Affinity Water

Your local supply, on tap

Our Business Plan for 2015-2020

December 2013

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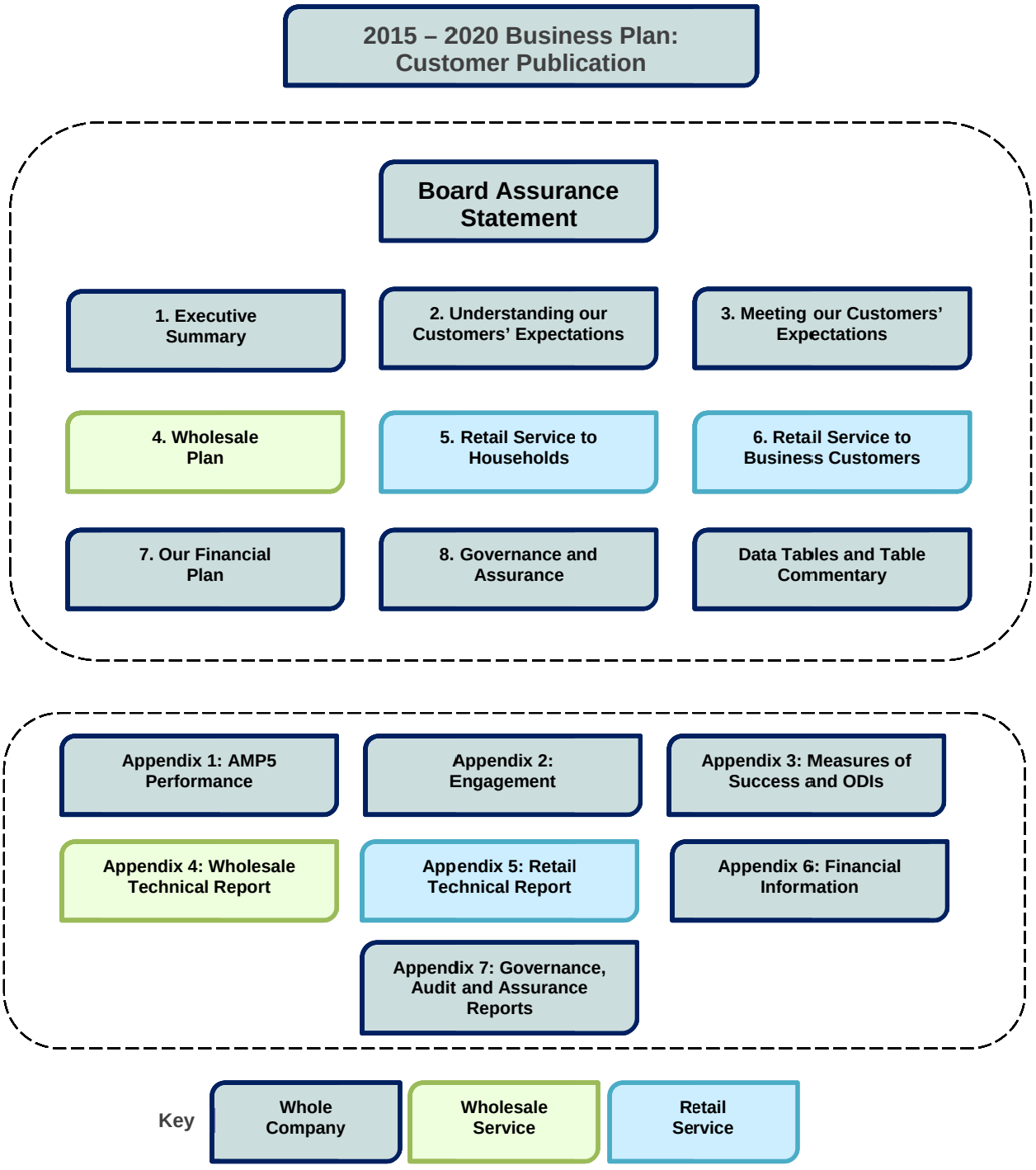
SOME OF THE INFORMATION IN THIS BUSINESS PLAN HAS BEEN REDACTED FOR SECURITY AND COMMERCIAL REASONS.

Note:
Table figures included within this narrative may be subject to rounding. For more precise figures, please refer to the Ofwat data tables.
All figures are shown in 2012/13 prices unless otherwise stated.

Our Business Plan at a Glance

- Affinity Water supplies water to **3.5 million people** living and working in southeast England, providing them with over **900 million litres of water** every day.
- **We have undertaken extensive research with our customers** to ensure we have understood and prioritised their views in developing our plans for 2015 to 2020. Our customer engagement was carefully structured and independently assured with more than 12,500 customers giving their views on our plans.
- **We must leave more water in the environment.** We operate in areas of 'serious water stress', with some of the most fragile ecosystems close to some of our abstractions. We have agreed with the Environment Agency that we will reduce the amount of water we abstract by 42 million litres per day by 2020 – nearly 5% of our supply.
- **We must use water more efficiently.** Customers want us to reduce leakage. We will cut leakage by 14% by 2020 and will be exposed to significant financial penalties should we fall short of this target and much smaller financial rewards should we exceed it.
- **We must encourage our customers to use water more efficiently**. Some of our household customers are among the highest water users in the country and we expect the number of households to increase by 6% by 2020. We will help our customers to save more water through a water efficiency programme and a targeted universal metering programme where customers can choose to continue to pay non-metered charges for up to two years.
- **We must maintain high quality water** by undertaking a risk based programme of lead pipe replacement to meet the more stringent lead standards in drinking water. We will enhance our catchment management activities to reduce the impact of pesticides on the water we abstract and implement an innovative treatment solution for metaldehyde.
- **We will increase investment in our infrastructure to more than £500m** between 2015 and 2020 to ensure that future generations will continue to have enough high quality water to meet their needs.
- **We will ensure value for money.** Average household bills will fall by 0.7% each year, before inflation, from 2015-2020. We will cut our base total expenditure by 10% to offset the increased costs of meeting new statutory obligations and maintaining our high quality service.
- **Our bills will remain affordable.** We are acutely aware of the economic pressures facing many of our customers. Our average bill is already below the average for England and Wales and has fallen in real terms between 2010 and 2014. Our average bill has not risen as a share of our customers' disposable income since the downturn began in 2009; and we now forecast it to fall as a share of customers' disposable income over the period 2015-2020. We plan to introduce a new Social Tariff from April 2014 to support our most vulnerable customers to reduce their bills.
- **We will be ready for retail market opening in 2017.** We operate our business on the basis that we should earn the right to be our customers' supplier of choice and constantly seek to earn their trust.
- Our Board has assured this plan and overseen its development. It considers it strikes the **right balance between affordability, customer service, benefits for the environment, and risk and reward for investors.**
- We can be trusted to deliver this ambitious plan having **achieved demanding targets in the current regulatory period.**

Submission Structure



Board Assurance Statement

Chairman
Dr. Philip Nolan

Independent non-executive director
Patrick Bourke

Independent non-executive director
Baroness Peta Buscombe

Independent non-executive director
Dr. Jeffrey Herbert

Independent non-executive director
The Rt Hon the Lord Mayor Alderman Fiona Woolf CBE

Executive director
Richard Bienfait – Chief Executive Officer

Executive director
Duncan Bates – Chief Financial Officer

Non-executive director
Antonio Botija

Non-executive director
Kenton Bradbury

Non-executive director
Andrew Dench

Non-executive director
Yacine Saidji

Non-executive director
Jim Wilmott

Introduction

We are pleased to present this Assurance Statement affirming the high quality of our Business Plan covering the five-year regulatory period 2015 to 2020. This Assurance Statement has been approved by each member of our Board.

We welcome Ofwat's commitment to placing greater responsibility on companies to develop their plans in consultation with their customers, and to rewarding companies whose Business Plans are well-balanced and well-evidenced. We recognise the need for our Plan to meet our regulatory obligations. It must also balance the needs of our current and future customers and the environment, the efficient cost of financing investment and operating the business over the longer term, and an appropriate sharing of risk and reward with customers. We also recognise that in this current economic climate we need to take into account the affordability of our bills.

Board ownership and governance

In early 2012, following Ofwat's publication of *Future Price Limits* and Defra's publication of *Water for Life*, we began the development of this Business Plan by reviewing lessons learned from PR09 and considering how best we could place customers and the environment at the heart of our business. The sections that follow set out:

- how we operate our business transparently, to the highest standards of governance, having regard to the principles of good governance of the UK Corporate Governance Code and UK Stewardship Code
- how we have led and overseen the development of a high quality Business Plan that will provide high quality Outcomes for customers and the environment, and which strikes an appropriate balance between affordability and service for customers and risk and reward for investors

Board leadership, transparency and governance

In this section we set out how the Company meets the requirements of the UK Corporate Governance Code and all relevant requirements of its Instrument of Appointment.

We are committed to the highest standards of governance and support the principles of good corporate governance set out in the UK Corporate Governance Code and the UK Stewardship Code. Following our change in ownership last summer, we have put in place new governance arrangements and these continue to evolve. We have made a number of recent improvements, and we plan further improvements before the end of 2013/14. We recognise the importance of demonstrating to customers, regulators and other stakeholders that we operate to the highest standards of governance and transparency. To this end, we are preparing a governance code, which we plan to publish in early 2014 so that customers and stakeholders can be confident of the strong governance of our business.

We consider that the Company complies with all the principles of the UK Corporate Governance Code, except in terms of board composition and membership of committees, which we explain further below.

Our Board comprises an executive chairman, four independent non-executive directors, two executive directors and five non-executive directors appointed by shareholders. We consider Patrick Bourke, Baroness Buscombe, Jeffrey Herbert and The Rt Hon the Lord Mayor Alderman Fiona Woolf CBE to be independent. Our chairman, Dr. Philip Nolan, meets regularly with our

shareholder investors to listen to their views and any concerns they may have about governance or other matters. In view of the representation of our major investors on our Board we do not consider the appointment of a senior independent non-executive director is required.

The composition of the Board does not meet the Code provision in that at least half the Board, excluding the chairman, should be non-executive directors determined by the Board to be independent. However, the composition is consistent with the Code's principle that no single director or group of directors can dominate the Board's decision taking because:

- no investor has a majority of voting rights and none of the directors appointed by investors is individually able to veto board decisions
- there is no arrangement between investors as to how to vote on certain matters; directors representing an investor act independently of those appointed by the other investors

We firmly believe that the Board has the appropriate balance of skills, experience, independence and knowledge to enable us to discharge effectively our legal duties as directors and the Company's regulatory obligations. Each director understands his or her duty to exercise independent judgment and, in discharging his or her duties, to have regard to customers, the long term consequences of decisions and the Company maintaining a reputation for high standards of conduct. As a Board, we value the contribution that all of our non-executive directors bring to the governance of the Company, and believe that their balance of skills, experience, independence and knowledge of the Company ensures strong leadership and governance. We are committed to maintaining significant independent representation on our Board and its Committees. As such, the governance code we are preparing will confirm the retention of four independent non-executive directors on our Board, alongside a Chairman.

Our Board is led by our Chairman, Dr. Philip Nolan, who was appointed on 1 April 2013. As executive Chairman, we do not consider Dr. Nolan to be independent. The roles of Chairman and Chief Executive Officer are separated, set out in writing and agreed by the Board.

Richard Bienfait, as Chief Executive Officer, is responsible to the Board for managing the business from day to day in an efficient, economical and effective manner. He is responsible for implementing the Board's decisions and for those matters we have delegated to him.

The Board's role is to lead and control the Company and to set strategy, objectives and major plans bearing on the success of the business. As directors, we are also responsible for ensuring that the Company has competent, prudent and effective executive management and that all necessary management systems and processes are in place and are working effectively.

Since the acquisition in June 2012, we have met monthly and we have reserved to ourselves for decision certain key matters such as strategy and management, including the approval of key regulatory submissions such as the Business Plan, Water Resources Management Plan, drinking water quality submission to the Drinking Water Inspectorate and our annual reporting.

We have established an audit committee, remuneration committee and nomination committee to assist us in discharging our responsibilities as a Board. While membership of these committees does not fully meet the relevant Code provisions, our independent non-executive directors are strongly represented on each committee and this ensures an independent voice and perspective is brought to bear on their work and decision-making.

Our regulation committee, comprising executives, non-executive and independent non-executive directors has supported us in discharging our responsibilities with respect to the

oversight, scrutiny and challenge of key regulatory submissions to regulators and the monitoring of regulatory performance against regulatory, financial and operating targets. As work on the development of our Business Plan has advanced, this committee's monthly meetings were integrated into our monthly Board meetings to facilitate the participation of all directors in the detail of our Business Plan.

We have regular interaction with our shareholders to apprise them of the performance of the business and any key decisions we need to make but we have not reserved any matters to shareholders for decision making. Our shareholders respect the primacy of the Board and the requirements of Conditions F, K and P of our Instrument of Appointment regarding the ring-fencing of our business. We are fully informed of the Company's obligation to conduct the business as if it were a separate listed company and, in so doing, to have particular regard to the matters set out in the licence. Where specific questions arise in this regard, the Company secretary is responsible for advising the Board on the requirements of the licence as well as company law.

Directors do not vote on (nor are counted in a quorum for) any resolution relating to a proposed or existing contract or arrangement or any other proposal in which they have an interest by virtue of other directorships. Where potential conflict exists between the interests of the Company as a water undertaker and those of other companies in the group, each director has regard exclusively to the interests of the Company as a water undertaker. These arrangements are reflected in the Company's Articles of Association.

We recognise the importance of transparency with respect to the ownership and tax arrangements of regulated water companies. The effective equity interests in Affinity Water are shown below. Further information about our owners and the holding company structure is included in Section 8.

- Infracapital Partners II 40%
- Morgan Stanley Infrastructure Partners 40%
- Beryl Datura Investment Limited 10%
- Veolia Water UK Limited 10%

By taking advantage of capital allowances available to all businesses to incentivise investment, we will be able to defer, not avoid, corporation tax and our customers will continue to benefit from lower bills accordingly. One of our financing subsidiaries, Affinity Water Programme Finance Limited, is incorporated in the Cayman Islands, a highly regulated and internationally recognised financial centre. Before establishing this subsidiary, we assured ourselves that it would be resident in the UK for tax purposes. We are clear that this arrangement does not avoid UK tax and brings no tax benefit.

Remuneration and Standards of Performance

Customers, regulators and stakeholders rightly expect that the remuneration of executive directors and other senior executives is linked to standards of performance experienced by customers. The Board's remuneration committee has therefore developed a long term incentive plan for executive directors and other senior executives linking incentive awards to the Company's ranking under the Service Incentive Mechanism. We consider this provides assurance to customers and stakeholders that management is appropriately incentivised to focus on providing high standards of service to customers.

Board ownership of AMP5 performance

Since the inception of AMP5, we have been closely involved in business planning activities and the monitoring of performance against the key regulatory outputs set at PR09. The Final Determination at PR09 indicated clearly to us the need to improve the operational and financial performance of the business to meet the expectation of customers**,** regulators and other stakeholders. We therefore led a review of the operational, financial and management needs of the organisation and implemented changes across these areas to ensure that the business was equipped and resourced to meet the challenges set. These changes included:

- enhancing the capabilities of the business in the areas of asset management, customer experience and cost efficiency
- creating an organisation structure that is aligned to the value chain to facilitate a customer-focused business
- establishing an internally led programme of business process improvements to improve service to customers and the efficiency of operations

We established an organisation that was fit to meet its regulatory outputs for AMP5 and capable of adapting to the new challenges it will face in AMP6 and beyond. Our key achievements for AMP5 to date include:

- our best ever water quality performance in 2010, in terms of compliance failures
- re-establishing the stable serviceability of our infrastructure assets in 2011/12
- year-on-year improvements against the Service Incentive Mechanism and the second lowest number of written complaints in the industry in 2011/12 and 2012/13
- reducing our annual operating costs such that by 2012/13 they are £12m lower than at the start of AMP5
- reducing the cost of our AMP5 mains renewal programme, to replace 630km of distribution mains, to £[X] per metre in 2012/13 prices, compared to the funded unit rate at PR09 of £[X] per metre
- unification of our three formerly separately managed regulated water companies: Veolia Water Central, Veolia Water Southeast and Veolia Water East, achieving savings in annual operating costs and improving services for customers as an integrated business

During AMP5, we have continually monitored the progress of the business in meeting our regulatory outputs and have challenged management's plans to achieve them. We have overseen the preparation of and approved our annual risk and compliance statements and annual performance reports, which provide transparent reporting to customers and our regulators on our performance. We further ensured that as part of the process of unification, we took steps to understand the operating environments of our East and Southeast Regions, their specific regulatory outputs for AMP5 and the particular operational challenges of those regions.

Customer focus and engagement

We are committed to placing customers at the heart of our business and to obtaining the best possible assurance that our Business Plan is responsive to their needs. There are two strong reasons underpinning our commitment. First, in order to achieve our vision of being the leading community-focused water company, we need to establish legitimacy and trust with customers and the communities in which they live and work. We can only achieve this by identifying what customers expect and need, and developing our plans to respond accordingly. Second, the significant challenge that we face with respect to managing our water resources challenge so

that we can continue to meet the needs of today's customers and future generations, whilst leaving more water in the environment, requires a step change in how our customers use and value water. We can only expect customers to respond positively to our plans to help them reduce the amount of water they use, if we are seen to be responsive to their needs and have legitimacy in their communities.

We welcomed Ofwat's proposal for involving customers in price setting and for companies to establish independent customer challenge groups to advise on and challenge their engagement and research plans and their interpretation of customers' views. We challenged management's proposals with respect to the establishment of our Customer Challenge Group (CCG) and determined that we should put in place an independently-chaired group. Our independent non-executive directors interviewed a number of candidates for the role and appointed Robin Dahlberg in June 2012.

Our customer engagement programme has involved 12,500 of our customers giving their views on different aspects of our plans for AMP6 and beyond. Through a combination of our qualitative and quantitative research, we have been able to understand the views of our customers on our proposed Outcomes, performance commitments, willingness to pay for different service attributes and the overall acceptability of our proposed bills between 2015 and 2020. We have overseen the development of and challenged management's proposals with respect to the Outcomes and performance commitments consulted upon and have listened carefully to what our customers and other stakeholders have told us in finalising our Business Plan proposals.

We greatly value the contribution that our CCG has made to the development of our Business Plan, in particular through the challenge and influence it has brought to bear on our customer engagement programme. We have sought to establish and maintain an open and constructive dialogue with our CCG and we have benefited greatly from the meetings we have held with Robin Dahlberg when we have been apprised directly of the CCG's views on the key elements of our Business Plan. Our Chairman, together with a non-executive and an independent non-executive director attended a CCG meeting in September when the results of our customer engagement work were presented by management to the CCG. This provided a valuable insight into the different perspectives of CCG members, at the critical time of the refinement of our Business Plan to take into account views expressed by our customers.

Developing our Outcomes, performance commitments and Outcome Delivery Incentives

We oversaw the development of our pre-consultation publication, *Investing for your community*, published in autumn 2012, which set out for consultation our proposed Outcomes and alongside this the key challenges for our draft Water Resources Management Plan. We received feedback from the qualitative research, which was undertaken and used this to inform our Strategic Direction Statement, published in spring 2013, which confirmed our Outcomes. We also oversaw the development of our Business Plan consultation, published in July 2013, which set out for consultation our proposed plan for AMP6 alongside two alternative plans based on a slower and faster pace of investment. It was important to us that our Business Plan consultation set out the bill impacts of each of the three plans, not only for transparency but also so we could be informed of customers' views about the balance between bill levels now and for future generations.

We operate in an area of serious water stress and we are acutely aware of our responsibility to take action to reduce our abstraction so that we can leave more water in the environment. We understand that our customers and stakeholders expect this of us. We must ensure that our Business Plan allows us to achieve this Outcome for the environment, while accommodating future population growth and the effects of climate change and improving the resilience of our

operations, through efficient sharing of water resources and investment in our network. We led the development of our draft Water Resources Management Plan in which we set out for consultation our plans to respond to these challenges over a 25-year horizon. This included plans to reduce leakage by 10% over AMP6 together with plans to help customers to reduce their per capita consumption by 7% over that period through a programme of targeted universal metering and water efficiency advice in six of our water resources zones.

The business consulted widely on these plans and although there was a broad measure of support for our proposals, it was evident that some customers had reservations about being forced to switch to a measured basis of charging, for a variety of reasons. We asked management to look at how we could respond to these concerns and, following further consultation with customers, we have decided to modify our plan to offer customers a two year transition period following installation of their meter during which time they can decide when to switch to a measured tariff. We have also decided that we should slow down the pace of universal metering from six zones in six years to six zones in nine years. For our Business Plan this means we will install 280,000 meters rather than 400,000 over the next five years. We plan to provide customers information about their monthly water usage alongside help and advice to reduce water usage. By responding in this way to what customers have told us, we anticipate that we will be able to minimise the number of customers who ultimately have not chosen to switch to metered charging by the end of the transition period, while at the same time making the water savings needed during the two year transitional period.

We have also taken account of the clear message from our customers and other stakeholders that we should do more to reduce leakage. Our Business Plan provides that we will reduce leakage by 14% during AMP6, compared to our consultation proposal to make a 10% reduction. Reducing leakage is our highest priority. We have therefore included stretch Outcome delivery incentives for leakage reduction, with the opportunity to earn reward for outperformance and incur significant penalties for under performance, reflecting the importance that we and our customers attribute to leakage reduction.

We are conscious of the role of the business as steward of a precious natural resource in an area of increasing water stress. This drives our commitment to using water responsibly and effectively. We have ensured that the needs of the natural environment have been given appropriate emphasis in our Business Plan, in particular through our assumptions of significant sustainability–driven reductions in abstraction and our proposed commitments to reduce leakage and to help customers reduce their own water usage. We have been keen to ensure that our business engages proactively with environmental regulators and neighbouring water companies and we have kept ourselves apprised of the work of the Water Resources in the South East Group.

We oversaw the development of our water quality submission to the Drinking Water Inspectorate in July 2013 and challenged management's proposals with respect to certain schemes that were ultimately omitted from our submission. The business' engagement with customers confirms to us that customers do not expect us to take any risk with the quality of the drinking water we supply and that they supported the bill impact associated with our proposals set out in our Business Plan consultation. The Drinking Water Inspectorate has indicated its full support for the inclusion of our proposals in our Business Plan (except one aspect of our joint proposals with Anglian Water for Ardleigh Water Treatment Works) and set out its expectations with respect to the provision of undertakings and issuing of compliance notices.

Engagement with customers has indicated a strong preference for our business to maintain levels of service set for AMP5. Accordingly, we are not proposing any improvement or deterioration in service levels. We are satisfied that the performance commitments we are proposing with respect to our Outcome of minimising disruption to you and your community will

provide confidence of our commitment to maintaining stable serviceability of our above-ground and below-ground assets.

We have considered the Outcome of the independent research into bill acceptability. We noted in particular that the proposed plan and the slower plan upon which the business consulted had an equally high level of acceptability of 91%, notwithstanding the differential bill impact. Following discussions with management, we are satisfied that the slower plan would not have provided the same benefits for the environment as the proposed plan. In the circumstances it was appropriate to use the proposed plan as the basis for further refinement of our plans in light of the findings of our customer research.

We have chosen performance commitments for each of our Outcomes that have been informed by the views of our customers, regulators and stakeholders. We set out our proposed commitments in our Business Plan consultation in July 2013. The business received feedback from the Environment Agency that we should consider strengthening our commitment to the environment by committing to implement abstraction sustainability reductions of 42 Ml/d in AMP6. The Drinking Water Inspectorate urged us to consider a performance commitment regarding the number of customer contacts about water quality. Both suggestions were helpful and we have decided to include both performance commitments in this Business Plan.

We have selected a package of Outcome delivery incentives that strikes a fair balance of risk and reward for our business and customers. It reflects the value that customers place on the service we provide, established through our willingness to pay research. The package includes both financial and reputational incentives across a range of measures. In overall terms the package provides an opportunity for us to earn an annual reward of up to +1.06% and to incur an annual penalty of up to -2.96% of total revenue, plus a further +0.5% to -1.0% under the Service Incentive Mechanism.

We have also enhanced protection for our household customers by increasing the amount we will pay under the Guaranteed Standards of Service Scheme to £50 where we fail to provide advanced warning of a planned supply interruption or fail to restore the supply within the time we have notified.

Compliance with statutory obligations

A primary driver for our Business Plan is the activity and investment we must make to ensure that our business can continue to meet its statutory and regulatory obligations during AMP6 and beyond. Our business has worked closely with the Environment Agency and Drinking Water Inspectorate to seek their views on specific components of our plans to ensure that we can implement our Water Resources Management Plan and continue to comply with all legal requirements relating to the environment and drinking water quality. We have considered their views on our plans expressed through our CCG and directly to the Company and where appropriate, modified our proposals to meet their expectations. Separately, we have obtained assurance from management and external assurance providers that our plans will allow us to continue to meet our statutory obligations. In light of what we have done and the assurance we have received, we are satisfied that our plan will enable us to continue to meet such statutory obligations.

AMP5 performance and legacy incentives

We have set out above how we have been proactively monitoring the performance of the business in meeting the regulatory outputs we accepted at PR09. This active oversight of performance, supported by third party assurance, gives us confidence that the business is

meeting and will continue to meet the outputs set. Accordingly, we confirm the accuracy and completeness of our AMP5 performance as set out in Appendix 1 of the Business Plan.

We have also reviewed the legacy incentive tools to be used by Ofwat to make appropriate adjustments to our 2015-20 wholesale price control to reflect their assessment of our AMP5 performance. We consider that the proposed adjustments included in the Business Plan are appropriate to the performance achieved, or that we reasonably expect to achieve, for AMP5.

Assurance of this Business Plan

We are, and have been, fully engaged in the design, development and preparation of our Business Plan. Our regular formal monthly meetings have allowed us to lead and provide strategic direction to management, to scrutinise and inform their proposals and to hear the voice of our customers and stakeholders through our engagement programme. Directors have supplemented these meetings with frequent meetings with the management team and subject matter experts, individually and in small working groups during the past twelve months.

This direct involvement is underpinned by a thorough independent assurance programme undertaken by external specialist quality auditors who report to us. We have derived assurance of a high quality Business Plan through a combination of a bottom-up review of each component by external assurance providers, including our Reporter and Auditors and a top-down independently-led review of the Business Plan as a whole. We describe more fully the specific governance and assurance framework established for the preparation of this Business Plan in Section 8.7.

It is of the utmost importance to us that the estimates and data on which our plan is based are of the highest quality, are accurate and complete and we confirm that they have been arrived at independently of other companies or competitors. We commissioned our Reporter and external Auditors to report to us their findings in respect of our August Data submission and the tables that form part of this Business Plan submission. We further commissioned independent research to help inform us on certain of the financial aspects of our plan, including our estimates for the weighted average cost of capital. Subject to any limitations identified in their reports and in the data table commentaries, we are satisfied as to the accuracy and completeness of the data and estimates provided.

Our investment plans will allow us to tackle the challenge of managing supply and demand over the next 25 years, while leaving more water in the environment - implementing abstraction sustainability reductions of 42Ml/d by 2020. They will also allow us to meet the new compliance standard for lead in drinking water and respond to the challenge of managing the deteriorations in raw water quality that we have experienced.

Overall, we plan to increase our level of investment in AMP6 to meet our key challenges and new statutory obligations, while maintaining levels of service for customers. We will reduce leakage by 14% by the end of AMP6 and support our customers to reduce their water usage through a targeted universal metering and water efficiency programme. We have included £106m (10%) of efficiencies in our base expenditure.

We have taken account of the advice we have received from Frontier Economics on the weighted average cost of capital for the industry and the appropriate premium for Affinity Water reflecting its specific characteristics. We have considered the risk that our investors are accepting through the stretch cost efficiencies within our plans and the strong package of Outcome delivery incentives we have put forward.

We have concluded that a wholesale weighted average cost of capital (WACC) of 4.3% would be appropriate for Affinity Water to reflect its characteristics and risk. We note that the evidence supports a 40bps premium for Affinity Water over the wholesale WACC for water and sewerage companies. Therefore, if Ofwat were to set an industry wholesale WACC at 4.1% - a figure it has recently used in presentations – this would be equivalent to sharing half of this premium with our customers.

We have considered the financeability of our proposals and the key financial ratios we need to maintain to retain our current investment grade ratings and are satisfied that we will continue to be able to meet the necessary tests set by the rating agencies throughout AMP6.

We have taken into account the affordability of our plans for customers and are proposing that average household bills will reduce by 0.7% in real terms per annum between 2015 and 2020, while gross disposable household income of customers in the regions we serve over the same period is projected to rise on average by around 1.4% per annum. Unlike for the UK water sector as a whole, our bills have not risen as a share of our customers' disposable incomes since the downturn in 2008. For the most vulnerable of our customers, we are proposing to introduce a social tariff from 2014/15.

We have reviewed successive drafts of this Business Plan to ensure that it effectively conveys the challenges our business faces, how we are placing customers and the environment at the heart of our future plans through our Outcomes, performance commitments and Outcome Delivery Incentives and how it provides the best value for money for customers today, balanced with an appropriate level of investment for the future.

All the Directors believe that this combination of personal and collective Board involvement and the comprehensive external assurance programme we have instigated demonstrates our commitment to producing a well evidenced Business Plan of the highest quality. Accordingly, each of us as Directors confirms our approval of this Business Plan.

Dr. Philip Nolan

Chairman

For and on behalf of each Director

1 Executive Summary

- Affinity Water supplies water to **3.5 million people** living and working in southeast England, providing them with over **900 million litres of water** every day.
- **We have undertaken extensive research with our customers** to ensure we have understood and prioritised their views in developing our plans for 2015 to 2020. Our customer engagement was carefully structured and independently assured with more than 12,500 customers giving their views on our plans.
- **We must leave more water in the environment.** We operate in areas of 'serious water stress', with some of the most fragile natural ecosystems close to some of our abstractions. We have agreed with the Environment Agency that we will reduce the amount of water we abstract by 42 million litres per day by 2020 – nearly 5% of our supply.
- **We must use water more efficiently.** Customers want us to reduce leakage. We will cut leakage by 14% by 2020 and will be exposed to significant financial penalties should we fall short of this target and earn much smaller financial rewards should we exceed it.
- **We must encourage our customers to use water more efficiently**. Some of our household customers are among the highest water users in the country and we expect the number of households to increase by 6% by 2020. We will help our customers to save more water through a water efficiency programme and a targeted universal metering programme where customers can choose to continue to pay non-metered charges for up to two years.
- **We must maintain high quality water** by undertaking a risk based programme of lead pipe replacement to meet the more stringent lead standard. We will enhance our catchment management activities to reduce the impact of pesticides on the water we abstract and implement an innovative treatment solution for metaldehyde.
- **We will increase investment in our infrastructure to more than £500m** between 2015 and 2020 to ensure that future generations will continue to have enough high quality water to meet their needs.
- **We will ensure value for money.** Average household bills will fall by 0.7% each year, before inflation, from 2015-2020. We will cut our base total expenditure by 10% to offset the increased costs of meeting new statutory obligations and maintaining our high quality service.

- **Our bills will remain affordable.** We are acutely aware of the economic pressures facing many of our customers. Our average bill is already below the average for England and Wales and has fallen in real terms between 2010-2014. Our average bill has not risen as a share of our customers' disposable income since the downturn began in 2009; and we now forecast it to fall as a share of customers' disposable income over the period 2015-2020. We plan to introduce a new Social Tariff from April 2014 to support our most vulnerable customers to reduce their bills.
- **We will be ready for retail market opening in 2017.** We operate our business on the basis that we should earn the right to be our customers' supplier of choice and constantly seek to earn their trust.
- Our Board has assured this Plan and overseen its development. It considers it strikes the **right balance between affordability, customer service, benefits for the environment, and risk and reward for investors.**
- We can be trusted to deliver this ambitious Plan having **achieved demanding targets in the current regulatory period.**

1.1 Affinity Water – committed to our customers and our communities

As the UK's largest water-only supplier, providing more than 900 million litres of water each day to a population of more than 3.5 million people, we are committed to delivering the highest quality water service to all our customers. Our business has been fulfilling this vital role in the community for over 100 years.

Our vision, "to be the UK's leading community-focused water company", reflects the importance we place on the way our people work within and for the communities we serve, and in understanding and responding to the needs of different community groups. We will be accountable to them at a local level. This vision and approach is something that sets us apart from other water companies.

We believe we have a unique privilege to serve these communities. Being both the supplier and the steward of a precious resource for future generations, we are acutely aware that we must continually build trust and legitimacy with our customers in their communities. This is central to achieving our vision.

Eight Water Resource Zones (WRZ) together make up our areas of supply, as shown in the map below. We view each WRZ to be a community and we have named them after a local river to underline the link between the service we provide and the local environment from which we source water. We know that our customers' preferences and operating conditions may be unique to individual communities, so we are committed to operating primarily at the community level.

Figure1-1: Our Communities and Water Resources Zones

1.2 Our performance and customer focus in AMP5 shows we can be trusted to deliver

The 2009 Price Review (PR09) was a very challenging determination for our business. It told us we needed to raise our game to meet the expectations of customers, regulators and other stakeholders. In 2010, a new executive team was put in place to ensure focus on delivering for our customers and communities and to fulfil the regulatory commitments of PR09. Improvements have included:

- Building our capabilities in asset management, customer experience and cost efficiency
- Creating an organisation design aligned to the water value chain to facilitate a customer-focused business
- Establishing an internally led programme of business process improvements to improve service to customers and the efficiency of our operations

We are achieving the tough regulatory outputs in the current AMP5 regulatory period. We have improved the customer experience since 2010 and we have established better control of our assets, with consequent improvements in asset performance. We will invest £454 million in our local infrastructure in the current five-year period, in line with the PR09 Final Determination.

We have had a keen focus on driving cost efficiencies in both capital and operating expenditure. As of October 2013, we have realised £22m in operating cost efficiencies since 2010, and our programme of planned savings will continue to be delivered over the next two years. As an example of increased capital efficiency, we have reduced our unit cost for mains renewal from £[X]/metre to £[X]/metre. The current rate is [X]% below that funded in PR09. We believe that by 2014/15 we will have improved our relative efficiencies of operating and capital maintenance expense to band ‘A' level.

Other significant results from 2012/13 compared with 2010/11 include:

- Our water quality compliance performance in 2012 was 99.95%
- We have reduced our written complaints by nearly a quarter, and escalated written complaints are down by 51%
- The number of properties receiving an interruption of supply for more than 12 hours has decreased by 75%
- Total bursts on our network have decreased by 36%
- The number of properties at risk of low pressure water supply has decreased by 38%
- We have met our leakage targets in each completed year of this AMP

Following our change of ownership in 2012, we have made a number of strategic changes for the benefit of our customers. In July 2012, we unified three formerly separately-managed regulated water companies: Veolia Water Central, Veolia Water Southeast and Veolia Water East. Unification achieved savings in operating costs by simplifying business systems and the use of common IT platforms. In October 2012 we rebranded our unified business as Affinity Water. In February 2013 we established a secured funding platform to confirm Affinity Water’s financial stability as an independent entity. Customers are now receiving improved services from an integrated business.

Our people are critical to our success in delivering change that benefits our customers and communities. We have fostered a culture of accountability for results. With high levels of

employee engagement, our people's feedback and ideas have been at the centre of the improvements to our internal processes and our resulting performance. We have a commitment to operate our business without harm. We believe that all accidents are preventable and that nothing is so important we cannot take the time to do it safely.

We are committed to customer-focused innovation. Some significant examples are:

- Our 'Voice of the Customer' programme integrates feedback of customer opinion through channels ranging from the traditional to the increasingly important digital channels and social media, and makes them accessible to our people. This creates a better understanding of customer needs and allows us to provide a service that our customers value
- We will launch innovative tariffs and payment plans, including social tariffs and flexible payment options for the most vulnerable members of society, to ensure our service remains affordable to all customers in the community
- Our 'Service Delivery Map' is a state-of-the-art approach to delivering predictable customer service levels based on improved asset management and reduced asset failure. It is supported by a deep understanding of our asset base and how to operate it optimally, recognising its specific strengths, vulnerabilities, risks and costs at the community level
- In 2010, we reorganised our network operational activities to improve the service we provide to our communities. We created a new team called Community Operations led by a Director of Community Operations. This organisational design allows us to manage network operations, such as leakage and mains burst repairs, with a strong emphasis on using our local knowledge in the community to substantially improve levels of service to our customers
- We have invested and will continue to invest in managing and analysing data more efficiently and in our capability to derive more value from it. This is a driver for understanding and predicting asset performance, for efficient network control, for insightful risk management and for helping our customers use water more efficiently

We are proud to have transformed our business to deliver real benefits for our customers and meet our regulatory targets. But we are not complacent – we are ambitious for continued improvement so we can further improve our service for customers and realise our vision to be the UK's leading community-focused water company.

Appendix 1 gives further details of how we have achieved the AMP5 outputs specified in the 2009 Final Determination.

1.3 We must tackle three challenges and take up one great opportunity

In preparing our Business Plan, and in our customer engagement, we took into account three fundamental challenges and one great opportunity that our business faces:

Challenge 1: Increasing water demand as a result of population growth

- We serve communities with some of the highest demand for water in the country. Between 2013 and 2020 the population in our supply area is forecast to increase by 160,000 (4%) to 3.72 million, with the number of households forecast to increase by 73,000 (6%) to 1.40 million. Our customers expect us to maintain the current high quality of our water while meeting this increased demand

Challenge 2: Acute pressure to increase the sustainability and resilience of supply

- Water is a very precious resource. The Secretary of State for the Environment, Food and Rural Affairs has designated all three of Affinity Water's regions as areas of 'serious water stress'. Government and regulators have emphasised the importance of resilience and long-term planning in adapting to increased water stress
- We have a high dependency on groundwater sources - around 60% of our water - which need to be replenished each year by winter rainfall. Other than natural aquifers, we do not have significant storage for untreated water. This means we are particularly susceptible to drought and pollution events and are vulnerable to the effects of population growth and planned sustainability reductions
- Most of the world's chalk streams are in the southeast of England with many flowing through our supply area. They are particularly at risk of drying up if water tables in the chalk bedrock are lowered by too much abstraction. We have a responsibility to protect the chalk stream ecosystems and their biodiversity by leaving more water in the environment
- We have already agreed with the Environment Agency to make sustainability reductions of 42Ml/d in our Central region during AMP6 – nearly 5% of our resource base
- We also have to contend with a less predictable and more variable climate, further increasing the pressure to improve the resilience and sustainability of our operations
- Our Water Resources Management Plan demonstrates how we have a need for significant investment to secure enough high quality water for future generations of customers

Challenge 3: Affordability and value for money

- The economy of the southeast of England is showing broad recovery after the financial crisis of 2008. Nevertheless, our supply area shows an uneven distribution of the benefits of the recovery. Many of our customers are understandably concerned over the cost of living and the affordability of water bills. The expected increase in Thames Water's sewerage bills due to the Thames Tideway Tunnel, which would be charged to the vast majority of our customers, will only add to their concerns
- We have a good record on maintaining the affordability of our water bills. They are below the industry average. And, unlike the industry as a whole, our average water bill has not risen as a share of our customers' average household disposable income since 2009. We are acutely conscious that customers want us to continue to prioritise value for money

Opportunity: Increasing choice of suppler for business customers

- The retail market for non-household customers is scheduled to open fully to competition in 2017 and more competition in other water markets is expected to follow after that. New companies will be able to enter the water market, giving customers more choice and compelling incumbent water companies to operate more efficiently so that they can offer customers more competitive prices and a better service. We operate on the principle that for all our customers we should work hard to be their supplier of choice

1.4 Our customers have shaped our Plan

We conducted a far-reaching programme of customer research, which complemented our existing customer engagement (such as the 'Voice of the Customer' programme) to fully understand our customers' needs and their priorities.

Our plan has benefited from our independent Customer Challenge Group

We established an independent Customer Challenge Group (CCG) in July 2012 to advise and challenge us as we developed our Plan and to provide further assurance that the views of our customers are at its heart. The CCG is independently chaired by Robin Dahlberg, who was appointed by our independent non-executive directors. The CCG has representation from our three supply regions and a broad cross-section of our customer base, as well as representatives of the Drinking Water Inspectorate, the Consumer Council for Water, Natural England and the Environment Agency.

We have kept the CCG regularly informed about our customer and stakeholder consultations. The CCG continually monitors our activities to make sure we are engaging with our customers and stakeholders in an effective manner, and it also evaluates how we interpret the results from our consultations.

Its other essential role is to challenge the components of our Business Plan, its Outcomes, commitments and performance measures. The CCG has also advised us on the acceptability to our customers and other stakeholders of the Plan and its anticipated consequences. To this end, it has made timely challenges to us about the quality of our customer engagement and also about our investment programme and our customers' willingness to pay.

The CCG has reported on its conclusions, and the report is submitted to Ofwat alongside this Business Plan. We wish to take this opportunity to thank all the members of the CCG for their contribution to our Plan.

We have undertaken an extensive and robust customer engagement programme

We conducted our customer consultation in three phases:

- In Phase One, we listened and learned about what our customers thought of us. We focused on identifying issues and opinions and on increasing our customers' awareness of the challenges we face. This phase ran from autumn 2012 up to March 2013, corresponding to the pre-consultation on our draft Water Resources Management Plan (dWRMP) and the consultation on our revised Strategic Direction Statement (SDS), 'Investing in your Community'
- In Phase Two, we tested and put values to the themes developed from Phase 1, with household and commercial customers, environmental groups, community groups, local authorities and regulators. We published for consultation a preliminary Business Plan in July 2013, with options. It ran in conjunction with the formal consultation phase for the dWRMP
- In Phase Three, during October and November 2013 we revisited our conclusions from the first two phases and obtained assurance that we had truly addressed our customers' preferences. This included looking at the overall acceptability of our Plan, the measures we propose for vulnerable customers and our plans for metering

Since autumn 2012, we have gained feedback from over 12,500 customers with a comprehensive programme that included a variety of approaches summarised in Figure 1-2.

Figure 1-2: Our engagement programme

Details of our programme are given in Appendix 2.

1.5 What our customers said most mattered to them

Our customers' expectations

Our customers helped us develop four key expectations of us in meeting their needs now and in the future, and to safeguard the environment. We call these our customer Outcomes (in our consultation with customers we used the term 'customer expectations'):

- Outcome 1: Making sure our customers have enough water, whilst leaving more water in the environment
- Outcome 2: Supplying high quality water you can trust
- Outcome 3: Minimising disruption to you and your community
- Outcome 4: Providing a value for money service

Our typical customer contacts us infrequently. For the great majority, the only interactions are when they use water and when they receive and pay their bills. Customers tend to take water for granted and rarely think about what is involved in the delivery of water services. They said they were generally happy with the service they receive from Affinity Water. Very few of those who have contacted us have **not** had a good experience.

The most important priorities for our customers are ensuring we maintain high quality water, reducing the amount of leakage and making cost efficiencies.

Customers view water quality as good and the supply as consistent. Their satisfaction is almost entirely based on the tangible services they receive. Quality of service is judged on the hardness, cleanliness, taste and consistency of water supply. Water hardness is an important issue for many customers, but when they understand the cost of reducing water hardness, most customers are not willing to pay for improvements.

Customers support our proposals to reduce abstraction and leave more water in the environment and to make water resources more resilient, but are reluctant to pay for improved environmental protection. Investing in metering in order to contribute to our abstraction reduction is a priority - but not as high as tackling leakage and maintaining high standards of water quality.

Our customers realise that both their water company and the communities they live in are accountable for using water efficiently and responsibly. Many of our customers want to know more about how they can become more water-efficient and reduce their demand.

Improving our level of service, specifically in reducing supply interruptions and the frequency of bursts, is not supported by customers if this requires an increase in their bills.

Customers, particularly vulnerable customers, are apprehensive about possible future price rises, and many are concerned that some people struggle to pay their bills and need help.

Section 2 of this Plan presents a fuller discussion on how we carried out the customer consultation programme, its results, and how we analysed and interpreted them.

Our customers' views on the pace of investment and impact on their bills

We wanted to make sure that we achieved the right balance between the price our customers are willing to pay, the level of service that they receive, and the pace of investment in our assets for future generations.

When we consulted customers on our Business Plan in summer 2013, we set out three options for bill levels in 2020, before inflation, with a breakdown of costs for each. These options were: our proposed Plan (resulting in a £3.70 increase from the 2014/15 average bill of £165), a second option with a slower pace of investment (a £2.50 decrease) and a third with a faster pace of investment (a £13.70 increase).

We carried out quantitative research on 'willingness to pay' and acceptability testing. This research was conducted independently by ICS Consulting and Eftec on our behalf, using representative samples of our customers based upon location and, in the case of household customers, their gender, age, and socio-economic grouping.

Overall, 91% of our customers from this research supported the proposed Plan and its bill impact. During the second phase of this research later in the year, 87% of customers supported our modified Plan and the associated increase in water bills of £1.80, before inflation.

We note that research by the Consumer Council for Water has indicated that 70-75% is the spontaneous level of acceptance that customers would consider to be the threshold of acceptability. On this basis, we are confident that we have robust evidence that the bill changes implied by our plans would be highly acceptable to customers – especially as we are now proposing price reductions in real terms.

Generally, customers do not want to see service deteriorate, even if that could result in lower bills. However, customer support for higher bills was weaker when they were asked additionally to consider increases in sewerage charges (for which Affinity Water is not responsible, but which, for most of our customers, are collected with our water bills).

1.6 How we will respond to what our customers said

Bills will come down in real terms

The Business Plan envisages reducing the average bill by 0.7% per year before inflation, resulting in our average bill in 2020 being 3.5% lower than it will be in 2014/15. Put simply, we are finding £106m, 10.0%, in efficiencies on our base expenditure to pay for the increased costs we face from meeting our customer Outcomes and new statutory obligations.

We think this pricing profile is the right one to meet our four customer Outcomes. In doing so it carefully balances the interests of:

- Today's customers - by enhancing further the affordability of our bills whilst maintaining our high quality and service standards. We are confident our customers find this acceptable given previous versions of our Plan contained small real price increases and achieved acceptability scores of around 9 in 10 customers
- Future customers - by investing to ensure there will be enough high quality water to meet their demands
- The environment – by abstracting less water and having a shared responsibility with our customers to save more water, with us showing leadership by reducing leakage and encouraging our customers to value water through a customer focused universal metering programme
- Investors – by ensuring we can attract the necessary investment to meet the customer Outcomes

Affordability of our bills will improve

Our average water bill is below the average for England and Wales. It has fallen in real terms every year for the period 2010-15. It will now fall in real terms every year for a further five years from 2015-20. We appreciate that comparing bills to inflation is only one measure of affordability. This is why we have researched how our average bills compare with estimates for our customers' real disposable income. Unlike the average water sector bill, ours have not risen as a share of our customers' disposable income since the financial crises in 2008. The affordability of our bills will improve further: before inflation, the cuts in our bills we have planned for 2015-2020 will represent a declining share of our customers' projected disposable income.

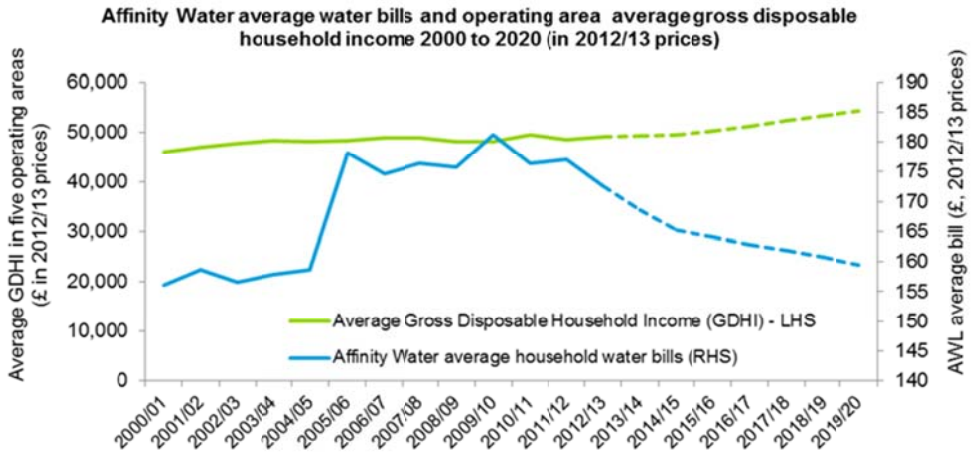


Figure 1-3: Comparison of average household water bills and real GDHI
Source: Deloitte

We have taken into account the affordability of our plans for customers and are proposing that average household bills will reduce by 0.7% in real terms per annum between 2015 and 2020, while gross disposable household income of customers in the regions we serve over the same period is projected to rise on average by around 1.4% per annum.

As well as looking at affordability for our typical customer, we have also been very mindful of our less affluent customers. We estimate that by 2020 those households spending more than 2.5% of their disposable income on our bill will fall by around 9%, to around 37,000-45,000 households. In practice, the improvement in the affordability of our bills at the lower end of the income range is likely to be greater than these numbers suggest because we plan to launch, in 2014, our Social Tariff to provide support to up to 30,000 customers.

Thames Tideway implications

We currently bill most of our customers on behalf of wastewater providers. Thames Water provides wastewater services to 80% of our water customers. We know from our research that many of our customers regard their water and sewerage services as a single service, particularly where they receive a single bill for both. This creates a number of challenges for us in relation to the expected future levels of Thames Water's sewerage bills.

As part of our quantitative customer research we commissioned statistically robust studies on the acceptability of the water bill as well as the combined water and sewerage bills. Our research shows that including Thames Water's proposed price increase to fund the Thames Tideway Tunnel will make the total bill unacceptable to our water customers. Our research showed that 91% of customers found a total bill increase of £3.70, before inflation, over the five year period acceptable, but that this level of support dropped to less than 70% if the sewerage bill increase was £10.

Given our limited ability to influence the potential bill impact of Tideway, our approach is to understand possible implications on operational costs, the levels of bad debt and SIM. We will devise a comprehensive communication programme so that we can inform customers of potential price changes and take steps to mitigate the impact on vulnerable and low-income customers.

We have adjusted our Business Plan in response to customers' views

Challenge from our CCG and feedback from customers and stakeholders has prompted us to accentuate the following features in our Business Plan:

- Maintaining high standards of water quality
- Meeting or exceeding our proposed leakage reductions
- Adopting a slower pace of investment for maintenance investment than we initially planned. However, we will maintain current service levels for interruptions to supply of over twelve hours duration and for the number of burst mains
- Adopting a slower pace of investment for our targeted universal metering and water efficiency programme. We will implement it in AMP6 in our four communities with the greatest water stress, rather than five, with a further two to be metered during AMP7
- Ensuring that vulnerable customers are supported by appropriate tariffs, including our Social Tariff
- Continuing to find and make cost efficiencies throughout our business to secure value for money and help us reduce prices in real terms over the next five year period
- Improving the advice we give to customers about managing hard water

Our performance commitments match what customers told us they valued

We want our customers to be able to measure our success and hold us to account. We have developed performance commitments to support our four customer Outcomes. These commitments have been validated by our research, particularly on customers' willingness to pay. Table 1-A shows the impacts on customer bills of each Outcome and how we have altered the performance commitments of our measures of success per Outcome as we moved through the customer consultation process.

Outcome	Measure of Success	Phase one engagement	Our Proposed Plan	Phase two engagement	draft Final Plan	Phase three engagement	Our Business Plan
Making sure our customers have enough water, whilst leaving more water in the environment	Leakage		10% reduction		10% reduction		14% reduction
	Average water use		7% reduction		7% reduction		7% reduction
	Water Available for Use		6% improvement		6% improvement		4% improvement
	Abstraction Incentive Mechanism (AIM)		-		-		New commitment
	Sustainable abstraction reduction		-		-		42 Ml/d reduction
Supplying high quality water you can trust	Compliance with water quality standards (mean zonal compliance)		Current level		Current level		Current level
	Customer contacts for discolouration		-		-		Current level
Minimising disruption to you and your community	Unplanned interruptions to supply over 12 hours		5% reduction		Current level		Current level
	Number of burst mains		15% reduction		Current level		Current level
	Affected customers not notified of planned maintenance		15% reduction		Current level		Current level
	Planned works taking longer to complete than notified		10% reduction		Current level		Current level
Providing a value for money service	Service Incentive Mechanism (SIM)		-		-		Current level
	Value for Money Survey		New commitment		New commitment		New commitment

Table1-A: How we changed our performance commitments in response to customers' feedback

We are setting incentives to focus our performance on customer priorities with the level of penalties for under-performance much greater than the level of reward for out-performance.

We are committing to a number of Outcome Delivery Incentives (ODIs) to hold ourselves accountable to our customers for our performance commitments and to help concentrate on successful delivery. We have developed an appropriate balance of incentives against our performance commitments, taking into account our customers' priorities. We have applied Ofwat's principles to ensure our ODIs are based on sound evidence and reflect our customers' priorities. We have obtained third party assurance of this.

Outcome	Measure of success	Type of ODI	Potential upside (% of total revenue)	Potential downside (% of total revenue)
Making sure our customers have enough water, whilst leaving more water in the environment	Leakage	Reward and penalty	+ 1.06%	-1.67%
	Average water use	Reputational incentive	-	-
	Water available for use	Reputational incentive	-	-
	Abstraction incentive mechanism	Reputational incentive	-	-
	Sustainable abstraction reductions	Reputational incentive	-	-
Supplying high quality water you can trust	Compliance with water quality standards	Reputational incentive	-	-
	Customer contacts about water quality	Reputational incentive	-	-
Minimising disruption to you and your community	Unplanned interruptions to supply over 12 hours	Financial Penalty only	+ 0.00%	-0.51%
	Number of burst mains	Financial Penalty only	+ 0.00%	-0.78%
	Affected customers not notified of planned interruptions	Compensation payments	-	*Enhanced GSS*
	Planned work taking longer to complete than notified	Compensation payments	-	*Enhanced GSS*
Providing a value for money service	Service incentive mechanism	Financial reward and penalty	+ 0.50%	-1.00%
	Value for money survey	Reputational incentive	-	-
Total package of Outcome delivery incentives			+ 1.56	-3.96%

Table1-B: Outcome Delivery Incentives

Given our vision to be the UK leading community-focused water company, we will innovate by reporting our performance against our Measures of Success at a community level as well as at a company level. This will enable customers within their communities to judge how well we are meeting their expectations and hold us to account.

In addition to these ODIs we will publish a number of key performance indicators to give our customers a broader perspective of our performance. Section 3 contains our full Outcome Measurement Framework.

Our customer engagement will continue through AMP6

We have learned that customers tend to take water supply for granted. When prompted, our customers are very keen and interested to know more. We are conscious of the need to provide assurance to stakeholders and regulators that we are open and transparent with our customers about our performance and that in carrying out our operations we are mindful of our customers' views.

In early 2014 we will publish our plans for a continuing programme of customer and stakeholder engagement for our eight communities. We will involve our customers and stakeholders in developing a structured communication and engagement plan that will stimulate dialogue on local issues. It will keep them informed about our progress against our agreed performance commitments and provide opportunities to challenge us and our performance.

1.7 We have a risk-based approach to managing our wholesale assets to deliver the Outcomes

With population in our area estimated to grow by 0.7% per annum, our customers' **demand for water will exceed the supplies** available. We need to implement measures to ensure our customers "have enough water" whilst ensuring we comply with our new obligation to leave more water in the environment.

