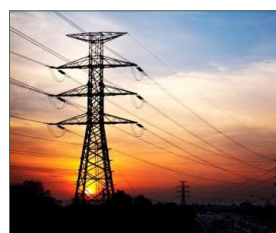


# Water & Sewerage Services Price Control 2015-21

Final Determination – Main Report  
December 2014



# About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail and Social; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

## Our Mission

Value and sustainability in energy and water.

## Our Vision

We will make a difference for consumers by listening, innovating and leading.

## Our Values

Be a best practice regulator: transparent, consistent, proportional, accountable, and targeted.

Be a united team.

Be collaborative and co-operative.

Be professional.

Listen and explain.

Make a difference.

Act with integrity.

# Abstract

We regulate the revenue NI Water receives through periodic price controls. This final determination is our assessment of the revenue required for NI Water to achieve targets and maintain and improve the service it delivers over the 2015-21 period. Overall our determination sets a revenue requirement of £2.3 billion for NI Water, which is £89 million less than the company's submission to us. It is estimated that our proposals will reduce the average customer bill in real terms over 6 years. However, we recognise these targets were set in anticipation of current levels of public expenditure allocations being maintained. If these allocations to NI Water are reduced we will work with NI Water and DRD to ensure that the company delivers the best possible package of outputs within the funding available.

# Audience

Regulated utilities, regulatory community, industry, consumers and their representative bodies and statutory bodies.

# Consumer impact

The price control will protect customers by setting price limits for the six-year period 2015-21. Customer views have also been taken into account in setting the type and levels of service they expect.

# Water and Sewerage Services Price Control 2015-21 Final Determination Main Report

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# Foreword

The Utility Regulator's primary role within the water industry of Northern Ireland is to protect the interests of consumers, both today and in the future. One of our most important regulatory processes is the price control which aims to ensure consumers receive best value for money. The price control determination sets out the revenue that the company requires to deliver a specified level of service to consumers.

This challenging determination (called PC15) was developed over a two-year period, through comprehensive review and analysis of the company's historical position and its proposals. The price control will run for six years with provision for a mid-term review during the price control period. Our final determination follows a consultation process with key stakeholders plus consumer engagement. This included not only the Department of Regional Development (DRD) but also the Northern Ireland Environment Agency (NIEA), the Drinking Water Inspectorate (DWI) and the Consumer Council (CCNI).

Overall this third determination will challenge NI Water to continue its journey of improvement. The determination identifies areas of improvement in levels of service, efficiency and significant investment in water and sewerage services. NI Water will be required to deliver both improved levels of service and efficiency within its identified revenue requirement. This will mean that the majority of business consumers will see their bills decrease, before taking account of inflation, over the PC15 period. This is a positive outcome for business consumers at this time.

Our determination establishes the funding required by NI Water to meet departmental targets contained within Social and Environmental Guidance and requires NIW to deliver enhanced regulatory outputs, continued investment, improvements in service and efficiencies. However, we recognise these targets were set by DRD in anticipation of current levels of public expenditure allocations being maintained. If these allocations to NI Water are reduced we will work with NI Water and DRD to ensure that the company delivers the best possible package of outputs within the funding available. In this scenario it is likely that there will be an impact on the level of services and outputs.

While the current framework is undoubtedly not ideal for such a capital intensive industry, NI Water can continue to learn from other water companies to reduce costs whilst improving performance. We now look forward to working with NI Water and other stakeholders to build on the significant progress made in recent years. Our goal is that water consumers in Northern Ireland will, at the end of the price control period, see further improvement in water and sewerage services at lowest possible cost.

# Summary

## Background

Northern Ireland Water (NI Water) is responsible for providing water and sewerage services to consumers in Northern Ireland. Since NI Water is the sole provider of water and sewerage services, the Utility Regulator (UR) regulates the amount of revenue the company receives. These costs are based upon the 'needs' identified. These 'needs' are jointly agreed with the Drinking Water Inspectorate (quality requirements for drinking water), Northern Ireland Environmental Agency (detail on discharge requirements), Department for Regional Development (government policy including funding) and the Consumer Council (consumer expectations). At present, the revenue that is attributable to domestic consumers is provided by government subsidy.

This document outlines our final determination for our third NI Water price control (also called PC15) which will apply from April 2015 to March 2021, with provision for a mid-term review during the price control period. However, we are aware that there is currently a review of government funding for many key services. In the event of public expenditure reductions for water and sewerage services we will work with NI Water to ensure that it delivers the best possible package of Business Plan outputs within the final public expenditure allocation. In this scenario it is likely that there will be an impact on the level of services and outputs.

## Price control determination: summary

### i Revenue requirement

This challenging determination provides for a total revenue requirement for NI Water of £2.34bn for the six-year period of the price control. Table 1 also notes NI Water's business plan submission for its revenue requirements.

Table 1: Total revenue request and proposal			
Revenue Requirement	NI Water Business Plan	PC15 Final Determination	Saving
Total Revenue	£2.43bn	£ 2.34bn	£-89.3m

### ii Capital expenditure (Capex)

Our determination provides for £1bn of capital investment. This aligns with current guidance on public expenditure available for investment in water and sewerage services. We accept that the company could commit a higher level of efficient investment and this would add value should additional public expenditure become available.

Of this investment, £556m (55%) is allocated to ongoing repair and replacement of assets to ensure the high levels of performance achieved to date are maintained.



£446m (45%) is allocated to deliver clearly defined and prioritised outputs which will enhance service, such as new and upgraded treatment works.

We have set a target of 7% increased capital efficiency for improving works. This will allow the company to deliver £56m of additional service improvement within the current budget. A 0.6% per year ongoing efficiency target has also been applied to both improving works and capital maintenance to ensure continuous efficiency improvement.

From NI Water's business plan it is clear that substantial work has been carried out by the company to engage with their consumers and improve asset management processes. We expect the company to continue the journey to improve asset management and better align consumer expectations with investment planning.

### iii Operational expenditure (Opex)

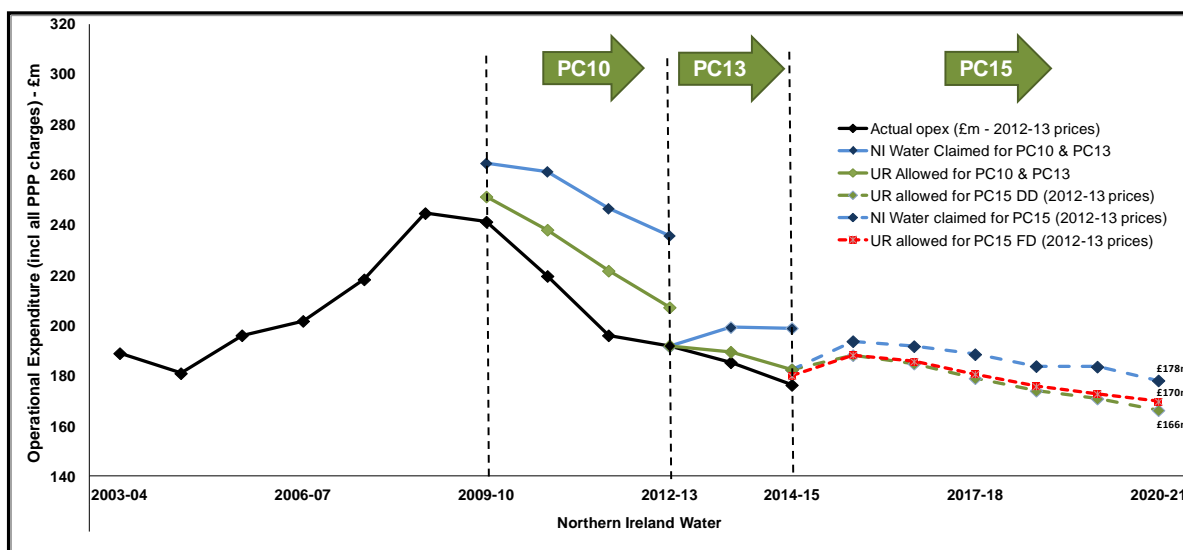
Benchmarking information shows that NI Water is 22% less efficient than similar companies in England and Wales. NI Water spends £1.27 for every £1 spent by the more efficient companies.

We challenge NI Water to reduce their efficiency gap and deliver 2.3% per annum efficiency savings over PC15, saving the consumer £47m in 2012-13 prices.

Figure 1 shows the profile of Opex by NI Water from our first price control PC10 onwards. The step change at the start of PC15 is largely due to an exceptional item around the likely increase in NI Water's business rates bill. NI Water has updated its estimate of the likely increase to over £12m per annum or an extra £74m over PC15.

Our determination means that consumers will see NI Water absorb much of any exceptional increase so that Opex will rise by a smaller proportion, or just £8m in the first year of PC15 before reducing. Operational costs are expected to reduce to £170m per annum by the end of PC15, from a starting value of £193m in 2015-16.

**Figure 1: Opex expenditure for PC10, PC13 and proposed expenditure for PC15**



## Impact on consumers

The majority of consumers will see their bills decrease, before taking account of inflation, over the PC15 period (see Table 2).

Only unmetered consumers, who represent 11% of all billed consumers, will see an increase in their bills. A typical bill for this group of consumers will increase from £250 to £285 by 2020-21. The main reason for this increase is down to more accurate information about the consumption levels of this group of consumers.

**Table 2: Typical consumer bills – NI Water business plan submission and UR Final Determination (£)**

Bills (2014-15 prices)	Actual 2014-15	NI Water Business Plan submission for 2020-21	UR Final Determination for 2020-21	Saving in 2020-21	Saving over PC15 compared to Business Plan
Average notional household	410	400	365	35	76
Typical unmetered	250	293	285	8	54
Typical small metered	361	367	348	19	72
Typical large metered	2,991	3,041	2,890	151	582

## Our determination – key benefits

This determination will result in the following, challenging but achievable outcomes:

- **Lower bills for most water and sewerage consumers** - the majority of consumers will see reductions in bills;
- **Improved efficiency** - challenging NI Water to deliver an 11.5% real terms reduction in total opex (2012-13 to 2020-21). This builds on improved efficiencies from our first two price controls;
- **Continued significant investment in water and sewerage services** - NI Water will continue to invest to maintain the existing assets and improve compliance with EU quality targets; and
- **Improvements in levels of service** - current service levels will be maintained. The number of properties at risk of low pressure or internal flooding will be reduced. New consumer service measures will be introduced, including a new consumer satisfaction survey providing 'actionable data' to improve customer services.

**Table 3: Some key outputs included within NI Water's programme for PC15**

- Investment to maintain an existing asset base with a replacement value of over £9bn will maintain levels of service to existing consumers.
- Continued connection of new properties to the water and sewerage network and the release of development constraints.
- Investment in trunk mains to Cookstown and Strabane will improve security of supply in an areas badly affected by recent freeze thaw events.
- Investment to alleviate the risk of internal flooding at 62 domestic properties and 836 properties affected by low water pressure.
- Investment in 19 wastewater treatment schemes to improve the quality of discharges from works > 250 population equivalent and upgrades of 45 small wastewater treatment works.
- Improvements to 56 unsatisfactory intermittent discharges to meet quality standards.
- Replacement or renovation of 905km of water mains and 74km of sewers.
- Further investment in systems to support the delivery of service, improve interactions with consumers, improve efficiency and make the service more sustainable.
- Proactive replacement of over 11,000 lead communications pipes at consumer properties in addition to lead pipe replacement under water main rehabilitation and in response to sample failures.
- Further reductions in leakage surpassing 159Mld (the economic level of leakage).
- Completion of work to secure water supply assets in line with requirements of the Preservation of Services and Civil Emergency Measures Directive.

## Next Steps

The PC15 price control has been an ongoing process of engagement. Our determination has been developed following extensive engagement with NI Water, which provides a vital public health service for consumers in Northern Ireland. We would also like to acknowledge the input of other stakeholders in helping us develop our determination, and in particular, the Department for Regional Development, Drinking Water Inspectorate, Northern Ireland Environment Agency, and the Consumer Council. We consider this determination provides the appropriate level of funding for NI Water to continue its journey of improvement and greater efficiency. However, we will continue to engage with stakeholders and, in the event of public expenditure reductions, consider any revisions necessary.

The main final determination report, technical annexes and consultation responses to the draft determination are all available to view on our website [www.uregni.gov.uk](http://www.uregni.gov.uk)

# 1.0 Introduction

## 1.1. The final determination

- 1.1.1 This document sets out the Utility Regulator's final determination for the PC15 Price Control for NI Water covering the six year period 2015-21. It sets out the assessment and challenge of NI Water's plans for PC15 and the determination of price limits and outputs we have made.
- 1.1.2 In preparation for the final determination we published a draft determination<sup>1</sup> on 10 July 2014 for consultation. Responses to this report and a summary of how we have addressed the points raised can be found in Annex V. The draft determination included back-ground information such as our approach to PC15 and some of the key issues considered in the development of the price control. Further information on our approach, timetable and key issues considered can be found in our PC15 Approach<sup>2</sup>.

## 1.2. Our role and duties

- 1.2.1 The Utility Regulator's role is to protect the interest of consumers in relation to the supply of water and the provision of sewerage services. Our primary duties are to:
- Protect the interests of consumers;
  - Ensure that NI Water carries out its functions properly; and
  - Ensure that NI Water is able to finance its functions.
- 1.2.2 One of the ways we discharge these primary duties is to undertake price controls. Each price control ensures that consumers receive value for money through a challenging and achievable determination of the future revenues and charges necessary to deliver a defined set of outputs. PC15 is our third price control which follows two shorter duration price controls, PC10 covering 2010-13 and PC13 covering 2013-15. Both these price controls delivered improvements in service and greater efficiency resulting in lower costs and bills for non-domestic consumers.
- 1.2.3 When carrying out our duties we have regard to Social and Environmental Guidance issued by the Department for Regional Development (DRD) in October 2014. The guidance follows the same themes as "Sustainable Water, A Long Term Water Strategy for Northern Ireland" which was published consultation in June 2014.

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<sup>1</sup> [http://www.uregni.gov.uk/water/price\\_control/pc15/draft\\_determination/](http://www.uregni.gov.uk/water/price_control/pc15/draft_determination/)

<sup>2</sup> [http://www.uregni.gov.uk/publications/pc15\\_approach\\_document](http://www.uregni.gov.uk/publications/pc15_approach_document)

- 1.2.4 In accordance with the Social and Environmental Guidance we have used the indicative allocation of £990m for water and sewerage services in the Executive's Investment Strategy (ISNI) for investment planning purposes. We also accept that the company could commit a higher level of efficient investment and this would add value should additional public expenditure become available. Any additional investment would have an impact on consumer bills.
- 1.2.5 The Social and Environmental Guidance states that NI Water's resource requirement for PC15 will be agreed on the basis of our determination and the availability of funding through the Executive's budget. We have applied best regulatory practice to base price limits on challenging efficiency targets which can be delivered while the quality of water and sewerage services is sustained and improved.
- 1.2.6 However, our price control determination is set in the context of the wider public expenditure environment and the spending constraints going forward. In November 2014, DRD issued a consultation on the "Draft Budget 2015-16: Spending and saving proposals within the Department for Regional Development". This signals a lower level of resource funding and lower level capital funding for 2015/16 than indicated in the Social and Environmental Guidance on which we have based our determination.
- 1.2.7 To ensure that NI Water is able to finance its functions within its current governance arrangements, we have entered into a Memorandum of Understanding with DRD and we are developing the associated Consequent Written Agreement (CWA) for PC15 with DRD. In the event of reductions in public expenditure for water and sewerage services we will work with NI Water to ensure that it delivers the best possible package of outputs within the final public expenditure allocation. To do so, we will work with other stakeholders to agree changes to outputs and / or prices if appropriate.

### **1.3. NI Water's governance arrangements**

- 1.3.1 NI Water is a government-owned company. Because it relies on government funding for the majority of its revenues, it is also classified for public expenditure purposes as a non-departmental public body and it is subject to the rules that govern public expenditure. This hybrid arrangement adds complexity and funding is uncertain from year to year. The normal risk mitigation measures available to regulated companies cannot be used by NI Water. The Minister for Regional Development is currently considering future arrangements for sustainable, secure governance, funding and regulation of the water sector within the context of a long term water strategy.
- 1.3.2 We have developed our approach to PC15 on the assumption that the current arrangements for governance and funding will continue. The fundamental building blocks of our price control are clear outputs, a determination of efficient expenditure, a robust plan for delivery and a focus on consumer service. All these, supported by robust benchmarking, will continue to be essential components of any good governance model.

- 1.3.3 We will continue to work with all stakeholders within the financial governance rules set by government to ensure NI Water continues to deliver in an efficient manner. It is worth acknowledging there are areas where current arrangements impact on the decisions made by NI Water.

## 1.4. Outline of the document

- 1.4.1 The following sections of this report describe the approach we have taken in more detail and set out the decisions we have taken in our final determination:

Section 2:	Price Limits
Section 3	Outputs and Outcomes
Section 4	Plan for Asset Maintenance
Section 5	Capital Investment and Efficiency
Section 6	Operational Costs and Efficiency
Section 7	Monitoring Delivery, Managing Change
Section 8	Conclusions and Next Steps

- 1.4.2 Further detailed information on our methodologies and supporting information underpinning the final determination are included as annexes which are listed in the contents pages.

## 2.0 Price Limits

### 2.1. Introduction

- 2.1.1 This chapter sets out NI Water's overall revenue allowance and associated price limits. It is important to note that NI Water's submitted business plan contained an error in the setting of the Regulatory Capital Value (RCV). This corrected RCV has a major impact on the allowed revenue since one of the building block elements is the return NI Water is allowed on the RCV. In agreement with NI Water we have amended their submitted business plan model to reflect the corrected RCV and not applied any smoothing to the revenue profile. Therefore, any comparisons to NI Water's business plan are made by comparison to this revised model. Compared to NI Water's revised model, our final determination will see bills and subsidy together being £89.3m (nominal prices) lower over the six-year period 2015-16 to 2020-21. This equates to a saving of 3.67%.

### 2.2. Allowed revenue

- 2.2.1 The revenue and price limits we have determined for NI Water cover the six-year period from 1 April 2015 to 31 March 2021. The overall revenue requirement is informed by the operational running costs and the level of capital investment, which we seek to apportion fairly between current and future consumers. For additional detail on allowed revenue refer to Annex A.
- 2.2.2 We allocate the revenue between five different customer groups. This ensures that each group pays for the services they receive and are not being subsidised by, or subsidising, other customer groups.
- 2.2.3 We apply a 'building blocks' approach for determining revenue and for setting charges. This approach follows regulatory practice and is similar to the approach we used at the previous price control, PC13. Under the building blocks approach, NI Water receives a rate of return on its RCV, i.e. the value of the company's asset base. The rate of return on the RCV is the cost associated with financing the asset base.
- 2.2.4 It is therefore necessary for us to update the company's RCV at the start of the price control. Efficient investment in new assets is added to the RCV at the start of the price control. Depreciation (reflecting the cost of using the existing assets) reduces the RCV. The cash cost of replacement is covered by the depreciation charge. The table below sets out the calculation of the notional RCV for each year of this regulatory control period.

**Table 2.1– Calculation of RCV (£m)**

Nominal prices	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Closing RCV (previous year)	2,054.8	2,192.2	2,335.4	2,484.5	2,640.4	2,802.4
Indexation	69.9	74.5	79.4	84.5	89.8	95.3
Adjustments	0.0	0.0	0.0	0.0	0.0	0.0
<b>Opening RCV</b>	<b>2,124.6</b>	<b>2,266.7</b>	<b>2,414.8</b>	<b>2,569.0</b>	<b>2,730.2</b>	<b>2,897.7</b>
Capital expenditure (excluding IRE)	131.5	134.7	137.8	141.5	144.5	150.2
Infrastructure renewals expenditure	25.3	26.0	26.7	27.5	28.2	29.0
Infrastructure renewals charges	-25.3	-26.0	-26.7	-27.5	-28.2	-29.0
Grants and contributions	-6.3	-6.5	-6.7	-6.7	-7.0	-7.2
Depreciation charge (MNI)	-60.4	-62.1	-63.8	-65.6	-67.4	-69.3
Adjustment to MNI for depreciation of capital grants	4.0	3.9	3.8	3.6	3.5	3.3
Other adjustments (e.g. disposal of assets)	-1.3	-1.3	-1.3	-1.4	-1.4	-1.5
<b>Closing RCV</b>	<b>2,192.2</b>	<b>2,335.4</b>	<b>2,484.5</b>	<b>2,640.4</b>	<b>2,802.4</b>	<b>2,973.3</b>
<i>Note: Figures may not add up due to rounding.</i>						

## Allowed rate of return

2.2.5 In setting price limits we consider the appropriate rate of return that NI Water should earn on its RCV. In particular we consider three components, NI Water submitted a claim for each and we made our own assessment.

- The gearing level, which reflects the level of borrowing against the asset base.
- The cost of debt, which is informed by an assessment of the cost of embedded debt, the forecast nominal rate of new debt and the projection of retail prices index (RPI) inflation; and
- The cost of equity, which reflects what level of return the financial market would expect from its investment. This is informed by the perceived level of associated risk.

2.2.6 Table 2.2 summarises the rate of return that NI Water sought and the determined rate of return.



**Table 2.2 – Proposals on the weighted average cost of capital (WACC)**

Components of the allowed rate of return	NI Water's PC15 claim	Our PC15 final determination
Cost of debt	1.22%	1.41%
Cost of equity	5.70%	5.65%
Gearing	50%	50%
<b>WACC (pre-tax cost of debt, post-tax cost of equity)</b>	<b>3.46%</b>	<b>3.53%</b>

2.2.7 We have set the elements comprising the WACC at levels similar to that submitted in NI Water's business plan and we commend the thorough and reasoned analysis that NI Water undertook in order to set its cost of capital for the business plan. Our detailed considerations are set out in Annex A.

2.2.8 In making our assessment on the rate of return, together with our consideration of the company's financeability we considered the following:

- The perceived risk to NI Water that arises because the company does not have a secure revenue stream (given the absence of domestic charging);
- The fact that risk has been handed back to taxpayers by the government and that only the government can address this risk transfer;
- The fact that the company must pay a dividend to its shareholder, the government;
- The absence of scrutiny of NI Water by external providers of finance and the setting aside of a requirement for a credit rating; and
- The risk associated with taking a price cap approach to regulation, as opposed to a revenue cap approach (which protects against a fall in customer numbers and consumption).

2.2.9 We have calculated an allowed revenue requirement of £2,341.8 m. This delivers a saving of £89.3m, when compared with NI Water's business plan submission.

**Table 2.3 – Final determination revenue proposal**

	<b>NI Water's corrected PC15 Business Plan</b>	<b>PC15 Final Determination</b>	<b>Saving over PC15</b>
Overall revenue (nominal)	£2,431.1m	£2,341.8m	£89.3m
Level of subsidy (nominal)	£1,852.0m	£1,773.8m	£78.2m
Revenue from charging (nominal)	£579.1m	£568.0m	£11.1m
<i>Note: Figures may not add up due to rounding.</i>			

2.2.10 The way we have calculated the overall revenue requirement compared with NI Water's PC15 Business Plan is shown below. The main area of saving reflects our challenge on operational expenditure. Smaller savings have also been identified in all the other revenue building block lines.

**Table 2.4 – Revenue requirement for PC15 (nominal)**

	<b>NI Water's corrected PC15 Business Plan</b>	<b>Our PC15 Final Determination</b>
Allowed for return	£524.8m	£520.4m
Infrastructure renewals charge	£175.9m	£162.7m
Depreciation	£395.9m	£388.5m
Operational expenditure	£1,028.0m	£971.3m
PPP costs	£306.5m	£299.9m
Overall revenue (unsmoothed)	£2,431.1m	£2,342.7m
Smoothing Adjustment	-	-£0.9m
<b>Overall revenue (smoothed)</b>	<b>£2,431.1m</b>	<b>£2,341.8m</b>
<i>Note: Figures may not add up due to rounding.</i>		

## 2.3. Financial sustainability

- 2.3.1 We have a primary duty to ensure that NI Water is able to finance its functions. We also believe that NI Water's financial strength should be appropriate to the governance framework within which it operates.
- 2.3.2 During PC15 we have continued to measure a series of financial ratios, an approach used by other regulators, the investment community and rating agencies.

**Table 2.5 – Financial performance 2015-21**

Financial ratio	Targeted value	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Cash interest cover	Around 3 times	3.1	3.1	3.1	3.1	3.0	3.0
Adjusted cash interest cover	Around 2 times	1.6	1.6	1.6	1.6	1.6	1.6
Funds from operations: debt	Greater than 13%	10.7%	10.6%	10.5%	10.4%	10.2%	10.0%
Retained cashflow: debt	Greater than 8%	8.7%	8.7%	8.5%	8.4%	8.1%	7.9%
Gearing (adjusted for PPP asset / liability)	Less than 55%	48.7%	48.1%	47.5%	47.0%	46.5%	46.0%

2.3.3 When considering the different measures used by other agencies we observe NI Water has failed two of Ofwat's target values (adjusted cash interest cover and funds from operations: debt). We consider that the values the company has achieved are appropriate for the governance framework within which NI Water is currently operating. As at PC13, we remain of the view that under the current governance framework, achieving financial ratios around a 25% to 30% margin of the target set by Ofwat for private companies is adequate.

2.3.4 While raising some concern around the approach to the funding of capital maintenance if the governance model was to change, NI Water have told as part of the business plan submission that achieving financial ratios around 25% to 30% margin to the target is adequate.

## 2.4. Price limits and charges

2.4.1 We have to determine the price limits (referred to as K factors) to be applied over the price control period. The K factors are the annual percentage increase or decrease in tariff basket charge caps above or below inflation (as measured by RPI). We set separate K factors for each of the five tariff baskets so that the correct revenue is raised from each customer group. The K factors for this final determination are set out in Table 2.6, please refer to Annex B for additional detail.

2.4.2 We have included a smoothing adjustment within all K factors and therefore revenue. This avoids step changes in tariffs in any single year and ensures a gradual movement in prices for customers.

