

Irish Water

IRC 1 Lookback Submission

Executive Summary



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Irish Water (IW) assumed responsibility for drinking water and wastewater services on the 1st January 2014. This involved taking charge of a large portfolio of fragmented and disjointed drinking water and wastewater assets (treatment plants, network pipes, etc.). IW's operations include several thousand water extraction points, treatment plants, pumping stations and wastewater discharge points, approximately 63,000km of mapped water pipelines and an estimated 25,000km of wastewater pipelines. IW supplies drinking water to approximately 80% of the public (3.3m people), with the remainder supplied by group water schemes and private wells. This is delivered through some 1,000 separate water supply areas (public water supply zones) and involves the abstraction, treatment and delivery of 1,700 million litres of drinking water each day. IW also collects wastewater from over 1,000 separate communities connected to the wastewater network (wastewater zones known as "agglomerations") and treats 1,600 million litres of wastewater daily, before it discharges it back into our rivers, harbours and coastal areas.

The origins of the fragmented nature of the Irish water and wastewater networks can be traced back to the 19th Century and the early formation of public water supplies, based locally on individual urban council areas and river basins. With expansion and development, this remained fragmented given the sparse rural nature of a significant part of the Irish population and the development of water and wastewater services within individual Local Authority boundaries.

Today Ireland's national water services are under severe stress and are simply not delivering to the standard required by a modern economy. Key shortcomings merit mention. At the start of 2014; 121 drinking water treatment plants, supplying over 900,000 people, required major upgrading to mitigate high risk of drinking water contamination. Up to 49% of all drinking water was lost before it reached our taps. 23,000 people were on boil water notices and an estimated 140,000 properties were at risk of not meeting the EU guideline on the maximum levels of lead in drinking water.

It was not just the drinking water network that was facing significant challenges. Over two-thirds of the sewer network used to transport the country's wastewater was in need of major repair. Untreated sewage was being discharged into our rivers and seas at 44 different locations across Ireland, including 7 large towns (Arklow, Cobh for example). Even in our largest cities (Dublin, Cork), the wastewater plants are not capable of meeting the full requirements of EU Directives. Consequently, Ireland was being pursued by the European Commission for persistent failure to meet European directive standards for wastewater treatment.

Ireland has suffered from the lack of a comprehensive database of water and waste water assets and associated performance and compliance data. While we have made good progress in compiling a national asset data base, it should be recognised we have more work to do to complete this and thus understand the full scale of the problems and challenges facing our water and waste water infrastructure.

This poor state of water services is the result of decades of underinvestment combined with a highly fragmented industry structure. As with all Government dependent funding, historically, water services experienced constrained and variable year-on-year funding. This

has resulted in significant underinvestment over many decades. In addition, in the past, water services were managed by 34 (now 31) separate Local Authorities (LAs). This structure resulted in duplication and significant inefficiencies and inconsistencies in the planning, construction, operations and maintenance of our water and wastewater networks.

IW has been working hard to begin to address many of these issues over the first Interim Revenue Control Period (IRC1).¹ The setting up of IW, to take responsibility for fixing our water services, is a massive and complex project of national importance. During this first revenue control period, and in subsequent ones, IW is charged with managing three key goals in parallel:

- Establishing a new national utility, building out the resources, systems and processes required to deliver infrastructure and services to an acceptable standard - and ultimately to best practice over time.
- Getting to grips with the scale of the problems, prioritising investment and remedial actions and delivering on agreed action/investment plans.
- Transforming how services are delivered, moving away from the 31 LA model to a leaner, more efficient model. This model will deliver; economies of scale, standard operating practices, standard maintenance practices and will reduce costs significantly while meeting best practice performance metrics over time.

The scale and challenge involved is enormous and needs to be reflected in the targets, plans and timescales that all stakeholders commit to.

IW recently committed in our 2014 to 2021 Business Plan to delivering a capex programme of €5.5bn over the plan timeframe, subject to Commission for Energy Regulation (CER) challenge and approval. We believe that the challenge of fully transforming water services in Ireland will extend well beyond 2021. We have published our 25 year Water Services Strategic Plan and it is clear that a multi-billion euro programme will be needed through several successive investment cycles. Our first full assessment of needs carried out during 2015 estimated a minimum total capital requirement of €13 billion, indicating the scale of the challenge facing IW. The IRC1 2014 – 2016 investment period is just the first step on this path to developing an effective water services system that meets the needs of our customers.

¹ Previously referred to as the Interim Price Control Period (IPC1).