We will act responsibly and meet our statutory obligations

We face the following new obligations:

- Water Framework Directive: we must reduce our abstraction by 42Ml/d (nearly 5% of our current resource base) before 2019/20 at specific sites and a further 28Ml/d over AMP7
- Water quality: a more stringent lead compliance standard takes effect from December 2013

We will ensure our customers have enough water

We will:

- Reduce leakage from our network by 27Ml/d, a 14% reduction by 2019/20
- Encourage our customers to value the water they use by implementing a comprehensive programme to save water supported by universal metering in the most water stressed communities. We will meter 280,000 properties by 2019/20 and give customers a choice to keep paying non-metered charges for up to two years

We will continue to provide high quality drinking water

We will:

- Pursue catchment management and new treatment processes at two of our major water treatment works to overcome deterioration in the quality of raw water from pesticides
- Implement a risk based programme of lead communication pipes replacement

Our assets are stable in terms of serviceability. We have significantly improved our asset management capability over the last 5 years – our Asset Management Assessment score is now 4.1.

We have implemented considerable efficiencies during AMP5 that are incorporated into our Totex (total operating and capital maintenance expenditure) projections, which include a further £95m or 10.4% of efficiencies across our Wholesale base Totex of £[X]m.

We will maintain flexibility to accommodate reductions that may be confirmed as part of the River Basin Management Plans during AMP6 as part of a Change Protocol.

Why our Wholesale Plan is the right plan to deliver the four customer Outcomes

The four Outcomes arising from customer feedback are at the core of our Wholesale Plan. Our Outcomes are inter-related and our plans to achieve them must be integrated and balanced. We have considered several alternative options which might deliver our four Outcomes. For each alternative, we considered the degree to which it was socially, economically and environmentally sustainable. We have developed this particular Plan by learning from our experience, evaluating these other options, and considering customer and stakeholder feedback.

Our Wholesale Plan also takes full account of the extensive engagement process we have had with customers and other stakeholders to develop our Water Resources Management Plan (WRMP) and our Strategic Direction Statement (SDS).

We are pleased to have agreed sustainability reductions with the Environment Agency. But given that we operate in an area of serious water stress and that we expect significant population growth within our supply area, the probability of a long-term supply deficit will increase if we do not take action now.

Our customers understand our critical long-term challenge of ensuring future customers have an adequate supply of high quality water, whilst leaving more water in the environment. Our customers would like to share in the responsibility of meeting this challenge by conserving water.

Our customers generally favoured demand-side rather than supply-side measures, with leakage reduction being a key priority for them. Our Wholesale investment strategy therefore requires a number of changes from the one used for PR09. We need to:

- Invest to manage water demand as we operate in areas of serious water stress and have also agreed sustainability reductions with the Environment Agency
- Invest in a lead quality programme to reduce the risk to vulnerable groups. We also need to invest in a pesticide quality programme
- Increase trunk main investment and reduce mains renewals expenditure
- Invest in critical storage for improved resilience
- Invest in ecosystem improvement, the National Environment Programme and the prevention of raw water deterioration
- Complete the AMP5/6 SEMD investment programme to maintain asset security

We have developed an optimised and efficient investment programme building on our experience of AMP5

The total cost of our Wholesale capital investment programme for AMP6 is £505m, compared to the £454m we will spend in AMP5.

In developing our capital investment programme, we started by embedding the learning from meeting the challenges set at AMP5. We then evaluated the long-term resilience of assets using the Defra model combined by our asset optimisation tool, (PIONEER) to produce a long-term asset strategy. This was balanced against affordability, cost benefit and the Environment Agency's mandated sustainability reductions.

We are assured our forecast

ts are cost-efficient. For example, we have reduced the unit cost of pipe renewal by 40% in AMP5 by totally re-examining our procurement and design processes. This ongoing efficiency is reflected in AMP6 costs.

A breakdown of our investment programme by customer Outcome is shown below.

Outcome	Capex (£m)	%
Making sure our customers have enough water, whilst leaving more water in the environment		
Supplying high quality water you can trust		
Minimising disruption to you and your community		
Providing a value for money service		
Total		

Table 1-C: Outcome Investment Programme Proposed for AMP6

We have a community-focused investment programme

For our Business Plan and Water Resources Management Plan we carefully considered how best to provide service to our customers. We have developed a Community Delivery Model which recognises that customers have a keen interest for information relating to the water used in their local community. We have seen this in our East and Southeast regions. So we have built our plans on eight communities – in effect eight smaller water supply operators with our investment reflecting the needs of the customers and the environment in those areas. This is shown in the chart below.

[Redacted]

Figure 1-4:PR14 AMP6 Capex by Community, £millions

Customer Outcome 1: Making sure our customers have enough water, whilst leaving more water in the environment

Challenging sustainability reductions agreed with the Environment Agency

A primary challenge for our business is adapting to the reduction in abstraction from a number of our groundwater sources, in order to improve flows and habitats in local chalk streams. We have agreed sustainability reductions of **42Ml/d** with the Environment Agency in our Central region in AMP6 and a further **28 Ml/d** in AMP7. Taken together these sustainability reductions are equivalent to nearly 8% of our current resource base.

We are keen to progress with these and have proposed the use of the transition investment mechanism to allow us to bring forward the required investment to deliver the abstraction reductions (including watercourse morphology changes) in the Rivers Beane and Mimram catchments.

We have agreed with the Environment Agency where sustainability reductions are to be cost-beneficially undertaken. Our Plan remains compliant with the latest information from the Environment Agency (NEP3, August 2013). The investment has been designed to avoid any deterioration in either the water environment or drinking water supplies. In our Plan, investment is included under our National Environment Programme to implement both the confirmed sustainability reductions and continue the investigation of the impact of our abstractions on the environment. We will investigate the potential for further sustainability reductions from sources classified as 'uncertain' and we have included provision through our Plan change protocol for the implementation of these measures, should they be confirmed to us as an Outcome of the forthcoming River Basin Management Plans.

Replacing reductions in supply with improvements in saving water through leakage and metering

Our Plan is substantially different from the previous PR09 plan as we no longer have a surplus of water resources. This means we have to replace lost resources by reducing leakage and encouraging our customers to be part of the solution by working with them to reduce consumption through metering and water efficiency. This builds upon the successful universal metering programme we have undertaken in our Dour community, which is our Southeast region, since 2006.

Incorporating customers' views is fundamental to both our Business Plan and the WRMP so we have consulted in a variety of ways during the spring and summer of 2013. We are pleased with the support customers have given to our plans, especially with respect to the fairness of our proposed metering programme. Universal metering will incorporate automated meter reading (AMR) systems. This will facilitate working with customers to conserve water by providing usage information monthly. We will retrofit existing meters with AMR where possible to improve the coverage of this available technology. This will allow existing customers to benefit from monthly usage information and start to improve how we manage demand in our network, especially supply pipe leakage.

Improving supply through sharing and trading

We have worked closely with other water companies in the southeast of England to explore the potential for sharing regional water resources in the interests of resilience, sustainability, cost and energy efficiency. This work has been valuable and we have used the outcomes of collective modelling work to inform our Plan. We have worked closely with neighbouring companies to ensure our respective Plans agree with regard to water trading. We have imported and exported bulk supplies of water for many years and this inter-dependency will continue. Trading water between companies, however, does not address the fundamental issue that we need to waste less water from our assets and engage with our customers to use less.

Investment required to achieve this customer Outcome

Of the total £[X]m capital investment that will be spent meeting this customer Outcome, the universal metering programme and meter optant programmes will comprise [X]% of the capital investment total.

Making sure our customers have enough water, whilst leaving more water in the environment	PR14 £m	% of total
Capital maintenance:		
Communication and stop tap replacement		

Meter replacement		
Other		
Capital enhancement:		
Leakage reduction		
Groundwater schemes		
Developer Services		
Business Planning WRMP		
Metering		
Sustainability reductions		
National Environment Programme		
Opex		
Total investment		

Table1-D: Investment required for our 'Making sure our customers have enough water, whilst leaving more water in the environment' Outcome

Customer Outcome 2: Supplying high quality water you can trust

Customers' expectations are clear

Through our research, our customers expressed a strong desire that we maintain our performance in delivering consistently high quality wholesome drinking water.

Our investment strategy matches customer expectations

We will meet the expectations by investing in:

- Water quality improvements for lead and pesticides
- National Environment Programme actions and investigations
- Biodiversity improvements
- Resilience, including security measures under SEMD and new compartments for two reservoirs

We will maintain the already high standards of water quality and meet future regulations by constructing treatment barriers for pesticides and start a targeted lead pipe replacement programme. We will maintain and improve the quality of our surface and groundwater sources by enhancing our catchment management programme. Through our NEP and biodiversity programmes we will continue to monitor the health of our rivers and natural water environment and investigate the impact of proposed sustainability reductions. Whilst we will not be implementing any proposals for softening water we will continue to research the financial and environmental implications.

We submitted detailed water quality proposals to the Drinking Water Inspectorate in July 2013 and we received Final Letters of Support from them on 14 and 28 October 2013. The Drinking Water Inspectorate Statement for Affinity Water's Customer Challenge Group Report to Ofwat states '*The Company is to be commended on the quality of the submissions to the Inspectorate, which complied with our PR14 guidance*'.

The NEP forms part of our WRMP which has been revised following consultation with our stakeholders and has been submitted to Defra and the Environment Agency as part of our Statement of Response on 15 November 2013.

Investment required to achieve this customer Outcome

Of the total £[X]m capital investment that will be spent meeting this customer Outcome, [X]% will comprise production maintenance whilst [X]% and [X]% respectively will be spent on our quality programmes relating to lead and pesticides.

Supplying high quality water you can trust	PR14 £m	% of total
Capital maintenance:		
Production asset maintenance		
Other		
Capital enhancement:		
Biodiversity		
NEP investigation, mitigation and catchment work		
Water Quality - Lead		
Water Quality – Pesticides		
Opex		
Total investment		

Table1-E: Investment required for our 'Supplying high quality water you can trust' customer Outcome

Customer Outcome 3: Minimising disruption to you and your community

Customer expectations are clear

Few customers experience disruption. Those that do are concerned when prolonged disruptions occur and are keen to be kept informed of progress of work. Customers want to see no deterioration in overall service and show less support for reducing the number of service interruptions.

Our investment strategy matches customer expectations

Our customers say that longer disruption periods affect them most. The longer disruptions tend to occur as a result of a trunk mains burst. We will prioritise investment on reducing the risk of failure of our large pipes. Maintaining serviceability of these assets requires planned maintenance and replacement. We will increase the renewal of trunk mains and implement 'hot spot' mitigation. We plan to renew 82km of trunk mains and 482km of distribution mains, with significant investment in our Stort, Wey and Dour communities.

Bursts occur on our network because of ageing infrastructure, ground movement and on occasion due to our operations. We have continued to develop our burst model techniques so we can accurately forecast the number of bursts. During AMP5 we have seen the variability in these forecasts stabilise. The amount we are investing in our network during 2010-2015 has enabled us to reduce significantly the amount of mains replacement required in 2015-2020 without compromising our aim of keeping our network performance stable. Linked to this is an element of preventative maintenance on the network, better control through network telemetry and improved network management (our 'calmer network' project).

Our treatment works now operate at a high level of resilience and we supply very high quality water, demonstrated by our high level of compliance. Our risk-based models indicate that we can reduce expenditure in this area, which we will do, but we have also introduced more targeted risk-based maintenance using new processes and in-house developed software that

will allow us to monitor and manage this expenditure reduction. The use of improved asset management processes (validated by third-party AMA assessment) will allow reduced capital maintenance expenditure supported by improved monitoring and control to manage risk.

Our improved risk management capabilities give us more flexibility within our communities

Our 'Service Delivery Map' is a central element in reducing the uncertainty in service levels to our customers. It is a framework for integrated planning of the water source-to-customer-tap journey in each community. The Service Delivery Map's main objective is to optimise cost between Capex and Opex taking into account operational productivity, risk and environmental performance. Importantly it is applied at the community level to engage and involve the local community in decisions.

Investment required to achieve this customer Outcome

Of the total £[X]m capital investment that will be spent meeting this customer Outcome [X]% will be spent on mains renewals, [X]% on trunk mains, with [X]% allocated to production maintenance.

Minimising disruption to you and your community	PR14 £m	% of total
Capital maintenance:		
Mains renewals		
Trunk mains		
Production asset maintenance		
IT maintenance and enhancement		
Other		
Capital enhancement:		
Resilience – Reservoirs		
Resilience – Security (SEMD)		
Opex:		
Total investment		

Table1-F: Investment required for our 'Minimising Disruption' customer Outcome

We have optimised our maintenance expenditure

Within the investment programmes for achieving our customer Outcomes of 'Supplying high quality water you can trust', and 'Minimising disruption to you and your community' is our planned expenditure on capital maintenance. The chart below indicates how this money will be spent, showing that [X]% of the investment will relate to water treatment, [X]% will relate to pumping assets, whilst [X]% of non-infrastructure investment will relate to our service reservoirs and towers to maintain the quality of water storage.

[Redacted]

Figure 1-5: MNI base capital maintenance, £million

Customer Outcome 4: Providing a value for money service

A robust costing process from a Totex and customer value perspective

We welcome Ofwat's move to looking at total expenditure and we have undertaken a detailed process to assure ourselves that our plans for Capex and Opex do not contain a bias towards the former. As a result of this assurance process we made a number of changes to decrease the whole life cost of some solutions and enhance value for money for customers. Examples of this include:

- Rather than implement nitrate removal at one water treatment works, we have increased the transfer of water from Anglian Water
- Catchment management - aimed at reducing the source of pollution instead of treatment options, except where these are essential
- Calmer networks - better management in network operating performance rather than increase replacement of mains
- Trunk mains - monitor operating performance rather than primarily relying on replacement
- More efficient use of pumping using network telemetry and source delivery maps rather than investing in more assets

Uncompromising targets for capital efficiency

We have been careful to ensure that our cost projections reflect accurate best estimates for efficient costs. We have derived the capital cost projections using a variety of sources. This includes direct application of unit costs based on in-house cost models, modified unit cost approaches (e.g. the Scheme Builder tool in PIONEER), and bespoke costings based on Well Defined Needs for scheme designs or other sources (e.g. Environment Agency costings for morphological NEP schemes).

We have applied a [X]% contingency to our cost estimates only in the cases of IT maintenance, communication pipe (CP) replacement for lead compliance and the cost to build a powdered activated carbon (PAC) treatment process at one of the water treatment works in the Hatfield group of sources. The total value of this Capex is £[X]m. We included this contingency due to the uncertain nature of the scope (for CP replacement), the novel nature of the PAC solution and the delivery of the IT solution.

Effective risk management is integral to our Plan

Our Plan will result in substantial changes to our operations and carries additional risk. We have a formal approach to the assessment of risk and criticality and this is implemented at asset level to build our understanding of asset care and capital maintenance needs. We apply the insights on risk arising from using our risk management framework and process to maintenance regimes at all scales from individual assets to capital programmes.

To apply our risk analysis, we have broken down the outcomes into service measures that link our proposals to customer requirements and allow us and others to monitor and assess our performance. An example of such a service measure is the number of properties experiencing a supply interruption of more than 12 hours.

We have valued the measures in monetary terms so that optimisation and cost-benefit analysis can be integrated into our investment planning. The measures are related to how we choose to

manage our assets and the associated asset risks (interventions) and can be constrained to achieve particular outcomes for an optimised plan.

We have set ourselves challenging Opex and Capex efficiency targets to limit the impact on customers' bills

In terms of our base Totex, operating and capital maintenance costs, we have reduced our AMP6 planned expenditure compared to the determination at PR09 by £[X]m, [X]%. We have applied 1.5% annual efficiencies to our operating costs and specific efficiencies, described above, as part of the optimisation of the expenditure programme which in total amount to £[X]m of capital maintenance efficiencies. We have been very thorough at ensuring we have not incorrectly allocated maintenance expenditure as enhancement. Atkins, our Reporter, has assured our entire capital investment programme for our Wholesale activities.

Totex is £[X]m higher than at PR09 due to an increase in enhancement expenditure of £[X]m

£m	PR09	PR14	Change	Change (%)
Operating costs, including adjustments above RPI, excl. new Opex				
Capital maintenance infrastructure				
Capital maintenance non-infrastructure				
Base Totex				
New Opex due to capital schemes and growth				
Capital enhancement expenditure				
Totex, including enhancement				

Table1-G: Comparison of Wholesale Totex: AMP5 vs. AMP6
Note: This Opex excludes £[X]m of pension deficit repair costs

1.8 Our plans for a better retail service for residential customers

Since 2010, we have consistently improved our service performance to our customers. For example, we now have the second lowest number of complaints for any water company. In 2012/13, we registered approximately 15 complaints per 10,000 customer connections, as compared to an industry average of 49. Our performance as measured by Ofwat's SIM score has also improved.

We have made it quicker and easier for our customers to do business with us 24/7 through our digital channels. We are proud that our social media channels were benchmarked sixth in the UK in 2013 for service responsiveness and customer experience

At the same time, we have demonstrated we can deliver value for money by reducing our retail costs. We have driven down our operational costs (excluding debt and debt management) by around 20% from £[X]m in 2010/11 to £[X]m in 2012/13.

About 48% of our 1.34 million household customers are on a metered supply.

Customer Outcome 1 – Making sure our customers have enough water, whilst leaving more water in the environment

We will help and encourage our customers to value water and use it more responsibly and efficiently. We will emphasis a smooth and customer-focused implementation of our universal metering and water efficiency programme. We will be installing around 280,000 meters over the five year period.

While most customers support metering as the fairest way to pay for the water used, some are reluctant to have a meter installed because they are concerned that it will increase their bills.

We will provide support to our customers to help them understand the need to install meters, the process of installation, how to use less water and, ultimately, help them with an easy transition to a new measured tariff.

We will be offering those customers who we meter, as part of the universal metering programme up to two years to choose to switch to a metered tariff. During this period, we will support them with targeted water efficiency advice, provide accurate information on their water use every month and comparator bills every six months. Finally, we will provide enhanced support for customers that need it, such as customers with high consumption and those who are financially more vulnerable.

We will learn from the experience of other companies and recommendations from CCWater in implementing our universal metering and water efficiency programme. We are confident we can achieve a smooth and customer focused implementation. This is why we are committing to there being no reduction in our SIM performance over the period.

Customer Outcome 2 – Supplying high quality water you can trust

Customer research told us that maintaining the high quality of our drinking water is a high priority and that customers want more information about our water quality challenges. Our retail service will improve the information we make available to customers about the quality of the water we supply. We will make it more accessible, reporting at a community level and we will provide clear and timely information to those customers who will be affected by our programme of replacing lead communication pipes. We will also improve the information we provide about water hardness.

Customer Outcome 3: Minimising disruption to you and your community

Customers may experience disruption when there is a planned or unplanned event which interrupts the continuity of our service.

We will provide information to customers about planned works using their preferred means of communication in sufficient time to allow them to make alternative arrangements. Where there is a service interruption, we will keep our customers informed of our timescales for restoring service through direct communication and use of digital media and our website.

We are also committing to pay enhanced compensation of £50 to our household customers (rather than the lower amounts set out in regulations) should we fail to meet our Guaranteed Standards of Service for planned and unplanned service interruptions.

Customer Outcome 4: Providing a value for money service

We have a comprehensive approach to providing value for money and affordable bills:

- We are committing to challenging efficiency savings to keep our costs flat over the period. We face a number of cost pressures from inflation, growth in our customer base, and moving customers on to metered tariffs. However, we will make efficiencies to offset these pressures
- We are offering innovative tariffs and flexible payment arrangements
- We will offer continued support for vulnerable customers by maintaining our WaterSure tariff, which caps charges at the level of the average metered bill. We will also introduce a new social tariff from 1 April 2014 to target support at those who need it most
- We will enable our customers to be part of the solution in saving water and help them manage their bills by allowing them to monitor their water use, offering advice on how to use water wisely and giving them additional encouragement to use less water

We do not expect bad debt costs to increase in real terms in AMP6 from the current 2013/14 level, despite the challenging economic environment for many of our customers. We expect to be able to control our bad debt costs better in the future by:

- Implementing a new debt management system in 2014 which will allow us to tailor our debt collection activities to the specific risk profiles of our customers
- Sharing with credit reference agencies information about the credit history of those customers who are able, but choose not, to pay their bills or reach a satisfactory payment arrangement with us
- Fully deploying our Social Tariff by 2017
- Implementing the industry-wide landlord portal to improve billing and recovery of revenue from transient customers within the tenant population

Providing value for money is more than just keeping costs to a minimum. It is also about enhancing our value proposition in the eyes of our customers. We will continue to increase our responsiveness to our customers' needs and expectations. Our approach includes:

- Our new Customer Charter
- Our 'Voice of the Customer' programme
- Web chat
- Social media
- Traditional contact channels

We will also make it easier and quicker for our customers to manage their accounts by improving the transparency of our billing and expanding the ways in which they can manage their accounts through digital solutions.

We have reduced our base Totex by [X]%, or £[X]m for the above activities compared to our Determination at PR09. However, this will be partially offset by new operating costs of £[X]m due to the growth in the number of metered customers and connected properties.

£m	PR09	PR14	Change	Change (%)
Operating costs, including adjustments above RPI, excl new Opex				

Capital maintenance non-infrastructure				
Base Totex				
New Opex due to capital schemes and growth				
Totex, including enhancement				

Table 1-H: Comparison of Retail Household Totex: AMP5 vs. AMP6

1.9 Our plan brings more choice and better service to our retail business customers

We currently provide Retail water services to around 70,000 business customers (our references to business customers include commercial, not-for-profit and public sector organisations). Over 60,000 customers are small and medium sized enterprises (SMEs) with consumption of water under 1Ml per year. These customers are often single-site businesses. Many have needs and consumption patterns similar to our residential customers.

We also serve over 1,500 customers with high usage of water of more than 5Ml per year. At this end of the business market, our customers operate in a wide range of business sectors, some with multiple sites. High usage customers are not all alike: for example, our multi-site public sector customers have very different needs from high usage single-site commercial customers.

We have deepened our understanding of the needs of both our high usage and lower usage business customers by undertaking detailed market surveys. The conclusions from these have shaped our Business Plan.

All our business customers will have a choice of retail water supplier when the market opens to competition in 2017. We are determined to ensure that both our existing and potential new customers value our water service so that we become their supplier of choice. We believe that increased competition will drive us to create innovative service offers, and we are keen to explore their value for all our retail customers, including residential customers where we will remain the sole supplier.

We will publish measures on how we are performing so that customers can hold us to account. This is why we are developing a business Service Incentive Mechanism (SIM) measure tailored to our business customers. We will also use focus groups of commercial users to create dialogue about how we can better serve their needs.

Since 2010, we have built a record of strong performance for our business customers, improving our Net Promoter Score (a qualitative measure of customer loyalty) from 58 in 2012/13 to 64 in 2013/14 to date. We receive very few complaints from business customers. In 2012/13 we received 113 written complaints, and they have decreased by 29% in 2013/14 to date.

Ultimately in a fully competitive market our success will be measured by how well we retain and serve existing and new customers. We intend to develop and publish a Business Customer Charter. This will set out what we will do for our customers, how we intend to build trust and loyalty with them, and how we will hold ourselves accountable to them.

Customer Outcome 1: Making sure our customers have enough water, whilst leaving more water in the environment

We will support our business customers to use less water so that we can achieve demand reductions of 1.5Ml/d through water efficiency by 2020. We will achieve this by:

- Improving the accuracy of the information we are able to provide business customers about their use of water. We aim to reduce the proportion of bills based on estimated meter readings to 1% for SMEs and below 1% for customers on Mid User and Large User tariffs
- Providing a wide range of water saving and recycling products and services. These services will range from simple tips and advice and free water efficient devices for SME customers to water audits for business customers with higher volume usage

Customer Outcome 2: Supplying high quality water you can trust

Our business relationship team will act as a first point of contact for business customers with issues or questions about the quality of their water supply. Our business customers need to trust the quality of the water which they receive and require us to maintain the high quality of the water supply at their premises. For some business sectors, for example, in food and drink processing, the quality of water is absolutely critical, because water is a vital element in their business processes.

We fully support the industry-wide initiative to set up the new WaterSafe assurance scheme. We will promote the use by our customers of WaterSafe accredited contractors and approved equipment under the new scheme.

Customer Outcome 3: Minimising disruption to you and your community

Our business relationship team will provide appropriate and timely information to our business customers regarding planned or unplanned operational work that will affect their water supply. We will use integrated and complementary customer contact channels to keep them informed and updated. These include: proactive contact of our largest customers by their account managers, telephony call-back, web chat, web video, on-line knowledge management system, mobile app, social channels and our website.

Customer Outcome 4: Providing a value for money service

Our business customers are keen that we provide high levels of service and that we are “easy to do business with”. However, they are also keen to ensure that costs are kept affordable to manage their own input costs.

Our business relationship team will provide a one-stop-shop for the quick and easy resolution of issues for our larger business customers. This team combines all contact with the customer from key account managers through to advisors and provides an operational interface for customers.

Our multi-channel approach will increasingly become the natural way of doing business. We will work as a business to ensure that all of our modes of engagement are integrated, complementary and focused on delivering excellent customer service.

We will use customer feedback to consider the introduction of innovative tariffs for all our customers, including SMEs, and will make sure they are aware of what is available to them. We want our tariff structure to be clear and logical to our customers. We will create and publish

default tariffs reflecting our current tariff structure, in accordance with Ofwat's guidelines for market opening.

Managing the end-to-end process for Developer Services

Developers seeking new connections and water mains infrastructure will have access to a single point of contact to manage the end to end process, regardless of whether the developer selects Affinity Water or a self-lay contractor to provide the new infrastructure. These retail activities will complement our wholesale activities for the provision of infrastructure for new developments so that developers experience a service which meets legal requirements and industry-wide key performance indicators.

Preparing for retail competition

We will be ready for retail market implementation for non-household customers in 2017. We have studied the introduction of competition in the Scottish water sector and in other utility markets to inform our planning for the post 2017 market and ensure market readiness for both our retail and wholesale activities. We will support the Open Water programme and the development of the market codes that will be needed to operate the market. We will develop our systems and processes to support the establishment of the market.

We will ensure that non-household customers can efficiently choose an alternative water supplier. We will implement governance arrangements for our wholesale and retail activities to provide assurance we are providing a non-discriminatory level of service to retailers, whether incumbent or otherwise. We will develop robust service level agreements between the providers of wholesale and retail activities within our business.

We are assured that our governance and controls to support the current water supply licensing regime are effective. They were successfully tested earlier this year with the switch by one of our business customers to a retail water supply licensee.

1.10 Governance and Assurance

Our Board has provided strong leadership to the development of this Business Plan and has robustly challenged plans by management and commissioned extensive internal and external independent assurance to ensure it could be confident this is a high quality plan that is based on customer priorities, sound evidence, and accurate data. Our Board has also ensured that our Business Plan has fully taken into account the views of the CCG.

Our Board has been keen to ensure that our Plan is based on cost efficient projections. We have set challenging operational cost efficiencies of 1.5% per year for wholesale activities and no inflation has been assumed for retail activities. The Board has also carefully scrutinised the capital expenditure plan to ensure that it is cost efficient and represents value for money for our customers.

Details of the assurance process the Board has undertaken are set out in the Board Assurance Statement and in Section 8.

1.11 Financial Summary

Our customers' average bill will fall in real terms over the next 5 years

Our customers' average bill will reduce from **£165.22** in 2014-15 to **£159.52** in 2019-20 before inflation. This is equivalent to a reduction of 3.5% overall or a reduction of 0.7% per year.

Our customers' average water bill, £ per year

2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
165.22	164.07	162.92	161.78	160.66	159.52

Table 1-I: Our customers' average water bill, £ per year

The wholesale and retail revenue requirements for calculating customers' bills

Across the three elements we project our annual revenue requirement to fall from £[X]m in 2015/16 to £[X]m in 2019/20. The reason why average bills fall at a faster rate is due to the increase in the number of customers we expect to serve over the period.

The tables below show our total revenue requirements for our wholesale and retail price controls.

Wholesale price control (£m)

Our total annual wholesale revenue requirement will fall from £[X]m to £[X]m over the period. Our wholesale total revenue requirement over the period is £[X]m. This excludes revenue from 'other income' outside the price controls for our customers.

Our wholesale water revenue requirement (as stated above) does not include connection and infrastructure charges or other income (bulk supplies, chargeable services, aerial rentals, hydrants and rental income). The table below shows the wholesale revenue including this other income.

2015-16	2016-17	2017-18	2018-19	2019-20

Table 1-J: Wholesale price control, including connection and infrastructure charges (£m)

Retail Household price control (£m)

Our total revenue requirement for our household retail price control over the period is £[X]m. The revenue falls over the period. The net effect of our proposed efficiencies outweighs the increases caused by new household growth and the increase in the number of measured customers.

2015/16	2016/17	2017/18	2018/19	2019/20

Table 1-K: Retail household price control (£m)

Retail non-household price control (£m)

Our total revenue requirement for the non-household retail price control over the period is £[X]m.

2015/16	2016/17	2017/18	2018/19	2019/20

Table 1-L: Retail non-household price control (£m)

Financial choices

We have selected a WACC of 4.3%, a 'pay as you go ratio' which varies between 67% and 91% during the period, a run-down rate on our legacy RCV of 4% p.a. and depreciation of new RCV over 25 years. This overall package delivers a plan which meets the following objectives:

- It provides value for money for our customers with the company operating close to the efficiency frontier
- It strikes a fair inter-generational balance, with the costs falling generally on those generations which benefit from the expenditure
- It reflects our customers' spending preferences
- It is financeable and provides a fair return to the providers of our finance

This Plan is financeable and it has been tested against a variety of scenarios.

For the overall business we have made £106m or 10% of base expenditure efficiencies in our PR14 plan, compared to the base Totex funded at PR09. The capital enhancement expenditure required in this plan is £[X]m, which is £[X]m more than at PR09, reflecting the water resource and water quality challenges we are facing.

£m	PR09	PR14	Change	Change (%)
Operating costs, including adjustments above RPI, excl. new Opex				
Capital maintenance infrastructure				
Capital maintenance non-infrastructure				
Base total expenditure				
New Opex due to capital schemes and growth				
Capital enhancement expenditure				
Base total expenditure, including enhancement				

Table 1-M: Comparison of Totex: AMP5 vs. AMP6

Retail Household expenditure

We have sought to absorb the upward cost pressures from general inflation by finding various efficiencies in the retail area of our business. As a result the average cost to serve is held constant over the period for measured and unmeasured customers.

The following table is in nominal prices, assuming RPI to be 2.75% per annum.

£m (nominal prices)	2015-16	2016-17	2017-18	2018-19	2019-20
Total cost					
Cost per unmeasured customer					
Cost per measured customer					

Table1-N: Retail Household Cost to Serve

Retail Non-household expenditure

We are not anticipating any increase in the number of non-household customers that we serve during AMP6. Cost pressures will be mitigated by efficiency improvements in much the same way as for the household retail plan.

£m (nominal prices)	2015-16	2016-17	2017-18	2018-19	2019-20
Total cost					
Cost per customer					

Table1-O: Retail Non-Household Cost to Serve

1.12 A fair balance between risk and reward

Weighted average cost of capital

It is important that we provide a fair return to our capital providers for investments they have made and investments we will make to underpin this plan. We have assumed for our wholesale business a minimum weighted average cost of capital (WACC) of 4.3%. This is a substantial reduction from the WACC used in setting the current price control (5.3%) and reflects the benefits of raising finance in the current lower interest rate environment and separating out the risk margin for our retail businesses.

We established a range for the WACC using Frontier Economics. We then took several factors into account and decided to adopt a WACC at the bottom of the range Frontier Economics had established. One of the factors we took into account was the impact on the affordability of our bills. We also took into account that the 'upside' that Ofwat has committed to providing companies with 'enhanced status' business plans. We consider that a WACC of this level is well supported by evidence and regulatory precedent.

Ofwat has used 4.1% as an example for the industry WACC based on current analyst expectations. We have evaluated the risks that we bear as a water only company with a higher operating gearing and smaller size to the larger water and sewerage companies (WaSCs). It has previously been well recognised by Ofwat and the Competition Commission that these risks should command a premium on the WACC used for the WaSCs.

Our ODIs are also heavily skewed to the downside: the maximum penalty we could face is 3.96% of our revenue, whilst the maximum reward for outperformance is just 1.56%. As a water only company we have a smaller ratio of total revenue to our Regulatory Capital Value: hence we are accepting more financial risk in our ODIs than would be the case for larger WaSCs.

The evidence suggests that this premium for Affinity Water is around 40bps. On this basis, our WACC of 4.3% is equivalent to us sharing half of the Affinity Water premium with our customers, provided Ofwat do not set an industry WACC less than 4.1%, which we note is a figure Ofwat has highlighted in its presentations as being based on market expectations.

Our central forecast of RoRE using a notional capital structure is 6.62%.

2 Understanding our Customers' Expectations

- We have undertaken an **extensive customer engagement and research** programme to ensure our Business Plan robustly reflects evidence of our customers' expectations, including future customers and the environment
- The findings of our research shows that our customers have four key expectations of us in providing their water service:
  1. **Making sure our customers have enough water, whilst leaving more water in the environment**
  2. **Supplying high quality water you can trust**
  3. **Minimising disruption to you and your community**
  4. **Providing a value for money service**
- Our customer research and engagement has been independently challenged and assured.
- We have examined carefully the **affordability** of our water bills
- Our proposals have extremely high levels of customer support and acceptability
- We believe extensive customer engagement should be 'business as usual', not just for regulatory price reviews

2.1 Our vision is driven by a passion to understand our customers and the communities we serve

Our vision is to be the UK's leading community-focused water company, leading in the eyes of our customers and the communities we serve. By improving our understanding of our customers' expectations, both as individuals and communities, we will provide sustainable and resilient water services which our communities value.

The area we supply is made up of eight water resources zones. We know the operating conditions in each zone and our customers' preferences are likely to be unique to their community. Each community is named after a local river in that area of supply to strengthen the link between the service we provide to our customers and the local environment from which we source water. Our plan respects and takes full account of the environmental conditions within these communities.

Figure 2-1: The communities we serve

Developing collaborative relationships with our customers and stakeholders is central to achieving our vision. Our Business Plan is focused on meeting our customers' expectations for their water service and delivering sustainable benefits for the communities we serve and the local water environment.

To achieve this we have carried out an extensive and robust programme of engagement with our customers, stakeholders and regulators to inform the development of our Business Plan. We have created an independent Customer Challenge Group to advise and challenge us during the process of developing our plan to ensure that we have incorporated the findings from our engagement appropriately in placing the views of our customers at the heart of our Plan.

2.2 Our approach to engagement

We believe that robust customer engagement is an important part of business as usual. We are privileged to be the supplier of water to our customers and communities and to be the steward of this precious natural resource for future generations. With this privilege comes a deep responsibility to engage with our customers and communities to understand their expectations.

We have significantly improved our approach to customer engagement demonstrating our commitment to put customers at the heart of our Plan. While we have substantially increased the range and number of our engagement activities we have focused on ensuring that all the work we have undertaken has been part of an extensive coherent and robust programme of engagement. Our approach has been fully integrated so that we have been able to engage and

consult with our customers on our Water Resources Management Plan and Business Plan. This has been essential to support the emphasis we are giving to the establishment of our customer Outcomes.

Our engagement programme has been developed and implemented with independent expert specialists and managed and co-ordinated by our own internal team including a dedicated Stakeholder Engagement Manager. All of our engagement activity is underpinned by principles of good practice following our Customer and Stakeholder Engagement Strategy (see Appendix 2 Supporting document A1).

We are very confident that our Business Plan meets our customers' expectations and achieves the right balance between the service our customers receive, the price they will pay and the pace at which we invest. This is a critical part of our approach to developing a high quality plan.

2.2.1 Key characteristics of our approach

Customer and Stakeholder Engagement Strategy

Ofwat, the Consumer Council for Water and the Environment Agency have published guiding principles and key considerations to take into account when developing an engagement programme. We have embedded this guidance in our Customer and Stakeholder Engagement Strategy (see Appendix 2 Supporting document A1). Our strategy defines the approach we have taken. Each activity and piece of research fits into an overall coherent and integrated programme.

Independent expert advice

Our customer engagement programme was developed taking advice from independent expert advisers to ensure our strategy is built on the principles of good practice and takes into account best practice on working with different customer and stakeholder groups. We engaged with our customers on a broad range of investment choices communicating with them using a wide range of media and research techniques. We have used the findings of our research to inform the development of both our Business Plan and our Water Resources Management Plan.

Integrating day-to-day customer feedback and contact

Through our 'Voice of the Customer' and 'Talkback' programmes we proactively engage with our customers on a daily basis. We systematically seek out their views and their opinions about our service. This means we get feedback from 1,000 customers every week – allowing us to hear the views from over 50,000 different customers every year.

In addition, we work in our communities on an on-going basis where we receive direct feedback from current and future customers through our award winning education centre for school children or through our Health and Local Authority Liaison Group.

Representative engagement across our communities and customers

Our engagement activity has been planned to take equal account of the communities we serve, particularly ensuring full representation of our three regions – Central, East and Southeast – which prior to unification in 2012 were served by separate businesses. Wherever possible we planned activities to take place across all eight of the communities we serve.

Quotas, against national Socio-Economic Groups (SEG) were established for each community and were used when we were looking for representative samples. Where we planned a series

of activities, such as focus groups, we asked recruiters to target specific SEGs, so that we could gain feedback from people in similar circumstances and compare it to others.

2.2.2 Customer engagement activity summary

We carried out 18 separate pieces of research specifically targeting our household and non-household customers. In total **we have received feedback from over 12,500 customers through a wide range of research methods.**

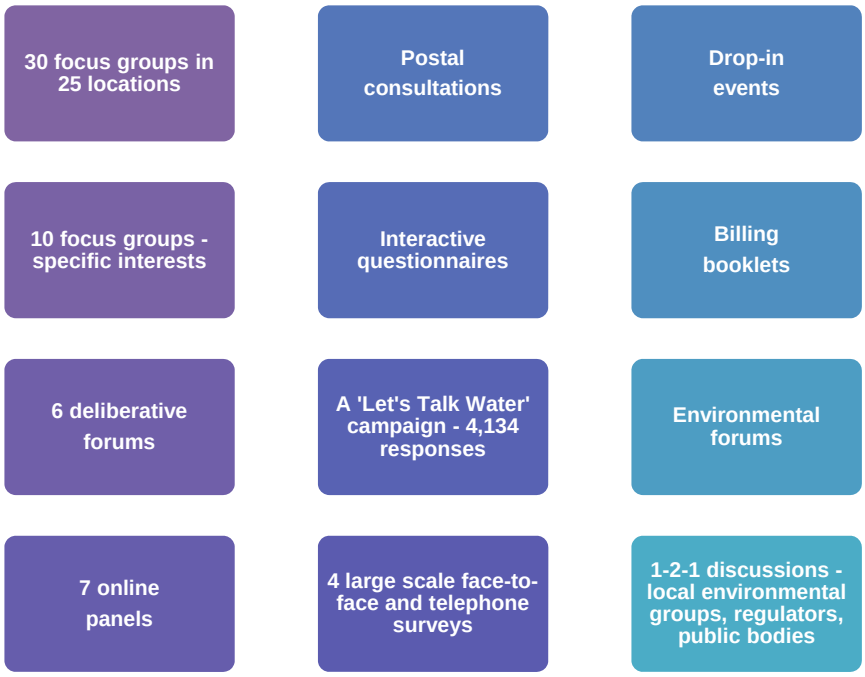


Figure 2-2: Our engagement programme

We weighted our findings according to the methodology of research and used them to **influence, inform and provide insight** for the development of our Business Plan (See Appendix 2 Section A3 for PR14 Procedure: Evaluation of findings).

Determining how much engagement was sufficient was based on answering two questions. Firstly, demonstrating that we had provided enough opportunity for people to get involved and secondly, more importantly, that we had continued until we had evidence to show that no new subjects or concerns were emerging. Regardless of the approach we took to engagement - qualitative, quantitative or self-selecting, for example - customers told us they were concerned about the same things. We feel confident that more than 12,500 responses are sufficient to allow us to identify the most important issues for our customers.

2.3 The Customer Challenge Group

In June 2012, our independent non-executive directors appointed an independent Chair for our Customer Challenge Group. The Chair, Robin Dahlberg, oversaw the appointment of members from our three supply regions and a broad cross-section of our customer base, as well as representatives from the Drinking Water Inspectorate, the Consumer Council for Water, Natural England and the Environment Agency.

The role of the CCG, under the clear and pragmatic direction of its Chair, has been to operate independently to:

- Review our customer engagement process and the evidence emerging from it to ensure customers' views have been considered in the development of our Business Plan
- Challenge the phasing, scope and scale of work required to deliver the necessary Outcomes
- Advise Ofwat on the effectiveness of our engagement and on our customers' acceptability, or otherwise, of our Business Plan and the associated impact on bills

The CCG was formed in July 2012, since when it has met regularly. The CCG has been kept updated on our engagement plans for customer and stakeholder consultation, as well as the results of consultation. Wherever possible, members of the CCG were invited to attend engagement events and to comment on material as it was being developed. CCG members attended 13 planned engagement sessions with customers. The CCG has monitored closely our engagement activities with our customers and stakeholders and how we have interpreted the findings in developing our Business Plan.

The CCG has produced a report of its findings, which has been submitted to Ofwat just ahead of our Business Plan.

For more information on our CCG, including its terms of reference, membership and minutes of its meetings, please see Appendix 2 Section E.

2.4 Our phased programme of customer engagement

In developing our Business Plan, our programme of customer engagement has been carried out in three phases, as illustrated on the following page:

- Phase One: Listening to, and learning from our customers
- Phase Two: Testing and valuing key themes and propositions with our customers
- Phase Three: Revisiting and assuring key themes and propositions with our customers

At the end of each phase of engagement we summarised our findings into customer themes following a detailed process of evaluation and validation. This iterative process allowed us to take multiple stakeholders and customer views and synthesise them into a set of findings that could be used to influence, inform and provide insight for the development of our final Business Plan.

Phase One: Listening to, and learning from our customers

Our early engagement activities focused on identifying issues, attitudes and opinions from our customers, specifically around their expectations of us in providing their water service. This phase consisted, predominantly, of qualitative research to help us to establish a baseline of our customers' opinions and attitudes. Research was conducted using independently-run workshops, face-to-face focus groups and online panels, members of which reflect the socio-economic groups in the communities we serve.

Phase 1 activities included the establishment of a baseline view from customers and stakeholders, a formal consultation, setting up our online panel as well as ongoing and regular customer engagement from day to day activities.

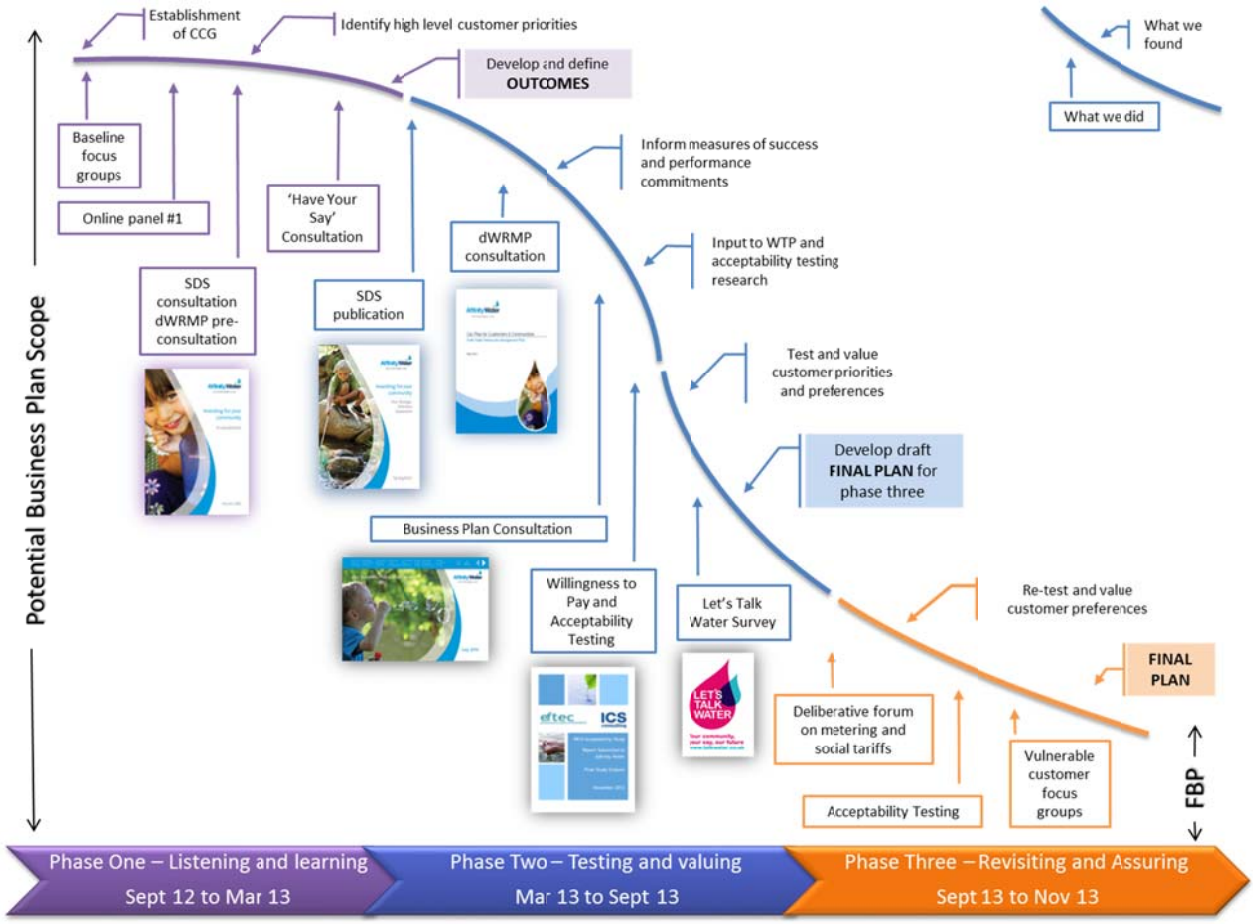


Figure 2-3: Our phased programme of customer engagement

2.4.1.1 Baseline customer focus groups

In summer 2012, we carried out ten focus groups in five locations with 77 customers across the communities we serve to understand our household customers' views on their water service and Affinity Water. Customers participating in the focus groups told us that they judge their water service on:

- The quality of the water
- The consistency of the water supply
- The price they pay
- The level of customer service they receive
- How we maintain the water infrastructure

The findings were consistent with customer feedback from our 'Voice of the Customer' and 'Talkback' programmes. There were no new issues. The results supported the development of our four customer Outcomes.

See Appendix 2 Section B3 for full details of this research.

2.4.1.2 *Consultation on our draft Strategic Direction Statement and pre-consultation on our draft Water Resources Management Plan*

In autumn 2012, we published *'Investing for your community'* a consultation on our draft Strategic Direction Statement and pre-consultation on our draft Water Resources Management Plan (dWRMP). We used this integrated approach to reflect the importance of water resources to our long-term planning and regulatory business planning.

As part of this consultation, we provided our initial views on the Outcomes our customers expect us to meet in providing their water service – **our customers' expectations**. These were developed based upon the themes presented within our 2009 Strategic Direction Statements[1], updated to be appropriate and relevant for our unified business and developed in light of the findings from the baseline customer focus groups.

We asked our customers whether the expectations we set out represented what they expect from us in providing their water service. The expectations were:

- Making sure our customers have enough water
- Supplying high quality water you can trust
- Minimising disruption in your community
- Providing a value for money service

The vast majority of respondents supported these expectations as presented. Some who attended the environmental stakeholder event, wanted the environment to be more explicit stated.

There were a number of consistent themes which customers shared in response to this consultation. These are summarised in Section 2.4.1.4 – customer themes.

See Appendix 2 Section B4 for full details of this research, including the range of engagement activities we carried out.

2.4.1.3 *Online panel*

To provide statistically robust quantitative data on specific issues, we set up an online panel. We used a specialist online panel provider, Research Now, to help us get the best insight into our customers' views. Our online panel is one element of our quantitative research. The panel was recruited on a company specific basis, with quotas to ensure that the membership reflects the socio-economic make-up of the communities we serve, as classified by Mosaic, and that the findings were statistically significant.

We had 448 customers respond to our first online survey designed to test customers' opinions and attitudes towards Affinity Water, water use and the service we provide. Customers valued the essential service we provide with most feeling that they were efficient in their water use

[1] At this time Affinity Water consisted of three separate companies; Veolia Water Central, Veolia Water East and Veolia Water Southeast

while the majority had never had contact with us apart from receiving their bill. The findings were remarkably consistent with earlier customer feedback

See Appendix 2 Section C2 for full details of this research.

2.4.1.4 Phase One customer themes

The findings from the different activities were shared across the business and with our CCG. We conducted a validation workshop, which was attended by CCG members to confirm the findings and suggest 'next steps' for research (see Appendix 2 Section B5).

The Phase One engagement results have been summarised into customer themes by each expectation in the table below.

Making sure our customers have enough water	Supplying high quality water you can trust
• Leakage was seen by customers as simple to rectify and important to conserve water. • Education on water efficiency and the environment was seen as important. • Customers wanted support to improve their water efficiency by providing water saving devices. • There was support for metering, for a variety of reasons, but primarily because most individuals felt it was the fairest way to pay.	• Customers were generally happy with the quality of their water. • Water hardness, chlorine and cloudiness were the biggest concerns. • There was little understanding of water treatment processes.
Minimising disruption to you and your community	**Providing a value for money service**
• Only a minority of customers had experienced disruption to their water supply. • Good communication seen as most important factor in acceptability of supply interruptions. • Customers saw maintenance as a necessity.	• Customers found it difficult to determine value for money due to a lack of choice and/or comparators. • Where participants were able to determine value for money they often felt they were receiving good value for money.

Table 2-A: Phase 1 customer engagement results

See Appendix 2 Section B for further information on Phase One research, a summary Phase One report is contained within Appendix 3 Section B6.

The themes emerging from Phase One informed the way we presented the proposed customer expectations in the dWRMP and Strategic Direction Statement and were the starting point for Phase Two of our customer engagement.

Qualitative research conducted during this phase helped us to establish a baseline of our customers' opinions and attitudes, specifically around their expectations for their water service. These customer themes were then used to define the activities to be tested in the next stage.

2.4.2 Phase Two: Testing and valuing key themes and propositions with our customers

Phase Two focused on testing what value our customers place on the service they receive and their priorities. We carried much more quantitative research to gain robust evidence of how acceptable our proposed Business Plan and service levels were to our customers.

During this phase, from June to September 2013, we engaged with a wide range of stakeholders in developing our plans including household and commercial customers, environmental groups, community groups, local authorities and regulators. Our engagement took a number of forms including statutory and non-statutory consultations and quantitative and qualitative research.

2.4.2.1 Consultations

Draft Water Resources Management Plan Consultation

In May 2013, we published our draft WRMP for statutory consultation. We sought our customers and stakeholders' views on our plan for balancing supply and demand in the next 25 years.

The consultation was available online and promoted to key stakeholders. We received 81 responses to our consultation that helped us shape our final WRMP and the elements of our Business Plan focusing on our management and use of water resources.

Key themes arising from our draft WRMP consultation responses were:

- Support to reduce leakage plus a preference for a greater response to leakage management in times of water scarcity
- Support to reduce abstraction where environmental damage is occurring, and acceptance for the impact on bills
- Calls for commitments to fully assess the natural environment, built environment, heritage and archaeological aspects prior to the delivery of the projects in our Preferred Plan
- A desire to see Affinity Water take a greater role in championing the protection of rare chalk stream habitats across the southeast of England
- Support to deliver a programme of universal metering, coupled with water efficiency awareness, to help customers reduce their consumption and save money

Our WRMP consultation was also supported by online panels to gain quantitative information from a representative sample of our customers (Section 2.4.2.2 – Online panels). See Appendix 2 Section B for further information on dWRMP consultation and formal Statement of Response.

Draft Business Plan Consultation

In July 2013, we published our draft Business Plan consultation which set out our 'Proposed Plan' for 2015 to 2020. Our Proposed Plan was based upon operational requirements and customer feedback received in Phase One. The purpose of the consultation was to gain our customers' insight into

our proposals for 2015 to 2020 and to ascertain if the proposals met their expectations.

Alongside our Proposed Plan, we presented a slower and a faster pace of future investment to help customers to determine if our Proposed Plan achieved the right balance between the service they would receive, the price they would pay and the pace of the investment. We also presented our proposed measures of success for meeting our customers' expectations and indicative performance commitments. This is summarised in the table below on the following page.

The consultation was open to all customers online and was presented to key stakeholders for discussion. We also tested our proposals at four full-day deliberative workshops throughout July. The deliberative forum results showed:

- The Proposed Plan was clearly favoured by customers
- There was strong support for the faster paced plan in terms of leakage reduction
- Findings on leakage reduction and metering mirrored quantitative research - but some concerns were raised around universal metering and those less able to pay their bills.

See Appendix 2 Section C7 for full details of this research.

Our draft Business Plan consultation was used to inform the quantitative research we carried out through our acceptability testing Phase One research (see Section 2.4.2.2 – Acceptability Testing – Stage One).

2.4.2.2 Quantitative research

We carried out two types of quantitative research for our Business Plan in addition to online panel surveys. We conducted willingness to pay research and acceptability testing. This research was conducted on our behalf by two leading specialists, ICS Consulting and Eftec, using representative samples of our customers based upon location, gender, age, and socio-economic grouping.

Willingness to pay

In early 2013 we commissioned ICS Consulting and Eftec to conduct research with our customers to understand their service priorities and the value they put on different attributes of their water service. These willingness to pay values were then used in our investment optimisation tool (PIONEER) to develop the most cost-beneficial Business Plan.

Business Plan Consultation – July to August 2013		Slower pace investment		Our Proposed Plan		Faster pace investment	
2014/2015 average household bill	-	-	£165	-	£165	-	£165
Making sure our customers have enough water	Leakage	No change	+ £0.45	10% reduction	+ £4.60	15% reduction	+ £6.40
	Average water use	4% improvement		7% reduction		10% reduction	
	Water available for use	4.5% improvement		6% improvement		7.8% improvement	
Supplying high quality water you can trust	Compliance with water quality standards	No change	+ £2.00	No change	+ £2.00	No change	+ £2.00
Minimising disruption to you and your community	Unplanned interruptions to supply over 12 hours	No change	+ 0.55	5% reduction	+ £2.60	10% reduction	+ £10.80
	Number of burst mains	No change		15% reduction		20% reduction	
	Affected customers not notified of planned interruptions	No change		15% reduction		25% reduction	
	Planned work taking longer to complete than notified	No change		10% reduction		25% reduction	
Providing a value for money service	Community survey	-	- £5.50	-	- £5.50	-	- £5.50
2019/2020 average estimated household bill	-	-	£162.50	-	£168.70	-	£178.70
Estimated change in average household bill by 2019/2020	-	-	- £2.50	-	+ £3.70	-	+ £13.70

Table 2-B: Draft Business Plan consultation

Our willingness to pay (WTP) research was carried out in two stages. The first stage asked questions around a broad range of service attributes, whilst the second stage focused on specific water resource attributes. Both stages applied 'choice experiment' methods. These are questionnaire-based stated preference techniques that involve asking survey respondents to complete choice tasks that gather information on their preferences for different aspects (attributes) relating to water services.

