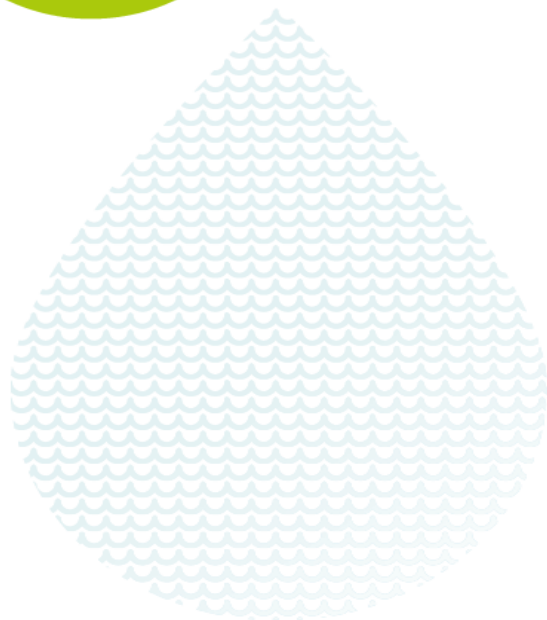


DŴR CYMRU
WELSH WATER:
BUSINESS PLAN
2015-2020



Contents

1. Board Assurance Statement	1
2. Statement from the Chairman	2
3. Introduction to Welsh Water and Glas Cymru	16
4. Customer Engagement and Research	18
5. How Our Plan Changed After Customer and Stakeholder Engagement	21
6. Costs - Efficiency, Upward Pressures and Cost Recovery	24
7. Financial Plan and Financeability	29
8. Returning Benefits to Customers	33
9. Outcomes and Measures of Success	34
10. Outcome Delivery Incentives	87
11. Risks and Uncertainties	94

1. Board Assurance Statement

As Chairman of the Board of Dŵr Cymru Cyf. (the Board), I give the following assurance on behalf of the Company:

- i) this business plan for the Company for the five years to 2020 has been approved and “signed off” by the Directors of Dwr Cymru;
- ii) the Board put in place a rigorous system of control, supervision and challenge under which the plan has been prepared by the Company and considered by the Board over a period of 22 months at 16 Board meetings including 6 special PR14 sessions. The Board believes that this system of control has allowed it to make an informed judgement about the credibility of the plan and the accuracy of the information which it contains;
- iii) the plan continues the policy of Glas Cymru, the owners of Dŵr Cymru, that *all gains go to customers*;
- iv) the Board considers that the plan will enable the Company to meet its statutory and regulatory obligations. The Board has monitored the processes put in place by the management team to compile relevant estimates and data, and on that basis the Board is able to confirm that estimates and data have been arrived at appropriately, and independently of other companies and competitors. The Board has also taken into account the information contained in the “performance dashboard” provided by Ofwat in compiling the plan. The Board confirms that it complies with the applicable parts of the UK Corporate Governance Code and the Principles of Good Governance set out by Ofwat; and
- v) the Board considers that this plan is a “high quality plan”.

RJ Ayling
Chairman

Business plan process

Best-practice corporate governance has been at the heart of the constitution and operation of our Board since the creation in 2000 of Glas Cymru, a company with no shareholders. From the outset of this price review process our internal planning processes and external stakeholder activities have been subject to extensive ongoing oversight by the Board and all the major strategic decisions that have shaped the plan have been made at Board level, having taken into account continuing input and challenge from the Customer Challenge Group, from the Members of Glas Cymru, from quality regulators and from a wide-ranging programme of customer engagement.

Our business plan represents an innovative and sustainable package that balances affordability and service – both for today’s customers and for future generations. It follows an exhaustive and detailed analysis of what really needs to be done and what our customers expect. The Board believes that this is a high quality, challenging, business plan that has the strong support of our customers.

2. Statement from the Chairman

On behalf of the Board of Welsh Water, I am pleased to publish our Business Plan for the forthcoming price control period, 2015-2020. This Plan has been developed in the light of an unprecedented programme of customer and stakeholder research which we have carried out over the last 18 months. We believe that this plan represents an attractive and sustainable outcome for our customers, including:

- a commitment to keep the increase in average bills to below the rate of inflation for each of the next 6 years;
- increasing the assistance provided to those customers who genuinely struggle to pay their bills by extending the scope and take-up of our customer assistance tariffs;
- a sustained investment plan of some £1.5 billion to deliver significant improvements in customer service, environmental performance and in the resilience of our core infrastructure;
- measured progress towards meeting the long-term challenges facing our business, for example from changing weather patterns and an ageing infrastructure, for the benefit of future generations of customers;
- challenging targets to improve key outcomes for customers, with penalties (and rewards) where those targets are missed (or exceeded);
- stretching assumptions to improve efficiency, cut costs and drive innovation, all delivering significantly improved value for money for our customers; and
- all gains will go to customers (whether from favourable economic circumstances, outperformance of efficiency targets or service rewards), whilst the strong balance sheet that the company has built

up over the last 12 years will help to insulate our customers from the effects of possible future risks and economic shocks.

The final round of independent customer research carried out in October 2013 found that 94% of our customers considered our plan to be acceptable, with 84% of household customers and 88% of non-household customers considering that it represents improved value for money as compared to our Consultation Plan.

Our plan “at a glance”

Over the course of 2015-20 we will spend some £2,903m (in 2012-13 prices), comprised of £1,272m in the wholesale water business, £1,356m in the wastewater business, and £275m in the retail businesses. This will enable us to meet all of our current and future (certain) statutory obligations and to make significant progress against our eight long term “Outcomes”, as indicated by our performance against the 22 Measures of Success. The Appendix to this statement sets out in tabular form what we plan to spend on each of our eight Outcomes and what this will deliver on each of the 22 Measures of Success. Section 9 presents further details of our plans and what they will achieve.

Customers will see significant improvements in the things they care about....

We will maintain our existing very high standards of drinking water and environmental quality. Customers will also see specific improvements by 2020 in a number of important areas:

- a reduction of 10% in the number of customer contacts relating to discolouration, appearance, taste and odour in drinking water;

2. Statement from the Chairman

- a reduction in leakage from our water mains of 8%;
- a reduction in the number of properties that suffer low water supply pressure of some 25%;
- a reduction in interruptions to water supply of 10%;
- a reduction of 20% in the number of properties that suffer flooding from sewers;
- a reduction in the number of customers affected by unpleasant odours from our wastewater assets of around 2,000;
- a one third reduction in pollution incidents from our wastewater systems;
- a very significant increase in the use of sustainable drainage schemes in priority areas, to protect properties from flooding and to protect the environment;
- developing an enhanced range of social tariffs targeting help to customers who struggle to pay; and
- a reduction of 5% in our net use of energy.

In addition, customers in general and the environment will benefit long-term from:

- the greater resilience of our delivery systems, with the proportion of our most strategic assets considered to be “at risk” falling from 23% to 15% by 2020, a reduction of over one quarter;
- the substantial investment at 12 Water Treatment Works (WTWs) (serving some 1.5 million people) to protect drinking water quality from known risks identified through our Drinking Water Safety Plans process; and

- further substantial investment at 22 Waste Water Treatment Works (WWTWs) (serving some 1.4million people) to improve compliance reliability and so protect the quality of rivers and beaches.

...and benefit from a further step change in value-for-money

Welsh Water’s customers have historically faced some of the highest average bills in England and Wales, largely due to the sewerage element of the bill. This situation has reflected in part the high cost to serve of our operating region, with many discrete areas of low population density, in turn implying more assets per customer and limited opportunities to benefit from economies of scale. In addition, unlike the inland companies whose sewage treatment facilities were generally built pre privatisation (with these costs effectively being financed by the taxpayer and largely written off at privatisation), our sewage treatment facilities were built post privatisation. This meant that the £1 billion investment programme to build new WWTWs around the coast of Wales had to be financed through customer bills.

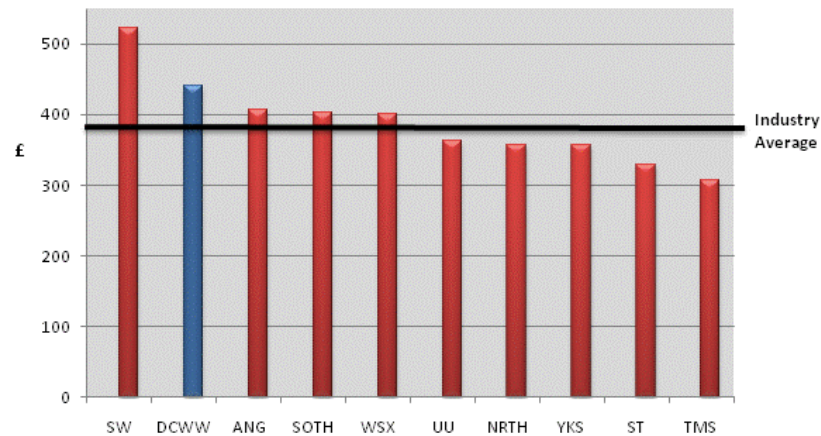
When Glas Cymru acquired Welsh Water in 2001, it had the second highest average household bill in the industry. It has been a consistent objective of the Board to bring down the level of bills in real terms, hopefully over the longer term to a level below the average for the water and sewerage companies.

By 2014/15 our average household bill will have moved from being 10% above the Water and Sewerage Companies (WASCs) average in 2009/10 to just 3% above average; and will have fallen by 8% in real terms since the beginning of this current price review period.

