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Funding Water and Wastewater Services

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1 Introduction

Providing water and wastewater services is a capital intensive undertaking that requires massive and sustained levels of investment. In order to bring infrastructure to the required level and ensure compliance with the requirements of the European Water Framework Directive, most member states have introduced various types of user tariffs for water and waste services

In the context of continued deferral of water charges in Northern Ireland, this paper:

- considers the impact reliance on public funding is having on critical infrastructure investment in NI;
- discusses wider attitudes and experiences of cost recovery policies;
- examines the experience of cost recovery in Scotland and Wales; and
- examines the Irish water model, which similarly to NI Water is funded primarily by non-domestic customers and state subsidy.

2 Background and context

Northern Ireland Water (NIW) is a Government Owned Company (GoCo), set up in April 2007 to provide the water and sewerage services (WSS) in Northern Ireland.¹ NIW replaced the Water Service (WS), which had been part of the former Department of Regional Development (DRD).

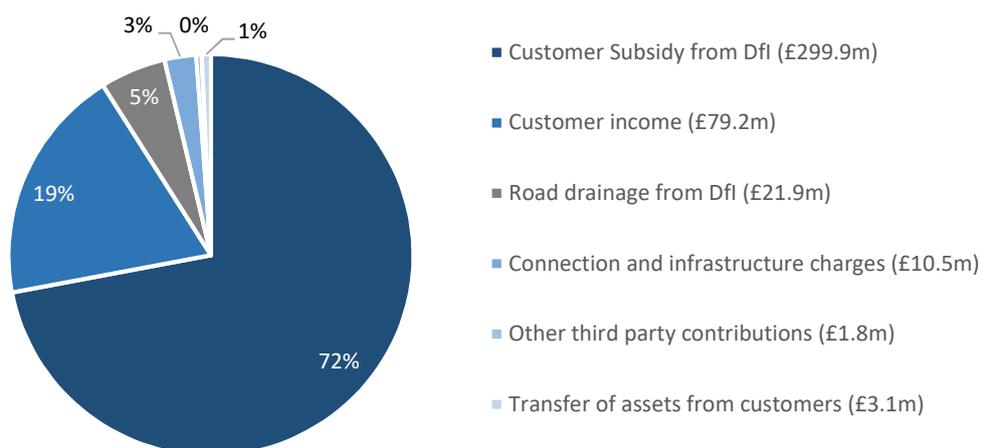
The main driver for the reform of the WS was the need to address issues caused by historical under investment in water and sewerage assets:

- Standards of service were below the required level;
- Standards of drinking water quality and wastewater treatment were below European Union (EU) Standards, bringing the risk of infraction proceedings, while posing risks to public health;
- Investment of some £3bn was required to upgrade water and sewerage infrastructure; and
- A more efficient delivery model was required.^{2 3}

2.1 Water charges

NIW was set up to be funded through user charges. To date, only non-domestic customers pay directly for WSS while the Executive, via the Department for Infrastructure (DfI), pays a subsidy to NIW in lieu of domestic charges. The power to pay the subsidy will expire on 31 March 2022.⁴ Figure one shows the breakdown of NIW's revenue for 2018/19. Revenue was £416.4m for the year, including a subsidy of £299.9m and £79.2m income from non-domestic customers.⁵

Figure 1: NIW sources of revenue 2018/19 (£m)



Source: [NI Water Annual Report and Accounts 2018/19](#)

¹ NIW is established under the [Water and Sewerage Service \(NI\) Order 2006](#)

² Water Reform Unit (2003) The Reform of Water and Sewerage Services in Northern Ireland: Public Consultation Document

³ NIAO, [Measuring the Performance of NIW](#), June 2010

⁴ [The Grants to Water and Sewerage Undertakers Order \(Northern Ireland\) 2017](#)

⁵ *ibid*

While NIW remains a GoCo under law, because of the level of subsidy it receives, it is treated as a Non-Departmental Public Body (NDPB) for Public Expenditure purposes. As a NDPB, NIW is subject to the full suite of public sector spending rules, including:

- Lack of flexibility between funding years;
- The requirement for expenditure to conform to available budget cover;
- The annual basis for funding control; and therefore
- The need to allow for funding alterations in-year.⁶

NIW has suggested that the current governance model and uncertainty over funding adds complexity and leads to inefficient capital investment that threatens the longer-term resilience of NI's water and wastewater infrastructure.⁷

2.3 Regulation

As a monopoly, an independent utility regulator (UREG) determines the amount NIW can charge for its services – and because of current arrangements, the subsidy it requires from Government. One of UREG's primary goals is to challenge NIW to deliver the highest possible levels of water quality, environmental protection and customer service at the lowest reasonable overall cost.⁸ UREG sets price limits through a Price Controls (PC) process.