Our survey method followed industry best practice[2] for undertaking stated preference research. We used focus groups and cognitive testing with customers to develop the initial survey instrument. This was then pilot tested and discussed with the CCG. The survey was refined at this stage before we conducted the main study fieldwork. At all stages the research was peer reviewed by Professor Ken Willis, University of Newcastle upon Tyne.

Stage one – general water service

Before conducting the stated preference 'choice experiment' we asked customers about the areas of service they felt might be in need of improvement and how they feel about current and future bills. Hardness of tap water and leakage were identified as the main areas for improvement while almost all customers felt content with their current level of bill with **only 2-4 percent of customers saying they would prefer lower bills with lower service.**

Stage one tested ten attributes of service around tap water quality, the reliability of water supply, the environment and availability of water. The study fieldwork was conducted with 1,207 household customers using a combination of face to face (CAPI) interviews and an online

[2] As set out in the following publications:
'Review of Cost-Benefit Analysis and Benefits Valuation', UKWIR, 2010
'Practitioners Guide', UKWIR, 2010 and
'Carrying Out Willingness to Pay Surveys', UKWIR, 2011

survey. In addition, 508 business customers were recruited by telephone and completed an online survey.

Tap water quality	Reliability of water supply	Environment & availability
Discolouration	Persistent low pressure	Water use restrictions
Taste & smell	Unexpected interruptions to supply	Low water levels and flow in rivers
Hardness	Burst mains flooding to properties	Leakage
Boil water notices and other notices		

Table 2-C: Willingness to pay stage one attributes of service

We presented choices to our customers about different levels of service and bills covering the 10 attributes of service. We found **strong evidence that our customers value more highly avoiding service reductions compared to their value for service improvements. Customers gave the highest value to leakage reduction and water quality** and gave higher values to avoiding deterioration than making improvements to current levels of service.

See Appendix 2 Section C6.1 for full details of this research.

Stage two – water resources specific

The purpose of our stage two water resources study was to expand the customer valuation evidence to support the development of our WRMP.

The stage two survey established relative values for different water resource planning options over and above the environmental and social costs that are assessed separately in our WRMP. Valuations for different options were used to inform the prioritisation of demand management and resource development options in our WRMP. The survey was also used to estimate relative values for different water use restrictions and durations.

Overall, **customers prefer demand management options** over supply side options. Online **respondents favoured fixing leaks and encouraging more customer water efficiency and metering.** Interviewed customers also favoured more customer water efficiency.

See Appendix 2 Section C6.2 for full details of this research.

Acceptability testing

Our customer acceptability testing complemented our willingness to pay studies. It enabled us to understand the potential combinations of bill-service scenarios which are acceptable to our customers. The acceptability testing recognised that there is a constraint on what customers can afford and what is acceptable in terms of bill impact. We conducted our acceptability testing in two stages.

Stage one

During the first stage we tested our Proposed Plan and two alternative plans, with slower and faster paces of investment, to understand the range of customer bill level acceptability. We used the same plans as set out in our Business Plan consultation. The purpose was to understand what is (most) acceptable to customers.

We conducted 1,200 surveys with customers, 400 per plan using a mix of survey modes. Household customers were surveyed using a mix of face to face interviews and online surveys, and business customers were surveyed entirely online. Quotas were set for each customer type to ensure that they were representative of our wider customer base.

More than nine out of ten (91%) customers surveyed found our Proposed Plan to be acceptable or very acceptable clearly demonstrating very strong support for a plan that increases bills by around £3.70 or less, before inflation. Acceptability was found to fall as sewerage charges increased. A modest increase in the yearly amount i.e. £10 is enough to have a noticeable impact on acceptability.

Socio-economic grouping of our household customers has a marginal impact on the level of bill acceptability of our plan. Acceptability for the AB band is higher than the other bands at 92%. The three lower bands have the same level of acceptability (C1 - 85%, C2 - 83%, DE - 84%). Acceptability of our plan remains high across all socio-economic groups.

Improving leakage rates and ensuring water quality meets standards had the highest levels of support in our acceptability testing which is exactly what customers told us through the stated preference research.

See Appendix 2 Section C8 for full details of this research.

Stage two

Stage two of our acceptability testing research was conducted as part of Phase Three of our engagement programme (see Section 2.4.3.1).

Online panels

We tested a number of specific issues with our customers where further qualitative research was necessary to improve our understanding of customer priorities. The issues included our draft WRMP, environmental measures, leakage, resilience and social tariffs. We also used our online panel to answer our 'Let's Talk Water' survey.

We received a wealth of feedback from our customers from these online panels. These have been captured within our customer themes' for Phase Two (See Section 2.4.2.4). For full details of the findings of the research see Appendix 2 Section C2.

2.4.2.3 Qualitative research

Let's Talk Water

In June 2013 we launched our 'Let's Talk Water' campaign to gain a clearer understanding of our customers' views on water use, metering, leakage, the environment and the water service which they receive. The

campaign also sought to improve our customers' understanding of our water resources challenges and to promote water efficiency.

We encouraged customers to share their views using advertisements online, on the radio and through local community centres. The high profile campaign included road shows in 12 busy shopping areas across the communities we serve.

Over 4,000 customers completed our surveys including 507 through our online panel. We ran the same survey with our customer-profiled online panel during the consultation period to validate the findings of the self-selecting audience which completed the web/paper versions.

Over **three quarters** of those who gave feedback **want us to prioritise leakage,** with more than 90% feeling that using water carefully was very important. The **vast majority of customers feel that meters are the fairest way to charge,** but around half of all customers were not willing to have a meter fitted. Around two thirds of customers felt that they pay about the right amount for the water and service they receive while it was not clear that customers would support paying more today to avoid increases in bill for future generations.

See Appendix 2 Supporting document C3 and C4 for full details of this research.

2.4.2.4 Phase Two customer themes

During our engagement we received over 12,500 responses from customers about their views on our Proposed Plan for 2015 to 2020. Customer acceptability for our Proposed Plan was significant, with 91% of those surveyed viewing it as acceptable or very acceptable. Nevertheless, we were able to further develop our draft Business Plan to reflect the priorities which our customers shared with us.

A consistent message from customers and stakeholders was that we should present the environment more explicitly within our customers' expectations. To reflect this, **we modified the 'Making sure our customers have enough water' expectation by adding 'whilst leaving more water in the environment'.** We also strengthened our commitments to deliver benefits for the environment by including additional performance measures.

The key feedback for each customer expectation, set out in the table below, followed a process of validation where findings were reviewed and corroborated. The findings were then developed into a series of themes that helped to influence, inform and provide insight to the development of a draft Final Plan.

See Appendix 2 Section C1 for a summary of Phase Two research.

Reflecting these priorities resulted in a downward adjustment to the investment programme we developed for our Proposed Plan. Key changes were to reduce the level of capital maintenance expenditure consistent with adopting a slower pace of investment for 'minimise disruption' and rebalancing investment between metering and leakage as part of the 'enough water' customer expectation.

This revised plan, reflecting customer priorities, was our draft Final Plan. This process of interpreting our findings from customer feedback and developing our plan was shared with our CCG to allow them to challenge the conclusions we had drawn. The draft Final Plan was the basis for our final quantitative research in Phase Three of our engagement programme. The overall impact of the changes we made, in terms of average household bill, was to reduce the five year bill increase to £1.80, before inflation.

Making sure our customers have enough water, whilst leaving more water in the environment	Supplying high quality water you can trust
• Our customers tend to take water for granted and rarely think about what is involved in the delivery of water services. • While some customers support metering, some are reluctant to have one installed. • Our customers want us to prioritise reducing the level of leakage and ensure water is not wasted. • Most customers think they are water efficient and would like to know how their consumption compares with others and how they can save water. • Our customers support proposals to leave more water in the environment and make water resources more resilient but are reluctant to pay for improved environmental protection.	• Our customers see provision of high quality water as a core duty for us and want investment maintained to protect and maintain high quality water to their tap. • Whilst the hardness of tap water is a concern of customers there is no statistical evidence that they are willing to pay to improve their service.
Minimising disruption to you and your community	**Providing a value for money service**
• Our customers want to see current standards of service maintained, however they do not particularly value service improvement. • Only a small proportion of customers experience disruptions. Those that do are very concerned when prolonged disruptions occur.	• Our customers are content with the bills they currently pay although they are concerned about any significant rise in their bill. • Many customers are concerned that some people struggle to pay their bills and want them helped; however, views on social tariffs are mixed. • Our customers support investment in assets to maintain the levels of service they want. • Our customers want more information about the challenges faced, and the actions and expenditure undertaken. • Customers are generally positive about our staff and rarely have cause for concern about customer service.

Table 2-E: Customer expectations for the Business Plan

2.4.3 Phase Three engagement: revisiting and assuring

Phase Three of our engagement, during October and November 2013, provided an opportunity to revisit areas that may have been under represented and to assure that the changes which we made to our Business Plan, following the second phase of engagement, were acceptable to our customers.

2.4.3.1 Quantitative research

We carried out a second stage of acceptability testing during the second half of October and early November 2013. This research was also conducted by ICS Consulting and Eftec on our behalf, using representative samples of our customers based upon location, gender, age, and socio-economic grouping.

Acceptability testing – stage two

We conducted 1,231 surveys with customers using a mix of survey modes. Overall, there was little difference in bill acceptability between the first stage and second stage studies. Our second

stage study, based upon our draft Final Plan showed that **around nine out of ten (87%) customers** surveyed found our plan to be acceptable or very acceptable compared to **91% of customers** surveyed in the first stage study based upon our Proposed Plan.

Both studies demonstrate very strong support for a plan that increases bills by around £1.80 or less, before inflation. The second study gives **very consistent results with stage one. Leakage reduction and water quality standards continue to have the highest levels of support** in acceptability testing. As illustrated in the chart below, respondents typically gave higher levels of support to specific proposed changes to service levels compared to stage one and the proposed level of efficiency savings play a key role in ensuring the overall acceptability of the Plan. **Customer satisfaction is currently very high with 94% of customers stating they are either 'very satisfied' or 'fairly satisfied' with the service they receive.**

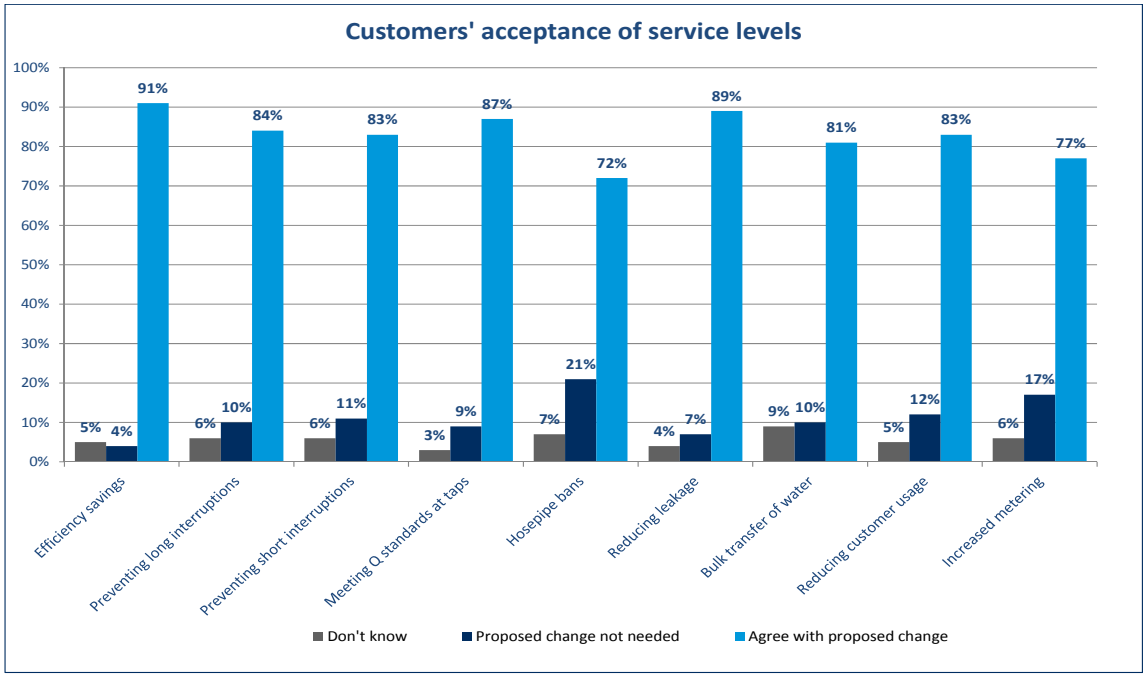


Figure 2-4: Customer acceptance of proposed service levels

See Appendix 2 Supporting document D4 for full details of this research.

2.4.3.2 Qualitative research

We carried out targeted qualitative research to address under-represented areas highlighted during the evaluation of Phase Two findings. In conjunction with our CCG we agreed to carry out further research into universal metering, social tariffs and more general engagement with vulnerable customer groups.

Deliberative forums

In October 2013, we commissioned engagement specialists OPM to carry out two deliberative forums with our customers to discuss our plans for universal metering and a social tariff. These events were specifically carried out in response to earlier customer feedback on our metering proposals.

Metering

Most **participants were supportive of the principle of metering** and felt it was fair to pay for the water they used. Some people felt that being on a meter would make people more aware of their water usage and make efforts to be more efficient. Cost was the main factor which influenced how customers felt about metering, with those people who felt that their bill would go down tending to be in favour of metering.

The **proactive communication of information about metering was seen as important** to increase customers' awareness and understanding about the benefits of metering. Customers also viewed providing water saving advice and devices as very important.

Social tariff

There were mixed views about our proposed social tariff. While some participants said they would be happy to contribute £1.30 towards it, others were very strongly against it. There were discussions about the 'deserving' and 'undeserving'. In contrast people were much more strongly in favour of a potential volumetric tariff that would include the removal of the standing charge.

Focus groups for vulnerable customers

We commissioned OPM to undertake two pieces of work to arrange six focus groups each involving approximately ten vulnerable customers. The purpose of the focus groups was to gain insight into vulnerable customers' views on our future plans.

To achieve a diverse mix of customers, quotas for the groups were set based upon social group, household composition, housing tenure, age, attitudes towards money and employment status. Each focus group lasted approximately two hours. Additionally OPM undertook telephone interviews with a number of agencies representing vulnerable customer groups.

The majority of participants felt that the proposed increase in price (£1.80, before inflation) was reasonable especially when compared with the price rises of energy companies. Across all groups, the awareness of our WaterSure tariff was very low and our customers requested that we promote any additional support which we offer for vulnerable customers. Our customers highlighted the importance of making bills accessible, informative and impactful.

Our customers wanted more support with achieving greater water efficiency, and wanted it to be easier to have a water meter installed and to understand the impact this could have on their water bills.

2.4.3.3 Phase Three customer themes

The findings from Phase Three reflect the targeted approach taken to revisit specific areas with our customers. In terms of acceptability, we found very high levels of support for our draft Final Plan with 87% of customers surveyed finding a £1.80 bill increase, before inflation, either acceptable or very acceptable.

Most participants in the deliberative forums were supportive of the principle of metering and felt it was fair to pay for the water they used. In addition, proactive communication of information about metering was seen as important to increase customers' awareness and understanding about the benefits of metering.

The majority of participants that took part in the focus groups for vulnerable customers felt that the proposed increase in price (£1.80) was reasonable. It is clear that awareness of our WaterSure tariff can be improved and customers highlighted the importance of making bills accessible and informative.

Outcome	Measure of Success	Phase one engagement	Our Proposed Plan	Phase two engagement	draft Final Plan	Phase three engagement	Our Business Plan
Making sure our customers have enough water, whilst leaving more water in the environment	Leakage		10% reduction		10% reduction		14% reduction
	Average water use		7% reduction		7% reduction		7% reduction
	Water Available for Use		6% improvement		6% improvement		4% improvement
	Abstraction Incentive Mechanism (AIM)		-		-		New commitment
	Sustainable abstraction reduction		-		-		42 Ml/d reduction
Supplying high quality water you can trust	Compliance with water quality standards (mean zonal compliance)		Current level		Current level		Current level
	Customer contacts for discolouration		-		-		Current level
Minimising disruption to you and your community	Unplanned interruptions to supply over 12 hours		5% reduction		Current level		Current level
	Number of burst mains		15% reduction		Current level		Current level
	Affected customers not notified of planned maintenance		15% reduction		Current level		Current level
	Planned works taking longer to complete than notified		10% reduction		Current level		Current level
Providing a value for money service	Service Incentive Mechanism (SIM)		-		-		Current level
	Value for Money Survey		New commitment		New commitment		New commitment

Table 2-F: Development of Business Plan in response to customer feedback

See Appendix 2 Supporting document D1 for a summary of Phase Three research.

2.5 How we responded to the views of our customers

2.5.1 Key messages from our customers

- Customer satisfaction is currently very high with 94% of customers stating they are either ‘very satisfied’ or ‘fairly satisfied’ with the service they receive. Very few of the customers who have contacted Affinity Water have not had a good experience
- Customers tend to take water for granted and rarely think about what is involved in the delivery of water services. The typical customer contacts Affinity Water infrequently. For the great majority, the only interactions are when they use water and pay their bills
- The most important priorities for our customers are ensuring we maintain high water quality, reducing the amount of leakage and making cost efficiencies
- Customers view the water quality as good and the supply as consistent. Their satisfaction is almost entirely based on the tangible services they receive. Quality of service is judged on the hardness, cleanliness, taste and consistency of water supply. Water hardness is an important issue for many customers but it is not clear that customers are willing to pay for improvements
- Customers support our proposals to reduce our abstraction and leave more water in the environment and make water resources more resilient but are somewhat reluctant to pay for improved environmental protection. Overall, customers prefer demand management

options over supply side options and favour leakage reduction and encouraging more customer water efficiency and metering

- Our customers realise that both their water company and the communities they live in are accountable for using water efficiently and responsibly. Many of our customers want to know more about how they can become more water-efficient and reduce their demand
- Improving our level of service, in terms of interruptions and frequency of bursts, is not supported by customers if this requires an increase in maintenance investment and pressure on tariffs. Customers would not accept deterioration in service even if this reduced bills
- Customers, particularly vulnerable customers, are concerned about possible future price rises, and many are concerned that some people struggle to pay their bills and need help
- Our four customer expectations were robustly validated by our research, though customers wanted a greater focus on the environment while recognising this needed to be managed though the day to day operations of the business
- Overall, 87% or nine out of ten customers supported our draft Final Plan during our second phase of acceptability research carried out in early November. Customer support for higher bills was weaker when they were asked additionally to consider increases in sewerage charges (for which Affinity Water is not responsible but which are collected with our water bills for most of our customers)
- Customers expect us to provide value for money to limit the impact on their bills of cost pressures we face

2.5.2 Key changes to our plan as a result of customer engagement

- We will maintain high standards of water quality as a major priority
- We will achieve or exceed our proposed leakage reductions as a major priority
- We will adopt a slower pace of investment for maintenance investment than we initially planned. However, we will maintain current service levels for interruptions to supply of over twelve hours' duration and for the number of burst mains
- We will adopt a slower pace of investment for our universal metering and water efficiency programme. We will implement it in four communities with the greatest water stress, down from five, with a further two to be metered during the five years after 2020
- We will ensure that vulnerable customers are supported by appropriate tariffs, including our Social Tariff
- We will provide good quality information to our customers on water efficiency to enable them to save water and save money
- We will continue to find and make cost efficiencies throughout our business to secure value for money and help us reduce prices in real terms for a further five year period
- We will look at how we can advise our customers on dealing with hard water
- We will place a greater incentive on achieving or exceeding proposed leakage reductions as, overall, leakage is a key recurring issue for our customers.

2.6 Continuing to engage with the communities we serve

Our vision is to be the UK's leading community-focused water company. We are committed to being fair, open and transparent in our interactions with customers, local organisations and stakeholders.

We have undertaken a wide range of customer consultation and engagement activities to help shape our plan. The increased scope and scale of this engagement represents a step change in our approach and this has helped us gain a stronger appreciation of our customers' priorities. This has influenced our investment choices and helped drive the focus of our performance commitments in the period 2015 to 2020.

We have learned that whilst customers tend to take water for granted and rarely think about what is involved in the delivery of their water service, when prompted, they are very keen and interested to know more. Our Plan integrates communication and engagement and provides opportunities to share information and discuss concerns.

We will build on the learning from the enhanced programme for PR14 and make use of the information gathered. We will continue to identify concerns and corroborate information from multiple sources before planning changes. The CCG has proved an excellent way to hold us to account on our customer engagement. We will maintain this level of accountability on a long-term basis through the creation of an independent stakeholder assurance panel.

2.6.1 Stakeholder assurance panel

The panel will be developed to reflect the diverse needs and priorities of customers and stakeholders in each of our eight communities. Its terms of reference and remit will be defined in line with feedback from our consultation and stakeholder engagement programme. We anticipate that the stakeholder assurance panel will meet at least twice a year to review our performance against our stated commitments and support our continued community engagement.

2.6.2 Continued community engagement

In early 2014 we will publish plans for our continued stakeholder communication and engagement for our eight communities, supported by our stakeholder assurance panel. We will involve our customers and stakeholders to develop a structured engagement plan that will reflect local issues. We believe this approach demonstrates that we want to take account of the needs of our local communities. Our communication and engagement plan will adhere to the following principles:

- Being open and transparent with our customers and stakeholders demonstrated though our corporate governance and accountability reporting
- Promoting genuine dialogue with stakeholders
- Keeping customers and stakeholders informed about our progress against our agreed performance commitments
- Providing a forum in which customers and stakeholders can challenge us if we are failing to meet their expectations
- Providing assurance to national stakeholders and regulators that we are open and transparent with our customers about our performance and that in carrying out our operations we are mindful of our customers' views
- Ensuring that as we enter into each asset management period we do so with a clear understanding of our customers' priorities

We envisage that our engagement and communication programme will include the following elements:

- Annual stakeholder forum event in each of our eight communities, led by our Executive Team
- Regular e-bulletin sent to community leaders and elected representatives. This will provide an update on community issues and review our performance against our agreed commitments
- Engaging customers and stakeholders via social media channels which they are already using every day, to build relationships, proactively inform and offer real-time issue resolution
- Online Forum, providing customers/stakeholders with an easy way to engage with us publicly and share their views via channels that they are familiar with
- Engagement with interest groups which reflect the needs of specific customer or community groups - for example vulnerable customers, wildlife trusts, local river groups

Following consultation with communities we will publish our final engagement plans on our website to ensure we are accountable and transparent in our dealings with them.

2.7 Understanding the affordability of our water bills

We recognise that some of our customers are feeling the financial 'pinch' and so we are keen to do our bit to ease cost of living pressures. We commissioned Deloitte UK to carry out a review of our household bills as a proportion of real gross disposable household income, both historically and for AMP6 forecast bills.

Our current average household water bill for 2012/13 is £173, around £9 below the average of £182. Our average bill will increase more slowly than the rate of inflation (measured by RPI) over the period 2010-2015. We now plan for a further five years of real price reductions over the period 2015-2020.

We recognise that customer bills rising by less than inflation (measured by RPI or CPI) is not the only measure of affordability. We have assessed how our average bill over time measures as a share of our customers' real household disposable income. Unlike the water sector as a whole, our average bill has remained fairly stable as a share of our customers' disposable income since the downturn started in 2009. Moreover, based on forecasts for disposable income from the Office of Budget Responsibility (OBR) and our planned real price reductions over 2015-2020, our average bill will become even more affordable over the next five years as it is forecast to reduce as a share of our customers' disposable income from 0.38% to 0.29% (from 2009/10 to 2019/20).

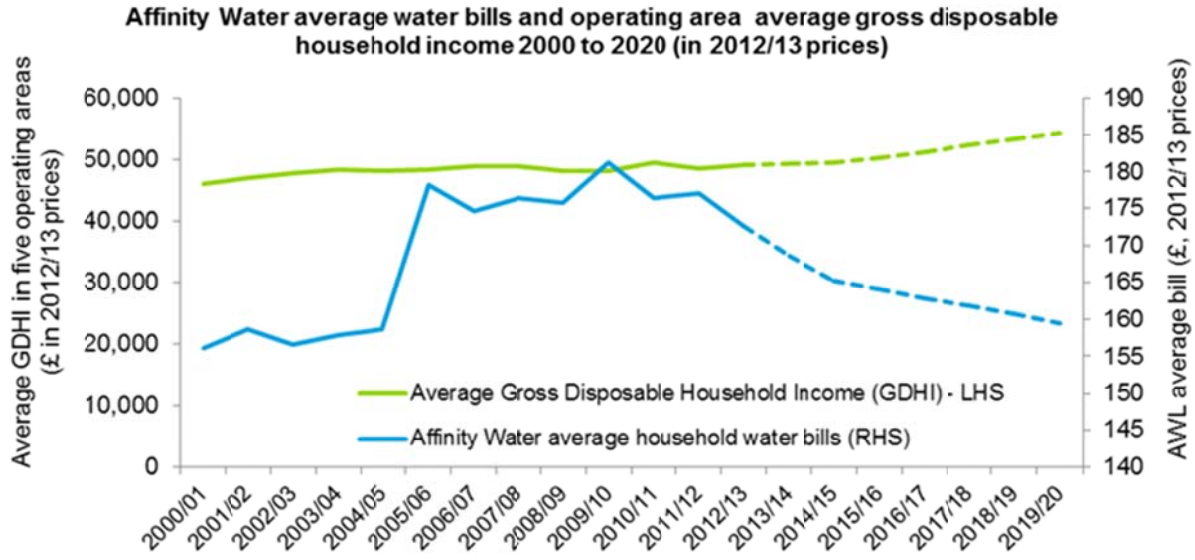


Figure 2-5: Comparison of average water bills and real GDHI
Source: Deloitte

As well as looking at affordability on average within our supply areas we have also been very mindful to look at the situation for less affluent customers. We do not have precise data for household incomes and their consumption so we approximated the situation using data from the IFS, OBR and ONS (making assumptions for average bills and household size).

We have taken into account the affordability of our plans for customers and are proposing that average household bills will reduce by 0.7% in real terms per annum between 2015 and 2020, while gross disposable household income of customers in the regions we serve over the same period is projected to rise on average by around 1.4% per annum. Unlike for the water sector as a whole, our bills have not risen as a share of our customers' disposable incomes since the downturn in 2009.

Given the reductions in our average bill, and increases expected in disposable incomes over the period, we estimate that by 2020 the number of households spending more than 2% of their disposable income on our water bill will fall by around 14% to around 50,000 to 60,000. On the same basis, by 2020 those households spending more than 2.5% of their disposable income on our bill will fall by around 9% to around 37,000-45,000. These figures assume these households pay an average household bill.

In practice the improvement in the affordability of our bills at the lower end of the income range is likely to be greater than these numbers suggest given our plans to launch in 2014 our Social Tariff. We expect to attract up to 30,000 households to our Social Tariff demonstrating our commitment to implement a genuine tool to tackle affordability for those who struggle with their bill.

2.7.1 Understanding total water and sewerage bills

We currently bill most customers on behalf of wastewater providers. Thames Water provides wastewater services to 80% of our water customers. We know from our research that many of our customers regard their water and sewerage services as a single service, particularly where they receive a single bill. This has presented a number of challenges for us in relation to the future of Thames Water sewerage bills.

As part of our quantitative customer research we commissioned statistically significant studies on the acceptability of the water bill as well as the combined water and sewerage bills. Our research shows that including Thames Water's proposed price increase to fund the Thames Tideway Tunnel will make the total bill unacceptable to our water customers. Our research showed that while 91% of customers found a total bill increase of £3.70, before inflation, over the five year period acceptable, this level of support dropped to less than 70% if the bill increase was around £13.70.

Our CCG challenged us on how we propose to deal with this situation. Given our limited ability to influence the potential bill impact of the Tideway Tunnel our approach has been to understand the possible implications in terms of operational costs, the potential for increased levels of bad debt and adverse impact on SIM. We will devise an effective communication programme so that we can inform customers of potential price changes and take steps to mitigate the impact on vulnerable and low-income customers.

We are working closely with Thames Water to understand and forecast the impact that any potential bill increase may have upon our customers. The forecast covers the potential detrimental impact on call volumes, complaints and debt. The operational costs have been assessed with Thames Water at around £[X]m over the AMP6. These costs will be recovered directly from Thames Water through the contractual arrangements we have in place and will not be passed to our customers. The potential impact on service has been incorporated into our SIM forecast as set out in Section 5.

The impact of the proposed price increase upon our customers' sewerage bills that impact their ability to pay their water and sewerage bill has been less easy to predict. Thames Water has concluded that collection rates may fall by 0.5%, increasing bad and doubtful debts. It is less clear whether this will have the same impact on the water bill we charge. There remains a degree of uncertainty and therefore risk that is difficult to forecast and predict.

3 How we will meet our Customers' Expectations

- Our Plan has very **strong support from our customers and stakeholders.** It carefully balances the needs of customers today, future customers and the environment
- We will make sure our **customers have enough water, whilst leaving more in the environment**
    - We will improve our efficiency in supplying water by reducing leakage by 14%, equivalent to 27 Ml/d.
    - We will help our customers use water more efficiently by increasing the number of households with a meter by 70%
    - We will leave more water in the environment and have agreed with the Environment Agency to abstract 42 Ml/d less by 2020
- We will **supply high quality water our customers can trust**
    - We will invest £[X]m at our treatment works to ensure customers can have confidence our water is of the highest quality
    - We will replace lead pipes in two water quality zones, especially those leading to schools and nurseries
- We will **minimise disruption to customers and their communities**
    - We will ensure customer have a reliable supply by investing in renewing and repairing our network of pipes
    - We will improve communication with customers about disruption by investing in proven digital technology
- We will provide **a value for money service**
    - Our average bill will fall by 0.7% per year before inflation.
    - Our average bill is less than the England and Waters average today and has not risen as a share of our customers' disposable income since the downturn began in 2008 – unlike the water sector on average
- We are setting ourselves **stretching performance commitments** to meet these four Outcomes including financial incentives on reducing leakage.
- We are **accountable to our customers and communities** so will report our performance at a company and community level

3.1 Our Plan at a glance

Outcome / Commitments	Bill / bill impact
Estimated average household bill 2014/15	£165.22
Making sure our customers have enough water, whilst leaving more water in the environment	
Reduce leakage by 14% - 27 Ml/d A stretching target for reducing leakage from the network to reflect the importance our customers place on it	
Reduce average water use by 7% Supporting our customers to reduce their consumption by offering water efficiency advice and introducing universal metering for 280,000 households in the most water stressed communities	
Improve the water available for use by 4% Increasing flexibility in out network so we can transfer water more effectively around our communities	
Abstraction Incentive Mechanism Ofwat will review our sustainability performance and compare this with other water companies	
Sustainable abstraction reductions of 42 million litres a day by 2020 Improving our efficiency in supply and reducing the demand for water will enable us to leave more water in the environment	
Supplying high quality water you can trust	
Compliance with water quality standards Maintaining the high quality of water by investing at our treatment works, sampling across our network and preserving the quality of our water sources	
Customer contacts for discolouration Understanding and responding to local concerns about water aesthetics	
Minimising disruption to you and your community	
Unplanned interruptions to supply over 12 hours Targeted investment in strategic mains to limit prolonged disruption to supply	
Number of burst mains Investing in our network to maintain service levels	
Affected customers not notified of planned maintenance Keeping our customers updated when we have to carry out planned maintenance	
Planned works taking longer to complete than notified Effectively planning and carrying out necessary maintenance to our assets to minimise disruption	
Providing a value for money service	
Service Incentive Mechanism Delivering a service which meets our customers' expectations	
Value for money survey Ensuring that we are providing the service which our customers and communities value, and that we help those who may struggle to pay	
Average 2019/20 household bill	£159.52
Estimated change in average household bill by 2019/20	- £5.70

Table 3-A: Performance commitments

We will meet our customers' expectations by delivering a water service that achieves the performance commitments set out in this section below. These performance commitments and measures of success have been developed from customer and stakeholder feedback to ensure that our plan will deliver the Outcomes that matter most to our customers.

Our plan to deliver these Outcomes will see average household bills falling by 3.5%, before inflation. **This is the equivalent of a reduction of £5.70 on an average household bill by 2020.**

3.2 The right plan for customers, communities and the environment

3.2.1 This Plan is the best way to deliver all of our Outcomes

Our Plan sets out a balanced package of programmes to achieve our four customer Outcomes. Each section of this Plan has been developed by learning from our current experience, evaluating other options and considering customer and stakeholder feedback. It has been developed with the full oversight of our Board.

Several alternative plans were considered and evaluated to assess their capability for meeting our Outcomes. For each we considered the degree to which they were socially, economically and environmentally sustainable.

We have agreed sustainability reductions with the Environment Agency. Our Plan takes account of our strategic challenge to reduce abstraction from some sources while ensuring customers have enough water in an area of serious water stress, with a growing population.

We consulted our customers and sought their views on the range of available options to test which of the plans was the most acceptable. We have taken account of customer priorities and concerns in the emerging evidence to shape our plans. Our chosen Plan reflects a sound understanding and a reasonable balance of customers' views.

3.2.2 Why this programme?

In developing our proposed capital investment programme, we started by embedding the learning from meeting the challenges set at AMP5. We then evaluated the long-term resilience of assets using the Defra model combined by our asset optimisation tool, (PIONEER) to produce a long-term asset strategy. This was balanced against the shorter-term considerations, such as bill affordability and statutory obligations such as sustainability reductions.

We have used the Outcome Delivery Incentive mechanism to balance short-term customer-led measures with asset-orientated measures so that our investment is driven by asset reliability.

For our Business Plan and Water Resources Management Plan we carefully considered how best to provide service to our customers. We developed our Community Delivery Model from our experience of working in the community and the recognition that our customers have a greater awareness of their local community, as we have seen in our East and Southeast regions. This view was reinforced by the enthusiasm our customers showed in trials of our Service Delivery Map tool for more information relating to their local community. So we have built our plans on our eight communities. Our Community Delivery Model brings together our Source Delivery Map and Service Delivery Map approach which we explain further in Section 4.

3.3 The cost of meeting our customers' expectations

The following tables set out the capital and operational costs associated with our plans to deliver the Outcomes for customers. We have not allocated costs for achieving the Outcome of providing a value for money service.

Making sure our customers have enough water, whilst leaving more water in the environment	PR14 £m	% of total
Capital maintenance:		
Communication and stop tap replacement		
Meter replacement		
Other		
Capital enhancement:		
Leakage reduction		
Groundwater schemes		
Developer Services		
Business Planning WRMP		
Metering		
Sustainability reductions		
National Environment Programme		
Opex		
Total investment		

Table 3-B: Capital and operational costs to deliver 'Enough Water' outcome

Supplying high quality water you can trust	PR14 £m	% of total
Capital maintenance:		
Production asset maintenance		
Other		
Capital enhancement:		
Biodiversity		
NEP investigation, mitigation and catchment work		
Water Quality - Lead		
Water Quality – Pesticides		
Opex		
Total investment		

Table 3-C: Capital and operational costs to deliver 'High Quality Water' outcome

Minimising disruption to you and your community	PR14 £m	% of total
Capital maintenance:		
Mains renewals		
Trunk mains		
Production asset maintenance		
IT maintenance and enhancement		
Other		
Capital enhancement:		
Resilience – Reservoirs		
Resilience – Security (SEMD)		
Opex:		
Total investment		

Table 3-D: Capital and operational costs to deliver 'Minimising Disruption' outcome

3.4 Measures of Success and Outcome Delivery Incentives

3.4.1 Our Measures of Success

We have developed 13 Measures of Success (MoS) to reflect our customers' priorities and fully align with the '*Principles for deciding on Outcomes and measures of success*'[3] and ensure that they are:

- As closely related to the Outcome as possible
- Measureable and verifiable
- Covering a large proportion of the Outcome
- Easy to understand by stakeholders
- Controllable
- Future proof

Our vision is to be the leading community-focused water company. We will take a significant step towards achieving this by reporting our performance for each measure of success at a community level as well as at a company level. This will enable customers within their communities to judge how well we are meeting their expectations and so hold us to account.

The MoS we have developed, in conjunction with our customers and stakeholders, will form the main part of our overall performance measurement framework. The performance framework will also include a number of key performance indicators to give our customers a broader perspective of our overall performance on an annual basis. A summary of the performance measurement framework is set out in Section 3.9.

[3] Frontier Economics on behalf of UKWIR, July 2013, Principles for deciding on Outcomes and measures of success

3.4.2 Our Outcome Delivery Incentives

We welcome the opportunity to develop our own Outcome Delivery Incentives (ODIs) in conjunction with our customers. Our approach has been developed through an extensive programme of customer and stakeholder engagement as set out in Section 2.

We have designed our ODI package so that we are held to account for the delivery of the performance we have committed to in our final Plan. We have developed our ODIs with Frontier Economics, independent specialists with experience in developing the UKWIR guidance on designing Outcome incentives and working on price controls, both in and outside of the water industry.

In developing our ODI package we have paid particular attention to the following criteria:

- Ensuring the appropriate balance of risk with our customers
- Alignment with customers' interests and providing appropriate compensation for any under-delivery of the performance commitments
- Making sure we take into account our assumptions on other regulatory incentives, including Totex efficiency sharing and the wider statutory framework within which we operate
- Simplicity, clarity and transparency so that our ODIs are easily understood, well targeted and meaningful

The design of our overall incentive package, as set out in Table 3-E, shows the balance of risk. The maximum reward for outperformance is 1.56% of annual turnover compared to a maximum penalty for underperformance of 3.96%. The balance of incentives is weighted towards greater penalty for failing to deliver. This balance is similar to the asymmetry we see in the way the current SIM mechanism has operated to date, with an incentive range of +0.5% to -1.0%. As a water-only company we have a smaller ratio of total revenue to our Regulatory Capital Value (RCV): hence we are bearing a greater level of risk in our ODIs package than would be the case for water and sewerage companies.

The balance of our incentives reflects what our customers have told us and aligns with our customers' interests. Customers have been very clear that they do not want to see their existing service levels change, particularly in respect of the 'Minimising disruption to you and your community' customer expectation. This was supported by our stated preference research that showed that customers did not particularly value improvements in service levels but placed a high value on ensuring that their existing service levels do not deteriorate.

We have reflected this in the design of two of our ODIs that are penalty only incentives for unplanned interruptions to supply over 12 hours and numbers of mains bursts. The valuation of the penalties, explained in more detail below, also ensures appropriate compensation to customers for under-delivery.

The majority of our performance commitments are non-financial. These performance commitments have significant reputational incentives should we fail to deliver. In many cases under-delivery could potentially lead to financial penalties from other regulatory bodies. For example, failing to meet our performance commitments under 'Supplying high quality water that you can trust' would have serious reputational and financial consequences with respect to the Drinking Water Inspectorate.

A detailed explanation of the process and principles we followed in developing our ODI package is set out in Appendix 3 and also in the commentary to data table W2 which includes the detailed design of each ODI.

Outcome	Measure of success	Type of ODI	Potential upside (% total revenue)	Potential downside (% total revenue)
Making sure our customers have enough water, whilst leaving more water in the environment	Leakage	Reward and penalty	+ 1.06%	-1.67%
	Average water use	No financial incentive	-	-
	Water available for use	No financial incentive	-	-
	Abstraction incentive mechanism	No financial incentive	-	-
	Sustainable abstraction reductions	No financial incentive	-	-
Supplying high quality water you can trust	Compliance with water quality standards	No financial incentive	-	-
	Customer contacts for discolouration	No financial incentive	-	-
Minimising disruption to you and your community	Unplanned interruptions to supply over 12 hours	Penalty only	+ 0.00%	-0.51%
	Number of burst mains	Penalty only	+ 0.00%	-0.78%
	Affected customers not notified of planned interruptions	Compensation payments	-	*Enhanced GSS*
	Planned work taking longer to complete than notified	Compensation payments	-	*Enhanced GSS*
Providing a value for money service	Service incentive mechanism	Reward and penalty	+ 0.50%	-1.00%
	Value for money survey	No financial incentive	-	-
Total package of Outcome Delivery Incentives			+ 1.56	-3.96%

Table 3-E: Outcomes, Measures of Success and ODIs

3.5 Making sure our customers have enough water, whilst leaving more water in the environment

We will improve the efficiency with which we use our water resources and support our customers to reduce their consumption to leave more water in the local environment. This will enable us to provide a sustainable water service and ensure that our customers, communities and the environment have enough water both now and in the future.

3.5.1 The challenges we face

Our key challenge is ensuring that our customers have enough water, now and in the future, whilst leaving more water in the environment to protect our chalk streams and local habitats, to preserve our water sources for future generations.

We supply water to 3.5 million people within the southeast of England, an area of supply which is classified by the Environment Agency as subject to serious water stress. The population of the communities we serve is forecast to grow by 15% over the next 25 years and less predictable weather patterns, associated with climate change, have the potential to reduce the water resources available to us and increase the risk of droughts. Additionally our customers have one of the highest rates of water use in England and Wales.

To overcome the challenges we face we need to use our water resources more efficiently and persuade our customers to recognise water as a precious and finite resource. This will enable us to secure our supply for future generations of customers and leave more water in the environment.

3.5.2 Our customers' expectations

Our research evidence demonstrates that customers want us to **reduce the level of leakage from our network as our top priority**.

Our customers see a shared responsibility for using water wisely between their water company and the communities they live in. We found a strong consensus that if we reduce the level of leakage from our network; customers are more likely to reduce the amount of water they use. To do this **our customers want more information and support on how to become more water efficient** and see education of all age groups as being important.

Whilst our customers see investing in metering as a lower priority, they accept that metered charges are the fairest way to pay for the water used. **Whilst most customers support metering in principle, some are reluctant to have a meter installed** because they are concerned that it will increase their bills. Our research showed that a **universal metering programme needed to be accompanied by support and advice to customers** about moving onto a metered charge and the potential impact this could have on bills.

Our customers support leaving more water in the environment to protect sensitive habitats. Our customers regard protecting the environment as important and place a high value on minimising impacts on sensitive habitats as a result of low river flows.

3.5.3 How are we going to do it?

We will meet our customers' expectations through four main activities:

Improving our efficiency in supplying water	We will reduce the level of leakage by 14%, equivalent to 27Ml/d of water a day. We will increase the resilience of our network by investing in 19.1km of new trunk mains to help improve our ability to move our limited water resources around the communities we serve. This will enable us to reduce our abstractions and reduce the effects of our operations on the local water environment.	**89%** of our customers support our proposals to reduce leakage. **72%** of our customers support our proposals to build resilience to prevent water shortages.
Helping our customers to use less water	We will implement a comprehensive programme to save water. This will include offering water efficiency advice and water saving devices, supported by universal metering in the four communities with the highest supply / demand imbalance.	**83%** of our customers support our proposals to reduce the level of customers' water usage. **77%** of our customers support our proposals to increase metering.
Effectively sharing water resources within the southeast of England	We will maintain trading arrangements with six of our neighbouring water companies to ensure that we make the best use of the water resources within the southeast of England.	**81%** of our customers support our proposals around bulk transfers of water.
Leaving more water in the environment	We will leave an extra 42 Ml/d in the environment by 2020. We will be reducing abstraction from 8 groundwater sources and stopping abstraction from another 8 sources. This will benefit our local communities, through improved flows in some chalk streams to support local environmental habitats.	This is a statutory obligation.

Table 3-F: Meeting our customers' expectation 'Making sure our customers have enough water, whilst leaving more water in the environment'

For further information on the activities set out above, please see Sections 4, 5 and 6 of this plan.

Note: Levels of support have been taken from the 'PR14 Acceptability Study, Final Study Outputs – November 2013

3.5.4 Our Measures of Success and performance commitments

To enable our customers to judge our performance in meeting their expectation, we will be reporting our performance against these measures of success at both a company and community level.

Measure of success	Why is this important?	2014/15	2019/20	Change	AMP6 Change %
Leakage (million litres per day)	Our customers have told us that this should be one of our highest service priorities. Reducing leakage from our network will improve our efficiency in supplying water.	189.3	162.2	27.1 Ml/d	14% reduction
Average water use (litres per person per day)	To deliver a sustainable water service we must encourage and support our customers to reduce their consumption.	158.4	147.4	11.0 l/p/d	7% reduction
Water Available for Use (million litres per day)	We must improve our efficiency in using our water resources. Water available for use is the level of water we need to supply to meet our customers' demand.	1115	1067	47.7 Ml/d	4% improvement
Abstraction Incentive Mechanism (AIM)	Measures the effect of our abstractions on specific water sources within the communities we serve.	-		Ofwat to confirm	
Sustainable abstraction reduction (million litres per day)	This measures the amount of water we are able to leave in the environment as a result of reducing leakage, helping our customers to reduce their demand and using our water resources more efficiently.	0.0	42.0	42.0 Ml/d	-

Table 3-G: Measures of Success and performance commitments – 'Making sure our customers have enough water, whilst leaving more water in the environment'

For full details of our performance commitments please see Ofwat data table W1 and supporting commentary.

3.5.5 Outcome Delivery Incentives

Measure of success	Type of incentive	Rationale
Leakage (million litres per day)	Penalty and reward	Reflects the importance and value which our customers place on leakage reduction.
Average water use (litres per person per day)	No financial incentive	Particularly difficult to establish robust estimate of customer value.
Water Available for Use (million litres per day)	No financial incentive	Particularly difficult to establish robust estimate of customer value.
Abstraction Incentive Mechanism (AIM)	No financial incentive	Ofwat will implement as a reputational incentive mechanism.
Sustainable abstraction reduction (million litres per day)	No financial incentive	Environment Agency enforcement action will result if we under deliver on our performance commitment.

Table 3-H: ODIs – Making sure our customers have enough water, whilst leaving more water in the environment

For full ODI details including annualised costs and benefit data please see Ofwat data tables W2 and W2a and supporting commentary.

3.6 Supplying high quality water you can trust

Our proposals have been developed in order to ensure that our customers continue to receive the high quality of water that they expect. We will meet our regulatory obligations for water quality in 2015 to 2020 and beyond.

3.6.1 The challenges we face

Drinking water quality standards are becoming more stringent over time and we must do more to maintain compliance with the UK standards. For example, some pipes in our network are made of lead which can potentially be harmful and we will need to do more replacement work.

Changes in manufacturing and agricultural practices can introduce chemicals into the natural environment which can affect the quality of untreated water. We need to ensure that our treatment processes are able to effectively deal with emerging and past pollutants. We also need to take action where deposits of minerals build up in our pipes over time which can cause the water we supply to become discoloured.

3.6.2 Our customers' expectations

Our customers trust the quality of the water which they currently receive and expect us to **ensure that we maintain the high quality of water at our customers' taps.**

Water hardness is an issue that is raised consistently by customers throughout our engagement programme. Whilst customers are concerned about the hardness of their water, it is not clear from the research we have undertaken that customers are willing to pay more to address this but we do need to investigate what the implications and costs of softening water supplies could be.

3.6.3 How are we going to do it?

We will meet our customers' expectations through 5 main activities:

Ensuring the water we supply is of the highest quality	We will invest £[X]m at our treatment works to continue to ensure the water we supply is of the highest quality including treatment processes to reduce pesticides. We will continue to carry our sampling at our treatment works and at our reservoirs to monitor and react to any anomalies.	**87%** of our customers support our proposals for maintaining the high quality of the water at their taps.
Responding to potential risks to water quality within our network	We propose to replace lead communication pipes in Watford and Finchley, where there is a high incidence of lead and throughout our supply area at schools and nurseries as a priority as younger consumers are more at risk from the cumulative effects of lead. We will continue to test our water with over 200,000 samples taken each year.	
Researching financial and environmental implications of softening water	We will not be investing to treat hard water during 2015 to 2020, but we will continue to research the financial and environmental implications of softening water.	
Maintaining and improving the quality of our groundwater sources	We will enhance our current programme of catchment management and continue to work in partnership with the Environment Agency and environmental groups. During 2015 to 2020 we will deliver our programme of catchment management in collaboration with Thames Water and South East Water to improve the quality of groundwater sources.	
Monitoring the health of our rivers and natural water environment	We will protect rivers by lining sections and pumping to maintain their flow as well as continuously monitoring the quality of the water. We will also undertake biodiversity studies and research on 'uncertain' sustainability reductions. We will continue to carefully manage Sites of Special Scientific Interest and sites of local conservation importance in our communities.	

Table 3-I: Meeting our customers' expectation – 'Supplying high quality water you can trust'

For further information on the activities set out above, please see Sections 4, 5 and 6 of this Plan.

Note: Levels of support have been taken from the 'PR14 Acceptability Study, Final Study Outputs – November 2013.

3.6.4 Our Measures of Success and performance commitments

To enable our customers to judge our performance in meeting their expectation, we will be reporting our performance against these measures of success at both a company and community level.

Measure of success	Why is this important?	2014/15	2019/20	Change	AMP6 Change %
Compliance with water quality standards (%)	Ensures that our water is of a high quality which our customers can trust and that we are meeting all drinking water quality standards.	≥99.95	≥99.95	No change	No change
Customer contacts – discolouration (nr/000/population)	Monitors occasions when we are not meeting a customer's expectation for their water quality.	0.66	0.66	No change	No change

Table 3-J: Measures of success and performance commitments – 'Supplying high quality water you can trust'

For full details of our performance commitments please see Ofwat data table W1 and supporting commentary.

3.6.5 Outcome Delivery Incentives

Our performance commitments for each measure of success include incentives to ensure we are accountable for their delivery. Our Outcome delivery incentives have been designed to reflect the value which our customers place on the attributes of the service they receive. Our incentives protect our customers. If we do not achieve the level of performance which they expect and incentive us to target our performance to the areas of service they most value.

Measure of success	Type of incentive	Rationale
Compliance with water quality standards (%)	No financial incentive	If we do not meet our statutory obligations, customers will be protected by the provisions of the Water Industry Act enforced by the DWI.
Customer contacts – discolouration (nr/000/population)	No financial incentive	

Table 3-K: ODIs – 'Supplying high quality water you can trust'

For full ODI details including annualised costs and benefit data please see Ofwat data tables W2 and W2a.

3.7 Minimising disruption to you and your community

In our draft Business Plan consultation, our Proposed Plan included improved service levels for our customers. However, our customers have made it clear that they do not particularly value an improvement in the level of service, or wish to see their service deteriorate. As a result we will efficiently maintain the current level of service which our customers receive by continuing to improve our asset stewardship and adopting innovative approaches.

3.7.1 The challenges we face

Our key challenge in minimising disruption is maintaining and replacing an ageing network of pipes over 16,500km long. Most of our pipes are located in the road and we must achieve a balance between the work we carry out repairing and renewing these pipes and disruption to the local community.

Less predictable weather patterns, associated with climate change, and extremes of weather can put immense stress on our network. We also need to protect our assets from natural disaster such as flooding, but also from theft, vandalism and other security risks.

3.7.2 Our customers' expectations

Our research suggests that only a small proportion of customers had experienced disruption to their water service. As such, disruption was not a particular concern for customers who often saw maintenance work as a necessity. However, **potentially prolonged periods of interruptions to their water service were a concern for customers.**

It is clear, from our stated preference research that our customers do not value an improvement in the level of service; however, they do not wish to see their service deteriorate.

Our customers broadly understand the need for planned work and **value effective and efficient communication before, during and after possible interruption to their service** to minimise the disruption which they experience.

3.7.3 How are we going to do it?

We have developed a number of programmes to achieve this Outcome:

Ensuring that our customers' supply remains reliable	We will maintain the stability of our network by monitoring, replacing and renewing key strategic mains to reduce potentially prolonged periods of disruption. Our targeted and cost efficient approach will focus on the most crucial pipes within our network which if they fail could cause widespread interruptions to our customers supply. We will replace 482km of distribution mains to prevent shorter interruptions to supply. Our mains renewal programme will be delivered in the order of [X]% less than the unit cost for the last five years.	**84%** of our customers support our proposals for preventing long term interruptions to supply. **83%** of our customers support our proposals for preventing short term interruptions to supply.
Continuing to improve the efficiency with which we operate our assets	We will be deploying network telemetry to enable real-time monitoring and proactive event detection. This will enable us to improve our understanding of asset failure and so plan maintenance more efficiently.	
Improving our communication about possible disruption to our customers' service	We will invest in proven digital technology to enable customers to access information more easily in near real time.	
Ensuring our assets continue to remain secure	We will continue to invest in security at our operational sites to ensure that the drinking water supply is secure. This will include investing in key operational sites and reservoirs in line with the Security and Emergency Measures Directive (SEMD).	

Table 3-L: Meeting our customers' expectation – 'Minimising disruption to you and your community'

For further information on the activities set out above, please see sections 4, 5 and 6 of this Plan.

Note: Levels of support have been taken from the 'PR14 Acceptability Study, Final Study Outputs – November 2013

3.7.4 Our Measures of Success and performance commitments

To enable our customers to judge our performance in meeting this expectation, we will be reporting our performance against these measures of success at both a company and community level.

Measure of success	Why is this important?	2014/15	2019/20	Change	AMP6 Change %
Unplanned interruptions to supply over 12 hours	Our customers are concerned about prolonged periods of interruption. This is a key serviceability measure providing an indication of the state of our assets to provide services in the future.	320	320	No change	No change
Number of burst mains	Burst mains cause disruption to our customers and communities, through the reactive maintenance required to tackle the burst. This is a key serviceability measure providing an indication of the state of our assets to provide services in the future.	3,100	3,100	No change	No change
Affected customers not notified of planned maintenance	Communication about possible disruption is a service priority for our customers. This measures how well we are doing this.	110	110	No change	No change
Planned works taking longer to complete than notified	It is important that we provide accurate information to customers of possible disruption and that we carry out our planned work efficiently.	550	550	No change	No change

Table 3-M: Measures of Success and performance commitments – 'Minimising disruption to you and your community'

For full details of our performance commitments please see Ofwat data table W1 and supporting commentary.

3.7.5 Outcome Delivery Incentives

Our performance commitments for each measure of success include incentives to ensure we are accountable for their delivery. Our Outcome delivery incentives have been designed to reflect the value which our customers place on the attributes of the service they receive. Our incentives protect our customers if we do not achieve the level of performance which they expect and incentive us to target our performance to the areas of service which they most value.

Measure of success	Type of incentive	Rationale
Unplanned interruptions to supply over 12 hours	Penalty only	Our customers do not wish to see any deterioration in service and we will be penalised for any under delivery. Financial rewards are not appropriate because our customers do not value an improvement in service.
Number of burst mains	Penalty only	
Affected customers not notified of planned maintenance	Compensation payments	If we do not achieve our performance commitments we will compensate those customers affected directly with a GSS payment. For household customers we will enhance the payments in the regulations to £50.
Planned works taking longer to complete than notified	Compensation payments	

Table 3-N: ODIs – 'Minimising disruption to you and your community'

For full ODI details including annualised costs and benefit data please see Ofwat data tables W2 and W2a.

3.8 Providing a value for money service

The concept of a 'value for money' service is different for every customer. To help to ensure that all of our customers view their service as providing value for money, our plans must acknowledge this.

3.8.1 The challenges we face

Our key challenge is achieving the right balance between the level of service our customers receive and the price they pay. Understanding and meeting our customers' increasing expectations for their service has to be balanced with ensuring that bills remain affordable, especially during the current tough economic climate where household incomes are under pressure.

We will provide support to our customers who struggle to pay their bills and ensure that in future, non-household customers have the ability to switch suppliers for their retail services should they wish to do so.

3.8.2 Our customers' expectations

The majority of our customers feel that the current service they receive **represents good value for money.**

The majority of our customers do not differentiate between the price they pay for water services and the price they pay for sewerage services. Customers, particularly vulnerable customers, are concerned about price rises, including sewerage charges.