2. Statement from the Chairman

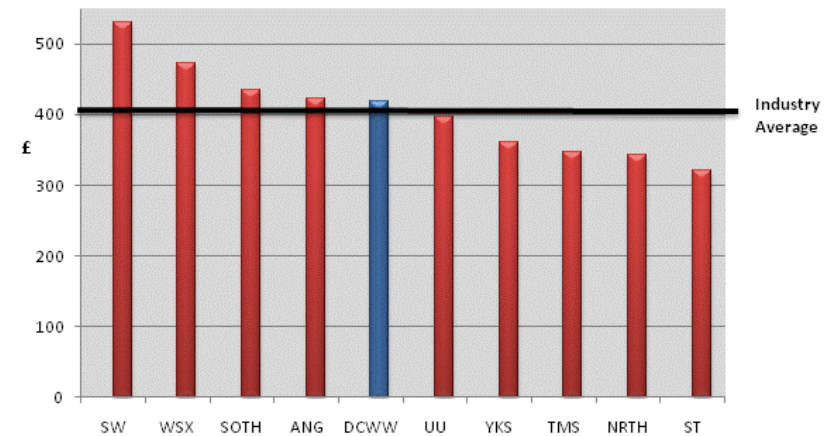
Household Combined Bills in 1999/2000

(at 2012/13 prices)



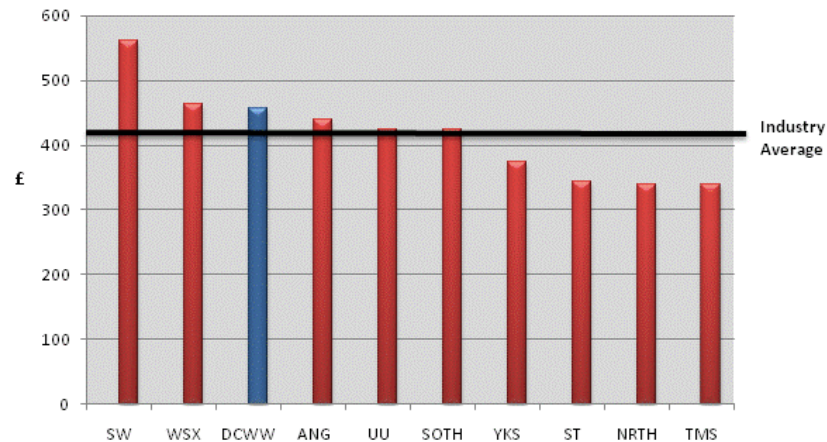
Projected Household Combined Bills in 2014/15

(at 2012/13 prices)



Household Combined Bills in 2009/2010

(at 2012/13 prices)



Our customers have in many cases faced falling household incomes during recent years due to the unfavourable economic climate, which is a particular challenge for our business as Wales has a relatively low level of average household incomes and a much higher than average concentration of areas of significant income deprivation. Improving affordability has therefore been a key objective for the Board in drawing up this plan.

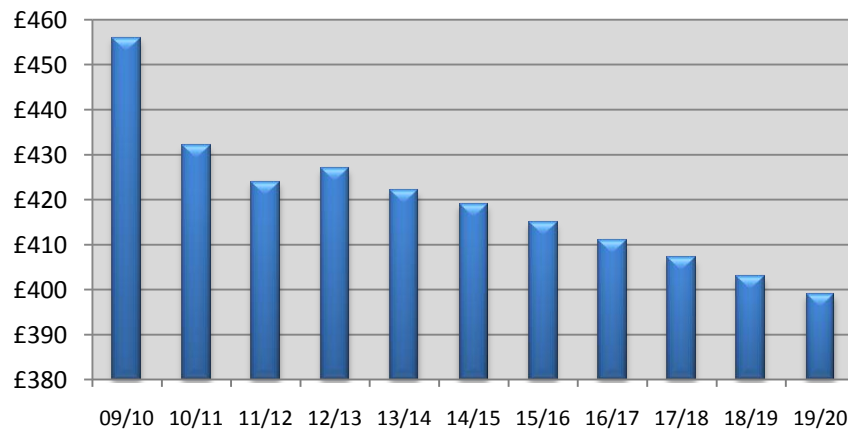
As a result of the stringent targets for improvements in operating and financial efficiency we have factored into our projections, we plan to deliver further reductions in the average household bill over the 2015-20 period. From £419 in 2014-15 (2012-13 prices), we plan to keep the increase in the average household bill to 1% below inflation in each year,

2. Statement from the Chairman

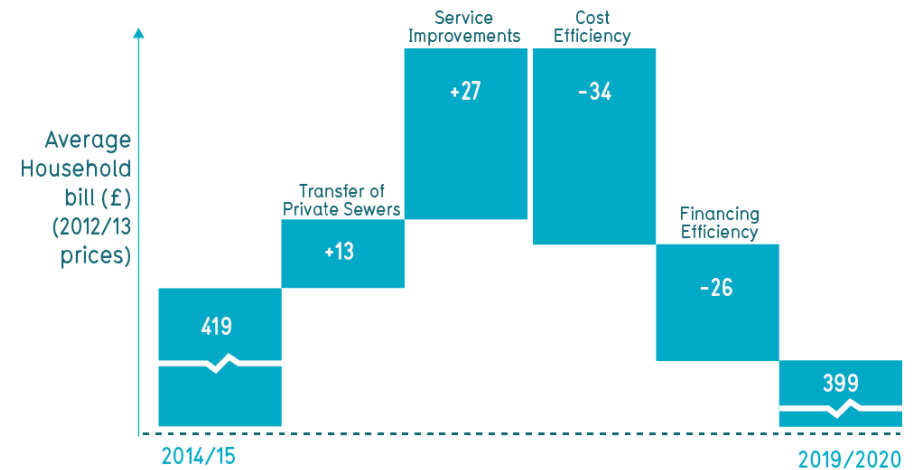
leading to a final average household bill in 2019/20 of £399 (2012-13 prices). This compares to £456 in 2009/10, a reduction in real terms of 12.5%.

This bill profile is likely to move our average customer bill to closer to the average for the water and wastewater companies. At the same time, we will be sustaining our current rate of investment in the business, enabling us to improve priority aspects of customer service for our customers, to meet our current statutory obligations and to prepare for the longer term challenges facing us; in all this represents an attractive package for our customers.

**Average Household Bills -
2012/13 prices**



Cutting our costs to reduce bills



2. Statement from the Chairman

Our Vision and Values – the context for the plan

Since Glas Cymru's acquisition of Welsh Water in 2001, our single objective has been to deliver high quality water and wastewater services to our customers; representing good value for money. The twelve years since have witnessed steady improvements in performance coupled with a gradual movement in our average household bill from being one of the highest in the industry to a position close to the average.

In 2013 we have launched a new Vision Statement to give a clear sense of purpose for all our people and to help the customers that rely on us every day for the essential services we provide to understand what we stand for.

Our Vision

We will *earn the trust of our customers* every day.

We will do this by delivering high quality, essential services that protect our customers' health, our communities and the environment around us.

To earn this trust, all of our people need to display the right values and behaviours on a continual basis, whether in providing service directly to customers, in protecting the environment, or in supporting their colleagues to do so. These values and behaviours define the "can do" culture that we need: only by all pulling together and living up to our corporate values will we truly deserve the trust of our customers.

Our Values

- OPEN to new ideas
- HONEST with everyone
- PROUD to put customers first
- EXCELLENCE in everything we do
- TRUSTED to do the right thing
- SAFE at all times

Our new Vision Statement provides the start of a "golden thread" which runs through all of our plans and strategies. It sets out our ultimate purpose, which drives the long-term aspirations and targets set out in "*Our Sustainable Future 2040*".

Challenges facing us in the long-term

Our long-term planning had identified a number of serious challenges to our business over the next 25 years. Our plan is designed to make sensible progress towards meeting those challenges, for the benefit of future customers, but at a pace which is affordable for our customers today. Some particular examples of these challenges include:

- Affordability - affordability will remain a key challenge for us, given that there is relatively high deprivation in parts of our region, as well as relatively low average household incomes (with some 15% of our customers spending 5% or more of their disposable income on their water bill);
- Investment requirements - whilst there has been significant investment in new assets in recent years, some parts of our network have received relatively less investment for many years and decades

2. Statement from the Chairman

(notably inland WWTWs, sewerage networks, parts of our water distribution system and some water treatment works); this situation leaves us in a position in which the quality of service can be high but is unreliable and is frequently exposed to risk, whether from unfavourable weather conditions or asset failures;

- Environmental standards - potential new environmental standards and the interpretation of those standards (for example from the Water Framework Directive (WFD), and the revised Bathing Waters Directive could result in a requirement for very significant expenditure on wastewater assets, not necessarily in a manner that would best deliver good value for money to society or the environment;
- Changing weather patterns - with the risk of more summer dry spells and particularly a greater frequency of storm events, put a continuation of service standards at risk, notably through the overloading of old combined sewerage systems;
- Population changes - with rapid growth expected in Cardiff and the surrounding region in particular;
- Changing technology - for example enabling detection of additional risks to public health from disinfection by-products in drinking water, and changes to water catchments will lead to new challenges for the treatment of drinking water;
- Increasing energy cost/carbon reduction requirements - as a major energy user, we will need to make our contribution to achieving carbon reductions, moving to a lower energy intensity business model; and
- Succession issues and people development - significant people change in our business will occur in the next 10 years, together with a

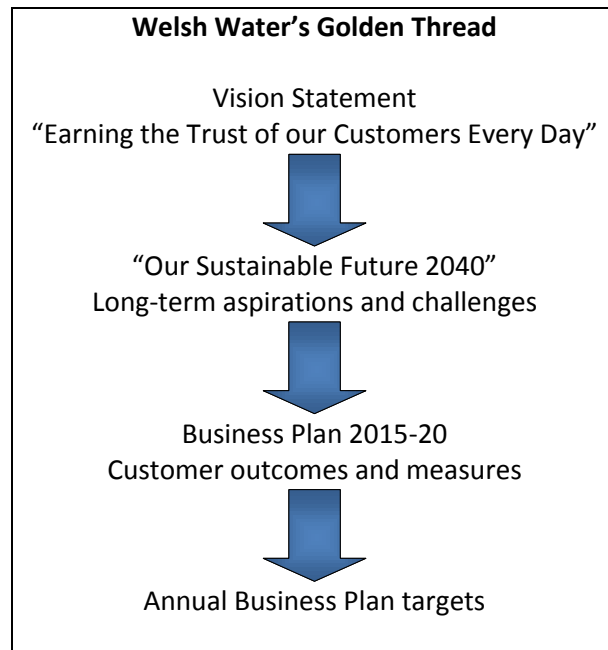
need for our people to have the skills and training to work in a much more technologically sophisticated industry than that of the recent past.