Price control

The starting point of the PC process is for NIW to submit a business plan to the UREG which sets out its proposals for outputs, what it will cost to produce these and the impact this will have on price. This is the basis for establishing the allowed revenue, expenditure and performance targets for NIW for the subsequent period of PC.

Under the current PC (PC15) that runs from 2015-21, the utility regulator determined NIW would require revenue of £2,340m to deliver its business plan. This included a subsidy of more than £296m per year (£1,774m over PC15) that would account for 76% of NIW's revenue requirements. Figure two provides a breakdown of NIW's revenue sources over the first four years of PC15, this includes subsidy a subsidy payment rising year on year from £283.5m in 2015/16 to £299.9m in 2018/19. This subsidy covers the notional household charge of around £400 per annum (table one).⁹

Table 1: Price Control 2015-21 (PC15) notional household charge

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
PC15 Final Determination	£410	£402	£402	£394	£387	£395	£400

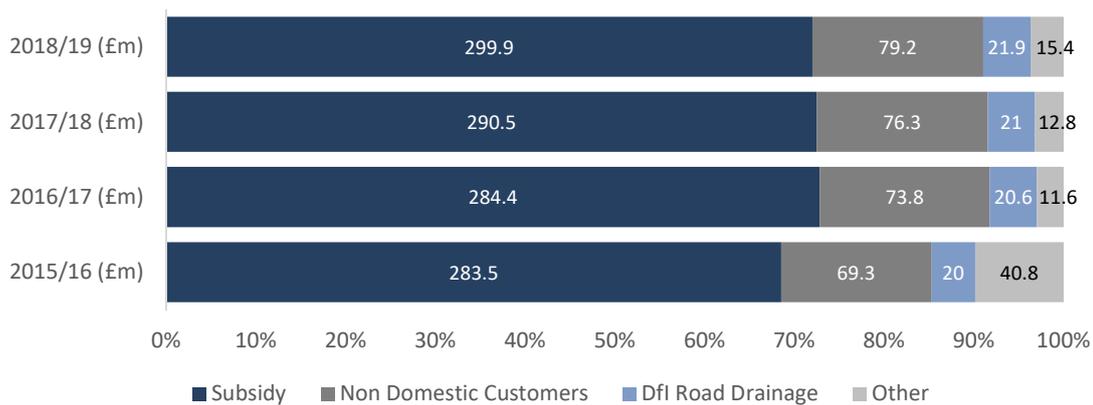
⁶ Utility Regulator, [PC15 Final Determination – Annex C, Memorandum of Understanding](#), December 14