Customers support investment to maintain the levels of service they currently receive but do not value service improvements that would push up their bills.

Customers expect us to **work hard to deliver efficiencies** to reduce the impact of new obligations on their bills.

3.8.3 How are we going to do it?

We have a number of programmes to achieve this Outcome;

Improving affordability by keeping bills from rising above inflation.	Our average bill will increase slower than the rate of inflation (measured by RPI) over the period 2010-2015 In real terms our average bill will have fallen by £5.70 or 3.5% over the period 2015-2020. We will implement a social tariff alongside our WaterSure tariff for customers struggling to pay the bill.	**87%** of our customers found our draft Final Plan acceptable or highly acceptable.
Increasing our responsiveness to customer needs	We will continue to develop and enhance our innovative 'Voice of the Customer', which currently enables us to engage with over 50,000 customers each year. We will increase our presence on social media. This will provide us with an opportunity to improve our customers' experience, on a channel that they are familiar with and using every day. Our new web chat function will make it easier for our customers to find what they need through our website.	
Making it easier and quicker for our customers to manage their accounts	We will be redesigning our bills to make it easier for our customers to understand how their charges are calculated and to manage their accounts. Our customers will continue to have a wide range of payment options available to them including weekly, monthly and annual payments. We will continue to develop our online e-billing system to make it easier for our customers to manage their accounts.	
Enabling our customers to save water and mange their bills	If we install a meter under our universal metering and water efficiency programme, each customer will then be taken through a two year transition period from installation of their meter within which they can choose to switch to a metered tariff at any time. We will also give customers a choice to keep paying non-metered charges during this period. We will be seeking to develop a solely volumetric tariff for metered customers to encourage them to use less water.	
Offering innovative tariffs and choice to business customers.	Embracing the opportunities available through market reform by actively engaging in the existing and emerging competitive market.	

Table 3-O: Meeting our customers' expectation – 'Providing a value for money service'

For further information on the activities set out above, please see sections 4, 5 and 6 of this Plan.

Note: Levels of support have been taken from the 'PR14 Acceptability Study, Final Study Outputs – November 2013

3.8.4 Our Measures of Success and performance commitments

To enable our customers to judge our performance in meeting their expectation, we will be reporting our performance against these measures of success at both a company and community level.

Measure of success	Why is this important?	2014/15*	2019/20	Change	AMP6 Change %
Service Incentive Mechanism	It is important because it measures our customers' satisfaction with the overall service which they receive.	-		Ofwat to confirm	
Value for money survey	The customer survey will enable us to understand whether our service meets our customers' expectations, is affordable and provides value for money.	-		To be established during 2014/15	

Table 3-P: Measures of Success and performance commitments – 'Providing a value for money service'

For full details of our performance commitments please see Ofwat data table R1 and supporting commentary.

3.8.5 Outcome Delivery Incentives

Our performance commitments for each measure of success include incentives to ensure we are accountable for their delivery. Our Outcome delivery incentives have been designed to reflect the value our customers place on the attributes of the service they receive. Our incentives protect our customers if we do not achieve the level of performance which they expect and incentive us to target our performance to the areas of service which they most value.

Measure of success	Type of incentive	Rationale
Service Incentive Mechanism	Rewards and penalty	Comparative performance against other water companies to enable customers to judge our performance.
Value for money survey	Reputational	The survey is a new measure as such we need to establish a baseline of performance. This measure is designed to complement SIM.

Table 3-Q: ODIs – 'Providing a value for money service'

3.9 Our performance measurement framework

To offer a broader perspective of our performance, we will also report performance against a range of key indicators as shown in the table below.

Outcome	Making sure our customers have enough water, whilst leaving more water in the environment	Supplying high quality what that you can trust	Minimising disruption to you and your community	Providing a value for money service
Measures of success	Leakage	Compliance with water quality standards	Unplanned interruptions to supply over 12 hours	Service incentive mechanism
	Average water use	Water quality contacts for discolouration	Number of burst mains	Value for money survey
	Water available for use		Affected customers not notified of planned interruptions	
	Abstraction incentive mechanism		Planned work taking longer to complete than notified	
	Sustainability reductions			
Perspective	Indicators			
Customer experience	Net Promoter Score			
	Properties affected by hosepipe bans		Water supply interruptions	Average household bill
Environmental impact	Greenhouse gas (GHG) emissions			
	SSSIs with favourable status	River water quality	Pollution incidents (water)	Energy efficiency savings
Reliability and availability	Security of supply index	Serviceability water non-infrastructure		Customers helped by a review of tariff
	Serviceability water infrastructure			Efficiency savings delivered
Financial	Post tax return on capital			
	Credit rating			
	Interest Cover			
	Gearing			

Table 3-R: Our performance measurement framework

4 Our Wholesale Service

- We will act responsibly and meet our statutory obligations. We face the following **new obligations:**
    - Water Framework Directive: we must reduce our abstraction by 42Ml/d (equivalent to 5% of current abstraction) before 2019/20 at specific sites and a further 28Ml/d over the 5 years from 2020
    - Water quality: a new lead compliance standard takes effect in December 2013 - 10 microgrammes per litre compared to the current 25 microgrammes per litre
- With population in our area estimated to grow by 0.7% per annum, our customers' **demand for our water will exceed the supplies** available. We need to implement measures to ensure our customers "have enough water" whilst ensuring we comply with our new obligation to leave more water in the environment
- We will ensure our customers have enough water:
    - We will reduce leakage from our network by 27Ml/d, a 14% reduction, by 2020
    - We will encourage our customers to value the water they use by implementing a comprehensive programme to save water supported by universal metering in the most water stressed communities. We will meter 280,000 properties by 2020 and **give customers a choice** to keep paying non-metered charges for up to two years
- We will ensure a high level of water quality compliance:
    - We will pursue catchment management and new treatment processes at two of our major water treatment works to overcome deterioration in the quality of raw water from pesticides
    - We will implement a risk based programme of lead communication pipes replacement
- Our **assets are stable** in terms of serviceability. We have significantly improved our asset management capability over the last 5 years – our Asset Management Assessment score is now 4.1
- We have implemented **considerable efficiencies** during AMP5 that are incorporated into our Totex projections, which include a further £95m or 10.4% of efficiencies across our entire base Totex (operating and capital maintenance expenditure) of £[X]m
- We will **maintain flexibility** to accommodate reductions that may be confirmed as part of the River Basin Management Plans 2015 during this next 5 years as part of a Change Protocol

4.1 Our wholesale service today

4.1.1 Summary

Over the past 4 years, we have transformed our wholesale activities

- We have better control of our assets and in particular our water network. Our assets are **stable** in terms of serviceability. The failure rate of both below and above ground assets has vastly improved
- We have made a step change improvement with our asset management practices and approach. This has been reflected in our Asset Management Assessment (AMA) improving from an overall score of 3.49 at PR09 to 4.16 for Below Ground Assets and from 2.98 to 4.08 for Above Ground Assets
- These significant improvements reflect the substantial enhancements we have made in our asset management strategy, approach, and implementation. We know our assets – know how they are performing and when and what maintenance is required and when they need replacing
- We have a better understanding of drivers and control of costs. We have made significant efficiencies over the last 4 years that means that our unit rates for network maintenance are at the low end of the industry and well below the PR09 Final Determination. This has allowed us to propose 10.4% efficiencies on base Totex (PR09 funded vs. PR14 plan)
- Our expenditure in AMP5 is delivering the outputs we accept. We have real ambition to do better and do more for our customers and for the environment. Our long-term ambition is set out in our Ofwat Table W1

Our external challenges have grown

- Our 2013 Water Resources Management Plan (WRMP) confirms we face a serious supply / demand deficit against the background of increasing population growth and the need to leave more water in the environment
- We also face new pressures and obligations to maintain the high quality of our water. Increased use of pesticides and an enhancement to the lead compliance standard creates a need to work hard on catchment management as well as implement improvements to our treatment processes and remove lead communication pipes using a risk based approach

Our obligations

In preparing our Business Plan we have taken account of our legal and regulatory obligations as a water undertaker and had particular regard to Defra's Statement of Obligations - Information for Water and Sewerage Undertakers and Regulators on Statutory Environmental and Drinking Water Provisions Applicable to the Water Sector in England (October 2012). These responsibilities may generate new obligations such as actions required as a result of the next round of River Basin Management Plans that are due in late 2015.

Our Plan takes account of potential new obligations and ensures we are able to discharge those responsibilities in a timely manner.

We have provided a letter of assurance to the Environment Agency stating:

- We accept our statutory obligations as summarised in Defra's Statement of Obligations
- We have included in our Business Plan all measures needed to implement our Water Resources Management Plan and in particular those specified in the final NEP3 schedule agreed between our teams on 22 October
- We have provided the Environment Agency with details of proposed studies and investigations, water quality schemes including catchment management and investment proposals to preserve resilience of supplies following sustainability reductions
- We have included a Change Protocol in our Business Plan to ensure we are able to finance any new obligations that may arise from the next round of River Basin Management Plans including any additional sustainability reductions that are currently uncertain

4.1.2 Scope of our wholesale plan

Our Wholesale Plan is a key component of our Business Plan and details the integrated set of benefits we intend to deliver for our customers between 2015 and 2020 and in the longer term for future generations of customers. We will secure sufficient high quality drinking water for our customers whilst ensuring the sustainability of sensitive local water environments and minimise the impact on communities.

We will deliver these outcomes in a cost efficient manner by selective investment in infrastructure, optimisation of resources and with the co-operation of our customers and neighbouring water companies. The total cost of our proposed capital investment programme for AMP6 is £505.4 million compared to an AMP5 total of £439.4 million however we will achieve this with an average decrease in household water bills for AMP6 of 0.7% pa, before inflation.

4.1.2.1 Our Outcomes

All four Outcomes are at the core of this Wholesale Plan and are inter-related. For example, to respond to a regulatory driver to supply higher quality water could result in insufficient water for supply or increasing energy consumption. We have mapped the primary function of the investment to outcomes. So:

- 'making sure our customers have enough water, whilst leaving more water in the environment' means ensuring there is sufficient water in the environment for abstraction and to meet ecological targets delivered by investment in capital enhancement
- 'supplying high quality water you can trust' means managing the catchments of our sources, operating and maintaining our assets efficiently and ensuring we meet current and future standards delivered by investment in capital maintenance
- 'minimising disruption to you and your community' means using our assets reliably and improving the resilience and optimisation of assets delivered by investment in capital maintenance
- 'providing a value for money service' means innovating and continuously improving the balance of asset performance with risk and uncertainty, to deliver cost efficiency through proposed targets and incentives

To achieve our four customer Outcomes the objectives of our Wholesale Plan are to:

- Act responsibly and in accordance with all our statutory obligations

- Reduce demand for water through improving our asset performance and working in partnership with our customers
- Preserve water quality by maintaining our assets to manage risk appropriately
- Reduce disruption to customers by monitoring the performance of our assets and investing to maintain their resilience
- Provide value to customers by improving our efficiency, meeting our targets and leaving more water in the environment
- Have flexibility to be able to accommodate uncertainty and finance new obligations as they arise so that we can implement measures without delay

We also aim to meet Ofwat's expectations and demonstrate:

- How our expenditure in AMP5 delivered the outputs intended and how the outcome has influenced our Business Plan
- Our proposals for future service, risk and expenditure in the short, medium and long terms
- How our plan aligns with customer preference and provides an acceptable balance which is compatible with our 25 year strategy
- We explain what is influencing service levels, how we have balanced risk and how this relates to our investment
- We explain why our Plan is efficient.
- The assumptions behind our Plan, how we have tested its sensitivity and how we have managed uncertainty

In writing this Wholesale Plan, we have not given specific locations of our assets in order to preserve security.

Our Water Resource Zones (WRZs) are numbered and named after local catchments, which we find invaluable when dealing with our communities. However, for the purposes of this Section, we refer to our WRZs numerically or by geographic region:

- Zones 1 – 6 inclusive are our Central region
- Zone 7 is our Southeast region
- Zone 8 is our East region

4.1.3 We have made a step change in our performance since PR09

4.1.3.1 Where we were

We received a very challenging determination at PR09. It reflected our mediocre operating efficiency and poor asset management at the time. Ofwat concluded that our business was:

- The worst performer in the industry in terms of operating expenditure and applied a very challenging 3.2% per annum efficiency target
- 13.57% less efficient than the industry median for infrastructure Capex, which reduced the total Capex funded by (£29.6m)

- 6.87% less efficient than the industry median for non-infrastructure Capex, which reduced the total Capex funded by (£17.1m)
- Not “stable” in below ground asset serviceability, leading to an adjustment to the RCV of £13m

The PR09 Final Determination was a watershed for our business.

We took stock and introduced a number of changes that have combined to achieve a step change in performance in our wholesale activities. We are meeting our regulatory targets and we believe that we have now built a firm platform for continuous improvement in AMP6.

4.1.3.2 We have restored infrastructure serviceability to ‘stable’

For our water resource zones 1 to 6 (i.e. those in our Central region) we achieved in 2012/13 our aim of restoring infrastructure serviceability from ‘marginal’ to ‘stable’. Investment in infrastructure, planning and modelling tools and active management means we moved from a largely ‘reactive’ situation to one of ‘planning and control’. Investment in our people, teamwork and innovation were major enablers to these achievements. Overall, our network is now more robust with reductions in leakage and leakage repair activity leading to a “calmer” network.

Our Business Plan Appendix 4 relates the history and achievements in detail.

Figure 4-1 shows that we reversed the upward trend in bursts in 2010/11 and have ensured a stable delivery of mains renewal in AMP5. The level of bursts experienced in 2012/13 was exceptionally low. Although we expect a slight increase in the full year for 2013/14, our performance will be well below our regulatory reference level.

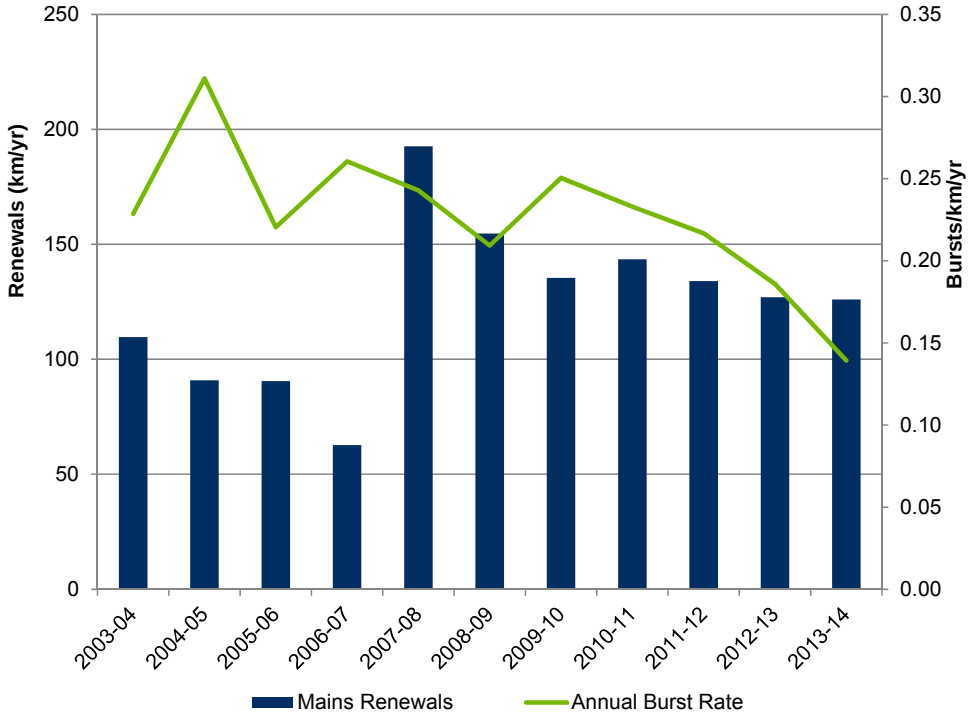


Figure 4-1: Burst rate compares with length of mains renewed

Figure 4-2 and Figure 4-3 show that the number of our customers at risk of experiencing low water pressure or experiencing an interruption greater than 12 hours has declined, demonstrating the stable performance of our network.

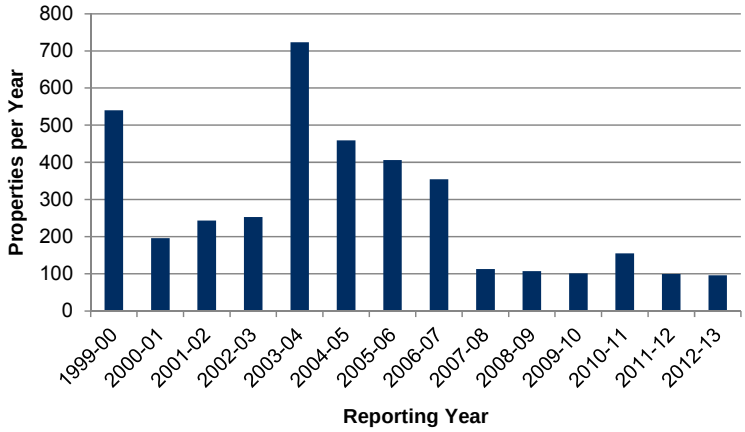


Figure 4-2: Properties at risk of low pressure (DG2)

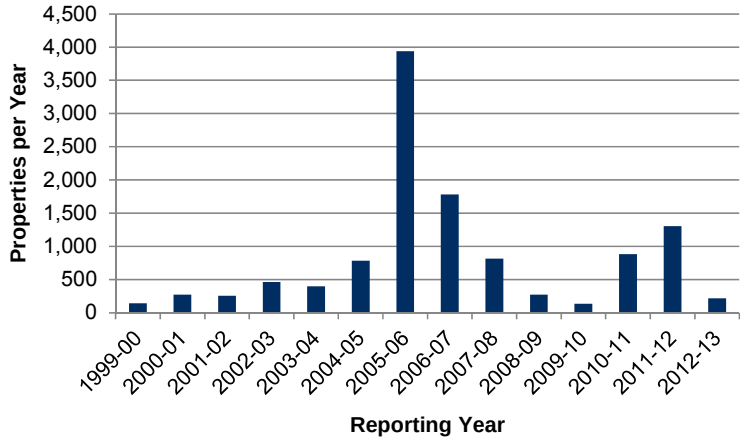


Figure 4-3: Properties experiencing an interruption of more than 12 hours (DG3)

4.1.3.3 We have made improvements to our asset management and asset delivery

Capital schemes to improve water quality and resilience

Our schemes at four of our water treatment works (WTWs), along with cleaning the associated mains using an 'ice pigging' technique, have led to a substantial improvement in appearance and reduced iron and manganese levels in Zones 4, 5 and 7. This is also reflected in the reduced level of customer complaints relating to colour and turbidity in these zones. New threats to water quality from pesticides are better understood and we understand how these can be managed through catchment management and innovative treatment.

Investment in renewing and improving our trunk mains and non-infrastructure assets

We invested substantially, particularly in North London. Despite this, we experienced two major incidents on a key trunk main in Stanmore, North London. We have replaced key sections of these mains and have identified 20 further projects aimed at reducing the number of customers potentially at risk of suffering a prolonged interruption to supply and we will renew these old trunk mains at key 'hot spots' by 2015. We demonstrated to Ofwat that our investment is cost

beneficial over a period of 40 years. We have completed extensive surveys of our trunk mains network to assess its condition and performance and improve our prediction of asset performance.

For non-infrastructure assets, our objective in AMP5 was to maintain serviceability of our treatment works, booster stations, service reservoirs and towers using a risk-based approach in prioritising investments. Reservoir monitoring and inspection programmes are on track. We monitor the performance of mechanical and electrical assets and where this is, or is anticipated as being, beneath the required standard we repair or replace the asset. This work is prioritised using a risk assessment based on probability and consequence of failure. The condition of our civil structures is monitored by physical inspection and where remedial work is identified, we prioritise it based on the likelihood and implications of failure.

Creating efficiencies by best practice capital management processes

During AMP5, we improved the design of our capital management processes and aligned them to the design of the organisation. In 2010/11, we implemented a project 'stage and gate' process, which increased productivity by reducing the associated people costs by 15%. At the same time, we collaborated with suppliers to generate better, simpler, cheaper ways of working.

Following the unification of our three businesses in 2012, we surveyed the production assets in our Southeast and East regions to achieve a common standard of asset information with our Central region. This gave us a unified approach to non-infrastructure maintenance investment forecasting.

We achieved significant savings in Opex and Scope 2 carbon emissions through an energy efficiency programme concentrating on optimising and improving pump effectiveness.

Understanding more about our environment

Corrosion of pipes leads to a high burst rate. About 1,850km of older ferrous pipes are laid in London Clay in the northern and western London suburban areas. Research by Birmingham University has identified London Clay as one of the most hostile environments for ferrous pipes. It is chemically aggressive and causes movement and fracture as it shrinks and swells when conditions vary from dry to wet.

We have learnt much about our ferrous pipes from detailed analysis of more than 4400 pipe samples in our workshop and developed innovative deterioration models to predict future failures of individual pipes.

Understanding and Controlling Costs

We responded positively to Ofwat's efficiency challenge, at PR09, for us to deliver our AMP5 capital programme.

As an example, we have made large unit rate savings on our mains renewal programme and we now are delivering our mains renewal programme at unit rates that are at the lower end of the industry. Our costs at PR09 determined through competitive tendering and current out turn costs was £[X] per metre. The funded PR09 unit rate was £[X] per metre. Our current rate of renewal is below £[X] per metre.

We have greater clarity over the cost drivers for mains renewals and we have increased control and confidence in our modelling and planning processes and outputs. We have improved

supply chain leadership, and we have improved our relationships with a smaller number of suppliers.

Improving the efficiency of our mains renewals delivery was recognised by the award of the 'Partnership Initiative of the Year' at the 2013 Water Industry Achievement Awards.

4.1.4 We now have a thorough understanding of our supply/demand balance

We face both demand-side and supply-side pressure

We face significant demand pressure. The population we serve has increased by approximately 150,000 over the past four years up to the current total of 3.6 million. It is forecast to grow by over 600,000, an annual increase of 0.7%, over the next 25 years to 4.2 million in 2040. The corresponding growth forecast in housing indicates that we will be supplying water to 288,000 additional houses by 2040, an annual increase of 0.9%. By 2040, we will supply 1.62 million households.

Clearly, additional population results in additional demand for water. New developments are governed by legislation requiring developers to build water efficient properties such that occupants use a maximum of 125 litres per person per day, and we have taken that into account in our demand forecast.

We also face supply pressure. Our water supply catchments are designated by the Secretary of State as being under serious water stress and apart from our East Region (WRZ8) opportunities to develop new resources are very limited. We have been challenged by the Environment Agency, politicians and local interest groups over the effects of abstraction from our groundwater sources on the flow in local chalk streams and must implement sustainability reductions in AMP6.

Climate change is adding to the challenge

Climate change appears to be altering rainfall and consumption patterns, reducing the amount of water available for supply, causing extreme weather events and creating significant variability in the quality of our source water. We monitor hydrological patterns for an early warning of droughts and floods. Our adaptation plans address responses to flooding, potential temperature increases and the consequences for water quality and treatment.

4.1.5 We have a better understanding of leakage

We have maintained an intensive active leakage control programme in AMP5 allowing us to better understand the benefits from leakage detection and our ability to achieve our targets.

4.1.6 We will trade water effectively

We already have 36 cross-border connections where we have the ability to import 101Ml/d (under average conditions) and export 36Ml/d.

We work closely with Defra, the Environment Agency and neighbouring water companies, considering regional sources of water in the southeast of England. This has led to enhanced opportunities for more effective water trading, in particular in the Water Resources in the South East (WRSE) projects.

These projects are included in our revised Water Resources Management Plan that was submitted to Defra, the Environment Agency and Ofwat on 15 November and this explains how we plan to address sustainability reductions, scarcity and drought risks in AMP6 and beyond.

4.1.7 We understand the role metering can provide

In 2006, Defra designated our Southeast region (WRZ 7) an area of water scarcity. As a result, we completed a programme of universal metering in AMP5 and have achieved 93% household metering coverage, which is considered the economic level by Ofwat[4].

Evidence collected from our metering programme in our Southeast region shows that savings of at least 16% in consumption have been made. This has resulted in an average consumption of about 130 litres per person per day. This compares to the per capita consumption in our Central region of over 160 litres per person per day, where less than 50% of domestic customers are metered.

In our East region (WRZ 8) optant meter take-up has been high and now 74% of households are metered.

In our Central region (WRZ 1 to 6) our strategy in AMP5 was to continue metering by encouraging optants but we were not able to justify at the time a universal metering programme. However, we continued to evaluate the range of services that enhanced metering technologies allowed us to offer our customers and the savings that metering could achieve through our tariff and automated meter reading (AMR) trial in WRZ 7.

4.1.8 We have exceeded our water efficiency targets

We take our duty to promote water efficiency very seriously. We have exceeded our targets during this AMP mainly due to the success of our promotional activities such as our Water Saving Squad and our educational services. The latter include our dedicated educational centre in Bushey, Hertfordshire and outreach programmes.

4.1.9 Transition spend projects

We have a number of projects that will require expenditure prior to AMP6

We have taken the decision to allocate costs to reflect an early start to the AMP6 programme, as several of our programmes of work require a level of preparation to enable continuity of output across all five years. Additionally we have a number of quality schemes that require pre-AMP 6 design in order to ensure meeting undertaking dates (refer to Ofwat Table W3a).

4.1.9.1 Making sure our customers have enough water, whilst leaving more water in the environment

Following consultation with our Customer Challenge Group (CCG) and the Consumer Council for Water, we propose to launch a **communication campaign in advance of implementation of our integrated metering and water efficiency programme** in WRZ 5 during 2014/15. We will also develop our logistics and delivery plans so we can begin installation in January 2015. We expect early installation will be offset by the transitional arrangement on bills allowing

[4] Letter from Ofwat to Veolia Water Southeast, "AMP5 Log Up – Metering to 95%", 28th October 2011

customers a choice of when they will switch to a measured tariff, which will result in the water saved programme remaining consistent with our final WRMP. We estimate this will cost £[X]m.

Operational Plans are to be developed for all sites that are subject to sustainability reductions to pave the way for the changes whilst ensuring resilience at all times. This includes emergency contingency for additional imports from Anglian Water, detailed to valve operations level. We plan to have these complete and tested by March 2015.

As part of our planning for **sustainability reductions** we assessed the risk of 'single point failure' when removing a source of supply from a zone. Where loss of resource can be made up from existing transfer capacity but we would be reliant on a single transfer into a zone we propose to install additional monitoring to ensure we can detect any issues that may arise as soon as possible. We therefore propose to select a supplier for a "Trunk Minder" type solution and install and test this by March 2015. We are also discussing with the Environment Agency the possibility of emergency use of sources that are subject to sustainability reductions, under very specific emergency conditions. This investment will be brought forward from AMP6.

[Redacted]

4.1.9.2 Supplying high quality water you can trust

The Drinking Water Inspectorate has asked us to start work on the innovative pesticide treatment plant we have proposed for our Hatfield group of sources. We plan to prove the technology through detailed design by March 2015 with a view to starting construction by June 2016. We will bring forward investment from AMP6 of £[X]m.

We also propose an early start to new GAC filters for pesticide removal at our largest water treatment works. We plan to start construction by 1 April 2015. This will bring forward investment of £[X]m.

As part of our proposed strategy for meeting the revised lead standard from 2013, we are planning to carry out extensive communications, planning and logistics activities by March 2015. As a result we are planning to spend £[X]m. Any reactive replacements during 2014/15 will be funded from the existing AMP5 programme.

4.1.10 We maintained supply during drought

We source 60% of our water from groundwater. Two successive winters of low rainfall recharge caused groundwater levels to decline. The drought in 2012 highlighted two issues: firstly, concern about the impact of the new temporary use ban restrictions on the livelihood of small businesses; secondly, we were facing the prospect of unprecedented drought if we saw a third dry winter.

Our levels of service in AMP5 were:

- 1 in 10 years for a temporary use ban and Drought Order restricting non-essential water use
- 1 in 20 years return period for a Drought Order that could suspend abstraction licence or low flow agreements and introduce other measures
- 1 in 50 years for an Emergency Drought Order increasing abstraction, which may harm the environment

- 1 in 50 years for an Emergency Drought Order to deploy standpipes, which we know is unacceptable to customers

Following the unusually dry weather we experienced over the 24-month period prior to April 2012, temporary use bans were imposed in our Central and Southeast regions.

A number of the London Olympic Games events, training and accommodation venues were located in our WRZ 1- 6. No interruptions to supply or incidents occurred to affect the smooth running of the Olympic Games.

Affinity Water Regions	Commencement of Hosepipe Ban	Lifting of Hosepipe Ban
Central	5 April 2012	9 July 2012
Southeast	5 April 2012	9 July 2012
East	No restrictions	No restrictions

Table 4-A: Hosepipe bans during AMP5

4.1.11 Improved asset management processes

4.1.11.1 Our progress

The Asset Management Assessment (AMA) was a benchmark used by Ofwat at PR09 to assess whether a company is following a best practice approach to prepare its investment needs for capital maintenance. We used the AMA as a benchmark to measure continuing improvement of our asset management approach.

Since PR09, an independent AMA has been conducted on three occasions and is included in Appendix 4 (Asset Management Assessment October 2013 – Final Report 12 November 2013). These were:

- In May 2012, during vendor due diligence at the time of Veolia Water's divestment of our business
- In January 2013, following unification of the three companies to form Affinity Water
- In October 2013, prior to submission of this Business Plan. The last assessment, undertaken by MWH, focused on an assessment of the asset management planning approach for PR14
- Our performance has increased significantly through AMP5, from an overall score of 3.49 to 4.16 for infrastructure and 2.98 to 4.08 for non-infrastructure as shown in Figure 4-4

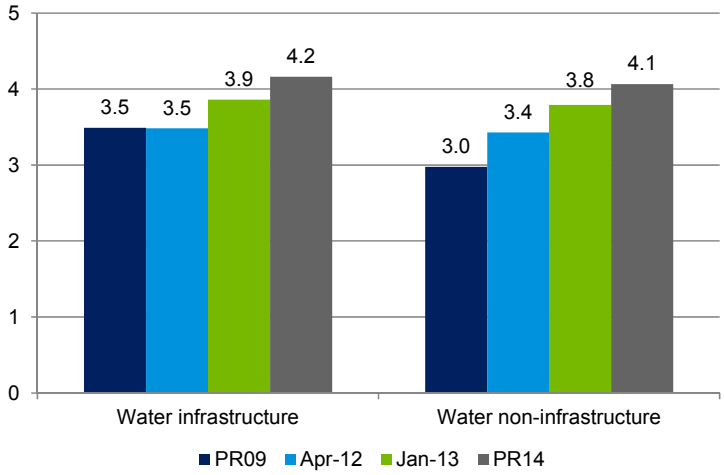


Figure 4-4: AMA score tracking in the last five years

4.1.11.2 We have made investment planning improvements

We implemented a new approach to identify an optimum renewal or refurbishment strategy based on a balance of cost and risk. We introduced portfolio optimisation using PIONEER as our on-going investment planning approach.

PIONEER is a web browser based software tool designed to optimise investment and operational strategies to achieve specified serviceability at least cost, subject to resource and capacity constraints. In keeping with best practice in asset management investment planning, it is designed to provide an integrated modelling environment to implement analyses that are focused on service to customers and the environment. It is risk-based and forward-looking, founded on the principles of the Common Framework and subsequent Ofwat guidance.

4.1.11.3 Our Source Delivery Map is a critical foundation for our planning

Our Source Delivery Map, supported by our Service Delivery Map sets us up so that we operate as eight small wholesale water companies. This enables us to embrace the industry changes and allow us to be accountable for our performance to a community whilst taking advantages of efficiency across distribution.

Within each of our WRZs is a defined network of infrastructure and assets, which are interlinked. At a local level, we rely upon our innovative **Service Delivery Maps**. These are analogous to electricity generation and distribution grids.

The **Source Delivery Map** is the means by which we guarantee water supply to all communities in the most efficient and sustainable way. It comprises the systems and processes that we have in place to manage the abstraction of water and minimise the operating costs of water production and supply across the strategic network. The Source Delivery Map ensures that we:

- Provide water during average demand times in the most efficient way
- Efficiently plan for disparities in demand and supply such as peak summer or a drought year while also making sure this is achieved as efficiently as possible
- Meet our medium and long-term needs looking holistically across the supply network and managing the change in risk that may result from changes in the supply (e.g. sustainability reductions) or demand (e.g. metering programmes and water use changes)

The most important marginal cost drivers are the cost of energy, treatment and maintenance. We manage and control (reduce where possible) these source marginal costs, by optimising the network, targeting capital maintenance at replacing or refurbishing inefficient plant and implementing new schemes to reduce bottlenecks in our network mains and maximise source abstraction and the transfer of water between zones.

To minimise our operational costs we use the MISER-S tool. This contains marginal cost curves for each source and pumping transfer between hydraulic demand zones. This means optimisation is not simply a mass balance / average cost optimiser, but optimises on marginal costs that change according to abstraction or transfer flow.

4.1.11.4 Our Service Delivery Map helps get the best value from our assets

The **Service Delivery Map** (SDM) is a programme of work developed with the aim of creating greater value from our assets. It provides a framework for integrated planning. The SDM describes the source to tap journey for each community. The main objective is to optimise the balance between Capex and Opex with asset and operations productivity, risk and environmental performance. It is a central component of our approach in AMP6. The SDM enables the 'contract' between Community Operations, Asset Management and the Customer. It captures a meaningful dialogue with customers on improvements needed at the community level and how much these might cost.

In summary, our SDM:

- Is applied at the community level
- Engages and involves the local community in development and decisions
- Provides better information and understanding of service risk from asset performance
- Optimises asset and network optimisation capability
- Allows benchmarking on a whole-life cost basis

A detailed explanation of the development and use of the SDM is available in Appendix 4.

4.1.11.5 We have high quality asset care plans

We are implementing **asset care plans** for all our assets. The initial focus is on production assets by assigning the correct asset care plan to an equipment group based on its risk and criticality. A standard risk matrix is being used to assess each equipment group. This approach is described further in Appendix 4.

During AMP5, we also implemented **asset risk profiling** to ensure we engaged operational staff and gathered a complete picture of all of the operational risks at our production sites and network zones.

4.1.11.6 We have a calmer network

We have rolled out an asset care plan for the network that allows for a better planned maintenance programme. This includes planned maintenance of pressure reducing valves (PRVs), flow meter and key valves. This expenditure will enable the proposed reduction in the replacement of distribution and trunk mains and support the reduction from AMP5 in reactive work.

- We know that we cause a proportion of bursts from our own valve operations. We have constructed a valve operations rig similar to the one used by Severn Trent Water and Yorkshire Water. This rig will be used as the basis of training for valve operation and will reduce the number of burst caused by our operations
- We know that our pump start up and shut down also causes damage. We have started a programme to slow down these operations to allow the network a recovery time following shutdown
- We are developing network telemetry. To date we have relied on "customer telemetry" – we know when a burst has happened because of the calls from our customers. However, through our network telemetry trial in Amersham we have established not only the feasibility, but also the practicality of constructing a single operational control system, fully integrating both above ground and below ground telemetry. Furthermore, we can provide a platform upon which future monitoring systems, for example on-line network water quality monitoring, could be implemented – if required. It can also save costs, especially energy costs, as it helps to define the performance over time of a district meter area (DMA), then how it integrates at the community level through to the SDM and subsequently the source delivery map

4.1.12 Data and IT strategy

Our information technology (IT) infrastructure is a critical facilitator for our future success.

In AMP4, we adopted a break-fix approach to replacing our IT hardware assets. To avoid this in the future, the replacement policy has an average asset life of 7.5 years.

The largest investment element of the IT maintenance programme in AMP5 was £[X]m for the replacement, upgrading and development of software applications. Of this, £[X]m was for the maintenance of large corporate applications and £[X]m for maintenance of standard operating systems and desktop applications. We planned to replace the ageing Billing Application, Electronic Document Management System, Job Management Application, Job Scheduling Application and Field Information System. These systems were increasingly obsolescent and carried high risk of failure. In most cases, they did not have the modern functionality needed to improve efficiency and meet customer expectations. Our Oracle application, Geographical Information and the Asset Management Information Systems, were upgraded in line with supplier recommendations.

As highlighted in the PR14 Business Plan Assurance Report (15 November 2013, Atkins), there are inconsistencies in the recording of company job management systems unplanned maintenance on our Asset Management Information System (AMIS). These inconsistencies have caused difficulties in the analysis of failure data and repair rates for non-infrastructure capital maintenance modelling. Data on leakage repairs has not historically been recorded according to District Meter Area, which has caused uncertainties in the derivation of leakage cost curves.

Whilst we have found pragmatic ways of dealing with these issues for our Business Plan modelling, they affect our ability to monitor and model asset deterioration and asset management options as business as usual.

The recent Asset Management Assessment undertaken by MWH[5] recommends:

"*The company should continue to improve performance and intervention data held for its non-infrastructure asset base; With limitations in the data used to derive unit costs for non-infrastructure capital maintenance activities, the company should continue to satisfy itself that wider industry data used is validated, relevant and appropriate for use in developing expenditure profiles.*"

"The implementation of PIONEER has been critical to the development of the asset management plan, on a risk based, forward-looking basis, to meet levels of customer service and performance. Staff have developed a detailed knowledge of this analysis and use of the PIONEER system to optimise the plan."

We have therefore planned to implement the required improvements within AMP6.

4.1.13 We are preparing for wholesale/retail separation

We are committed to the development and deployment of separate wholesale and retail activities with the aim of delivering excellent standards of quality of service to our customers.

As a general rule, anything that involves direct interface with the customer is within the scope of our retail activities, though there are some exceptions and areas of overlap. The interface between wholesale and retail activities will be governed by a service level agreement defining key performance indicators and related charging arrangements.

We have included costs for changes required to support the introduction of competition and ensure our wholesale business will be ready to interact with our incumbent retail service or an alternative retailer, but not the external costs of supporting the establishment of the market.

4.1.14 The wholesale price control

Breakdown of our revenue requirement

Section 7 explains in detail the make-up of the wholesale price control.

[5] Asset Management Assessment, October 2013, MWH

4.2 Making sure our customers have enough water, whilst leaving more water in the environment

4.2.1 Summary

Achieving this Outcome is the entire focus of our Water Resources Management Plan (WRMP). The final document was submitted to the Secretary of State as part of our Statement of Response in November 2013. Our Business Plan therefore represents the culmination of extensive engagement with customers, regulators and other stakeholders including community special interest groups.

For this Outcome, we have considered how to achieve our commitment to leave more water in the environment as well as strategies for leakage reduction together with water saving through integrated metering and water efficiency. We have also explained how we have worked with other companies in the southeast of England to share resources and how we work with developers to meet the demand arising from new housing.

4.2.2 Our Water Resources Management Plan

Our objectives when developing the WRMP were to improve resilience, reduce the environmental effects of our operations and meet government aspirations by lowering demand.

We sought the views of our customers and stakeholders on our draft WRMP and investment proposals between May and August 2013. We received a wide range of views from over 80 respondents. Customers generally support our proposals. In our Statement of Response, we have shown how we have considered each response together with other feedback we received on our Business Plan proposals.

As we have a supply/demand deficit in five of our eight zones at the beginning of the planning period and in seven zones by 2040, we have considered a wide range of options to rebalance supply and demand which results in a substantial investment programme for our Central region, WRZ 1- 6. Our Southeast region has deficits from 2020, so we have developed options to address this. Our East region, WRZ 8, remains in surplus throughout the 25-year planning period and no water resources investment is required.

The situation in our Southeast region, WRZ 7, has improved since the publication of our draft WRMP. Sustainability reductions in the Little Stour are not now required and therefore water resources investment to 2020 is significantly lower. The only scheme required is flow augmentation on the Little Stour. This investment is included in our Business Plan.

We have also reviewed our options in light of the requirements set out by the Water Framework Directive and the need to prevent deterioration in ecological status arising from our proposals. We have included provision in our Business Plan under our proposals for a change protocol for further sustainability reductions that are currently classified as ‘uncertain’ should new obligations arise from the River Basin Management Plans due by the end of 2015.

Our revised WRMP Preferred Plan and least-cost plan both fully resolve the supply / demand balance with a range of option types. We believe our Preferred Plan is a better balance and offers best value for our customers, stakeholders and the environment. The process we used to reach this conclusion is detailed in Section 11.3 of our revised WRMP, which is included in Appendix 4.

The graphs in Table 61 of our WRMP show a comparison of the least cost Plan and our Preferred Plan at company level and relate to the balancing of supply and demand. Points of note include:

- Our Preferred Plan includes a larger programme of leakage reduction than our least-cost plan
- Our Preferred Plan reduces demand more swiftly than our least-cost plan due to the smooth delivery of our universal metering programme in our Central region. The least-cost plan delivers metering in two distinct periods, with three WRZ in AMP6 and the remaining WRZ from 2034
- The least-cost plan does not select any water efficiency options in the first ten years of the planning period
- Our Preferred Plan generates fewer supply schemes than our least-cost plan, as we have promoted more demand management schemes. As a result, our Preferred Plan has a smaller impact on the environment
- Demand is lower at the end of the planning period in our Preferred Plan

We have also evaluated the risk of delivery for each plan (WRMP Section 11.4) which indicates the least cost plan is of higher risk than the Preferred Plan particularly in terms of the success of our proposed metering and water efficiency programme. We conclude that the higher risk is likely to result in higher cost and this could be of sufficient magnitude to exceed the difference in forecast cost between our Preferred Plan and the least cost option. This has been recognised by our Reporter in his audit report[6].

Section 11.5 of our WRMP explains that customers and stakeholders have indicated their support in our Preferred Plan for:

- The level of sustainability reductions
- Excluding the high environmental risk options
- Sharing water resources
- Demand management in favour of taking more water from the environment
- Leakage reduction
- Universal metering
- Non-household water efficiency

Assessing our weighted average annual demand

For this Plan, we have looked carefully at the relationship between our demand forecasts in our WRMP and those used for assessing changes in operating costs for AMP6. We examined the pattern of historical demand and its relationship with temperature and rainfall to establish a framework for demand scenarios for Normal Year Annual Average (NYAA) and Dry Year Annual Average (DYAA) for our WRMP and we also considered a Wet Year Annual Average (WYAA) for our Business Plan to ensure our cost forecasts take account of the full range and frequency of weather conditions. Weighted Annual Average Demand values were then derived from 80% NYAA, 10% DYAA and 10% WYAA. We benchmarked this assessment with the actual average demand for the last 10 years and this corresponded very closely to our Normal

[6] Atkins 2013 Affinity Water PR14 Business Plan Assurance Report, p7 – Appendix 7

Year Annual Average. Therefore we have used this scenario for WAAD. Details of the derivation of WAAD are included in our Demand Forecast Technical Report to our WRMP.

4.2.3 How we responded to stakeholder views with changes to our WRMP

We have made the following amendments to our WRMP as a result of the representations we received from consultees responding to our draft WRMP consultation.

- Our customers told us they preferred demand management measures (leakage and water efficiency) over increasing abstraction from rivers[7] (see Section 2)
- We have slowed our universal metering and water efficiency programme, in response to customers and the Consumer Council for Water's comments, so that metering will be delivered approximately equally over two AMPs. We have been developing our communications campaign, taking account of reports such as the Consumer Council for Water's report *The Customer Impact of Universal Metering Programmes (May 2013)*
- We have continued to work on our delivery programme for household metering and water efficiency and the transition plan to support our customers, as requested by the Consumer Council for Water. We have considered the impact of transitional arrangements on achieving demand savings and to compensate for this, we have enhanced our communications including frequency of meter reading and water efficiency provisions
- We have improved our water efficiency programme to include more educational awareness and expand the future role of our Education Centre team in Hertfordshire, as many of our customers would like to see us working more with local schools to educate the next generation
- We have thoroughly reviewed our levels of service analysis, in response to comments from both the Environment Agency and Ofwat, and provided further evidence in support of our assessment. This does not have an impact on the options selected in our Preferred Plan
- We plan to introduce a delay to the implementation of temporary use restrictions for economically vulnerable non-household customers, such that they receive a slightly higher level of service
- We explain that emergency drought orders for additional abstraction where it harms the environment would be at no greater frequency than 1 in 118 years
- We have clarified that we consider emergency drought orders for the use of standpipes are unacceptable and we are not planning for their use in anything other than civil emergency conditions
- We have reviewed our headroom assessment for our baseline demand forecast to ensure we have fully considered all of the uncertainties around our supply / demand balance. We have responded to feedback on our Plan from Anglian Water and allowed for uncertainties in our supply from our shared resource, Grafham Water
- We have removed a third party licence groundwater option from our feasible options list in response to the Environment Agency's concerns that there was no existing licence at this location. This option was selected in our draft WRMP but is no longer available for our revised WRMP.

[7] Eftec and ICS Consulting, 2013, PR14 Stated Preference Study: Water Resources WTP Study, p18 (Appendix 2)

- We have concluded our negotiations with regard to bulk transfers of water from our neighbouring water companies and other third party suppliers so that our respective Plans are consistent with WRSE, as requested by the Environment Agency, Ofwat and the Consumer Council for Water.
- We have run additional scenarios to address customers' views, for example offering reservoirs and desalination options taking account of their significant impact on the environment. We have also run scenarios where all options that have been classified as high and medium risk with respect to the environment are not available, to show the impact on costs.
- We have reflected the uncertainty of our WRMP in our headroom assessment, as required by the Environment Agency, and discussed its impact on our WRMP. Some consultees were concerned we had insufficient headroom and that we were over reliant on our proposed universal metering and water efficiency programme and bulk transfers from other water companies, who, during drought may be unable to meet our needs. We have also considered contingency options that we may need to develop should our Preferred Plan fail to deliver the benefits projected.
- We have continued to assess the environmental impact of our options as part of our SEA, as requested by the Environment Agency and Natural England. Our assessment is that the options in the first ten years of our Preferred Plan will not cause deterioration in ecological status in accordance with the Water Framework Directive and that the options in the remainder of the planning period are very unlikely to cause deterioration. We will continue to review our future projects as part of our annual review of our WRMP, and will investigate potential deterioration effects as necessary so that we are able to draw firm conclusions to ensure no deterioration through adoption of alternative solutions well before any option is included in subsequent WRMPs. This approach does not affect the selection of options in our modelling.

4.2.4 Planned expenditure to meet this Outcome

The table below shows a breakdown of the planned expenditure required to meet this customer Outcome. We will invest in infrastructure to maximise the potential of our existing sources and we will manage risk through having a resilient supply network. We will also invest in our demand side programme, for example through our universal metering and water efficiency programme.

Making sure our customers have enough water, whilst leaving more water in the environment	PR14 £m	
	Sub-total	Total
Capital Maintenance		
Reactive communication pipe and stop tap replacement		
Meter replacement – domestic		
Meter replacement – commercial		
Ardleigh reservoir maintenance		
Preventative network maintenance		
Other		
Capital Enhancement		
Business Planning - WRMP		
Developer Services		
Groundwater schemes		
Leakage (extra)		
Metering - retrofit AMR		
Metering (optant)		
NEP investigation		
NEP mitigation		
Sustainability reductions		
Developer Services - contributions incl. diversions		
Metering (universal)		
Opex		
Totex, including capital enhancement		

Table 4-B: Planned expenditure for "Making sure our customers have enough water" Outcome

4.2.5 Our commitment to leave more water in the environment

We are committed to achieve sustainability reduction in abstraction from a number of our groundwater sources to improve flows and habitats in local chalk streams. We have agreed sustainability reductions of **42Ml/d** with the Environment Agency in our Central region in AMP6 and a further **28Ml/d** in AMP7. These reductions represent a significant element of our resource base.

We are keen to progress with these and have proposed the use of the **transition investment** mechanism to allow us to bring forward investment to deliver the abstraction reductions (including morphology actions) specifically at Stevenage and Welwyn pumping stations in the River Beane and Mimram catchments. We have agreed with the Environment Agency where cost beneficial sustainability reductions are to be undertaken consistent with NEP3, August 2013[8] from the Environment Agency. Our plans have been designed to satisfy the objective of 'no deterioration' of both the water environment and drinking water quality in our supplies. We have agreed with the Environment Agency the following challenging sustainability reductions that apply to our groundwater abstraction sources in four of our eight zones.

[8] NEP WR Phase 3 August 2013 (Issued 28_06_13 revised final 18_10-13)

Water Resource Zone	Reduction Average DO Ml/d	Reduction Peak DO Ml/d
1	-13.00	-8.15
2	-14.66	-5.82
3	-42.14	-37.58
Company Total	**-69.80**	**-51.55**

Table 4-C: Groundwater abstraction sustainability reductions by 2025

The reductions affect 13 of our sources with five sources being shut down and eight having reduced outputs. Further possible reductions of 217Ml/d have been listed in the Environment Agency's 'unknown' category and these could affect future WRMPs. As part of the NEP, we will continue to work closely with the Environment Agency to explore further potential for sustainability reductions in the 'uncertain' sources.

As a result of discussions with the Environment Agency in November 2013, we have included provision for an early start on the implementation of sustainability reductions measures as part of transitional expenditure in 2014/15 and we have included a Change Protocol in our Business Plan (see Appendix 6) to make provision for the implementation of new obligations in AMP6.

Details of proposals can also be found WRMP Technical Report 1.4: Sustainability Reductions.

Abstraction Incentive Mechanism

AIM is a reputational target for AMP6 and this is helpful as it will reflect the substantial progress we are planning to make with sustainability reductions. Provided the AIM is balanced, it should reflect an overall gain for the environment where substantial volumes of abstraction are curtailed and only partially replaced by water from alternative existing sources and new imports as the greater portion will be addressed through demand reductions.

A list of 92 of our sites has been selected by Ofwat as being suitable for AIM. These are all groundwater sites affecting Band 1, 2 and 3 Water Bodies under the Environment Agency's assessment of ecological effects under the Water Framework Directive.

We have considered options for reporting how the environmental sensitivity of sites affects our operational decisions and how the AIM measure compares with our own incentive measures of progress in achieving sustainability reductions – water available for use. We have included all environmentally sensitive sites in our proposed AIM reporting measure and we are keen to work with Ofwat and the Environment Agency to develop this measure further.

Improving resilience to drought and implementing sustainability reductions

In our draft WRMP, we put forward proposals to improve resilience against a third dry winter drought based on work we carried out in the spring of 2012 when we had experienced two very dry winters and we were forecasting unprecedented drought conditions by the autumn of that year. In the event, the crisis was averted by an equally unprecedented rainfall pattern over the summer that was a 1 in 200 year event. We describe this in detail in WRMP Section 3.2.1.6.

In our draft WRMP, we submitted our estimate to reduce the impact of a third dry winter drought on customers for a capital investment of £15million. As evidenced by the response from our

consultees presented in WRMP Section 10.3, our drought resilience proposals were generally supported. This was also backed up by our online panel in August 2013 (also see Section 10.5.3).

For our revised WRMP, we reviewed the supply deficit we forecast in severe drought and, at the same time using our MISER operational model, we worked out in detail what measures would be needed in each of our hydraulic demand zones to achieve site by site sustainability reductions of 42Ml/d in AMP6 and 28Ml/d in AMP7.

Implementation of sustainability reductions means we will have to replace this lost groundwater with a combination of demand management measures (leakage reduction, metering and water efficiency) and by transferring water from other areas.

As a consequence of this work, we will be investing to reinforce our network in AMP6 and AMP7 to be able to replace lost local resources as well as building greater capacity to move water around. The level of investment has been minimised as a result of our implementation of a wide range of leakage reduction and demand management measures to reduce the demand for water.

River scheme	Scheme	Ready by	Costs £m
Ver	Redbourn to St Albans pipeline	2016	
Beane	Sacombe to Stevenage pipeline and pumping	2018	
Misbourne	Amersham to Hughenden reinforcements	2017	
Gade	Piccotts End to Adeyfield pipeline	2018	
Mimram	Pumping modifications	2018	
Zonal transfer	Bovingdon to Boxted pipeline	2018	
Zonal transfer	Baldock to Royston	2018	
		Total	

Table 4-D: Resilience measures to mitigate water lost to sustainability reductions

These investments mean that we have also reduced the severity of drought our customers will experience following a third dry winter (which corresponds to the level 4 trigger in our Drought Management Plan and a return event of 1 in 118 years) such that the supply deficit under those conditions is now forecast to be only 1.5Ml/d by 2020 and 15Ml/d by 2040.

As the impact of drought conditions will be reduced following the introduction of measures to achieve sustainability reductions and the scale of the forecast deficits is managed under our Drought Management Plan (also revised to take account of sustainability reductions), we are no longer proposing specific further investment for drought measures.

As a result of discussions with the Environment Agency in November 2013, we have included provision for an early start on the implementation of sustainability reductions measures as part of transitional expenditure in 2014/15.

Levels of service

Table 4-E summarises our analysis of the calculated return period for each of our levels of service, and compares it with our actual level of service provided to our customers. A return period is a statistical measure of the average frequency of an event occurring, and is usually

given as a certain “event”; for example, a drought with an average frequency of 1 in 10 years would have a 10-year return period.

Our calculations are described in section 3.2.1 of the WRMP (Appendix 4).

	Drought Zone Trigger Level	Action Level	Action	Customer Level of Service in our draft WRMP	Calculated Return Period (confidence interval)	Revised Customer Level of Service
Increasing Drought Severity ↓	3	3a	Domestic Temporary Use Restrictions	1 in 10	**1 in 10** (1 in 7 to 1 in 17)	**1 in 10**
		3b	Vulnerable non-household Temporary Use Restrictions	~	~	< 1 in 20 *
	4	4a	Drought Orders for non-essential use	1 in 20	**1 in 65** (1 in 50 to 1 in 100)	**< 1 in 40 ***
		4b	Drought Permits for Additional Abstraction	~	~	1 in 75 **
		4c	Drought Orders for restrictions on essential use	~	~	1 in 90 **
	5	5a	Emergency Drought Orders for abstraction causing Environmental Damage	~	**1 in 118** (1 in 100 to 1 in 150)	1 in 118
		5b	Emergency Drought Orders for standpipes and rota cuts	1 in 50	~	**Considered Unacceptable**

Table 4-E: Our Levels of Service, calculated and actual
** Estimated forecast for implementation of restrictions as these are required in advance of the actual hydrological conditions occurring.*
*** Interpolated return periods for different types of drought orders.*

4.2.6 Challenging leakage reduction programme

We will reduce leakage by 27Ml/d in AMP6. As illustrated in Figure 4-5, this reduction is part of a reduction in leakage that we plan to achieve over the next 25 years, however, with the steepest reduction in AMP6. We have included leakage as a key performance commitment and Outcome Delivery Incentive.

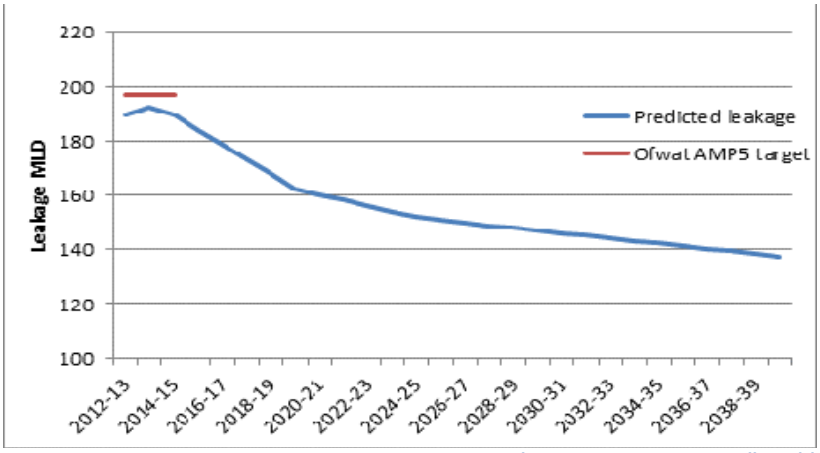


Figure 4-5: Future predicted leakage performance

Customers support our leakage programme but do not wish bills to increase

Customers have expressed an expectation that we will cut leakage as far as reasonably practicable but are unwilling to see an increase in their bills to pay for this.