2.4.3 The draft determination only included a smoothing adjustment for the unmeasured non domestic customer water and sewerage customer groups to prevent a large increase in the first year of PC15. Both NI Water and CCNI suggested we make further smoothing adjustments within the final determination

**Table 2.6 – K factors for PC15**

Tariff basket	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Unmeasured water supply	-3.51%	-3.50%	-3.53%	-3.59%	-3.63%	-3.64%
Unmeasured sewerage service	-0.05%	-0.48%	-0.98%	-1.15%	-0.81%	-0.86%
Measured water supply	-1.12%	-1.12%	-1.10%	-1.10%	-1.10%	-1.10%
Measured sewerage services	-0.26%	-0.26%	-0.26%	-0.25%	-0.25%	-0.25%
Trade effluent	2.60%	1.75%	1.62%	1.60%	1.60%	1.60%
<b>Overall K factor</b>	<b>-1.22%</b>	<b>-1.49%</b>	<b>-1.68%</b>	<b>-1.75%</b>	<b>-1.60%</b>	<b>-1.61%</b>

2.4.4 Customers of the companies in England, Wales and Scotland pay a proportion of their sewerage charges for the collection and treatment of surface water drainage from individual properties and roads. This is because legislation in Great Britain does not permit any alternative method of cost recovery. However, the NI Executive endorsed the charging of roads drainage costs to DRD Roads Service.

### Average notional household charges

2.4.5 Our price control process does not differentiate between customer groups, but seeks to deliver lower charges and better services for all. We have assumed that there will be no direct charging for domestic customers over the period of this price control. However, in order to provide full information, we have reproduced the notional average household charge over the PC15 period in the table below.

**Table 2.7 – Average notional household charge**

	Average notional household charge (2014-15 prices)							Saving over PC15
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
NI Water's corrected business plan	£410	£402	£402	£394	£387	£395	£400	<b>£80</b>
Our PC15 Final Determination	£410	£403	£396	£388	£380	£372	£365	<b>£156</b>
<b>Our final determination saving / (cost)</b>	<b>-</b>	<b>-£1</b>	<b>£6</b>	<b>£6</b>	<b>£7</b>	<b>£23</b>	<b>£35</b>	<b>£76</b>

*Figures may not add due to rounding.*

- 2.4.6 The notional household customer is projected to save £156 over the PC15 period. This is a further saving of £76 compared to the NI Water business plan.

### Typical small and large business customer charges for water and sewerage

- 2.4.7 We have provided indicative bills for water and sewerage services for a small and large metered customer and an indicative unmetered non-domestic bill for water and sewerage services. These indicative bills are for information purposes only and are based on a number of assumptions that may not apply to each water and / or sewerage customer.

**Table 2.8 – Typical small metered business bill**

	Typical bill (2014-15 prices)							Saving/ (cost) over PC15
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
NI Water's corrected business plan	£361	£371	£372	£363	£357	£363	£367	-£27
Our PC15 Final Determination	£361	£359	£357	£355	£352	£350	£348	£45
<b>Our final determination saving</b>	-	£12	£15	£8	£5	£13	£19	£72
<p>1. Figures may not add due to rounding.</p> <p>2. Represents combined bill for water and sewerage services after deduction of subsidy element for domestic allowance. Domestic allowance available to non-domestic customers that pay full business rates.</p> <p>3. Calculated based on assumed usage of 285m<sup>3</sup> a year and assuming a customer supply pipe size diameter of up to 20mm.</p> <p>4. Based on 95% return to sewer.</p>								

- 2.4.8 A typical small metered business customer is projected to save £45 during PC15. This is a further saving of £72 compared to the NI Water business plan.

**Table 2.9 – Typical large metered business bill**

	Typical bill (2014-15 prices)							Saving / (cost) over PC15
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
NI Water's corrected business plan	£2,991	£3,076	£3,082	£3,009	£2,954	£3,009	£3,041	<b>-£225</b>
Our PC15 Final Determination	£2,991	£2,974	£2,956	£2,939	£2,923	£2,906	£2,890	<b>£357</b>
<b>Our final determination saving</b>	<b>-</b>	<b>£102</b>	<b>£126</b>	<b>£70</b>	<b>£31</b>	<b>£103</b>	<b>£151</b>	<b>£582</b>
1. Figures may not add due to rounding. 2. Represents combined bill for water and sewerage services after deduction of subsidy element for domestic allowance. Domestic allowance available to non-domestic customers that pay full business rates. 3. Calculated based on assumed usage of 1,306m <sup>3</sup> a year and assuming a customer supply pipe size diameter of over 25 up to 40mm. 4. Based on 95% return to sewer.								

2.4.9 A typical large metered business customer is projected to save £357 during PC15. This is a further saving of £582 compared to the NI Water business plan.

**Table 2.10 – Typical unmetered business bill**

	Typical bill (2014-15 prices)							Saving / (cost) over PC15
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
NI Water's corrected business plan	£250	£292	£293	£288	£283	£289	£293	<b>-£238</b>
Our PC15 Final Determination	£250	£261	£273	£285	£290	£289	£285	<b>-£184</b>
<b>Our final determination saving / (cost)</b>	<b>-</b>	<b>£31</b>	<b>£20</b>	<b>£3</b>	<b>-£7</b>	<b>-£0</b>	<b>£8</b>	<b>£54</b>
1. Figures may not add due to rounding. 2. Represents combined bill for water and sewerage services before after of subsidy element (currently corresponding to 50% of unmetered water and sewerage services) 3. Based on an annual Net Annual Value of £8,000.								

2.4.10 A typical unmeasured business customer bill is projected to increase by £184 by the end of PC15. However, our PC15 final determination represents a saving to customers of £54 over PC15 as compared to the NI Water business plan.

2.4.11 Unmeasured bills have been held down during both PC10 and PC13 periods while NI Water implemented a targeted metering programme aimed at reducing

average unmeasured water consumption. Although further metering of this customer group will continue, customer bills from PC15 onwards will now reflect improved information about consumption levels.

## 2.5. The infrastructure charge

- 2.5.1 When NI Water connects a household premise to the water and sewerage network for the first time it can levy an infrastructure charge, as well as charging the direct costs of making the new connection. The infrastructure charge provides a contribution towards the cost of developing local networks to serve new consumers.
- 2.5.2 Under NI Water's Licence Condition C we set limits on the infrastructure charge. We have determined a final infrastructure charge limit of £305 for 2015-16 (2014-15 prices). This is £42 lower than the maximum allowed charge set by Ofwat in England and Wales.

## 2.6. Management of risk and uncertainty

### Working alongside a Public Expenditure (PE) regime

- 2.6.1 As part of the PC10 price control process and in order to provide a clearer framework for future price controls we worked with the DRD to develop a Memorandum of Understanding (MOU) to set out how the regulatory regime would work alongside public expenditure. A copy of this can found in annex C.
- 2.6.2 The MOU recognises the constraints that the public expenditure system imposes in respect of funding and that risk mitigation measures normally available under regulation cannot be used. In particular:
- 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.
- 2.6.3 Following on from the MOU a 'Consequent Written Agreement' (CWA) was drawn up. This sets out the procedures for dealing with alterations to funding to be agreed between the Department and the UR.
- 2.6.4 We updated the CWA as part of the PC13 process and are continuing to work with DRD to update it again for PC15. The latest draft of the CWA can be found in annex D. This also includes the PE figures consistent with the final determination.

- 2.6.5 However, we are aware that there is currently a review of government funding for many key services. In the event of public expenditure reductions for water and sewerage services we will work with NI Water and other stakeholders to ensure that it delivers the best possible package of Business Plan outputs within the final public expenditure allocation.



## 3.0 Outputs and Outcomes

### 3.1. Introduction

- 3.1.1 This Chapter provides a summary of the outputs which will be delivered in PC15. It sets out how we classify and measure outputs and benefits. A summary of key benefits is also provided.

### 3.2. PC15 Consumer engagement

- 3.2.1 The views of consumers on the type and level of service they expect, and the prioritisation and delivery of those service levels is an important component of this price control. A key aim for all stakeholders was to clearly identify what consumers want, identify their priorities for water and sewerage services, show how these will be delivered and over what timescale.
- 3.2.2 To gain an understanding of what consumers want, a Consumer Engagement Oversight Group (CEOG) was formed by CCNI, DRD, NI Water and the UR with NI Water acting as Chair. CEOG worked collaboratively to develop a plan for consumer engagement and an extensive piece of research was carried out to understand the aspects of water and sewerage services which matter most to households and businesses.
- 3.2.3 CCNI has reported the findings of this research work in “Connecting with Consumers”<sup>3</sup>. CEOG continues to meet to ensure that the findings are implemented. In this section we have summarised key findings from the report to provide background to the determination of outputs and outcomes for PC15.
- 3.2.4 Consumer research was undertaken in 2013 and involved:
- a. Qualitative research:
    - i 12 focus group discussions with 97 domestic consumers; and
    - ii 17 in-depth interviews conducted on a one-to-one basis with non-domestic consumers.
  - b. Quantitative research:
    - i A survey of 1,031 randomly selected households (domestic consumers) across Northern Ireland; and
    - ii 512 telephone surveys with non-domestic consumers.
- 3.2.5 The research identified consumer preferences for a range of service improvements and a willingness to contribute survey used to assess trade-offs between different improvements in service which could be delivered. The survey also covered consumers’ experience of NI Water, consumer views of NI Water,

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<sup>3</sup> <http://www.consumercouncil.org.uk/publications/connecting-with-consumers-report/>

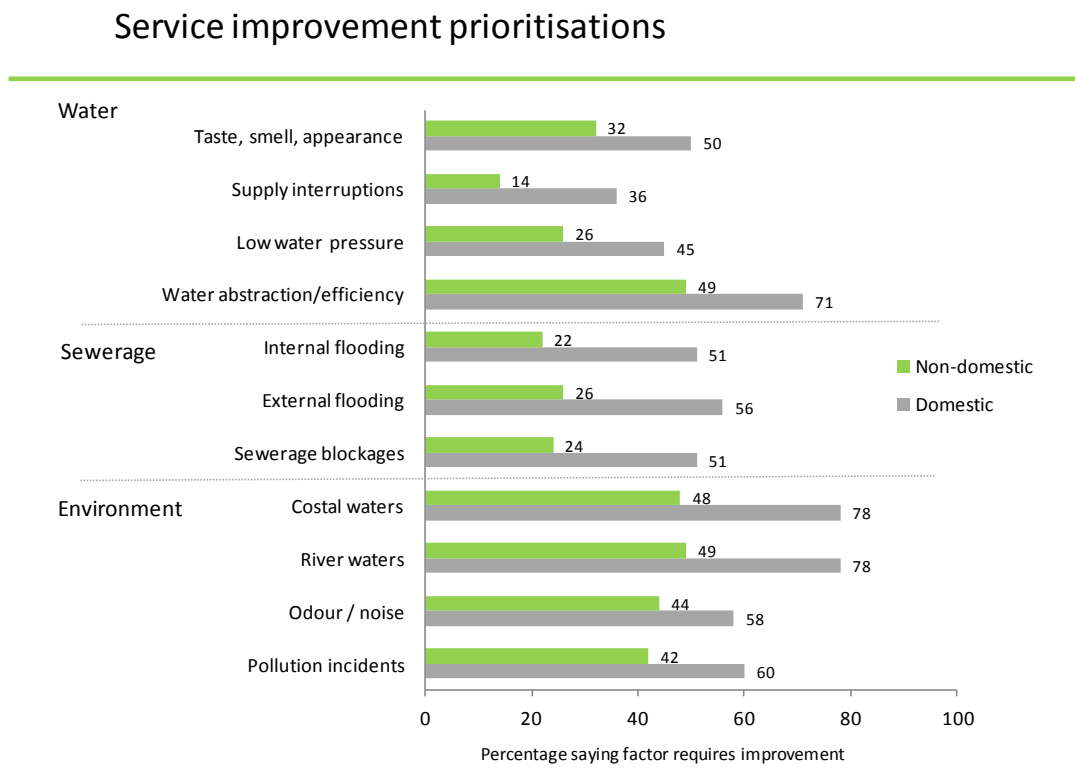
preferred methods of communication and consumer education. The service attributes assessed in the survey are shown in Table 3.1.

**Table 3.1 – Service improvement attributes considered in consumer engagement**

Service area	Service attributes
<b>Water service</b>	Taste, smell and appearance Supply interruptions Low water pressure Water abstraction / efficiency
<b>Sewerage service</b>	Internal flooding External flooding Sewerage blockages
<b>Environment</b>	Coastal water River waters Odour / noise Pollution incidents

3.2.6 Figure 3.1 illustrates the percentage of consumers who requested improvements in each aspect of service. Domestic consumers were more likely to request improvement in all areas of service, with the highest percentages focused in the environmental area, followed by sewerage and then water.

**Figure 3.1 – Overview of service improvement prioritisation**



3.2.7 Figure 3.1 does not take into account the willingness of consumers to contribute extra to improve service delivery. This is addressed in Figure 3.2, which displays improvement priorities against the consumers’ willingness to contribute extra to improve the service.

**Figure 3.2 – Summary of domestic priorities and willingness to contribute**  
**Service improvement priorities and WTC**



3.2.8 There are no attributes receiving a high improvement score and high willingness to contribute score (Quadrant 1). This indicates that no areas are falling well short of customer expectations and requiring widespread remedial attention. This backs up a key finding of the survey that most consumers were satisfied with the service received most of the time.

3.2.9 Quadrant 2 includes service attributes which had the highest value of willingness to contribute, yet received relatively low priority for improvement. Consumers deem these aspects of service to be vital to lifestyle and business operation and therefore are willing to contribute financially to ensure optimum service. However as consumers are typically satisfied with the current level of service, they did not request vast improvements in these areas. Targeted investment should be made to improve these areas further.

3.2.10 Service attributes in Quadrant 3 were given the same low priority for improvement as Quadrant 2 combined with a low value of willingness to

contribute. These areas should be investigated to identify improvements which can be delivered at low cost and combat 'hot-spots' of poor service.

3.2.11 Environmental improvements were given the highest priority in terms of need for improvement but received a low willingness to contribute. This suggests that consumers believe NI Water has a corporate responsibility to improve environmental aspects of service but lack the inclination to contribute towards improvements which have less of an immediate impact on the household.

3.2.12 These findings reinforce other key conclusions from the PC15 research:

- Most consumers appear satisfied with the service provided most of the time. Most domestic consumers have few issues with the current service. They simply expect it to work. Provided it does, consumers rarely think about water and sewerage services or how they are provided. Consumers expect their water and sewerage service to be resilient;
- Consumers expect local service 'hot-spots' to be addressed. When issues occur, they tend to be localised and restricted to defined areas. When asked about willingness to contribute, consumers prioritised local issues such as water supply and flooding which have a direct impact on their daily lives;
- Consumers want strategic decision making. They recognise the integrated benefits which can be delivered by investment, for example, the link between reduced leakage and increased water pressure or a reduction in sewer blockage and reduced risk of flooding. Working to prevent problems occurring is as important as resolving the problem when it does occur;
- Consumer experience shapes their views. The research was conducted at a time when there were relatively few large-scale reported incidents. Had the research been conducted after a major incident, customer priorities might be different because of their service experience;
- Consumers expect NI Water to provide information and education on how to be more water efficient and on the disposal of waste. It was evident that the majority had either missed previous campaigns or believe that more could be done to raise awareness;
- Domestic and business consumers prefer to contact NI Water by telephone. They want to speak to someone who provides answers based on their needs, not the company's, and who fixes the problem first time or can say when the problem will be resolved and then delivers on their promises; and
- Non-domestic consumers who pay for water and sewerage services directly thought that NI Water needed to make improvements in its customer services. However, few were willing to pay more for these improvements. Good customer service is expected as part of the services businesses already pay for.

- 3.2.13 Affordability remains a key issue for many households. Forty nine percent of households would not be willing to contribute more to improve water and sewerage services.
- 3.2.14 In preparing its business plan, NI Water has had to balance competing priorities within a constrained capital budget. To test the business plan, NI Water went back to participants in the first stages of the research. NI Water provided information on the research findings, explained the proposals in the draft business plan and asked the participants to comment on them. Domestic and business consumers consulted in this review were mainly satisfied with the proposals in the draft business plan and had few concerns or recommendations for change.

### 3.3. Definition of outputs

- 3.3.1 The purpose of investing in water and sewerage services is to maintain and improve the services that consumers receive. Ultimately consumers experience service as a series of outcomes, including:
- Whether tap water is safe to drink and is acceptable in terms of taste, odour and appearance;
  - Whether the supply of tap water is reliable, including during extreme operating conditions such as severe weather;
  - Whether surface and foul wastewater is drained effectively and consumers are not affected directly by flooding or a reasonable fear that they might be affected by flooding from sewers;
  - Whether the impact of water and sewerage services on the environment is limited (including the impact of water abstraction and the pollution that can be caused by intermittent and continuous discharges of wastewater); and
  - Whether the company responds quickly when things go wrong, is able to resolve the underlying problem satisfactorily and keeps the consumer informed while doing so.
- 3.3.2 In practice, a water and sewerage company will deliver a series of outputs which aim to secure the outcomes consumers' want. We have assessed the outputs for PC15 in line with the level of investment. These outputs form part of an overall package which the company must deliver.
- 3.3.3 We categorise outputs under three headings:
- **Service level outputs:** service level outputs measure the impact of investment on the level of service experienced by consumers. This includes, for example, the number and duration of interruptions to supply and overall compliance with water quality parameters. This type of output is preferred as it maximises the company's freedom to determine the best way

to deliver the required level of service at minimum cost. It encourages innovation and cost savings that benefit consumers in the longer term;

- **Nominated outputs:** these are specific items, often identified by the quality regulators such as improvements to a discharge standard to meet mandatory legislative requirements. We have also included a number of specific improvements that NI Water identified as nominated outputs in its business plan. This includes trunk main schemes and the provision of additional water storage capacity; and
- **General activities:** we included activities (such as the rate of replacement of water mains or the replacement of sewerage) as outputs where it was not possible to establish a clear link between activity and service level outputs in the short term. This ensures that NI Water will put forward robust plans for each price control period against which it can be monitored. Activity rates can be reviewed at subsequent business plans and increased or reduced to reflect experience and the levels of service that consumers require in the future.

- 3.3.4 The summary outputs for PC15 are set out in Table 3.2 and Table 3.4. This includes some additional output measures introduced for PC15.
- 3.3.5 The output tables include projected performance for the final year of PC13 to show how the outputs planned for PC15 compare with the current period. Further commentary on these outputs is given in Annex F.
- 3.3.6 These tables will form the basis of the monitoring plan we will ask NI Water to publish following our final determination. They will be supported by a detailed list of nominated outputs which will be subject to a formal change control protocol throughout the PC15 period.
- 3.3.7 The outputs included in Table 3.2 and Table 3.4 are targets which the company is expected to meet or exceed. Performance against some targets can be affected by external factors such as weather conditions, by the statistical impacts of sampling or by the quality of the assets. This can create variability in performance which the company cannot control or can only partially control. This is true for water quality measures, wastewater quality measures and leakage.
- 3.3.8 In the outputs tables we have set targets for these measures at the lower end of the likely level of performance. We have provided further information on the expected range of performance in Annex F. Exceeding the targets should not be seen as out-performance. The company will only out-perform when it is reliably operating at the upper end of the expected range.
- 3.3.9 In PC13 we have introduced a formal process of serviceability monitoring. Our first serviceability assessment is included in Annex G and summarised in Section 3.8.
- 3.3.10 In addition to monitoring individual outputs we also assess the company's progress against a composite OPA score. This combines a range of service

measures. Further details of our overall performance assessment are provided in Section 3.9 and at Annex E.

3.3.11 Many of the targets included in Table 3.2 and Table 3.4 do not adequately reflect the things which were found to be most important to consumers in the consumer research. For example:

- Company-wide targets can mask local hotspots of poor service;
- Targets for service measures such as interruptions to supply are only meaningful if the company has the information necessary to develop challenging targets which drive improvement; and
- Consumers expect the company to answer the phone. What is important is the quality of the response and the ability of the company to resolve the issue quickly.

3.3.12 In conjunction with other stakeholders, we are taking a number of steps to address this issue:

- Our treatment of consumer service outputs during PC15 is to be developed by the Consumer Measures and Satisfaction Working Group (CM/SAT) who continue to report back to the CEOG. A more detailed examination of the work of CM/SAT and its agreed timeline to introduction of new consumer measures and satisfaction survey for PC15 is included in Section 3.6;
- Additional output measures included in Table 3.2 and Table 3.4 provide activity measures which chart progress towards longer term outcomes. For example, proactive lead pipe replacement or the completion of catchment management plans;
- The introduction of serviceability measures including sub-threshold indicators and consumer complaint measures which will alert us to possible emerging service issues before failure occurs; and
- The introduction of reporting against development outputs to monitor progress of the work NI Water undertakes to develop its capability and introduce new techniques (see Section 3.6).



### 3.4. Summary of PC15 Outputs

**Table 3.2 – Customer service and water quality outputs for PC15**

Line description		Units	PC13	PC15					
A Consumer Service			2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1	DG2 Properties at risk of low pressure removed from the risk register by company action	nr	170	92	108	157	159	160	160
2	DG2 Properties receiving pressure below the reference level at end of year	nr	1,132	1,040	932	775	616	456	296
3	DG3 Supply interruptions > 12hrs (unplanned and unwarned)	%	0.19	0.18	0.17	0.17	0.16	0.15	0.15
4	DG3 Supply interruptions (overall performance score)	nr	1.08	1.07	1.05	1.03	1.00	0.98	0.96
5	DG6 % billing contacts dealt with within 5 working days	%	99.90	99.90	99.90	99.90	99.90	99.90	99.90
6	DG7 % written complaints dealt with within 10 working days	%	99.50	99.50	99.50	99.50	99.50	99.50	99.50
7	DG8 % metered customers received bill based on a meter reading	%	99.00	99.00	99.00	99.00	99.00	99.00	99.00
8	Call Handling Satisfaction score (1-5)	nr	4.75	4.65	4.65	4.70	4.70	4.75	4.75
9	DG9 % Calls not abandoned	%	99.00	99.00	99.00	99.00	99.00	99.00	99.00
10	DG9 % calls not receiving the engaged tone	%	99.90	99.90	99.90	99.90	99.90	99.90	99.90
11	Overall Performance Assessment (OPA) score (11 Measures)	nr	215	218	221	224	227	232	236
12	Total Leakage	MI/d	165	163	161	159	157	155	153
13	Security of supply index	nr	100	100	100	100	100	100	100
14	Percentage of NI Water's power usage derived from renewable sources	%	20.0	20.0	25.0	30.0	35.0	40.0	40.0
B Quality Water									
15a	% overall compliance with drinking water regulations	%		99.79	99.79	99.79	99.79	99.79	99.79
15b	% compliance at consumers tap	%		99.69	99.69	99.69	99.69	99.69	99.69
16	% iron compliance at consumers tap	%		97.10	97.10	97.10	97.10	97.10	97.10
17	% Service Reservoirs with coliforms in >5% samples	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C Water Outputs									
18	Water mains activity - Length of new, renewed or relined mains	km	168	130	144	129	167	147	188
19	Completion of nominated trunk main schemes	nr	2	1	0	0	1	0	1
20	Completion of nominated water treatment works schemes	nr	3	1	0	0	1	0	2
21	Completion of nominated improvements to increase the capacity of service reservoirs and clear water tank	nr	1	0	0	1	0	1	1
D Serviceability									
22	Water infrastructure serviceability	Text	Stable	Stable	Stable	Stable	Stable	Stable	Stable
23	Water non-infrastructure serviceability	Text	Stable	Stable	Stable	Stable	Stable	Stable	Stable
E New Output Measures									
24	Number of Catchment Management Plans	nr		6	7	7	6	7	7
25	Number of lead communication pipes replaced (proactive)	nr		1,844	1,844	1,844	1,844	1,844	1,844
26	Number of school visits	nr		176	176	176	176	176	176
27	Number of events	nr		57	57	57	57	57	57
28	% Service Reservoirs where sample taps have been assessed, and if necessary upgraded, to the appropriate standard	%		50.0	100.0	100.0	100.0	100.0	100.0

3.4.1 The water quality targets reflect the minimum of a likely operating range based on a lower 2.5 %-ile. The expected operating range is shown in Table 3.3

**Table 3.3 - Water quality compliance range**

	Overall Compliance	Compliance at Tap	Iron Compliance
Minimum (based on lower 2.5%-ile)	99.79%	99.69%	97.10%
Maximum	99.87%	99.82%	98.90%
Mean	99.82%	99.74%	97.86%



**Table 3.4 – Sewerage service outputs for PC15**

Line description		Units	PC13	PC15					
A Consumer Service Sewerage			2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1	DG5 Properties at risk of flooding - number removed from the 2 in 10, 1 in 10 and 1 in 20 risk register by company action	nr	21	8	8	22	8	8	8
2	DG5 Properties on the 2 in 10, 1 in 10 and 1 in 20 risk register at the end of the year	nr	150	148	146	130	128	126	124
B Quality Sewerage									
3	% of WwTWs discharges compliant with numeric consents	%	91.0	91.1	92.4	93.2	94.1	94.5	94.5
4	% of total p.e. served by WwTWs compliant with numeric consents	%	97.80	98.08	98.26	98.30	99.12	99.16	99.16
5	Small WwTW compliance (works greater than or equal to 20p.e. but less than 250p.e.)	%	79.15	83.71	86.97	89.58	91.86	94.46	96.74
6	Number of high and medium pollution incidents attributable to NI Water	nr	29	28	27	26	25	24	23
C Sewerage Outputs									
7	Sewerage activity - Length of sewers replaced or renovated	km	14	11	12	11	13	13	14
8	Delivery of improvements to nominated UIDs as part of a defined programme of work	nr	59	27	16	5	8	0	0
9	Delivery of improvements to nominated WwTWs as part of a defined programme of work	nr	18	3	4	4	0	1	7
10	Small wastewater treatment works delivered as part of the rural wastewater investment programme	nr	18	7	8	7	8	7	8
D Serviceability									
11	Sewerage infrastructure serviceability	Text	Stable	Stable	Stable	Stable	Stable	Stable	Stable
12	Sewerage non-infrastructure serviceability	Text	Stable	Stable	Stable	Stable	Stable	Stable	Stable
E New Output Measures									
13	Number of CSO and EO discharges at which event and duration monitoring equipment is installed/fully optimised, and meet NIEA requirements	nr		57	58	58	58	58	58
14	Number of qualifying Wastewater Treatment Works delivered as part of the defined programme of improvements to comply with PPC Regulations	nr		0	0	0	To be defined by output from and assessment of PPC sites and NIEA		
15	Impermeable surface water collection area removed from the combined sewerage network (such as roads and pavements, roofs and hardstandings)	m2		30000	30000	30000	30000	30000	40000
16	Number of 'sustainable solution' WWTW serving a PE > 250 delivered as part of the defined programme of work for improvements to nominated WWTWs	nr		0	1	1	0	0	0
17	Number of 'sustainable solution' WWTW serving a PE < 250	nr		0	0	0	1	1	1

### 3.5. Delivery of nominated outputs

- 3.5.1 Table 3.2 and Table 3.4 summarise the delivery of nominated outputs for PC15. Further detailed information on the nominated outputs for PC15 are included in Annex H.
- 3.5.2 The nominated outputs for PC15 take account of progress in PC13 and include the delivery of PC13 nominated outputs which have subsequently carried forward into PC15. Further information on the extent of carry-over of nominated outputs from PC13 is included in Annex F. Our approach is consistent with the approach we have taken to adjusting the financial determination for PC13 out-turn (see Annex I). Our approach ensures that consumers are not required to pay a second time for outputs which have been delayed.