⁷ NI Water, [Annual Report and Accounts 2018/19](#), August 2019

⁸ Utility Regulator, [Price Control and Tariffs](#), accessed 3 March 2020

⁹ Utility Regulator, [PC15 Final Determination](#), December 2014

Figure 2: NIW revenue 2015/16 to 2018/19

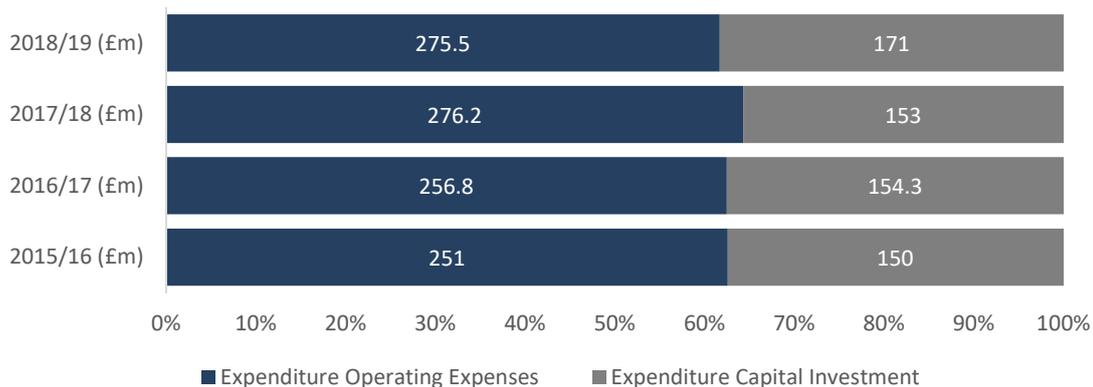


PC15 Investment

NIW’s estimated that it could invest £1.4bn efficiently in PC15 if funding was available, while it identified a further £1bn capital requirement to address strategic drainage issues and comply with EU regulations.¹⁰ As NIW is subject to the public expenditure constraints investment plans for PC15 were based on an indicative allocation of £990m for water and sewerage services in the Executive’s Investment Strategy.¹¹

This has had a direct impact on NIW’s investment output. For example, the PC15 Business Case proposed addressing capacity issues at 70 Wastewater Treatment Works (WwTW) at an estimated cost of £200m.¹² £60m was allocated over the PC15 period, enabling work on 19 sites to be completed. Figure three sets out NIW’s operating and investment expenditure over the first four years of PC15. During this period NIW has invested £628m; to reach the £990m indicative investment agreed in PC15 it would require £362m over the two remaining years of PC15 2019/20 and 2020/21.¹³

Figure 3: NIW operating expenses and capital investment 2015/16 to 2018/19



¹⁰ Utility Regulator, [PC15 Final Determination, Annex K Capital Investment](#), December 2014

¹¹ *ibid.*

¹² Michael Fitzpatrick & Cormac Campbell, [Sewage problems 'may limit house building'](#), BBC News online, October 2018

¹³ NI water, [Annual Report and Accounts 2015/16 to 2018/19](#), accessed 1 March 2020

PC21

NIW has indicated it will need in excess of £500m to address wastewater capacity issues in the next price control period (2021 - 2027).¹⁴ This is to address both the backlog from PC15 and to deal with new sites identified in the forthcoming business plan. Failure to meet this requirement could create a vicious circle where failure to address capacity issues creates an ever-growing backlog of work which could have significant impacts on the local economy and environment.

NIW has stated underfunding of PC15 curbed economic development preventing new housing and commercial developments connecting to the sewerage system in over 100 towns. Furthermore, the strategy warns that the planned growth of Belfast City will stall unless the £1bn investment in strategic drainage is supported.¹⁵ NIW's chief Executive has recently addressed issues related to capacity with the broader NIW infrastructure network:

“Every part of our infrastructure network has a finite capacity. There is an example of a water main commissioned in the 1880’s that is part of a network supplying some 20,000 customers”¹⁶

“The sewerage network is now becoming a major issue and realistic, significant investment is needed to increase its capacity and enable the continuing safe management of ever increasing volumes of wastewater and sewage. Currently, almost 30 per cent of the largest wastewater treatment works are either at, or are fast approaching their capacity”¹⁷

NIW has submitted its business plan for the next PC21 that contains an investment plan of some £2.5bn. It remains to be seen how much will be allocated to NIW for this period and if it will be sufficient to deliver on its business plan goals.

3 What are the options for funding NIW?

Based on evidence which will be presented below there are essentially two ways to fund NIW:

- Continue to fund it from the public purse. This paper will show this is broadly the approach taken in Ireland. In this scenario NIW's revenue needs will be considered alongside that of other public services and be subject to public sector spending rules. There are questions under this scenario if the hybrid status of NIW is sustainable in the long term and whether a reform of governance structures should be considered.
- Introduce a charging regime whereby the operational and investment costs of NIW are met through user charges. This is the most common approach across the EU

¹⁴ NI Water, [Funding restraints curb development](#), October 2018

¹⁵ NIW, [Our Strategy 2021-46](#), accessed 18 February 2020

¹⁶ Agenda NI, [NIW: Infrastructure for economic boom or gloom](#), June 2019

¹⁷ *ibid.*

but there is variation and depending on the extent of cost recovery, the requirement for public funding for WSS could be reduced or NIW could become entirely self-financing.