From over 500 representative responses to our draft WRMP panel, a majority of 75% feel we should increase the rate at which leaks are fixed. When asked about their willingness to pay for this, however, 69% of our leakage panel respondents stated they are not prepared to see an increase in their water bill to address this.[9]

We have responded to this feedback with our leakage proposals. It is also vital that customers play their part in leakage reduction as around 25% of overall leakage derives from their properties. Our metering programme will provide customers with more coherent and timely information on their water usage and will work in concert with improved management of leakage in our network.

Objectives of our leakage reduction programme

Having outperformed our leakage target so far in AMP5 we plan to maintain that level of performance and improve upon it where practicable.

As a contribution to reducing our overall demand for water, we have a target to lower leakage by a further 27Ml/d by 2020. This comprises 20Ml/d from our network and 7Ml/d from customer pipes and fittings, resulting from the universal metering programme.

We will fulfil the following objectives:

- A continuous reduction in leakage over the 10-year period from 2015 to 2025
- Control of leakage year-on-year below a predetermined leakage target
- A cost beneficial approach
- Continual improvement towards increasing efficiency in managing and controlling leakage
- Open, continuous dialogue with customers on potential changes and their impact

It is important that we have a balanced investment programme to manage the supply/demand deficits in some of our communities. The reliance solely on very large levels of leakage reduction presents significant risks to our customers if these cannot be achieved in a sustainable and cost beneficial manner.

Customers' needs are at the heart of our approach to leakage management and control

The method of calculating leakage is complex and defined by regulatory guidance. As the leakage calculation is a regulatory target, all the parameters and assumptions are audited by an independent third party reporting to our Board.

Network performance and leakage are affected by environmental factors and show seasonal variation. Our network is maintained under positive pressure that rises and falls daily. This stresses the pipes and causes leaks resulting in a natural rate of rise (NRR) of leakage. If we take no action, leakage in an area will rise as the different assets deteriorate over time. When

[9] OPM, 2013, Panel Survey Findings, Leakage, p32 (Appendix 2)

the minimum night flow (MNF), less the legitimate night usage is above the target for leakage, we investigate and employ active leakage detection.

The flow of leakage is linked directly to pressure. Optimising the pressure of the network helps to control leakage. In AMP5, we invested in equipment to match customer demand at an optimum pressure. This is achieved using pressure-reducing valves either working in isolation or as part of a group of control valves.

Customers support the principle of utilising pressure management as a cost effective and energy efficient way to control leakage. Given a choice of options, over 90% of our leakage panel respondents supported pressure management provided their appliances were not affected (40%), it took place at night (28%) or they could be assured of receiving the minimum pressure they were entitled to (23%)[10].

Active leakage detection

We depend upon our customers and staff to report observable leakage. We encourage them to use a Freephone line (Leakspotters available 24/7), texting, the internet, email, and social media to report leaks. With visible and non-visible leakage, we employ various techniques to locate the source of the leak.

Leakage detection utilises acoustics. When pipes leak, they generate vibration and sound. Leaks are located using 'listening sticks' and 'correlators' on pipes and fittings, operator experience and complex technology. By triangulation of soundings and correlation with flow and pressure measurement, more precise locations of leaks are determined with increasing accuracy. This lowers the cost of excavation and repair.

We have also developed and trialled in-line telemetry, using Navig8, to give real time analysis to optimise management pressure and flow in the network.

Leakage from customers' properties

On average, around 25% of total water leakage arises from customers' pipes and equipment. Whenever we install a new meter, we check for leaks between the meter and the internal stop tap. If we find a leak and it can be repaired without having to do any extra digging, we carry out the work free of charge. Installing or replacing increasing numbers of water meters will allow us to promote the monitoring and reduction of customer side leakage and water usage.

Our repair policy, advice and guidance on leakage are made readily available to customers via our website and printed media. This forms part of the package of information given to customers having meters installed or replaced.

If a customer reports a leak from their supply pipe, one of our engineers conducts a free assessment and if there is a visible leak and the pipe is generally in good condition, we may decide to undertake a discretionary repair free of charge, subject to certain conditions relating to location, nature of the pipe and access.

[10] OPM, 2013, Panel Survey Findings, Leakage, p62 (Appendix 2)

Leakage cost

We use a cost curve to estimate the cost of leakage. The curve was assured independently[11]. To deliver the leakage reduction of 27Ml/d in AMP6 requires £[X]m of Capex and £[X]m Opex (totalling £[X]m including base Opex).

4.2.7 Water saving programme - universal metering and water efficiency

4.2.7.1 Universal metering and water efficiency programme

Our water resources situation is substantially different from our previous Business Plans, as we no longer have a surplus in seven of our eight communities. To avoid a demand deficit we have to reduce our leakage and engage with our customers so that they can be part of the solution. We will encourage our customers to value the water they use by implementing a comprehensive programme to save water supported by universal metering coupled with enhanced water efficiency measures in the most water stressed communities.

We will meter 280,000 properties by 2020 and give customers **a choice** to keep paying non-metered charges for up to two years. This builds upon the successful universal metering programme we have undertaken in our Southeast region (WRZ7). For AMP6, we propose to meter fully four of the water resource zones at a rate of 56,000 meters per annum, at a cost of £[X]m over the 5 years (including the costs associated with customer supply pipe repairs). The remaining zones in our Central region will be completed in AMP7.

By the end of AMP6 meter penetration will be 69% in Central, 84% in East and 93% in Southeast. From recent evidence of our metering programme in Zone 7 metering could reduce consumption by 16% or more.[12]

We prioritised our metering programme on the basis of targeting those communities having the greatest gap between customer demands for water against our resources and ability to supply.

Universal metering will incorporate advanced meter reading systems (AMR). AMR will help to significantly reduce the cost of meter reading. We plan to increase the frequency of readings to monthly to provide our customers with their usage information regularly so that they can understand better their use of water and can identify promptly supply pipe leakage.

We will retrofit existing customer meters where possible to improve the coverage of this available technology. This will allow existing customers also to benefit from enhanced information and start to improve the way that we manage the demand in our network, especially customer leakage.

We asked customers their views on a charging system that rewarded households according to how careful they are in their use of water: a majority of 67% of our dWRMP online panel were comfortable with the concept of the introduction of a volumetric stepped tariff.[13] We will consider options for developing this in AMP6.

[11] Update to the Short Run Sustainable Economic Level of Leakage (SR SELL) for PR14- Phase 2 (November 2013)
[12] Affinity Water, 2013, Metering Trials Final Report, Section 2, p7
[13] OPM, 2013, Panel Survey Findings, dWRMP, p27

Our universal metering programme will be supported by a dedicated customer engagement plan to encourage customers to switch to a measured tariff, monitor and understand their usage and deploy water saving measures in their homes. Based on our experience in our Southeast region (WRZ7) high quality customer engagement is an imperative for success. The savings we plan to achieve in our universal metering and water efficiency programme are summarised in the following table.

Meter installation period	WRZ	Water saved from metering (Ml/d)	Water saved from customer supply pipes (Ml/d)	Water saved from Water Efficiency (Ml/d)	Total water saved (Ml/d)
2015 - 16	5	**2.71**	1.01	0.57	4.29
2016 - 17	1	**3.67**	1.38	0.76	5.81
2017 - 18	3	**7.11**	2.62	1.52	11.25
2019 - 20	2	**4.93**	1.87	1.08	7.88
AMP 6 delivery		**18.42**	**6.88**	**3.93**	**29.23**
2022	4	**12.07**	4.04	2.6	18.71
2024	6	**5.36**	1.97	1.17	8.5
AMP 7 delivery		**17.43**	**6.01**	**3.77**	**27.21**

Table 4-F: Metering delivery planned water savings

We propose to accelerate the investment in meter installation with an early start before 2015.

Our approach to metering

Our universal metering programme will install meters with walk-by AMR on a street-by-street basis. Wherever practical, existing measured customers will have their meters equipped with a walk-by AMR device. AMR meter installations will be considered for metering of joint supply and difficult to fit properties on a case-by-case basis.

We will continue to offer optant meters to those customers who request a meter and we expect 40,000 optant household meters in AMP6 and we will meter all new properties, predicted around 45,000 properties. These property numbers are slightly less than our Water Resources Management Plan to allow for multiple occupancy dwellings.

Our preference is to locate our meters external to a customer's property. This has the advantages of ready access for installation, maintenance, repair and meter reading by our people and we are more likely to be measuring the entire supply of water to the property. Internally fitted meters have the benefits of weather protection, ready access by the customer and, assuming ease of entry, they are cheaper to fit. On balance, we prefer to locate the meters externally since this will assist our detection of supply pipe leakage. For flats, the meter installation is likely to be an internal fit either inside the customer's property or at a 'common' feed. Some flats may have a communal hot water supply separate to their cold-water feed.

We propose to install an AMR walk-by unit on all future meter installations in all zones. In AMP5 we proved that the technology works and will provide more information to customers on their water use in the future, both as part of their bills or through our website. There is considerable

evidence to suggest that regular feedback has a positive effect on reducing consumption. Respondents to our online panel view the additional information we currently supply as helpful to their understanding (55%)[14] and a majority of the panel (69%) has told us they would like to see more information about water use appearing on their bill[15]. AMR technology has the potential to be adapted to allow customers to monitor their own water usage in near real time.

Where newly installed meters show continuous use, the cause will be investigated and where necessary external supply pipes will be repaired under our supply pipe repair policy. Water efficiency advice and water audits will be offered to all households following installation of a water meter.

Shared supplies can present significant difficulties for meter installation. We are aware, from customer feedback, that customers in multi-dwelling buildings such as blocks of flats are disappointed when unable to have meters installed. In AMP6, through the use of remote read AMR units, we anticipate a significant proportion of these types of properties will be able to be metered successfully.

Justification for our integrated metering and water efficiency strategy

In almost all of the water resource scenarios modelled, metering of Zones 1–6 was highlighted very early in the planning period as an optimal solution for balancing supply and demand. Our proposed metering programme is supported by the outputs of our various models including:

- The Economic Balance of Supply and Demand modelling supports metering in all six zones of our Central region demonstrating that it represents the least cost planning solution to maintain the supply / demand balance; (Section 11.4.2.3 of the WRMP)
- Through the use of the UKWIR Smart Metering Model, we find that metering including AMR over 5 years offers the optimal metering solution (Section 8.4.3 of the WRMP)
- Universal metering and water efficiency in our areas has strong alignment with government, Defra, Environment Agency and Ofwat sustainable water policies

Our analyses take on board the requirements of the Water Resources Planning Guidelines that we determine the best value solution taking account of climate change, sustainability and resilience.

A cost benefit analysis (CBA) was carried out using the latest UKWIR methodology[16] to determine the optimal metering solution for the universal metering programme. The model was developed specifically to meet the latest regulatory requirements and included the following elements - meter and data capture procurement, meter replacement, meter installation, meter reading, AMR, communications, Capex and Opex, back office system, programme costs, leakage, internal leakage, supply pipe leakage, network leakage, level of demand and diurnal demand profile, dealing with customers, and carbon emissions (Scope 1 and 2). Details can be found in Technical Report 3.3 appended to the WRMP.

The results of our CBA modelling indicate that:

[14] OPM, 2013, Panel Survey Findings, SDS/dWRMP, p17
[15] OPM, 2013, Panel Survey Findings, dWRMP, p25
[16] The Affinity Water metering cost benefit analysis (CBA) model used the CBA model developed as part of the UKWIR project titled “Smart Metering in the Water Sector”. The UKWIR methodology was developed by Frontier Economics as part of the UKWIR Smart Metering Programme. The objective of the UKWIR project was to provide a CBA model that could be used by water companies to make their AMP6 smart metering business cases

- Both dumb meters and AMR are beneficial when compared to the base case
- AMR is beneficial when compared to dumb metering if the marginal cost of water is closer to the long run marginal costs rather than the short run marginal cost
- A five-year programme appears to be more cost effective than a ten-year programme

We have also taken into account customer views in developing our options. The majority of customers agree that metering is the fairest means of charging for water (75% of our dWRMP panel agreed with this statement[17]) While opinion was divided on the likelihood of a meter saving them money, nonetheless 77% believe a compulsory metering programme should be universal rather than limited to areas of serious water stress. [18]

When it comes to choosing to have a meter installed, the consensus weakens. Those who have seen or expect to see their bill increase, often feel that while it might be fairer for the wider good, for them personally, it seems unfair. This becomes evident in the data collected during our consultation phase. We asked customers about willingness to have a meter fitted during our 'Let's Talk Water' campaign that took two forms, an online panel and through a broader event and communication campaign: only around half of respondents who did not have a meter said yes to this question (50-58% across the range).[19]

Feedback received across several of our engagement activities suggests the provision of clear, frequent and high quality information would contribute significantly to customer comfort during the transition (before, during and after installation). One example of this type of feedback came in early October when we held two deliberative forums in Rickmansworth and Harlow. The outputs are detailed in Section 2. In summary, customers expect to be kept informed during the 'pre-installation phase' at least 3–6 months prior to the first installation and would like to see easy to understand comparative bills available during the transition period to understand the impact of a meter on their bill.[20] A third party supplier experienced in community communications will be engaged and the Consumer Council for Water indicated a willingness to support our communication plan.

There is considerable evidence to suggest that regular feedback has a positive effect on reducing consumption[21]. Post-installation, customers would like to read the meter themselves and use the internet, an app or some combination to access 'real time' meter readings. More information on the bill about water use is desirable as a means to interpreting and comparing bills (69% would like to see this).[22]

The proposed two-year transition period from installation prior to adoption of the measured bill met with their approval with 69% of deliberative forum participants considering it fair[23]. It is clear from the experience of Southern Water and South East Water that implementation of a 'compulsory' metering programme had an adverse effect on customers. We are confident that our approach to 'universal' metering will mitigate the impact on customers.

The customer journey proposed for the programme is explained in Section 6. It gives the customer 24 months to learn and understand their consumption and comparative costs such that they could choose to switch to a metered bill before the end of the transitional period. There

[17] OPM, 2013, Panel Survey Findings, dWRMP, p22
[18] OPM, 2013, Panel Survey Findings, dWRMP, p26
[19] OPM, 2013, Let's Talk Water Consultation Report, p26
[20] OPM, 2013, Community Metering Consultation Deliberative Forums
[21] 07/CU/02/2 - The Sociology of Water Use
[22] OPM, 2013, Panel Survey Findings, dWRMP, p25
[23] OPM, 2013, Community Metering Consultation Deliberative Forum, p21

are four key elements to assuring success in customer acceptance of the meter installation programme:

- Communication – starting effective two-way communication with affected customers 3–6 months before the start of installation
- Water efficiency – providing information, equipment and advice to customers free of charges to demonstrate the positive environmental, social and economic benefits of metering
- Transitional billing period – allowing two years for customers to adjust to a metered supply before receiving the first full volumetric bill
- Support for vulnerable customers – means tested, structured tariffs and charitable support for those at risk of adverse economic impact of metering

Meter replacements and meter optants

We are planning to replace 104,954 household meters due to their asset life and install approximately another 40,000 optant meters in AMP6 (inclusive of East and Southeast regions). We used current unit prices of £[X] to replace a household meter (£[X]m in total) and £[X] to install an optant meter (£[X]m) respectively.

We will continue to fit meters at the request of our customers (optants). Our policy of replacing meters at the end of their useful asset life is based on the asset care plan for meters. In implementing universal metering, we will integrate the meter replacement programme. When customers request a meter in an area subject to universal metering we will ensure as far as practicable that they are metered as part of the programme. For installations outside the bounds of the universal metering programme, optant meters will be installed by a separate delivery team.

In WRZ 8, we will continue to promote optant metering. Given the demographics of the area, it is likely that customers with reasonable income and single occupancy will find a meter beneficial whilst there may be resistance from some customers based on their low income.

Meter projections

In AMP6, our Plan will achieve over **29Ml/d** reductions in demand from metering using automated meter reading (AMR) technology in Zones 1-6. Table 4-G and Table 4-H show the levels of meter penetration in AMP6, including our universal metering programme, optant metering and new properties. We plan to continue metering in Zone 2 and 4 in AMP7 and expect to reach 90% metering in our Central region by 2023. The number of meters installed in each year is different to our Water Resources Management Plan as we have smoothed the delivery to maximise efficiency. The number of meters installed by 2020 is the same.

	AMP6					
	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL
Optants (Central only)	9,164	9,164	8,103	6,031	4,610	37,072
Universal installation	47,237	63,512	63,512	63,512	42,323	280,096
New builds	7,320	7,351	7,134	7,026	7,304	36,135
% penetration	47.7%	53.7%	59.6%	65.3%	69.1%	

Table 4-G: Projection of metered households in AMP6 for Central

	AMP6					
	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL
Optants	600	580	560	530	510	2,780
Universal installation	0	0	0	0	0	0
New builds	462	373	278	208	198	1,519
% penetration	80.1%	81.7%	82.5%	83.3%	84.0%	

Table 4-H: Projection of metered households in AMP6 for East

No data is supplied for Zone 7 as there is no proactive metering programme in that region due to the high levels of penetration (93%), and our forecast is that the remaining customers who can opt for a meter will be minimal.

Where metering is not feasible

Experience has shown that there are a number of situations where metering of individually occupied premises is not possible. This may be due to complex plumbing or difficulties in achieving access for surveys and meter installations.

For such customers who cannot be metered we will examine whether further work at a sensible economic cost to us could make metering possible. If the cost is prohibitive, the customer will be asked if they wish to pay for the work to be carried out in order to benefit from having a meter installed. In the event that it is not possible to physically install a meter, that property will be transferred onto an assessed charge.

4.2.7.2 Water efficiency programme

Customers support a focus on water efficiency. Responses to the formal consultation and through the engagement programme inform us that:

- 69% of customers would value access to more information about their water use[24]
- 59% of customers believe being in possession of more information on where water is used in their home would influence their behaviour[25]

[24] OPM, 2013, Panel Survey Findings, dWRMP, p25
[25] OPM, 2013, Panel Survey Findings, dWRMP, p29

- 67% of customers agreed behaviour would be affected by the installation of a meter[26]
- 87% of customers agreed they would use water saving devices if supplied to them[27]
- 72% of customers are interested in the supply of discounted water efficient white goods[28]

Our water efficiency programme will be a pivotal part of that will help to reduce overall customer consumption in accordance with the Water Resources Planning Guidelines (WRPG) guiding principles.

We recognise that some of our communities have the highest unmeasured per capita consumption (PCC) in the country and we face a major challenge to support our customers in reducing demand. We consider this to be the right approach in addressing the supply deficits we face over the next 25 years, as well as meeting government aspirations for companies with above average consumption to fall to below national average levels.

Alongside and in support of the metering programme we plan a comprehensive water efficiency programme for domestic customers having a meter installed and commercial customers.

We propose a coherent demand management programme including metering, education, community programmes, leakage reduction and pressure management. The Outcome of this is that we forecast our metering and water efficiency strategy will reduce consumption by 24Ml/d by 2020 and 33Ml/d net savings, taking account of population growth. Details of our approach to water efficiency are in Technical Report 3.4 appended to the WRMP.

We consider that, concurrent with leakage reduction, pressure management and metering, water efficiency is key to reducing the risk of supply deficits we could face over the next 25 years. It is also aligned with Government aspirations to reduce consumption to 130 l/h/d. Generally, our customers support more efficient use of water as part of an integrated demand management programme.

We are investigating a partnership with the Energy Saving Trust, community groups and local authorities, a number of whom have indicated a willingness to work with us through our consultation process to launch an enhanced customer communications campaign starting in 2014.

Support for our household customers

A standard water efficiency pack of guidance and promotion of free devices will be given to all newly metered customers. They, and those with expected high consumption, will be given the opportunity to benefit from an enhanced free home audit and fitting of efficient devices. The scope of the audit will also include energy efficiency opportunities by the more effective use of hot water. According to the Energy Savings Trust around 24% of domestic energy usage involves heating water. Using less hot water offers an opportunity to multiply the benefits in terms of savings on fuel and water bills.

[26] OPM, 2013, Panel Survey Findings, dWRMP, p21
[27] OPM, 2013, Panel Survey Findings, dWRMP, p28
[28] OPM, 2013, Panel Survey Findings, dWRMP, p30

Non-household water audits (non-process)

Free water audits of non-process activities e.g. toilet flushing, hand washing and showers will be offered to non-household customers. The scope will include energy efficiency as for household customers. These will lead to advice on improving water efficiency and reducing cost largely through saving energy in heating water.

Non-household water audits (process)

Non-household water audits will be available to advise businesses how to use water more efficiently in wet processes that are industry specific. The scope will include water use in cooling, heating, cleaning, washing, product and processing. The scheme will be delivered in partnership with a third party industry specialist in process water use.

Water Efficiency Activity	Number	Unit cost £	Total cost £m	Water saving Ml/d
Metering pack + free home audit	112,000			3.93
Non-household non-process water audit	2,700			0.34
Non-household process water audit	200			1.53

Table 4-I: Water efficiency activities, costs and savings

Community and customer focused water efficiency programmes

A key component of our universal metering programme is our water efficiency campaign. As we install meters on a street-by-street basis, we will provide water efficiency devices and advice to customers. In AMP6, we will save around 4Ml/d as a result of our water efficiency campaign.

We have developed various water efficiency schemes for consideration in our WRMP, and other activities are promoted in the planning period beyond AMP6, including the installation of dual flush WCs for some customers and additional community focused water efficiency campaigns.

4.2.8 Sharing water resources effectively within the South East of England

The Water Resources in the South East Group (WRSE) was set up to review how the six regional water companies could utilise strategic regional water resource in the most efficient and effective way. We are actively engaged within the WRSE and with the Environment Agency, Ofwat, Defra, CCWater and Natural England, to explore options for best use of resources across the southeast. Modelling of scenarios at a regional level has been combined with our models to generate options outlined in our WRMP (see Section 9 of our WRMP). These have been shared with our CCG and in our engagement programme.

Water Trading

We have been actively involved in water trading for many years. Arrangements are in place with six neighbouring water companies for the bulk supply import of treated water to our communities and with four of the companies for bulk supply exports in different locations. In some cases these are contingency sources where we draw upon the supply during emergencies or droughts. The graph below shows our projected utilisation of the largest (by volume) of our existing bulk imports in a typical ‘normal’ year from 2015/16 to 2030/31.

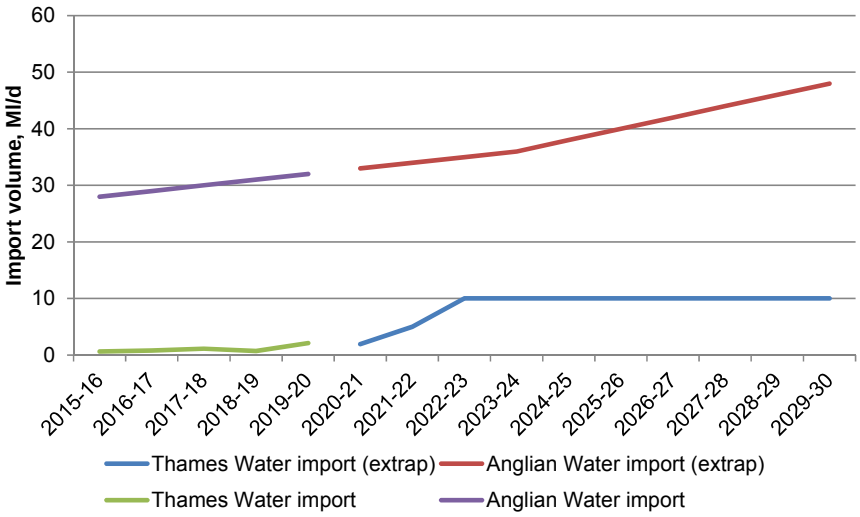


Figure 4-6: Forecast of imports from Thames Water and Anglian Water to 2030

Water trading will be a key feature of securing continuity of supply in AMP6 and we plan to enhance this level of trading activity during AMP6 and beyond. Table 4-J identifies the existing transfers available to us and the new transfers we have agreed with our neighbouring companies.

ID	Existing or New transfer	Donating Company	Receiving Company	Average Ml/d (max)	Peak Ml/d (max)
1	Existing	Anglian	Affinity WRZ3	91.0	109.0
2	Existing	Thames	Affinity WRZ4	10.0	10.0
2a	**New**	Thames	Affinity WRZ4	17.0	17.0
3	Existing	Thames	Affinity WRZ4	0.2	0.2
4	Existing	Thames	Affinity WRZ4	2.0	2.0
5	Existing	Thames	Affinity WRZ6	2.27	2.27
5a	**New**	Thames	Affinity WRZ6	2.7	2.7
6	Existing	Cambridge	Affinity WRZ5	0.31	0.31
7	Existing	Affinity WRZ3	Cambridge	0.04	0.04
8	Existing	Affinity WRZ3	Anglian	0.14	0.14
9	Existing	Essex & Suffolk	Affinity WRZ5	0.03	0.03
10	Existing	Affinity WRZ6	South East	36.0	36.0
11	Existing	Affinity WRZ7	Southern	0.1	0.1
12	Existing	Affinity WRZ8	Anglian	8.1	8.1
13	**New**	South East	Affinity WRZ7	2.0	2.0
14	**New**	Southern	Affinity WRZ7	1.0	1.0

Table 4-J: Water Company & Third Party Bulk Transfers

Ardleigh

At Ardleigh in Essex, we own jointly with Anglian Water a surface water reservoir source and associated water treatment plant that supplies Zone 8. This source is governed and operated through the provisions of the Ardleigh Reservoir Order 1967 and under the management of the Ardleigh Reservoir Committee. We are entitled to 50% of the output but, under a short-term agreement, we currently take only 30% of the total output, allowing Anglian Water to take 70% under a ten-year rolling Bulk Reservation Agreement signed in 2010.

4.2.9 Proposed change process in AMP6

Our Water Resources Management Plan includes reductions in abstractions and plans for all confirmed and likely abstractions. Our Business Plan does not make provision for unknown sustainability changes; however, we recognise that we may have further obligations to reduce abstractions arising from the next round of River Basin Management Plans (RBMPs) to achieve ecological targets in local water bodies. We have been asked by the Environment Agency to include examination of further 'unknown' sustainability reductions and we have included £[X]k in our National Environment Programme to carry this out. It is important any solutions that arise from the RBMPs are not back-ended in our investment programme and are planned for in a controlled way. We therefore propose the following process to manage and deliver the unknown sustainability changes should they be confirmed by the Environment Agency at NEP Phase five

as summarised in Table 4-K below. A Change Protocol has also been included in Appendix 6 of our Business Plan to ensure we are able to finance any new obligations without undue delay.

Step	Process	Date
1	Timely execution of the NEP phase five and integration with consultation of the second cycle river basin management plans and delivery of Water Framework Directive obligations. This will include studies to determine any investment cost impacts.	2016
2	Integration of AIM into our operational plans.	2015
3	Update on how our demand management options and how the utilisation of sources from other water companies are progressing and hence reviewing progress against the WRMP.	Annually
4	Include any confirmed unknowns as changes in the update the WRMP as part of the Annual review process.	Annually
5	Submit robust cost benefit proposals to Defra, Environment Agency and Ofwat based upon a Customer Challenge Group consultation for consideration.	2016
6	Undertake customer consultation on revision to WRMP to embrace the investment if required following Step 5. Confirm final costs for inclusion under a change process for inclusion in prices with Ofwat.	2017
7	Proceed with detailed design and implementation with a programme agree with EA that is integrated with the remainder of the sustainability reductions programme	2017

Table 4-K: Process for integration of new obligations into our Business Plan

The volume of further 'unknown' sustainability reductions is up to 217Ml/d under average conditions and 255Ml/d under peak conditions. From our experience of the sites that are involved and our sensitivity assessment for our WRMP investment modelling we have assessed the potential range of cost of between £[X]m and £[X]m. The timing of further expenditure will depend on guidance from the Environment Agency on priority and on the practicalities of replacing further sustainability reductions with further supply or demand management measures. We will also consider the use of further imports of water and thus delivery may depend on the availability of water from other companies and the quality of that water in view of the need to preserve 'no deterioration' of supplies to customers.

4.2.10 Developer Services

Developer Services activities will be shared between retail and wholesale services as follows:

- Retail: provision of developer information and administration for new connections
- Wholesale: physical provision of connections, new mains and diversions for developers

In preparing our Business Plan we have analysed the last eight years of data for:

- Historical volumes of work compared to growth
- Lengths of new mains, reinforcements and diversions
- Unit rates for all work types
- Historic levels of contributions
- Infrastructure Charges
- Introduction of an Affinity Water wide application fee

- Use of AMR meters

Our complete workings are presented in the supporting technical documentation in Appendix 4.

During the early part of AMP5 we realised that the arrangements we had in place for delivering new connections to our customers were far from ideal. As a result the timescales for providing new connections and mains to our customers were typically significantly below the expectations of our customers. We recognised the importance of this and, over the last year, have made significant changes to the way we approach Developer Services activity including:

- Bringing the majority of the development and delivery activity back in-house
- Enhancing the design of the underlying processes to remove blockages and inefficiencies
- Implementing new technology to improve the throughput of projects

As a result performance has now improved as follows:

- We have a robust application assessment process with in excess of 90% of applications being processed and accepted within three days
- The time to provide cost advice for applications is improving and will shortly reduce to less than 20 days – a position we forecast to reach during 2013/14
- The delivery of mains installations is now consistently within the three month target Service Level Agreement
- The delivery of services installations is within the target SLA of 15 days

Our intention is to consolidate these improvements during the rest of AMP5, demonstrating our ability to deliver in a reliable, customer focused way. We also face increasing challenges in AMP6 including:

- Increasing customer demand. A key challenge for us will be to sustain and then improve further our performance around new connections despite the increasing workload
- Understanding and meeting increasing customer service expectations. Our customers' expectations of the service we provide to them will continue to increase. This places ever increasing pressure on our delivery performance
- Retail competition introduction. Whilst this will not bring as large a challenge to Developer Services as it will to other areas, it will necessitate changes in the way we manage the relationship between our wholesale services provider and one or more retail service providers

During 2015 to 2020, we will:

- Continuously look to evolve our processes to improve performance further
- Continue to reduce our costs, in particular by ensuring that overheads incurred on unproductive work are eliminated or properly reimbursed
- Exploiting the potential benefits that will come from the new work management system being implemented in the last years of AMP5
- Introduce an interactive, online application form and process that will both make it easier for customers to apply for new connections and allow us to drive further cost efficiencies, further reducing costs to our customers

4.2.11 Summary of our investment proposals for each community in AMP6

Zones 1 to 7

Option	Description	WRZs	Year
Leakage	Leakage reduction through increased ALC	1,2,3,4,5,6	**2015**
Leakage	Leakage reduction - pressure management with new PRVs	4,5	**2015**
Metering	Universal metering (AMR) and water efficiency	1,2,3,4,5,6	**2015**
Supply	Thames Water bulk transfer, 12Ml/d available in 2015 & 2016	4	**2015**
Water Efficiency	Water audits Commercials (non process)	All	**2015**
Water Efficiency	Water audits Commercials (process)	All	**2015**
Resilience	Reinforcement in WRZ1	1	**2015**
Resilience	New pipeline between WRZ3 & WRZ5	3	**2015**
Resilience	Re-commission source in WRZ5	5	**2015**
Resilience	Group licence in WRZ5	5	**2015**
Leakage	Leakage reduction - pressure management with new PRVs	1,3,6	**2016**
Leakage	Leakage reduction - subdivide large DMAs	1,2	**2016**
Resilience	Purchase third party licence for WRZ5	5	**2016**
Leakage	Leakage reduction - pressure management with new PRVs	2	**2017**
Leakage	Leakage reduction - subdivide large DMAs	4	**2017**
Resilience	Reinforcement west-east in WRZ3	3	**2017**
Leakage	Leakage reduction through increased ALC, 2Ml/d	7	**2018**
Supply	Source Optimisation in Ashridge	1	**2018**
Supply	Increase Thames Water bulk transfer to max capacity (17Ml/d)	4	**2018**
Supply	Source Optimisation in Widford	5	**2018**
Supply	Source Optimisation in Hempstead	5	**2018**
Supply	Increase licence in Stansted	5	**2018**
Supply	Local licence recovery	7	**2018**
Supply	Network improvement near Barham	7	**2018**
Supply	Dover Constraint Removal	7	**2018**
Leakage	Leakage reduction through increased ALC, 2Ml/d	2,3,5	**2020**
Metering	Metering: community integrated AMR & water efficiency	2	**2020**
Water Efficiency	Airport water efficiency - Heathrow	4	**2020**

Table 4-L: AMP6 Supply / Demand Schemes in Water Resource Zones 1 - 7

Zone 8

Whilst there is no supply/demand deficit in Zone 8, we commit to supporting our customers by:

- Providing a water meter, installed free of charge, if they opt to have one
- Offering water efficient products, free of charge
- Maintaining our assets to ensure security of supply

4.2.12 Impact of these measures on supply/demand position

These balanced proposals will deliver:

- A saving of 20Ml/d in distribution leakage through our leakage management programme and 7Ml/d from the repair of leaking customer supply pipes as part of our universal metering and water efficiency programme
- A reduction in demand of 29Ml/d from universal metering by AMR in four of our six water resource zones in the Central region (with the remaining two WRZ delivered in the following five-year period). This includes around 4Ml/d from the distribution of water efficient devices and in-home water efficiency audits
- Approximately 2Ml/d from water efficiency, targeted at our non-domestic customers to help them identify ways to use less water in the operation of their businesses
- An extra 2Ml/d output from our existing licences, by increasing the amount we abstract without causing damage to the environment. These options also give us an extra 11Ml/d during peak conditions
- 17Ml/d more water from our neighbouring water companies as a bulk transfer of water

We will start work on delivering sustainability reductions in the River Beane and Mimram catchments in 2014/15 [Redacted].

4.3 Supplying high quality water you can trust

4.3.1 Summary

We will respond to our customers' strong desire that we maintain our performance in delivering consistently high quality, safe, wholesome drinking water. This Plan is focused on meeting that expectation by investment in new treatment processes and enhancing existing assets and extending our catchment management activities.

Our customers consider that they receive high quality water at their tap most or all of the time[29], believing their supply to be safe (82%), clean (81%) and fresh (71%)[30]. We will respond to our customers' strong desire that we maintain our performance in delivering consistently high quality, safe, wholesome drinking water. This customer priority was a key message from our deliberative forums: providing high quality drinking water is seen as a core duty that should be prominent in our Business Plan[31]. This Plan is focused on meeting that expectation by investment in new treatment processes and enhancing existing assets and extending our catchment management activities. We will maintain the already high standards of water quality and meet future regulations by constructing treatment barriers for pesticides and start a targeted lead pipe replacement programme. We are responding to potential risks of deteriorating water quality by continuing to test water at treatment plants and in the network, replacing lead pipes and selective flushing of mains.

Whilst we will not be implementing any proposals for softening water, we will continue to research the financial and environmental implications of softening water.

Our proposed level of investment has the agreement of our customers as evidenced by consensus of opinion across our deliberative forums. Example quotes include:

- "They seem just to be getting on and doing the right thing"
- "An increase of £2 seems like good value for money for continuing to receive high quality water"[32]

We submitted detailed water quality proposals to the Drinking Water Inspectorate (DWI) in June 2013 and we received Final Letters of Support from them on 14 and 28 October 2013. The Drinking Water Inspectorate Statement for Affinity Water's Customer Challenge Group Report to Ofwat states **'The Company is to be commended on the quality of the submissions to the Inspectorate, which complied with our PR14 guidance'.**

We have used both our water quality proposals and our WRMP as a basis for customer consultation.

Our Water Quality Plan has four main components:

- Water quality improvements for lead and pesticides
- National Environment Programme actions and investigations
- Biodiversity improvements

[29] OPM, 2013, Lets' Talk Water Consultation Report, p34
[30] OPM, 2013, Panel Survey Findings, p9
[31] OPM, 2013, Business Plan Consultation – Customer Deliberative Forum, p21
[32] OPM, 2013, Business Plan Consultation – Customer Deliberative Forum, p22

- Resilience including security measures under SEMD and new compartments for two reservoirs

4.3.2 Planned expenditure to meet this Outcome

The table below shows a breakdown of the capital investment required to meet this customer Outcome. In addition to the annual maintenance and operating expenditure we expect to incur to supply high quality drinking water, we will invest in further catchment management, new treatment processes to manage the risk of pesticides, replace lead communication pipes to meet the new lead standard and invest to meet our duties for biodiversity and the national environmental programme.

	PR14 £m	
Supplying high quality water you can trust	**Sub-total**	**Total**
Capital Maintenance		
Production asset maintenance		
Managing properties experiencing low pressure		
Other		
Enhancement		
Biodiversity		
NEP investigation		
NEP mitigation		
NEP Water Quality - Catchment		
Water Quality - Lead		
Water Quality - Pesticides		
Opex		
Totex, including capital enhancement		

Table 4-M: Planned expenditure for "Supplying high quality water you can trust" Outcome

4.3.3 Our approach

Our investment programme has been developed to support our commitment to meet the water supply needs of our customers and seeks to mitigate asset risk of failing to meet drinking water standards and our regulatory obligations in AMP6 and beyond.

This Plan ensures the service we provide remains resilient by making choices that consider wider social, economic and environmental issues. We used the benefit assessment framework *Quantifying the Benefits of Catchment Management,* UKWIR (2012), to develop a 'Cost Benefit Framework' to explore each option and cost for the schemes in our submission. This benefit assessment framework has been developed to assess the wider benefits of our options:

- Our customers' expectations
- Regulatory requirements
- Benefits in AMP6 and beyond

We support what is proposed in *River Basin Management Plans* and are keen to see the use of water protection zones to safeguard public water supplies. We will continue our proactive stance on minimising pollution threats to our resources by working with the Environment Agency

and third parties that use and store chemicals, both to encourage enhanced stewardship but also to ensure the 'polluter pays' wherever possible.

We have adapted this approach to explore mitigation options and scenarios. Our methodology has identified the requirements of the business in addition to a number of mandatory regulatory requirements that we have also considered and addressed including:

- Water Supply (Water Quality) Regulations
- National Environment Programme (NEP)
- Sustainability Reductions (SR)
- Water Framework Directive (WFD)

The primary focus in this programme of work is AMP6; however, the Outcomes from our NEP and catchment management investigations / interventions will support long term management of our assets beyond 2020 and support future schemes in AMP7.

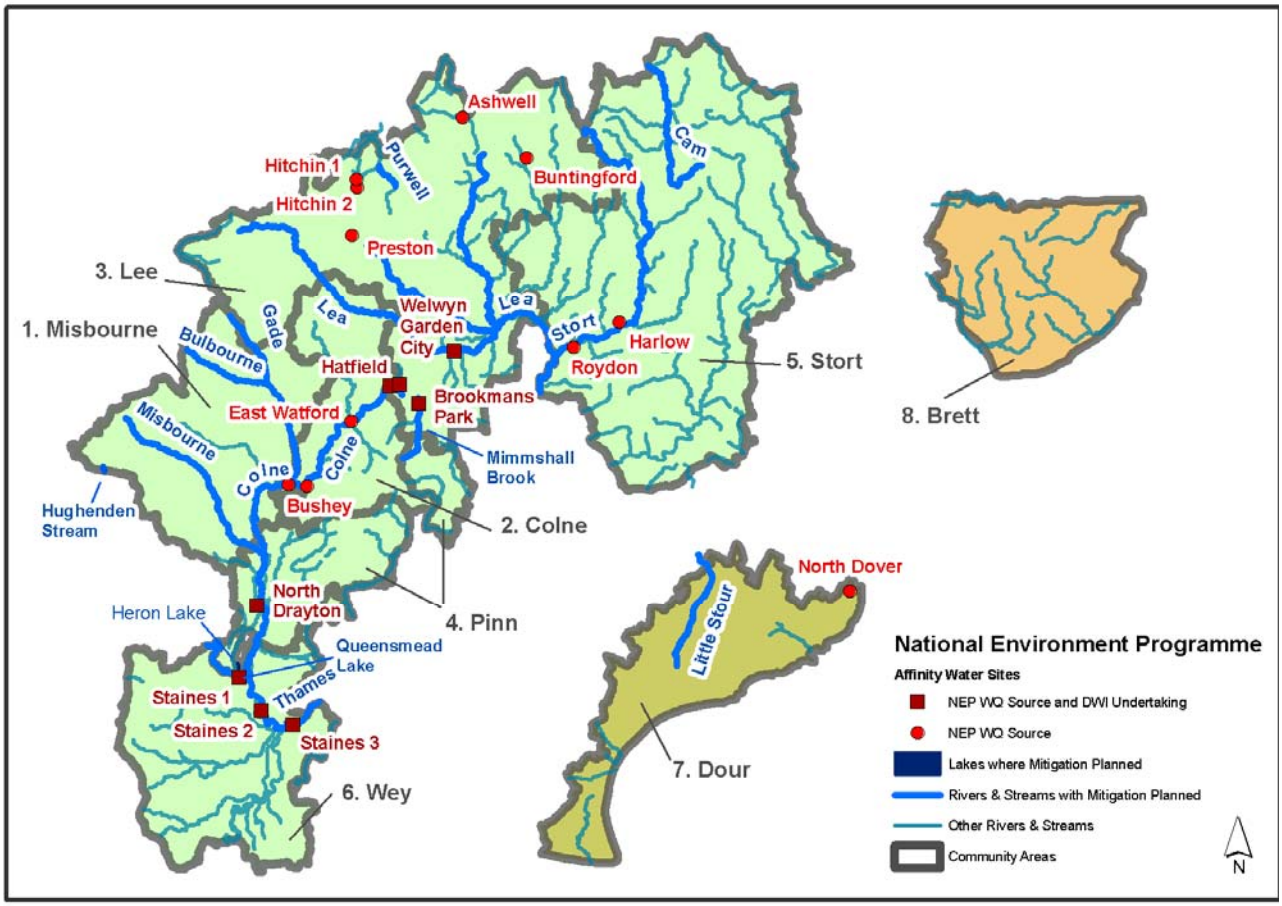


Figure 4-7: Location of Water quality scheme proposals for AMP6

Options selection

Having identified water quality issues from engagement and consultation we considered a range of options and their relative cost. In our options appraisal, we did not include schemes that require a change in legislation or a change in regulatory enforcement. We recognise that, in the

case of metaldehyde (which is widely used in agriculture for the control of slugs, and is not removed by existing treatment processes for pesticide removal) there is substantive debate on the future of enforcement powers to ban its use or require product substitution. Nevertheless, our plans are formulated to mitigate as much risk as we can influence.

We reviewed each of the options in light of customer expectations and our assessment of alignment with legislative, regulatory and policy drivers. We also considered whether the options would provide benefits beyond AMP6. This proved particularly challenging as we considered whether options would provide both sustainable improvements in water quality and lead to 100% compliance. We rejected any options that failed to meet regulatory compliance. In determining our preferred solutions, we considered whether the least cost option could provide sufficient compliance within a reasonable timescale in order to minimise the impact on customer bills. In many cases, the least cost option for each water quality issue was not compliant and required a compound solution e.g. catchment management together with treatment. We believe this minimises the risk of non-compliance, is most cost effective and provides a balanced programme. The summary of our cost benefit assessment is included in Appendix 4, section 12.

We carried out risk assessments and considered options to meet the objectives to address each risk of water quality non-compliance. Where our Regulation 27 risk assessments relating to investment proposals have changed, Regulation 28 reports were submitted to the DWI on 28th July 2013 (see Appendix 4, Section 12). Our Board monitored progress of the programme and reviewed, scrutinised and approved the submission. It was also active in challenging the options considered, cost estimates and alternatives and deciding to exclude proposals for additional measures at two of our WTWs as these were not cost beneficial compared to an increasing the use of water imports.

Our submission to DWI was supported by their 'Final Decision Letters of Support' and the 'Drinking Water Inspectorate Statement for Affinity Water's Customer Challenge Group Report to Ofwat' on 14 and 28 October 2013.

Prevention of deterioration arising from sustainability reductions

The sources most likely to be used to balance sustainability reductions will be existing bulk imports from Anglian Water and Thames Water and increased output from our surface WTW on the Thames near Staines. Currently, each of these supplies is subject to S19 Undertakings for metaldehyde. In order to maintain the quality of supply to consumers in the areas likely to be affected, it is our intention to use water from these works to supply areas they already supply, although where it forms part of a blended supply the proportion will increase. Changes in supply arrangements were risk assessed and we asked the Environment Agency to allow us flexibility with our abstraction licences to ensure that we can prevent any deterioration in water quality. We requested the Environment Agency use their enforcement powers to control the level of metaldehyde in the catchments supplying raw water to these abstraction sources.

4.3.4 Maintaining and improving the quality of our water sources

4.3.4.1 Summary

We have experienced pollution of some of our abstractions from urban, industrial and agricultural sources. The results of pollution risk assessments of our catchments are incorporated into water risk assessments (Drinking Water Safety Plans) on which monitoring programmes and risk mitigation are based.

Deployed to fulfil our undertaking to DWI on metaldehyde contamination, our catchment officers undertake monitoring and pollution prevention activities all our abstraction catchments. We plan to continue our catchment management programme in AMP6.

Our AMP5 plans anticipated that there would be no permanent reduction of deployable output as a result of pollution. In the event of a major outage caused by pollution we can transfer water between catchments and from cross border imports. This allows flexibility but increases operational cost. We have additional safeguards against loss of water supply from our River Thames sources during river pollution incidents. These include an agreement allowing us to take emergency supplies from two Thames Water reservoirs (up to 3,650 million litres per annum).

4.3.4.2 Control of pesticides

In AMP4 and AMP5, we gave Undertakings for metaldehyde at our four surface works near Staines that abstract water directly from the River Thames and Ardleigh Reservoir. The Undertakings detail the steps we were taking to facilitate compliance with the standard of 0.1µg/l. At that time, there was limited knowledge of farming practices, little engagement with catchment stakeholders, options for treatments were not well understood and monitoring data within the wider catchment was not available. Since then, we have increased our understanding of the issues relating to metaldehyde and other crop protection products used in the catchment. The successful introduction of the Thames Catchment Management Steering Group with the Environment Agency, Thames Water and South East Water pooled catchment monitoring data, disseminated consistent messages to stakeholders and shared resources across company boundaries. Similarly, we have worked with Anglian Water with respect to our joint reservoir asset near Manningtree.

Due to the complexity of the issues, we are proposing a parallel approach for catchment activities and treatment options in AMP6. This approach is consistent with the integrated approach to meeting the objectives of the WFD as outlined by the Government in *The Natural Choice (June 2011)* and *Water for Life (December 2011)* and as also referred to in the *Defra Statement of Obligations (October 2012).* We have also been working closely with the Environment Agency and other water companies on our catchment management activities and our proposals for PR14 build on the knowledge and expertise we have gained in seeking a cost-effective long-term strategy for controlling pollution at sources.

4.3.4.3 Catchment management

Based on our and other companies' recent experience we consider catchment management offers some benefits in reducing the concentration and frequency of the specific pesticides that have been detected in our surface water sources.

Our proposals build on past activities and concentrate our efforts in the most effective way to influence use of metaldehyde and several key herbicides. We are confident that this is the best, most cost effective long-term solution to improve the quality of the raw water, help prevent the potential ban of metaldehyde and promote best practice with regards to crop protection products. This scheme will also support and contribute towards meeting the objectives of the Water Framework Directive.

For AMP6, we propose to enhance our AMP5 programme of catchment management work. We have assessed a number of projects as being beneficial in achieving our aims. These include:

- Carrying out detailed walk-overs in hot-spot catchments to identify pollution pathways
- Sponsoring an *ad hoc* Agricultural Adviser to provide water-quality-specific agronomic advice based on outputs of the catchment monitoring programme
- Providing awareness events and specialist pollution control training to farmers and contractors within hot-spot catchments
- Producing a regular newsletter to all farmers, land owners and contractors in the hot-spot catchments highlighting water quality issues impacting drinking water supply
- Identifying and modelling pollution pathways in catchment to understand and implement mitigation measures
- Funding farmers to take arable land out of production in hot-spot catchments and replace with buffer strips and swales slowing down diffuse pollution entering watercourses
- Funding the cost differential for product substitution in hot-spot catchments where it is likely to have a significant impact on the concentrations in the raw water

Subsidising farmers for taking land out of use and product substitution appears to have significant benefits as we have seen a reduction in pollution in catchments. This success is the general direction supported by Defra. In AMP6, we are considering all of these options for delivery in collaboration with Thames Water and South East Water. These will be coordinated with the Environment Agency National Environment Programme (NEP) and Safeguard Zone investigations.

4.3.4.4 Removal of pesticides by treatment

River Thames abstractions – Zones 4 and 6

Four schemes implement measures to address increasing levels and types of pesticides in the raw waters at our major surface water treatment works that abstract from the River Thames. 2012 was a very wet year and we, like most companies with lowland surface water abstractions, experienced high levels of metaldehyde in raw waters that lead to failures of the standard in water supplied to customers. Proposal AFW32 is to implement catchment actions to aim to reduce levels of metaldehyde reaching watercourses in the Thames catchment and covers our four water treatment works on the Thames near Staines. The proposal includes investigating options to subsidise farmers to use an alternative product. The costs of all the catchment management programmes of work included in Table 4-N are allocated to the NEP.

Hatfield group of sources WTW – Zones 2 and 3

The proposal for our treatment works that receives water from our Hatfield group of sources includes investigation of treatment options to address metaldehyde. The WTW treats water from four different groundwater sources that are vulnerable to pollution from various sources. In two of the sources, metaldehyde has been detected where its origin is thought to be a local landfill site. In this case, catchment actions are unlikely to achieve significant benefits, and we are proposing to install powdered activated carbon dosing (PAC) to assess its ability to reduce levels of metaldehyde to achieve compliance with the standard in the treated water. Since the DWI issued our final decision letter, we have indicated that the target date for completion of the plant to treat pesticides will be March 2017 and not March 2016, although we will begin work on the project in 2014/15.

Ardleigh WTW – Zone 8

The proposal for Ardleigh WTW is partially supported by the DWI. An Undertaking will be put in place to cover the catchment and abstraction management proposals to mitigate metaldehyde and clopyralid. The inclusion of disinfection by-products (DBPs) as a parameter in the proposal relates to the new Regulation 26(1A) in the Water Supply Regulations 2010, which requires us to minimise the formation of DBPs during treatment and in distribution, without compromising the effectiveness of any disinfection stages. The proposal involves increasing the frequency of regeneration of granular activated carbon (GAC) from an average of once every 8 years to once every 5 years. DWI declined to support this proposal on the basis that there were no grounds for enforcement. The proposal also included plans for enhanced monitoring for DBPs and precursor compounds within the treatment process with a view to identifying options for optimising the process to minimise formation of DBPs. The DWI commended this element of the proposal because they consider that this work will add to our understanding of the contribution of the treatment processes and other factors towards the formation of disinfection by-products, which will inform future investment needs to improve compliance with Regulation 26(1A).

Ardleigh WTW is managed by the Ardleigh Reservoir Committee on behalf of Anglian Water and Affinity Water, and each company has a legal duty to contribute 50% of the costs incurred by the committee in operating and monitoring the works.

PR14 DWI Ref.	Scheme Name	Quality Parameter(s)	Scheme Type	Preferred Option	DWI Final Decision	Totex Cost £m
AFW29	River Thames WTW	Pesticides including carbetamide, propyzamide & metazachlor	Treatment + Catchment Management	Combination of approaches, including increased GAC capacity and pilot studies of treatment options to mitigate metaldehyde	Reg. 28 Notice	
AFW30	Hatfield Group WTW	Pesticides, including metaldehyde	Treatment + Catchment Management	Treatment to be investigated + Catchment Actions	Undertaking	
AFW31	Ardleigh WTW	Pesticides, including metaldehyde & clopyralid; and disinfection byproducts	Treatment + Catchment Management	Installation of On-site metaldehyde monitor + Catchment Actions	Undertaking	
AFW32	River Thames Metaldehyde - 4 sites	Pesticides including metaldehyde	Catchment Management	Catchment actions	Undertaking	
	Emerging Risks Catchment Management Scheme		Catchment Management	Catchment actions		

Table 4-N: Summary of catchment protection and treatment schemes proposed under our Q plan

4.3.5 Water quality issues arising in our network

Water quality can deteriorate in the distribution network and customers' supply pipes due to the nature of the materials of construction e.g. lead, external ingress of water or residual deposits

from treatment settling in quiescent sections. These issues are controlled by active management of the network e.g. flushing, application of Water Fittings Regulations and Water Quality Regulations and replacement of problematic materials such as lead pipes. This is considered as part of our base costs.

Replacement of lead pipes

The water quality standard for lead in drinking water will be tightened from 25µg/l to 10µg/l on 25 December 2013. As part of our preparation for the 10µg/l standard, during AMP3 we installed orthophosphoric acid dosing plants at sites that provide water to water supply zones that we identified as being at 'high risk'. In the intervening period, we undertook significant monitoring of the lead concentrations at customers' taps to optimise the dosing and understand the effects of that process. We made significant improvements such that 98% of samples taken across our communities comply with the upcoming standard. Monitoring also confirmed that there has been no increase in risk within our 'low risk' water supply zones over the last ten years, so there is no requirement for any additional orthophosphoric acid dosing plants.

The DWI confirmed that compliance means meeting the standard of 10ug/l and undertaking mandatory customer protection measures with regard to informing customers of non-compliance. The DWI intends to issue a Notice under Regulation 28(4) of the Water Supply (Water Quality) Regulations 2000, as amended, requiring us to mitigate the risk of failure to meet the standard for lead and is an increased risk of not complying with the new lead standard in our water supply zones. Our solution to this challenge is risk-based and cost effective ensuring we achieve the standard in line with the DWI Notice. Our Plan ensures we deliver the Outcome of 'Supplying high quality water you can trust' and comply with the DWI's requirements to undertake to reduce the likelihood of failure of the standard. Where possible we will integrate the replacement of lead communication pipes with the universal metering programme.

Our approach

Our current policy does include the replacement of lead communications pipe (CP) when 10ug/l is exceeded. We are experienced in using different techniques when replacing CPs e.g. non-dig techniques, open-cut and moling. Generally, the latter results in a higher rate of success in replacing lead CPs. Many of the CPs and the supply pipes (SPs) in our region are 'three-eighths' inch lead that has been laid in a non-straight 'swan neck' configuration. This is problematic for non-dig techniques. Moling is not constrained by the diameter of the existing lead CP or the manner by which it is laid.

There are zones outside of the dosed zones where consumers will have lead communication and supply pipes and therefore there is a greater probability they will ingest higher concentrations of lead than the average population in those un-dosed zones. To target customers who are most at risk from the cumulative effects of lead we propose to undertake company-wide replacement of lead communication pipes for the highest risk customers, notably children and infants at schools and nurseries.