### 3.6. Reporting against development outputs

- 3.6.1 Not all the outputs which NI Water must deliver can be measured against numerical targets in the short to medium term. The work which NI Water undertakes to develop its capability and introduce new techniques is equally important for the long term development of the services it provides to consumers and the cost of those services.
- 3.6.2 In Section 3.8 of the draft determination we highlighted the need for the company to be more specific in defining the steps it will take over the long term to improve planning and delivery of improved service, identifying key areas where we expected the company to provide additional information of its plans to develop capability. To ensure a continued focus on key development areas which cannot be monitored by numerical targets, we have identified development outputs for PC15 which are set out in Table 3.5. The company should update its plans against these areas and report progress against these plans.

**Table 3.5 - Development output reporting**

Ref	Description
1	<p><u>Development of new consumer measures</u></p> <p>The company shall report progress on the development of new consumer measures and satisfaction survey outlined in Section 3.7 of the PC15 final determination. The company shall:</p> <ul style="list-style-type: none"> <li>• Complete a trial of new consumer measures by 30 September 2015;</li> <li>• Go-live with new consumer measures on 1 April 2016;</li> <li>• Complete a trial of a new consumer satisfaction survey by 31 December 2015; and</li> <li>• Go live with a new consumer satisfaction survey 1 April 2016.</li> </ul>
2	<p><u>Plan for Asset Maintenance</u></p> <p>The company shall provide a clear plan of how it will develop its approach to asset maintenance by the 30 June 2015 with an interim update by the 30 April 2015.</p> <p>The plan shall meet the basic requirements set out in Section 4 of the final determination.</p> <p>The company shall report progress against the plan throughout PC15. We shall determine the frequency of reporting once the plan has been developed.</p>
3	<p><u>Preservation of Services and Civil Emergency Measures Direction (PSCCMD)</u></p> <p>The company will report progress on delivery of PSCCMD enhancements agreed with the Department for Regional Development.</p> <p>The Utility Regulator will seek updates from DRD to confirm that the agreed work has been completed.</p>

Ref	Description
4	<p><u>ICAT Strategy</u></p> <p>The company shall report progress on the development and implementation of the ICAT strategy including implementation of the trial projects proposed for PC15 and its benefits and the economic case for extending the strategy.</p>
5	<p><u>Water resource management plans and drought plan</u></p> <p>The company shall complete a Water Resource Resilience Plan which combines a Water Resource Management Plan and Drought Plan.</p> <ul style="list-style-type: none"> <li>• A draft plan should be available for consultation by June 2016;</li> <li>• A plan should be complete for publication by April 2017.</li> </ul> <p>When developing its plan, the company should set out and incorporate its water demand management strategy and its policy on water efficiency measures in homes and businesses.</p>
6	<p><u>Sustainable Economic level of Leakage</u></p> <p>The next economic level of leakage assessment shall be prepared in 2016-17 to inform the Water Resource Resilience Plan and revised leakage targets for PC15 from the mid-term review onwards.</p> <p>This should be updated in 2019-20 to inform the company's business plan submission and the establishment of leakage targets for the PC21 period.</p>
7	<p><u>Controlled Reservoir Safety</u></p> <p>The company shall report progress on the inspection and maintenance of controlled reservoirs under the proposed Reservoir Bill addressing:</p> <ul style="list-style-type: none"> <li>• Remedial work on Camlough Reservoir (see Annex K);</li> <li>• Implementation of the inspection requirements of the proposed Reservoir Bill for controlled reservoirs by the end of 2017-18;</li> <li>• Completion of maintenance requirements arising from these inspections by 2020-21.</li> </ul> <p>Report on any material issues identified in the surveys which require immediate attention which cannot be delivered within the estimate PC15 funding.</p>
8	<p><u>Water mains prioritisation</u></p> <p>The company shall engage with stakeholders on the development of its water mains prioritisation process to incorporate the outcome of PC15 consumer engagement including interruption to supply and dirty water complaints by 31 March 2015.</p> <p>The company shall provide updates on the implementation of the prioritisation annually throughout PC15.</p>

Ref	Description
9	<p><u>Sustainable Catchment Management</u></p> <p>The company shall report progress on Sustainable Catchment Management annually. The report shall set out the action the company has taken and its plans for subsequent action.</p> <p>The report shall identify the benefits in terms of activity, improvements in raw water quality and reduction of peak flows.</p>
10	<p><u>Minimising the water quality risk from lead pipes</u></p> <p>The company shall provide an annual report detailing how the implementation of its strategic lead policy and lead replacement programme is progressing. This should explain how the company is managing this activity and targeting hotspots to maximise benefits and how it is assessing the improvements delivered by the work undertaken.</p> <p>The report shall also provide details of the activity undertaken by the company, in conjunction with other stakeholders, to develop and implement a strategic risk based approach for addressing compliance issues associated with private supply pipes and domestic distribution systems.</p>
11	<p><u>Water meter renewal</u></p> <p>The company shall report progress against its programme of water meter renewal, targeted to deliver a uniform rate of replacement to ensure that all revenue meters are no more than 17 years old by the end of PC15.</p>
12	<p><u>Targeting sewerage 'hotspots'</u></p> <p>The company shall report on its plans to target sewerage hot-spots of blockage and collapse and the development of its sewerage intervention prioritisation to incorporate the outcome of PC15 consumer engagement. The company shall provide updates on the implementation of the prioritisation annually through PC15.</p>
13	<p><u>Polluted Storm Water Overflows</u></p> <p>The company shall report progress on the investigation and remediation of storm-water overflows including enforcement action taken by various authorities and any remediation action undertaken.</p>
14	<p><u>Storm water separation</u></p> <p>The company shall develop a plan for investing the funding allocated for storm-water separation by September 2015 which sets out the target projects and the benefits they deliver.</p> <p>The company shall assess the scope for storm-water separation and assess benefits it could deliver to support further investment.</p>

Ref	Description
15	<p><u>Strategic drainage Study</u></p> <p>The company shall report progress on its strategic drainage study programme to complete a business case for investment to resolve strategic drainage issues by March 2020.</p>
16	<p><u>Sewer flooding report</u></p> <p>The company shall provide an annual report on property flooding alleviation and mitigation providing an update on the DG5 flooding register, progress on feasibility studies to identify solutions and progress in delivery of investment and delivery of outputs.</p>
17	<p><u>Sustainable Urban Drainage Systems (SUDS)</u></p> <p>The company shall record information on SUDS applications and report annually on:</p> <ul style="list-style-type: none"> <li>• The number of applications received; and</li> <li>• The number of schemes adopted.</li> </ul> <p>The company shall maintain a register of its decisions on SUDs applications, highlighting the reasons any application was refused.</p>
18	<p><u>Implementation of the PPC requirements for Odour Management</u></p> <p>The company shall develop a plan for the implementation of PPC requirements for Odour Management by 31 March 2015 which shall be prioritised and agreed with NIEA. The company shall report progress against the delivery of this plan.</p>

### 3.7. Delivery of the Social & Environmental Guidance

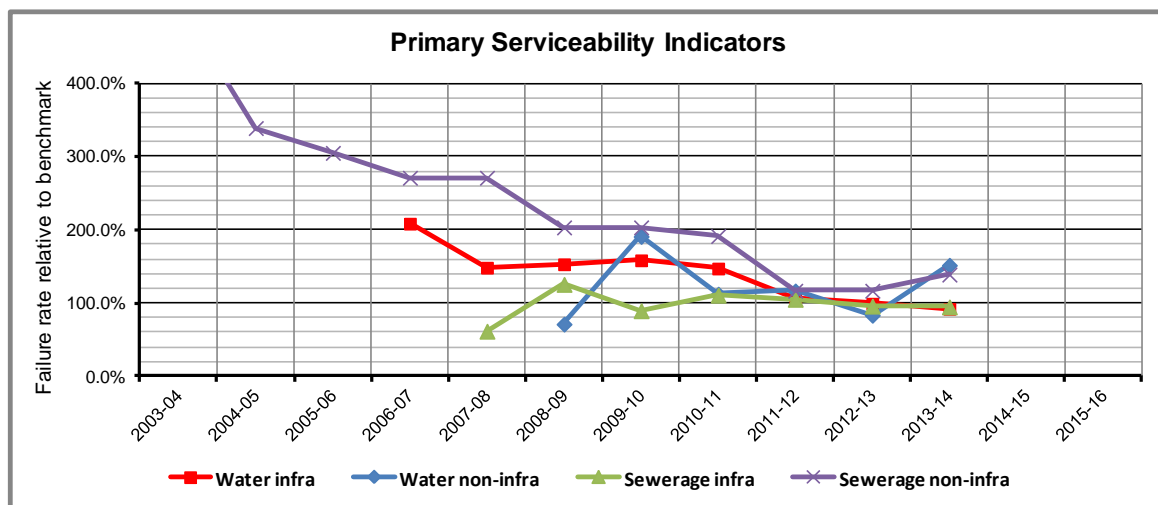
- 3.7.1 In addition to the outputs itemised above, the Social and Environmental Guidance requires the company to meet various general regulatory requirements and contribute to the delivery of wider government policy objectives. Many of these outline how NI Water should approach its work rather than the work it should carry out. The final determination outputs includes delivering these broader policy objectives included in the Social and Environmental Guidance.

### 3.8. Maintaining serviceability

- 3.8.1 Serviceability is the capability of an asset to provide a service. It is a broad measure based on a mix of service indicators, asset performance indicators and sub-threshold indicators which balance consumer experience and the underlying performance of the assets. Focusing asset maintenance planning on serviceability, rather than the condition or performance of the assets, will ensure that investment targets consumer outcomes in the short term and the right level of capital maintenance investment is maintained in the medium and long term.

- 3.8.2 Serviceability is monitored by trending a series of defined asset performance indicators (such as the frequency of pipe bursts) and service indicators (such as the frequency of interruption to supply). Data trends are used to determine whether asset serviceability is improving, stable, marginal or deteriorating.
- 3.8.3 As well as monitoring what has been delivered, serviceability indicators provide a basis for planning asset maintenance investment to maintain a reference level of service to consumers and the environment now and into the future.
- 3.8.4 Serviceability measures include sub-threshold measures and consumer complaint measures which can reveal emerging service issues before failure occurs.
- 3.8.5 Annex G describes our approach to serviceability assessment and provides our first assessment of serviceability for PC13. It sets out:
- Our approach to assessing serviceability;
  - Our assessment of the serviceability reference levels and control limits we consider appropriate for monitoring performance into PC15; and
  - The regulatory action we would take in respect of serviceability.
- 3.8.6 The current trend in serviceability is stable following improvements driven by investment over the last decade (see Figure 3.3)

**Figure 3.3 - Primary serviceability indicators**



## 3.9. Overall performance assessment

### Opinion on company proposals

- 3.9.1 NI Water has significantly improved its service performance over the last number of years. This improvement in service has been reflected in the OPA score more than doubling from 98 in 2007-08 to 216 in 2013-14.

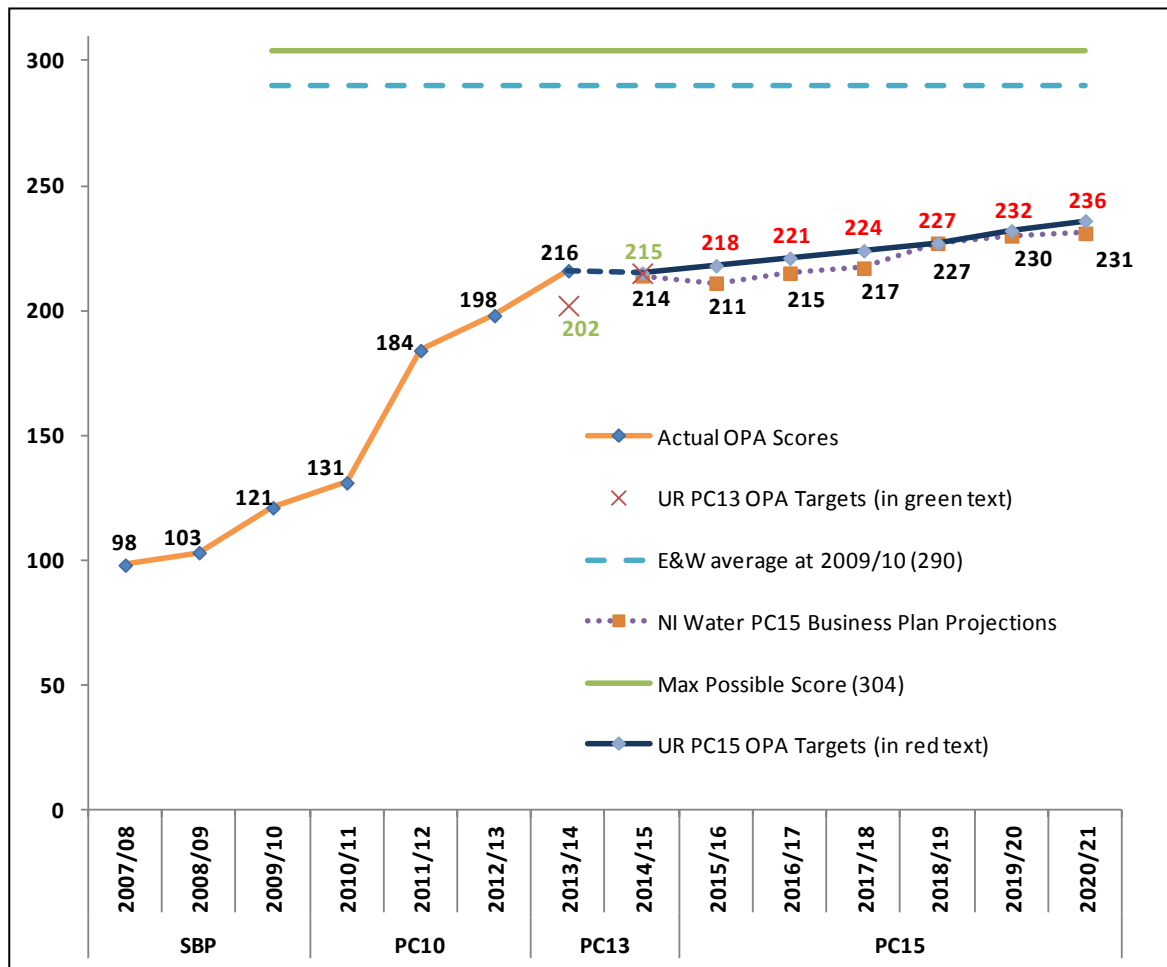
- 3.9.2 Based on NI Water's performance so far, and on the performance of Scottish Water, it is our strong expectation that NI Water's OPA score can and will continue to improve over the PC15 period, even where we have proposed a robust and reasonable efficiency challenge.
- 3.9.3 For the final determination the UR has undertaken its own assessment of an appropriate OPA target. Like NI Water, this approach has been cautious, recognising that as NI Water closes the gap with what was achieved by companies in England and Wales, the scope for further rapid improvement diminishes.
- 3.9.4 Of the 11 service measures included within the OPA many individual measures are at maximum or close to maximum scores. This leaves drinking water quality, unplanned interruptions and sewerage related pollution incidents (high, medium and low) as offering substantial scope for improvement, with NI Water projecting a substantial increase in performance against sewage treatment works consent compliance for PC15.
- 3.9.5 The UR is also mindful that it is difficult to forecast with complete certainty the magnitude of individual service improvements, especially given year-on-year variability on some measures.

### Proposed OPA scores

- 3.9.6 For the above reasons, the UR has taken a cautious approach to estimating the degree to which NI Water can improve its OPA score over the six years of PC15 and our detailed reasoning can be found at Annex E.
- 3.9.7 At draft determination the UR set an OPA target of 236 by the final year of PC15, keeping 9 of the 11 measures the same as NI Water submitted in its business plan. For the remaining 2 measures the UR identified scope for more rapid progress on closing the service gap than NI Water assumed in its business plan (5 additional OPA points).
- 3.9.8 In their draft determination consultation response, NI Water submitted revised, more stretching company projections for the two measures which the UR re-assessed. This had the effect of increasing their business plan target by 4 OPA points. We can therefore infer that this means that the company now believe that a score of 235 is a suitable target for the final year of PC15.
- 3.9.9 As also was the case in our draft determination, we have set a more appropriate profile of annual OPA targets in our final determination, removing the slight drop which NI Water projected in overall service standards at the beginning of PC15.
- 3.9.10 The Consumer Council, in their consultation response to the draft determination have explicitly stated that they support the UR's increased OPA score of 236 along with the adjustment in the OPA profile to remove the company's negative step from 2014-15 to 2015-16.
- 3.9.11 For the final determination the UR has interpolated a high level and gradual, year-on-year linear increase in the OPA from its PC13 OPA target of 215 in 2014-15, to its end of PC15 OPA target of 236 in 2020-21. A comparison of the

UR PC15 final determination targets against company business plan proposals is contained in Figure 3.4.

**Figure 3.4 – Targeted Improvements to NI Water’s OPA Scores in PC15**



3.9.12 The company will therefore need to increase its OPA score by around 3 to 5 points per year to achieve the UR’s target. Our final annual OPA targets based on this high-level analysis is shown in the table below:

**Table 3.6 – Final Determination targeted OPA scores for PC15**

	PC13 Targets		PC15 Targets					
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
UR PC15 final determination	202	215	218	221	224	227	232	236



### 3.10. New consumer measures and satisfaction survey

#### Background

- 3.10.1 An open workshop on the future of the current Overall Performance Assessment of NI Water was held in October 2013. The workshop considered the relevance of continuing the OPA's satisfaction survey of recent telephone contacts to NI Water to drive consumer service improvements within the company.
- 3.10.2 The workshop agreed that continuing with such a survey was of very limited use to NI Water, the survey failing to provide the 'actionable data' NI Water now required to help improve the delivery of consumer service.
- 3.10.3 The work of the CM/SAT was expected to continue to develop new consumer measures and a new consumer satisfaction survey as part of the partnership approach developed under the auspices of the CEOG in 2013.
- 3.10.4 The work of CM/SAT and the direct involvement of DRD representatives have already influenced DRD's SEG, including the following priorities under CS4 and CS5:-

**Table 3.7 – DRD Social & Environmental Guidance relating to consumer service**

Priority CS4	Continue improvements in handling customer queries, complaints and billing (DG6-9).
Priority CS5	<p>Work with stakeholders through the Customer Measures and Satisfaction Group (CM/SAT) to develop more consumer focussed performance measures, including:</p> <ul style="list-style-type: none"> <li>i) New consumer satisfaction (CSAT) Key Performance Indicator which gives a measure of customers' overall satisfaction with the service provided by NI Water; and</li> <li>ii) Adoption of industry best practice measures for performance on handling customer contacts for example: <ul style="list-style-type: none"> <li>- customer contact levels (through all communication channels);</li> <li>- first point of contact solutions; and</li> <li>- repeat contacts.</li> </ul> </li> </ul>

- 3.10.5 At the same time the UR began working group level input to a UK Water Industry Research workstream entitled, "Alternative SIM Measure: Implementation Plan – Report Ref. No. 14/CU/01/7" published 30 October 2014.
- 3.10.6 With the new regulatory framework for PR14 Ofwat decided to embark upon a consultation on how SIM might be replaced by some form of alternative.

#### The way forward

- 3.10.7 For PC15 continued use of the OPA is envisaged, especially those network related measures and scores. The company is also conducting consumer surveys using the Ofwat SIM template on back of advice from CM/SAT.

- 3.10.8 CM/SAT has begun an early evaluation of the usefulness of the SIM style survey results for NI Water and depending upon when the industry moves to its new 'Alternative SIM' survey as consulted upon by Ofwat 2013-14, CM/SAT will need to decide what format of survey best suits NI Water and local consumers. Ofwat will publish the detail of its current price control PR14 on 12 December 2014.
- 3.10.9 To date CM/SAT has examined the results of the trial SIM 1<sup>st</sup> and 2<sup>nd</sup> Wave survey analyses. Further quarters worth of SIM survey data and analyses are planned to inform the CM/SAT final view on which elements of the SIM survey are worthwhile continuing within the new consumer survey to be introduced during PC15.
- 3.10.10 One aspect of Ofwat's potential new consumer survey involves the adoption of unannounced surveys, with no notice period for companies. Any new satisfaction survey of NI Water should be based upon truly random sampling techniques without prior notice.
- 3.10.11 A further consideration for any new consumer satisfaction survey is the extent to which it can be adopted across our other local regulated utilities. A standard consumer satisfaction measure could provide additional comparison of our regulated companies and help inform decisions on how to continually improve consumer service throughout the Northern Ireland utility sector.
- 3.10.12 The inclusion of a simple question using the Net Promoter Score (NPS) methodology is something that has already been examined by Ofwat and UKWIR, in the context of the England and Wales regulatory landscape, where there appears a strong preference to retain some form of financial incentive around the SIM and any replacement.
- 3.10.13 NPS would certainly provide NI Water with actionable data as the answer to the simple question, "How likely are you to recommend company / brand / product X to a friend / colleague / relative?" and, more importantly, can be compared across industries and utilities, locally and internationally, and comparative performances monitored over time.
- 3.10.14 At the present time the CM/SAT Working Group has enabled the delivery by NI Water of a new, single NPS style question to be included along with a further question on consumer satisfaction within a new Omnibus Survey<sup>4</sup> allowing NI Water to deliver one of DRD's SEG requirement, specifically CS5(i) (see Table 3.6 above).
- 3.10.15 The consumer satisfaction survey questionnaire the CM/SAT is working towards introducing part way through PC15 will likely include an NPS or other overall customer experience scoring question alongside attendant questions to probe the underlying reasons behind consumer scores of NI Water.
- 3.10.16 Given consumer expectations are continually evolving, especially during the Digital Information Age, there is also the desire by CM/SAT to include sufficient

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<sup>4</sup> Both questions provide little more than a snapshot or 'temperature check' of consumer sentiment towards NI Water, lacking any real actionable data to explain why scores are what they are and why they might have changed over time.

flexibility into the new survey to enable any emerging consumer issues to be researched.

- 3.10.17 Fundamentally, the primary focus of the new survey is to deliver ‘actionable data’ to NI Water through PC15 and beyond. This will help sustain continual improvements in consumer service over time.

### **Timeline to new consumer measures and satisfaction survey**

- 3.10.18 NI Water is already considering the procurement of a new consumer survey to replace its existing OPA survey and SIM survey; having more than one survey running in parallel will become more difficult to justify once CM/SAT has fully evaluated the SIM survey results.
- 3.10.19 Once a new survey is trialled along with some performance monitoring of NI Water, the Regulator will consider introducing the necessary amendments to the PC15 Monitoring Plan during the PC15 period, to include a new consumer satisfaction survey and/or target(s).
- 3.10.20 Regarding new customer measures, a similar process of trialling and then amendment to the PC15 Monitoring Plan will happen during PC15. The department’s SEG has already usefully included some examples which CM/SAT is examining:
- Customer contacts (both wanted and unwanted);
  - FPOCR; and
  - Repeat contacts.
- 3.10.21 An indicative timeline to the new consumer measures, satisfaction survey and amended PC15 Monitoring Plan follows:

**Table 3.8 – Proposed timeline to new consumer measures and satisfaction survey**

Customer Measures (CM)	Timeline	Customer Satisfaction Survey (CSAT)
	July 2014 to Mar 2015	Procure new survey provider (9 months)
Draft AIR15 reporting requirements issued by Regulator	end Mar-15	Draft AIR15 reporting requirements issued by Regulator
AIR15 clarification process - start	Mar-15	AIR15 clarification process - start
New CM trial - start	1 <sup>st</sup> Apr-15	New CSAT trial – start
	30 <sup>th</sup> Jun-15	CM/SAT review 1 <sup>st</sup> set of results
AIR15 clarification process - ends	15 <sup>th</sup> Jul-15	AIR15 clarification process - ends
New CM trial – ends	Jul-15 to Sep-15	Further trialling
CM/SAT Working Group review results	29 <sup>th</sup> Sep-15	CM/SAT Working Group review results
New CM refinement process	Oct-15 to Dec-15	Further trialling
CM/SAT review progress and finalise new consumer measures	Dec-15 through Jan-16	CM/SAT review results and finalise new satisfaction survey for PC15 to replace previous OPA Call Handling Satisfaction Survey
Regulator amends PC15 Monitoring Plan (including new KPIs and whether to include tramlines)		Regulator amends PC15 Monitoring Plan (including new KPIs and whether to include tramlines)
NI Water prepare systems for monitoring from 2016-17 onwards		
New CM Go-Live and AIR16 reporting	1 <sup>st</sup> April 2016	CSAT Go-Live and AIR16 reporting

3.10.22 For this final determination's PC15 Monitoring Plan we have introduced two new KPI's to the effect that by the end September 2015 CM/SAT will have trialled new consumer measures and a new consumer satisfaction survey. By January 2016 the Regulator will be able to amend the PC15 Monitoring Plan. This will help NI Water meet its reporting requirements for the 2016-17 year onwards with new measures and survey Go-Live from 1st April 2016.