3.1 Cost recovery

Water is viewed as an economic good in most countries;¹⁸ in fact, Northern Ireland and Ireland are virtually unique in not charging for it. In the European Union (EU), most pricing policies are based on Article 9 of the Water Framework Directive (WFD), which introduced the concepts of cost recovery, the 'polluter pays' principle (PPP) and incentive pricing.

- Cost recovery is about the service provider recouping the cost of providing water and sewerage services;
- The PPP takes account of not only the financial costs of the provision of water services, but also to the costs of associated negative environmental effects (environmental costs);
- Incentive pricing relates to how water users pay for their use, and how the water price affects water user behaviour.

The literature suggests that effective water charging policies can promote equity, efficiency and sustainability in the water sector. However, while it appears conceptually quite simple, politically cost recovery is very difficult to implement.¹⁹ The European Environment Agency (EEA) suggests a number of obstacles faced when establishing the cost-recovery principles forwarded by the WFD.

- How to provide the infrastructure necessary for the operation of new water pricing schemes (e.g. meters);
- The tension between social objectives and the need for cost recovery;
- Resistance from stakeholders and users to water charges; and
- The notion that water is a basic requirement for life (and thus charging for such a basic good is considered socially unjust).²⁰

Examples from EU

The EEA conducted a study looking at the implementation of cost recovery measures in a number of EU countries: 'Assessment of cost recovery through water pricing', considers water pricing in several EU countries: Croatia, England and Wales, France, Germany, the Netherlands, Scotland, Serbia, Slovenia and Spain. The report found that:

¹⁸ Peter Rogers, et al., [Water is an economic good: How to use prices to promote equity, efficiency, and sustainability](#), Water Policy, vol. 4, 2012, pp 1-17

¹⁹ *ibid.*

²⁰ European Environment Agency, [Assessment of cost recovery through water pricing](#), September 2013

- Recovery of the operation and maintenance costs of water services is the rule in most EU Member States;
- The recovery of investment costs for water supply and sewage services is not yet the rule in all countries. However, it is the rule in the GB market;
- The structures for charging affects prices. For example, bills based on actual use (volumetric) are lower than those with a flat rate structure;
- Households use around a third less water when they are charged for the actual amount they use. However, flat-rate charging structures are still more common in many countries;
- In most countries, farmers are also allowed to use unlimited water for a flat charge. However, charging for the volume of water used reduces the amount of water used by agriculture by 10-20 %.
- The public seems to support being charged according to the volume of water they use – 84% of EU citizens agree with this principle to some extent.²¹

Affordability

Affordability is often central to the debate around charging for water. The concerns around affordability are generally dealt with through specific provisions that ensure that water services are available to low-income households at a reasonable cost. For example:

- Free water allowances: households are given an allowance and only pay for use that exceeds this allowance. This type of scheme is used in Ireland and Belgium and provides a clear incentive to restrict water use
- Specific exemptions for low-income households: These reduce the cost-recovery rates but do not change incentives.

According to the OECD, keeping water prices at artificially low levels (or not charging at all) may not be the best way to ensure the affordability of water services to low-income households. It suggests this approach fails to account for the wider societal need for good water and wastewater infrastructure. The OECD further suggest that pricing schemes that imply cross-subsidisation between rich and poor households may reconcile the objectives of cost recovery and affordability, but they need to be carefully designed to ensure that sufficient revenues are generated and that the cross-subsidy is well-targeted (i.e. all poor households and no rich households benefit from it).²²

4 Water Governance

The Minister for Regional Development was asked in September 2013 to outline the best model for NI Water governance. He stated:

²¹ European Environment Agency, [Assessment of cost recovery through water pricing](#), September 2013

²² OECD, [Managing Water for All](#), 2009

*“The best model for Northern Ireland Water (NIW) governance is one that supports and ensures the provision of high quality water services to the people of Northern Ireland. It should be sustainable, affordable and efficient. It should meet our EU obligations, support economic growth and protect the environment”.*²³

This has been a recurring question since the reform of the water service in 2007 but clearly, it remains very much unanswered, with NIW continuing to operate under a hybrid operating model described by the UREG as suboptimal.²⁴

Assessments of the different models have been done in the past: The IWRP Strand two report addressed issues of legal structure, governance, capital investment and affordability. It identified that one of the biggest problems with the reform process in Northern Ireland carried out under direct rule Ministers was that it failed to secure public confidence due largely to a lack of openness and transparency in their decision-making and accountability processes.