Our long-term plans are designed to respond to these emerging challenges by focussing on the eight essential outcomes that we need to achieve, if we are to be a truly sustainable business that can continue to earn the trust of our customers in the decades to come.



2. Statement from the Chairman

These eight outcomes feature consistently in Our Sustainable Future 2040, in our Business Plan for 2015-20 and in our annual business plans, with challenging but deliverable targets set for each outcome measure in 2020 and longer-term aspirations for 2040. By delivering on these outcomes and measures, including the key measure to ensure affordability for customers, we can deliver improving value for money for customers, both now and for future generations.



We asked our customers to help us shape our plan...

With no shareholder requirements from our owners, Glas Cymru, to meet, we are uniquely placed to ensure that our Business Plan for the 2015-20 period is driven entirely by the needs and preferences of our customers and other stakeholders. Our ongoing customer engagement and monitoring activities provide us with good information on customer views and how they have developed, and these helped to shape our initial consultation plan proposals. However, for the purposes of this planning process we also put in place an unprecedented range of supplementary measures and activities to understand customer requirements in more depth, so as to enable us to place them at the heart of the plan. Centred around the publication in June 2013 of our consultation proposals “Your Company. Your Say”, these included a wide range of customer survey and research activities which were undertaken in consultation with a newly-established independent “Customer Challenge Group” (CCG) that provided critical oversight of our engagement strategy.

During the preparation of the Business Plan we engaged extensively with both household and business customers and, in total, there were eight different research exercises, including willingness-to-pay studies and discrete exercises on different facets of the plan such as customer service propositions and specific environmental issues.

This independent customer research was complemented by an extensive programme of stakeholder engagement with a wide range of organisations who have a role in representing customers’ interests, including the Members of Glas Cymru, the Welsh Government, our

2. Statement from the Chairman

quality regulators, political representatives, NGOs, and business customer bodies.

Details of our engagement work and the way in which the results shaped the plan, both at a strategic level and in terms of determining specific components, are set out in sections 4 and 5.

Generally, there was broad endorsement of the plan with the vast majority of customers being of the view that we had struck the right balance between the proposed investment and bills.

We responded to challenge from the CCG....

The CCG commended the scope and nature of the customer research and engagement that we carried out. However, based on the detailed findings of that work, they challenged us strongly to amend our Plan to make it even more acceptable to our customers. Their main challenges as we understood them were:

- was a £13 increase in the bill justified to pay for the adoption of private sewers, which had happened back in 2011, and was it acceptable to customers?
- whilst customers overall supported our Consultation Plan, a revised plan with below inflation bill increases would attract even stronger customer support;
- could we be more ambitious and set more challenging efficiency targets?
- could we reduce our assumed cost of capital so as to reduce customers' bills, given current benign conditions in the capital markets?

- could we do more to find out the views of our most disadvantaged customers and do more to help them?
- how were we going to amend our proposed Outcomes, Measures of Success and investment plans, in light of the updated information on customers' willingness-to-pay for service improvements?

....and re-shaped our proposals accordingly

As a result of this intensive process of scrutiny, testing and challenge, we made several important changes, including:

- we made changes to the "Measures of Success" that we will use to monitor our performance in delivering the eight overall long term "Outcomes". These include the addition of two new measures (leakage and sewer flooding) and the removal of "supporting economic development" as a measure. In particular, we have now given additional prominence to the importance of educating and informing our customers about the nature of our company and what we do, and have included this as a Measure of Success. Details are set out in section 9;
- we made adjustments to our detailed investment plans and service targets, to reflect updated information on customers' "willingness-to-pay" for particular service improvements, for example increasing the proposed investment to reduce the risk of sewer flooding;
- we challenged the business to find further efficiencies and savings in the AMP6 period, without jeopardising the standards to which we have committed, consistent with the increasingly prominent role that innovation will play in the development of our business in the future. Building on our strong track record of efficiency improvement, over the course of the next seven years we are aiming to deliver some

2. Statement from the Chairman

£273m of further cost efficiencies, spread across our operating and capital investment activities. Details are set out in section 6;

- we further analysed the trade-offs we face between the financeability of the business and the affordability of bills, both over the AMP6 period and into the long term, in order to ensure that the return on capital required is as low as possible, commensurate with the retention of our current credit rating. An allowed cost of capital on the regulatory capital value of our wholesale business of 4.5% will deliver financial ratios that will enable us to avoid the threat of a credit rating downgrade and maintain the sound financing position of the business built up over 12 years of de-leveraging. This helps to protect our customers against the risk of future unanticipated expenditure requirements or unforeseen difficult economic circumstances. Details of our financing strategy are set out in section 7; and
- as a consequence of these tougher targets for operating and financing efficiency, our final plan includes much the same benefits for customers, both in the short-term and in the long-term, whilst pegging future increases in customers' bills to 1% below inflation in each year to 2020.

The Board also considered carefully whether we could go even further and aim for lower bill increases than those proposed between 2015 and 2020. However, given the very strong response from customers that they did not want to see long-term investment in the business postponed in order to achieve lower bills in the short-term, further bill reductions could only come from more challenging efficiency targets or a further reduction in the cost of capital. We consider that the proposed figure of some

£273m for operating and investment efficiencies reflected in our plan to be extremely stretching and we do not believe that we could plan on the basis of achieving even greater savings; we will of course strive in practice to deliver the maximum amount of efficiency and (since our owner has no shareholders) all such gains will go to our customers (see section 8). Equally, a further reduction in the allowed cost of capital would result in credit metrics below the levels required to maintain our current credit rating and we do not believe that a credit rating downgrade would be in the best long-term interests of our customers, as it would imply a higher cost of finance in future and lead directly to higher bills and greater risk for our customers in the long-term. Again, any financial outperformance will be to the benefit of our customers.

Efficiency and innovation

A key element of our plan to improve value for money for our customers is the challenging targets set for reductions in operating costs and capital investment costs. These targets of some £273m build on the significant cost reductions that have already been made during the current regulatory period. In fact, since Glas Cymru acquired Welsh Water in 2001, we have clearly the best record in operating cost reduction in the sector, with costs reduced by 2% in real terms (notwithstanding the very significant additional costs that have been absorbed to operate new assets, such as the formerly private sewer system, and to meet higher quality standards), as compared to an increase of 10% to 35% in real terms for the other water and sewerage companies.

These targeted efficiency savings will come from a whole host of business initiatives, including:

2. Statement from the Chairman

- new “Smart” network operation, with increased remote control and automation;
- capital re-procurement, incentivisation of our new alliance of capital delivery partners, working to deliver a “smooth” investment plan over a longer planning horizon;
- new LEAN operating practices, to reduce breakdowns and minimise waste;
- investment in energy efficiency and renewable energy generation;
- reduction in bad debts through improved customer information;
- innovation and best practice, driven by benchmarking and partnership working with certain leading European water companies;
- competitive re-procurement and “right sourcing”; and
- environmental research and investigations, to improve the cost efficiency of our environmental protection activities .

Further details of these initiatives are set out in Section 6.

Competition and market reform

From 1st April 2015, there will be a fundamental change in the way the industry is regulated, with separate “wholesale” and “retail” segments, in place of the current vertically-integrated undertaker structure. It is intended that this separation will bring about greater customer focus on the part of “retailers”.

To support the new arrangements, Ofwat has modified our licence in order to enable it to set separate price controls for each segment. Consequently, together with this integrated Business Plan publication, we have prepared separate plans for “Wholesale Water”, “Wholesale Sewerage”, and the “Retail” segments.

Under legislative proposals currently before Parliament, competition between retailers for non-household customers, currently restricted to water supply customers using in excess of 50 Ml/yr, will be extended from 1st April 2017 to all non-household customers in England for both water and sewerage services, but there will be no change in eligibility in Wales. We are committed, however, to ensuring that no customer in Wales is worse off as a result of the different market arrangements, and we will therefore be monitoring developments in the market in England with a view to always being competitive on customer service, value and innovation.

We will continue to seek opportunities presented by the market reforms to improve our value for money for our customers. For example, during the preparation of our 25-year Water Resources Management Plan (WRMP) we have identified a number of potential opportunities, including one to export additional water from our operating area. Any resultant trades will be in accordance with our trading and procurement code to ensure that they deliver benefits. Any commercial benefits from such trading arrangements would go to our customers, in the form of lower bills.