3.10.23 To assist the development of the new consumer satisfaction survey a range of acceptance criteria has been agreed by CM/SAT to allow examination of competing options:

- Be easy and cost effective to administer;
- Support light touch regulation, avoiding unnecessary regulatory reporting;
- Be clear – ensuring consistence of interpretation and application over time;

- Be customer – not regulator – focussed;
- Provide an overall measure of customer satisfaction;
- Be easy for customers to understand; and
- Be actionable – supporting improvements in the consumer experience.

3.10.24 The development work to be progressed by CM/SAT during PC15 has been well supported through our consultation phase. The company in its response to our draft determination stated:

*“We look forward to continuing to develop new customer service measures to set targets for improving customer experience”.*

3.10.25 As well as the above the Consumer Council stated:

*“We welcome the development of a customer satisfaction measure and KPI, including separate measures for domestic and non-domestic consumers to deliver ‘actionable data’,... The Consumer Council looks forward to continuing the work of the CM/SAT working group and believes that these new performance measures will provide robust consumer based evidence to drive further improvements in services and value for money for paying customers”.*

3.10.26 Ulster Farmers’ Union also stated their support:

*“We also very much welcome the inclusion of ‘improvements in levels of service’ as a key benefit of the Price Control and the new consumer satisfaction survey to provide ‘actionable data’ to improve services”.*

3.10.27 The above provide strong comfort that the work of the CM/SAT Working Group is travelling down the right path towards continued improvement in consumer service. The touchstone measure will undoubtedly include both sustainable improvement in consumer satisfaction and the enabling of ‘actionable data’ to provide NI Water with the evidence base to improve value for money and consumer services for the consumer.

### 3.11. Summary of key benefits

**Table 3.9 – PC13 Summary of key benefits**

<b>Base maintenance</b>	<ul style="list-style-type: none"> <li>Investment to maintain an existing asset base with a replacement value of over £9bn will maintain levels of service to existing consumers.</li> <li>Completion of safety inspections and planned work at impounding reservoirs.</li> <li>Renovation and renewal of 74km of sewers.</li> </ul>
<b>Maintain and enhance consumer service</b>	<ul style="list-style-type: none"> <li>Investment in trunk mains to a trunk main to Cookstown will improve security of supply in an area badly affected by the 2010-11 freeze thaw.</li> <li>Investment in the water distribution network to reduce interruptions to supply and improve supply pressure at 836 properties.</li> <li>Investment in the sewerage network to address the risk of internal flooding at 62 domestic properties.</li> <li>Further investment in systems to support the delivery of service, improve interactions with consumers, improve efficiency and make the service more sustainable.</li> <li>New consumer service measures will be introduced, including a new consumer satisfaction survey providing 'actionable data'.</li> </ul>
<b>Improve water quality compliance</b>	<ul style="list-style-type: none"> <li>Completion of four nominated water treatment upgrades to secure the quality of drinking water.</li> <li>Continued investment in water distribution mains to improve water quality as part of a programme to rehabilitate a further 905 km of mains.</li> <li>Proactive replacement of over 11,000 lead communications pipes at consumer properties in addition to lead pipe replacement under water main rehabilitation and in response to sample failures.</li> <li>Completion of work to improve the security of water supply assets.</li> </ul>
<b>Improve environmental compliance</b>	<ul style="list-style-type: none"> <li>Investment in 19 wastewater treatment schemes to improve the quality of discharge from works &gt;250 population equivalent.</li> <li>Upgrade of 45 small wastewater treatment works.</li> <li>Upgrading of 56 unsatisfactory intermittent discharges to meet quality standards.</li> </ul>
<b>Growth and supply demand balance</b>	<ul style="list-style-type: none"> <li>The company will be able to continue to connect new properties to the water and sewerage network.</li> <li>Investment at sewage treatment works will address development constraints due to lack of capacity.</li> </ul>
<b>Improve sustainability</b>	<ul style="list-style-type: none"> <li>Improvements to existing assets, levels of service and quality enhancements will contribute to a sustainable service.</li> <li>Further leakage reductions to reduce water lost and go beyond the sustainable economic level of leakage (ELL) of 159Mld.</li> <li>The proportion of renewable energy used will increase in line with government targets and energy efficiency measures will be implemented.</li> <li>The company will extend the sustainable catchment management approach it has developed with stakeholders.</li> <li>A revised Water Resource Management Plan (WRMP), incorporating drought planning requirements, will be prepared to identify long-term water resource management and security of supply investment needs.</li> <li>Feasibility and development work will be undertaken to ensure the continuity of output delivery into PC21.</li> </ul>

## 4.0 Plan for Asset Maintenance

### 4.1. Introduction

- 4.1.1 As part of the development of PC15, we set out our approach to asset maintenance in which we identified:
- a. The need for the company to develop a Plan for Asset Maintenance as part of its PC15 Business Plan submission; and
  - b. Our views on a range of asset management techniques commonly applied to estimate future investment and the strengths and weaknesses of these techniques.
- 4.1.2 This chapter considers NI Water's plan for asset maintenance and confirms the need for NI Water to build on progress to date and develop and deliver a clear plan of work which will improve its ability to estimate the medium to long term requirement for investment in asset maintenance and prioritise this investment in the short term.

### 4.2. Asset maintenance investment

- 4.2.1 The provision of water and sewerage services is a capital intensive business. The network of water mains and sewers extends to 26,700 km and 15,200 km respectively. Water resources, water treatment works, pumping plant and wastewater treatment works require substantial structures, mechanical and electrical plant and instrumentation. NI Water estimates the gross replacement costs of its current assets as £9.1 billion (March 2013).
- 4.2.2 Asset maintenance investment (sometimes referred to as base maintenance or capital maintenance investment) is the investment necessary to replace assets which have reached the end of their useful life or to provide alternatives which will support continued service delivery. At present, NI Water invests about £80m per annum to maintain its assets. It plans to continue to invest at this level in PC15 but has indicated that a higher level of investment may be necessary in the future.
- 4.2.3 Almost a quarter of NI Water's revenue is used to maintain the assets and the service they deliver. Because this investment maintains current services, it is paid for by current consumers and taxpayers through charges and subsidy.
- 4.2.4 Given the scale of investment and the complexity of the asset base, there is a need for a robust plan for asset maintenance which will allow the company to establish the 'right' level of asset maintenance in the medium and long term and ensure that this is delivered efficiently. If investment is made too early, we lose the opportunity to either reduce charges or invest in other service improvements. If investment is made too late, service may deteriorate until an adequate level of investment is restored.



- 4.2.5 In our information requirements for PC15 we asked the company to:
- a. Assess its asset maintenance planning capability; and
  - b. Report on its current asset inventory and costing systems and the improvements necessary to allow the company to:
    - i Improve its estimate of the gross and net value of its assets and refresh its current cost depreciation estimate; and
    - ii Improve the medium to long term estimate of asset maintenance investment.
- 4.2.6 In our draft determination we commented on the methodology the company had used to assess its asset maintenance capability. We noted that the key purpose of the methodology is to provide a framework for a critical assessment of asset maintenance planning capability which identifies gaps and provides the basis for a plan to address these gaps. From our review of the initial capability assessment we believe that the company has achieved this. The company has identified improvements across its processes: from the need to keep them under review, to the need to address the key weaknesses in the data and processes necessary to allow it to assess the medium to long term investment required to maintain serviceability.
- 4.2.7 We also commented on the company's plan to address the weaknesses identified in its asset maintenance planning capability. We noted that the proposed improvements identified in the company's business plan were expressed in generic terms with no clear understanding of the desired outcome, the scope of activities necessary to achieve these outcomes, the timescale in which these activities will be delivered, or the costs of these activities. We asked that:
- The company provide a plan which developed the summary of approaches provided by the company into a plan to address the gaps identified in the asset maintenance planning capability assessment.
  - The plan should clearly set out the desired outcome, the scope of activities necessary to achieve these outcomes, the timescale over which these activities would be delivered and the cost of the activities.
  - When developing timescales for the plan, the company should consider data, systems and processes including, for example, how long it will take to collect a sufficient trend of robust data to draw conclusions.
- 4.2.8 As part of its consultation response, the company provided an update on the range of techniques it is considering to address a range of asset maintenance issues. While the company is developing its approach, it has not yet been able to provide the clear plan we have asked for. We require the company to provide us with a clear plan of how it will develop its approach to asset maintenance by the 30 June 2015 with an interim update by the 30 April 2015. In the meantime, the company should ensure that the Utility Regulator is briefed on the



development of its plan at regular intervals. Once we have received the plan, we will monitor its delivery through PC15.

### **4.3. Modern equivalent asset valuation**

- 4.3.1 In our draft determination, we concluded that there is no material benefit in asking the company to prepare a modern equivalent asset valuation (MEAV) in the first three years of PC15. In reaching this decision we have consulted DRD to confirm that it does not need a revised asset valuation for public expenditure purposes at present.
- 4.3.2 While we do not require the company to submit a revised MEAV for regulatory purposes, we recognise that the components of a MEAV valuation (asset data, asset replacement costs and residual asset life estimates) can be useful in assessing asset maintenance requirements. In the absence of a more specific bottom up approach, an estimate of the replacement cost profile can provide a useful estimate of medium to long term investment need. In view of this, and in the absence of a requirement to complete a MEAV, we expect the company to include proposals for updating its asset inventory and asset intervention costs and for improving its estimate of residual asset lives in the updated plan outlined in Section 4.2.7 and Section 4.2.8.

### **4.4. NI Water approach to estimating PC15 asset maintenance investment**

- 4.4.1 In our approach to asset maintenance planning for PC15, we identified a range of techniques which are typically used to assess medium to long term asset maintenance need.
- 4.4.2 In its business plan submission the company has made use of:
- a. An estimate of historical expenditure which shows investment in PC10 and PC13 at or below levels projected for PC15;
  - b. Specific asset maintenance plans developed for non-infrastructure assets using expert panels, augmented by an assessment of asset life-cycle to estimate replacement over the longer term; and
  - c. Condition assessment programmes for service reservoirs and trunk mains.
- 4.4.3 There has been no significant use of forward looking risk based approaches which take account of deterioration and running costs. This is an area that the company plans to develop during the early years of PC15.
- 4.4.4 During our engagement with the company on the business plan submission, we noted significant improvements in the quality of data available and the quality of the assessments being undertaken compared to previous price controls. Previous investment in asset data, systems and processes, such as the Asset

Data Acquisition project and the use of mobile work management systems, has facilitated this work. For example we noted:

- The development of formal methodologies for the prioritisation of investment in service reservoirs and water mains;
- Improved quality and granularity of non-infrastructure asset data which will provide the basis for collecting information on proactive and reactive maintenance from the mobile works management system; and
- A comprehensive and well structured bottom up assessment of medium term investment needs for treatment works and pumping stations which used expert panels and challenge panels.

4.4.5 We welcome these developments which will provide an improved understanding of asset maintenance investment into the future. However, at this stage, the data and processes are in their initial development. Many are being applied for the first time and have not benefited from feedback as they are applied repeatedly. They lack supporting information on how the assets are deteriorating over time to confirm that any backlog identified is a true backlog rather than a steady state. As a result, we do not have sufficient evidence to accept the outcome of this work as a means of supporting a significant increase in asset maintenance investment.

## 5.0 Capital Investment and Efficiency

### 5.1. Introduction

- 5.1.1 This chapter gives our overall assessment of investment in capital maintenance and enhancement during PC15. It includes consideration of the out-turn of the PC13 capital programme and an assessment of available funding. Consideration is given to ensure that the level of capital maintenance investment is appropriate to ensure that existing services and serviceability is maintained. Then further investment is committed to accommodate growth, enhance services to consumers and meet new quality obligations.
- 5.1.2 Scrutiny is also applied to the estimate of future costs ensuring they reflect actual costs experienced by the company and scope for further efficiency is assessed with a capital efficiency applied. Scope for delivering additional outputs within the identified budget is also determined.
- 5.1.3 The programme of work proposed by the company for PC15 was constrained by the indicative public expenditure budget of £990m in nominal terms. The company has concluded that it could spend £1.4bn efficiently over PC15. It has identified a further £900m would be necessary to complete all the work necessary to meet the Social & Environmental Guidance including substantial work to improve drainage in Belfast, improve water quality in Belfast Lough and meet the requirements of revised European Union directive on shellfish waters and bathing waters.
- 5.1.4 We agree with the company that the programme of work is constrained and further investment would deliver benefits and could be delivered efficiently. However, any future increase in expenditure needs to be well planned to allow it to be delivered efficiently and on the highest priority outputs. NI Water has indicated that any substantial increase in investment should be phased into the second half of PC15 and we agree with this approach. There is a clear need to signal any substantial increase in expenditure as early as possible to allow enough time to develop sustainable solutions and deliver them efficiently.

### 5.2. PC13 Out-turn

- 5.2.1 Our determination for PC13 allowed capital investment of £297.6m in 2010-11 prices to maintain serviceability and deliver a defined set of outputs and outcomes. In this section, we assess the delivery of the PC13 capital programme and describe the action we have taken to ensure that the company is adequately financed for the outputs it has delivered and that consumers do not pay twice for the same output.
- 5.2.2 All costs are presented in 2010-11 prices, consistent with the PC13 final determination.

- 5.2.3 In our final determination for PC13, we indicated that we would adjust future charges to reflect actual levels of capital inflation as measured by the Construction Output Prices Index (COPI). Capital inflation, as measured by COPI, has been higher than we assumed in the PC13 final determination, reducing the purchasing power of the capital allowance by £10.0m. A 'notified index' adjustment, which considers changes in both COPI and RPI, has been applied to the opening RCV for PC15 to account for changes in capital inflation. This adjustment is described in Annex A.
- 5.2.4 There have also been changes to the outputs delivered in PC13. To determine whether the company continued to deliver value for the investment made in PC13, we assessed the changes in outputs through a process of logging up and logging down and adjusted the opening balance of the RCV at the start of PC13 accordingly. As a result, future charges to consumers will reflect the value of the outputs that have been delivered. Where an additional output is delivered, the efficient cost of delivery is logged up. Where an agreed output is not delivered, the value of the output is logged down.
- 5.2.5 Our assessment of logging up and logging down is presented in more detail in the technical Annex I and the outcome summarised in Table 5.1.

**Table 5.1 – PC13 Logging up and logging down (2010-11 prices)**

Item description	RCV adjustment (£m)
Outputs logged up	7.8
Outputs logged down	-27.0
Return on capital adjustment	-0.8
Total RCV adjustment	-19.9
Note 1. In 2010-11 prices consistent with the 'base year' for the PC13 final determination.	

- 5.2.6 Our assessment has been updated for the final determination based on the company's assessment of current and projected capital investment at October 2014.

### 5.3. Capital budget

- 5.3.1 NI Water's investment plan for PC15 was based on the indicative allocation of £990m for water and sewerage services in the Executive's Investment Strategy (ISNI) for investment planning purposes. This budget is expressed in nominal terms.
- 5.3.2 Our assessment of the capital expenditure available for NI Water to invest in PC15 is shown on Table 5.2. We have accepted the adjustments proposed by the company in respect of PPP finances and IFRS infrastructure accounting. We have based our estimate of future income on the company's projected level of development activity and the average level of development income for the four year period 2011-15. This estimate was updated for the final determination

using the company's latest best estimates of capital income for PC13. 30% of income from infrastructure charges has been allocated to deferred credits.

**Table 5.2 - Public expenditure budget reconciliation (£m nominal)**

	15-16	16-17	17-18	18-19	19-20	20-21	PC15
PE capital budget used	155.0	158.0	163.0	167.0	171.0	176.0	990.0
Alpha PPP maintenance	-1.2	-0.5	-1.8	-1.3	-1.5	-0.2	-6.5
Residual interest in off balance-sheet PPP	-3.6	-3.6	-3.7	-3.8	-3.9	-4.0	-22.7
IFRS infrastructure renewal charge adjustment	1.0	1.1	1.1	1.1	1.1	1.1	6.5
Capital grants and contributions	6.3	6.5	6.7	6.7	7.0	7.2	40.5
Capital grants and contributions transferred to deferred credits	-0.8	-0.8	-0.8	-0.8	-0.9	-0.9	-4.9
NI Water gross capital budget	156.8	160.7	164.5	168.9	172.7	179.2	1002.8

## 5.4. Capital inflation

- 5.4.1 NI Water's capital investment is constrained by public expenditure budgets which are set in nominal terms. The outputs which can be delivered will be affected by inflation which will reduce the real purchasing power of the budget. In its business plan, NI Water repeatedly highlighted the risk that capital works inflation could grow faster during the PC15 period than currently assumed as a significant risk to delivery of the PC15 outputs.
- 5.4.2 Historically, we have used the Construction Output Price Index for New Works (COPI) prepared by The Building Cost Information Service of RICS (BCIS) as a means of adjusting the capital programme for inflation.
- 5.4.3 In the draft determination we noted concerns about the continued use of COPI and sought views on alternative measures of capital inflation we could use for PC15.
- 5.4.4 We have concluded that we should adopt RPI as the basis for estimating and adjusting for capital inflation over PC15.
- 5.4.5 Further information on the response to the draft determination and our conclusions in respect of future adjustments for capital inflation can be found in Annex K.

## 5.5. Capital maintenance investment

- 5.5.1 NI Water's proposals for capital maintenance investment in PC15 are summarised in Table 5.3, reproduced from the company's business plan.

**Table 5.3 - NI Water's summary of capital maintenance expenditure (£m 2012-13 prices)**

	PC10 Annual Average	PC13 Annual Average	PC15 Annual Average Unconstrained	PC15 Annual Average Constrained
Water infrastructure	18.4	20.6	21.6	14.2
Water non-infrastructure	15.4	12.7	32.2	21.2
Wastewater infrastructure	11.5	9.1	16.0	10.5
Wastewater non-infrastructure	30.9	27.8	52.3	34.4
Management & general	-	-	included	included
Total	76.2	70.2	122.1	80.3

- 5.5.2 In its assessment of the investment needed to maintain the service, the company has concluded that an increase in investment of 74% from PC13 levels is necessary (the unconstrained case). This scale of increase would have a significant impact on the long term cost of water services. It would have an immediate impact on costs to customers and taxpayers with an increase in maintenance costs transferring direct to revenue. This estimated unconstrained maintenance budget would use 87% of the indicative capital budget. Once investment to meet growth was considered, there would be no room for improvements to water quality, the environment or consumer service.
- 5.5.3 With this in mind, NI Water has proposed a constrained budget of £80.3m in 2012-13 prices. The company has emphasised the risk that this places on serviceability and the potential that expenditure will have to increase even further in the future to address a backlog. The company has proposed that any mid-term review should include a review of capital maintenance investment in the light of improved asset information and serviceability trends.
- 5.5.4 In Section 4.0, we noted the significant improvements in the quality of the data being used and the quality of the assessment being undertaken to inform NI Water's assessment of capital maintenance investment need. However, we concluded that they do not provide sufficient evidence to support a significant increase in asset maintenance investment. In view of this, we adopted the following approach to determining capital maintenance investment in the absence of a strong case to support the level of increased investment identified by the company:
- We reviewed recent trends in serviceability and concluded that serviceability is stable which indicates that capital maintenance investment in the recent past has been adequate;
  - We reviewed recent trends in capital maintenance investment and concluded that investment from 2007-08 has averaged £82m in 2012-13 prices (excluding backlog base maintenance in the SBP period);

- c. We completed an econometric assessment of capital maintenance investment, expanding the range of techniques employed to allow us to triangulate to a reasonable determination. We concluded that a reasonable allowance for capital maintenance investment in 2012-13 prices is £80m; and
  - d. We have applied an on-going efficiency adjustment over the PC15 period of 0.6% from a base year of 2012-13.
- 5.5.5 Detailed information on the econometric modelling is included in Annex J. The overall analysis and our conclusions are described in Annex K. We have concluded that an average annual investment in capital maintenance of £77.4m would be adequate to maintain services and serviceability over the PC15 period.
- 5.5.6 We have set out the need for the company to develop its plan to close gaps identified in its asset maintenance planning capability. In preparing this plan, the company should consider the timing to the mid-term review and programme its activities to provide the information necessary to support any proposed change in asset maintenance investment.

## 5.6. Assessment of the capital investment programme

- 5.6.1 We have taken a number of steps to satisfy ourselves that the programme of work is reasonably costed:
- We commissioned an audit by the Reporter which covered a range of estimates across the programme. The Reporter did not identify any material issues in the way the programme was costed. The Reporter did raise concerns about the level of risk, and / or optimism bias applied to estimates, particularly those where there is still significant uncertainty in the solution. At times the Reporter was able to provide confirmation that the unit costs of NI Water were as good as or lower than those experienced in the GB water industry;
  - We asked the Reporter to confirm that the cost estimates were consistent with the Cost Base. This provides us with confidence that any Cost Base efficiency adjustment is relevant to the investment programme; and
  - We have reviewed the costs proposed by the company against historical run-rates of expenditure and high level unit costs seen in the delivery of PC10 and PC13 to provide top-down confirmation that the overall cost is reasonable.
- 5.6.2 As an additional challenge on the company's cost estimates we asked a cost consultant to prepare a business plan level estimate for 4 schemes included in the company's business plan. These estimates were prepared using a database of costs from across the water industry in England & Wales and reflect the average out-turn cost of work in England & Wales. The average out-turn cost of these schemes was 12% less than those proposed by NI Water's costs adjusted



for regional price differences. While we do not give significant weight to a comparison based on a small sample of schemes, we take comfort that:

- The analysis suggests that the costs proposed by NI Water are reflective of costs in the wider industry; and
- The variance on this small sample is similar to the Cost Base efficiency challenge derived by comparing standard costs from NI Water with standard costs in England & Wales.

5.6.3 Overall, we concluded that the business plan costs are a reasonable reflection the company's costs at the base year expect where there remains substantive uncertainty on the scope of the works.

5.6.4 At this stage, we have only made two scope adjustments to the programme:

- We have not included a £2.4m of the increase in capitalised salaries and on-costs requested by the company over PC15. The Cost Base efficiency assessment takes account of the level of capitalised salaries and on-costs included in the capital programme. The increase in capitalised salaries and on-costs would erode efficiency; and
- We have deducted £4.7m of investment in works to secure wastewater treatment works sites following a review of the scope of the work by DRD.

5.6.5 The consultation period for the draft determination provided an opportunity for stakeholders to provide further feedback on the balance of the investment programme and the value of proposed outputs in light of the company's costed investment plan. No material issues were raised on the priorities for investment within the constrained capital budget. However,

- NIEA noted its disappointment that sufficient funding was not available to address all environmental requirements; and
- DWI was unable to support investment in the nominated outputs for water quality because the company had not been able to provide it with sufficient information at this stage. Subsequent to the receipt of consultation responses, there has been further engagement between DWI and the company in relation to ongoing and emerging risks. We have therefore concluded that, in the light of the potential risks identified by both parties and the plans to undertake further treatability studies, it would be appropriate to retain some of the enhancement investment proposed by the company pending completion of the studies and further risk assessments.

## 5.7. Capital efficiency targets

5.7.1 At our draft determination the UR set an average 10.9% efficiency target on NI Water's capital enhancement. This target encompassed a 9.1% catch-up and a 0.6% per annum continuing efficiency assumption for the six years of PC15. The



- 9.1% catch-up figure was as the result of triangulating number of efficiency approaches.
- 5.7.2 For the final determination capital efficiency targets have also been derived through a triangulation process of our cost base analysis (see Annex L), as well as a separate report on Capital Procurement Efficiencies from our Reporter and this report is published at Annex N.
- 5.7.3 Our cost base analyses were further informed upon a Regional Price Adjustment (RPA) of -6.2% which can be found at Annex M. This updates the Utility Regulator's views on the overall regional cost relativity enjoyed by NI Water and is an essential part of our comparative analysis to ensure like-for-like comparison of standard capital unit costs against the England and Wales industry.
- 5.7.4 In response to our draft determination efficiency targets the company highlighted two main areas of disagreement:
- 'Jacob's assessment is that NI Water will not be able to deliver an average efficiency of 9.1% for Capital Enhancement over the PC15 period'; and
  - 'it is unrealistic to assume that a 9.1% P0 cut in capital enhancement costs could be delivered in less than 6 months'.

### Cost base analysis

- 5.7.5 In light of our draft determination, NI Water revised their efficiency catch-up percentages from an average of 2.5% within their business plan, over the entire six-year PC15 programme, to an average of around 7.3% on advice from Jacobs.
- 5.7.6 Additional data from Ofwat since our draft determination was published has meant that we have reconsidered our -5% & -10% adjustments to benchmark company's standardised costs for productivity improvements over time. We have now amended our draft determination scenario B to assume a -2% productivity improvement during PR09 with an asymmetric treatment of efficiencies<sup>5</sup>. This is the minimum discount we feel reflects the cumulative productivity improvements England and Wales companies may have evidenced since PR09<sup>6</sup>.
- 5.7.7 NI Water also criticised our choice of benchmark at draft determination stating, *'The UR has used upper quartile without cognisance of the reliability of the data.'* The UR considers that whilst the upper quartile is quite a challenging target, it should be noted that due to our appreciation that there remains inherent uncertainty around our analysis of cost base (especially with the passage of time

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<sup>5</sup> Ofwat in July 2014 reported that approximately £3.3bn to £3.7bn of capex efficiency savings (15-17%) could be delivered for PR09 out of £21.8bn (using RPI indexation). While these are sizeable efficiency savings relative to RPI (+17.3% over the 5 years), COPI (as used in the cost base model) has had a much more modest increase over the 5 years from 2008-09. Comparing actual nominal spend with a PR09 allowance inflated up by COPI indicates more modest efficiency savings.

<sup>6</sup> We took England and Wales cost base data from Ofwat's PR09 determination, the last available set of standardised unit costs.

since the England and Wales comparator data was last submitted and audited) the company has been asked to close only 75% of the gap to the upper quartile and not 100%.