Aside from that, The Strand Two report was not overly critical of the chosen GoCo model, suggesting that if there was some greater clarity with the governance arrangements then it could work:

“What matters is not so much which legal form is adopted as the content that is put in place in practice. Each model has the potential in principle to meet all of its objectives:

- *public confidence*
- *effective delivery of high quality services*
- *maximum cost-effectiveness for customers*
- *affordability; and*
- *sustainability”*

It would seem that the ability to operate without the operational and financial restrictions imposed by NIW status as a NDPB is essential to the future well-being of NIW. The introduction of water charges is one way in which NIW can become ‘self-financing’, or at the very least bring it to a stage where at least 51% of its revenue comes from charges.

²³ NI Assembly, [Oral Question - AQO 4472/11-15](#), 9 September 2013, AQO 4472/11-15

²⁴ Utility Regulator, [PC15 Mid-term Review](#), February 2018

Scottish Water

Scottish Water is a government owned corporation, with similarities to the NI Water GoCo. However, Scottish Water does operate commercially, generating over 90% of its revenue through direct charges and borrowing the remainder from the Scottish Government to support capital expenditure.

- In 2018/19 Scottish Water's income from its customers exceeded £1.2bn;
- To supplement this Scottish Water borrowed £165m to fund its expenditure;
- Scottish water invested £660m in infrastructure and spent £428m for operating costs.²⁵

Governance

Scottish Water is managed by a 13-member board of directors. The board consists of eight non-executive members, appointed by Scottish Ministers, and five executive members. The executive members are the chief executive and the executive leadership team, which consists of an Asset Management Director, Commercial Director, Customer Service Delivery Director and Finance and Regulation Director. Scottish Ministers are also responsible for appointing the chairperson of the board.²⁶

England and Wales

Water companies in England and Wales are private and as a result operate entirely separate from Government. They are subject to regulation from the national regulator Ofwat who set prices. Regulation in NI is based on the same model used in England and Wales.

While privatisation of the water companies in England and Wales has had its critics, an independent review found that it had also brought about huge infrastructure improvements, which have enhanced drinking water and environmental quality.²⁷ The regulatory framework in England and Wales has been critical in the roll-out of privatisation.

Under Ofwat, the national regulator, the average annual household water bill in England and Wales rose by 40% above inflation between 1989 and 2014/15.²⁸ That means the average bill in 2014/15 (£396) was 40% higher than the average bill in 1989 (when the 1989 bill is converted into 2014/15 prices).²⁹ The average bill for 2020-21 is £404,³⁰ this is £4.00 higher than the notional household bill in NI.

²⁵ Scottish Water, [Annual Report and Accounts 2018/19](#).

²⁶ SPIICE (2012) Water Resources (Scotland) Bill [online] available from: <http://nia1.me/1sg>

