Treatment Plant)	Kildare County
Leixlip Water Treatment Plant Water Treatment Plant	Fingal

### Water Availability – Upgraded Plants

Project	Local Authority
Inniscarra WTP Manganese works	Cork County
Dublin City Water Supply Scheme (Ballymore Eustace Water Treatment Plant - Sludge treatment) civil c	Dublin City
Arigna Regional Water Supply Scheme Water Treatment Plant Upgrade (5 plants)	Roscommon County
Loughrea Water Treatment Plant Emergency Works at WTP	Galway County

# Wastewater

## Wastewater Compliance – New Treatment Plants

Project	Local Authority
Cheekpoint Sewerage Scheme Wastewater Treatment Plant	Waterford County

## Wastewater Compliance – Upgraded Treatment Plants

Project	Local Authority
Bunlicky WWTP Upgrade	Limerick County
Clifden Sewerage Scheme Phase 1 Wastewater Treatment Plant Upgrade	Galway County
Carrigtwohill Sewerage Scheme Wastewater Treatment Plant Upgrade	Cork County
Cliffoney SS WWTP Upgrade	Sligo County
Carbery / Muskerry Bundle (14 Plants)	Cork County
Rathvilly SS Wastewater Treatment Plant Upgrade	Carlow County
Hacketstown SS Wastewater Treatment Plant Upgrade	Carlow County
Ballinroad Sewerage Scheme (SLI) Wastewater Treatment Plant	Waterford County
Gorey SS Contract 1 (Courtown WWTP Upgrade)	Wexford County
Cavan Sewerage Scheme (H) Wastewater Treatment Plant Upgrade	Cavan County
Kilbeggan Sewerage Scheme Phase 1 Advance Works - Interim Upgrade	Westmeath County
Tullow WwTP Upgrade Advance Works	Carlow County
Shannon Sewerage Scheme -WWTP Upgrade Ph1	Clare County
Lismore Sewerage Scheme (SLI) Wastewater Treatment Plant Upgrade	Waterford County

## Wastewater Capacity – New Treatment Plants

Project	Local Authority
Kilmallock Sewerage Scheme Wastewater Treatment Plant -	Limerick County
Longford Towns & Villages (5) Sewerage Scheme Bundle 11 Contract 2 (Wastewater Treatment Plant (5 Plants)	Longford County
Claregalway & Milltown Sewerage Scheme Wastewater Treatment Plant (2 Plants)	Galway County
Letterkenny Sewerage	Donegal County
Waterford Grouped Towns & Villages Sewerage Scheme1 Contract 8 (7 Plants)	Waterford County
Ballymore Eustace Sewerage Scheme (SLI) Wastewater Treatment Plant	Kildare County
Cross & Neale WWTP (2 Plants)	Mayo County
West Cork Grouped Scheme (4 Plants)	Cork County
Laois Grouped Towns Sewerage Scheme1 Wastewater Treatment Plants (5 Plants)	Laois County

## Wastewater Capacity – Upgraded Treatment Plants

Project	Local Authority
Galway Sewerage Scheme Phase 3 (G) Volume B - Wastewater Treatment Plant Upgrade (Mutton Island)	Galway City
Ballincollig Sewerage Scheme (G) Wastewater Treatment Plant Upgrade (Advance Works)	Cork County
Riverstick Sewerage Scheme Wastewater Treatment Plant Upgrade	Cork County
Dunlavin Sewerage Scheme (GDA) Wastewater Treatment Plant Upgrade	Wicklow County
Oldcastle Sewerage Scheme (GDA) Network & Wastewater Treatment Plant Upgrade	Meath County
Ballylongford & Tarbert SS - WWTP Upgrades	Kerry County
Knightstown SS- WWTP Upgrade	Kerry County
West Cork Grouped Scheme	Cork County
Lower Liffey Valley Sewerage Scheme Wastewater Treatment Plant Upgrade	Kildare County