- 5.7.8 In terms of precedent the WICS has previously used the upper quartile in their own cost base analysis of Scottish Water whilst Ofwat used the upper quartile for their PR14 draft determination totex modelling on wholesale. The Competition Commission used the 5th best company in their RP5 determination of NIE in a comparison of 15 companies ie upper third. This is close to our upper quartile (which is between 4th and 5th best company) as calculated in the cost base model.
- 5.7.9 Finally, we should remember that a potentially tougher stance might have been adopted had we compared to a least reasonable cost benchmark company (as with the COLS modelling approach to opex which uses frontier performance as its benchmark to derive the opex efficiency gap).
- 5.7.10 NI Water's business plan proposal was for an average 2.5% efficiency with no continuing efficiency percentage assumed for PC15. However, in response to our draft determination analysis, NI Water has moved to our baseline scenario which encompasses around 5.4% catch-up and an average 1.9% continuing efficiency.
- 5.7.11 The results of our cost base analysis has been updated from the draft determination and are outlined below, including the principal scenarios which informed our triangulation of our eventual preferred catch-up target.

**Table 5.4 – Results of PC15 Cost Base – Efficiency challenge**

Service Area	Efficiency Challenge at PC10	PC15 Approach Method		
		A	B (revised from Draft Determination)	C
		Base Approach (-5%)	Asymmetric Approach (-2%)	Asymmetric Approach (-5%)
Water Infrastructure	14.5%	7.7%	6.3%	8.2%
Water Non-Infrastructure	11.2%	16.8%	15.8%	17.5%
Sewerage Infrastructure	12.9%	-14.6%	1.8%	1.8%
Sewerage Non-Infrastructure	11.4%	9.9%	7.9%	9.9%
<b>Weighted Average</b>	<b>12.5%</b>	<b>5.4%</b>	<b>7.6%</b>	<b>9.1%</b>

- 5.7.12 Under **Method A**, our base case approach, the total scope for catch-up at PC15 is assessed to be 7.2%; however this is reduced to 5.4% when a 75% catch-up rate is applied. The notable minus efficiency figure for sewerage infrastructure (-14.6%) in Method A shows that NI Water are substantially more efficient than the upper quartile benchmark costs in England and Wales in this area.
- 5.7.13 For **Method B**, which assumes a -2%% reduction in unit costs from PR09, shows that while NI Water has made commendable improvement in the cost of its capital works, there is still a 7.6% cost reduction required to close 75% of the gap to the upper quartile where we adopt the Ofwat PR04 approach of treating efficiencies asymmetrically.
- 5.7.14 While Method A illustrates how NI Water has become noticeably efficient on the sewerage infrastructure service area, Method B's results show there is still some expectation for further cost reductions in water costs and sewerage non-infrastructure.
- 5.7.15 **Method C** is a mix between Method A and B as it adopts Method A's -5% continuing efficiency assumption along with adoption of Method B's asymmetrical approach to efficiency. Although challenging for NI Water, this approach is quite a bold but a highly reasonable methodological approach.
- 5.7.16 The above results from our three approaches illustrate that an appropriate PC15 enhancement efficiency catch-up target for NI Water lies between a 5.4% to 9.1% range. At our draft determination we adopted a 9.1% catch-up target for the six-year price control.

### Capital procurement efficiencies

- 5.7.17 We directed the Reporter to undertake a Review of Capital Procurement Strategies and Efficiency Comparisons which was shared with the company in the course of its compilation to a final draft in May 2014. A public domain version has been included within our final determination as Annex N.
- 5.7.18 The report considered procurement best practice internationally across public and private sectors, including best practice procurement within the England and Wales comparator set of water companies. The report's focus is efficiencies rather than scope savings so that the latter, if imposed, would further reduce the cost of whatever procurement strategy is employed.
- 5.7.19 Whilst the report explicitly considered the various governance arrangements which are in place over NI Water:

*"Intrinsic institutional and financial differences (amongst others) between NI Water and [its comparators] in the privatised water companies which cannot be addressed through regulatory levers alone"*

- 5.7.20 The Reporter concluded that:

*"Nevertheless, there are evidently a number of **keener business practices** [UR boldface] that NI Water could and should adopt which would allow it to close the efficiency gap and converge on the levels of capital efficiency of its privatised counterparts."*

- 5.7.21 The report goes on to estimate the extent of the efficiencies which might be obtainable from application of such procurement practices. These begin at 10% efficiencies applicable to PC15 using an incentivised Client / Consultant Model, which with the full benefit of Longer Term Planning and Early Supply Chain Involvement could produce 13% efficiency in the longer term.
- 5.7.22 Using alternatively the Project Joint Venture Model and capturing the longer term benefits the efficiency could rise to 14% in the longer term or alternatively using the Programme Joint Venture Model the efficiency could be as high as 15% in the longer term.
- 5.7.23 The key conclusion we take from the Reporter's report is that whilst differences occur between NI Water and its comparators, with the application of "keener business practices" the company can release at least 10% capital efficiencies during PC15.
- 5.7.24 This contrasts with the advice from Jacobs to NI Water which is used in the company response to our draft determination. Jacobs contend that, *'about 4.8% out of the total 10% improvement in efficiency could be obtained over the PC15 period, but this would take time to implement'*.

### Catch-up efficiencies

- 5.7.25 In establishing the appropriate efficiency target for capital enhancement in PC15, the UR has considered that for the final determination a 7.0% efficiency target for capital enhancement expenditure is appropriate given NI Water's relative position with regards to capital works as outlined in Table 5.4.
- 5.7.26 Our final determination percentage also sits between the two procurement efficiency numbers supported by the two external experts, Jacobs and the Reporter. The UR undertook the examination of procurement efficiencies to ensure we had some alternative form of analysis rather than simply rely on our cost base analyses to establish a catch-up efficiency target for capex.
- 5.7.27 The procurement efficiencies analysis, given its wide focus and depth of analysis as defined in Terms of Reference, was always of greater importance than our use of a further alternative which used a re-pricing approach concerning 4 typical capital schemes. The latter was meant to provide some additional intelligence over NI Water's relative efficiency on capex but the percentages thereby derived were of use only so far as they confirmed either a positive or negative efficiency gap. The triangulation by NI Water in its response to our draft determination incorrectly included all three items of analyses<sup>7</sup>.

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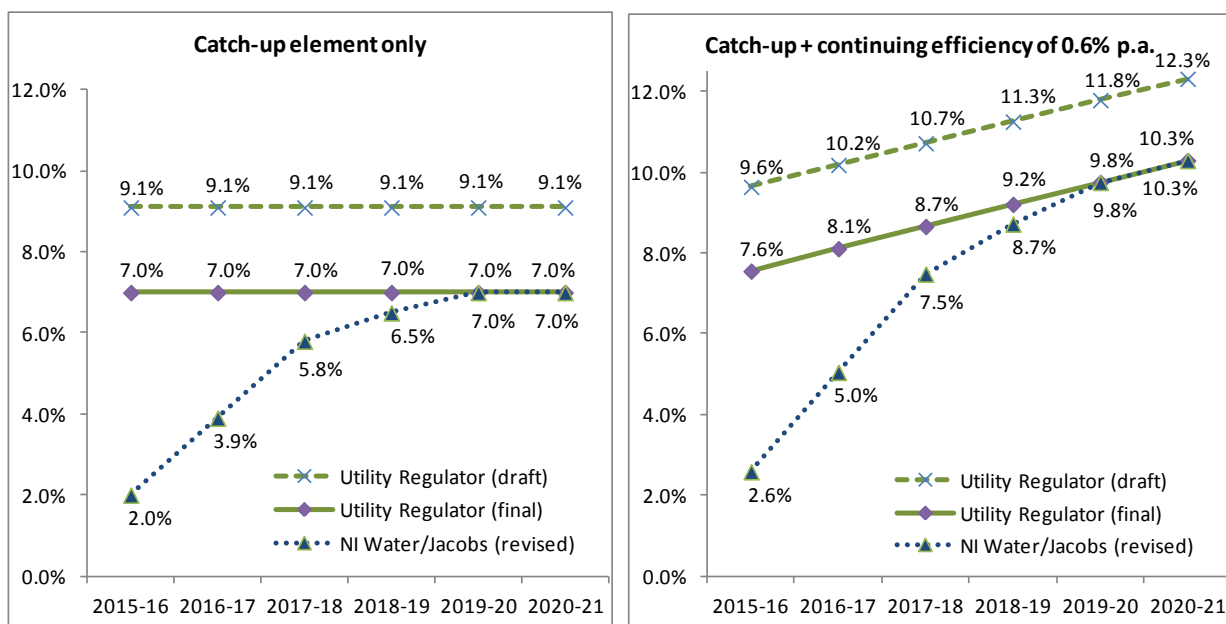
<sup>7</sup> Triangulation is borrowed from navigational and land surveying techniques that determine a single point in space with the convergence of measurements taken from two other distinct points. Its use in business allows for two (or more) methods to be incorporated into a study in order to check the results.

## Frontier shift

- 5.7.28 In addition to the efficiency catch-up, a continuing efficiency assumption of 0.6% per annum capital productivity has been applied as a result analysis of capital frontier shift applying to the water industry - see Annex O.
- 5.7.29 Cumulatively, this 0.6% per annum assumption leads to a 3.5% efficiency in capital enhancement by the end of the six-year price control. Due to the profile, over the six-year PC15 capital enhancement programme the frontier shift assumption has an average 1.8% to 1.9% overall impact.

## Phasing of efficiency challenge

- 5.7.30 The company in its response to our draft determination has asserted it does not have its supply chain fully engaged for PC15 as yet and as such is not in a position to release supply chain efficiencies in the early part of PC15, especially, as they state, there is but 6 months left to the start of PC15.
- 5.7.31 The company stated that catch-up efficiency of 7.0% was achievable, but they gradually profiled their efficiencies to reach 7.0% in year five of the price control, from 2.0% in year one. Overall, over the six years of PC15, NI Water state they can achieve a maximum *average* catch-up of 5.4% over the six-year PC15.
- 5.7.32 The UR have always applied such efficiencies to the total capex programme from year 1 onwards, assuming the company can manage the delivery of capital projects and efficiencies over the duration of each price control.
- 5.7.33 We do not believe profiling efficiencies is appropriate for the following reasons:
- (i) Savings associated with procurement contracts for new capital works and materials etc can be realisable in first year of a price control;
  - (ii) The company have had advanced notice of expectation of capital efficiency for PC15;
  - (iii) NI Water's business plan costs were based on 2012-13 and 2013-14 years and we can assume that NI Water will have improved its capex delivery somewhat since then;
  - (iv) At PR04 Ofwat expected 75% catch-up in year 1 for enhancement spend (although this excluded 'early start' schemes);
  - (v) The company could manage the delivery of capital projects and efficiencies each year over the duration of the PC15 price control to achieve the monetary target for additional outputs.
- 5.7.34 A comparison of our efficiency profiles for PC15 is illustrated below. It can be seen that the UR have reduced our efficiency target for capital enhancement by around two percentage points from what we proposed in the draft determination.

**Figure 5.1 – Comparison of enhancement efficiency profiles for PC15**

### Comparative check on capex efficiencies

- 5.7.35 As a check on the target to be applied to NI Water the UR has undertaken a comparison of other regulated companies undergoing relatively similar capital expenditure programmes.
- 5.7.36 Welsh Water, in their business plan for PR14 stated that they are targeting £98m of capital savings over the five years to 2020 – around 6% of their total capex.
- 5.7.37 Severn Trent are forecasting to deliver £238m of savings, which equates to around 7% of their capex; South West Water are reporting a 5.5% capex efficiency for the 2015-20 period; while Northumbrian are assuming a 6% capital efficiency across their programme for 2015-20.<sup>8</sup>
- 5.7.38 With a capital enhancement budget of £1,089m, Scottish Water set a £151m (12%) enhancement efficiency target for the 2015-21 period. According to Water Industry Commission for Scotland (WICS) the cost of the enhancement programme will be influenced by the extent to which Scottish Water can continue to improve the efficiency of its planning and delivery mechanisms. Scottish Water has proposed an overall average capital efficiency target of around 16% in its plan (for total capex).<sup>9</sup>
- 5.7.39 We are informed that Network Rail were not set a total enhancement efficiency target as such by the Office of Rail Regulation (ORR) for CP5, but under the Enhancement Costs Adjustment Mechanism (ECAM) projects are examined in a

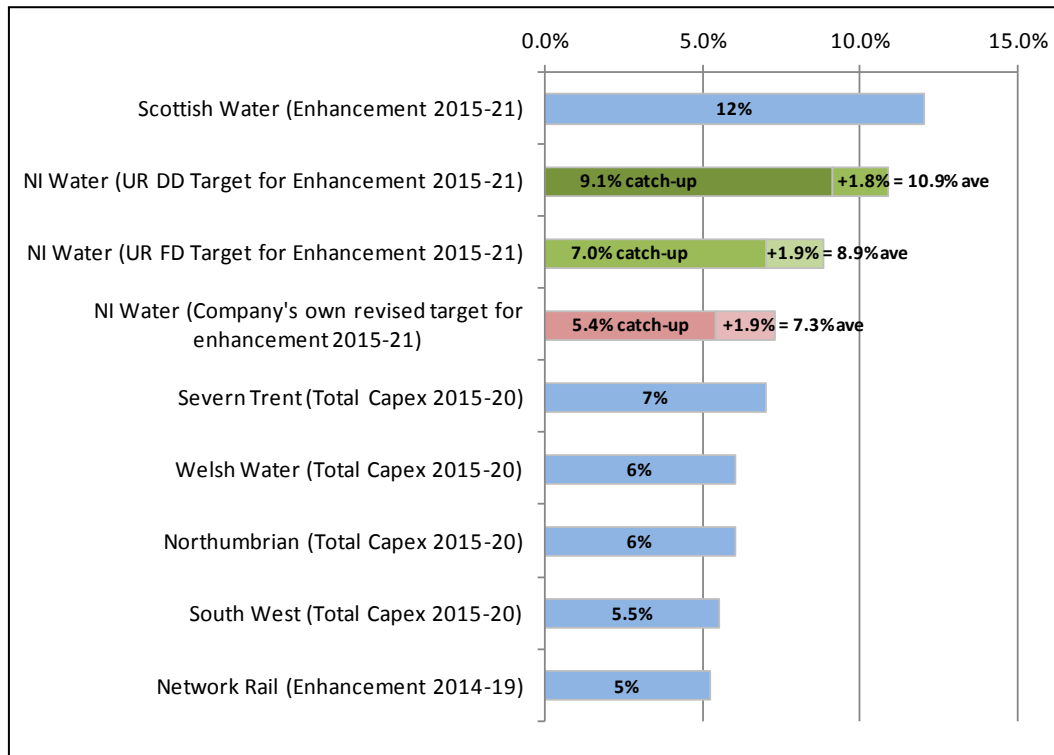
<sup>8</sup> These are headline figures as reported within each respective company's business plan for PR14 and the UR has been unable to see the underlying analysis.

<sup>9</sup> As taken from WICS's customer information note 21. This may have been superseded by WICS's final determination.

[www.watercommission.co.uk/UserFiles/Documents/customer%20note%2021\\_220113.pdf](http://www.watercommission.co.uk/UserFiles/Documents/customer%20note%2021_220113.pdf)

project-by-project basis. Network Rail set a 12% efficiency target for enhancement for the 2014-19 period, but as this was profiled we estimate that this would be the equivalent to an average of around 5% for the CP5 period.

**Figure 5.2 – Comparison of average capital efficiencies** <sup>10</sup>



5.7.40 While these figures provide context for NI Water's efficiency targets, each target is company-specific. All the different companies compared would have differences in their scope to achieve efficiencies depending on their stage of maturity and their circumstances.

5.7.41 It should also be noted that the figures quoted regarding other companies are taken or derived from business plan figures. Ofwat in their final determination of PR14 may set some of these companies a specific totex allowance which may necessitate different capex efficiencies (depending on the scope for improvement within each of the various revenue building blocks).

## Conclusion

5.7.42 For our final determination we have set a catch-up target of 7.0%, plus continuing efficiency of 0.6% p.a. (1.9% on average), a challenging but achievable target. Our reasoning follows:

- Our cost base model identifies catch-up of 5.4% to 9.1% to close 75% of the gap to the upper quartile, depending on our approach used;

<sup>10</sup> The +1.8% and +1.9% figures in the graph refer to the average impact of the 0.6% continuing efficiency element over the six years. We are assuming NI Water's revised proposed efficiency profile translates into a 5.4% average catch-up over the six years of PC15.



- Adopting a 7.0% catch-up would be pragmatic in recognising the uncertainties of our Cost Base approach but is well within ranges above;
- NI Water/Jacobs have indicated in their consultation response that 7.0% catch-up is at the maximum of what they state is achievable (albeit not possible in year one, which they state is a 5.4% average); and
- In applying our 0.6% per annum productivity or continuing efficiency assumption to our 7.0% catch-up we estimate average efficiencies of 8.9% across PC15. This is still lower than the Reporter's estimate of procurement efficiencies achievable over PC15 of at least 10% on total capex.

5.7.43 The table below shows the actual profile of efficiencies applied year-on-year over each of the six years of PC15.

**Table 5.5 – Utility Regulator's capital enhancement efficiency targets for PC15**

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Catch-up Reduction – Annual Profile (%)	7.0%	-	-	-	-	-
Catch-up Reduction – Cumulative Profile (%)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Productivity Assumption – Annual Profile (%)	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Productivity Assumption– Cumulative Profile (%)	0.6%	1.2%	1.8%	2.4%	3.0%	3.5%
<b>Final Determination Cumulative Capital Enhancement Efficiency Profile (%)</b>	<b>7.6%</b>	<b>8.1%</b>	<b>8.7%</b>	<b>9.2%</b>	<b>9.8%</b>	<b>10.3%</b>

- 5.7.44 This identifies an additional £23.5m of enhancement efficiencies over the six-year price control over and above NI Water's post efficiency figures in their PC15 business plan. This works out on average across PC15 to be around 8.9% of the pre-efficiency enhancement expenditure programme.
- 5.7.45 With NI Water significantly increasing their proposed enhancement efficiencies in their response to our draft determination (to 5.4% catch-up and 0.6% per annum continuing efficiency) from what was in their business plan, our final determination figures are approximately only £5.8m above the impact of NI Water's revised proposals.
- 5.7.46 In order for consumers to benefit fully from the expected efficiencies, these savings are expected to be retained within the company for the PC15 period. The UR will therefore expect £23.5m worth of additional capital projects to be delivered for the original post efficiency amount which NI Water proposed in their PC15 business plan. These projects will make a positive difference to the service experienced by NI Water's consumers.



## 5.8. Scope for additional outputs

5.8.1 Within a fixed nominal budget any adjustment to the capital programme will impact on the outputs which can be delivered.

5.8.2 In our determination of the capital programme we have made a number of adjustments which increases the scope of additional outputs which can be delivered as follows:

- We have amended the assumptions for capital inflation to align with RPI from 2012-13;
- We have made an adjustment for additional income;
- We have determined a lower level of capital maintenance compared to the company in real terms, freeing investment for additional outputs;
- We have applied a Cost Base efficiency factor of 7.0% to the pre-efficiency enhancement expenditure in the company's plan;
- We have made a specific adjustment to the programme in respect of capitalised salary and on-costs funding; and
- We have made a specific adjustment to funding of work to secure wastewater treatment works to reflect a reduction in the scope of works.

5.8.3 The impact of these adjustments on the enhancement investment available to deliver additional outputs is shown on Table 5.6.

**Table 5.6 – Scope for additional outputs (£m)**

	2012-13 prices	nominal
Reduction in outputs due to inflation adjustment	-0.7	-0.4
Adjustment for additional income	3.3	4.0
Adjustment for UR capital maintenance assessment	16.6	21.1
Additional output fund from efficiency	23.5	27.8
Add capitalised salary adjustment	2.2	2.6
Add PSCEMD scope adjustment	4.0	4.7
Adjust for delivery of Greyabbey WWTW	-3.3	-4.2
Total	45.7	55.7

## 6.0 Operational Costs and Efficiency

- 6.1.1 Chapter 6 sets out our approach to assessing the scope for additional operational costs and efficiency. This includes how we have established a baseline, assessed adjustments to the baseline, special factors, the operational efficiency gap and proposed efficiency targets.

### 6.2. Background

- 6.2.1 Each price control ensures that consumers receive value for money. This is achieved through setting a challenging and achievable determination of the future revenues and charges necessary to deliver a defined set of outputs.
- 6.2.2 PC15 is our third price control which follows two shorter duration price controls, PC10 and PC13. Both price controls delivered improvements in service and greater efficiency. The result is lower costs and bills for non-domestic consumers.
- 6.2.3 It is important to emphasise that by 'efficiency' we mean delivery of the same (or better) levels of service for less money.

### 6.3. Scope for operating cost efficiency

- 6.3.1 In determining the efficiency challenge, we undertake a number of steps to ensure it is appropriate going forward. These include:
- Establish NI Water's **baseline opex**;
  - Adjust for **additions / (reductions)** to base costs;
  - Assess transformation costs, including plans for Business Improvement (BI) and Voluntary Early Retirement / Voluntary Severance (VER/VS);
  - Assess **opex from capex** requirements;
  - Determine allowances for special factors and atypical expenditure;
  - Ascertain the relative **efficiency gap** between NI Water and the **benchmark** company;
  - Make assumptions on the **frontier shift**;
  - Consider how public private partnerships / private finance initiative (PPP / PFI) costs should be treated;
  - Review NI Water proposals; and

- Set efficiency targets.

## 6.4. Establishing baseline opex

- 6.4.1 Baseline expenditure is an assessment of the ‘true’ opex cost of providing water and sewerage services in the base year. For PC15 the base year is 2012-13. The baseline cost will be the amount against which efficiency targets are set.
- 6.4.2 In order to establish a baseline, a number of adjustments must be made. For instance, PPP / PFI costs must be removed as these are not subject to the same level of efficiency challenge. Once an efficient allowance for PPP / PFI is determined elsewhere in our analyses, we add an allowance for PPP / PFI back into the opex total.
- 6.4.3 Atypical costs should be accounted for separately. These costs are excluded from baseline opex as they are non-recurring in nature.
- 6.4.4 As announced in PC13, we do not treat business improvement (BI) costs as atypical anymore. These are recurring annual costs based on a management decision, so do not merit atypical status going forward. This means that BI costs are included in the gap analysis and subject to future efficiency targets.
- 6.4.5 VER/VS costs are much more sporadic and changeable in nature. The profile of the PC15 claim is good evidence of this. Consequently, these costs are still excluded from the baseline and any efficiency challenge with the retention of their treatment as atypical.
- 6.4.6 The company’s baseline and that adopted by us is set out in the table below.

**Table 6.1 – Claimed versus allowed baseline costs (2012-13 prices)**

	NI Water Approach	Regulator Allowed
Total opex in 2012-13	£191.71m	£191.71m
Less all PPP costs	£47.71m	£47.71m
Less BIP <sup>11</sup>	£0.00m	£0.00m
Less VER/VS	£3.43m	£3.43m
Less atypical costs	-£1.60m	-£1.60m
<b>Baseline Cost</b>	<b>£142.16m<sup>12</sup></b>	<b>£142.16m</b>

*Figures may not sum due to rounding*

<sup>11</sup> Business improvement costs are no longer treated as atypical. These are ongoing costs incorporated into the baseline figure.

<sup>12</sup> Whilst this figure forms the NI Water baseline, they exclude business activity costs from catch-up efficiency targets.

- 6.4.7 The baseline refers to the 2012-13 year, but PC15 does not begin until 2015-16. For the interim period, the company's opex claim is greater than that allowed in the PC13 final determination.
- 6.4.8 We see no reason to carry opex into PC15 beyond that allowed at PC13. To account for this we have allowed the additional opex that is considered appropriate and which carries across into the PC15 period.
- 6.4.9 The company has provided further detail on the considerable savings achieved in the current year (2014-15). NI Water's response to our draft determination highlighted their view that the vast majority of such savings are 'one-off' and therefore of no benefit to informing opex efficiencies across the PC15 period. However the company accepts some of their identified savings are repeatable.
- 6.4.10 We have accepted this argument to an extent. Certainly it would appear valid for 'release of provisions' which cannot be repeated. However, given that an efficiency gap remains and costs forecasts are low for 2014-15, an adjustment has been made.
- 6.4.11 We have examined the company's breakdown of its 2014-15 position. Similarities can be seen with the out-performance that occurred in the year prior to PC10.
- 6.4.12 We have amended the PC13 efficiency level. This ensures that the opex in 2014-15 not only aligns with our PC13 allowances (which signalled a lower opex than originally included by NI Water in its business plan), but incorporates 60% of the calculated 2014-15 savings. The result is a £5.1m reduction on the business plan claim.

## **6.5. Additions (reductions) to base operational expenditure**

- 6.5.1 We have considered claims for new opex arising out of changes to the operating environment. These changes might include requirements to meet new legal standards or improve drinking water and / or treatment standards etc.
- 6.5.2 We also requested information on additions and any opex reductions. These reflect changes to baseline costs not due to efficiency. The table below details the amounts claimed and the proposed allowance.
- 6.5.3 In determining whether or not to allow additional opex, we apply the two regulatory tests as adopted at PC10:
- Newness – is the expenditure related to any new obligation or specified improvement in service levels e.g. new compliance standards; and
  - Exogeneity – does NI Water face an exogenous (i.e. outside its management control) increase in cost in relation to current activities e.g. new tax levy etc?

**Table 6.2 – PC15 claimed versus allowed additional costs (2012-13 prices)**

Additional Opex by Area	NI Water Claim	Regulator Allowance	Allowance (%)
Insurance costs (employer & public liability)	£5.12m	£5.72m	112%
Communications	£0.45m	nil	nil
National Insurance contributions	£5.00m	£5.00m	100%
Carbon Reduction Commitment scheme	£3.30m	nil	nil
Capitalisation	(£6.68m)	(£4.03m)	60%
Additional resourcing requirement	£2.64m	nil	nil
Rates (Water)	£63.78m	£52.15m	82%
Rates (Sewage)	£0m	£21.95m	n/a
Pension	£1.81m	£1.81m	100%
Consultancy Support	£0.71m	£0.57m	80%
<b>Total Additional Opex</b>	<b>£76.14m</b>	<b>£83.18m</b>	<b>109%</b>

*Figures may not sum due to rounding*

6.5.4 Consideration is further given as to whether the cost category has been taken account of elsewhere. For instance, no allowance would be necessary if the cost is accounted for in either the efficiency analysis or the frontier shift.