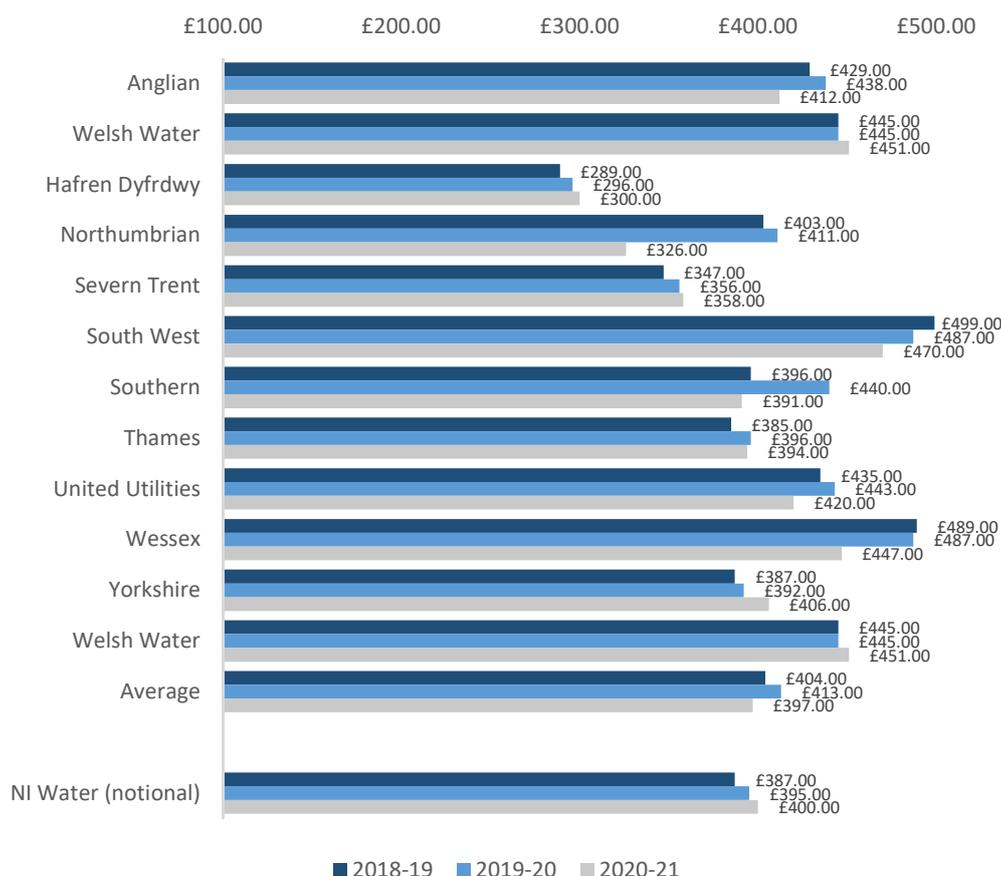
²⁷ Cave. M, [Independent Review of Competition and Innovation in Water Markets: Final report](#), April 2009

²⁸ National Audit Office, [The economic regulation of the water sector](#), June 2014

²⁹ Full fact, [Water rip-off? Are water bills up 40% since privatisation?](#) November 2018

³⁰ Ofwat, [PR19 final determinations: Policy summary](#), December 2019.

Figure 4: Average Household Water and Sewerage Bills 2018-19 to 2020-21 in England, Wales and NI



Most of that rise happened in the early years of privatisation. From 1995 to 2014/15 the increase was smaller—9% in real terms.³¹ More recently, average bills have started to fall (although they are still higher in real terms than they were before privatisation). They fell by 2.6% in real terms between 2009/10 and 2014/15, and Ofwat’s most recent price control ruled that average bills should fall by 5% in real terms between 2014/15 and 2019/20.

Welsh Water

Dŵr Cymru or Welsh Water is unique among the private water companies of England and Wales. Welsh Water is owned Glas Cymru (Glas), a not-for-profit company limited by guarantee, set up in 2001 specifically to acquire Welsh Water, using bank and bond finance. Glas’s status as a company limited by guarantee (CLG) means that it operates on a non-profit basis and has no shareholders; therefore, any profit it does make is reinvested into the business for the benefit of Welsh Water's customers.³² Dŵr Cymru Cyfyngedig (Welsh Water) is the principal trading company of the group

³¹ Full fact, [Water rip-off? Are water bills up 40% since privatisation?](#) November 2018

³² Glas Cymru (2009) Policy and Procedure for the Selection and Appointment of the Members of Glas Cymru Cyfyngedig [online] available from: <http://nia1.me/1ta>

Governance and Accountability

Glas is headed by a Board of Directors who are responsible for the strategic direction of the company and for reviewing operational and financial performance. All the directors of Glas are also directors of Welsh Water, and vice versa. This identity is designed to ensure that the risk of conflicts of interest between the responsibilities of the two boards is minimised.³³

The Board is accountable to the Members of Glas Cymru for its management of the Company. Members are appointed due to specific expertise in the industry or corporate governance. Members play an important role in scrutinising Welsh Water's performance against commercial and other targets, as well as against water industry benchmarks for quality of service and cost efficiency.³⁴ They receive no payment whether by dividend, bonus or any other form.

Financial operations

A key aspect of Welsh Water's success is its financial operations. Since Glas's acquisition of Welsh Water, the level of gearing (the ratio of net debt to Regulatory Capital Value) has been brought down from around 93% to around 60%. This ensures continuity of finance and Welsh Water's ability to raise future finance for investment at the lowest possible rates of interest.³⁵

Borrowing to help fund long-term investment programmes is an efficient way of financing the construction of long life assets and does not put an undue burden on the customers of today to pay for assets that will provide service for many years. Welsh Water's finances its capital programme through debt the form of low cost bonds raised on the capital markets.