Within the overall improvement and high level of compliance across our communities, there are two water supply zones, Watford (Z046) and Finchley (Z054), which have not achieved 97% compliance with 10µg/l over the previous five years. We propose to replace lead communication pipes within these zones in order to achieve compliance rates of 10µg/l. We propose to undertake street-by-street replacement of communication pipes in these zones. We believe that significant benefit would be gained from replacement of communications pipes in these areas

and because of the high number of properties with shared supply pipes, more consumers will benefit than in supply zones where there are fewer shared supply pipes. The publication *DWI PR14 Guidance - Lead in Drinking Water (July 2013)* states that removing lead communication pipes reduces consumer exposure to lead (paragraph 2.4).

Finchley and Watford are both situated in areas with predominantly clay soil, which are prone to greater ground movements. Consequently, lead pipes were used for service pipes because of their flexible nature and reduced propensity to burst or leak. The housing stock is predominantly built before 1969 after which the use of lead in plumbing systems was banned. Both of these factors resulted in the high proportion of properties with lead pipes in these zones. The historic data indicates there will be contraventions of the 10µg/l standard when it comes into force due to the high numbers of lead pipes in both water supply zones.

We provide information to customers about lead in water verbally, in writing and through our website advising how best to reduce lead levels in drinking water.

Our lead compliance strategy therefore requires, firstly, the replacement of 406 lead communication pipes in all zones in Zones 1-6 for high risk groups (nurseries, primary and junior schools, maternity and health centres) and secondly, the replacement of 29,250 lead communication pipes primarily in Finchley and Watford water quality zones. We have calculated a unit rate of £[X] per replacement. This has a considerable efficiency target when compared to our current costs of c£[X] per replacement.

Customer engagement

We consulted with our customers through all channels and the CCG. Overall, customers are supportive of our investment programme to achieve the Outcome of 'Supplying high quality water you can trust'. Over the years, we built an excellent working relationship with the health professionals within our region and hold regular liaison meetings. This group is aware of the lead issue and is supportive of our approach. Going forward we will continue to engage with the group to ensure awareness of our lead replacement programme.

We are experienced at managing customers' concerns about the health implications of lead. Scaling up our communications and supporting information for customers when we replace a large number of lead communication pipes is paramount.

Alternative solutions

We are aware of other techniques for refurbishing lead CPs currently coming to market and intend to explore these in order to establish whether they will deliver the benefit of reducing the concentration of lead at lower cost. New techniques to refurbish lead pipework *in situ* are at various stages of development. Some are based on applying an inner coating to the lead pipe. One approach offers the benefit of applying the epoxy lining from the customer's supply pipe back into our network at very little marginal cost. This has the added advantage of reducing the risk of lead leaching from the customer's supply pipe as well as our CP. We plan to continue to explore alternatives to physically replacing pipes and this will be key to reducing the construction costs.

We are in the process of procuring suppliers for the remainder of AMP5 and AMP6. Included in the specification are the replacement/refurbishment of lead CPs and the identification of other techniques and innovations to reduce the concentration of lead in our CPs.

Hardness of water

A main concern of customers is the hardness of the water we supply. Our groundwater supplies are classed as 'hard' or 'very hard' water. We make no proposals for the general company-wide treatment of hard water. There is no health-based or general standard for hardness. Whilst the effects of lime deposits on kitchenware and bathware we consider can be inconvenient and unsightly we believe that, currently, there is no justification for the large investment required to treat all the hard water sources in the area.

Moreover, while the issue is highlighted consistently in responses across our engagement activities, nonetheless detailed research on customer priorities for service and bills indicates that the high importance placed on water hardness is not supported by evidence of positive willingness to pay to reduce properties affected by hard water[33].

We will, however, continue to research and keep abreast of the developments in treating hardness, their deployment and costs.

Reservoir programme

To improve resilience in AMP6 we propose two new cells for service reservoirs at [Redacted]. These cannot be taken out of supply and the solution is to provide new cells to allow flow diversion and isolation of cells for cleaning.

4.3.6 Monitoring the health of our rivers and natural water environment

4.3.6.1 National Environment Programme (NEP)

Many of the chalk streams within our supply area are failing to meet Good Ecological Status (GES) under the Water Framework Directive (WFD). We have been working in partnership with The Environment Agency since 1990 to understand the effects of our abstractions on stream flows.

Through previous NEP investigations and options appraisals, we have identified that our groundwater abstractions exacerbate periods of low flows in many of the local chalk rivers. Where it has been confirmed that our abstractions are having adverse environmental impacts, we have agreed sustainability reductions on our licences. Environmental monitoring and impact assessment are key to evaluating these impacts. The implementation of the WFD is likely to increase the scope and frequency of environmental monitoring.

The Environment Agency is responsible for identifying which schemes are required to deliver environmental improvements and meet legislative requirements. The majority of catchments within our supply area have been designated as either over-abstracted or over-licensed or both, meaning that there is unlikely to be further water resources available for exploiting without detrimental impact on the environment. Time limiting of licences, reduction of abstraction volumes and additional requirements stipulated on such licences for environmental monitoring mean that there will be an increasing requirement for us to undertake monitoring to maintain our licence base.

[33] Eftec and ICS Consulting, 2013, PR14 Stated Preference Study: Main WTP Study, Section E.6

AMP5: Central Region

The Environment Agency identified six schemes for investigation, options appraisal and implementation under the AMP5 National Environment Programme. These schemes were included in our PR09 Water Resources Management Plan and Business Plan submission and funding of all six schemes was approved in Ofwat's Final Determination. This work formed a challenging programme for delivery within the AMP5 period, with 29% of our peak Deployable Output (365Ml/d) under investigation. Deadlines have been agreed with the EA for the completion of each scheme.

This programme of work involves the investigations into the environmental impact of our groundwater abstractions in three river catchments (Rivers Colne, Ver and Rib) followed by an options appraisal where a detrimental impact is identified. This work includes investigations into the impact of two major groups of sources that have not been previously investigated (the LANE and BLAF Groups). A further options appraisal was required on the Misbourne, which was subject to investigation and implementation in AMP1/2. The work package also included the installation of fish screening on our River Thames intakes.

Scheme	Drivers	Investigation	Options Appraisal	Implementation
Upper Colne	BAPw1 WFw3	Mar-2014	Mar-2015	
Mid Colne River & Lakes	BAPw1 Iw3	Mar-2014	Mar-2015	
Upper & Middle Ver ****	BAPw1	Mar-2013	Dec-2013*	
Mid Rib	BAPw1 WFw3	Mar-2013	Mar-2014	
Misbourne	BAPw1		Mar-2012 **	
Fish Screens	BAPw1			Mar-13***

Table 4-O: NEP schemes and deadlines as given in PR09 submission (Central)
** Revised deadline of March 2014 agreed with the EA*
*** Revised deadline of March 2013 agreed with the EA*
**** Revised completion date of December 2014.*
***** These two schemes were combined into one to improve efficiency.*

AMP5: Southeast Region

The Environment Agency identified two schemes for options appraisal in our Southeast region, to identify options to address the impact of our groundwater abstractions in the Little Stour catchment and Dungeness Special Area of Conservation.

Scheme	Drivers	Investigation	Options Appraisal	Implementation
Little Stour	BAPw1 WFw3		Dec-2013	
Dungeness SAC (Denge)	Hw1		Mar-2015	

Table 4-P: NEP schemes and deadlines as given in PR09 submission (Southeast)

AMP5: East Region

There are currently no NEP schemes in our East Region.

AMP6

The Environment Agency has identified four schemes for investigation and options appraisal and ten schemes for implementation in PR14 in our Central and Southeast regions.

A summary of the programme drivers is included in Table 4-Q and details of the ten schemes for implementation are shown in Table 4-R.

Scheme Name	Driver	Nature of Activity
Ver	wrWFDs1 wrBiod1	Investigation & Options Appraisal
Cam	wrWFDs3	Investigation & Options Appraisal
Purwell	wrWFDs3	Investigation & Options Appraisal
Fish Screens at WALS	wrWFDs1 wrBiods1	Investigation & Options Appraisal
Mimram – source to Digswell	wrWFDs1 wrBiod1	Implementation
Beane	wrWFDs1 wrBiod1	Implementation
Upper River Gade	wrWFDs1 wrBiod1	Implementation
Upper Lee	wrWFDs1 wrBiod1	Implementation
Misbourne	wrWFDs1 wrBiod1	Implementation
Ver	wrWFDs1 wrBiod1	Implementation
HMWB – HERO & QUEE	wrWFDp1	Implementation
Fish Screens at ARDL	wrWFDp1	Implementation
Little Stour	wrWFDs3 wrBAPw1	Implementation
Dungeness	wrHD1	Implementation

Table 4-Q: Summary of PR14 NEP schemes and drivers

Nature of Scheme	Driver	Catchments (DWA length km)	Activities	Totex Cost £m
Morphological Mitigation	WFD	Beane (14.8), Ver (7), Mimram (8.5), Gade (16) and Upper Lee (10.5).	• Re-engineering of the river where the flow regime cannot be modified • Bank rehabilitation/re-profiling; • Preservation and restoration of habitats; Allowance of fish passage; • Modification of vegetation management practices; • Removal or replacement of hard bank reinforcement with a soft engineering; • Removal of obsolete structures; Modification of structures; • Sediment management strategies. • Monitoring - Spot gauging river flows; Groundwater level monitoring; surveys of macrophytes and macroinvertebrates, river habitats and corridors.	
Flow Investigations	WFD, BAP	Ver, Cam, Purwell, Bulborne, Colne.	• Comprehensive investigations into the impacts of our abstraction on river flow levels and report our findings	
Heavily Modified Water Bodies & Fish Screening	WFD, BAP	Heron and Queensmede Lakes; Walton WTW; Ardleigh Reservoir;	• Suitable enhancement/mitigation to ensure Good Ecological Potential (GEP); • Investigation into the effectiveness of the existing screens in preventing the entrainment of eels and elvers; • Installation of eel screens of an appropriate width must be installed.	
River Support Scheme	WFD, BAP	Misbourne	• River support from Amersham and Chalfont St Giles pumping stations • A new river support borehole in Chalfont St Peter • In-channel restoration and morphological enhancements including installation of deflectors and/or channel re-profiling creating low flow profile • Monitoring – Spot gauging river flows; groundwater level monitoring; surveys of macrophytes & macroinvertebrates, river habitats and river corridors.	
Refuge Augmentation	WFD, BAP	Stour	• Installation of new abstraction borehole & refuge at Littlebourne Oast Houses • Enhancement works & removal of weir & channel re-profiling at Garrington	
Unknown - Options Appraisal & Feasibility Study/Adaptive Management	WFD, BAP	To be defined on the publication of the River Basin Management Plan	• Additional studies and implementation through a ‘change protocol’ related to the Abstraction Incentive Mechanism.	

Nature of Scheme	Driver	Catchments (DWA length km)	Activities	Totex Cost £m
Biodiversity	BAP, NERC	All relevant landholdings	• Tree surveys; tree remediation work; priority 3 remediation work; planting of new trees and hedges; Invasive species management; wild flower meadows; management of existing ponds; creation and management of ponds; bird and bat box installation; barn owl and kestrel surveys; internal ecological surveys to include reptiles, birds, spiders and bats; external ecological surveys; ecosystem service management cost; reedbed management; land management; • White Cliffs Countryside Partnership - dormouse surveys, management of Lodge Wood/ Lye Oak, Lady orchid survey, scrub clearing and butterfly transect; • New boardwalk at Springwell Lake and Stockers Lake. • Management of Stockers and Springwell Lakes. • Stakeholder Management of Wrasbury Lakes complex.	

Table 4-R: AMP6 National Environment Programme Schemes

As details of requirements will only become clear over the next 2 years through the River Basin Management Plans the cost of further sustainability reductions could be substantial. Options for further supply development or demand reductions are limited or potentially compromised by projects such as HS2; we have made provision (Appendix 4) in our WRMP for the additional studies and implementation through a 'change protocol'.

In January 2013, we were notified that a morphological mitigation scheme would be included in the NEP for AMP6. We have therefore made a provision for funding in our PR14 submission for works within the Depleted Water Areas (as defined by the Environment Agency) on the Mimram, Beane, Ver, Gade, Upper Lee, Misbourne and Little Stour. This work will help improve in-channel habitats and contribute to meeting the target of GES.

We will be working closely with the Environment Agency and other key stakeholders in these catchments to help ensure the success of these projects. Where these rivers also flow through our landholdings, there are links with our Biodiversity project to meet our duties under the Natural Environment and Rural Communities (NERC) Act.

We will also be undertaking implementation works on two lakes that are designated as Heavily Modified Water Bodies (HMWB) so that they achieve Good Ecological Potential (GEP) by 2027, as well as installing fish screening and eel passes. Further replacement fish screens, to meet the Eels Regulations, will also be installed at Ardleigh.

4.3.7 Biodiversity

From October 2006, all public authorities (including statutory water companies) in England and Wales acquired a duty under the Natural Environment and Rural Communities Act (NERC) 2006 to have regard to the conservation of biodiversity in exercising their functions. UK BAP priority species and habitats are those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). The National

BAP highlights the important habitats and species that have declined in coverage over recent decades and are now considered to be rare and threatened. We identified around 30 priority species on over 20 of our land holdings and eight different types of priority habitats on 17 land holdings. Some of these sites are not designated but still have value as they provide local havens or wildlife corridors between the designated areas. Around 70 sites in our Central region are adjacent to designated sites.

We have significant land holdings across our supply area (1470ha), including statutory designated sites, e.g. Dungeness Site of Special Scientific Interest (SSSI), Wraysbury Lakes SSSI and RAMSAR site, and sites of local conservation importance, e.g. Stockers Lake, which require management to ensure biodiversity is maintained and enhanced and that health and safety requirements are met. These are managed successfully in conjunction with local and national stakeholders e.g. wildlife trusts, RSPB, and the Environment Agency.

4.3.8 Replacement of water treatment works assets

Our investment plan for the maintenance and replacement of water treatment works assets has been developed using our PIONEER model as discussed in 4.1.11.2.

To ensure that water quality remains stable throughout the AMP6 period, we have constrained the maintenance optimisation process using PIONEER, so that the likelihood of a quality related incident does not increase through the period. This ensures we invest at the right time and place to ensure customers are not affected by the natural deterioration and possible failure of assets. This takes into account the levels of redundancy present in our treatment processes and the time to replace, or restore plant to an operational condition.

Our improved risk based models and experience on the ground show that we can reduce maintenance expenditure slightly, whilst maintaining service to customers, which we will do, but we have introduced more targeted risk based maintenance using new processes and in house developed software that will allow us to monitor and manage this reduction.

Figure 4-8 shows for each of the top 10 production asset investment areas, the relative distribution of assets by age band. The age bands are in 5 year steps (0-5, 5-10, etc.).

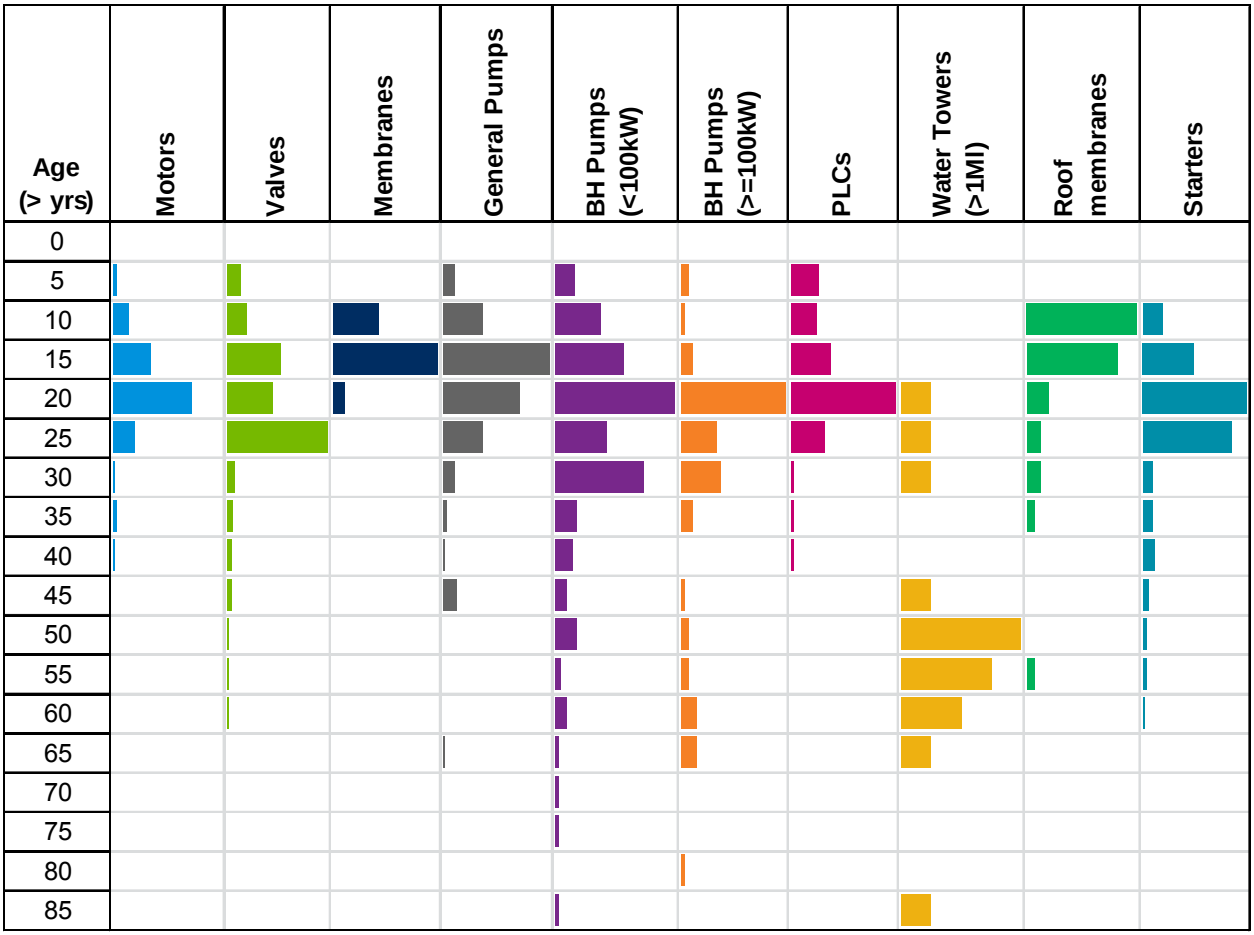


Figure 4-8: Distribution of top 10 assets for investment by unit type and age band of population

We have a number of medium life assets that are distributed toward the older end of the range. In the case of Borehole Pumps less than 100kW, Borehole Pumps greater than 100kW, general pumps and Motors most of our assets are centred around 20 years of age. It is likely that these rotating assets are likely to be inefficient and this supports our optimisation modelling Outcome, which forecasts that replacement or refurbishment is economic based on energy costs. Other mechanical and electrical items (valves, starters are also of a similar age which supports replacement of a proportion these assets. PLCs are regarded as a short life asset so have done well to survive, however we are now seeing failures and reaching obsolescence of older components. Membranes installed predominantly in the 1990s are requiring regular 'pinning' to isolate failed filter elements. To maintain our water quality obligations, we need to replace a proportion of these and some of our reservoir and tower roof membranes to prevent rainwater ingress into ageing civil structures. This controls the risk of possible bacteriological contamination.

Unplanned shutdowns of our assets due to component failure affect both continuity of supply and water quality so are linked to two of our Outcomes. Whilst consumer protection devices means the quality of the water we put into supply is 'failsafe', nevertheless we consider the reliability of our assets as a key factor in both Outcomes.

Figure 4-9 shows all of our production sites (source works, reservoirs, towers and boosters) ranked by average 2011/12 output (or throughput) and by criticality band. Please note we have redacted the names of our production sites for security reasons.

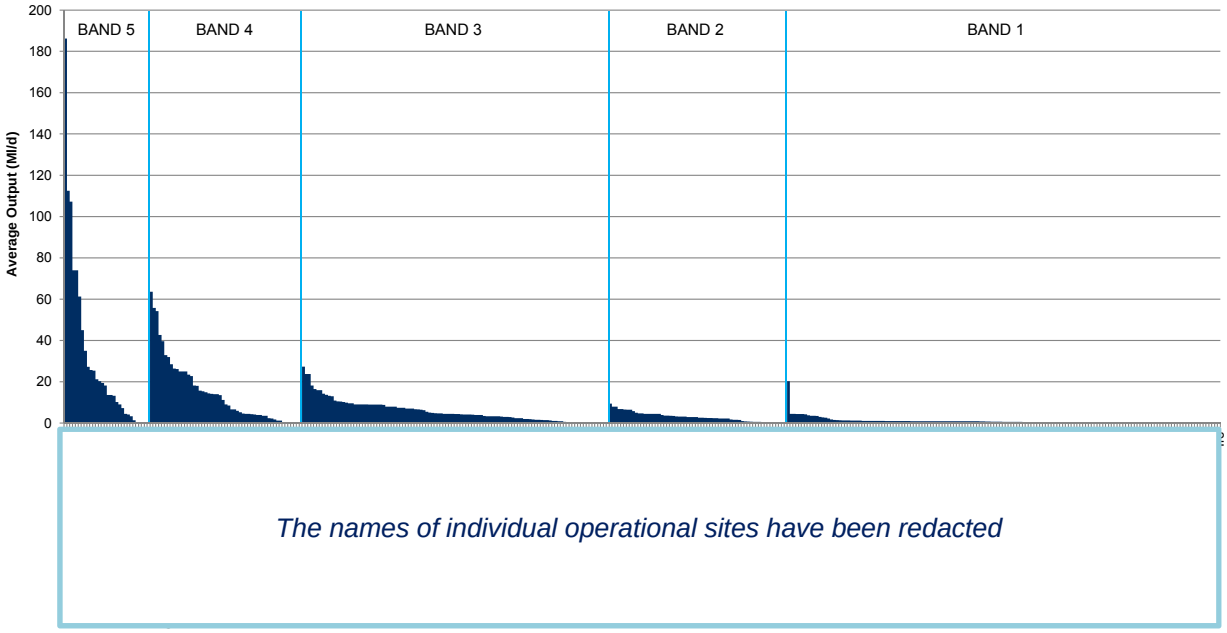


Figure 4-9: Average Output of Production Sites by Criticality Bands

In our consequence modelling, should a site fail, we use the exact number of customers impacted after operational mitigation over different time-spans (0-6 hours, 6-12 hours etc.). As a broader indication of the importance of each site, we use the average number of customers impacted over these time bands and the costs of mitigation, to calculate a 'Criticality' banding. Band 5 is the highest band and band 1 is the lowest.

Our larger sites are situated in band 5. The steepness of the curve in this band shows that we have taken steps to mitigate against failure at many sites in the past through our SEMD programme, but we still have some smaller strategic sites, which have few alternative means of supply. Our trunk main hotspot programme will also assist in this respect, as well as reducing the potential impact of trunk main bursts.

4.4 Minimising disruption to you and your community

4.4.1 Summary

Only a small proportion of customers experience disruption – participants to our deliberative forum confirmed that service disruption is an important issue for them but one that few had experienced[34]. For the most part, our customers tells us (66% of our online panel) that we put things right quickly[35] but where this is not the case, they are concerned when prolonged disruptions occur and are keen to be kept informed of progress of work. Customers want to see no deterioration in overall service and show less support for improvement in service interruptions.

Usually this will be as a result of a burst in the local pipes delivering water to properties. Very rarely, interruptions caused by water abstraction, treatment, storage, pumping or maintenance activities may cause problems in continuity of supply. Maintaining serviceability of these assets requires planned maintenance and replacement.

We have made substantial progress in this area due to more targeted investment. We will maintain our pipes so that the continually ageing asset base is replaced to prevent deterioration for future generations. Over the last seven years, the evidence of current network performance shows we reached a serviceability assessment of 'stable'. In terms of our burst pipes measure, this means we can slow pipe renewal in AMP6. We have also reduced the unit cost of pipe renewal by 40% in this AMP by totally re-examining our procurement and design processes and this ongoing efficiency is reflected in AMP6 costs.

Our customers say that longer disruption periods affect them most – so we will prioritise investment in reducing risk of failure of our large pipes and the more widespread loss of supply effects. We will do this by concentrating on trunk mains renewals and 'hot spot' mitigation. We plan to renew 482km of distribution mains in and the total length of trunk mains planned is 82km, with significant investment in the Stort, Wey and Dour communities, (WRZ 5, 6 and 7). Investment in new trunk mains and monitoring of existing trunk mains to preserve resilience as a result of sustainability reductions are in addition to this.

Our treatment works now operate at a high level of resilience and we supply very high quality water evidenced by our high level of compliance. Our risk based models indicate that we can reduce expenditure in this area, which we will do but we have introduced more targeted risk based maintenance.

4.4.2 Planned expenditure to meet this Outcome

The table below shows a breakdown of the expenditure required to meet this customer Outcome. This Outcome is largely achieved with operating and capital maintenance expenditure. Renewal of our distribution and trunk mains is a critical aspect of this expenditure programme.

[34] OPM, 2013, Business Plan Consultation – Customer Deliberative Forum, p27
[35] OPM, 2013, Panel Survey Findings, SDS/dWRMP, p10

	PR14 £m, 2012/13 prices	
Minimising disruption to you and your community	**Sub-total**	**Total**
Capital Maintenance – above ground Ardleigh maintenance DMA infrastructure ICA / Telemetry maintenance and enhancement IT maintenance and enhancement Production asset maintenance Other		
Capital Maintenance – below ground Mains renewals Trunk main renewals Preventative network maintenance Asset modelling Grafham maintenance Other		
Capital Enhancement Resilience - Reservoirs Resilience - Security (SEMD)		
Opex		
Totex, including capital enhancement		

Table 4-S: Planned expenditure for "minimising disruption to you and your community" Outcome

4.4.3 Our asset management strategy will develop and deliver a robust and efficient capital maintenance plan

4.4.3.1 Above ground assets

Our plan has been derived using PIONEER for our above ground operational assets. A key output, as confirmed by Atkins, is that the plan proposed for AMP6 is our actual plan and is not only conducted for regulatory purposes.

The key points of this are:

- The approach optimises the investment plan to meet current performance standards
- Detailed performance/cost trade-offs are based on modelling of historic asset performance at the level of each asset type
- The analysis is based on whole-life Totex costs
- Key operational constraints are reflected

Results are cross-checked to determine they can be practically implemented and have an acceptable impact across resource zones/communities.

To ensure that water quality remains stable throughout AMP6, we have constrained the maintenance optimisation process using PIONEER, so that the likelihood of a quality related incident does not increase through the period. This ensures we invest at the right time and place to ensure customers are not affected by the natural deterioration and possible failure of

assets. This takes into account the levels of redundancy present in our treatment processes and the time to replace, or restore plant to an operational condition.

4.4.3.2 Below ground assets

With the increased levels of distribution mains replacement since 2005, which followed years of much lower investment, there has been a benefit of reducing our burst rate and stabilising our infrastructure. We have carefully selected the minimum amount of renewals using statistical modelling and practical design methods to achieve significant reductions in mains failures and therefore risk to our customers across our DMAs. Our DMAs are becoming more robust with reductions achieved in leakage and repair activity leading to a "calmer" network. We have also driven down the costs of undertaking this work.

We have also used our PIONEER model to analyse our below ground assets. We have treated the three main below ground asset classes separately, acknowledging the different approaches required; however, we have performed these analyses with an overarching framework.

- Collection of pipe data from our GIS database, work management system and information from our pipe sample database, where our asset performance laboratory has analysed over 4,400 samples
- Deterioration analysis leading to failure predictions were performed using our three survival analysis models, which we have developed form our PR09 submission, resulting in yearly burst predictions for each of the distribution and trunk mains
- A bespoke grouping process has ensured that the distribution mains renewal output of the PIONEER software is a true reflection of the AMP6 programme, this process closely matches our detailed design process for selecting mains renewal schemes
- PIONEER has then been used to perform an optimisation to produce the below ground asset capital maintenance requirements

The evidence we have presented shows that we are managing risks of mains failure by accepting moderate failure rates on mains and only intervening when absolutely necessary.

By 2011-12, we had successfully reversed the trend in bursts and achieved the Ofwat reference level ensuring that our infrastructure was classified as stable. The target was achieved using the programme devised and at the costs originally estimated, with efficiencies now being achieved on cost that are being passed into AMP6.

The lengths proposed in AMP6 are 482km of distribution mains and 82km of trunk mains. The change of emphasis from distribution mains to trunk mains reflects that throughout AMP5 the majority of our interruption events have been on trunk mains. In the years 2007/08 to 2011/12 there were 789 bursts on trunk mains. During this time 2,222 properties were affected for greater than 12 hours by a burst on a trunk main.

Without these major bursts the total drops to 155 or an average of 31 a year. There is still the risk, however, of a single isolated incident which has a larger number of properties affected, so there are additional strategies to reduce the scale and duration of such an incident. Please refer to Appendix 4 Section A (8.3.3) for details of our trunk main hot spot and network monitoring strategies.

4.4.3.3 Resilience

Resilience is the ability of our business to anticipate, absorb, adapt to and recover from an event that disrupts or threatens water supply. It is about maintaining the continuity of a service in the presence of disruptive events.

Resilience is best described using the Cabinet Office approach, which is based on four principal components of **Resistance, Reliability, Redundancy and Response & Recovery.**

The government is clear that the main responsibility for resilience of critical infrastructure lies with the owners and operators. Under the Security and Emergency Measures Direction 1998 (SEMD) and the Security and Emergency Measures Guidance 2009 water companies have obligations to ensure resilience of their infrastructure.

[Redacted]

Resistance	[Redacted]
Reliability	[Redacted]
Redundancy	[Redacted]
Response & Recovery	[Redacted]

Table 4-T: Our allocation of resilience risk management

[Redacted]

4.4.3.4 Asset management

To support day-to-day operations and ensure effective asset management as part of our 'business as usual' we will continue to record, update and use infrastructure data in our GIS, undertake pipe sampling and analysis in our workshop and utilise asset management and hydraulic models to support decision making. The costs for these items are included in our plan as business support activities. Following our fresh approach to asset management and the outcome of the Asset Management Assessment, we are confident that we have the processes and systems in place to continue to optimise our assets, reduce our costs and lower our carbon footprint.

4.4.3.5 Asset care optimisation and management

Maintenance activities are an integral part of the whole life cycle asset management. Investment in maintenance adds value through improving efficiency and prolonging the active life of the asset. Our Asset Care Optimisation (ACO) approach aims to provide the most cost effective and technically feasible asset maintenance programme. We have a systematic, structured, risk and criticality based approach that reduces the risk of failure. Using techniques such as failure mode analysis and root cause analysis it targets specific interventions rather than a generic time-based routine. In developing ACO we have benchmarked successful organisations outside the water sector.

4.4.3.6 Supply

We manage our supply network across 50 hydraulic demand zones: 33 in our Central region, eight in our East region and nine in our Southeast region. We mitigate short run mismatches of supply and demand through the use of a number of innovative applications developed in-house.

With some minor regional variation, the main factors influencing our choice between different options for balancing short run supply and demand are:

- costs for chemicals and maintenance
- marginal kW/Ml for abstraction and transfer between demand zones
- annual and peak licence
- target deployable output both peak and average
- transfer capacity between zones
- water quality blending
- storage capacity
- planned outage
- annual energy tariffs and seasonal TRIADs and constraints when DUOS rates apply

Medium-run plans are determined by our supply and demand situation when we will be subjected to reductions in source supply and more reliant on demand measures and inter-company transfers to meet supply needs. Our Water Resources Management Plan sets the most efficient way of meeting demand into the future using a number of supply and demand side schemes.

Community based staff undertake network activities across the company by monitoring and controlling pressure. [Redacted] Production and contact centre staff, hydraulic and optimisation modellers, energy and water resources specialists all contribute to the effective management of the supply network.

In AMP5 we have implemented a number of strategic schemes related to network investment including optimisation tools (MISER-S and MISER PSL), PSPM (Pump Station Performance Monitor), Optima, inefficient pump replacement, avoiding costly water imports, reinstatement of Bow Bridge source, additional standby generation supports TRIAD and STOR management and a new trunk main connecting north west London to meet new demand in Southall optimised to reduce energy consumption and pressure control.

We are keen to build on innovations described in Appendix 4 Section A (5.3.12) and progress our Service Delivery Mapping process that embraces the roll out of our Community Development Model and Calmer Network project that includes enhanced leakage management and integrated network telemetry. We have included transitional expenditure in our programme for AMP6 to begin the next phase of work in 2014/15.

Our plans for the remainder of AMP5 and AMP6 include a new telemetry system replacing the obsolete Serck telemetry system, upgrade of NAVIG-8 software in 2014 allowing analysis of impact and cost of interventions on performance and service of assets; a true source to tap approach to zone management.

Planned maintenance outage is managed through our TRACE application. We also optimise our capital maintenance in our PR14 plan. The optimisation is based on the most cost efficient way

of maintaining and replacing assets in order to meet service outcomes. As part of this programme of work there is an element of planned pump replacement to reduce energy consumption over AMP6 and AMP7.

4.4.3.7 Carbon

We report two measures of operational carbon emissions annually. We report our carbon dioxide equivalent emissions from electricity and other energy usage (excluding transport) in relation to the Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES) and our total greenhouse gas emissions (GHG) in our annual report and accounts. Almost 95% of these emissions are from the generation and transmission of electricity across the UK from purchased electricity. The biggest driver of our AMP6 carbon emissions is the forecast carbon intensity of grid electricity. The Department of Energy and Climate Change (DECC) has predicted significant grid decarbonisation from the increased usage of low carbon technologies.

We predominately use electricity to abstract and pump water from aquifers or river sources, through treatment processes and into the supply network. Throughout AMP6 we forecasted a 4.75% reduction in our electricity usage due to a planned reduction in water demand and abstraction. This reduction is dependent upon prevailing conditions, such as the weather and rainfall, which affects demand and aquifer water levels and includes only a small margin for the realisation of uncertainties such as those that form the basis of our WRMP headroom forecast. In line with our Energy Policy, we will continue to implement energy efficiency schemes that provide value for money for our customers.

During AMP6 significant reductions in demand are planned. When customers reduce their water usage, our energy usage and reportable carbon reduces. When customers reduce their use of hot water, their typical cost savings in energy consumption are approximately five times larger than their saving in water costs. The carbon savings made from their reduction in energy use are typically an order of magnitude higher than our saving in carbon. Therefore it is likely that the reduction in our customers' carbon footprints will be more significant than our planned carbon footprint reduction.

We currently purchase electricity from renewable energy sources, which are exempt from the Climate Change Levy. However this electricity is not exempt from the CRCEES charge. In 2012/13 we made a CRCEES payment calculated based on these emissions of £[X]m. This is expected to increase to over £[X]m in 2013/14, as the cost of CRCEES emissions increases from £[X] per tonne of carbon dioxide equivalent ("tCO2e") to £[X]/tCO2e.

CRCEES emissions make up approximately 95% of our total GHG emissions. These emissions in 2012/13 were 118ktCO2e; this was lower than predicted, partly due to lower than normal demand and lower than expected leakage. Our total carbon footprint includes approximately 6ktCO2e of emissions from other activities, such as the use of ozone to treat water, gas oil for use in standby generators and fuel use in our buildings and transport fleet. In line with the UK car industry, our fleet transportation policies continue to reduce the carbon intensity of our vehicles.

DECC's latest forecast for grid decarbonisation and annual grid emissions factors (GEF) was published September 2013. This forecast a 49% reduction in grid carbon intensity by 2019/20, compared to 2012/13. However with news regarding delays in new nuclear generation facilities and the installation of renewable energy capacity, we believe this forecast could be optimistic. We based our AMP 6 grid emission forecast on industry information for fuel mix changes between now and 2019/20. Our forecast shows GEFs reducing by 33% of the DECC forecast to

2019/20, i.e. reducing 16.4% from 2012/13 levels. The forecast CRCEES emissions under these alternative scenarios are shown in the table below.

Forecast Emissions, tCO2e	2015	2016	2017	2018	2019
GEF remains at 2012/13 level	122	122	120	118	117
GEF follows our forecast	115	108	104	101	98
GEF follows DECC's forecast	99	78	70	65	59

Table 4-U: Forecast CRCEES Emissions with alternative Grid Emissions Factors (GEF)

4.4.3.8 Security costs

The residual physical and electronic security requirements for our estate were provisionally set at £[X]m agreed at PR09. Using knowledge of security costs in AMP5 and due to the reclassification of our operational sites, the requirement is greatly reduced to £[X]m.

The maintenance costs of the electronic access control and intruder detection systems are approximately £[X]/site/year. Installation of the systems will be spread across the first three years of the AMP6 period.

	Capex £m	Opex £m	Total Cost £m
Installation of SEMD-Security on AW Sites 317 sites			

Table 4-V: Costs for upgrading all our sites to meet the regulatory security requirements

4.5 Providing a value for money service

4.5.1 Summary

Our Plan sets out the most balanced package of programmes to achieve our four customer Outcomes. Each section of this Plan has been developed by learning from our current experience, evaluating other options and considering customer and stakeholder feedback. It has also been developed with the full oversight of our Board.

Table 4-W shows a summary of our proposed capital investment programme for AMP6 compared with AMP5.

Category	PR09 Capex	AMP5 Capex	PR14 Capex
Maintenance Infrastructure			
Maintenance non-infrastructure			
Enhancement Quality			
Enhancement supply/demand			
Enhancement service level			
Total (Net)			

Table 4-W: Comparison of Totex between AMP5 and AMP6

This table shows that we have made substantial improvements in the efficiency of our capital maintenance expenditure that reduces from £[X] in AMP5 to £[X] in AMP6, a saving of nearly 20%. However we have new obligations which amount to £[X]m to continue to maintain supply-demand balance and to meet water quality standards. By improving our capital efficiency, we have been able to offset the additional investment required for capital enhancement.

Several alternative plans were considered and evaluated to assess their capability for meeting our Outcomes. For each we considered the degree to which they were socially, economically and environmentally sustainable.

4.5.2 Why this programme?

We have proposed this programme starting from embedding the learning from the challenges set at PR09. We then have viewed the long-term resilience of assets using the Defra model balanced by our asset optimisation tool, PIONEER to produce a long-term asset strategy. This has then has been balanced against the short-term customer led measures.

We also have short-term pressures of the sustainability reductions and ensure our asset utilisation is efficiently maximised.

It is important that we balance the short-term customer led measures with asset-orientated measures so that we invest on asset reliability. We have done this by using the proposed Outcome Delivery Incentive (ODI) mechanism so they are interlocked with the proposed Outcomes.

The following table shows the total planned investment by Outcome to illustrate the primary areas of investment linked to service measures.

	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL
1. Have enough water Infrastructure Non-infrastructure Enhancement Opex						
Totex						
2. High quality water Infrastructure Non-infrastructure Enhancement Opex						
Totex						
3. Minimising disruption Infrastructure Non-infrastructure Enhancement Opex						
Totex						
Total Infrastructure Non-infrastructure Enhancement Opex						
Grand Total						

Table 4-X: Planned capital investment by Outcome
Note. The Opex includes pension contribution costs which are excluded from the price control make up

A summary of the cost of our plans and key outputs is shown in Table 4-Y.

Investment area	Total Capex	Key outputs and costs	Key Outcomes
Infrastructure		• [Redacted]	Minimising disruption to you and your community Making sure our customers have enough water, whilst leaving more in the environment
Non infrastructure		• [Redacted]	Making sure our customers have enough water, whilst leaving more in the environment Supplying high quality water you can trust Minimising disruption to you and your community
Non infra - Non op		• [Redacted]	Supplying high quality water you can trust Minimising disruption you and your community Making sure our customers have enough water, whilst leaving more in the environment
Quality		• [Redacted]	Supplying high quality water you can trust Minimising disruption to you and your community Making sure our customers have enough water, whilst leaving more in the environment
Supply demand		• [Redacted]	Making sure our customers have enough water, whilst leaving more in the environment

Table 4-Y: Investment Programme and Key outputs Proposed for AMP6

How we have assured cost efficiency of our planned expenditure

We have taken steps to assure the cost efficiency of our planned expenditure and this is described in the Section 7.

Meeting customers' expectations

We have challenged ourselves to ensure our Plan is fully integrated with our customers' expectations. We propose to implement our investments in AMP6 through our Community Development Model.

4.5.3 Capital efficiency and costing process

We have built our plans based on a traditional Opex, Capex build up. This has allowed data from our financial systems and analysis to be assured and cross referenced.

We have then considered Totex and we have inspected any proposed options for capital bias. A number of proposals have options that are a result of this review:

- [Redacted]
- Catchment management aimed at reducing the source of pollution instead of treatment options except where essential
- Calmer networks rather than an increase in the replacement of mains
- Trunk mains monitoring rather than replacement
- Reduced capital maintenance on treatment works via improved maintenance programme
- More efficient use of pumping via network telemetry and source delivery maps rather than more assets

In assembling the costs for the Plan, the costs that have been use within the capital programme have been generated using three types of approach:

- Direct application of unit costs based on the company cost models
- Modified unit cost approaches (e.g. Scheme Builder)
- Bespoke costings based on Well Defined Need scheme designs or other sources (e.g. costings for NEP morphological schemes)

In terms of unit costs, there is an efficiency for distribution mains that is in the order of [X]% below the already relatively low average unit costs that are being delivered under the current contract. Efficiency challenges have also been applied to the universal metering and the lead communication pipe replacement programmes. Other cost items within the capital programme have not been subject to the same unit cost efficiency challenges and essentially reflect best estimates of current costs.

We have applied a [X]% contingency to our cost estimates only for IT maintenance, CP replacement for lead compliance and the cost to build a powdered activated carbon (PAC) treatment process at the WTW in the Hatfield group. The total value of this Capex is £[X]m. We included this contingency due to the uncertain nature of the scope (for CP replacements), innovation of the solution (PAC) and delivery of solution (IT).

We also have also had inconsistencies in the way that indirect overheads have historically been allocated to different cost drivers within the capital programme. We have assumed that all indirect overheads will be a capital efficiency target and hence applied this across the programme. This resulted in the proposed Capital expenditure plan being reduced by £[X]m or [X]% efficiency challenge.

4.5.4 Managing risk

Our Plan will result in substantial changes to our operations and carries additional risk.

We have broken down the Outcomes into service measures that can be readily used to link our proposals to customer requirements and to assess our performance. An example of such a service measure would be interruptions of a specified duration. The measures are valued in monetary terms so that optimisation and cost benefit analysis techniques can be applied to our investment planning. The measures relate to our choices in how we manage our assets (interventions) and can be constrained to achieve particular outcomes in an optimised plan.

We have a formal approach to the assessment of risk and criticality and this is applied at asset level to help understand asset care and capital maintenance needs. Risk is the product of the likelihood and consequence of asset failure and is used when developing maintenance regimes from asset to capital programme level. These risks were identified using the principles established in the risk management framework and process.

A significant proportion of our plan is to support statutory obligations and we have challenged ourselves to be efficient. Our rates for mains renewals, metering and proposed indirect overhead efficiency result in a significant delivery challenge in AMP6.

The price of water is relatively cheap in comparison to other services. This undermines perception of water as a precious resource. One litre of water typically costs less than 0.1p/litre for customers. Assessing value purely on price leads to confusion. Usually the price of something is determined by the market and supply and demand not necessarily its value. Rather than simply considering the cost, it is more useful to think about the value of water in terms of minimising risks and maximising opportunities. Our Plan considers the following categories of risks:

- Physical risk of not having the right amount of the right quality water in the right place at the right time
- Financial risks – these can result in costs for providing alternative sources e.g. bottled water
- Regulatory risks – these arise from compliance and changes in the regulatory regime
- Reputational risks associated with a negative perception by customers or investors

Household customers (retail non-contestable) are concerned largely with physical and financial risks. Non-household customers (retail contestable) are concerned with all of these risks.

Atkins made the following observations regarding the principal risks to our forecasts:

“**Modelling of service measures through PIONEER**. We note that this ‘modelled’ link to service measures covers less than half of the Capital Programme, as many items are driven by statutory needs (enhancements and supply/demand) or are simply based on maintaining existing asset functionality (management and general and smaller expenditure items).This issue is described above in relation to the service measures and Outcomes.”

“**Process assets capital maintenance**. Whilst a practical approach has been developed for the modelling of maintenance needs for process assets, reliable data on age, asset deterioration, failure rates and refurbishment costs are limited, and the modelling depends on the validity of the expert judgement that has been used in developing model inputs. However, the concerns

that we had over potential error or bias in the outputs have been addressed, and sensitivity assessments now indicate that the risks that result from this issue are limited."

"**Metering programme**. A reasonable lower bound estimate has been used for unit costing approaches and water saving assumptions, but there are considerable uncertainties that inevitably remain with the assessment of costs and benefits within the WRMP. As noted above, the case for universal metering within a short (10 year) timescale is partly policy driven, rather than simply representing the least cost plan for meeting sustainability reductions and balancing supply and demand."

"**Lead**. The unit costs for the programme have reduced significantly following our earlier challenges, but these are currently based on assumptions and are therefore uncertain."

"**Opex and final table figures**. We have reviewed most of the significant Opex costs that result from the Capital Programme, and the significant concerns that we had in relation to the Opex forecasts that were being produced by PIONEER have now been addressed. However, we have not yet seen the final aggregate assessment of the operational cost implications of the Capital Programme, and there are some areas of Opex that we have not yet audited."

Risk mitigation measures

We have considered these risks and have taken them into account in the preparation of our Plan. Where we consider that there is a significant expectation of a change in expenditure to meet new obligations, we have identified these to be subject to our Change Protocol, which is included in Appendix 6 of this Business Plan.

4.5.4.1 How we will achieve this

A large proportion of capital expenditure for 2015-2020 is from our water resources supply and demand programme and quality programme, both designed to meet the Outcomes of 'Making sure our customers have enough water, whilst leaving more water in the environment' and 'Supplying high quality water you can trust,'

The approach we took to determine capital investment for AMP6 involved incorporating capital maintenance requirements, the costs of deploying the Water Resources Management Plan and our investment proposals to the DWI to meet water quality requirements. We followed the relevant guidance. The outputs in terms of impacts on customers' bills provided input to our customer engagement processes.

4.6 Additional evidence to support our Plan

Our wholesale plan covers our wholesale activities from securing and operating water sources through treatment, storage and distribution of product to supply to customers' properties. Appendix 4 provides a comprehensive summary of the elements considered and activities undertaken to enable us to develop our wholesale plan.

Appendix 4 is a record of the activities, research, data, analyses and results we have utilised and is a primary reference point for material describing in detail how we have built the Plan we are using to achieve the Outcomes our customers have told us that they expect of us. Appendix 4 includes the following reports:

- Section 4A contains our **'Technical Report for our Wholesale Plan'** (November 2013) which describes the technical aspects that support the capital investment needed for our wholesale plan. Among these, we describe our methodology for our approach to the capital expenditure plan; set out our infrastructure, non-infrastructure and IT assets; describe our customer engagement process; introduce our Service Delivery Map; consider costs and estimates as well as provide information on our water resource, quality enhancement and resilience programmes. Finally, we describe the results of our analysis and how these elements create our Preferred Plan.
- Section 4B, our **'Quality Plan Submission'** (August 2013) explains how we have derived our plans to protect drinking water quality; environmental quality and catchment management including details on lead communication pipe replacement; pesticide reduction and how we will meet our commitments to relevant EU Directives, national legislation and policy initiatives.
- Section 4C is our **'Statement of Response on our Water Resource Management Plan'** (WRMP) (November 2013). We sought the views of our customers and stakeholders on our WRMP and investment proposals between May and August 2013. In this Statement of Response, we show how we have considered each response together with other feedback we received on our WRMP and Business Plan proposals. We explain how we have revised our WRMP in response to customer and stakeholder views and we take account of the latest data on population and housing growth forecasts.
- Section 4D contains our **revised Water Resources Management Plan** (WRMP) titled 'Our Plan for Customers & Communities' (November 2013) which describes our water resource planning strategy and proposed investment for the next 25 years. Our WRMP has been revised following extensive consultation with our customers and stakeholders and sets out how we will deliver a range of measures across our eight water resource zones to ensure the security of water supplies is maintained into the future whilst reducing the environmental impact of our operations.
- Section 4E shows our **'Water Resources Management Plan Tables'** (November 2013) with tabulated data for each of our water resource zones. Information available includes baseline supply; baseline demand; supply utilisation values; a list of feasible options and a description of the least cost, preferred and final plans.
- Section 4F is our **'Water Resources Management Plan Strategic Environmental Report'** (November 2013). Due to forecast population growth, housing growth, sustainability reductions and climate change, we anticipate a supply/demand deficit after 2015 which will require us to put in place options to close the gap. Our Strategic Environmental Assessment outlines the options we have considered and how environmental considerations have influenced the appraisal of those options.

5 Our Retail Service for Household Customers

- We **will earn legitimacy with our customers** by understanding their needs and improving our service. Our innovative **Voice of the Customer** programme and feedback from our teams will continue to ensure our customers' preferences drive improvement through each activity within our business

- We will be **accountable to our customers** by publishing our promises and performance levels at a company **and** community level in our Customer Charter. We will be a **champion for our customers** by developing robust Service Level Agreements with our wholesale services

- We are proud to have the **second lowest level of written complaints** for any water company - but we can be, and we want to be, number one

- We will ensure our customers experience a smooth implementation of our wholesaler's universal metering and water efficiency programme. We have a **comprehensive programme of communication and support.** Our confidence is underlined by a commitment to ensure our SIM scores improve over the period

- We will respond to our customers' desire for value for money by challenging all costs to help **keep our average bill as low as possible**

- We will introduce a new **Social Tariff from April 2014** for the most financially vulnerable of our customers, subject to Ofwat's approval

5.1 Where is our service today?

We provide retail services to 1.34 million households across the eight Affinity Water communities in the southeast of England. About 47% of our household customers are on a metered supply.

We are determined to achieve our vision of being the UK's leading community-focused water company. We recognise that we have a unique privilege. We are the sole supplier to these communities and are entrusted with the stewardship of a vital natural resource for both current and future generations of customers. With this privilege comes a responsibility to really understand what matters to our customers and their communities and ensure that we are accountability to them for our performance. We work on the basis that we should strive for customer service excellence - so if our customers did have a choice of supplier they would want to choose Affinity Water.

5.1.1 Our business now acts on the voice of our customers

Since 2010 we have consistently improved our service performance. For example, we now have the second lowest number of written complaints for any water company – although we are keen to be number one. Our performance as measured by Ofwat's SIM score has improved. At the same time, we have ensured we can deliver value for money by reducing our retail costs.

Our performance has been driven by three factors:

- We strive to ensure we **understand the needs of our customers** through our innovative Voice of the Customer programme
- We have **listened to our customers' feedback** and used it to improve our processes and ways we serve our customers
- We make it quick and easy for our customers to transact with us **24/7** through our digital channels

Understanding our customers

In 2010 we implemented our 'Voice of the Customer' programme to engage effectively with our customers about their experience of our service and to measure their satisfaction level.

At the heart of this is our Talkback SMS system. Where possible after each customer interaction we send a text message asking the customer to rate our performance. We now receive around 50,000 responses a year – this scale and the granularity of feedback we receive, allows us to drill down into each customer facing business process. This tool has proven to be very powerful in supporting our continuous improvement.

The key performance metric we use is a Net Promoter Score (NPS); a measure used widely in other retail and customer service industries where earning customer loyalty is critical to commercial success. It measures, in a consistent way, the difference between the proportions of customers who would recommend our services and those who are dissatisfied.

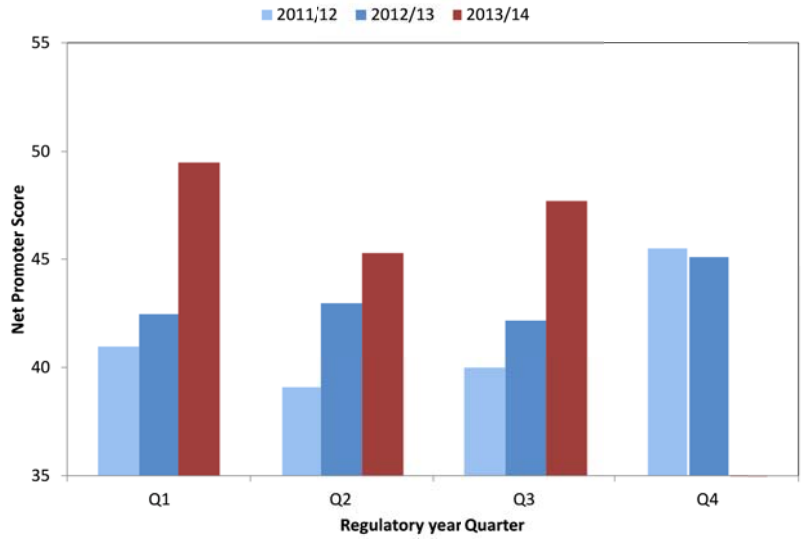


Figure 5-1: Net Promoter Score performance

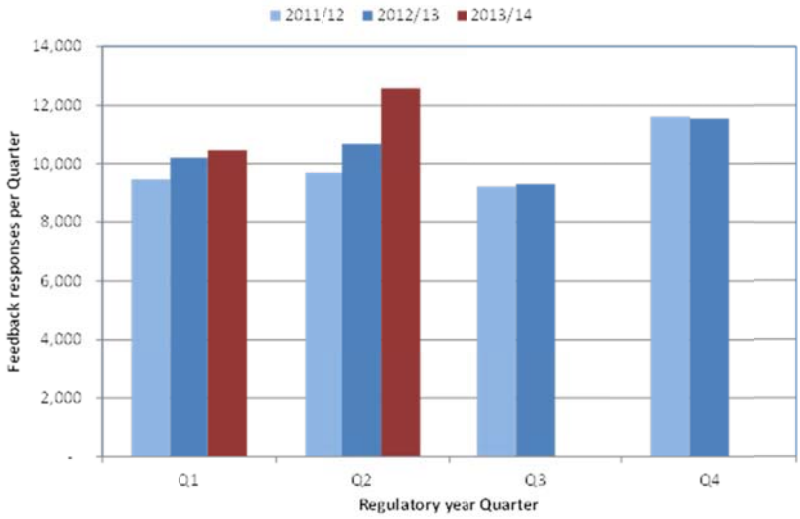


Figure 5-2: Customer feedback responses

Acting on customer feedback

We have used insights gained from our Voice of the Customer programme to develop and implement many improvements. The following case study shows how we improved the management of high consumption.

We used 'Voice of the Customer' feedback to overhaul our process of pre-bill screening for high consumption billing. We reduced the consumption threshold to increase the number of bills we check before dispatching the bills. This allowed us the opportunity to check and pre-empt issues of misreading and to distinguish these errors from genuine high consumption. Where we identified genuine high consumption due to leakage on a customers' property, we changed our process. We now aim to verify the leak and help the customer solve the leak and we agree a leakage allowance and bill correction over the phone. Should we need to visit a customer to investigate an issue with provide our customers with a two hour appointment window, rather than half day. Customers can now also set up their appointments online.

The findings from our extended engagement programme broadly reflect the feedback from Voice of the Customer and other customer feedback. In our first online panel[36] we asked customers some general questions about their experiences and expectations of us, including why they made contact. 51% stated their reason was in connection with a bill, which is consistent with the levels of phone contact we receive. We also asked whether they found the information we provided helpful and 55% found it was. We also asked about sewerage charges and 38% thought that because they received the bill from us, we were responsible for proving wastewater services.