ICR1 Capital Investment Programme

IW will broadly meet the overall capital allowance for the period 2014 to 2016, as shown in the table below.

All nominal monies	Allowed 2014-2016	Actual & Forecast 2014-2016	Variance
	€m	€m	€m
Infrastructure Investment	1,220	1,235	15
Ancillary Investment	726	612	-114
Total Capex	1,946	1,847	-99

Table E.1 – Total allowable and forecasted capital expenditure, 2014 to 2016.

IW will broadly meet the overall capital allowance for the IRC1 period, as shown in the table above. We have used available funding from underspend in some capital headings to deliver additional investment in other areas which merited prioritisation. The domestic metering programme expenditure is lower than anticipated as a result of efficiencies gained in the roll out of the programme nationally; external factors, and difficulty in obtaining accurate survey data for some meter locations. Despite that, since July 2013, in excess of 800,000 meters have been installed.

Irish Water's positive impact is already evident.

IW has made significant progress since 2014 in addressing some of the priority challenges. Our customers are starting to see the benefits of the targeted investment approach adopted. This is evidenced by:

- A reduction in the number of water treatment plants on the EPA Remedial Action List (RAL) from 140 (Q1 2014) to 112 (Q3 2015). This is a first step in meeting our RAL target of zero by 2021, which is also a national commitment to the EU commission.
- A reduction in the number of people on boil water notices from over 23,000 to circa 6,000 following the provision of new infrastructure.
- 27 megalitres per day (Ml/day) of drinking water has been saved in the first eight months of operation of the First Fix Leak Repair Scheme. This is a first step towards our objective of reducing network leakage from 49% to 38% by 2021.
- In tackling leakage, we have reviewed the district metering infrastructure nationally and assessed it as only 50% operable. We are undertaking significant efforts to improve this to 90% operability through the delivery of the water conservation projects and we have achieved initial savings in network losses in early pilot schemes and in the first fix programme.
- Significant progress in upgrading wastewater treatment plants, with major upgrades in progress in Swords, Naas (Osberstown), Leixlip, Galway, Clifden, Dunmore East, Ardmore, Kinvara, Clonakilty and Carrigtwohill. Of these, treatment has commenced in Clonakilty, Clifden and Ardmore. Work is now commencing in Youghal, the Cork Lower Harbour towns and will shortly commence in Shannon town, Bundoran, Killybegs and Convoy.
- A major programme of asset maintenance has commenced to repair known defects across the network, and targeted programmes of work that have been initiated to reduce risks and optimise water treatment (disinfection, pH correction), as well as

replacing over 500km of the worst performing watermains from a leakage viewpoint. We have also delivered a number of energy efficiency projects with short payback period (less than 4 years).

For more details on key achievements see Appendix A.

IW is focused on building on these achievements and delivering further benefit.

IW plans to invest €5.5 billion in our water services infrastructure for the period to 2021, subject to CER challenge and approval, and to implement best utility practices in operations, maintenance and capital investment delivery.

We believe that the successful delivery of our 2014-2016 investment programme is establishing a solid base for the continued delivery of these commitments in IRC2. IW intends to build upon this through the *Common Framework Approach* to Investment Optimisation which aims to ensure optimised outputs for the investment choices made, as explained in our capex lookback submission.

IRC1 Operational Expenditure

Meeting the operating expenditure allowance while improving performance has involved trade-offs.

The CER provided IW with an operating expenditure (opex) allowance of €1,679m over IRC1. This allowable expenditure incorporated an efficiency target of 7% opex reduction year-on-year in 2015 and 2016. This was exceptionally challenging given the need to improve operational performance from the outset.

IW’s allowable and forecasted outturn expenditure for the IRC1 period is shown in the table below. IW is expected to largely remain within the allowance over the period.

	Allowed Q4 2014-2016 (a)	Actual & Forecast Q4 2014-2016 (b)	Variance 27 Months (b) – (a)
Category	€m	€m	€m
Operations and Maintenance	1,254	1,255	1
Targeting Operating Model	293	294	1
Shared Services	39	43	4
Group Centre	28	30	2
Non-Controllable Costs	65	59	-6
Total	1,679	1,681	2

Table E1.1 Summary of opex incurred relative to allowable opex.

The allowance was met through a combination of efficiency savings and activity deferrals as elaborated on in the following paragraphs.

Since assuming responsibility in 2014, IW has already delivered approx. €70m savings in core asset opex in addition to significant improvements in performance.