Welsh Water's strong credit rating enables it to *borrow money* at very competitive rates.³⁶ For instance, in 2006, Dŵr Cymru issued a 50-year bond at a real interest rate of just 1.4%.³⁷ This is a significant advantage of this particular business model as servicing debt is one of the most significant costs of WSS companies³⁸ accounting for one third of the average household bill across the sector – meaning that a one per cent increase in the cost of capital can add 5% to bills.³⁹

Irish Water

Irish Water was established in January 2014 with a statutory responsibility for all aspects of water services planning, delivery and operation at national, regional and

³³ Dŵr Cymru (2012) Dŵr Cymru Cyfyngedig Regulatory accounts for the year ended 31 March 2012

³⁴ Glas Cymru (2009) Policy and Procedure for the Selection and Appointment of the Members of Glas Cymru Cyfyngedig

³⁵ Welsh Water, [PR19 Financial Resilience](#), September 2018

³⁶ (Welsh Water) Dŵr Cymru (2013) Your Company Your Say: Our Plans 2015-21 [online] available from: <http://nia1.me/1t7>

³⁷ Dŵr Cymru (2012) Environment, Food and Rural Affairs Committee: Written evidence submitted by Dŵr Cymru Welsh Water on 12th October 2012 [online] available from: <http://nia1.me/1f0>

³⁸ Glas Cymru (2001) Glas Cymru's plans for Welsh Water [online] available from: <http://nia1.me/1ey>

³⁹ (Welsh Water) Dŵr Cymru (2013) Regulatory accounts for the year ended 31 March 2012

local level in Ireland. Irish Water took over from local authorities to address what had become a very fragmented water services operating model around the country and to deliver a multi-billion euro investment necessary to bring Ireland's wastewater treatment plants and water and sewerage networks up to standard.⁴⁰

In terms of governance, Irish Water operates under structures that are based on those already in place in Scotland and Northern Ireland. Irish Water is a fully publicly owned, regulated, commercial State body. It has the same core responsibilities as NIW and Scottish Water:

- operation and maintenance of water and wastewater assets; and
- to provide safe, clean, affordable and environmentally compliant water and wastewater services to households and businesses connected to the public networks.⁴¹

Irish Water is regulated by the independent economic regulator, the Commission for Regulation of Utilities, under the same model as UK water regulators i.e. the CRU is charged with protecting the interests of water and wastewater customers; monitoring the performance of Irish Water; and approving an appropriate funding requirement sufficient to enable Irish Water to deliver the required services to specified standards.⁴²

Funding

Irish Water was established under the same premise as NIW, in that it would be self-financing with a new system of charging for domestic and commercial users to be introduced. Following several amendments to the original scheme of charges and following talks for the formation of a new government in May 2016, the Minister for the Environment, Community and Local Government on 29 June 2016 announced the establishment of the Expert Commission on the funding of domestic public water services in Ireland.⁴³

The Expert Commission recommended the funding of water services for normal domestic and personal use should be out of taxation suggesting the question of whether there should be "...a dedicated tax, a broadly-based fiscal instrument, or an adjustment to existing taxes to fund this requirement would be a matter of budgetary policy."⁴⁴

The commission recommended that the volume of water necessary to meet the normal domestic and personal needs of citizens should be independently, that the state should provide this at its own cost but that excessive or wasteful use of water be discouraged

⁴⁰ Irish Water, [Strategic Funding Plan 2019–2024](#), June 2019

⁴¹ Irish Water, [Policy Statement](#), May 2018

⁴² Ibid.