We found that some groups of customers have additional needs.[37] Whilst many of their requirements and concerns are the same as everyone else and included affordability and reliability of service, they wanted to be able to gain information in multiple ways.

Subjects emerging from all the research were consolidated into a series of themes, two of which are summarised as: customers tend to take water for granted and rarely think about what is involved in the delivery of water services and customers are generally positive about our staff and rarely have cause for concern about customer service.[38]

Making it quick and easy for customers to do business with us 24/7

We have developed a platform of digital solutions that meets our customers' expectations for self-service 24/7. The range of digital solutions which we now offer includes:

- Online account management
- Mobile account management
- Web chat and knowledge management systems
- Social media: twitter/ Facebook

Customers' use of these channels has grown significantly. This has reduced the level of traditional forms of contact and reduced costs.

We are proud that Social Pioneers, a benchmarking study by ICMI – an international contact centre consultancy - benchmarked our social media channels in 2013 as sixth in the UK for

[36] OPM, Research Now, Panel Survey Findings, Findings from 6 panel surveys conducted in 2013
[37] OPM, Research with Vulnerable Groups, Findings from interviews with stakeholders
[38] Report on Engagement Activity, Phase 2 'Testing and Valuing', Activities undertaken March – September 2013

service responsiveness and customer experience. We were the only water company to be recognised in the 'Top 50 Companies for Customer Service' awards (across all industries in the UK).

5.2 We have improved our performance levels as measured by Ofwat and the Consumer Council for Water but are ambitious to improve further

The improvement in our customers' satisfaction can be seen through our Service Incentive Mechanism score. We have improved from 78.19 in 2011/12 to 80.31 in 2012/13 and we expect to achieve 80.47 in 2013/14. This improvement is despite the organisational change of bringing three companies into one to become Affinity Water. We have maintained the relative industry position of ninth, but acknowledge that our qualitative water service has the opportunity to improve. We have shared with our Board our plans to improve our performance with a forecast score of 83.40 in 2014/15.

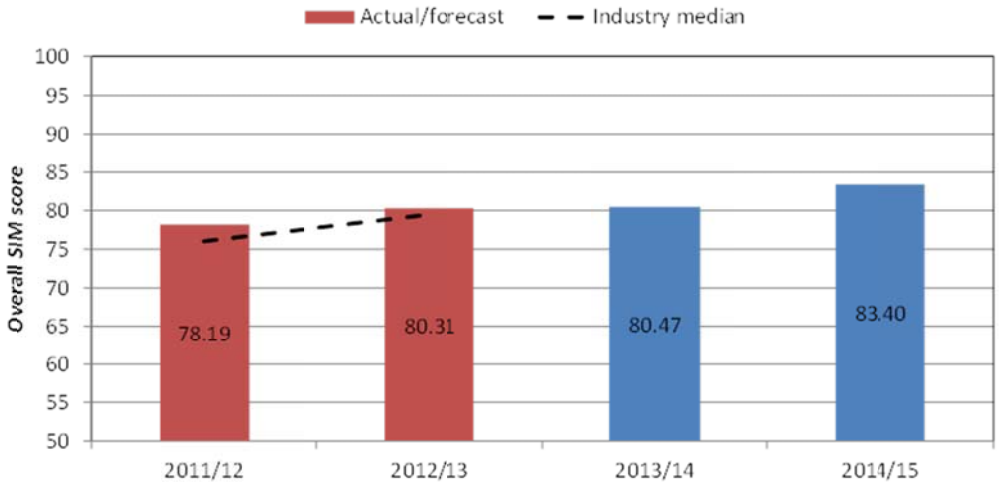


Figure 5-3: AMP5 SIM performance

The power of our 'Voice of the Customer' programme is best demonstrated by the reduction in written complaints. We have been placed second in the industry (as a unified business) in the 2011/12 and 2012/13 CCWater industry report. But we are not complacent - we want to be number one.

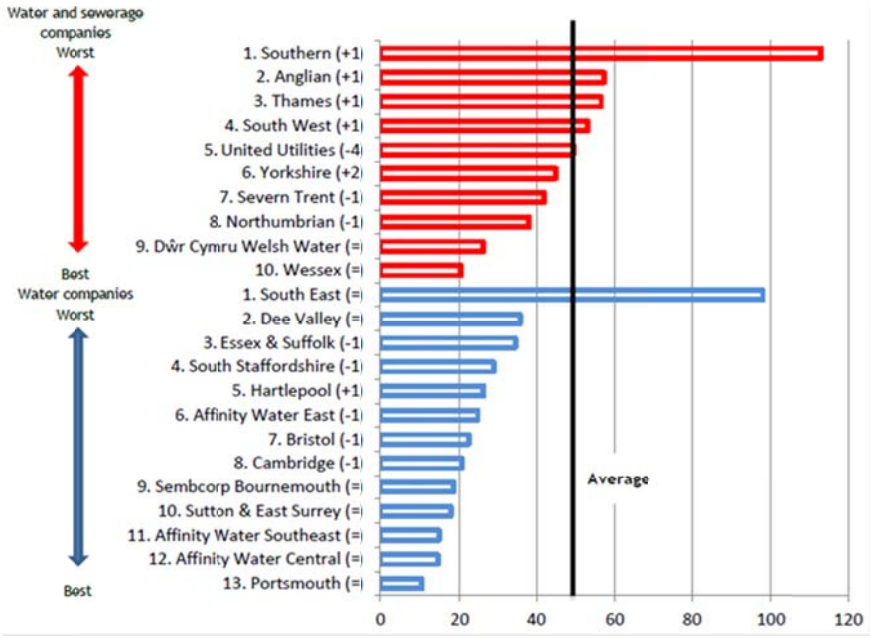


Figure 5-4: 2012/13 written complaints performance

Source: CCWater's 'Complaint Handling in the Water Industry England and Wales April 2012 – March 2013'

5.3 We have improved service whilst achieving cost reduction

We have driven down our retail operational costs (excluding debt and debt management) by around 20% from £22.1m in 2010/11 to £17.5m in 2012/13. We are also planning further efficiencies this year and next year.

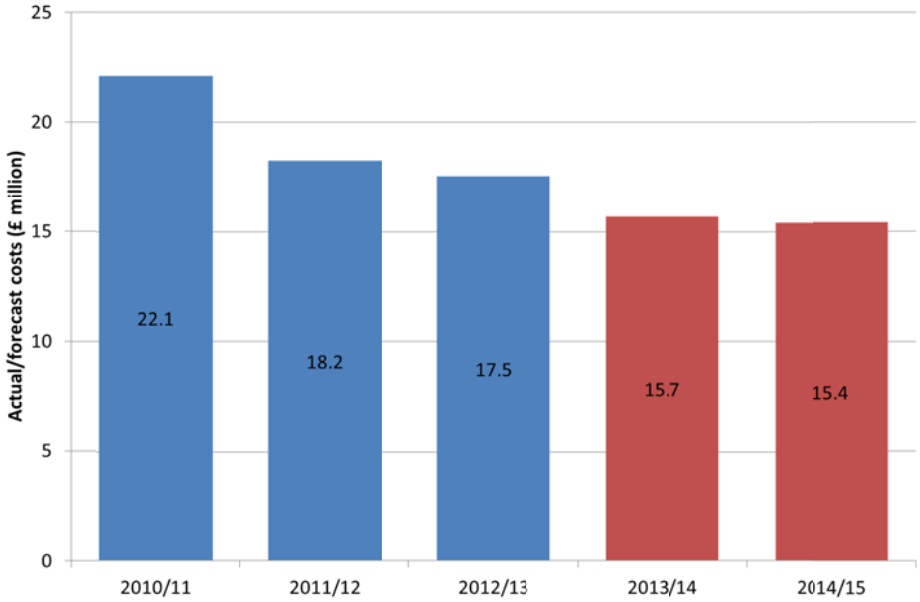


Figure 5-5: AMP5 operational cost (excluding debt/debt management) performance

5.4 Making sure our customers have enough water, whilst leaving more water in the environment

5.4.1 Our customers' expectations

We believe the following messages from our customer engagement (see Section 2) are especially relevant to the Retail service we provide.

- Our customers see a **shared responsibility** for using water wisely between their water company and the communities they live in and we serve
- **Our customers want more information and support on how to become more water efficient** and to reduce their demand. They see the education of all age groups as being important, especially when linked to leakage and metering
- Our customers accept that metered charges are the fairest way to pay for the water used and **would like help in managing the amount of water they use to help them to control their bills**
- While most customers support metering, some are reluctant to have a meter installed because it they are concerned that it will increase their bills. Customers felt that **a universal metering programme needed to be accompanied by support and advice to customers** about moving onto a metered charge and the potential impact this could have on bills

5.4.2 How are we going to meet our customers' expectations?

Our primary focus in providing our retail service is to help and encourage our customers to value water and to use it more responsibly and efficiently, ensuring that we have enough water both now and in the future. This will help our metered customers to manage their bills and benefit the local water environment within the communities we serve.

We are committed to gaining customer acceptance of our universal metering programme. Central to this is our key objective of ensuring a smooth and customer focused installation process for the 280,000 meters that will be installed in the period 2015-2020. We know that while customers support metering, as a fair way to pay for water, some are reluctant to have one fitted. Their main concerns fall under three headings[39]:

- Why is metering needed?
- How will a meter be fitted?
- What will be the impact on their personal bill?

We appreciate the scale and risks involved with the universal metering programme and will actively manage these, ensuring customers' needs are at the heart of the programme. The key element to the retail plan is to provide support to the customer to help understand the need for a metering programme, the process of installation, how to use less water and, ultimately, to facilitate an easy transition to a new measured tariff.

We are providing to all customers a two year transition period to switch to a metered tariff. We will support them with targeted water efficiency advice, provide information of their water use

[39] OPM, Community Metering Consultation, Deliberative Forums, October 2013

monthly, provide a comparator bill every six months, and allow customers to opt-in at their request to a metered tariff within the two year period.

Helping our customers to use water more efficiently

Clear communication about universal metering

Our experience in our southeast region (east Kent) and that of other water companies has shown that universal metering programmes can drive customer contact and negatively impact customers' satisfaction with their water service. This was also highlighted by the Consumer Council for Water's report - *The Customer Impact of Universal Metering Programmes in South East England.* The findings, together with discussions with Southern Water and South East Water, have helped shape our approach to try to avoid these customer satisfaction issues.

We have developed a clear and comprehensive strategy for customer communication built on three critical elements for encouraging customer and community acceptance:

- Community communication and awareness: an ongoing programme of engagement with our customers to gain their understanding and acceptance of the programme's aims
- Survey and installation: clear planning and focussed communications with customers as we move through each supply area installing the new meters
- Post installation support: a two year transition period during which we will help customers understand and manage water usage prior to moving them to a measured tariff

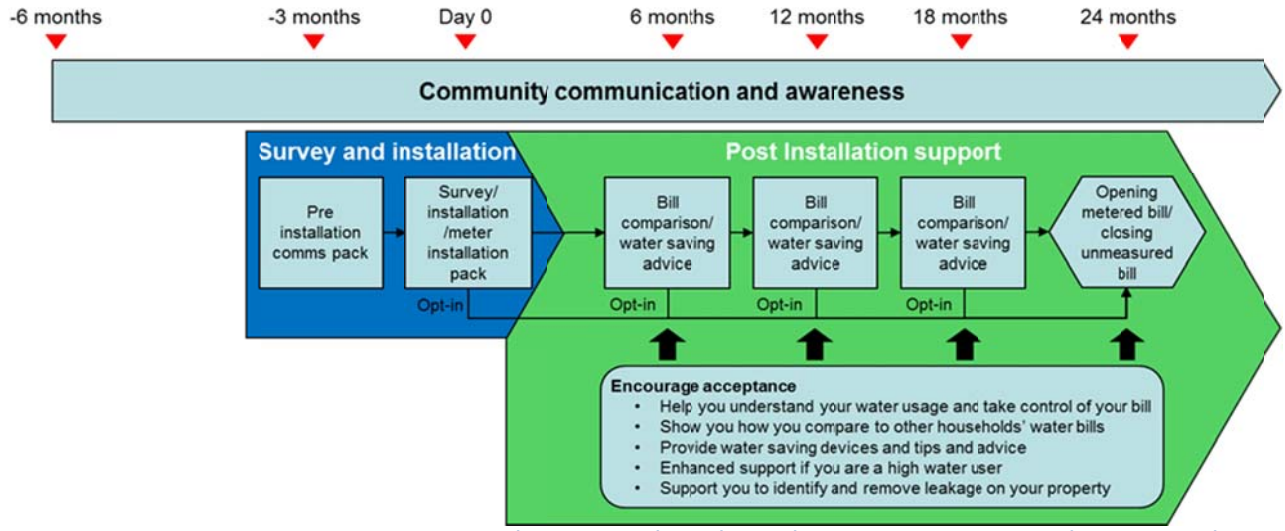


Figure 5-6: Universal Metering Programme customer journey overview

Community communication and awareness

Throughout the life of the programme we run a range of communication and awareness activities including:

- Being visible within the communities we serve months ahead of installation, holding neighbourhood meetings at local and Parish Council level, meeting with key community stakeholders such as elected representatives, NGOs, local authorities and housing associations

- Using our digital and social media channels to inform, involve and engage customers in communication
- Providing a dedicated website with more detailed information on the programme
- Running information campaigns on local radio stations and in local newspapers
- Expanding our environment and education service to deliver water saving advice and guidance for all customers, in addition to its primary focus on school children - an extension to the award winning community education programmes we have run for the last 15 years

Survey and installation phase

We will ensure that customers receive clear and targeted communications including:

- A visible presence in the community and the home to support customers face to face
- A pre-installation survey information pack for each household
- Follow-up letters for customers where there have been meter installation problems
- SMS appointment reminders
- Further targeted information emails at key points
- Post-installation SMS satisfaction surveys
- A copy of our Code of Practice

Post installation support phase – two year transition

Each customer will be taken through a two year transition period from installation of their meter. This allows regular (six monthly) reviews and advice on consumption and the impacts through comparison information on customers' bills. The comparison of the cost impact between the two tariffs will prevent "bill shock" for those customers who will be adversely impacted. It also provides a period for us to identify and help those customers likely to require additional support, typically high consumption customers and the financially vulnerable. Details of the standard and enhanced levels of support we shall offer are shown below.

Standard customer support	Enhanced customer support
For all our customers in the first 24 months we will provide monthly meter readings on-line to help customers understand their consumption and potential bill impact. At the end of the first six months and then at six monthly intervals, customers will receive a bill that: - Compares their current bill to a notional metered tariff basis bill - Shows how their consumption compares to local and national averages - Shares advice on how to reduce their water usage We will continue to proactively review high consumption bills, working with customers to resolve meter reading issues or identify potential customer-side leaks. We will then support customers to resolve customer-side leaks in line with our current policy. At any point within the two year transition, customers can opt to move across to a measured tariff. At the end of the two year transition period, all remaining customers will be switched across to a metered tariff automatically.	As per the standard support, but with additional support for two particular groups: High consumption customers: - We will provide face-to-face water saving audits and advice including provision of water saving devices - We will work with a range of partners including the Energy Savings Trust, energy providers, local councils and voluntary groups to deliver this support Financially vulnerable customers: - We will review if customers are eligible for and would benefit from either the WaterSure tariff or our new Social tariff. - Customers will continue to have a wide range of payment options from weekly to annual payments, which can be set up via a range of channels, making it easier for customers to pay on time. - The Direct Water Payment scheme will continue until the full roll-out of the Government's Universal Credit scheme.

Table 5-A: Post meter installation support activities

Where we find it impractical to fit a meter we will explain this to the customer and transfer them onto our assessed tariff.

Standard optant activity

We will continue to provide a meter where a customer requests a meter under the meter optant process.

5.4.3 How are our customers going to measure our success?

We appreciate that a universal metering programme could lead to more customer contact, which could negatively impact on our SIM scores as has been the experience with some water suppliers. But we believe that we owe it to our customers to work hard to engage with them very effectively to ensure that there is no deterioration in our SIM scores over this period and we meet or exceed the forecast SIM score set out in Ofwat Table R1, which shows a slight increase over the period.

We will report our performance against a range of measures, as laid out in Section 3, which will include an annual customer survey. We intend to report at a community level and add the SIM, NPS and 'Voice of the Customer' data to provide feedback to customers about what we have achieved and how we will address concerns, both for customers and with the Wholesale service provider.

5.5 Supplying high quality water you can trust

5.5.1 Our customers' expectations

Customers see **the provision of high quality water as a core duty** for Affinity Water and want investment maintained to protect and maintain the supply of high quality water to their taps. They are **concerned about the hardness of their water, but are unwilling to pay more** to reduce hardness.

5.5.2 How are we going to meet our customers' expectations?

When asked, customers valued safe, high quality drinking water with 97% thinking water is safe and clean[36] and 93% agreeing that high quality water is supplied most or all of the time. [40] When prompted the only concerns customers had with water quality was regarding water hardness, with nearly 4 in 10 people noticing the effects of hard water all the time.[40] However, when customers were asked to place a value on changing water hardness, as part of the attribute testing is the willingness to pay research[41], it was not possible to determine, with any confidence, what that value would be.

As part of consultation on the Business Plan in July 2013[42], we tested customers' views on our proposal to invest so that we did not compromise water quality. Customers felt water quality was non-negotiable and this approach was well received with 7 in 10 attendees at the workshops agreeing. Again the only concern raised was about water hardness.

Our planned investment will ensure we achieve compliance with water quality standards and continue to reassure customers that their water is safe and can be trusted.

5.5.3 How are customers going to measure our success?

We understand that customers are concerned about water hardness and in their view it is a characteristic of water quality. We are committed to sharing more information with customers about the options for managing water hardness including steps they can take and we will be working with the wholesale business to identify and provide costs for options to reduce hardness which we can then test with customers.

We report all water quality incidents to the Drinking Water Inspectorate who produce an annual report of compliance, which is publicly available. In addition we will report our performance as part of our performance measurement framework. Additionally, we will share any customer complaints about quality and provide information to show how we addressed and resolved these issues. As with all our performance measures we will continue to report at company and community level.

[40] OPM, Lets Talk Water consultation, findings from public consultation and survey of Affinity Water panel members, September 2013
[41] ICS Consulting, PR14 Stated Preference Study, main WTP study, September 2013.
[42] OPM, Business Plan Consultation, Customer Deliberative forums, August 2013

5.6 Minimising disruption to you and your community

5.6.1 Our customers' expectations

People feel that this is an important issue, but few have directly experienced a service disruption. Customers want to see the standards of service maintained and are willing to pay slightly more to see this happen. Only a small proportion of customers experience disruption. However, those that do are very concerned when prolonged disruptions occur. Customers want more information about the challenges faced and the actions and expenditure undertaken. This should be multi-channel and personalised to meet customer needs and preferences.

5.6.2 How are we going to meet our customers' expectations?

Disruption to customers and communities is a consequence of working on or disturbance to our network; this can be planned or unplanned. Customers understand the need to work on burst pipes and replace water mains and want to ensure we make people aware of any planned disruptions.

We are pleased our customers told us that they broadly understand the need for planned maintenance work. But as the Retail service we need to meet our customers' expectation that they want **effective and efficient communication before, during, and after an interruption to their service** to minimise the disruption that they experience (see Section 2).

We will establish robust Service Level Agreements governing the provision of this Wholesale service and act as the customer champion. We are also committing to pay £50 compensation to our household customers (rather than the lower amounts set out in regulations) should we fail to meet our Guaranteed Standards of Service for planned and unplanned service interruptions.

To reduce the impact of possible disruption to our customers service experience, we will continue to **improve our communication processes** to ensure that our customers have the information they require in the format they want. To do this we will use a combination of traditional contact and digital solutions to minimise the disruption to customers as shown below.

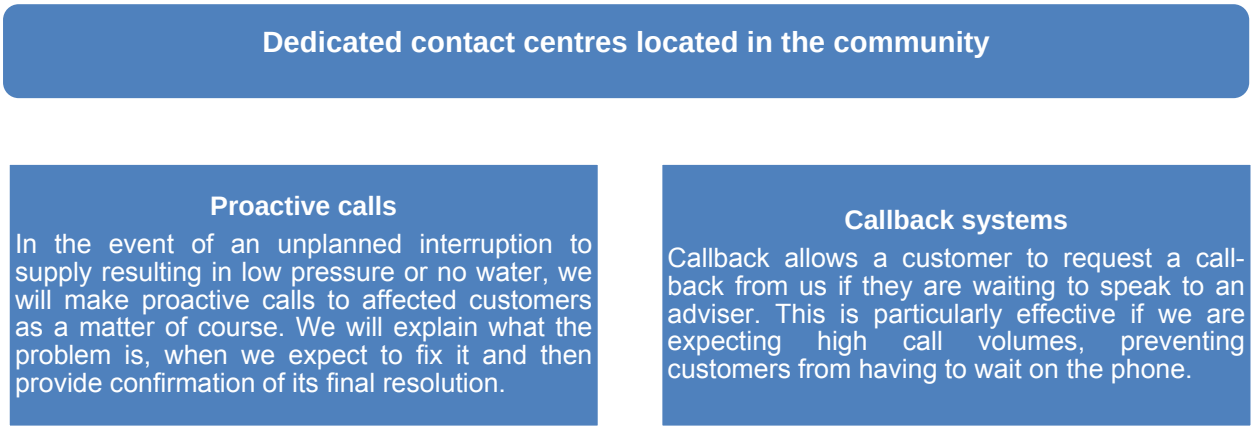


Figure 5-7: Proposed customer communications improvements

Improving the information available to our customers

We will maintain our traditional contact methods (telephone and post) but know that more of our customers want to be able to find the information they require at their convenience through digital and online channels:

- **Live service updates -** we provide live communication on our website of water network problems along with forecasts of when we expect them to be resolved
- **Web-videos -** we have created these to help customers understand 'how to' read a meter, locate their stop tap, and other useful water-related activities
- **Mobile app -** working in the same way as our website this provides information updates on both planned and unplanned work, allowing a mobile user to understand the work being undertaken, including when this started and is expected to finish
- **Web knowledge management -** this is key to putting our customers in control by allowing them to self-serve, preventing unnecessary telephone contact. We have a detailed bank of frequently asked questions which customers access and rate every day. We then update the material to ensure that our customers have the information they require at their fingertips
- **Web chat -** a new communication channel providing online facility to improve two way communication.
- **Social Media -** Use of twitter and Facebook to keep customers informed of water supply issues

Our new Customer Charter will track and publish information on our promises on both planned and unplanned interruptions to supply, so customers will be able to hold us to account at a company and a community level. In addition, our community based SIM score will reflect how well we serve our customers in terms of this Outcome.

5.6.3 How are we going to measure our success?

The existing measures of SIM, VoC and NPS provide us with valuable feedback from customers about the effectiveness of communication, especially when dealing with causes of disruption. We will maintain and extend the reporting of these findings as part of our performance measurement framework.

5.7 Providing a value for money service

5.7.1 Our customers' expectations

Customers are content with the bills they currently pay for our service, although they are concerned about any significant rise in their bills. Many customers are concerned that some people struggle to pay their bills and want them to be helped. However, their views on social tariffs are mixed. Customers support investment in assets to maintain the levels of service they want.

The extensive bill acceptability research, stage one, confirmed that 91% of customers felt that the proposals we made were acceptable. When repeated in stage two this was maintained at a high level of 87%[43].

We asked groups of vulnerable customers about their awareness of the support available and found that WaterSure was not well known – either by them of the agencies supporting them. Many of them had questions about eligibility and were interested in the social tariff and felt it was a constructive way of supporting people on low incomes. Several groups felt we should provide more channels and special forms of support and advice for vulnerable customers and they encouraged us to present information that was accessible, eye catching and in plain English.

5.7.2 How are we going to meet our customers' expectations?

We will provide a value for money service in a number of ways:

- Ensuring that our customers' bills remain affordable by committing to efficiency savings which keep the average bill rise below the rate of inflation. We will also offer innovative tariffs (e.g. volumetric tariff) and flexible payment arrangements
- Enabling our customers to save water and manage their bills by enabling them to monitor their water use and offering advice on how to use it wisely
- Increasing our responsiveness to all customers' needs through the Voice of the Customer programme to deliver efficiency and service improvement
- Making it easier and quicker for our customers to manage their accounts by providing innovative solutions through different channels

Ensuring that our customers' bills remain affordable

Being cost efficient to help keep changes in average bills below the rate of inflation

We are committed to making cost reductions, through our Voice of the Customer programme and the adoption of digital channels, to enable us to reduce in real terms the average bills for our customer.

A new Social Tariff

We know that some customers struggle to pay us. We want to support these customers through the introduction of a new Social Tariff from 1 April 2014. Eligible customers will have a household income of less than £15,860 or be in receipt of certain benefits. We expect 30,000 households to be accessing the social tariff by the end of 2017.

Eligible customers will receive a fixed, flat rate bill, currently £95.80, which reflects a reduction of around 40% on the average household bill. Customers on our social tariff will be required to have a meter installed to ensure that water consumption is not excessive, although their bill will remain fixed. We will also offer them a water audit to help them to improve their water efficiency.

We have developed our social tariff following extensive engagement with our Customer Challenge Group, the Citizens Advice Bureau and the Consumer Council for Water. We also engaged with our customers extensively about this. Our social tariff has received support from

[43] ICS, PR14 Acceptability Study, Final Study Outputs, November 2013

CCWater during October 2013, and having discussed it with Ofwat in November 2013, we intend to include our tariff in our principal statement for 2014/15.

We expect in 2014/15 that the cross-subsidy will be less than 50 pence and will rise as volumes increase to 30,000 in 2017 when £1.40 will be required.

The key to the success of the social tariff is to reach those most in need, and we will actively promote it and the WaterSure tariff. In order to do this we will develop links with Local Authorities, Age Concern and Citizens Advice Bureaux as well as generate direct promotional activity.

It is clear that a more holistic approach to indebtedness would help customers and as such we intend to develop partnerships with energy providers who are trying to support the same customers through similar schemes. A joint programme with energy is more likely to have longer lasting impact and meet our objectives of using less water by the installation of improved heating and washing facilities i.e. installation of showers where customers have baths only.

Continued support for vulnerable customers

We will maintain our Water Sure tariff for customers who receive welfare benefit, have three or more children or have a medical condition that requires them to use water frequently. Customers eligible for this tariff will have their water charges capped at the average metered charge to ensure that those who use more water do not struggle to pay their bill.

In addition our special care team continue to assist those customers who require information in a specific way such as braille statements, help for the hard of hearing and help for customers where English is not their first language. We fully support the industry wide initiative to set up the new WaterSafe assurance scheme.

Enabling our customers to save water and manage their bills

The combination of support to save water, through more information and water efficiency, combined with our targeted universal metering and water efficiency programme and new innovative tariffs will give our customers the opportunity to take even more control of their bills. We will work with our customers to enable them to manage their current and future bills.

Developing a new innovative volumetric tariff

During 2015 to 2020, we will be seeking to develop a solely volumetric tariff for metered customers to encourage them to use less water. At present, approximately 20% of a metered customer's bill is fixed which means that a customer's effort to reduce their use of water may not be fully rewarded in terms of the price they pay. Our innovative tariff would only charge for the water used and would seek to reaffirm the cost benefits which customers can achieve by using less water.

When we spoke recently with Ofwat, they were not keen that we removed entirely our standing charge. Subject to Ofwat approval, we would seek to replace the standing charge with an equivalent bundled minimum charge but which includes a charge for a minimum volume of water. Consumption beyond the minimum volume would then be invoiced at the same unit rate as the bundle, making the entire bill volumetric except for household properties which remain empty for most or all of the billing period. The effect is to create a volumetric tariff whilst ensuring that all customers contribute to the costs of network maintenance, metering and billing. This tariffing approach is similar to the bundle approach used in the telecom sector.

Research through the deliberative metering forums (see Appendix 2) indicated that 69% of customers would approve of a tariff that rewarded low use of water, with only 9% against. This was seen as being both fair and supportive of our aim of encouraging all customers to use water wisely.

A two year transitional period with our water efficiency and Universal Metering Programme

Following the installation of a meter, we will not switch a customer to a measured tariff for a two year transitional period, unless the customer chooses to switch voluntarily.

For the two year transition, whether a customer has chosen voluntarily to switch to a measured tariff or not, we will provide monthly consumption data allowing them to monitor and track their consumption over time and provide potential bill impact information. We will offer water saving advice and a home water audit, with the aim of persuading customers to use water more efficiently.

Increasing our responsiveness to customers needs

We will use multiple channels to gather and respond to feedback from our customers about their service to deliver a continuously improving service which meets their expectations. These include:

- Our Customer Charter
- Our Voice of the Customer programme
- Team feedback
- Web chat
- Social media
- Traditional contact channels

Making it easier and quicker for our customers to manage their accounts

To make it easier and quicker for our customers to manage their accounts, we are committed to improving the transparency of billing and expanding the ways in which our customers can manage their accounts through digital solutions, see Appendix 5 for details.

- **Clearer bills:** our customers have told us that they often find their water bill confusing - particularly the case for new customers and those who have changed tariffs during a billing period. We will be redesigning our bills to make it easier to understand how they are calculated, what payments are required and how these might vary from one bill to the next. This will make it easier for our customers to manage their accounts and payments
- **Flexible payment options:** we will continue to make a wide range of payment options available to our customers including weekly, monthly and annual payments. We will facilitate payments online or using mobile devices
- **Direct Debits:** to remove customers' concerns around overpayment we will automatically repay our customers any overpayment of more than £10 at their payment plan's anniversary. This shows an open and trustworthy approach, and removes a potential barrier to further take-up of direct debit
- **E-billing:** became available in November 2013, providing a quick and easy way for customers to view their bills electronically
- **Online account management in one place:** our customers can self-service their accounts through our website or our mobile application when they choose. We will continue to expand the transactions that our customers can complete to make it easier and quicker for them to manage their accounts. This already includes the ability to view current and previous bills and their payment history, as well as notify us if they are moving home or would like to opt for paperless billing
- **Mobile application:** focuses on the website's key functionality to make it easy and quick for customers to engage with us on the move. We have an iPhone app in development (the mobile platform on which most of our customers access our website) with an android phone app planned for 2014
- **Social Media:** Use of twitter and Facebook to keep customers informed of water supply issues

Figure 5-8: How we make it quicker and easier for customers to manage their accounts

5.7.3 How are our customers going to measure our success?

We will undertake an annual survey to gain our customers' views on whether we are providing a value for money service. We shall be transparent and publish the findings of this survey.

Customer Charter

Our Customer Charter will explain our performance compared to our commitments. The Charter will be totally transparent and open and published monthly across a variety of channels. See Appendix 5 for details.

5.8 Our performance commitments to our customers

To enable our customers to judge our performance in meeting their expectations, we will report the following measures of success at both a company **and** a community level.

	Unit	Why is this important?
Service Incentive Mechanism (SIM)	Score out of 100	It is important because it measures our customers' satisfaction with the overall service which they receive.
Value for Money Survey	%	The customer survey will enable us to understand whether our service meets our customers' expectations, is affordable and provides value for money.

Table 5-B: Measures of Success

In addition to our Measures of Success we will report a number of key performance indicators to give our customers and stakeholders a broader perspective of our overall company performance.

Perspective	Key Performance Indicator
Customer experience	Net promoter score
	Average household bill
Environmental impact	Greenhouse gas (GHG) emissions
	Energy efficiency savings
Reliability and availability	Customers helped by a review of tariff
	Efficiency savings delivered

Table 5-C: Key performance indicators

The Outcome Delivery Incentive for the Retail service has considered the various components of customer service such as reduced complaint volumes and unwanted contact, the improvement of our network minimising disruption and reducing unwanted network contacts. We have concluded that most, if not all service components are best articulated in the SIM score.

SIM has proved to be a very effective measure and driver of improved service, easily benchmarked across the industry. SIM includes the various components of customer service and summarises them in a consistent and measurable way and any additional ODI's would be a subset of SIM.

In Ofwat Table R1 we forecast our future SIM performance. We have taken account of the universal metering (UMP) and water efficiency programme and also used information from Thames Water (see Appendix 5) on the impact of the Thames Tideway Tunnel (TTT) upon customers' bills and subsequent contact and complaint rates.

We are confident that we can mitigate the effects of our UMP and the TTT and improve service to our customers further in both the qualitative and the quantitative scores which are detailed in the tables below. For the purpose of the forecast we have assumed no change to the SIM methodology. We have forecast that the overall SIM score will improve leading to an expected stable position when compared to the industry over the period.

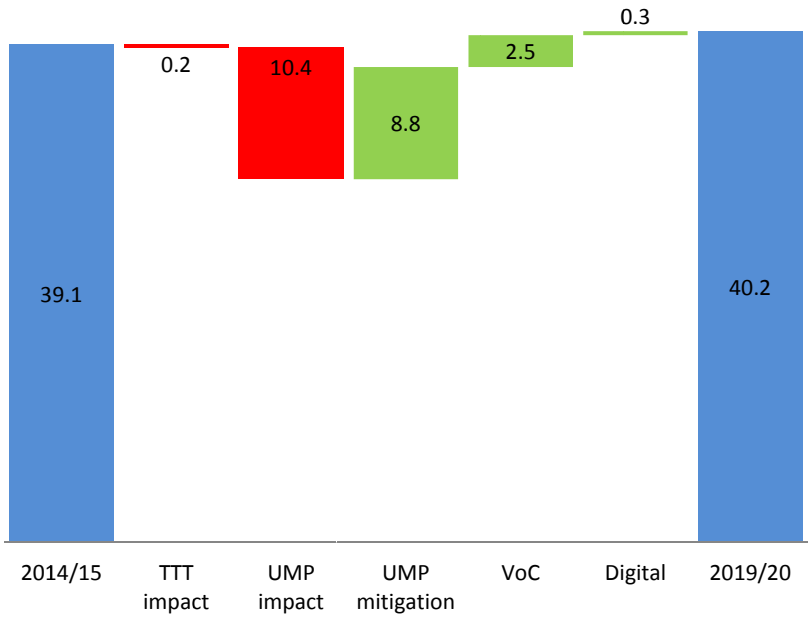


Figure 5-9: SIM quantitative score forecast

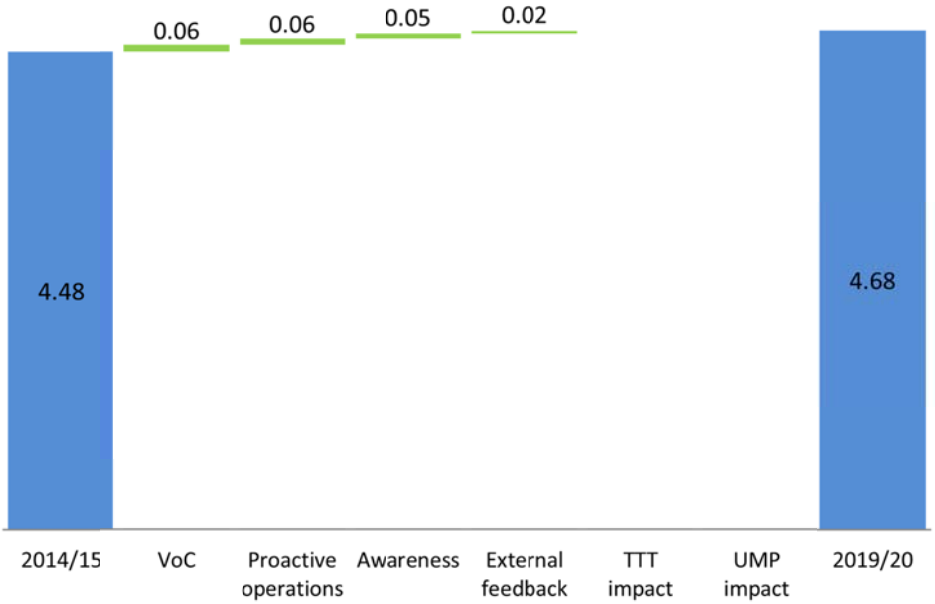


Figure 5-10: SIM qualitative survey score forecast

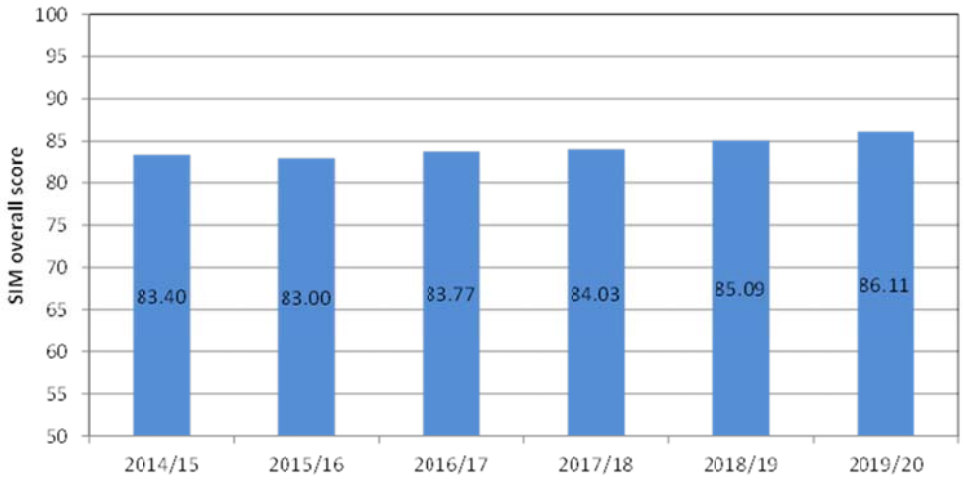


Figure 5-11: SIM overall score forecast

5.9 The costs of our household retail activities

Ofwat Table R3 has been completed using the allocation of costs between Retail household, Retail non-household and Wholesale as defined in Ofwat's guidelines. Illustrated in Figure 5-12 the cost of our retail household activities are likely to increase during the period, due to:

- Growth in population and households, additional metered customers due to Universal Metering Programme
- Increase costs due to Universal Metering Programme (additional support on queries)
- Inflation on operational costs
- Debt risk (based on historical performance)

However, we have set out our plans to mitigate these cost pressures through:

- Operational efficiencies from our 'Voice of the Customer' programme and digitalisation (see Appendix 5)
- Efficiencies on debt management
- A stretched challenge for further savings which are yet to be identified

Cost per customer shows no increase over the AMP period and in real terms reduces. Total costs increase only by growth and the movement of customers from unmeasured to metered (Ofwat Table R3).

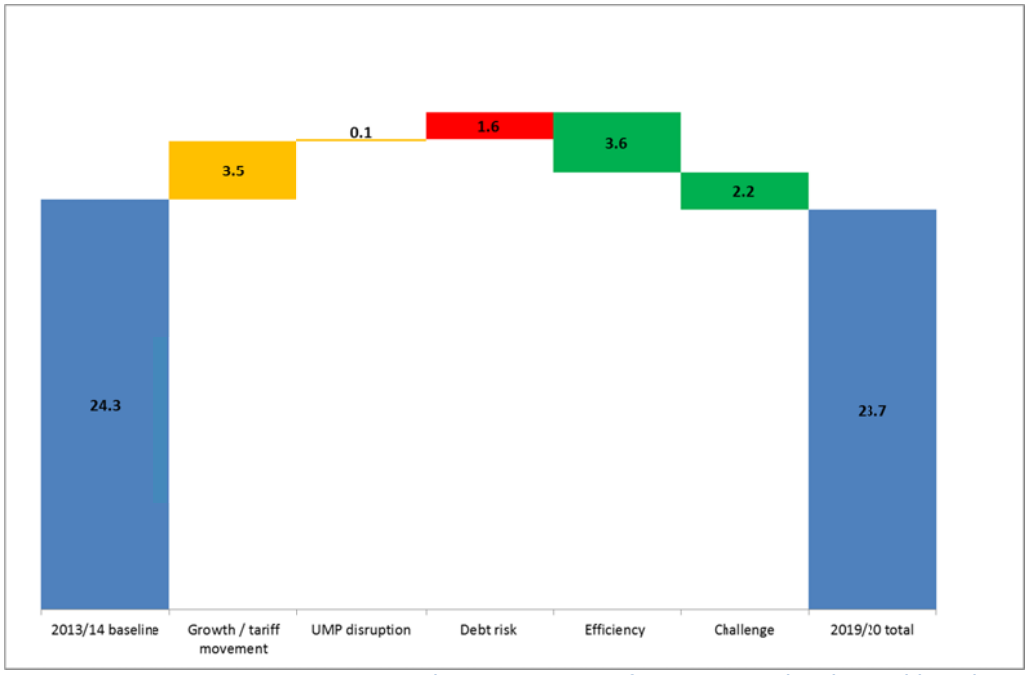


Figure 5-12: AMP6 forecast operational cost drivers(2012/13 prices)

We will also need to invest in our IT systems over the period and plan to spend £[X]m on the maintenance of existing IT systems (described in more detail in Appendix 5). This will be essential to both maintaining current operational performance and to the delivery of the operational efficiencies described above.

	Item description	Amount (£'000)
Business Systems	Corporate desktop and content management	
	CRM billing, collections and debt management	
	ERP service	
	Other business systems	
	Business systems sub-total	
IT support and hardware	Infrastructure support services	
	Core infrastructure	
	Networking	
	End user computing	
	Telephony	
	IT support and hardware sub-total	
	Total	

Table 5-D: IT investment

The total IT costs have been allocated between the household business and non-household business based upon the volume of activity and number of accounts. £[X]m has been allocated to the household plan, the depreciation of which is shown in Table R3, £[X]m to non-household customers in Table R4.

Debt management improvements

We do not expect bad debt costs to increase in real terms over the price control period from the forecast 2013/14 level of £[X]m. This is despite the current economic climate and financial pressures in the local economy.

Debt management systems

We plan to improve the control our bad debt costs following the implementation of the new Tallyman debt recovery system, which is due to go live in 2014. We believe that the full deployment of our Social Tariff by 2017 will also begin to have an effect on bad debt costs towards the end of the AMP6 period.

The new debt recovery system will enable the segmentation of our customers, better targeting the right activity to encourage customers to pay their bills on time. This targeted, specific approach, effectively manages the can't and won't pay customers.

'Won't pay' customers

Tallyman will enable us to store data in a more effective way. This will allow us to become a full member of the organisation Credit Account Information Sharing (CAIS). Membership allows us to incentivise customers by making them aware of the consequences of their actions if we register a default in payments that affects their credit rating. We are totally committed to supporting customers who struggle to pay their bills. However, we are equally committed to recovering revenue from customers who won't pay and will take all reasonable steps to encourage payment.

The new industry landlord portal will help identify the correct customer at the right time and assist in understanding the movement of customers within the tenanted population to ensure we obtain payment.

'Can't pay' customers

The application of the new debt management systems will also be able to target and promote the new social tariff which will help prevent customers falling into arrears and those already in debt. Whilst the new tariff has yet to be applied early modelling of potential impacts together with the use of the Tallyman system indicate that bad debt can be effectively prevented from rising in the next five years.

Whilst plans have been developed to manage debt, there remains a risk that debt could rise higher than forecast. Our forecast has an element of challenge built in to be delivered in the latter part of AMP6 which has an element of uncertainty and therefore risk.

An overview of the debt plan is shown below.

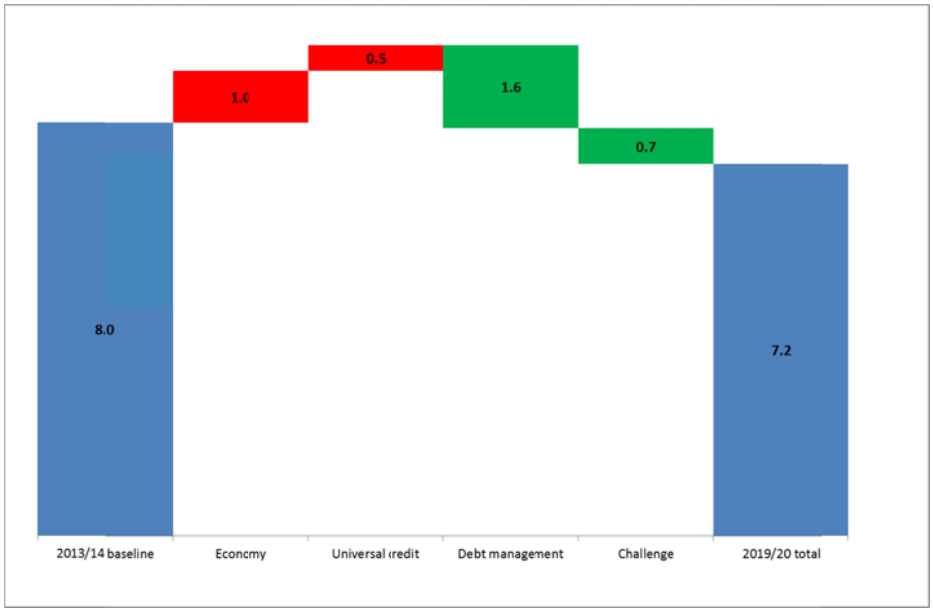


Figure 5-13: Overview of AMP6 debt forecast cost drivers

5.10 Risk and reward

Our Retail household service costs and margin calculations have been undertaken using a series of assumptions regarding the allocation of costs between Wholesale and Retail activities, and separate assumptions regarding the allocation of costs between household and non-household activities. We have used guidance from Ofwat throughout in the approach to cost allocation and the definitions for Retail and Wholesale activities. This includes the allocation of all the RCV to Wholesale.

In assessing the appropriate level for the margin for our household business we have examined three issues as per Ofwat's guidance:

- The working capital requirement
- Any new capital expenditure for the household retail business over the period 2015-2020
- The financial risks facing this business upon which it would be appropriate for there to be a reward by way of a profit margin

We have considered how our margins benchmark to comparators from other sectors, particularly regulated sectors.

The contribution of working capital is fairly small given payment in arrears with the Wholesale service as is the degree of new capital investment (we are planning £[X]m of IT asset Capex costs).

However, our Retail household service does face a number of risks that are important when considering the appropriate margin.

Thames Tideway Operational Costs

We bill on behalf of Thames Water 1.1 million customers for sewerage services. We are working closely with Thames Water to understand and forecast the impact that any potential bill increase may have upon our customers. The forecast covers the potential detrimental impact on call volumes, complaints and debt. [Redacted]

Thames Tideway Debt

The impact of the proposed price increase upon our customers' sewerage bills that impact their ability to pay their water and sewerage bill has been less easy to predict. Thames Water has concluded that collection rates may fall by [X]%, increasing bad and doubtful debts. It is less clear whether this will have the same impact on our water bill. There remains a degree of uncertainty and therefore risk that is difficult to forecast and predict.

Debt

Historic performance on the bad debt charge has seen an increase each year over AMP5 per annum to a level of £[X]m bad debt charge on £[X]m of household debt as at 2012/13, our forecast for 2013/14 is £[X]m bad debt charge. Recent debt benchmarking within the water industry by KPMG has confirmed that our performance is at the median of comparison performance.

The forecast for debt in Ofwat Table R3 incorporates the improvements that we expect to see. These include new debt recovery systems, a Social Tariff, the industry landlord portal, and CAIS membership (see Appendix 5 for more details).

In real terms our customers should see a reduction in the charge for bad and doubtful debts. There is a risk to delivery of these plans as, whilst they are well defined for short-term benefit realisation, they are less clear longer term in years four and five and therefore there is a degree of uncertainty and risk

5.11 Margin

In assessing the appropriate retail household margin we have taken independent expert advice (see Appendix 6 Frontier Economics) on relevant benchmarks. Taking all this evidence in the round we consider an appropriate margin is c. [X]% of the operational cost to serve.

This margin is lower than the margin for our non-household Retail business due to differences in volume risk arising from competition.

[Redacted]

The financeability of the Retail household business has been tested against this margin in Ofwat Table A19 and has proved to be appropriate.

In addition to the retail margin, it may be possible to earn enhanced reward as determined through the SIM performance.

6 Our Retail Services to Business Customers and other Non-Household Organisations

- Our Plan is built on the view that **service excellence and choice is the foundation of customer loyalty**. Based upon a segmented approach, and using increased customer insight, from our Voice of the Customer programme, we will deliver tailored propositions and service improvements while maintaining tariffs broadly at current levels

- We will be **accountable to our customers.** We have created a business SIM and using additional Key Performance Indicators we will advise customers of our results via a new Business Customer Charter. We will be a champion for our customers, actively managing the interface with the Wholesale service by putting in place robust Service Level Agreements focused on meeting customers' needs

- We will be **ready for full market opening in 2017.** We are agile and responsive to future changes in the market. We have identified necessary market readiness and compliance activities and will ensure a non-discriminatory approach

- Our proposed **default tariffs are non-discriminatory** and fully in accordance with guidelines. Our plan and financial calculations are compliant with Ofwat's definitions and guidance on cost allocation

- Our **margin calculation reflects a balanced view of the degree of risk** associated with the non-household market, together with the relatively low capital assumptions made for this part of the business. Ultimately, our financial success for our non household retail business will be determined by the competitive market

6.1 Where is our service today?

We currently provide Retail services to around 70,000 business customers and other organisations. The majority of these, over 60,000, comprise small and medium sized enterprises (SMEs) with consumption under 1Ml per year. These customers are often single-site businesses and modest users of water.

We also serve over [X] customers with consumption of more than 5 Ml per year. At this end of the business market, our customers operate in a wide range of business and other non-household sectors, some with multiple sites. Dedicated account managers from our business relationship team serve these customers. This ongoing face-to-face engagement enables us to understand our customers' requirements and tailor our service accordingly.

Our understanding of the needs of our customers has been enhanced by undertaking detailed customer surveys. We invited a group of SMEs, affected by the temporary use ban in 2012, to a focus group in autumn 2012 as part of our research to develop our outcomes. These businesses were in the sports and leisure sector. Their biggest concern was the use of temporary use bans and the way they felt they had been applied.[44]

Their expectations were broadly consistent with household customers and they valued a continuous supply un-interrupted supply that would be maintained, taking account of predicted levels of growth, at a fair price.

We ensured we included non-household customers in our statistically significant research for both willingness to pay and bill acceptability.

In our willingness to pay research[45], we surveyed more than 500 businesses. Their unprompted priorities for improvement were hardness of tap water and leakage. However, when asked to place a value on changing water hardness, as part of the attribute testing, it was not possible to determine, with any confidence, what that value would be.

Since 2010 we have extended our record of strong performance for our business customers:

- Our net promoter score, a qualitative measure of customer loyalty, for the 2013/14 year to date is 64 compared to 58 in 2012/13; scores over 50 are generally viewed as excellent across all sectors
- We receive very few complaints from business and other non-household customers. In 2012/13 we received 113 written complaints, approx. 16 complaints per 10,000 customers, and we have reduced these by 29% in the year to date 2013/14

Our Voice of the Customer programme identified important improvements we needed to make to meter implementation times and our communications with customers. We have changed these processes and as a result, the percentage of commercial meter installations completed within 30 days has risen by over 100%.

We have created a separate business relationship team to enhance our focus towards the specific needs of business and other non-household customers. The team acts as a focal point for enquiries through all contact channels, including billing queries, meter reading and

[44] Dialogue by Design, Affinity Water Investing in your community, qualitative research combined summary report, February 2013
[45] ICS, PR14 stated preference study : Main WTP Study, September 2013

operational water issues. Additionally, the team acts as a customer advocate. The team is focused on continuously improving the customer experience by implementing improvements to provide customers with quick and easy processes, combined with integrated and complementary modes of engagement. It operates separately from colleagues serving household customers, although there are some shared activities across the two teams.

We will measure how we are performing so that customers can hold the business to account. This is why we have created a business Service Incentive Mechanism (SIM) and will use Key Performance Indicators to publish results via a new Business Customer Charter. We are determined that our existing and potential new customers value our service.

6.2 Segmentation and understanding our customers' expectations

Our Plan is built on our view that service excellence is the foundation of customer loyalty. This in turn is dependent upon understanding the needs of our customers. For this to be achieved, we have adopted a segmented approach, as follows:

- Key accounts
- Local Authority and Housing Associations (LAHA)
- Developers
- Small and Medium Enterprises (SMEs)

This approach helps us organise our service propositions to reflect the distinctly different needs of these customers. For example, our local authority customers with multi-sites have very different needs to our larger single-site 'key account' customers.

We use a variety of techniques to ensure we understand our customers' needs including:

- Market research and surveys targeted at segments of business customers
- Key Account Forums – focused on our 85 largest users
- Industry Forums – forums held have included the following sectors: Sports and Leisure, Education and Public Administration/Local Government, Manufacturing and Transport and Utilities, and Pharmaceuticals
- Customer visits and using insights from our people in face-to-face discussions with individual customers
- Road shows at a selection of our customer sites
- Our Voice of the Customer programme and feedback from our customer contact team

This insight is distilled into a systematic data-driven process to identify opportunities to improve our service (see Figure 6-1). We use it to develop tailored product offerings and provide choice e.g. of payment options or communication channels to individual customers.

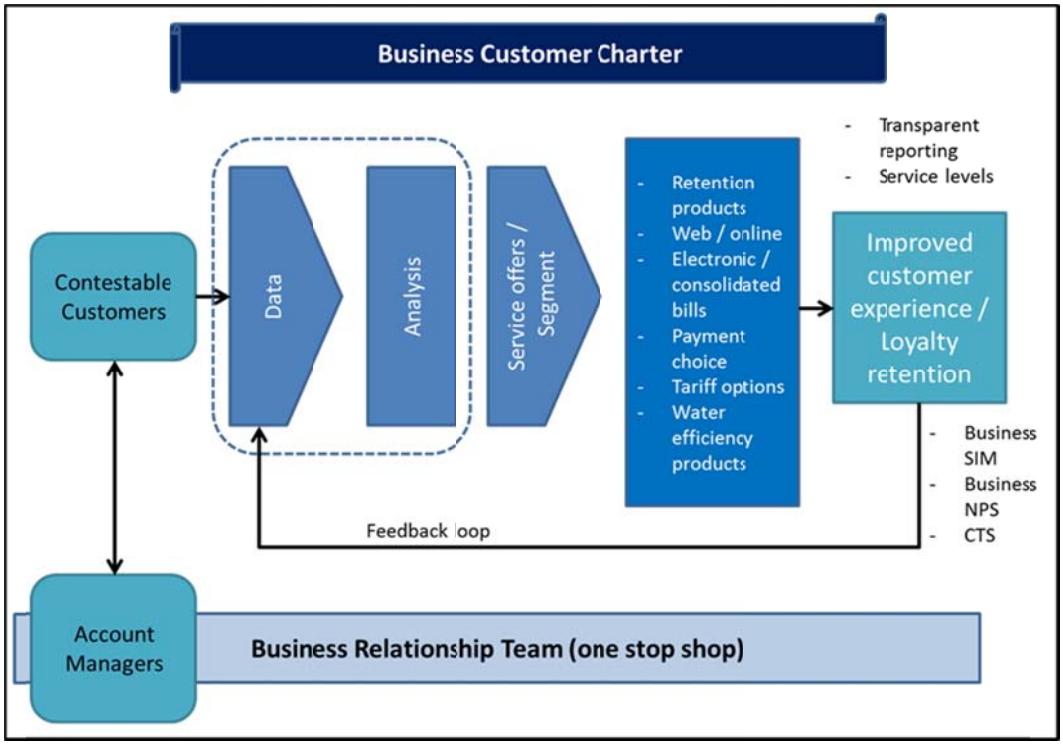


Figure 6-1: Business customer support – lifetime value model

The common key message we hear from our business customers is they want us to ensure we "do the basics very well" and provide a compelling value proposition, building trust and confidence with them. However, as Table 6-A shows larger customers' needs are different to those of SMEs.