6.5.5 The table below details the rationale behind the proposed determinations.

**Table 6.3 – Rationale for additional opex allowances**

Additional opex claimed by NI Water	Criteria Met	Comment
Insurance costs (employer & public liability)	Yes	<p>It is accepted that these claims will occur, so a level of provision must be made. The base year figure does appear abnormally low, so an uplift is merited.</p> <p>In the draft determination we excluded the 2007-08 costs from our annual run rate calculation since we viewed it as an outlier. Further adjustments were made for 'movements in provisions'.</p> <p>On further evidence from NI Water we have excluded all provision movements. The resultant increase in our final allowance run rate is far closer to NI Water's recent experience across the PC13 period.</p> <p>We have therefore determined an amount above that originally submitted by the company.</p>
Communications	No	<p>The company's response to our draft determination highlighted that with continued deferral of domestic charging; communications represent the only means of engagement with a large proportion of its consumer base.</p> <p>Their inability to use price signals to improve water efficiency means they have to rely almost exclusively upon communications. The company also contended that SEG requires a higher level of</p>

		<p>communication activity than presently undertaken and reflected within base opex.</p> <p>Communications remain neither a new nor an exogenous cost. In the absence of alternative evidence, the company is adequately funded for these activities within base opex.</p> <p>Furthermore, our efficiency analysis already includes opex amounts within the comparator set which undoubtedly include similar communications activity to that undertaken or required of NI Water.</p>
National Insurance contributions	Yes	<p>External changes to the contracting out pension arrangements will mean employers losing the National Insurance discounts they currently enjoy. Estimates support the scale of the proposed cost increase.</p>
Carbon Reduction Commitment (CRC) scheme	No	<p>Our Real Price Effects include the latest forecast power price increases from DECC. These electricity estimates include all non-avoidable taxes and duties (including estimated average rates of the Climate Change Levy and the cost of CRC allowance purchases for future years).</p> <p>Funding this part of claimed additional opex would amount to double funding.</p>
Capitalisation	Partially	<p>Our partial allowance reflects a disallowance of the proposed new headcount staff. However we have accepted the company's additional capitalisation of existing staff or current costs.</p> <p>In the company's response to the draft determination we agreed our treatment of opex in this regard is correct. The company maintains our treatment of the consequences for capex ought to mean an increase in corresponding capex. This aspect of our determination is discussed further under section 5 – Capital Investment and Efficiency.</p>
Additional resourcing requirement	No	<p>Not a new or exogenous cost. The company is already funded to undertake these activities.</p>
Rates (Water)	Yes	<p>NI Water is undergoing rates revaluation through Land &amp; Property Services (Dept of Finance &amp; Personnel) or 'LPS'. This is estimated to raise the company's total rates charge. At the time of the draft determination, NI Water had submitted an estimate for its water rates only.</p> <p>Since then we have engaged extensively with both the company, DRD and LPS. In the interim period the valuation of water assets has reduced. We therefore used the company's latest submitted estimate to inform our final determination.</p> <p>The latest estimate reduces the forecast water rates increase from the £10.6m p.a. used in our draft determination to a £8.7m p.a. (2012-13 prices) increase in this final determination.</p>
Rates (Sewage)	Yes	<p>An estimated increase in the total sewerage charge from £6.6m (in 2012-13) to over £10m has been re-worked around a new NAV (Net Annual Value) for NI Water's sewerage estate. The result is an additional allowance of £3.7m p.a.</p> <p>The net effect across water and sewage is an increase of £1.7m p.a. above the £10.6m p.a. allowance from our draft determination.</p> <p>We do not consider the option to set aside NI Water's increase in rates for a future Relevant Items application as available.</p> <p>Rates have been included within past NI Water price determinations and those for Gas and Electricity network companies. This allows costs to be included and fully reflected within consumer bills, specifically NI Water's business customers.</p> <p>If DRD wish to fund the increase in rates bills through a Relevant Item</p>

		<p>bid this is a matter that can be considered outside the FD.</p> <p><i>How we apply efficiencies to the rates additional opex</i></p> <p>The company does not agree with our applying any efficiency to their rates expenditure, either their present rates charge within base opex or additional rates due from 2015/16.</p> <p>The company went further in its response to the draft determination and now argues for a straight pass-through of all rates expenditure, at least as regards any additional rates expenditure during PC15, alongside separate treatment of the rates opex through the Relevant Items process (established at the time of PC10 and updated in subsequent price controls).</p> <p>We continue to include rates in the opex we apply our efficiency discount. This approach is consistent with best practice regulation adopted by the Competition Commission in its recent determination for NIE and consistent with our previous approaches at PC10 and PC13.</p> <p>Practically, this means we set NI Water's baseline, include various additions / reductions over the PC15 period, and then levy an efficiency discount to encourage NI Water to become more efficient over time. By close of PC15, the cumulative discount on all NI Water's opex, from catch-up efficiencies and frontier shift, is just over 19% so that for every £1 extra of water rates allowed at PC15, by year 6 NI Water will receive other factors remaining constant, only 81 pence.</p> <p>On this basis, we consider our efficiency discount remains more than sufficient incentive for NI Water to manage both its estate and rates bill in the interests of consumers. Any cost pass-through on rates would expose consumers to missed opportunities for cost reduction.</p>
Pension	Yes	Full allowance for the final determination based on updated actuarial assessment.
Consultancy Support	Partially	<p>NI Water's claim included additional consultancy support for both the potential mid-term review, as well as the bulk of their claim in the years leading to our next price control or PC21. We have included the latter due to there being little evidence of a similar consultancy support within the 2012-13 baseline that applies across PC15.</p> <p>We are not convinced of the requirement for similar operational consultancy support for any mid-term review in PC15. Such activities will be focused upon the delivery of more informed business cases to justify further and / or additional investment through the latter half of PC15.</p> <p>The company in its response to our draft determination signalled agreement on this matter, so long as the, "scope of the mid-term review remains as defined [above]".</p>

## 6.6. Transformation costs

- 6.6.1 Since 2007-08, NI Water has been allowed transformation costs. BI projects and VER/VS were both funded across previous price controls with no efficiencies applied.
- 6.6.2 The funding was granted in recognition that significant change was required to modernise the company. It was also provided to help reduce the sizeable efficiency gap, which stood at 49% in PC10.



- 6.6.3 NI Water was allowed opex in PC10 to fund BI and VER/VS in recognition of the significant transformation it proposed itself. This was expected to deliver reduced head count, improved efficiency and close the gap with peers in England, Wales and Scotland.
- 6.6.4 Actual spend has been confirmed by NI Water in their PC15 Business Plan. This supports an overall under spend across PC10 and PC13 of £26m.
- 6.6.5 NI Water therefore contends there is scope for future public expenditure bids to fund BI and VER/VS up to £26m. After this point is reached, any new BI or VER/VS bids would be wholly new from the consumer (and taxpayers) viewpoint. The UR might then consider an allowance that would not have previously been funded by consumers (and taxpayers).
- 6.6.6 The significant level of VER/VS funding was passed onto all customers in charges; non-domestic consumers via bills and domestic consumers via the government subsidy. The substantial in year under spend was handed back to government and therefore the taxpayer was credited.
- 6.6.7 To ensure the non-domestic customer is not charged twice, we proposed in PC13 that any extra funding sought by NI Water should be raised through outperformance or if necessary through PE funding.
- 6.6.8 We sought additional support from stakeholders towards funding NI Water's future transformation through VER/VS and BI activities. We supported the company in taking forward its proposals for same through the normal PE processes. This includes the submission of business cases to the relevant funding bodies.
- 6.6.9 At PC13, the DFP wrote to DRD indicating they were keen to support VER/VS schemes and BI or 'invest to save' proposals. This assumes business cases submitted to the proportionate level of detail and quality for approval. We would hope DFP will maintain its position on such matters, subject to PE funding constraints.
- 6.6.10 We would hope any such approvals would be supported by robust business cases. These should include analysis of need, costs and benefits etc. For VER/VS projects, defined targets for future staff levels need to be included. This mitigates against the risk that overall headcount reduction is offset by the creation of entirely new posts.
- 6.6.11 Given the preceding, we remain committed to ensuring consumers are not charged twice for business transformation. We previously announced in PC13 our intention to treat such costs as Business as Usual or 'BAU' in future price controls rather than as atypical costs.
- 6.6.12 NI Water, whilst incorporating most of its BI costs into their baseline opex, then excluded BI from its own efficiency gap analysis. We have included this within both baseline and modelled opex for the purposes of determining the gap.
- 6.6.13 As regards VER/VS, NI Water has included high-level costs in their opex submission. However the company state that they have excluded such monies from their revenue recoverable from customers. This ensures consumers avoid



- paying twice. Whilst excluded from revenue, we remain supportive of NI Water continuing to improve its business and reduce its staffing numbers through VER/VS to further close the efficiency gap.
- 6.6.14 Likewise, we support the continued transformation of NI Water through its BI programme. Any new PE bids for additional BI throughout PC15 are supported in principle.
- 6.6.15 We expect such bids to continue to be subject to the normal departmental approvals process. This being the case, such additional BI is quite properly a matter for DRD as shareholder and the company.
- 6.6.16 The UR can assist, in any early quality assurance of BI projects and business cases, if NI Water considers this may expedite the process of business case approval.
- 6.6.17 The PC15 costs claimed and the proposed revenue allowance is set out in the table below. This represents the revenue implications which consumers can expect to pay as a result of PC15.
- 6.6.18 To avoid double funding of BI and VER/VS, the amounts here are nil. These costs were previously funded and paid for in PC10, having been underspent and handed back to DRD as shareholder by the company.
- 6.6.19 A further Table 9.4 Annex A – Financing Investment outlines how our PC15 final determination of revenue reconciles to NI Water's PE treatment. PE funded BI and VER/VS is included as a separate and additional line input towards the total PE requirement across PC15.

**Table 6.4 – PC15 claimed versus allowed transformation costs (2012-13 prices)**

	<b>NI Water Claim<sup>13</sup></b>	<b>Regulator Allowance</b>
Business Improvement	£1.80m	nil
VER/VS	£6.60m	nil
<b>Total Transformation Costs</b>	<b>£8.40m</b>	<b>nil</b>

## 6.7. Opex from capex

- 6.7.1 This reflects new expenditure arising from the capital programme. Besides additional obligations and transformation costs, baseline opex will be impacted by capex spend.

As in previous price controls this can either have a positive or negative effect. Opex could increase as a result of more power consumption associated with

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<sup>13</sup> NI Water's PC15 claim refers to PE expenditure rather than any revenue which would impact on customer tariffs.

better treatment. Alternatively, costs could fall as a capex solution may reduce the manpower requirement.

6.7.2 NI Water's claim and the proposed allowances are provided below.

**Table 6.5 – PC13 claimed versus allowed opex from capex cost (2012-13 prices)**

	NI Water Claim	Regulator Allowance
Opex from Capex Costs	£15.28m	£13.27m

6.7.3 The opex from capex proposed by NI Water appears reasonable. As a proportion of capital spending, their opex from capex remains in line with historic performance in England and Wales.

6.7.4 The reduced allowance is based on our analysis of individual capital project costs. Principally this includes the Castor Bay to Belfast trunk main. We concluded any additional pumping costs would be offset by a reduction in the need for water to be pumped elsewhere in the network.

6.7.5 NI Water in its response to our draft determination considered some additional further factors and concluded:

*“Given the annual requirement remains uncertain, a revised opex from capex bid had not been included as part of our response”.*

## 6.8. Special factors

6.8.1 A special factor is a variable outside of management control, which results in either higher or lower costs than comparators. The company has the opportunity to make a case for such items in the business plan.

6.8.2 These adjustments do not represent additional allowed opex. They are however reflected in the relative efficiency modelling. Overall our special factors analyses means a smaller efficiency gap than would otherwise be the case had we ignored all of NI Water specific cost differences.

6.8.3 For the purpose of establishing the efficiency gap, the UR must determine on these costs. Given the materiality of accepting or rejecting NI Water's special factors claim across a 6-year regulatory period, we invited the company to submit a draft claim at the end of 2013.

6.8.4 We provided NI Water with feedback on a 'comprehensibility' test basis. Their subsequent claim was reworked prior to submission along with the PC15 business plan.

6.8.5 Of the six special factors submitted by NI Water, at draft stage we allowed three of these. This amounted to just under half their £10.9m original claim.

- 6.8.6 NI Water in their response to the draft determination challenged all but one of our special factor allowances. They further provided a detailed submission on a new special factor claim. This is based around the legacy decision to use a specialised technology for wastewater treatment.
- 6.8.7 The latter's use is argued as more prevalent in the province, compared to comparator companies. It resulted from the need to achieve tighter Northern Ireland Environment Agency (NIEA) discharge consents (into smaller watercourses).
- 6.8.8 We have considered this late request for an additional special factor on the basis that it is a one-off. Our acceptance for consideration in PC15 does not indicate we would undertake to always do so in similar circumstances in future.
- 6.8.9 Various other company arguments have been advanced by the company in their response to the draft determination. These include special factors for rurality, electricity prices, regional salary and wage differences, NDPB status and sewer networks.
- 6.8.10 We have applied four criteria when assessing the company's special factor claims. These were previously set down in our PC15 Reporting Requirements. They allow the discretion to calculate whether to allow any or what proportion of the company's claims in our determinations:
- i What is different about the circumstances that cause materially higher costs ("material" claims have previously been agreed by company and Regulator as those individual claims which amount to greater than 1% of total service modelled opex)?
  - ii Why do these circumstances lead to higher costs?
  - iii What is the net impact of these costs on prices over and above that which would be incurred without these factors? What has been done to manage the additional costs arising from the different circumstances and to limit their impact?
  - iv Are there any other different circumstances that reduce the company's costs relative to the industry norms? If so, have these been quantified and offset against the upward cost pressures?
- 6.8.11 Compared to the £12.80m special factor claimed by NI Water (including their late claim concerning specialised wastewater technology), the Regulator has determined a partial allowance of £6.78m, equivalent to 53%. This materially reduces the estimate of the 2012-13 efficiency gap from what it might otherwise be calculated without special factors.

**Table 6.6 – Claimed versus allowed special factors (2012-13 prices)**

Special Factor Claim	NI Water Claimed	UR Allowed	Proposed %
Rural Network (Sewage)	£4.02m	£2.81m	70%
Sludge Disposal	£0.69m	£0.00m	nil
Electricity Prices	£5.30m	£4.73m	89%
Regional Wages	(£1.20m)	(£2.02m)	169%
NDPB Status	£1.03m	£0.00m	nil
Sewerage Network Under-Investment	£1.09m	£0.00m	nil
Wastewater Treatment	£1.87m	£1.26m	68%
<b>Total Special Factor</b>	<b>£12.80m</b>	<b>£6.78m</b>	<b>53%</b>

*Figures may not sum due to rounding*

- 6.8.12 The rationale behind the allowance for each factor is summarised below.
- 6.8.13 **Rural Network (Sewage)** – NI Water claimed extra cost incurred on the sewer network due to a dispersed population. This consists of higher travel costs, more small treatment works and additional wastewater pumping stations.
- 6.8.14 For the purpose of the final determination, the UR continues to accept a ‘bottom-up’ adjustment is required. Our revised estimate remains what we believe to be a reasonable allowance. We do not accept the company response which challenged our calculations as having not fully reflected the extent of rurality in their network.
- 6.8.15 **Sludge disposal** – NI Water has claimed a special factor for the cost of sludge disposal. NI Water has a legal obligation to transport sludge to PPP operators for incineration. The company contends it differs from England and Wales comparators who have the flexibility over choice of disposal method.
- 6.8.16 We continue to determine NI Water’s estimated savings could be less than £0.3m. Since this falls well below our 1% service level opex materiality threshold we continue to disallow this special factor claim. NI Water accepted this element of our draft determination.
- 6.8.17 **Electricity prices** – NI Water has argued for a special factor due to higher power prices in Northern Ireland. NI Water cited the limited amount of supplier competition and tariff structures as some of the reasons behind the difference locally.
- 6.8.18 We accept that an industrial electricity price difference exists, as borne out by the Quarterly Transparency Report (QTR). NI Water, in its response, argued we had not fully reflected the “*nature of our [NI Water’s] operating environment and the constraints this places on [their],...ability to access lower off-peak tariffs*”.

- 6.8.19 We have calculated a weighted price difference using the different connection types quoted within the QTR. We then applied a view on the inefficiency factor to produce a special factor allowance similar to NI Water's own claim.
- 6.8.20 We are content our approach sufficiently reflects the difference in power costs NI Water faces compared to the comparator set of companies.
- 6.8.21 **Regional wages** - The company business plan has provided an assessment of the advantage gained from operating in a low wage economy. This results in agreement between us that some quantum of negative special factor should apply.
- 6.8.22 Within their consultation response the company took a different view. NI Water argued that they are disadvantaged because of alignment with public sector rates of pay. We rejected this on the basis that the company has had time and funding to change terms and conditions of employment.
- 6.8.23 We used the latest ASHE<sup>14</sup> revised data in the final determination. We continue to include BI staff costs in our estimation of the special factor wage allowance.
- 6.8.24 **NDPB status** – Due to a lack of domestic charging, NI Water is classified as a non-departmental public body. This results in certain costs, which other utilities would not have to face e.g. procurement rules, public sector reporting, Assembly Questions and Freedom of Information requests, for example.
- 6.8.25 In principle, the UR is of the opinion that a special factor exists. It was recognised in PC13 that the structure would mean extra opex (then valued at 12 Full Time Equivalents [FTEs]). NI Water's PC15 claim is based around a higher estimate of extra resourcing and costs for 20 FTEs.
- 6.8.26 NI Water presented additional evidence around the cost impact of Freedom of Information requests, the Environmental Information Regulations and NI Assembly questions.
- 6.8.27 The UR remains aware of various offsetting factors which need to be included in a fair estimation of the net cost. These include:
- Savings from public sector procurement;
  - Executive/bonus pay restraint;
  - Absence of parent company returns; and
  - Avoided compensation payments to domestic customers.
- 6.8.28 Given such offsetting factors and uncertainty around the quantum of avoided costs, no allowance is made. This is based on the view that the claim, whilst

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<sup>14</sup> The Annual Survey of Hours and Earnings (ASHE) is a national statistic of levels, distribution and make-up of earnings and hours worked for UK employees by sex and full-time / part-time status in all industries and occupations. The ASHE is published by the Office of National Statistics.

valid, falls below the materiality threshold. NI Water has failed to adequately address the third and fourth of our special factor acceptance criteria above.

- 6.8.29 **Sewerage funding** – NI Water has argued that the legacy of under-investment in small diameter sewers over the last 15-20 years has resulted in a poorer performing network. The company contends it has to incur higher opex to mitigate against such impacts. A number of performance metrics are provided as evidence of a disparity between England and Wales comparators and themselves.
- 6.8.30 The company has demonstrated a clear gap in the number of network issues. This fact is accepted by the UR. The company, in its response to our draft determination, contends its analysis, *“proves NI Water is still an outlier even when the impact of sewer laterals is reflected”*. However, NI Water remains unable to evidence any financial data linking this with a lack of capital investment.
- 6.8.31 It is not clear whether capital budgets were restricted compared to England and Wales. It is also unknown if the extent any such restriction might have been mitigated by more efficient capital spending (which was within the control of managers within the previous NI Water Service or present day NI Water).
- 6.8.32 Given the absence of any financial data supporting NI Water's position the UR cannot assume that a special factor for legacy investment is certain. No allowance continues to be made in the final determination.
- 6.8.33 **Wastewater treatment** – In the mid 2000's, Water Service adopted specialist technology to meet tight consents at sensitive watercourses. NI Water's claim relates to the extra cost of operating this plant.
- 6.8.34 Normally such a decision is within management control and not subject to a special factor. For this particular issue, we have decided to make an exception. The rationale is based on what may be termed a 'legacy' issue.
- 6.8.35 The decision to implement the technology was taken prior to NI Water being formed. In this respect, the initial choice was outside NI Water control. At least in the short-term, the company must live with the consequences.
- 6.8.36 Having examined the company request in detail, we contend the magnitude of the claim to be over-stated. This is based on the concern that costs have not been fully mitigated. Certain works appear overly expensive compared with comparators. We have reduced the claim by 32%.
- 6.8.37 Full details and discussion of the special factors, claimed and allowed, is provided in Annex P.

## 6.9. Relative efficiency gap and catch-up

- 6.9.1 The catch-up targets and scope for improvement for NI Water are determined by the size of this gap. We also consider what has been achieved by companies in other utilities as well as the extent to which NI Water has closed its efficiency gap from 2007.

## Current gap

- 6.9.2 NI Water has steadily improved its opex performance since the inception of the company. The efficiency gap has fallen from the 49% (2007-08) in PC10 to 38% (2010-11) in PC13 and 22% (2012-13) in the current PC15 price control.
- 6.9.3 It is important to recognise such reductions in opex have been achieved at the same time as improving levels of service for consumers.
- 6.9.4 The company response to our draft determination included a late submission of their alternative to our COLS modelling. We have examined the company models and data in extensive detail and have determined to remain with our broad approach for the time being.
- 6.9.5 Both our own alternative analyses (see Annex Q – Alternative Efficiency Modelling) and NI Water's offered at once divergent and convergent views on the magnitude of the opex efficiency gap.
- 6.9.6 The company approach resulted in a higher gap (27%) when compared to the very best performers. Using our frontier companies, the gap was much reduced (12%). We have some concerns with NI Water's approach. However, when business rates are removed from the models, the scale of the gap is similar to our current COLS findings.
- 6.9.7 Further analyses and research is required before we can reliably transfer from our using COLS modelling (adopted from 2006 to date) to any new or alternative modelling approach which is credible.
- 6.9.8 We are however convinced that continued dialogue and engagement with the company will offer the opportunity to develop a new set of models. Such a new alternative modelling approach will use 'up to date' data to produce robust efficiency gap estimates. These will inform our annual reporting of NI Water's progress during PC15.
- 6.9.9 We would hope to develop such a new approach to at least inform our next price control of NI Water at PC21. Ideally this would be in place by next year's Cost and Performance Report.
- 6.9.10 After taking special factors, atypical costs and alternative efficiency modelling<sup>15</sup> into account to inform our triangulation of the opex efficiency target, the UR assesses the PC15 gap to be 21.6% in the 2012-13 base year<sup>16</sup>.
- 6.9.11 Under this analysis NI Water has moved from being a band E<sup>17</sup> performing company to a band C company. That said, there remains scope for further reductions in operational spend if NI Water is to improve its efficiency band.

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<sup>15</sup> Extensive analyses of a number of alternative modelling approaches supports the continued use of the relative efficiency analysis used in both PC10 and PC13 determinations and can be found at Annex Q.

<sup>16</sup> Full details on the calculation of the efficiency gap can be found in Annex R.

<sup>17</sup> Ofwat used to compare companies relative efficiency using Band A to E, corresponding to 'most efficient' to 'least efficient' respectively.



- 6.9.12 In money terms this means that in 2007-08 NI Water spent £1.96 for every £1 spent by the benchmark company. The 2012-13 gap equates to a £1.27 operational spend for every £1 spent by its peers.

### Final determination

- 6.9.13 Our final determination sets a catch-up efficiency rate of 2.3% per annum. This offers NI Water a robust and reasonable challenge in the interests of consumers (and taxpayers).
- 6.9.14 The reduction in efficiency challenge from our draft determination reflects a number of factors. First, we have allowed a larger special factor allowance in total. We then made no reduction to special factors and atypicals which would normally have been the case to reflect the exclusion of business activity costs.
- 6.9.15 These changes reduce the estimated efficiency gap from 23% to 21.6%. The fall requires a smaller catch-up efficiency to deliver the required reduction in opex by end of the PC15 period.
- 6.9.16 Next, in taking a proportion of the company's 2014-15 opex performance as sustainable, we have effectively included a higher level of efficiencies for the PC15 prior year. This leaves a smaller amount of the efficiency gap to be caught up across the period. Hence, a smaller level of catch-up efficiency is required.
- 6.9.17 Our 2.3% per annum catch-up now resides outside the bounds of our 5% to 7.5% range as advised by our consultants (LECG and NERA) at PC10<sup>18</sup>.
- 6.9.18 The lowering of our efficiency target recognises the company's success in moving to a band C company.
- 6.9.19 The overall catch-up rate over the eight years from 2012-13 has been set at 80%. The equivalent catch-up assumption used under PC10 was 60% over five years. This is the same as used by Ofwat when setting efficiency targets for the private water companies in England and Wales.
- 6.9.20 In PC13 the equivalent catch-up rate we adopted was 62.5% over five years. Other regulators such as the WICS have by contrast chosen different catch-up rate assumptions e.g. 80% over just four years. The ORR adopted a two-thirds catch-up rate across five years.
- 6.9.21 In PC10 and PC13, the UR followed Ofwat precedent quite closely, amending for the length of the control period.
- 6.9.22 On a geometric basis, an Ofwat precedent of 60% catch-up rate over five years equates to a 16.7% per annum closure. Extrapolated over eight years, this is equivalent to a 77% catch-up rate.
- 6.9.23 NI Water has chosen a catch-up of 75% over the eight years from 2012-13 in their PC15 Business Plan. This is a reasonable figure to assume. For the final

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<sup>18</sup> [http://www.uregni.gov.uk/publications/final\\_determination\\_annexes\\_contents\\_page](http://www.uregni.gov.uk/publications/final_determination_annexes_contents_page), see Annex F.