⁴³ Joint Committee on the Future Funding of Domestic Water Services, [Report](#), April 2017

⁴⁴ Expert Commission on Domestic Public Water Services, [Report on the Funding of Domestic Public Water Services in Ireland](#), November 2016

by charging such use beyond the allowance, thereby adhering to the 'polluter pays principle'.⁴⁵

The annual average usage was calculated at 125,000 litres. The annual household allowance was then set at 1.7 times above this resulting in an allowance of 213,000 litres per year for homes with up to four residents.⁴⁶ Homes with more than four residents have an additional 'allowance amount' of 25,000 litres per year, for each extra resident. Irish Water will charge €1.85 per cubic meter (1,000 litres) for usage over the threshold (see 'Water allowance' above). The charge will be capped at €250 per year for water and €250 per year for wastewater services. The maximum charge for excess water usage will therefore be €500 per year.⁴⁷

Funding

Irish Water's revenue in 2018 totalled €982m of which €720m (73%) was government subsidy and €262m from commercial revenue. In 2018 Irish Water made capital investments of €683m (€526m in 2017) in water and wastewater infrastructure. €380m of this came directly from the subsidy. However, Irish Water also has a statutory borrowing limit of €2,000m to help fund investment.

According to Irish Water's business plan the ability to borrow from international banking and capital markets is critical in enabling it to secure the necessary capital to invest in water infrastructure. According to Irish Water the regulatory model under which it operates, which is based on the UK model, gives lenders and bond investors confidence that the risks of lending to the utility is low. This allows the utility to borrow low cost debt from lenders/bond investors, which benefits customers in the short and long run.⁴⁸

Whilst operating under similar governance models NIW and Scottish Water do not have borrowing powers like this, they can borrow funds from their sponsoring Departments, but the level of borrowing remains restricted by public expenditure limits. It is unclear how Irish Water can access funds from private equity companies at competitive rates, associated with low risk, given it relies so heavily on Government subsidy. However, certainty over funds is reflected in its Irish Water's Strategic Funding Plan 2019-2024. This sets out a funding requirement of €11bn to 2024, comprised of a €6.1bn investment in infrastructure and assets and €4.9bn in operating costs.⁴⁹

⁴⁵ Expert Commission on Domestic Public Water Services, [Report on the Funding of Domestic Public Water Services in Ireland](#), November 2016

⁴⁶ Commission for Regulation of Utilities, [Irish Water's Household Water Conservation Proposal](#), March 2019

⁴⁷ Electronic Irish Statute Book (eISB) S.I. No. 597/2017 - [Water Services Act 2007](#) (Threshold Amount and Allowance Amount) Order 2017

⁴⁸ Irish Water, [Business Plan to 2021](#)

⁴⁹ Irish Water, [Strategic Funding Plan 2019–2024](#), June 2019

Summary and conclusions

NIW was set up to address issues caused by decades of underinvestment in water and wastewater infrastructure. The intention was for most, if not all of its revenue to come from charges levied on households and commercial users. However, the introduction of domestic charges has been deferred.

Since 2017, the NI Executive has provided NIW with a subsidy in lieu of this proposed income from domestic users. The subsidy of some £300m per annum is not sufficient for NIW to maintain both the existing 'ageing' network and complete strategic investments to protect the long-term viability of the network. Funding shortages have already led to developments being refused, and could have long-term social, economic and environmental impacts for NI.

The reform of water services in NI mirrored those elsewhere as a realisation, driven largely by the environmental and water quality requirements of the EU's water framework directive, that significant and sustained investment in water and wastewater infrastructure that was required. The WFD called for cost recovery measures and introduced the Polluters Pay Principle advocating the cost of water and wastewater services across the EU should reflect the environmental impact.

Charging for water and wastewater services is now common practice across most of the EU. However, the extent of cost recovery does vary among member states. The means by which charges are administered also varies, with research suggesting volumetric bills are the most equitable and are most acceptable to the public.

The main goals of water charging appear to have been achieved; evidence from GB shows that revenue generated through charges enables the levels of sustained investment necessary to deliver customer service, environmental and economic goals. Evidence also shows that water conservation is best achieved through volumetric charging.

Like the NI Executive, the Irish Government has taken the decision to subsidise its national water company rather than introduce domestic charges. The Irish model encourages water conservation and applies the polluters pay principle by only charging domestic customers for overuse of water.

Irish Water is a state-owned regulated utility similar to Scottish Water and NIW, although of the three Scottish Water is the only utility to collect most of its revenue through domestic charges. A significant difference of the Irish Water model are the statutory borrowing powers of the company which are not available in NI or Scotland. Experience from the private water industry in GB, particularly Wales show that debt is both an efficient and equitable way to deliver investment in water and wastewater infrastructure but in order to access this money there needs to be a stability in the governance and regulatory structures.