Incentivising our performance

One of the significant innovations in this price review is the invitation to companies to put forward their own package of penalties and rewards to ensure that they are appropriately incentivised to deliver the outcomes that customers want. In addition, following a period during which companies have benefited on balance from macroeconomic circumstances, Ofwat has urged companies to maintain their legitimacy by sharing benefits with their customers.

2. Statement from the Chairman

Both initiatives fit well with the unique approach that this company takes to the delivery of water and wastewater services. We know that customers rightly expect that we maintain high levels of performance in everything we do – for all of them, not just a majority – and we already have a wide range of compensatory measures that we put in place when we fall short. Building on this approach we are going to put in place a comprehensive “Outcome Delivery Incentive Scheme” from the start of the price control period that contains a suite of penalties and rewards covering our Measures of Success (and other aspects of performance too). These will range from direct payments to customers through to general price control adjustments, and will include the payment of compensation to a locality or community where a failure on our part has caused damage that is not directly customer-specific (e.g. flooding of public places or pollution of a stretch of river). Implementation of the Scheme will be supported by the creation of an enhanced annual reporting regime that will ensure that it is operated fairly and transparently.

All gains go to customers

The sharing of benefits with customers has been at the heart of what makes Welsh Water unique since its acquisition by Glas Cymru in 2001. To date, we have “distributed” nearly £300m worth of benefits to customers, for example through the financing of accelerated investment in service and through direct bill reductions, and built up £1.5 billion of “customer equity” or “reserves” that help protect customers against risks and shocks and which will provide the basis for the delivery of further benefits to customers in the future.

During the period to 2020, all gains will continue to go to customers (whether from favourable economic circumstances, out-performance of efficiency targets or service performance rewards).

Risks and uncertainties

In preparing our business plan we have taken into account the risks and uncertainties to which the company and the services that we provide will potentially be subject over the course of the price control period. We face a number of normal (mainly symmetrical) business risks, such as fluctuations in input prices, economic growth, and the weather, all of which may lead to financial performance that is better or worse than projected.

In addition, we bear a number of (mainly asymmetrical) risks associated with changes in legal and regulatory obligations. Notable examples include the possible significant re-interpretation of the Urban Wastewater Treatment Directive (UWWTD), and the major uncertainty that prevails regarding the effect of the WFD (including its daughter directives which set specific requirements) over the AMP6 period.

We are confident, however, that we are well-placed to manage these uncertainties and to deal with the associated risks on behalf of customers. Our A-grade credit rating, supported by the customer equity that we have built up, means that we are well-placed to offset the impact on customers from any such adverse “cost shocks” during the AMP6 period.

2. Statement from the Chairman

Measure of Success		Units	Performance now	Performance 2019/20	Total Expenditure	
					Maintain £m	Additional Improvements £m
Outcome A: Safe Drinking Water						
You will have complete confidence that your drinking water is safe, reliable and tastes good.						
A1	Safety of drinking water (WW)*	Compliance with standards %	99.98 ¹	99.99	211	28
A2	Customer acceptability (WW)	Contacts per 1,000 population	3.2 ¹	2.9	62	29
A3	Reliability of supply (WW)	Minutes lost per customer per year	53 ²	10% lower than 2014/15	235	33
Outcome B: Protecting our environment						
We will safeguard a sustainable environment that we are proud to hand on to future generations						
B1	Abstraction water for use (WW)	Permit compliance %	100 ²	100	175	0
B2	Treating used water (WS)	Permit compliance %	97 ¹	99	425	77
B3	Preventing pollution (WS)	Number of incidents	237 ¹	150	183	38
Outcome C: Responding to climate change						
We will adapt our activities to deal with the potential effects of climate change, while reducing our own carbon footprint						
C1	Adapting to climate change (WW, WS)	Surface water removed from wastewater network (property equivalent)	1,000 ³	25,000	17	43
C2	Carbon footprint (WW, WS)	GWh of renewable energy generated	40 ³	100	23	19

¹ Based on an average of performance over the last three years save for D4 and D5 which are calculated over a two-year period

² Performance in 2012/13

³ Annual performance

⁴ Of controllable costs (excluding business rates and regulators' fees)

* WW = Wholesale Water, WS = Wholesale Sewerage, R = Retail

2. Statement from the Chairman

Measure of Success		Units	Performance now	Performance 2019/20	Total Expenditure	
					Maintain £m	Additional Improvements £m
Outcome D: ‘Excellent’ customer service Our Customer service will be as good as the best utility companies in the UK						
D1	Service Incentive Mechanism (SIM) (WW, WS, R)	Industry score	top quartile ³	top quartile	178	15
D2	At risk’ customer services (WW, WS, R)	No of Customers	850 ³	425	57	14
D3	Sewer Flooding (WS)	Number of Properties	196 ²	155	53	7
D4	Non-household customer satisfaction (R)	% Satisfied customers	87 ¹	90	34	1
D5	Earning the Trust of Customers	% Customers	63 ¹	75	8	0
Outcome E: Affordable prices Our prices will reflect good value for money for our customers, with an effective range of help for those struggling to pay.						
E1	Affordable Bills (WW, WS, R)	annual increase	below inflation	1% below inflation	0	0
E2	Help for disadvantaged customers (R)	Number	52,000 ²	100,000	9	6
Outcome F. Asset Stewardship We will maintain our assets for future generations, at the most efficient cost.						
F1	Asset Serviceability (WW, WS)	Independent assessment	Stable ²	Stable	438	0
F2	Leakage (WW)	MI/Day	190 ²	169	55	74
F3	Asset resilience (WW, WS, R)	%	77 ³	85	110	42

¹ Based on an average of performance over the last three years save for D4 and D5 which are calculated over a two-year period

² Performance in 2012/13

³ Annual performance

⁴ Of controllable costs (excluding business rates and regulators' fees)

* WW = Wholesale Water, WS = Wholesale Sewerage, R = Retail

2. Statement from the Chairman

Measure of Success		Units	Performance now	Performance 2019/20	Total Expenditure	
					Maintain £m	Additional Improvements £m
Outcome G: Developing our People We will develop a team of people who can provide a great service to our customers.						
G1	Health & Safety (WW, WS, R)	Number of Incidents	26 ¹	20	89	5
G2	Competence for role (WW, WS, R)	% Staff	85 ³	95	17	0
Outcome H: Business Efficiency We will continue to be an efficient business with a strong credit quality.						
H1	Operating Efficiency (WW, WS, R)	reduction in cost	20% ³	18% ⁴	25	68
H2	Financing Efficiency (WW, WS, R)	Credit rating	A/A3/A ²	A/A3/A	0	0

¹ Based on an average of performance over the last three years save for D4 and D5 which are calculated over a two-year period

² Performance in 2012/13

³ Annual performance

⁴ Of controllable costs (excluding business rates and regulators' fees)

* WW = Wholesale Water, WS = Wholesale Sewerage, R = Retail

3. Introduction to Welsh Water and Glas Cymru

Our Responsibilities to our Customers

Welsh Water is the sixth largest of the ten regulated water and sewerage companies in England and Wales. Our primary responsibility is to deliver safe and reliable drinking water and sanitation to the 3.2 million customers living in Wales and adjoining areas of England.



We provide an essential public service and, as custodians of the water industry in our area, we have responsibilities for protecting the environment and delivering a high quality and reliable service to our customers. Crucially, we must have particular regard to the interests of future generations, and are committed to pursuing a genuinely

sustainable long term strategy that provides the best value for money not just for today's customers, but for future customers as well.

Much of what we do day-to-day to deliver a high quality and reliable public service involves operating and maintaining an enormous network of mainly long life assets worth some £26 billion. We undertake this by:

- operating 63 WTWs and treating and supplying on average around 830 million litres of safe, clean drinking water through some 27,400 km of pipes to over three million people every day. We also carry out some 275,000 water quality tests a year at our state-of-the art laboratories in Newport (South Wales) and Bretton (North Wales);
- collecting wastewater (including surface water) through a network consisting of some 30,000 km of sewers, 1,912 sewage pumping stations (SPSs) and 3,200 combined sewer overflows (CSOs), and treating it at 838 WWTWs;
- managing 40,000 hectares of land. This includes four visitor centres that attract around 1 million visitors each year. Every year, around 40,000 schoolchildren and young people visit our education centres or receive lessons from us as part of our outreach programme; and
- employing and developing some 2,500 staff across Wales, Hereford and Deeside that help to ensure that we provide a first class essential service. They include the people that customers will speak to if they need to contact us, who are all based in Wales.

Our customers are amongst the poorest in the UK, with relatively high deprivation in parts of our region. It is estimated that

3. Introduction to Welsh Water and Glas Cymru

around 30% of our household customers spend more than 3% of their disposable income on their water and sewerage bills. Consequently, affordability is and will continue to be a key challenge for us.

Historically, Welsh Water's bills have been above average, largely due to the sewerage element of the bill. Unlike the inland companies whose sewage treatment facilities were generally built pre-privatisation (with these costs effectively being financed by the taxpayer and largely written off at privatisation), our sewage treatment facilities were built post privatisation. This meant that the £1 billion investment programme to build new WWTWs around the coast of Wales had to be financed through customer bills. (Customers of South West Water have faced even higher sewerage bills for similar reasons. However, unlike our customers, they have received help from the UK Government to reduce their bills.) In addition, our mountainous and relatively rural operating environment entails more assets per customer and, hence, more cost.

As a result of our unique model, and the strategy we have pursued, we have successfully reduced the gap between our average bill and the overall industry average. The objective of the Board is to continue to reduce our bills relative to the other water companies in England and Wales.