Largest customers	SMEs
Having continuity and resilience of supply	Water efficiency advice / devices
The speed of our response to restore your supply after an outage	Environmental products
The price of your water	Leakage detection
Having online access to view your consumption via AMR	Online billing
Your water company providing an environmentally sustainable supply	Water audits
Being provided with additional water quality services	Online / smart reading
Supported by a dedicated office team including a single face to face contact	Water filters / softeners
Your water company will help you improve your water efficiency	Consolidated bill

Table 6-A: Market research results: priority orders of customer requirements

Our customers have told us that price is a key driver for switching to another supplier but it is not the only attribute that they will look for.

The bill acceptability testing[46] included more than 300 businesses. Where we tested value for money, non-household customers were slightly less accepting of any increase and showed a slight preference for the slower, cheaper plan compared to household customers. There were also some differences in strength of acceptability across the regions, with 80% non-household customers in the Southeast agreeing that the plan was acceptable, compared to 86% and 90% in East and Central.

Our research and insight underpin our plans to deliver against the four customer Outcomes discussed below.

6.3 Making sure our customers have enough water, whilst leaving more water in the environment

6.3.1 Understanding our customers' expectations

Our research demonstrates that for our largest customers "having continuity and resilience of supply" is the most important requirement.

Our business and other non-household customers also expect to receive advice and support to minimise the amount of water they use and to keep their bill as low as possible. Water efficiency advice and devices, and water audits are particularly seen as an important future service for SME customers.

6.3.2 How are we going to meet our customers' expectations to use water more efficiently?

Our retail service will perform a critical role in ensuring that our wholesale function fully meets this expectation. Our retail service will engage with customers on water efficiency initiatives. We will use a number of approaches to achieve the target saving of 1.5Ml/d from non-household customers, a target we included in our Water Resources Management Plan. In addition, we will offer discretionary chargeable services to meet customers' needs for additional water efficiency activities.

Accurate information on water usage

Our customers have said they value having bills based upon meter readings rather than an estimate, to give them an accurate picture of their water usage and expenditure; we have improved our performance to meet this expectation.

- 97% of SME bills were based on actual meter readings in 2012/13. In 2013/14 this is expected to rise to 98%. We plan to increase this further to over 99% of SME customers by 2020
- In terms of our larger monthly read customers, on mid and large user tariffs, 97% of bills were based upon an actual meter reading in 2012/13. This figure has risen to 99% in the year to August 2013, and we target to increase this to over 99% by 2018. Where appropriate to meet our larger customers' needs, we will have a variety of discretionary chargeable packages including automated meter reading fixed network development, similar to the approach used in the energy market by Centrica

[46] ICS, PR14 Acceptability Study, final study outputs, November 2013

Water efficiency audits and support

We will make available a wider range of water-saving and water recycling products & services, meeting customers' needs to reduce, re-use and re-cycle water and waste.

SME offering

Views of SMEs were strongly represented in the bill acceptability testing[46] where more than 90% of the non-household customers surveyed were from businesses with fewer than 100 employees.

We will offer advice for SME customers, who have similar needs to household customers. As an additional value added chargeable service we will provide water efficient devices to customers, in support of our aims of wider consumption reduction.

Key account and Local Authority and Housing Associations (LAHA) customer offering

Our key account and LAHA customers will be offered discretionary value added chargeable water audits to advise how they can become more water efficient in non-industry specific activities such as toilet flushing, hand washing and showers.

Our key account customers who have intensive water consumption, will also be offered advice services on how to use water more efficiently in processes that are industry specific but also common across an industry sector. The scheme will be delivered in partnership with third party industry specialist.

Many of our larger customers consider their whole water management cycle as part of their Corporate Social Responsibility (CSR) strategy. For these customers, we will support them as a single point of contact for water and waste matters in their whole water management.

Water audits will enable customers to understand where they use water and how they can reduce that amount. We will aim for this value added service to be commercially assessed to enable recovery of our costs through a "gain share" arrangement with the customer.

Customer-side leakage services

As part of our drive towards more efficient use of water we will provide customers with chargeable support for the detection and repair of leakage on their private water network and plumbing.

6.4 Supplying high quality water you can trust

6.4.1 Understanding our customers' expectations

Our customers trust the quality of the water they receive and would like us to ensure that we maintain this high quality. In the Consumer Council for Water's SME market research into competition, "Guarantee of continued water quality," was selected as one of the top three measures needed to ensure that competition in the water and sewerage industry works for SMEs.

For some of our key account customers ensuring the quality of water is a critical issue where water is an essential in their business processes. Customers such as those in the Food and Drink sector and in pharmaceuticals sector require a tailored service.

6.4.2 How will we meet customers' expectations?

Ensuring that our customers are receiving high quality water

Our Wholesale service ensures the water we supply is wholesome. We will establish robust Service Level Agreements governing the provision of this wholesale function and act as the customer champion if they have any concern about their water quality.

Ensuring that our customers continue to trust the quality of the water they receive

The business relationship team will act as a first point of contact regarding any issues that business and other non-household customers have about the quality of their water supply. If required, we will facilitate bespoke testing of water for customers as a discretionary chargeable service. We will monitor customers' views and feedback regarding the quality of water they receive and will respond to this feedback as appropriate. Our Business Customer Charter will publish monthly updates on the quality of water provided.

Providing expertise for Key Customers and Local Authorities and Housing Associations

Wherever required the business relationship team will ensure the provision of specialist advice for key business customers for whom water quality is critical in their business processes.

We will utilise our water expertise to provide support for customers in managing their HSE compliance risks by undertaking *Legionella* and other risk assessments. We are planning to broaden this chargeable service during the next five years, enriching our proposition for business customers.

Supporting the WaterSafe initiative

We fully support the industry wide initiative to set up the new WaterSafe assurance scheme. Our business relationship team will promote the use of WaterSafe accredited contractors and approved equipment under the new scheme.

6.5 Minimising disruption to you and your community

6.5.1 Understanding our customers' expectations

Our customers have told us how important it is for them to have a reliable and continuous supply of water.

They would not be able to function without an assured water supply at their premises and for many unexpected interruptions in water service would be costly or even pose health and safety risks.

6.5.2 How are we going to meet customers' expectations?

Service Level Agreements

We will ensure that robust Service Level Agreements and monitoring regarding planned and unplanned interruptions are put in place to cover the interaction of our Wholesale and Retail services. We will proactively inform customers ahead of expected possible disruption and will ensure our wholesale function meets the defined standards Service Level Agreements and the expected areas they will cover are described in Appendix 5.

Improving our communication about possible disruption to our customers' service

We will ensure that we will deliver appropriate and timely information to our customers regarding planned or unplanned operational work that could affect our customers. We will use integrated and complementary customer contact channels to keep them informed and updated.

We will use a variety of channels to keep our customers informed of planned or unplanned interruptions, including using our account managers for our largest customers, telephony call-back facility, web chat, web video, and knowledge management system, social channels and our website. Table 6-B summarises the channels and provides an overview. More detailed analysis of digital channels is provided in Appendix 5.

Channels / communication method	Comment
Proactive calls	Calls to key customers regarding impending disruption
Callback system for SME customers	Request a callback – assists during busy call times
Improving self-service for SME customers	Access information through digital or online channels
Instant web chat	Allows direct discussion of any problems or issues with our teams via instant messaging
Live service updates	Website used to advise customers of network problems and forecast resolutions
Web videos	Communicate with the community in a highly visual way to effectively address areas of concern, e.g. major projects
Our mobile app	New app provides full access to the website for information updates on both planned and unplanned work
Web knowledge management	Detailed bank of frequently asked questions which customers access and rate every day

Table 6-B: Channels for advice on potential service disruption

6.6 Providing a value for money service

6.6.1 Understanding our customers' expectations

Customers want us to be "easy to do business with". In addition, they want our charges to remain affordable. Regarding value for money, customers are content with the bills they pay for

Affinity Water's service, although they are concerned about any possible significant rise in their bills.

6.6.2 How are we going to meet customers' expectations?

Dedicated service through a one-stop-shop for key account and Local Authority and Housing Association customers

Our business relationship team will provide a one-stop-shop for the quick and easy resolution of our customers' issues. The integrated team will undertake all contact with the customer from key account manager through to advisor. Our current organisation broadly reflects the activity split of retail /wholesale as defined by Ofwat, including an operational interface with customers.

Quick and easy self-service transactions for the SME market

Many of our SME's are happy to use self-service to make it quick and easy to transact with us. We will offer our SME customers a choice of self-service, or for those who prefer it provide a more conventional interface managed by the Business Relationship team.

Our multi-channel approach will increasingly become the natural way of doing business. We will offer the following digital enhancements to improve the choice and customer service for our customers:

- Online account management for SME base
- Web Chat
- Mobile application- full functionality of the website through a mobile
- Billing: consolidated billing and e-billing

We expect that by providing better information and services through channels which customers choose, this will increase customer satisfaction whilst reducing our retail costs to serve.

Clear interface for Developer Services

Developers are important business partners and we aim to provide improved service to them over the plan period. Developer Services activities are shared between our Retail and Wholesale services as follows:

- Retail service – provides the developer information, and administration for new connections
- Wholesale service – provides the connections for developers

Our Wholesale service will provide the majority of the activities with our Retail service account managing and acting as the customer champion. We will work under an SLA to ensure that an improved and seamless end-to-end service will be provided.

Ensuring that our customers are on the right tariff for them

Through continuous review and audit, we will ensure that customers remain on the right tariff. We will develop the choice of tariffs available to our business customers, and use our communication channels to explain them.

Clear transparent and non-discriminatory default tariffs

Our overall approach towards tariffs is to ensure they are fair and transparent for our customers and non-discriminatory. In line with the expected requirements for the introduction of full business market opening we will create and publish default tariffs reflecting our tariff structure.

Currently, we have different tariff structures for each of the three former separate companies, prior to unification of the business in July 2012. These tariffs reflect those which existed with Veolia Water Central, Veolia Water East and Veolia Water Southeast. We will align over the next five years these historical tariff structures in terms of:

- standard tariff for customers with less than 3Ml annual demand
- mid-user tariff for customers with between 3Ml and 50Ml annual demand
- large user tariff for customers with more than 50Ml annual demand for water

We aim for our tariff structure to be clear and understandable and we are proposing default tariffs as set out in Ofwat Table R4.

We have used the guidelines issued by Ofwat on cost allocation and have used the definitions of Retail and Wholesale services as set out in the Ofwat price control methodology document. Table 6-C sets out the assurance checks undertaken regarding the construction of default tariffs.

Issue	Evidence
Cost allocation checks: Retail / Wholesale	Cost allocation checked in line with Ofwat methodology statement
Cost allocation checks: Household / non-household	Retail / wholesale costs allocated in line with Ofwat guidance
Cost reflective / non-discriminatory checks. Compliance /risk	Cost checks: customer operational costs by size band of customers

Table 6-C: Assurance checks regarding default tariffs

We will hold our costs stable at the base 2012/13 level (see Ofwat Table R4).

New large 'super user' tariffs

In response to customer feedback, and our segmentation analysis, we expect to bring proposals for April 2015 on a number of new "super-user" tariffs more accurately reflecting unit costs which we plan to discuss with Ofwat.

New innovative tariffs

We will use the feedback from customers to consider the introduction of new, innovative tariffs, including for our SME customers. We are reviewing the opportunity to reward customers who have low costs to serve by sharing cost savings with them.

6.7 Readiness for the introduction of full retail competition

We will be ready for full retail business market competition in 2017.

There are three issues regarding the new market arrangements which we have addressed explicitly in our business planning:

- **Market readiness:** We have identified necessary market readiness and compliance activities, will ensure a non-discriminatory approach, and have made allowances for these costs in line with Ofwat guidance
- **Retail/Wholesale relationship:** We will be a champion for our customers, actively managing the interface with Wholesale service by putting in place robust Service Level Agreements focused on meeting customers' needs
- **Compliance with legal and regulatory obligations:** Our Plan and financial calculations are compliant with the Ofwat definition of Retail service, guidance on cost allocation between Retail and Wholesale services, and the allocation of costs between household and non-household activities

6.7.1 Activities for market readiness

We have been assessing the available information on how the post 2017 market will operate so that we can ensure our market readiness plans align with this. We have studied the experience of the introduction of competition in Scotland and in other utilities markets in order to inform our planning for both Retail and Wholesale market readiness.

Business customers expect to be able to switch service provider in a seamless way and this will require a fit for purpose market design, and consistent and compliant operation of the defined industry processes by all water companies. In providing Retail services we will be striving to ensure that we remain our customers' supplier of choice, but in the event that our customers choose to move away from us, we will ensure that the transfer is facilitated in an efficient and compliant way.

Ongoing market costs are not included in our Plan. Costs which arise from forthcoming legislation are subject to considerable uncertainty, both in their size and scope, and in the allocation of costs to companies. We believe that these costs should be treated by the Change Protocol (Appendix 6). This will allow these costs to be logged up.

6.7.2 Relationship between Wholesale and Retail

We have structured our business so that it aligns to the value chain, with Wholesale and Retail services broadly being provided by specific separate teams within our business. In our readiness activities for the full market opening in 2017, we plan to formalise the relationship between the provision of Wholesale and Retail services by establishing Service Level Agreements.

We will need to be able to demonstrate that we are able and willing to provide a non-discriminatory level of wholesale service to our incumbent retail service and third party retailers. We therefore intend to introduce more formal governance arrangements covering our Wholesale and Retail services. In practice, this means defining our business activities into Retail (household and non-household separately) and Wholesale, and identifying shared

activities which support both Wholesale and Retail services. It will include the development of a compliance regime and a set of Service Level Agreements. Our people will be briefed regarding their responsibilities for compliance with legal and regulatory rules. Appendix 5 sets out some examples of the interface activities.

6.7.3 Compliance with legal and regulatory obligations

We have ensured that our operations are compliant with existing legal and regulatory obligations, especially the Water Supply Licensing (WSL) regime. Our arrangements were successfully tested this year with the switch of an eligible customer to a water supply licensee

As part of our compliance auditing, we have reviewed the status of our business contracts and special agreements to confirm our view that these business contracts are compliant with competition law and regulations. In particular, the contracts may be terminated at short notice so would not prevent customer switching and are priced at tariff rates approved by Ofwat. We have five special agreements that are also compliant, details of which we report to Ofwat each year.

6.8 How will we measure the success of our retail service to our business and other non-household customers?

In a fully competitive market our success will be measured by how well we retain and serve existing and new customers, in a cost effective manner to deliver a profitable business, due to this we are not proposing any Measures of Success directly related to Retail non-household.

We will measure how well we succeed in the four key areas outlined in this plan by continuously monitoring our performance both financially by monitoring progress against budget and in customer satisfaction in two ways: business SIM, and by undertaking surveys with our customers on value for money, service delivery and advocacy.

Business SIM and Net Promoter Scores (NPS): Following the successful implementation of the SIM performance measurement approach we have developed our own business SIM measuring the quantitative and qualitative experience of our business customers. As we build enhanced knowledge of our customer segments we will be able to compare levels of our performance between sector types. We have set targets for the improvement in business SIM scores; an overall improvement of 30% on quantitative measures over the next five years is forecast. We want our customers to see progressive increases in NPS measures and the business SIM score to rise to 84 in 2017 and 88 by 2020.

Value for money surveys: We plan to undertake periodic surveys with our customers and to gain feedback on the extent to which we are delivering value for money. These activities will include gaining feedback on transactions undertaken, including any suggestions for improvements.

Feedback from our people: As with NPS feedback, we will use the quantity and quality of the process innovations from our teams as a lead indicator of the success of our business plans. Engaged employees are empowered to positively impact improvements which ultimately lead to enhancement of customer satisfaction and hence loyalty and retention.

Business and Non-Household Customer Charter: We intend to develop and publish a Business Customer Charter for our business customers. This reflects our transparent approach

to publishing our promised service standards that our customers can expect. The Charter will set out our service promises and our performance against them.

6.9 Risk and reward

Our Retail business costs and margin calculations have followed Ofwat's guidance. This includes the allocation of all the RCV to Wholesale. In assessing the appropriate level for the margin for our non-household business we have examined three issues as per Ofwat's guidance:

- The working capital requirement
- Any new capital expenditure for the non-household retail business over the period 2005-2020
- The financial risks facing this business upon which it would be appropriate for there to be a reward by way of a profit margin

We have also considered how our margins benchmark to comparators from other sectors, particular those regulated sectors that were opening to competition.

[Redacted]

However, this business does face at least two risks that are important when considering the appropriate margin:

- Volume risk associated with the uncertainty around the structure and design of the competitive market and its subsequent impact on our customer base. We will focus upon ensuring we shall be our customers' supplier of choice and earning loyalty through delivery of the measures set out in this plan. We will refine our strategic approach to the market, monitoring carefully the external business environment, and assessing the activities of other stakeholders. We believe that our strengths are in being flexible and responsive to change which place us in a strong position to both shape, and respond to, the requirements of the new market. Appendix 5 explains the assumptions made on market readiness costs
- Cost risk associated with the impact of deterioration in economic conditions on bad debt. To help minimise this, we will use customer information and other sources e.g. credit checks, to improve the approach to managing debt with commercial customers. The Tallyman debt management system will be utilised to assist the team in keeping debt costs to a minimum. At the end of 2012/13 there was £[X]m outstanding debt, with a bad debt charge around £[X]m

In assessing the appropriate retail contestable margin we have taken independent advice from Frontier Economics (see Appendix 6) on relevant benchmarks. We consider an appropriate margin is c. [X]% of the operational cost to service.

[Redacted]

We recognise that once the market is fully open to competition the level of our returns will be driven by our success in the market in retaining and winning customers. Hence, our margin in practice could change over AMP6 from that assumed in setting this plan.

The financeability of the Retail non household business has been tested against this margin in Ofwat Table A19 and proved to be appropriate.

7 Our Financial Plan

- [Redacted]

8 Governance and Assurance

- **Our Board has governed the development of this Business Plan** and commissioned an extensive programme of external assurance and audit to assure itself that it is a high quality plan.
- External assurance has been provided to our Board by Atkins Limited, Frontier Economics Limited, PricewaterhouseCoopers LLP and Ernst & Young LLP.
- The Board is satisfied this Business Plan will allow Affinity Water to **meet all relevant statutory and legal obligations.**
- To help reinforce our **legitimacy with our customers,** our Board is committed to transparency in reporting the Company's performance. This Business Plan makes our ownership and corporate structure very clear.
- Our Board has explained in the Board Assurance Statement how we meet the principles of good governance of the UK Corporate Governance Code and how we expect to meet the principles set out in Ofwat's consultation: *Board leadership, governance and transparency – principles.*

8.1 Our Board of Directors

Chairman

Dr. Philip Nolan

Philip Nolan was appointed to the Board as Chairman in March 2013. Philip is also Chairman of John Laing Plc, a specialist investor, operator and manager of public sector infrastructure assets and Ulster Bank Limited. He was previously chief executive of Eircom, Ireland's national telecommunications supplier from 2002 to 2006. Prior to that, he served as an executive director of BG Group and chief executive of Transco from 1998 and in 2000, leading the demerger of Transco as chief executive of the Lattice Group.

Independent non-executive directors

Patrick Bourke

Patrick Bourke was appointed to the Board in July 2013. Patrick is a Chartered Accountant and is currently Group Finance Director of John Laing plc. He was previously Chief Executive of Viridian Group PLC, having first undertaken the role of Group Finance Director and formerly was Group Treasurer of Powergen plc. He chairs our Audit Committee and has a wide range of experience in regulated businesses operating within the private and quoted sectors.

Baroness Peta Buscombe

Baroness Buscombe was appointed to the Board in 2007. Baroness Buscombe is a barrister, an active member of the House of Lords and has held a number of shadow ministerial positions including responsibility for industry and enterprise, regulatory reform, the media and education. Formerly Chairman of the Press Complaints Commission, she is a non-executive Director of Local World Limited, a member of the House of Lords European Select Committee responsible for infrastructure, employment and the Single Market, a parliamentary delegate on the Council of Europe and Chairman of the Advisory Board for the Samaritans.

Dr. Jeffrey Herbert

Jeffrey Herbert was appointed to the Board in July 2012. Jeffrey was previously chairman of Veolia Water East Limited. Jeffrey is an industrialist who has held CEO and chairman roles for a number of large, international business in the automotive, mineral extraction and mechanical engineering sectors. His non-executive roles have included chairman/deputy chairman in the retail, aerospace, investment and water sectors. He is a Fellow of the Royal Academy of Engineering.

The Rt Hon the Lord Mayor Alderman Fiona Woolf CBE

Fiona Woolf was appointed to the Board in 2007. Fiona is a member of the Competition Commission, a partner with CMS Cameron McKenna and trustee of Raleigh International. Fiona Woolf is a former president of the Law Society and is currently the Lord Mayor of the City of London.

Executive directors

Richard Bienfait – Chief Executive Officer

Richard Bienfait is Chief Executive Officer and was appointed Managing Director of the company in March 2010. Richard has been a member of the Board since 2006. He joined Veolia Water in 1997 as Group Financial Controller and joined the Board of Veolia Water UK and became Chief Financial Officer in 2004. He is a member of the Institute of Chartered Accountants and an associate member of the Association of Corporate Treasurers.

Duncan Bates – Chief Financial Officer

Duncan Bates is Chief Financial Officer of Affinity Water Limited, having joined the company in March 2012 and appointed to the Board in September 2012. He joined Veolia in 1992 and held a number of financial posts until his appointment as Veolia Environnement UK's Group Financial Controller in 1999. In 2007, he became Finance Director of Veolia Water's UK non-regulated business, a post he held until joining Affinity Water. He is a Fellow of the Chartered Institute of Management Accountants.

Non-executive directors

Antonio Botija

Antonio Botija was appointed to the Board in June 2012. Antonio is an Associate Director of Infracapital and is responsible for investment origination and execution. Prior to joining Infracapital, Antonio worked as Associate Director at the Infrastructure and Transport Group of UBS Investment Bank in London, where he was a financial advisor on infrastructure projects and transactions across many sectors including roads, railroads, airports, ports and airlines.

Kenton Bradbury

Kenton Bradbury was appointed to the Board in June 2012. Kenton is a Director of Infracapital and a number of companies in which Infracapital has invested including companies within the Zephyr Investments, Calvin Capital, Red Funnel Ferries and Infracapital Solar groups of companies. Prior to joining Infracapital, he was Senior Vice President of Infrastructure and Regulation for E.ON based in Germany.

Andrew Dench

Andrew Dench was appointed to the Board in June 2012. Andrew is Chief Financial Officer and Deputy Chief Executive Officer of Veolia Water UK Limited, Ireland and Northern Europe having joined Veolia Water UK in June 2010. He holds a number of directorships of companies within the Veolia Water group and previously spent more than 15 years working in corporate finance advisory with Morgan Stanley, and more latterly, with Credit Suisse.

Yacine Saidji

Yacine Saidji was appointed to the Board in June 2012. Yacine is an Executive Director at Morgan Stanley Infrastructure focusing on European investing and holds directorships in the Madrileña Red de Gas group of companies. Prior to joining Morgan Stanley in 2006, he spent three years at McKinsey & Company advising clients in the energy sector.

Jim Wilmott

Jim Wilmott was appointed to the Board in June 2012. Jim is a Managing Director and Head of Europe of Morgan Stanley Infrastructure and is a director of European Rail Finance (GB) Limited, the Eversholt Rail Group and a number of companies affiliated with Morgan Stanley.

8.2 Board committees

Our Board has established three standing committees to assist it in discharging its responsibilities and provides further information about them in its Assurance Statement. Each committee operates in accordance with terms of reference approved by our Board and which we have published on our website. Membership of each committee is shown in Figure 8-1.

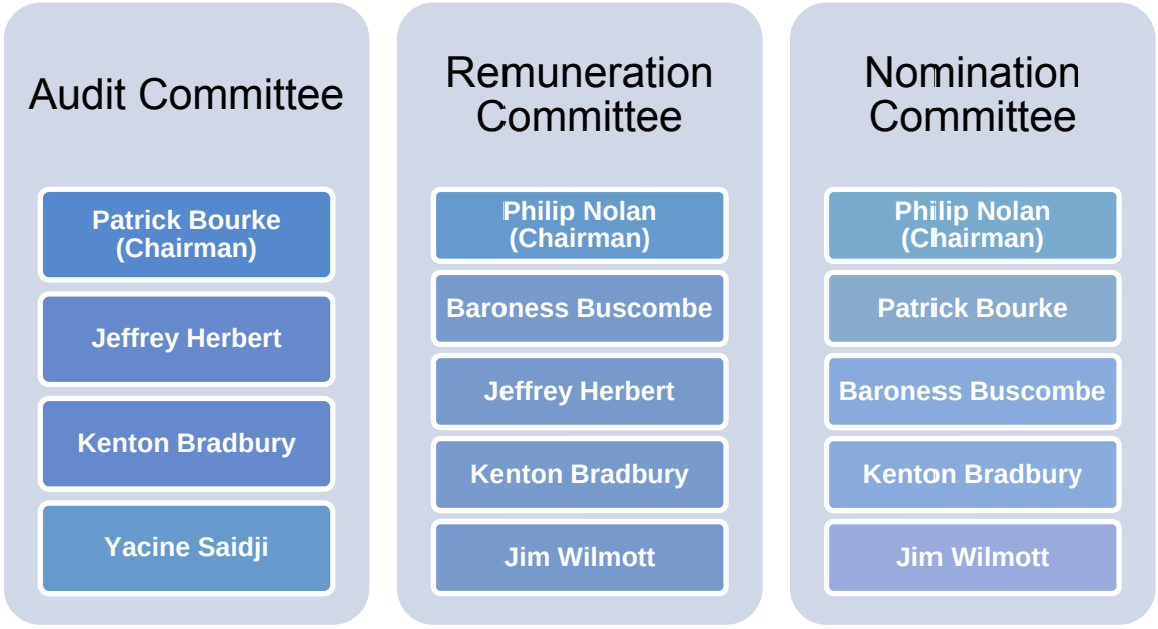


Figure 8-1: Affinity Water Board committee membership

8.3 Our owners

This section sets out in detail our ownership and corporate structure because we are committed to transparency in order to maintain trust and legitimacy with our customers, regulators and other stakeholders.

On 28 June 2012, the majority shareholding in the group of companies, of which Affinity Water Limited was a wholly owned subsidiary, was sold by Veolia Water UK Limited to Affinity Water Acquisitions Limited, an acquisition entity formed by Infracapital Partners II, the infrastructure investment fund managed by M&G (the European Investment arm of Prudential Plc), and Morgan Stanley Infrastructure Partners. Veolia Environnement S.A. retained a 10 per cent minority shareholding through its subsidiary Veolia Water UK Limited. The effective equity interest in Affinity Water Limited is as follows:

- Infracapital Partners II 40%
- Morgan Stanley Infrastructure Partners 40%
- Beryl Datura Investment Limited 10%
- Veolia Water UK Limited 10%

Infracapital Partners II

Infracapital Partners II has made its investment through Infracapital F2 Rift S.à.r.l., which is a wholly owned subsidiary of Infracapital F2 Rift Holdings S.à.r.l., both of which are incorporated in Luxembourg.

Infracapital Partners II is one of a number of European infrastructure funds managed by M&G Investment Management Limited, a subsidiary of Prudential Plc. It was established in 2010 to make investments in income-generative infrastructure assets and businesses, including electricity and gas networks, water companies, transport infrastructure and renewable energy.

Morgan Stanley Infrastructure Partners

Morgan Stanley Infrastructure Partners has made its investment indirectly through MSIP Dalis B.V, which is incorporated in the Netherlands.

Morgan Stanley Infrastructure Partners is a global infrastructure investment fund managed by Morgan Stanley Infrastructure Inc., part of the investment management division of Morgan Stanley. It was established in 2007 to make investments in core infrastructure assets that provide essential public goods and services to societies across the globe and seeks to improve asset performance using active management.

Beryl Datura Investment Limited

Beryl Datura Investment Limited has made its investment through Infracapital F2 Rift Holdings S.à.r.l.. It is a company established by the State Administration of Foreign Exchange of the People's Republic of China. Its investment is managed by Gingko Tree Investments Limited, which focuses on investments in real assets such as infrastructure and real estate and is attracted to relatively stable, predictable, long-term investments.

Veolia Water UK Limited

Veolia Water UK Limited is incorporated in England and Wales and is a subsidiary of Veolia Environnement S.A. which is listed on the Paris and New York Stock Exchanges. It has made its investment through its shareholding in Affinity Water Acquisitions (HoldCo) Limited and has established with Affinity Water a capability sharing arrangement. This arrangement gives Veolia Water access to Affinity Water's knowhow, experience and expertise while Affinity Water has access to Veolia Water's advice on global water technologies and developments.

8.4 Our financing

Affinity Water Acquisitions Limited funded the acquisition of Affinity Water from Veolia Environnement through a combination of equity, shareholder loan notes and £552 million of acquisition debt provided by a syndicate of five bank lenders. In February 2013 we refinanced this external bank debt by way of a securitisation of our business. This was achieved by reorganising the group to create the required securitisation structure and the existing bank debt was repaid using the proceeds of bonds issued by our subsidiary financing companies.

As a part of the refinancing, Affinity Water Limited was financially and operationally "ring-fenced" from the rest of the group. This further enhanced the ring-fencing provisions already in our licence granted by Ofwat and was effected by the transfer of the equity of Affinity Water Limited from Affinity Water Capital Funds Limited to a newly created holding company, Affinity

Water Holdings Limited. The sole business of Affinity Water Holdings Limited is holding the shares of Affinity Water Limited and it is a wholly owned subsidiary of Affinity Water Capital Funds Limited.

We also incorporated Affinity Water Programme Finance Limited as a special purpose vehicle for the purpose of issuing asset backed securities. External bonds totalling £575m were issued on 4 February 2013 and at the same time the existing £200m bonds issued by Affinity Water Finance (2004) Limited were brought within the securitisation. We believe that the ring-fencing structure provides significant corporate benefits, providing better access to long-term debt markets and an opportunity to reduce the cost of capital employed in the regulated business for the benefit of customers.

Affinity Water Programme Finance Limited is incorporated in the Cayman Islands but resident in the United Kingdom for tax purposes. Because the bonds were, in part, used to discharge financing put in place to make the acquisition, it was not possible for us to establish a UK company to act as issuer. By being resident in the United Kingdom for tax purposes we are clear that this arrangement does not avoid UK tax and brings no tax benefit. Bonds issued by both Affinity Water Programme Finance Limited and Affinity Water Finance (2004) Limited are listed by the UK Listing Authority and are subject to the Listing Rules and Transparency and Disclosure Rules. Our debt financing is summarised in Table 8-A below.

Debt	Bond £m	Maturity Date
Class A Fixed Rate Bond (Issued 2004)	200.0	July 2026
Class A Index Linked Refinancing Bond	150.0	June 2045
Class A Fixed Rate Refinancing Bond (1)	250.0	March 2036
Class A Fixed Rate Refinancing Bond (2)	80.0	September 2022
Total Class A	**680.0**	
Private Placement Class B IL Refinancing Bond	95.0	June 2033
Total	**775.0**	

Table 8-A: Debt financing

The credit ratings for our bonds assigned by the rating agencies, Moody's and Standard & Poors are shown in Table 8-B below.

Bonds	Moody's	Standard & Poors
Class A	A3	A - (sf)
Class B	Baa3	BBB (sf)
Corporate Family Rating for Affinity Water Limited	Baa1	Not applicable

Table 8-B: Bond credit rating

8.5 Our corporate structure

The chart below (Figure 8-2) shows the ownership of the company and the group structure, excluding dormant subsidiaries. Unless otherwise indicated, all companies are wholly owned by the parent company shown.

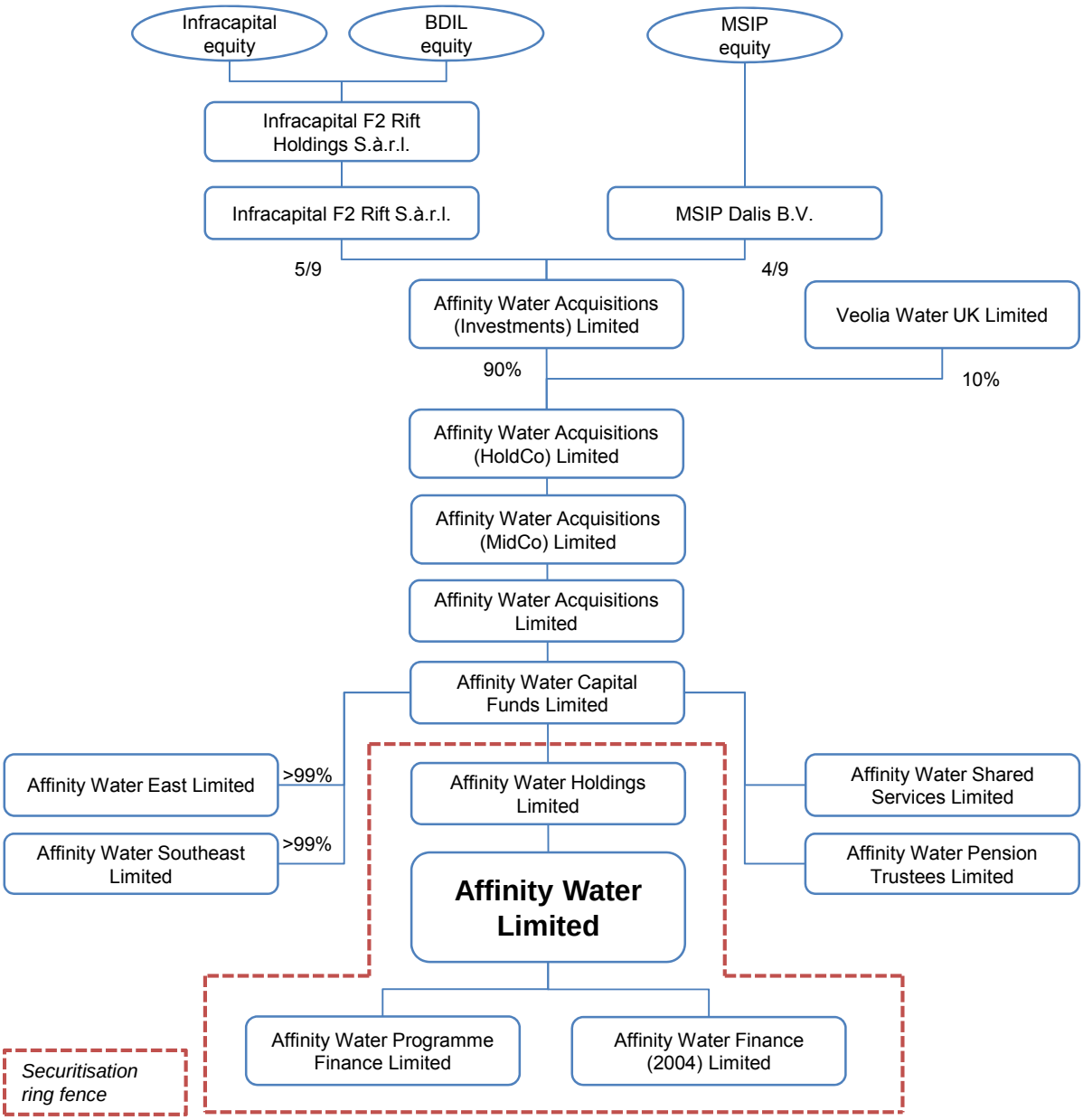


Figure 8-2: Group structure
Note: Securitisation ring fence established in February 2013

Our UK holding company is Affinity Water Acquisitions (Investments) Limited and the holding company structure shown was established for the purpose of the acquisition in June 2012. There are no non-regulated businesses within the Affinity Water group. We consider Infracapital Partners II and Morgan Stanley Infrastructure Partners to be our ultimate controllers - as they are in a position to exercise material influence over our policy and affairs. These entities have provided us with legally enforceable undertakings that they will:

a) give us such information as may be necessary to enable us to comply with our obligations under the Water Industry Act 1991 and Instrument of Appointment;

b) refrain from any action which would cause us to breach any of our obligations under the Water Industry Act 1991 or the conditions of the Appointment; and

c) use their best endeavours to ensure that our Board maintains not less than three independent non-executive directors, who shall be persons of standing with relevant experience and who shall collectively have connections with and knowledge of the areas for which we are a water undertaker and an understanding of the interests of our customers and how these can be respected and protected.

We are satisfied that these undertakings are being properly discharged and that we are able fully to meet our regulatory obligation to operate our appointed business as if it were substantially our sole business and the company were a separate public limited company.

Our Board has set out in its Assurance Statement how our governance meets the principles of good governance of the UK Corporate Governance Code and UK Stewardship Code and how we expect to meet the principles set out in Ofwat's consultation: *Board leadership, governance and transparency – principles*.

8.6 Meeting our legal obligations

In developing our Business Plan, we have taken into consideration all current and future legal obligations, including those governed by other regulators, including:

- The Environment Agency
- Drinking Water Inspectorate
- Natural England

We have worked closely with these regulators throughout the business planning process. Where future obligations are uncertain, we have used reasonable assumptions to develop our proposals. We have developed a change protocol setting out the process we will follow should we need to seek financial recognition of significant output changes which may arise, for example, from new statutory obligations or actions required by quality regulators, changes relating to a notified item or any changes driven by customer priorities. Our change protocol is set out in Appendix 6.

We have examined our Business Plan against Defra's Statement of Obligations: Information for Water and Sewerage Undertakers and Regulators on Statutory Environmental and Drinking Water Provisions Applicable to the Water Sector in England, published in October 2012. We are satisfied that our Business Plan will allow us to discharge our responsibilities and provide more information on how we will meet these obligations in Appendix 7. We have also included the correspondence we have received from the Environment Agency and Drinking Water Inspectorate indicating their views on our Plan within this appendix.

8.7 AMP6 Business Plan governance

8.7.1 PR14 Programme Board

Our Board has owned the development of our Business Plan and has put in place arrangements for the management of our business planning process and its assurance so that it can be confident that our plan is of high quality. Key to the preparation of our Business Plan has been the creation of a PR14 Programme Board, led by an experienced programme manager, to co-ordinate the business planning process and related activities on a day-to-day basis. The Programme Board has adopted established project management standards and principles and operates under terms of reference that make clear the responsibilities and authorities of the Programme Board and its individual members.

Our Programme Board meets regularly and is responsible for:

- Providing leadership to ensure that the PR14 activities set by the Board are delivered on time, within budget and to a high standard of quality
- Preparing a Business Plan which ensures we can continue to meet our statutory and legal obligations while meeting so far as is reasonably practicable the expectations of our customers, stakeholders and our investors in line with Ofwat's PR14 methodology
- Identifying and making recommendations to executive management and the Board with respect to key strategic decisions
- Establishing strong quality assurance and audit of the components of our plan and its overall quality
- Reviewing the progress of each of the work packages contributing to the preparation of our plan and to escalate any issues that cannot be resolved at Programme Board level to executive management or the Board
- Challenging and supporting the work being undertaken by work stream leaders and work package owners
- Prioritising work and agreeing the utilisation of resources
- Keeping under review the progress and performance of activities
- Communicating effectively any regulatory changes and their impact on the PR14 process to the wider business
- Supporting the process of responding to issues, comments and changes in requirements including those from regulators, shareholders and directors

Our Programme Board began its work by undertaking a full review of lessons learned from PR09, and identifying the key work streams needed to prepare our PR14 submission. Appropriately qualified senior managers and executives were appointed to take ownership and responsibility for specific work streams. Each work stream comprises of a number of work packages that were clearly defined. Work package scopes were scrutinised, challenged and finally approved by the Programme Board prior to work commencing.

The Programme Board has continued to review, challenge and approve the work of all contributors throughout the process prior to presentation to the executive management team. Minutes are captured at each Programme Board and circulated to our senior executive team.

A fortnightly highlight report is also produced and circulated to them giving the following updates at a work stream level:

- Key achievements
- Activities for the next fortnight
- Project programme and budget status
- Project risk and issues
- CCG activities

We have given particular attention to implementing a robust system of quality control, building on existing procedures already in place for regulatory reporting. We have specifically designed a quality assurance process for our Business Plan, which includes:

- Documented governance procedures, including a unified change-control process to manage change across all work streams
- Identification and control of project risk
- Monitoring and remedial action for any non-compliance
- Document control and secure access to materials

8.7.2 Business Plan assurance

Our Board has provided strategic leadership and guidance on all elements of the Business Plan. The Board has requested that the Business Plan development be subject to external assurance from independent expert specialists reporting to the Board in addition to our internal assurance processes. We therefore implemented a multi-layer assurance process to review and challenge our proposals in line with industry best practice (Figure 8-3).

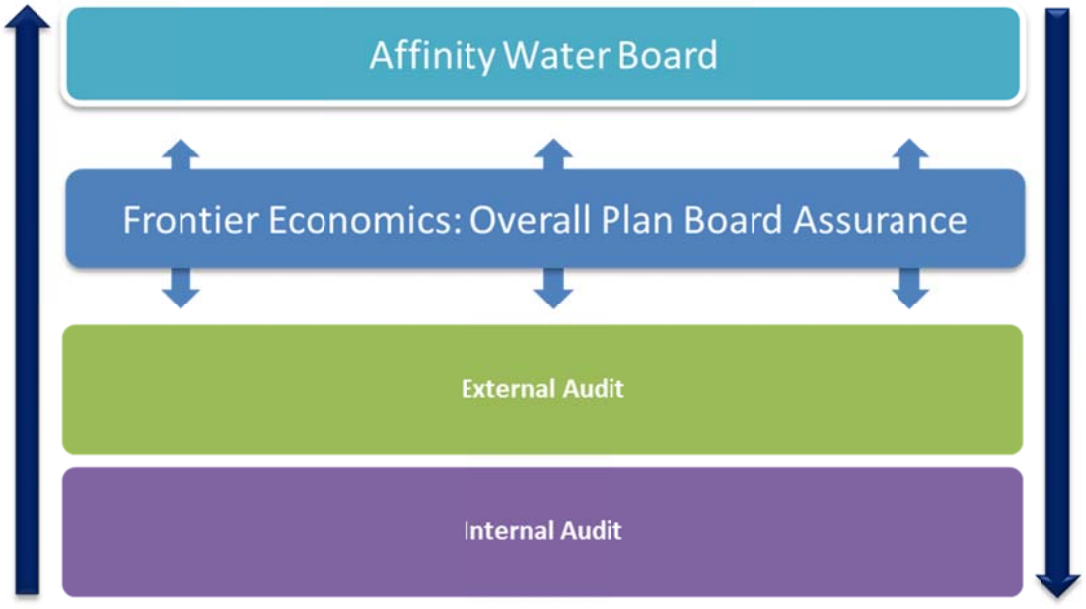


Figure 8-3: PR14 Assurance

Internal audit and assurance functions included:

- Internal team peer reviews
- Internal Audit team
- Specialist technical support
- PR14 Programme Board

The following external specialists have also provided support:

- Frontier Economics
- Ernst & Young
- Pricewaterhouse Coopers LLP
- Atkins

The external auditors and assurance providers have reported to the Board throughout the process. Each assurance process was designed to advise the Board on whether the plan was based on robust evidence. Audit reports have highlighted any material concerns or omissions allowing us to take the necessary corrective actions in developing our final plans.

The scope of the audit work carried out by each company is outlined in the following section. Full audit reports can be viewed in Appendix 7.

Overall Plan assurance: Frontier Economics Limited

We commissioned Frontier Economics Limited to review a number of components of our Plan and their application to our final Business Plan, with the ultimate objective of providing our Board with assurance that we can meet the criteria for a 'high quality plan' in that it:

- is designed to deliver good Outcomes for customers today and in the future and the environment and ensure we meet our statutory obligations
- contains accurate and efficient projections and estimates without inflated costs
- is not be a 'bid' and should not seek to game the regulatory process
- contains fair proposals to share 'pain and gain' with our customers

Frontier Economics Limited were also specifically asked to report to our Board on the following areas:

- The rigour of the evidence of **customer engagement** in relation to our Outcomes and affordability
- An assessment of our **performance commitments and delivery measures** against value for money and statutory requirements
- The reasonableness of our wholesale cost efficiency assessment
- **Retail costs and non-household tariffs**, to assess the quality of evidence relating to our household retail costs and our proposals for non-household tariffs to ensure they are non-discriminatory
- The robustness of our evidence that supports our **risk analysis** used in our assessment of the balance of risk and reward and in ensuring our plan is financeable

- **The risk and reward balance**, to assess whether risks have been allocated appropriately and whether the potential returns are calibrated in a suitable way against the risks
- **The reasonableness of our approach to affordability**, to cover the overall level of affordability in AMP6, the longer-term position (i.e. relating to PAYG factors) and the specific steps to manage affordability (social tariffs and support for vulnerable customers)
- **Financing of the Plan,** to cover the financeability of our plan (in aggregate and for individual segments), the resilience of our financing position and (linked to the above criteria), and the balance of risk and return
- **Treatment of 2010 – 2015 outturns,** to review how we have proposed to deal with differences in performance over AMP5
- **Overall balance of the Plan,** to capture the overall balance, coherence and robustness of our plan and the quality of our Business Plan narrative

We asked Frontier Economics Limited to approach their work in three stages (tasks) and for one of their Directors to provide our Board with progress reports at Board meetings as their work developed. These tasks are shown in Figure 8-4 and explained in more detail below

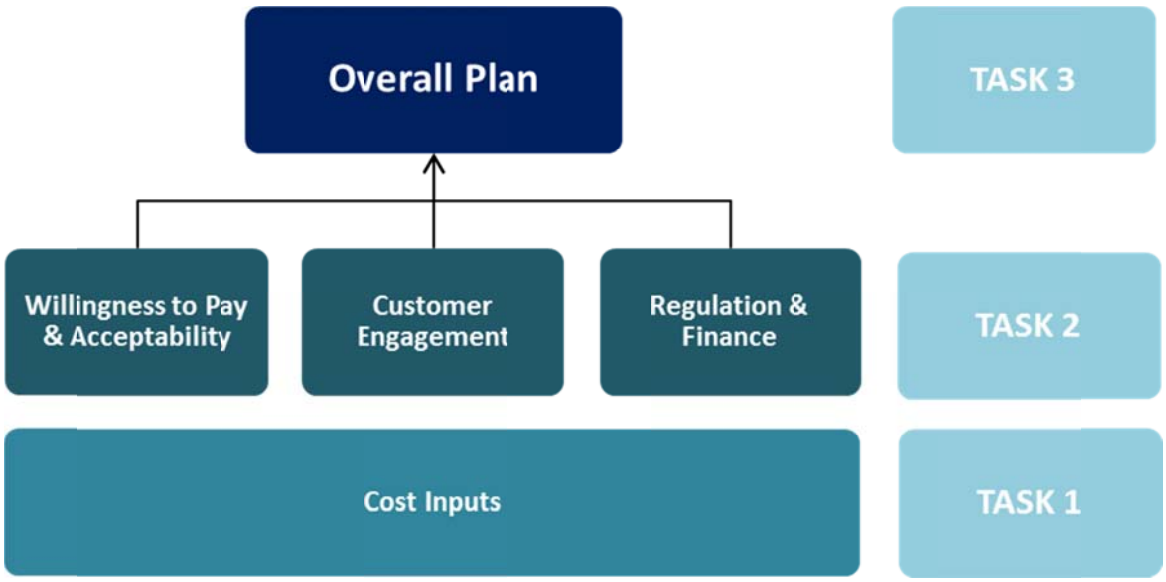


Figure 8-4: Frontier Economics - Approach to Assurance

Task 1:

Frontier Economics Limited were asked to review the cost information underpinning our plans. The initial phases of this assurance were intended to ensure that the Plan was built on solid foundations and to provide an early warning if any key pieces of evidence were missing or evidently inconsistent with the direction of the Plan overall. Frontier asked the following questions:

- Is the scope of analysis underpinning the plans complete and sufficient for the company to make key strategic decisions?
- Is the evidence robust, in particular with respect to cost efficiencies?

Task 2:

Frontier Economics Limited undertook a detailed review of the following work streams, covering the quality of the work conducted, its completeness and the robustness of the data relied upon:

- Willingness to pay and acceptability testing
- Do the proposals draw on evidence from the willingness to pay and acceptability testing activities, such that the plan reflects customers' preferences?
- Is the evidence produced robust and insightful, therefore fit to assist Affinity Water in formulating the Business Plan?
- Customer engagement
- Do the proposals draw on evidence of customer engagement in relation to Outcomes, affordability and the overall Plan?
- Regulation & finance, including
- Cost of capital assessment
- Development of well-justified, credible Outcome incentives.
- Appropriate balance of risk and reward
- Financeability of the Plan
- Affordability over AMP6 and in the longer term.

Frontier Economics Limited ensured that careful attention was paid to making sure that our work was fully joined up with the evidence reviewed during Task 1 and that the work streams had addressed all the strategic questions that needed to be addressed in the final plan.

Task 3:

Frontier Economics Limited were asked to assess the overall quality of our plan, moving through several iterations from draft to final versions. Sessions were held with our Board, reviewing the draft Plan against the criteria of completeness and robustness of evidence, risk and reward balance between customers and shareholders and coherence of the narrative of the Business Plan.

Work stream level audit and assurance

We commissioned our Reporter, Douglas Hunt of Atkins Limited, in addition to Ernst & Young LLP and PricewaterhouseCoopers LLP to undertake specific assurance activities at work stream level with respect to the preparation of our Business Plan.

Ernst & Young LLP: August Data Submission

We appointed Ernst & Young LLP to review certain of the data that we provided to Ofwat in our August Data Submission. Their review considered data relating to:

- Water Service Expenditure by Purpose
- Defined benefit pensions

Atkins Limited: August Data Submission

We asked our Reporter to undertake an audit of certain of the data included in our August Data Submission. He was asked to consider the methodologies and processes by which data had been produced and to confirm whether it had been prepared in accordance with the relevant guidance and requirements, including the Ofwat Information Requirements and line definitions. His review followed a similar approach to that undertaken to assure our internal Annual Return. This included a review of the supporting documentation, data and evidence being used to assess whether:

- at a component level, our teams compiling the documents and information had an understanding of and were meeting the requirements for the data return;
- we had sufficient processes and internal systems of control to fully meet the requirements for the data return;
- our explanations of where and why certain data requirements could not be met were soundly based; and
- we had sufficient processes and internal systems in place to identify, manage and review any reporting risks and necessary assumptions.

The specific audit activities included:

- A review of those lines that were not directly taken from our internal Annual Return or previous June Return tables.
- A review of Capex figures to confirm that the allocations met the reporting requirements, and confirmation that totals reconciled to historically collated June Return, internal Annual Return or Regulatory Accounting reporting tables.
- A review the wholesale Opex entries against the Opex and accounting separation used within the Regulatory Accounts.
- Where forecasts were required, a check that these were based on reasonable assumptions that reconciled with the PR09 Final Determination (FD) where appropriate.

Atkins Limited: Final Business Plan Submission

We also commissioned our Reporter to carry out a number of structured audits covering all relevant workstreams of the Business Plan. This has provided them with a technical understanding of the assessments we have used to derive the key elements of our plan and the quality of data, models and assumptions used in those assessments. A risk-based approach was taken, focusing on material costs, risks and potential service impacts.

The majority of the assurance work was to provide comment on the following aspects of the derivation of the Capex and Opex forecasts for the wholesale elements of the Business Plan:

- The data and input assumptions that have been used to create the relevant models and assessments.
- The logic and application of the technical models that have been used to justify need and expenditure, with reference to industry standards and best practice where appropriate.
- The justification, optioneering and scheme development that has been used for scheme-specific and non-modelled components of the capital programme.

- The unit costs and project specific costs that have been developed for Capex and Opex estimates.
- The derivation of Opex, where this has been included as a deviation from the baseline as a result of the wholesale capital programme.
- The service measure outputs from the relevant models and assessments and their consistency with the relevant Business Plan tables.
- For the retail plan, work has focused on the Capex inputs that feed into the cost depreciation calculations, and the Opex impacts that result from the wholesale Capex.

The audits were structured to align with the main models and drivers that were used to build up the Opex and Capex forecasts, and covered the audit blocks listed below:

- Capital programme, cross asset optimisation and wholesale data tables
- Core infrastructure and capital maintenance
- Core non-infrastructure and capital maintenance
- Management and general
- Supply / demand balance
- Enhancement
- Retail expenditure

As key components of our Business Plan submission, the Atkins Limited audit also covered our draft Water Resources Management Plan and our Drinking Water Inspectorate submission on drinking water quality schemes.

Draft Water Resources Management Plan (dWRMP): In total three iterations of audit have been carried out for the dWRMP and Atkins Limited have also reviewed all commentary received from the consultation on the plan from our regulators.

Drinking Water Inspectorate (DWI) Submission: In order to provide a robust submission to the DWI, enhancement expenditure in relation to deteriorating raw water quality and meeting new standards for lead was subject to challenge both by our own teams and by Atkins Limited.

Atkins Limited commenced these audits in May 2013 and have followed an agreed timetable. Work package leaders have acted as our internal audit leads for each workshop. Notifications of audit were provided to teams prior to each workshop, with a summary of findings provided within 5 working days following the session. Work package leaders where then responsible for following up on and closing out any issues identified and providing an update on progress back to the external auditor.

Atkins Limited: Working with our Customer Challenge Group (CCG)

Due to the need to complete the preparation of our Business Plan in parallel with the CCG completing its report to Ofwat on our engagement with customers, our CCG Chair asked that we commission Atkins Limited to provide a separate formal report on our Business Plan at the end of November 2013. The intention of this report is to identify any material changes that had been made to our final Business Plan following completion of the CCG Report, highlighting for the CCG the changes, impacts and consequences.

PricewaterhouseCoopers LLP (PwC)

We appointed PwC to carry out Agreed Upon Procedures ("AUPs") over certain financial data tables prior to submission. The tables they performed AUPs over included the Wholesale Water tables (W3 W3a W5 W8 W9 W10 W15 W16 W17 W19), Retail tables (R3, R4 & R5) and Appointed Business tables (A1 A2 A3 A5 A7 A8 A9 A10 A11 A12 A13 A14 A15 A18 A19 A21 A22 A23) For each of these tables, the related data points and the accompanying Business Plan narrative, the following work was undertaken where applicable;

- Check for compliance with Ofwat table guidance
- Agree data points to underlying records and supporting calculations and re-perform those calculations where appropriate
- Review of table narrative to ensure consistency with table contents, internal consistency with other tables and narrative and compliance with the detailed Ofwat preparation requirements
- Comment on any other revisions or amendments identified in the course of the review
- Agree historic data to supporting documentation and where relevant check Reconciliation of opening positions to underlying accounting records
- Agree IFRS adjustments made to supporting calculations
- Agree projected data outputs to the company's KPMG model
- Agree certain financial assumptions such as; opening RCV, RCV run off, and inflation to supporting documents
- Review and agree Tax assumptions (including impact of IFRS adoption)

Our Internal Audit team has supplemented the work undertaken by PwC, checking input data for our regulatory finance model back to source data, and reviewing table A20 (Scenarios) and related commentary. This involved tracing the adjustments specified in the scenarios, including Ofwat defined values, through our econometric model to the final table.

8.7.3 Audit outcomes

The external challenge and scrutiny given by our audit and assurance providers have allowed us to implement a number of improvements during the development of our Business Plan. Full audit reports from the following external specialists are available in Appendix 7 of this Business Plan;

- Atkins Limited
- Frontier Economics Limited
- PricewaterhouseCoopers LLP