- determination, the UR has increased the challenge slightly to 80%. This is in line with both Ofwat precedent and our adopted approach in PC10 and PC13.
- 6.9.24 The company response to our draft determination continues to propose a lower level of catch-up along similar lines of argument first used at PC13. We have continued with our draft determination approach.
- 6.9.25 However, we see merit in the company's argument in favour of a profiling of the efficiency catch-up across PC15. This is in preference to our more usual straight line efficiency approach adopted in PC10 and PC13.
- 6.9.26 NI Water's planned efficiencies as profiled within their PC15 Business Plan, follow an S-shaped or logistic (or more precisely the cumulative frequency of the Normal Distribution 'bell curve') profile. In other words, efficiency takes time in the early part of PC15 to build up steam. Most efficiencies are delivered part way through the period before declining at PC15 end.
- 6.9.27 We have introduced an element of profiling of NI Water's opex efficiency targets across PC15 given its dependency on PE funding.
- 6.9.28 We have further adjusted PC15 efficiency in the final year of the price control. This ensures that by close of PC15 the efficiencies are NPV neutral for consumers (when discounted by the WACC).
- 6.9.29 Having assessed the gap at 21.6%, an 80% catch-up generates an efficiency target of 17.25%. With our profiling of efficiencies using an NPV neutral approach, the overall cumulative is slightly higher at 17.6% by close of PC15.
- 6.9.30 The net efficiency challenge NI Water faces at PC15, given the material addition to NI Water's rates bill as a result of business rates revaluation by LPS, is 2.3% with a 4% reduction from claimed opex, saving consumers £47m across PC15.
- 6.9.31 NI Water's efficiency target in PC15 must be delivered alongside the organisation absorbing an additional business rates bill totalling £74m extra over the same six-year period.

**Table 6.7 – Claimed versus allowed special factors (2012-13 prices)**

Special Factor Claim	PC10 (3 yrs)	PC13 (2 yrs)	PC15 (6 yrs)
Efficiency gap	49%	38%	22%
Catch-up efficiency rate	7.2%	5.0%	2.3%

## 6.10. Frontier shift assumptions

- 6.10.1 In addition to setting a catch-up target for the company to close the gap to the industry frontier, it is common regulatory practice to estimate how the best performing or frontier companies are expected to perform with respect to costs.

- 6.10.2 Our frontier shift assumptions include consideration of our productivity assumption and the real price effects (RPE) which an efficient company is likely to face across the PC15 period.
- 6.10.3 The analytical framework we continue to adopt was first used with NI Water at PC13. It examines productivity gains which the frontier companies are expected to deliver over the price control period. The analysis also examines input prices which England and Welsh water companies will typically expect, taking into account the nature of their opex spend.
- 6.10.4 The approach we have taken is comparable to that used in NIE's RP5 determination. The approach was subject to a referral to the Competition Commission which then validated the UR methodology.
- 6.10.5 Our new estimate of frontier shift was undertaken internally, which we subsequently quality assured.
- 6.10.6 Frontier shift analysis now more fully considers how input costs may change over the price control period. It further details how companies may continue to realise productivity gains over the longer term.

### Summary

- 6.10.7 A summary of the results of the analysis can be seen below.
- 6.10.8 The findings of our frontier shift analysis indicate the following additions, to our efficiency catch-up targets. These are calculated from:
- Our detailed analysis of Real Price Effects (RPEs);
  - The long-term productivity assumption of 0.9% per annum; and
  - An updated view on RPI movement.

**Table 6.8 – Frontier shift assumptions**

	PC13		PC15					
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Weighted Input Prices	3.3%	2.9%	3.2%	4.0%	4.0%	4.0%	4.1%	4.1%
RPI	(2.9%)	(2.5%)	(2.4%)	(3.2%)	(3.4%)	(3.2%)	(3.2%)	(3.2%)
Productivity	(0.9%)	(0.9%)	(0.9%)	(0.9%)	(0.9%)	(0.9%)	(0.9%)	(0.9%)
<b>Frontier Shift</b>	<b>RPI-0.5%</b>	<b>RPI-0.5%</b>	<b>RPI-0.1%</b>	<b>RPI-0.2%</b>	<b>RPI-0.4%</b>	<b>RPI-0.1%</b>	<b>RPI-0.1%</b>	<b>RPI-0.1%</b>

- 6.10.9 We reviewed whether the March 2014 OBR<sup>19</sup> RPI forecasts used in our draft determination have been superseded by recent economic developments. This is especially pertinent given the relatively low inflation levels which have been evident of late.
- 6.10.10 Looking at the more recent HM Treasury Comparison of Independent Forecasts from November 2014, we can see that RPI inflation over the medium term is expected to be somewhat lower than what was originally assumed.
- 6.10.11 For the purposes of the final determination we consider it prudent to use the more recent HM Treasury publication of independent forecasts. These better reflect the current more modest economic and inflation outlook from draft determination.
- 6.10.12 Since the draft determination we have also incorporated new power and labour cost estimates, taking account of the latest expert projections for these key input prices. The associated frontier shift analysis is included in Annex S - Opex Frontier Shift Report.

## 6.11. Treatment of PPP / PFIs

- 6.11.1 Three PPP / PFI contracts provide a significant proportion of NI Water's water and wastewater services. The Alpha project supplies approximately 250 million litres of drinking water per day. Omega PPP provides around 20% of current wastewater treatment capacity. Taken together NI Water's PPP / PFI contracts account for close to 25% of its total opex spend.
- 6.11.2 At this stage of PC13, it is apparent that NI Water is performing well against target. Efficiencies have been realised early in the contract period. The company included further anticipated service level savings within their cost projections, albeit much smaller than at previous price controls.
- 6.11.3 NI Water has informed us this is the result of having captured many of the larger service level savings earlier on within the PPP contracts.

**Table 6.9 – NI Water proposed PPP efficiency targets for PC15 (2012-13 base year)**

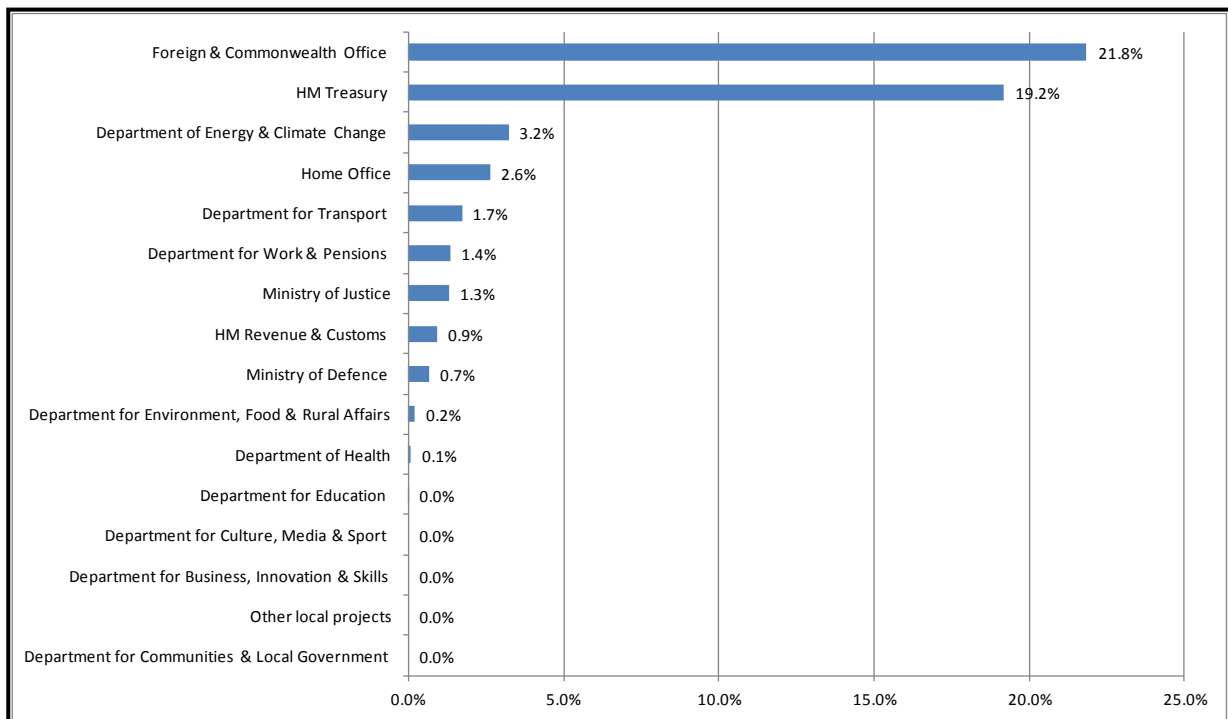
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
PPP Water – Cumulative Efficiency	5.42%	0.95%	1.41%	0.45%	0.14%	-0.18%
PPP Sewerage – Cumulative Efficiency	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%

<sup>19</sup> The Office for Budget Responsibility (OBR) was created in 2010 to provide independent and authoritative analysis of the UK's public finances. Whilst their remit is to analyse and report on the sustainability of the public finances, the OBR has a responsibility to the Chancellor of the Exchequer to deliver the fiscal and economic forecasts.


### How NI Water's PPP / PFI savings compare

- 6.11.4 Each PPP / PFI project is different. The scope for money to be saved very much depends on the nature of the service delivered and the specification of the original contract. However, the UR has undertaken a brief comparison of the level of savings being experienced across the various government departments on PFI projects against those of NI Water.
- 6.11.5 According to analysis undertaken by the National Audit Office (NAO) and HM Treasury, savings of £1.6bn are set to be made. This is out of a total outstanding PFI Unitary Charge amount of £206.6bn across a wide range of UK government departments. This works out as an approximate 0.8% reported saving over the entire life spans of the various contracts.
- 6.11.6 These savings have transpired due to a Ministerial commitment for an ongoing programme of reform to improve the cost effectiveness and transparency of PFI contracts.
- 6.11.7 While the savings are small in relative terms, they are quite significant given the relatively fixed nature of these contracts and the magnitude in absolute money terms of the outstanding PFI charges. The graph below shows the large variation between the various government departments in question.<sup>20</sup>

**Figure 6.1 – PFI Savings as a Proportion of Unitary Charge**



<sup>20</sup> For further detail on the nature of these savings, see: [http://www.nao.org.uk/wp-content/uploads/2013/11/Savings-from-operational-PFI-contracts\\_final.pdf](http://www.nao.org.uk/wp-content/uploads/2013/11/Savings-from-operational-PFI-contracts_final.pdf). Graph calculated from Figure 5 of the NAO document.

6.11.8 Although comparison is difficult, NI Water savings since PC10 amount to around  its originally contracted Unitary Charge. It therefore appears NI Water are achieving higher than the average operational savings as reported by the UK government departments. However, it should be noted that this figure is approximate.

6.11.9 The reader should also be mindful of a number of caveats for the NAO / HM Treasury figures, which may make a like-for-like comparison problematic – most importantly:

- Savings may have come from reduced levels of service rather than efficiency per se;
- Savings can very much depend on whether the original contract was ‘over-specified’ or no longer relevant, or whether the level of ‘soft-services’ which could perhaps be scaled back without affecting core service functions;
- Most of the £1.6bn of savings are forecast future savings, realised over the life of the project, rather than immediately. Some savings are, as yet, not legally binding;
- The large savings reported by the departments of Foreign & Commonwealth Office and HM Treasury relate to more intensive use of accommodation;
- Some savings may have led to an increased risk transfer to the public sector; and
- Savings made before the Ministerial commitment may not have been included.

6.11.10 Notwithstanding these caveats and limitations of the analysis, it is reassuring that NI Water’s PPP / PFI savings at the present time are at least comparable to those being achieved elsewhere. Based on our high-level workings, the company savings appear relatively higher than the average saving reported by NAO / HM Treasury.

6.11.11 Despite contractual limitations, there may still be scope for further savings within the PPP / PFI schemes and these should be explored by the company. During PC15 therefore we expect the company to continue to:

- Effectively manage its PPP / PFI contracts to ensure value for money. This includes effective performance monitoring and payment deductions where appropriate;
- Review whether the service specification reflects the current requirements and that the company is only paying for what it needs;
- Consider opportunities to increase energy efficiency within its PPP / PFI projects (including potential energy from waste solutions);

- Effectively manage any transfer of risk;
  - Monitor prospects for refinancing; and
  - Communicate lessons learned with relevant parties.
- 6.11.12 Going forward, there is a need for the company to ensure an optimal usage of PPP / PFI vs. NI Water assets. NI Water analysis to inform this intra-company comparison should be based upon whole life costs (including opex, capex, lifecycle and maintenance). This helps ensure that the PPP / PFI assets are used as effectively as possible in Value for Money terms.
- 6.11.13 Given that some capacity exists within the PPP / PFI schemes, it may be beneficial to use these assets more intensively to ensure maximum value.

### Other Issues

- 6.11.14 NI Water has obtained performance deductions in every year of PPP / PFI operations. Strong contract management lies behind this. The Reporter has noted that NI Water has not assumed any such deductions in PC15, in contrast to recent performance.
- 6.11.15 In the draft determination the UR aligned its treatment of PPP / PFI performance deductions with the treatment of employers / public liability claims - where a run-rate was assumed for problems likely to arise.
- 6.11.16 In order to ensure a more realistic PPP / PFI cost allowance over PC15, the UR in the draft determination conservatively factored in a £362k per annum performance deduction assumption. This was equivalent to half NI Water's run rate of around £720k per annum.
- 6.11.17 Both the company and DRD were critical of this approach. For NI Water this, *"seemed to assume that NI Water's contractors will underperform"*. DRD stated, *"it would seem inappropriate that the Regulator should base its savings assessment on an assumption of poor performance"*.
- 6.11.18 For the final determination, whilst not wishing to set an allowable failure rate, we consider it appropriate to recognise that such issues will occur in all likelihood. We therefore do not believe it right that the consumer should carry the cost risk, which would effectively occur if the UR gave an allowance that assumed no performance deductions. If performance deductions do materialise during the six years of PC15, customers effectively pay for a level of service not received.
- 6.11.19 While it is impossible to predict with certainty on issues such as PPP performance deductions we have only assumed half of the historic run-rate.

## 6.12. NI Water opex proposals

- 6.12.1 The efficiency challenge proposed by NI Water in PC15 represents a further 'step-down' from the targets imposed at PC10 and at PC13. This reflects good progress in obtaining and out-performing our regulatory efficiency targets.

**Table 6.10 – NI Water proposed targets for PC15 (excluding PPP's)**

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Catch-up Reduction – Annual Profile (%)	1.40%	1.80%	2.56%	2.56%	1.80%	1.40%
Frontier Shift – Annual Profile (%)	-0.22%	0.35%	1.27%	2.03%	0.75%	2.05%
<b>Total Cumulative Efficiency Profile (%)</b>	<b>4.81%</b>	<b>7.06%</b>	<b>10.27%</b>	<b>13.24%</b>	<b>13.68%</b>	<b>16.00%</b>

*Figures may not sum due to rounding*

6.12.2 Adoption of a lower rate of catch-up (75% across an 8 year period), combined with good performance in the previous price control, has resulted in a relatively low annual target for PC15. NI Water also excludes business activities and their additional water rates expenditure from their own catch-up efficiency discount.

6.12.3 The result of the company's approach is detailed below.

**Table 6.11 – NI Water proposed opex profile for PC15 (2012-13 prices)**

	PC5					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Baseline Opex (excl. Business activities) – (£m)	128.83	128.83	128.83	128.83	128.83	128.83
Plus Additional Opex (excl. rates increase) – (£m)	1.12	2.12	2.11	2.11	2.11	2.11
Plus Opex from Capex – (£m)	1.80	2.12	2.55	2.65	2.88	3.28
Plus Busines Activities – (£m)	13.33	13.33	13.33	13.33	13.33	13.33
Plus Water Rates – (£m)	10.63	10.63	10.63	10.63	10.63	10.63
Less Efficiencies – (£m)	-6.29	-9.47	-14.01	-18.17	-18.49	-21.97
Plus BI Costs – (£m)	0.30	0.30	0.30	0.30	0.30	0.30
Plus VER/VS – (£m)	0.28	0.55	1.93	1.93	1.93	0.00
Plus Adjustments – (£m)	0.00	0.00	0.14	0.00	0.28	0.28
Plus Total PPP Unitary Charge (Post Efficiency) – (£m)	43.72	43.32	42.72	42.17	41.78	41.28
<b>Total Opex Profile – (£m)</b>	<b>193.71</b>	<b>191.72</b>	<b>188.52</b>	<b>183.78</b>	<b>183.57</b>	<b>178.07</b>

*Figures may not sum due to rounding.*

## 6.13. Overall challenge to NI Water

6.13.1 As part of the price control process the UR has the responsibility of setting efficiency targets. These targets are generated on the basis of:

- a. The efficiency gap between NI Water and the frontier companies;
- b. The rate of catch-up which is deemed achievable; and
- c. Efficiency improvements previously recorded and / or expected of benchmark performers.

6.13.2 Having undertaken all the analysis, the Utility Regulator is of the opinion that NI Water's opex proposals are not challenging enough.

6.13.3 The UR therefore proposes the following efficiency profile:

**Table 6.12 – Utility Regulator's proposed efficiency targets for PC15**

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Catch-up Reduction – Annual Profile (%)	1.66%	2.14%	3.05%	3.07%	2.17%	2.14%
Catch-up Reduction – Cumulative Profile (%)	6.43%	8.44%	11.23%	13.96%	15.82%	17.63%
Frontier Shift – Annual Profile (%)	0.10%	0.17%	0.35%	0.12%	0.06%	0.06%
Frontier Shift – Cumulative Profile (%)	1.11%	1.28%	1.63%	1.74%	1.80%	1.85%
<b>FD Cumulative Efficiency Profile (%)</b>	<b>7.47%</b>	<b>9.61%</b>	<b>12.67%</b>	<b>15.45%</b>	<b>17.33%</b>	<b>19.15%</b>

*Figures may not sum due to rounding*

6.13.4 The annual efficiency targets for PC15 represent a robust and reasonable challenge for the company. The overall opex allowance is provided in the table below.

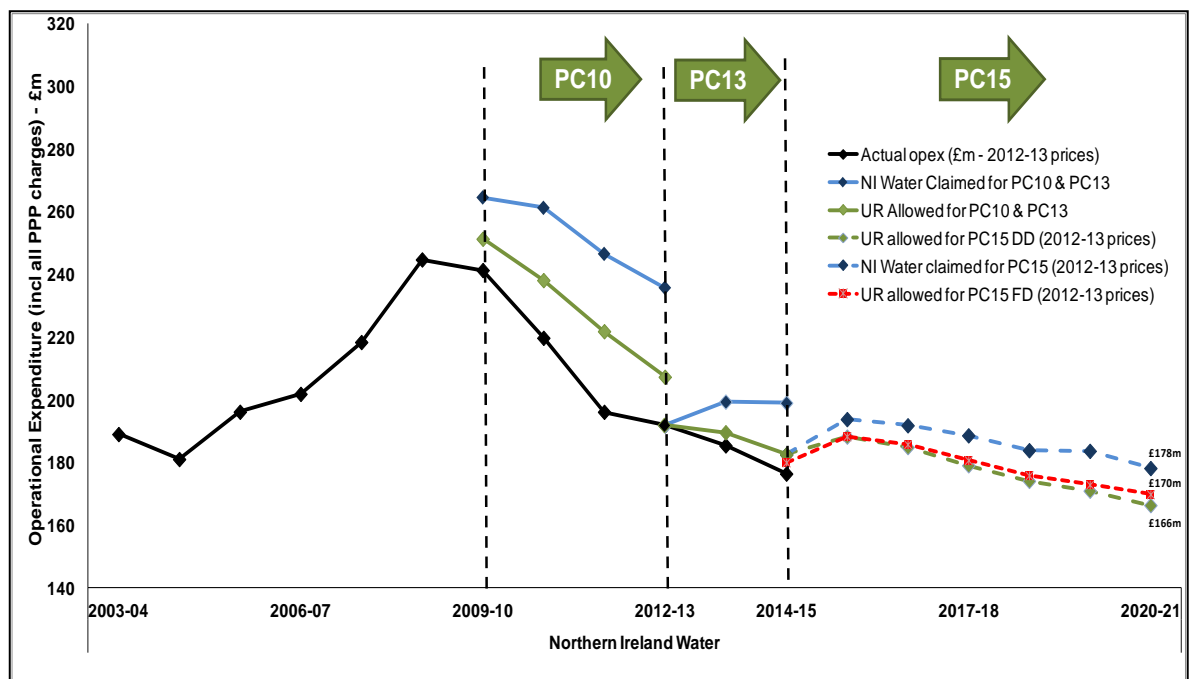


**Table 6.13 – Utility Regulator’s target opex profile (2012-13 prices)**

	PC15					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Baseline Opex – (£m)	142.16	142.16	142.16	142.16	142.16	142.16
Plus Additional Opex – (£m)	12.94	13.94	13.93	13.93	14.21	14.21
Plus Opex From Capex – (£m)	1.47	1.79	2.21	2.32	2.54	2.95
Less Efficiencies – (£m)	-11.69	-15.17	-20.06	-24.48	-27.55	-30.51
Plus BI Costs – (£m)	0.00	0.00	0.00	0.00	0.00	0.00
Plus VER/VS – (£m)	0.00	0.00	0.00	0.00	0.00	0.00
Plus Adjustments – (£m)	0.00	0.00	0.00	0.00	0.00	0.00
Plus Total PPP Unitary Charge (Post Efficiency) – (£m)	43.35	42.96	42.36	41.81	41.42	40.92
<b>Total Opex Profile – (£m)</b>	<b>188.23</b>	<b>185.68</b>	<b>180.60</b>	<b>175.74</b>	<b>172.79</b>	<b>169.73</b>

Figures may not sum due to rounding.

6.13.5 The UR has recognised NI Water’s good performance during PC10 and PC13 evidenced in the graph below:

**Figure 6.2 – PC10 / 13 / 15 claimed versus allowed and actual (2012-13 prices)**

6.13.6 A summary of the difference between the amounts claimed and allowed is detailed below.

**Table 6.14 – Opex efficiency challenge (2012-13 prices)**

Opex Efficiency Challenge	NI Water PC15 Business Plan Claim	Regulator PC15 Final Determination Allowance	Variance	
<b>Total Operating Expenditure (post efficiency)</b>	£1,119m	£1,073m	4.2%	£46.6m
<i>Additional efficiencies</i>				£41.1m
<i>PPP performance deductions</i>				£2.2m
<i>Additional opex</i>				-£7.0m
<i>Transformation costs</i>				£8.4m
<i>Opex from Capex</i>				£2.0m
<b>Net efficiency challenge</b>	1.67%	2.35%		

6.13.7 The efficiency challenge applied to NI Water in PC15 is 2.348% (annualised), calculated as a percentage of the prior year baseline.<sup>21</sup>

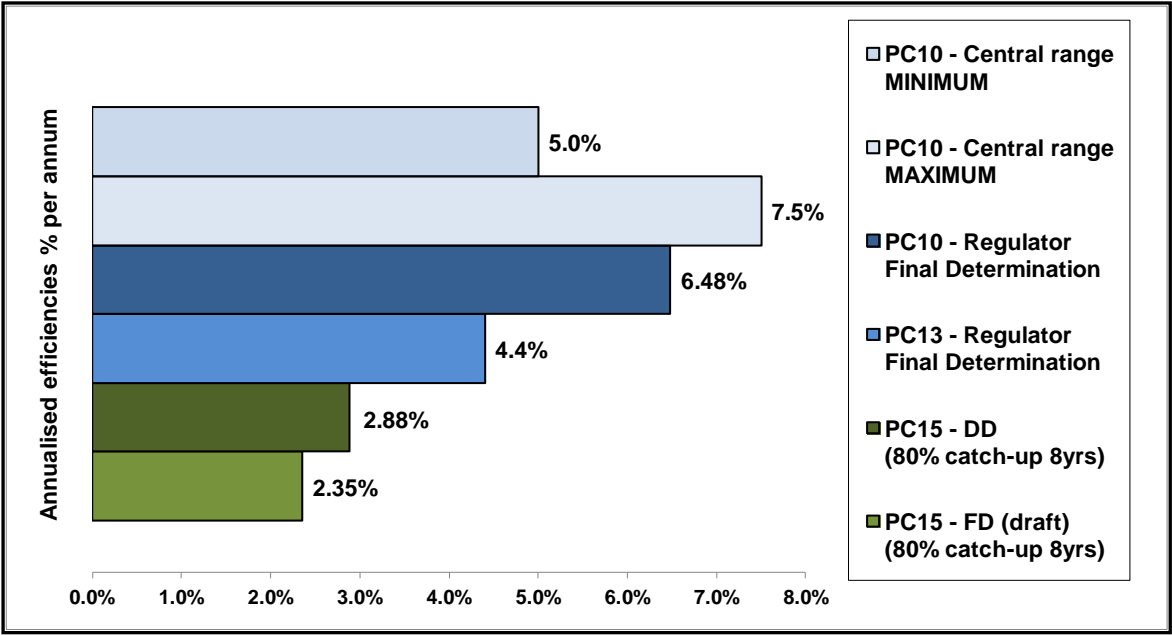
6.13.8 The equivalent efficiency challenge at PC10 was 6.48% (annualised) and 4.4% in PC13 (annualised) (see Figure 6.3 below) which demonstrates the challenge to NI Water at PC15 although robust, remains reasonable having taken account of NI Water's delivery of outperformance during PC10 and PC13.

6.13.9 These targets represent a continuation of our role in setting robust, challenging targets for the company on behalf of consumers. This was echoed by Consumer Council's response to our draft determination which stated, "*We have consistently called for challenging, ambitious and realistic targets to be set,...find[ing] the right balance between affordability and risk to service delivery*" and we believe we have reached the correct balance in setting PC15 efficiency targets.

6.13.10 It must also be remembered that the much reduced level of targets in PC15 is due to the substantial improved performance of NI Water in reducing its efficiency gap from PC10 and PC13.

<sup>21</sup> Efficiency percentage calculated excluding PPP capital charges.

Figure 6.3 – PC10 / 13 / 15 annualised efficiency challenge



6.13.11 The PC15 final determination efficiency challenge is materially lower than that for PC13 and PC10. This recognises NI Water’s success in reducing its efficiency gap by delivery of real and sustainable savings, emerging into PC15 as a band C company rather than band E.

## 7.0 Monitoring Delivery, Managing Change

### 7.1. Introduction

- 7.1.1 This chapter considers monitoring of NI Water during PC15 and identifies how change will be managed, including consideration of a mid-term review.