Welsh Water and Glas Cymru

Welsh Water is owned by Glas Cymru, a "company limited by guarantee" that has no shareholders and does not pay dividends. All financial surpluses are reinvested for the benefit of customers. Under Glas Cymru's ownership, Welsh Water's assets and capital investment are financed by bonds and retained financial surpluses.

Glas Cymru's constitution strictly limits its purpose to that of financing water assets in Welsh Water's area of appointment and managing the business, so that high quality water and sewerage services are delivered at least cost to the customers and communities served.

Glas Cymru Members

Instead of shareholders, Glas Cymru has Members. (There are currently 57). Members hold the Board to account for the stewardship of our assets, and our goal of providing an essential public service to more than three million people in a manner which will be sustainable for future generations. Our members are selected by an independent panel which is required to maintain a balanced and diverse membership, reflective of the range of our customer and stakeholder interests. They do not receive any fees, nor do they have any financial stake in the business.

4. Customer Engagement and Research

Context

Customer and other stakeholder priorities play an ongoing role in shaping what we do, not just at price reviews. The Members of Glas Cymru (See Section 3) carry out an important function in monitoring and challenging the performance of the Board and the activities of the company, and we have in place a range of “business as usual” activities that provide us with valuable insights into customer needs and how they change over time. These include:

- regular tracking surveys;
- focus groups;
- ongoing analysis of customer complaints;
- monthly independent customer satisfaction surveys; and
- non-household customer satisfaction surveys.

We also work closely with Consumer Council for Water Wales (CC Water) and other stakeholder organisations in order to involve them in what we do and to ensure that their views and priorities are fully understood.

Business Plan Preparation - Overview

For the purposes of the price review as a whole, and the preparation of our AMP6 Business Plan in particular, we have carried out a range of additional activities.

First, in line with an Ofwat initiative, we set up an independent “Customer Challenge Group” (CCG) to oversee the process of customer consultation, in order to ensure that we have listened effectively to our customers and other stakeholders, and taken them into account in building our plan. The CCG is chaired by Diane McCrea (who is also the

chair of CCWater) and comprises representatives from the quality regulators, CCWater, the Federation of Small Businesses, Wales Environment Link, a Housing Association, Age Cymru, NHS Wales and the Welsh Local Government Association.

Second, we implemented an unprecedented series of customer research activities during 2013, involving the application of two distinct methods:

- a traditional customer research approach using focus groups and qualitative and quantitative techniques; and
- the use of proactive customer engagement including exhibitions, road shows and public meetings at towns and cities across our operating area, supported and complemented by a dedicated “Your Company. Your Say” website, and meetings with stakeholder groups.

A summary is set out below.

Summary of Customer Engagement and Research

Our consultation plan “Your Company. Your Say” was launched to Welsh Assembly Members and other stakeholders at the Senedd in June, and was also presented to MPs in Westminster, the Board of Natural Resource Wales (NRW), the Welsh Government’s PR14 Forum, and the Independent Environment Advisory Panel (IEAP) (established by the company and attended by representatives of 30 environmental organisations). In addition, we brought it to the attention of a wide range of additional stakeholders such as local government, the Citizens Advice Bureau, the National Trust, and various other representative bodies.

4. Customer Engagement and Research

We then engaged with customers at a series of eight road show exhibitions, open evenings, and by means of a dedicated “Your Company. Your Say” website. This process included the completion of a questionnaire by more than 2,000 customers to elicit views on our proposals.

In addition, we carried out a range of structured customer research activities, including 44 focus groups in our area, (of which eight were deliberative), two further focus groups in Dee Valley Water’s area (concentrating on wastewater only), 2,550 phone-post/E-mail-phone (PpP) interviews on willingness-to-pay, and 1,487 PpP interviews on the acceptability of the consultation plan. These involved both household and non-household customers.

Our engagement and research activities were scrutinised in detail at every step by the CCG, which gave invaluable input to the design and implementation of our activities and ensured that research material was clear and easy to understand. Importantly, the CCG played a vital role in the interpretation of the research and engagement findings.

Findings

The results of our engagement and research programmes can be summarised as follows:

- there was strong support (84% of household customers and 83% of non-household customers) for the basic strategy we had proposed to implement a measured improvement in services in certain priority areas, whilst holding down bill increases to no more than the rate of inflation;

- a sizeable majority of customers were not prepared to support a reduction in bills if that meant that investment in service improvements and the long-term resilience of the business would have to be postponed;
- however, affordability concerns were prominent and a plan that could deliver those benefits to current and future customers whilst also keeping down the increase in bills to below the level in the consultation plan would be preferable;
- whilst the package of Outcomes and Measures of Success that had been put forward found considerable support, some individual elements received a mixed response;
- up-to-date information on the values customers place on service outcomes was obtained to enable us to prioritise our expenditure plans; and
- many customers responded very positively to our programme of engagement and indicated that they would like to know more about the nature of the company and how they could support its activities.

In addition, willingness-to-pay values for 13 service measures were derived and have been fed into the cost benefit analyses that support the investment programme. They found no widespread willingness to cut service in return for lower bill options.

The CCG felt that vulnerable customers had been difficult to reach and were possibly under-represented in the engagement exercise. In response, we set up events specifically focused on these groups in five locations. In addition a specific event was held in October 2013 to discuss our plans with groups representing vulnerable customers.

4. Customer Engagement and Research

In section 5 we explain how our plan was changed in response to customers' views and input from stakeholders.

October survey results

We wanted to make sure that the changes we made correctly reflected the view of our customers and so in October 2013 we carried out a further round of independent customer research. This was carried out by Accent Research and involved a statistically representative sample of 500 household and 200 non-household customers from across our region. This research, carried out at a time of considerable negative coverage of utility bills in the media, found that 94% of customers considered our changed plan to be acceptable, with 84% of household customers and 88% of non-household customers considering that it represents improved value for money as compared to our Consultation Plan.

5. How Our Plan Changed to Reflect Customer and Stakeholder Engagement

Your Company. Your Say

When we launched the consultation on our plan we explained to customers that there would be an increase in the average bill of £13 per household in 2015-16, to reflect the additional costs we are incurring as a result of the transfer of private sewers and pumping stations in 2011, costs that were not taken into account at the 2009 price review. We have had the option of increasing bills in this period in line with the “interim determination” provisions of our licence, but we have elected to defer the increase until the beginning of the next price control period.

Thereafter, we explained, notwithstanding the significant improvements that we proposed to implement during the course of the AMP6 period, we believed that we would not need to increase bills above inflation across the remaining 4 years to 2019/20.

What customers and other stakeholders said

As set out in Section 4, there was general endorsement of the balance between investment and customer bills that we put forward, and broad acceptance of the proposal to maintain bills in real terms over the AMP6 period once the initial £13 increase had taken place. A significant minority of respondents, however, expressed a desire to see some real reduction in bills. A similar minority were in favour of more investment.

We also engaged widely with our key stakeholders, including CCWater, NRW and the Drinking Water Inspectorate (DWI). These organisations were also represented on the CCG. Our plans were also shared with the Welsh Government-led PR14 Forum.

How the Customer Challenge Group challenged us

The main areas of challenge as we understood them were as follows:

- was the £13 per household cost increase associated with private sewers justified and was it acceptable to customers?
- a clear view that below-inflation bill increases would be preferable;
- could we be more ambitious in terms of cost efficiency and financial efficiency, i.e. a lower cost of capital?
- could we do more to help disadvantaged customers by targeting a higher number of customers to benefit from our “customer assistance tariffs”? and
- the plan needs to address the “priority issues” identified by customers including low pressure, sewer flooding, odour, leakage and customer education.

Our final proposals

We have responded to these challenges and representations in a number of ways:

- without diminishing the overall scope of the plan, we have worked hard to find additional ways of delivering outcomes more efficiently, both in the wholesale and the retail segments, and built these into our projections (see section 6);
- we made changes to the “Measures of Success” that we will use to monitor our performance in delivering the eight overall long term “Outcomes”. These include the addition of new measures such as leakage and sewer flooding and the removal of “supporting economic development” as a measure for the asset stewardship outcome. In particular, we have now given additional prominence to the importance of customer “trust” in our company and what we do, and

5. How Our Plan Changed to Reflect Customer and Stakeholder Engagement

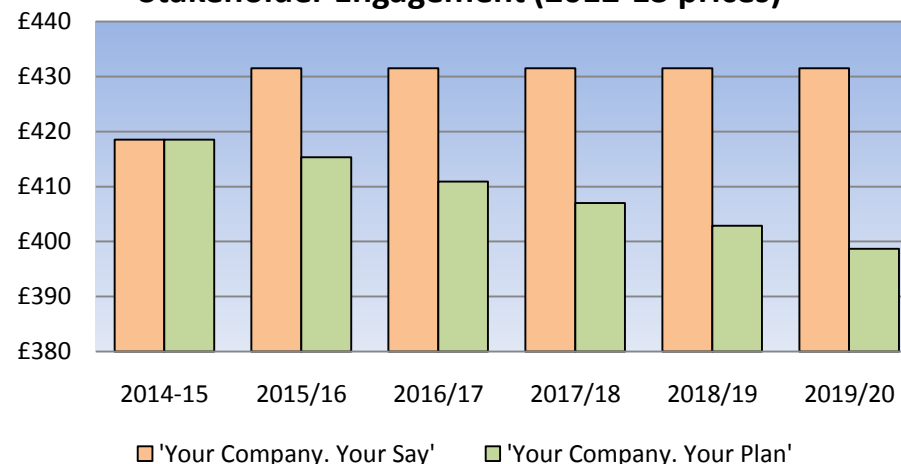
have included a dedicated Measure of Success accordingly. Details are set out in section 9;

- we made adjustments to our detailed investment plans and service targets, to reflect updated information on customers' "willingness-to-pay" for particular service improvements, for example increasing the proposed investment to reduce the risk of sewer flooding;
- we have further optimised our plans for financing the business, especially as regards "pay-as-you-go" (PAYG) ratios and the RCV run-off rate, and have been able to reduce the return on capital. However, whilst we considered the CCG's suggestion that we should consider cutting our credit ratings to reduce bills further, we have not done so. We do not believe this would be in the long-term interests of our customers (see section 7); and
- although we have some 52,000 customers registered on one of our "customer assistance tariffs" there are some 190,000 customers that have to pay over 5% of their income on water. Our plan forecasts an increase in the number of customers benefiting from these tariffs to 100,000 by 2020. We have considered the CCG's suggestion that that this number should be increased further. We have not done so because we believe that delivering the proposed increase is already a very challenging ambition.