Within the short duration of IRC1, IW has developed a better understanding of our opex cost base. It is clear that in order to effectively operate and maintain a disparate and stressed asset base, a greater level of activity is required than previously estimated. In addition, the compliance and service standards which IW is required to meet have continued to rise. Despite having delivered real efficiencies, to meet the very challenging allowances, we have had to prioritise expenditure and this has resulted in trade-offs. We have focused resources on the highest priority areas for performance improvement within IRC1. An appropriate level of resourcing is critical to the achievement of compliance standards, and service and quality improvements for our customers.

IW has secured savings but a transformation of the operating model is required to deliver sustainable efficiencies while improving service for our customers.

The establishment of IW represented a step change in the way that drinking water and wastewater services are delivered. The creation of a single utility has enabled us to realise efficiencies and these have contributed to meeting the allowance.

IW will continue to drive for further efficiencies but the scale of those achieved over the IRC1 period cannot be repeated at the same rate, without full transformation of the underlying operating model.

We have embarked on an ambitious transformation programme for the water services sector, including the design of a new Water Industry Operation Framework (WIOF). Similar to other jurisdictions (e.g. Scotland), this transformation will involve initial investment to realise long-term benefits. It is important that all stakeholders understand and buy into this requirement.

IW is committed to delivering this transformation and securing efficiency and service benefits for our customers. Our Look Forward submission to the CER in Q1 2016 will provide further detail on the challenges now facing IW and our plans to address these in the next revenue control period.

Appendix A: Overview of Key Achievements

Drinking Water Capacity:

- Increase in the headroom of water treatment plants in the Greater Dublin Area from a margin of approx. 2% to approximately 10% currently. This is critical for immediate needs but will not be sufficient for future requirements.
- Replacement/rehabilitation of over 500km of existing poor quality watermains. This is in addition to several thousand public side and backyard lead services.
- Progress in increasing the operability of the national district metering infrastructure - from 50% to 90% through the delivery of water conservation projects.

Drinking Water Quality:

- Developed a national approach to drinking water risk management.
- The number of water treatment plants on the EPA Remedial Action List (RAL) reduced from 140 (Q1 2014) to 112 (Q3 2015).
- Delivery of the national lead replacement and treatment strategy.
- Reduced the number of people on boil water notice from over 23,000 to approx. 6,000.

Customer Side Leakage:

- 27 megalitres per day (Ml/day) of drinking water has been saved in the first eight months of operation of the First Fix Leak Repair Scheme.
- 15,188 leak investigations and 2,239 leak repairs have been completed. A significant number of leaks were found to be within customers' premises.
- 51,158 customer notifications have been issued to the end of the November 2015 with a total of 18,490 responses resulting in a leak investigation survey.

Domestic Metering Programme:

- Installation of over 800,000 meters. The meter reading process has been very successful with over 98% of available meters returning reads.
- Provision of water usage and customer-side water wastage information from the meter reading process. The continuous flow alarms on approx. 7% of properties in the meter reading cycles has fed directly into for the First Fix Free programme.

Wastewater Capacity:

- Commenced upgrade of 23 and intend to build 25 new Waste Water Treatment Plants (WWTPs).
- Major upgrades are in progress in Swords, Naas (Osberstown), Leixlip, Galway, Clifden, Dunmore East, Ardmore, Kinvara Clonakilty and Carrigtwohill. Work is now commencing in Youghal and for the Cork Lower Harbour towns and will shortly commence in Shannon town, Bundoran, Killybegs and Convoy.

Wastewater Quality:

- Introduction of new technologies, with a focus on efficient and sustainable processes. Notable technology adoption included those used in Clonakilty Wastewater Treatment Plant (WWTP) and expanding the Ringsend WWTP.
- The number of agglomerations compliant with the Urban Wastewater Treatment Directive has risen from 120 in 2013, to a projected 132 in 2015.

Establishment of a High Performing Utility & Transformation of the water services operating model:

- Delivered €70m in core asset opex savings since assuming responsibility in 2014.
- Introduction of the Common Framework Approach - an international best practice approach to optimising investment decisions.
- Establishment of a robust capex governance framework in the form of the Water Investment Approval Committee (WIAC) and Group Investment Approval Committee (GIAC).

Best Practice Customer Service Function:

- Establishment of a Customer Operations function to provide service to, and billing of, customers.
- Establishment of a Customer Operations call centre and a Customer Billing call centre.
- Delivery of two major domestic customer initiatives: the validation campaign of 2014/15; and, the commencement of domestic billing from Q2 2015 which was made more complex by national policy changes in Q4 2014. IW now issues c.41,000 bills nightly, c.7m per annum.
- Processing of over 1.7m calls to date through our contact centres.