### 7.2. Background

- 7.2.1 Processes for monitoring the company's delivery of outputs and for managing any potential changes will need to be established as part of the PC15 final determination. This Chapter outlines our approach for monitoring delivery and managing change during PC15 including the scope of a PC15 mid-term review.
- 7.2.2 Monitoring delivery by the company is an important part of our role. It helps us discharge our duties under the Water and Sewerage Services (Northern Ireland) Order 2006 to secure that the functions of a water and sewerage undertaker are properly carried out. It needs to be detailed enough to provide assurance that the company will meet targets for the period as a whole, but not so onerous that regulatory reporting adds a significant burden to NI Water. By monitoring delivery we both ensure that the outputs included in the final determination are delivered and that we obtain the data and develop the understanding of NI Water's business necessary to carry out our role.
- 7.2.3 We aspire to 'output' regulation, but the lack of robust data in some areas means that we intend to continue to monitor a mix of outputs and activities. We will also monitor the delivery of nominated schemes which are either:
- Specific quality outputs required by the quality regulators or other stakeholders and included in the determination; or
  - Specific schemes nominated by the company in its PC15 Business Plan which are directed at delivering a specific service improvement.
- 7.2.4 It is recognised that changes might occur during the regulatory period which might mean that the outputs included in the final determination will need to be altered. For example, as a consequence of changes to assumed funding or changes to legislative requirements. Such modifications need to be managed in a controlled and transparent manner and we have established approaches for ensuring this occurs.
- 7.2.5 We intend to use processes that have been established for previous price controls to manage change and monitor company progress in delivering outputs during PC15. The key components of our approach are listed below:
- The Monitoring Plan;

- Memorandum of Understanding and Consequent Written Agreement;
- Change Control Protocol;
- The Annual Information Return and Cost and Performance Report;
- Quarterly Capital Investment Monitoring returns;
- Serviceability assessments;
- Output monitoring;
- The Scheme of Charges;
- The Regulatory Accounts; and
- Mid-term review.

7.2.6 Each component is described in greater detail below.

### **7.3. Monitoring delivery and managing change**

#### **Monitoring Plan**

7.3.1 Once the final determination has been concluded we will ask the company to summarise the outputs it will deliver in PC15 in a Monitoring Plan. This will be supported by a detailed list of nominated outputs. The Monitoring Plan will provide a public facing summary which will be a ready source of information to allow other stakeholders to monitor the company's progress in delivering PC15. We will issue requirements for the Monitoring Plan with the final determination.

#### **Memorandum of Understanding and Consequent Written Agreement**

7.3.2 A Memorandum of Understanding (MOU) has been agreed between the DRD and the UR which sets out how the regulatory regime works alongside public expenditure. A copy of this can found in Annex C.

7.3.3 A 'Consequent Written Agreement' (CWA) has been established under this MOU which sets out the procedures for dealing with alterations to funding and the processes and assumptions that will apply at each price control. The latest draft can be found in Annex D.

7.3.4 We will continue to work with DRD to finalise this over the coming weeks.

#### **Change Control**

7.3.5 Specific outputs contained within the company's Monitoring Plan will be subject to a formal Change Control Protocol during PC15. This is presented in Annex T and sets out the procedures and steps that the key statutory stakeholders shall follow to control changes to outputs. It provides a structured framework for managing change and ensuring that: changes have been agreed by

stakeholders; that the necessary funding is available; and, that changes are reflected in associated documentation and monitoring processes.

### **Annual Information Return and Annual Cost and Performance Report**

- 7.3.6 Each year the company will be asked to submit an Annual Information Return providing information on its performance in the year including: key outputs; customer service measures; financial and billing information; the water balance and leakage; asset information; explanatory factors and expenditure reports. We will review the AIR requirement to align with the PC15 final determination and ensure that the data collected remains relevant for current and future needs.
- 7.3.7 We will publish a Cost and Performance Report annually setting out the progress the company has made in delivering PC15. We shall continue to scrutinise NI Water's claimed efficiencies and publish our views on the extent of the real and sustainable efficiencies, especially but not exclusively relating to those operational efficiencies delivered by the company in the preceding financial year.

### **Quarterly Capital Investment Monitoring Returns**

- 7.3.8 We have found the quarterly Capital Investment Monitoring (CIM) remains useful in monitoring delivery in previous price controls and for acquiring data which has informed our work on PC15. We will initially continue quarterly monitoring but will discuss the potential for using higher level summary data and exception reports and reducing detailed information requirements to half yearly submissions.

### **Serviceability Assessments**

- 7.3.9 We have introduced serviceability requirements and completed an initial assessment of control limits which is included as Annex G. We will review this assessment for the final determination. We will monitor serviceability annually during PC15 and publish our conclusions as part of the annual Cost & Performance Report.

### **Output Monitoring**

- 7.3.10 We have worked with the quality regulators to ensure we have a clear understanding of the nominated outputs that are to be delivered in PC15 in preparing our final determination.
- 7.3.11 During PC15 we will continue to work with other stakeholders in the Output Review Group to monitor key outputs. We will also liaise with the quality regulators to receive compliance reports and sign-off of outputs and to manage the impact of any changes to quality requirements, including the impact of any emerging issues.

### **Scheme of Charges**

- 7.3.12 The provision and approval of an annual scheme of charges is a condition of the Licence. We will review and approve the Scheme of Charges to ensure that the company remains within the price limits of the determination and that its charges do not discriminate between different customer groups.

## Regulatory Accounting Information

- 7.3.13 We will continue to collect regulatory accounting information allowing us to monitor the financial performance of the regulated business against the financial projections of the final determination.

## 7.4. Mid-term review

- 7.4.1 When we set our proposals for a 6 year price control for PC15 we concluded that we should make provision for a planned review part way through the price control to:

- Allow a managed change in funding to realign the revenue and outputs with any substantive change to medium term funding levels; and
- Provide an opportunity to implement innovative and sustainable solutions which might develop from the strategic studies which NI Water will carry out in the early part of the price control.

- 7.4.2 We highlighted that a key risk of a planned mid-term review is that it will reduce the commitment to developing a business plan and determination for the full six years. There is a risk that the mid-term review becomes a full price control in itself which will increase regulatory burden and undermine the objective of long term planning.

- 7.4.3 We already have processes in place through the Memorandum of Understanding, the Consequent Written Agreement and the Change Control Protocol which allow us to manage annual changes in capital and opex within the public expenditure funding regime NI Water also operates within.

- 7.4.4 Within these existing processes we have the option of re-determining K factors to take account of changes in investment levels of increased or reduced costs (known as relevant items). Any re-opening of the financial determination under the Consequent Written Agreement would be comprehensive and symmetrical in that it should consider all relevant changes the company has faced, positive and negative. DRD have agreed with this principle and this is currently built into the Consequent Written Agreement (CWA).

- 7.4.5 While we have had the opportunity to reset K factors under the existing Change Control Protocol and Consequent Written Agreement, we have not found it necessary to do so. To date relevant item bids have not impacted on the regulated funding of the company. Even a reduction in the capital programme of £50m in PC10 did not warrant a re-determination of K factors during the price control. Instead we adjusted prices in PC13 to reflect the reduced investment in PC10. However, these changes occurred with short duration price controls and it would not be appropriate to allow material changes in revenue to accumulate over a 6 year price control to cause a stepped change in prices at the start of the next price control.

- 7.4.6 We are aware that the process of changing K factors is in itself a determination which requires a detailed regulatory assessment which places a burden on both

the company and the regulator. Therefore we are minded to make the mid-term review the only opportunity to re-open the financial determination for PC15. This means that any financial changes not captured in the mid-term review would not be reflected in charges until the next price control. We would retain the option of reviewing prices at anytime within the existing change mechanisms at our discretion but we would only exercise this option if we deem there to be a material need.

7.4.7 Our view is that the mid-term review should provide a single opportunity to re-open the financial determination to take account of:

- Any relevant items bids already determined as part of the regular monitoring of the company to the extent that they impact on regulatory funding;
- Any material change to capital funding determined through the change control protocol including any material increase or decrease in capital maintenance investment;
- Any material change in customer numbers and demand; and
- Any material change in costs which cannot be defined with any certainty in the business plan – for example the cash tax position of the company.

7.4.8 However, in the event of a material reduction in public expenditure funding which reduced the outputs which could be delivered by the company, we would consider making an earlier adjustment to price limits under the processes included in the Consequent Written Agreement.

7.4.9 There is value in limiting the scope of the mid-term review so that the opportunities and incentives of 6 year plan are maintained. Therefore we are minded not to reopen the financial determination to reconsider the following:

- Return on capital;
- Operational cost efficiency;
- Capital cost efficiency; and
- General changes in operational expenditure such as unit rates for power or changes in labour or contractor costs.

7.4.10 However, any re-opener could impact on risk and limiting the scope for the mid-term review may cause asymmetry in risks between consumers and company. We will consider this risk as we finalise processes for the mid-term review.

7.4.11 The risks associated with these issues remain with the company to manage over the duration of a six year price control. It ensures that the timing of a mid-term review does not have an impact on how the company plans and delivers efficiency. It ensures that the mid-term review is not driven by short term changes in key unit rates such as power costs which might be reversed during the remainder of the price control.



- 7.4.12 In setting out our approach above, we have introduced a general test of materiality. We are minded to set an overall materiality threshold of a £3m change in revenue, positive or negative, in 2012-13 prices using RPI as a deflator. We would not re-determine K factors unless the total impact of the changes covered in the mid-term review is higher or lower than this materiality limit. This is similar to the materiality threshold which would have applied to the provisions for an interim determination previously included in the company licence. We will consider a materiality threshold for individual items which must be reached before they are included in the assessment of the overall materiality limit and re-determination of K factors.
- 7.4.13 Any re-opening of the financial determination at the mid-term review will be comprehensive and symmetrical in that it should consider all relevant changes the company has faced, positive and negative. The UR would retain the option of considering all areas if deemed appropriate at the time.
- 7.4.14 Including capital maintenance expenditure as one of the items considered in a mid-term review risks removing the incentive on the company to improve capital maintenance targeting and efficiency to remain within the determination. Before we considered a change of capital maintenance funding we would expect the company to demonstrate that any deterioration in serviceability was out with its control and it had taken reasonable steps to reprioritise spending within existing budgets to address emerging issues.
- 7.4.15 The mid-term review should be undertaken in the third year of PC15 with a view to including any change in K factors in the scheme of charges for 2018-19. If the company intends to seek a review of K factors in the mid-term review it should liaise with the Utility Regulator at the start of June 2017 to set out the scope of changes it plans to include. The company should complete a submission by the 15 September 2017. The Utility Regulator will complete its determination of K factors by the 15 December 2017.
- 7.4.16 The mid-term review provides an opportunity to manage changes to the outputs for PC15 including the opportunity to introduce new outputs or react to any changes in the way outputs are defined or measured. We would encourage NI Water and stakeholders to hold back changes of this type until the mid-term review to maintain clarity. For example:
- Changes to WWTW compliance targets due to a change in the way that standards are defined or monitored;
  - The introduction of targets for new consumer measures; and
  - Any changes the Utility Regulator considers necessary to the upper control limits for serviceability modelling.
- 7.4.17 Finally, the mid-term review provides an opportunity for NI Water to implement innovative and sustainable solutions which might develop from the strategic studies which NI Water will carry out in the early part of the price control.

## 8.0 Conclusions and Next Steps

- 8.1.1 The PC15 Price Control has been an on-going process of engagement and we would like to acknowledge the input of other stakeholders in helping us develop our determination, and in particular, the Department for Regional Development, Drinking Water Inspectorate, Northern Ireland Environment Agency and the Consumer Council.
- 8.1.2 NI Water submitted its business plan to us in March 2014. Following a period of engagement, we published our draft determination in July 2014 for consultation. This final determination takes account of the response to the draft determination and further engagement with the company to arrive at determination of a total revenue requirement of £2.34bn, £89.3m less than the company requested.
- 8.1.3 It is our view that this determination provides the appropriate level of funding for NI Water to maintain and improve services and continue its efficiency journey. However we are aware that our determination is set in the context of the wider public expenditure environment and the spending constraints going forward. In the event of reductions in public expenditure for water and sewerage services we will work with NI Water to ensure that it delivers the best possible package of business plan outputs within the final public expenditure allocation and ensure NI Water is not held accountable for delivery of any targets it is not funded to deliver. To do so, we will work with other stakeholders to agree changes to outputs and / or prices if appropriate.
- 8.1.4 Under Condition B of its Licence, NI Water has 2 months (until the 10 February 2015) to advise us whether it disputes the determination. In any event, the price limits set out in this determination are the maximum price limits the company can apply when setting prices for 2015-16.
- 8.1.5 We will ask NI Water to prepare a Monitoring Plan for PC15 confirming the outputs and milestones for delivery going forward. We will continue to monitor the delivery of PC15 against the Monitoring Plan and report progress in our Cost and Performance Reports.

# Glossary of Terms

Term	Description
Appointed water company	The term used to describe the regulated water only and water and sewerage companies who supply water and sewerage services to consumers. Also known as a 'regulated company' or 'undertaker'.
Asset life	The time from the date of installation (when new) of an asset (or part) until the asset (or part) has to be replaced. The remaining asset life is recorded from the present. Asset lives for the current asset base are estimated and only known exactly after the asset has been replaced.
Base expenditure	This is the expenditure needed to continue delivering current levels of service, before taking account of planned or required improvements. It comprises operating and capital maintenance expenditure.
Base service outputs	NI Water must maintain the service standards and the ability of its assets to continue to provide service into the future.
Benchmark company	This is the company which is used as the relative efficiency reference point. To set the benchmark, a company (or group of companies): <ul style="list-style-type: none"> <li>• Must represent a reasonable proportion of industry turnover (historically 2.5% to 3%);</li> <li>• Must have no special characteristics outside management control that significantly reduce its costs;</li> <li>• We must have no concerns about the consistency of the benchmark company's data; and</li> <li>• For the capital maintenance benchmark a company must have stable or improving serviceability.</li> </ul>
Business plan	NI Water's business plan sets out: <ul style="list-style-type: none"> <li>• Its overall strategy and the implications for price limits and average bills;</li> <li>• Its strategic objectives in terms of service performance, quality, environmental and other outputs;</li> <li>• The activities necessary in the period to meet these objectives; and</li> <li>• The scope for improvements in efficiency.</li> </ul>
Capital efficiency	The efficiency of using capital expenditure to deliver outputs.
Capital expenditure (capex)	Appointed water companies' spending on new, replacement or refurbished capital assets, such as construction and buying machinery.
Capital maintenance	Planned work by appointed water companies to replace and renovate water and sewerage assets to provide continuing services to consumers.
Capital maintenance econometric return (CMER)	A standardized data set provided by each appointed water company from which econometric models for assessing relative capital efficiency are developed.
Change protocol	Principles and outline procedures for confirmed changes funded

	improvement programmes during an asset management programme period.
Charging year	The period for which NI Water bills customers starting on 1 April each year.
Competition Commission (CC)	Considers merger references. It is also the body to which companies can appeal if they disagree with our decisions on price limits, licence amendments or accounting guidelines.
Construction output price index (COPi)	Published by the Building Cost Information Service (BCIS), COPi measures changes to construction prices which can move in a different way from the Retail Price Index. We use COPi to compare how much companies have actually spent on capital investment compared with what we allowed for in price limits.
Consumers	Refers to individuals or households that purchase and use goods and services generated within the economy. In this case we are referring to those who use water and sewerage services.
Cost base	A defined set of standardised capital work items and projects.
Cost benefit analysis	This measures all the costs and benefits of a project in a common currency (preferably £s). It is used to assess the balance between the costs and benefits of a proposed project.
Cost of capital	The minimum return that providers of capital require prompting them to invest in or lend to the appointed water companies given their risk.
Current cost depreciation (CCD)	The depreciation charge on tangible fixed (above-ground) assets based on the current values of those assets, less amortisation of deferred credits relating to grants and third party contributions. This depreciation is generally only applied to above-ground assets as an infrastructure renewal charge is applied to underground assets.
Depreciation	A measure of the consumption, use or wearing out of an asset over the period of its useful economic life.
Determinations	Some of our decisions are known as determinations, the biggest of which is the outcome of a price control setting out appointed water company's price limits that will operate for a period and the specific outputs that they will have to deliver.
Econometrics	A process that finds a link between expenditure in an area (for example, capital maintenance for water distribution) and a number of measurable explanatory variables (for example, length of distribution mains). If proved, the correlation can be used to derive predicted expenditure for an appointed water company.
Enhanced service levels	Permanent, identifiable and measurable improvements in service levels that are in addition to achieving the most recent established appointed water company-wide base levels of service. They are in addition to improvements resulting from expenditure in other purpose categories.
Enhancement	A level of service delivered better than previously defined. Examples of enhancements include: <ul style="list-style-type: none"> <li>• Fewer supply interruptions for consumers;</li> <li>• Fewer disruptions for the public in general; and</li> <li>• Less pollution for the environment.</li> </ul>

Financeability	Our duty to ensure that NI Water can finance the proper carrying out of their functions is interpreted to mean not only that they should receive a return on investment at least equal to the cost of capital.
Gearing	A company's net debt expressed as a percentage of its regulated capital value.
Indexation	A technique to adjust income payments by means of a price index.
Infrastructure assets	Mainly underground assets, such as water mains and sewers, also dams and reservoirs that last a long time. A distinction is drawn between the infrastructure and non-infrastructure assets because of the way in which they are managed, operated and maintained by appointed water companies.
Infrastructure charges	Developers pay infrastructure charges to NI Water when a new property is connected to either a public water supply or a public sewer. The infrastructure charge provides a contribution to the investment required as a result of the demand that new developments generally place on the local distribution or sewerage network.
Infrastructure renewals charge (IRC)	An annual accounting provision for the medium to long-term maintenance needs of the infrastructure assets network (underground pipes) charged to the profit and loss account.
Infrastructure renewal expenditure (IRE)	The actual expenditure incurred in the financial year in maintaining the operating capability of infrastructure assets through renewal or renovation of those assets.
Interim determination	An interim determination may allow NI Water, or us, to seek revised price limits if specified outputs required of a company change such that the total impact on the company, in net present value (NPV) terms, amounts to 10% of company turnover. The specific items that can be considered are detailed in NI Water's Licence (as relevant changes of circumstances) or defined at a price control as notified items.
International financial reporting standards (IFRS)	These are standards and interpretations adopted by the International Accounting Standards Board.
K factors (price limits):	The annual increase in charges that NI Water can make. The amount by which a company can increase (or must decrease) its charges is controlled by the price limit formula $RPI \pm K + U$ . K is a number determined by us at a price control, for each year, to reflect what it needs above inflation, in order to finance the provision of services to consumers. It may be changed at an interim adjustment between price controls. RPI is expressed as the percentage increase in the Retail Price Index in the year to the November before the charging year and U is the amount of unused K not taken up in previous years.
Logging up and logging down	The process at price controls enabling appointed water companies to set aside variations in costs, which are taken into account when we next set price limits.
Maintenance non-infrastructure	All actual or historic expenditure charged to capital maintenance non-infrastructure.
Modern equivalent	A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials,

asset	techniques, and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.
Monopoly	A monopoly is defined as a persistent market situation where there is only one provider of a product or service, in other words a company that has no competitors in its industry.
Net present value (NPV)	The economic value of a project, at today's prices, calculated by netting off its discounted cash flow from revenues and costs over its full life.
Non-infrastructure assets	Mainly surface assets, such as water and sewerage treatment works, pumping stations, company laboratories, depots and workshops.
Non-regulated activity	Non-core business not associated with the delivery of water and sewerage services.
Notified items	Any item notified by us to NI Water as not having been allowed for (either in full or in part) in the determination at the most recent price control.
Operating expenditure (Opex)	NI Water's day-to-day spending on running the services, for examples, staff costs and power.
Outperformance	Achieving planned outputs for less expenditure than that assumed in price limits.
Output	Whatever is produced by a project.
Overall performance assessment (OPA)	<p>A measure of performance which reflects the broad range of service provided to customers. The key areas within the OPA are:</p> <ul style="list-style-type: none"> <li>• Water supply (pressure, interruptions, restrictions and drinking water quality);</li> <li>• Sewerage service (flooding incidents and risk of flooding);</li> <li>• Customer service (quantitative and qualitative aspects of service); and</li> <li>• Environmental impact (compliance with statutory environmental legislation).</li> </ul> <p>We use the OPA within the price setting process.</p>
Per capita consumption (PCC)	The measure of average use per person in an appointed water company's area. Companies are required to report estimates for both metered and non-metered consumers.
Quality enhancements	A generic term for work programmes implemented by the companies to improve the quality of drinking water or the environment typically by treating wastewater discharges to a higher standard. These enhancements are required to fulfil new legislation or national initiatives approved by Ministers.
Quality regulators	A collective term for the Drinking Water Inspectorate and the Northern Ireland Environment Agency.
Regulatory capital value (RCV)	The capital base used in setting price limits. The capital value is calculated using our methodology (for example, after current cost depreciation and infrastructure renewals accrual). Also known as the 'regulatory asset base' and the 'regulatory asset value'.
Reporters	These are professional independent consultants who act as commentators on the wide range of regulatory information that the appointed water

	companies submit to us. This information needs to be well founded and provide a consistent base of industry-wide comparative information for regulatory decision making. We therefore require NI Water to appoint a reporter to examine, test and give their opinion on this information, in line with our guidance. Each reporter's appointment is subject to our approval. Each owes a duty of care to us and also owes a duty of care to NI Water.
Retail price index (RPI)	An index of changes in retail prices. Charges are controlled by the formula $RPI \pm K$ . RPI is expressed as the percentage increase in the Retail Price Index in the year to the November before the charging year.
Return on capital	Return on capital, also known as return on invested capital, is a financial measure that quantifies how well a company generates cash flow relative to the capital it has invested in its business.
Revenue base	This is the amount received by NI Water from their customers.
Revenue requirement	The amount of money that NI Water must receive from its customers to cover its costs, operating expenses, taxes, interest paid on debts owed to investors and, if applicable, a reasonable return (profit).
Security of supply index (SoSI)	Assesses each appointed water company's ability to supply customers in dry years without imposing demand restrictions such as hosepipe bans. Companies with higher index score bands have better security of supply.
Serviceability	The capability of a system of assets to deliver a reference (i.e. expected) level of service to consumers and to the environment now and into the future.
Substantial effect clause	This allows companies, or us, to seek a change in price limits if circumstances beyond the companies' control change such that the total impact on the company amounts in NPV terms to 20% of company turnover.
Supply / demand balance	The balance between the amount of an appointed water company's available water resources and the demand for water by customers. Any imbalance between supply and demand can be met through resource enhancement or demand management strategies.
Tariff basket	<p>The basket of charges to which the annual price limits apply, comprising charges for:</p> <ul style="list-style-type: none"> <li>• Unmetered water supply;</li> <li>• Metered supply;</li> <li>• Unmetered sewerage services;</li> <li>• Metered sewerage services; and</li> <li>• Reception, treatment and disposal of trade effluent.</li> </ul> <p>Within the overall price limit, basket items may increase or decrease by different amounts and percentages. However, the average change in the basket of charges must not exceed the price limit.</p>
Unit cost modelling	Simple modelling based on unit costs, for example per connected property, which can be used to assess relative efficiency.
WaSC	Appointed water and sewerage company provides water and sewerage services.

Water Framework Directive (WFD)	A European Directive to provide a coordinated approach to water management with the European Union (EU) by bringing together strands of EU water policy under one piece of framework legislation. Member States must produce plans for river basin management districts that set out a programme of measures aimed at protecting bodies of surface and groundwater. Each plan must include economic analyses of water use and move towards full cost recovery in water pricing. For more information, see the WFD website at <a href="http://www.fwr.org">www.fwr.org</a> .
Water resource zone (WRZ)	The largest possible zone in which all water resources, excluding external transfers, can be shared. Hence, it is the zone in which all consumers experience the same risk of supply failure from a resource shortfall.
Weighted average cost of capital (WACC)	For an appointed water company, the average costs of its debts and cost of equity capital, weighted according to the balance of debt and equity which finances the company's assets.
Water only Company	An appointed water only company. WoCs provide water but not sewerage services.



# Abbreviations

Abbreviation	Description
AIR	Annual Information Return
BIP	Business Improvement Programme
BT	British Telecom
CAA	Civil Aviation Authority
CAPEX	Capital Expenditure
CC	Competition Commission
CC	Current Cost
CCD	Current Cost Depreciation
CCNI	Consumer Council Northern Ireland
CEOG	Consumer Engagement Oversight Group
COPI	Construction Output Price Index
CWA	Consequent Written Agreement
DFP	Department of Finance and Personnel
DG's	Performance Indicators (originally set by OFWAT Director General)
DRD	Department for Regional Development
DWI	Drinking Water Inspectorate
E&W	England and Wales
ELL	Economic Level of Leakage
GoCo	Government Company
IFRS	International Financial Reporting Standards
IRC	Infrastructure Renewals Charge
IRE	Infrastructure Renewals Expenditure
K-factor	The adjustment to price caps excluding RPI
KPI	Key Performance Indicators
M and G	Management and General
MEAV	Modern Equivalent Asset Value
MLE	Maximum Likelihood Estimation
MNI	Maintenance non-infrastructure
MOU	Memorandum of Understanding
NDPB	Non Departmental Public Body
NIE	Northern Ireland Electricity

NIEA	Northern Ireland Environment Agency
NIW	Northern Ireland Water
OBR	Office of Budget Responsibility
OFCOM	Office of Communications
OFGEM	Office of Gas and Electricity Markets
OFWAT	Office of Water Regulation (England and Wales)
OPA	Overall Performance Assessment
OPEX	Operating Expenditure
ORG	Output Review Group
ORR	Office of Rail Regulation
PC10	Price Control 2010 – 2013
PC13	Price Control 2013 – 2015
PC15	Price Control 2015 – 2021
PE	Public Expenditure
PFI	Private Finance Initiative
PPP	Public Private Partnership
RCV	Regulatory Capital Value
RPA	Regional Price Adjustment
RPI	Retail Price Index
RPI-X	A form of price control where charges are linked to RPI
SBP	The Strategic Business Plan 2007-2010
SONI	System Operator for Northern Ireland
STW	Sewage Treatment Works
UK GAAP	United Kingdom Generally Accepted Accounting Practice
VER	Voluntary Early Retirement
VS	Voluntary Severance
WACC	Weighted Average Cost of Capital
WACI	Weighted Average Charge Increase
WICS	Water Industry Commission for Scotland
WRZ	Water Resource Zone
WTW	Water Treatment Works
WwTW	Wastewater Treatment Works