We have also had to take into account a number of additional upward cost pressures that were not known at the time that we consulted on the plan in the early summer of 2013, such as the latest forecasts for future power costs. Notwithstanding these, the net effect of the changes since June has been favourable. As a result, in our final business plan proposals:

- customers will see no increase in bills in 2015-16 in relation to the cost of the private sewer transfer. This has been completely offset by the extra efficiencies we have factored into our projects; and
- we are now targeting increases in average bills 1% below inflation in each year of the AMP6 period.

Average Household Bill Pre- and Post Stakeholder Engagement (2012-13 prices)



Over the course of the ten years spanning AMP5 and AMP6, this will deliver a total reduction of 12.5% in real terms, from £456 in 2009/10 to £419 in 2014/15 and £399 in 2019/20 (all in 2012-13 prices).

Welsh Government

We have also taken account of the draft Social and Environmental Guidance issued by the Welsh Government and the position it has taken

5. How Our Plan Changed to Reflect Customer and Stakeholder Engagement

on a variety of important water policy issues. Although the next version of the Strategic Water Position will not be published until January 2014, we have engaged with the Welsh Government whilst they have been formulating their strategy and believe that our plan is consistent with the core principles underpinning the policy in so far as they relate to safe drinking water, environmental quality and providing a high quality service at an affordable price.

6. Costs – Efficiency, Upward Pressures, and Cost Recovery

Delivering best value water and wastewater services means spending as efficiently as possible, managing upward cost pressures, and recovering costs in the way that best balances the interests of today's customers and future generations.

Our Cost Challenge

One of our greatest challenges has been the management of costs in a region characterised by geographical and topographical features that make it very difficult to match the average levels of cost across the rest of the industry. This is illustrated by a simple comparison of assets per customer with our peers.

The asset configuration and networks required to serve our geographically dispersed customer base mean that we operate significantly more assets per customer than the other WASCs and these assets tend to be smaller. This leads to higher relative costs as we are unable to achieve the economies of scale available to other companies with the largest conurbations. Comparative productivity is also reduced due to the extra travelling and “call out” costs required to operate and maintain our rural assets.

We are participating in a European Benchmarking Cooperation exercise involving the exchange and evaluation of key data. This involves some 40 utility companies from over 18 countries.

The initial draft reports for 2013 show useful headline indicators and suggest that our overall unit costs are below average. This will be a useful means of comparing both cost and other data so that we can look to

continuously improve and compare performance data against the best companies in the world.

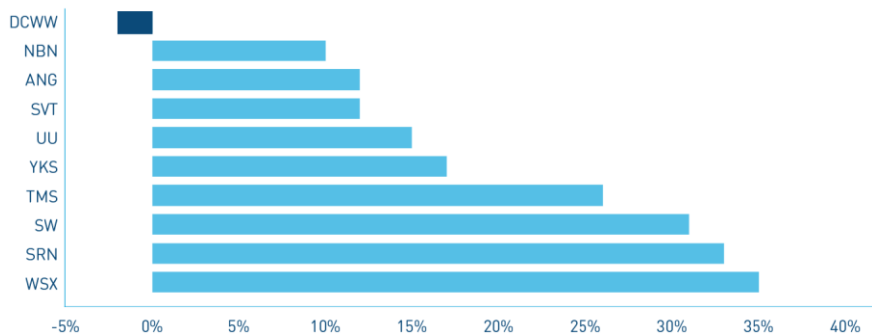
Customers per asset						
	Water mains	Sewers	Water treatment works	Sewage treatment works	Service reservoirs	Intermittent discharges
	Cust / km	Cust / km	Cust (k) / works	Cust (k) / works	Cust (k) / SRV	Cust (k) / ID
ANG	50	58	14	2.3	4.9	1.0
DCWW	48	72	19	1.6	2.4	0.4
NBN	73	72	32	2.8	5.4	0.5
SVT	72	68	24	3.7	5.0	0.9
SW	51	76	25	1.1	2.4	0.4
SRN	74	84	12	5.0	4.6	1.2
TMS	113	80	41	15.7	9.4	2.6
UU	72	68	36	5.3	7.8	1.0
WSX	49	66	7	2.9	1.9	0.8
YKS	67	69	30	3.3	5.1	0.8
AVG	69	71	23	3.6	4.9	0.9
DCWW rank	10	4	7	9	9	10

6. Costs – Efficiency, Upward Pressures, and Cost Recovery

Since the acquisition of Welsh Water by Glas Cymru in 2001 we have made considerable strides in offsetting these inherent factors by delivering efficiency improvements at an unrivalled rate. Welsh Water is the only WASC, for example, that has reduced its operating expenditure in real terms over that period.

Operating costs 2001-2013

% change in opex by company since 2001



At PR09, Ofwat’s efficiency assessment led to a £39 million opex efficiency target (at 2007/08 prices) for AMP5 and we have worked hard to achieve this. We have in-sourced the key operational contracts which had been let to United Utilities Operations and Kelda Water Services during AMP4 and have pursued a number of other in-sourcing initiatives, for example bringing back in house our income and billing activities which had been outsourced to Veolia Water Services and also our laboratories and sampling services provided by Severn Trent. Our investment in ‘green

energy’ and processes including anaerobic advanced digestion have helped reduce our power consumption and generate income from returning electricity to the grid. As a consequence of this focus on cost efficiency, between 2009 and 2013 we have resumed our comparative cost reduction performance relative to the rest of the industry and are on track to meet Ofwat’s efficiency target.

Driving further efficiencies in AMP6

Looking ahead, we continue to strive to identify new ways of planning, procuring, operating and delivering that can provide better overall value for money for our customers. Our priority is to focus on what further efficiencies we can achieve, and how we go about securing them. For the purposes of this Business Plan, therefore, we have carried out a root-and-branch review of our cost structures with a view to identifying new initiatives.

For capital delivery, our procurement strategy is already well-advanced. We began by reviewing 11 different contract models and testing them against our objectives, lessons learnt from the past, our competence as a client and feedback from the market. Our proposed model is to create an Alliance that brings together the skills of partners and Welsh Water in order to drive value in the planning and pre-construction phase by co-locating Welsh Water, contractor and consultant resource in a Solutions Team to work collaboratively on innovative solutions, work packaging and optimising the supply chain, whilst maintaining partner-specific accountability for all aspects of construction. The Alliance will be required to deliver savings against our core in-house benchmarking resource, our “unit cost database” (UCD) of around 2% per annum,

6. Costs – Efficiency, Upward Pressures, and Cost Recovery

cumulative, over the course of the AMP6 period. In total we are targeting savings of £98m over the five years to 2020, compared with our current unit costs. This is consistent with an independent external review of our capital efficiency that was carried out by Franklin and Andrews which identified scope for efficiency in the delivery of the capital programme.

It is our aspiration, however, to do even better. Our commercial model includes pain/gain and KPI arrangements that will ensure that partners are highly incentivised to outperform the UCD cost curves, which themselves will have been ratcheted down following the tendering process, as well as incentives to work with us to identify the least (totex) cost solutions in the first place. In all, we have designed the Alliance model for AMP6 using best practice techniques and features, all oriented to delivering the lowest cost capital programme achievable. In this way we are confident of securing industry-leading performance by 2020.

For our operations, the identification of potential efficiencies remains a core “business-as-usual” strategic activity. We have already identified a series of costed initiatives that will deliver savings in the wholesale business of nearly £26m per annum by 2020, including changes to the procurement of bought-in services, insourcing where cost effective, and further extensions to mobile working. In our retail business we have identified efficiencies of £12m per annum that will be achieved in full by the middle of the quinquennium. On top of these we are projecting net efficiencies that will reduce operating expenditure by nearly £8m per annum by 2020 as a result of capital projects, notably in energy, IT, sludge, and automation/control of more of our assets. In total, we are targeting an 18% reduction in “controllable” operating costs (i.e.

excluding business rates and regulators’ fees) by 2020, as compared to 2012/13.

These targeted efficiency savings will come from a whole host of business initiatives, including:

- smart networks and increased remote automation, both to improve further our pollution and sewerage flooding performance and to optimise our productivity going forward. We are to invest significantly in further asset performance monitoring and network modelling, to gain an improved understanding of performance in real time and proactively predicting and preventing pollution incidents or other service failures;
- new operating practices. We will continue to improve our operations practices both in terms of efficiency and effectiveness, through the introduction of LEAN operating principles which aim to maximise the efficient use of our assets. This will be delivered through a project which aims to significantly reduce our operating costs by retaining only those practices that add value and are core to good operations and asset management;
- investment in energy efficiency and renewable energy generation. Our investment proposals for AMP6 follow the successful investments in renewable energy made in AMP5, which have contributed to driving our energy and carbon costs down. We will be investing in further advanced, anaerobic digestion schemes at WWTWs in North Wales, together with additional wind, hydro and solar PV renewable generation schemes;
- reduction in bad debts through improved customer information. One of the challenges we have in collecting from customers is knowing

6. Costs – Efficiency, Upward Pressures, and Cost Recovery

who we should bill when customers aren't necessarily obliged to provide us with this information. This issue is more acute in the case of tenanted properties for example. With the investment we have already made in our core collections and billing systems in AMP5, we will be able to build the interfaces that will allow us to purchase from and share data with external organisations. We also plan on making greater use of Credit Reference Agencies, more data modelling to determine customer propensity to pay, undertaking a data refresh exercise annually and using desktop trace facilities;

- innovation and best practice, driven by benchmarking and partnership working with certain leading European water companies. We have commenced benchmarking with a range of other companies across Europe, to assist us in understanding where we should and can improve our performance most. We have also included within our Plan significant research and technology development funding to drive forward this agenda;
- ongoing competitive re-procurement and "right sourcing"; and
- environmental investigations. Our AMP6 proposals also include a range of environmental investigations to enable us to shape the agenda associated with the WFD and other emergent environmental regulatory drivers. Specifically, we will be undertaking a range of environmental investigations to try to ensure that where pollution is caused by a third party this is identified and the cost of cleaning up are borne by the third party and not by our customers. We will also be undertaking such investigations to design and deliver softer engineering solutions both within AMP6 and in AMP7 in particular.

In total, compared with the base year of the price review of 2012/13, our projections reflect a cumulative efficiency improvement of some £273m over the five year period.

Cost pressures

Like all companies, we also face upward pressures on our costs, and therefore bills. Over the course of the AMP6 period operating cost pressures will add £21m to totex compared with the 2012-13 baseline, chiefly comprising:

- higher power costs. Although future power prices are uncertain, there is general agreement that they will rise in real terms. We have used the Ofwat forecast, rather than the (higher) Bergen forecast commissioned by Water UK; and
- increasing costs associated with the private sewer transfer, including the adoption and rehabilitation of pumping stations.

The balance is accounted for by the upward pressures on operating expenditure associated with quality improvements, e.g. phosphate removal at sewage treatment works.

6. Costs – Efficiency, Upward Pressures and Cost Recovery

Overall position

The position on overall totex for AMP6 is as follows.

	15/16 £m	16/17 £m	17/18 £m	18/19 £m	19/20 £m
Totex					
2012/13 base (12/13 prices)	621	621	621	621	621
Pressures	5	16	18	20	21
Efficiency	(30)	(42)	(54)	(69)	(78)
	596	595	585	572	564

Cost recovery - “pay as you go” and RCV “run-off rate”

Having determined the overall level of expenditure in AMP6 we gave very careful consideration to:

- the choice of “pay as you go” (PAYG) rate – the proportion of totex to be recovered from customers in the year in which it is incurred; and
- the selection of an RCV “run-off rate” – effectively the depreciation of the inherited RCV recovered from customers in any particular year.

Both issues were considered together within the overall context of the trade-offs between the affordability of bills today, the financeability of the business, and bills in the longer term.

As set out in section 7, at least one of the ratings agencies has indicated that it will base its ratings assessment on fundamentals, and will disregard any deviation in PAYG rates from the “default” position of recovering operating expenditures from customers (but no more). Consequently, there is no financeability gain to be achieved by adjusting

PAYG rates. We have, accordingly, set our PAYG rate over the five year period at the level necessary to cover operating expenditures.

However, we have varied our PAYG rates slightly between one year and another in order to contribute to a smooth bill profile.

	15/16	16/17	17/18	18/19	19/20	Avg
Opex/Totex	42%	42%	43%	43%	43%	43%
PAYG rate selected	47%	45%	44%	43%	41%	44%

Similarly, we have given careful thought to our choice of RCV run-off rate, which implies recovery of the RCV over 22 years. We believe it strikes a fair balance between the interests of today’s customers and those that will have to finance the RCV in the future.

7. Financial Plan and Financeability

Required Rate of Return - Overview

Our primary financing objective is to ensure that returns are sufficient (but no more) to enable us to secure the efficient financing of our functions, thereby achieving an optimal balance between financeability and affordability.

Welsh Water is entirely financed by debt. The credit quality of our debt is therefore of paramount importance to the company and its customers. Improvements in our credit ratings since the acquisition of Welsh Water in 2001 have helped to secure significant benefits for our customers. Our bonds are now rated A by Standard & Poor's (S&P) and Fitch Ratings (Fitch), and A3 by Moody's Investor's Services (Moody's), some of the highest ratings in the sector.

The centrepiece of our financing strategy is the maintenance of these credit ratings because this is consistent with achieving the lowest possible sustainable bills for customers over the long term. We have therefore approached the issue of the cost of capital by posing the question: "what is the minimum required rate of return consistent with that strategy?" This is addressed below.

Why maintaining credit rating is in customers' long term interests

The maintenance of our existing strong credit rating is important to the long term interests of our customers.

In preparation for this price review, we gave careful consideration to the issue of credit ratings during AMP6, and commissioned some detailed work from Frontier Economics on this subject. On the face of it, if the

company were to accept a lower credit rating in AMP6 this would enable it to target lower interest cover ratios, and therefore a lower rate of return on RCV, all else equal. This would be consistent with lower bills in the first instance, but would give rise to higher bills over the longer term. This is because a lower credit rating would increase both costs and risk going forwards, in a number of ways:

- a lower credit rating increases the cost of issuing new debt, all else being equal. As set out in the Frontier Report, the cost of BBB-category debt can be 0.5-1.0% higher than A-category debt. This is equivalent, over the long term, to a higher rate of return on RCV of 0.3-0.5% (assuming 60% gearing), which translates into an average household bill that is higher by £12-£20 per annum. During the course of the AMP6 period we will be re-financing some £220m of existing debt, and raising at least as much again of new debt. Higher interest costs during AMP6 would therefore be reflected in worse credit metrics at the start of PR19 leading to tighter financeability constraints going forwards;
- as well as raising the cost of the debt that is issued, a lower credit rating also reduces the flexibility of a financing strategy, in particular by restricting the range of sources available. Unlike other water companies, we do not have the option of raising more equity in times of capital market stress, and the comparatively limited appetite for BBB-rated utility debt will be further constrained when the European Solvency II Directive, which will impose new requirements on insurers' holdings of such debt, comes into effect. The lower certainty of being able to raise finance when we need to do so would

7. Financial Plan and Financeability

increase costs, because we would need to hold additional liquidity. It could also create risks for customers by raising the possibility of delays to necessary investment;

- a credit downgrade for Welsh Water could fundamentally change market sentiment towards us, in particular because it could be taken as a signal that further downgrades could be possible in the future. The experience of 1998-2001 shows that once the perceptions of the providers of debt turn negative and are characterised by uncertainty, it is not a matter of companies having to pay higher interest rates on new debt: rather, there is a risk that the providers withdraw completely and it takes time and effort to coax them back; and
- as Ofwat is aware, under condition F6A of our licence, we are required to use all reasonable endeavours to ensure that we maintain an investment grade credit rating. Whilst this does not specifically require us to maintain a credit rating for our debt in the A-category, in practice we consider that a downgrade in our ratings to the BBB category would leave the company with insufficient “compliance headroom”, because an external shock could put the company at risk of ratings action that rendered us non-compliant.

From target credit ratings to the cost of capital

As noted above, since Welsh Water is financed entirely by debt, we have adopted a different approach to equity financed companies in assessing both the cost of capital and financeability constraints.

This approach can be summarised as follows:

- (i) assess the financial ratios required by the company to maintain its “A” credit rating;
- (ii) calculate the cost of capital required to maintain the ratios at this level; and
- (iii) assess the cost of capital for reasonableness¹

Given this methodology, there has been no need for us to perform a separate “financeability assessment”, because we have arrived at the lowest cost of capital consistent with the financeability constraints.

Target ratios

We have identified the following financial metrics as critical for the company to maintain its A grade credit rating:

Moody’s/Fitch:

- regulatory gearing (Net Debt/Regulatory Capital Value) of under 65%.²
- adjusted cash interest cover ratio (Funds from operations less capital charges³)/Net cash interest) of 1.6x to 1.8x.

Both the above targets are Moody’s ratio guidance for an “A3” rated company. Ofwat have also proposed to use these ratio definitions.

¹ In line with Ofwat’s final methodology (page 141) we agree that financeability should be assessed on a whole company level. We do not believe that a different cost of capital for the water and sewerage businesses can be justified.

² The definitions of regulatory gearing and adjusted cash interest cover are as set out in Ofwat’s final methodology paper dated July 2013, at page 144.

³ Moody’s have yet to confirm that capital charges can be represented by RCV depreciation.

7. Financial Plan and Financeability

In addition to the Moody's and Fitch adjusted interest cover ratio, S&P assess cash coverage by reference to their "Adjusted Fund from Operations/Net Debt" ratio, where Adjusted Funds from Operations is defined as: Earnings before tax and depreciation less Infrastructure renewals expenditure less cash interest less indexation⁴.

The ratio does not appear in Ofwat's final methodology proposals but is a critical S&P ratio in assessing the financial strength of a water company. Given the importance of this ratio to the S&P analysis of regulatory utilities we also recommend that Ofwat consider including this ratio analysis in their assessment of a company with a notional capital structure.

S&P have indicated that the ratio needs to be around 8% to maintain an "A" Grade, but other factors such as net cashflow and liquidity also play an important role in all three ratings agencies' assessments.

Frontier Economics have also confirmed, based on their review of rating methodologies, that the above ratios are appropriate for a company to maintain an "A" grade rating, provided that other rating factors (such as the regulatory environment or the rating agency's assessment of the company's operational and financial efficiency) remain unchanged.

Financial projections

⁴ For a detailed definition refer to S&P's "Corporate Methodology", "Key Credit Factors for the Global Regulated Utility Industry" and "Corporate Methodology: Ratios and Adjustments", all dated 19 November 2013.

Our modelling shows that we can just achieve the target ratios by using a (vanilla) cost of capital of 4.5%. This gives the following financial projections (in out-turn prices):

	14/15	15/16	16/17	17/18	18/19	19/20
	£m	£m	£m	£m	£m	£m
Revenues	737	770	791	815	838	858
Expenditure incurred	(617)	(642)	(660)	(672)	(678)	(689)
Cash interest	(129)	(136)	(145)	(149)	(151)	(152)
Operating cash flow	(9)	(8)	(14)	(6)	9	17
Net debt	2,864	2,970	3,080	3,183	3,273	3,352
RCV	4,802	5,063	5,343	5,638	5,927	6,217
Regulatory gearing	60%	59%	58%	56%	55%	54%
Adjusted interest cover ratio	1.6X	1.8 X	1.7 X	1.7 X	1.7 X	1.6 X

The company's regulatory gearing is below 65% in all years of the plan and, on balance, the suite of other credit metrics could reasonably be expected to maintain current rating levels.

We have given careful consideration to the question of whether we can meet the financeability constraints with a lower cost of capital by changing our assumptions on PAYG ratios and/or RCV run-off rates. Although the methodologies adopted by the rating agencies are quite different in some respects, none at present enable "financeability headroom" to be generated by adjusting these levers in this way, and

7. Financial Plan and Financeability

Moody's has explicitly stated that it will discount any such "*acceleration*" of cash for the purposes of its credit assessments.

The Industry Cost of Capital

By way of a "cross-check", we have also carried out our own investigations into what would be an appropriate industry "cost of capital" for PR14. To this end, we commissioned Frontier Economics to carry out an assessment of available evidence and to prepare an independent estimate.

In summary, Frontier's analysis produces a range for the weighted average cost of capital for the industry of 4.2-4.8%. Our own required rate of return of 4.5% falls squarely at the mid-point of this range, and is therefore consistent.

Summary

What matters to us is that bills to customers over the long term are as low as possible. By enabling us to maintain our current credit ratings, a 4.5% cost of capital puts us in a position to continue to access low cost borrowing going forward and to minimise customer bills over the long term.

8. Returning Benefits to Customers

Overall position

Ofwat has critically observed that unexpected gains made by water companies have not been distributed equitably between the companies' shareholders and their customers.

Also, while all water companies are legitimately entitled to make profits which accumulate to form a distributable reserve (the "equity return"), where their distributable reserve has resulted in a greater than expected return of dividends to shareholders, customers can legitimately say that they have been disadvantaged.

Welsh Water's position

Welsh Water is a wholly owned subsidiary of Glas Cymru which was formed in 2000 with the sole purpose of acquiring and managing Welsh Water and delivering high quality water and wastewater services at least cost to its customers (present and future). Glas Cymru has no shareholders – it is capitalised solely from debt – no distributions are made to members and all "equity returns" made by Welsh Water (from whatever source) are made available by Glas Cymru for the benefit of customers. In the past this has taken a number of forms:

- the build-up of equity reserves, in order to reduce gearing in Welsh Water, thereby reducing risk and finance costs and providing the basis for lower bills in the future;
- accelerating the investments in capital projects to improve services to customers and the environment when the Board of Glas Cymru is convinced that there is a strong case to do so;
- paying "dividends" to customers in the form of bills lower than the maximum allowed by regulatory price controls;

- supporting customers who are economically disadvantaged by providing customer assistance tariffs; and
- meeting the costs of new legal obligations such as the transfer of private sewers and not seeking to recover those costs from customers.

Thus the structure of Glas Cymru provides a framework that ensures that when "equity returns" are accumulated, whether expectedly or not, *all gains go to customers*.

Between 2001 and 2015, the "gains" that have benefitted customers will amount to some £2.2 billion, made up of retained equity of £1.9 billion; "dividends" to customers of £152m; additional expenditures on service improvements of £87m; funding of customer assistance tariffs of some £22m; and meeting the £26m of operating costs of private sewers since the transfer to the company in October 2011.

9. Outcomes and Measures of Success – at a glance

Outcomes and measures of success - general

Our plans for AMP6 have been structured around the eight “Outcomes” that have driven the business since the publication of “Our Sustainable Future” in 2007, itself subject to extensive formal consultation at the time. For the purposes of this price review, we re-tested our core approach, first by applying the UKWIR framework contained within the UKWIR report entitled “Defining and incentivising outcomes and measures of success”, and subsequently through the extensive customer research and stakeholder engagement process summarised in sections 4 and 5 above, all in ongoing consultation with the CCG.

During the early stages of this review we identified between two and three “measures of success” as the indicators by which our progress in achieving each outcome could be gauged, and our performance incentivised. Inevitably there are trade-offs between the number of measures selected and the importance of not omitting dimensions of our performance that are of importance to customers. The initial proposed set of measures was developed internally following structured debate, and then subsequently modified as a result of customer research, stakeholder engagement, and challenge from the CCG and the Board.

For the avoidance of doubt, however, the company remains committed to the achievement of excellence in all aspects of service delivery, not just those that fall within the scope of the measures of success.

Measures of success - targets

For all aspects of service delivery performance, we face trade-offs between doing more, faster, and affordability and financeability

constraints. The final targets that we have chosen for each of our measures of success reflect:

- the aspirations and expectations of customers and the views of key stakeholders;
- customers’ willingness-to-pay ;
- new legal and regulatory obligations;
- our relative performance as against other companies in the sector, particularly the best performing companies; and
- historical performance and trends.

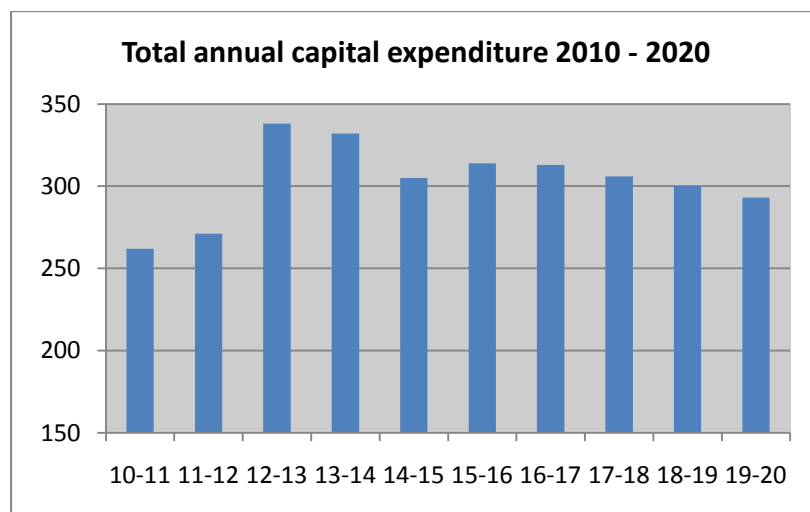
In addition, although we have engaged with customers and stakeholders primarily in relation to the 2015-20 period, we are also setting out our aspirations as to longer term (2040) targets that provide important context for what we are ultimately aiming to achieve.

In the remainder of this section we present, in summary, each of the measures of success, what the targets represent, and our plans for achieving them including estimated expenditures. It should be noted that our cost structures are characterised by extensive “joint” and “common” costs, which means that individual expenditure decisions may contribute to the achievement of more than one measure of success. In addition, some expenditures are incurred to meet obligations that do not fall directly within one or more measures of success, and accordingly they are assigned to the measure of success with which they are most closely aligned, albeit that they do not directly contribute to the achievement of the stated targets.

9. Outcomes and Measures of Success – at a glance

Investment plans

In total, we plan to invest £1,476 million over the AMP6 period, 2015-20, in order to achieve our proposed outcomes and our overall business objectives. This has been assessed as some £915 million to maintain the existing level of service to customers and the environment, some £197 million to meet current and known future statutory obligations and some £364 million to deliver service improvements of particular value to customers or to reduce costs in the future (resulting in lower bills to customers). The annual capital expenditure since 2010/11 and projections to 2019/20 are shown in the following table:



We have designed our AMP6 investment plan so that it will have a consistent profile of expenditure, rather than the “boom and bust” profile that has generally characterised water companies’ investment plans in the past. This “smoothed” profile will enable our supply chain to

resource and plan work more efficiently, delivering lower costs to our customers. We are also now planning six years in advance, so that we will seek to maintain this visibility of our forward investment programme right through the AMP6 period, allowing further cost benefits from improved batching of equipment procurement and the common design of schemes.

Each of these investment headings is considered in turn below.

Maintaining current service levels

There was overwhelming support from customers throughout our research and engagement activities that we must continue to invest in order to maintain existing service levels and environmental standards. Over the last 5 years, we have developed sophisticated asset management and planning processes, which have been independently accredited to the internationally recognised PAS55:2008 standard. These give us considerable confidence that the investment proposals are necessary and efficient to ensure the long-term serviceability of our asset network; further information is contained in particular in relation to Outcome F1 Asset Serviceability.

Meeting statutory requirements

Exhaustive work has been carried out with the quality regulators, the NRW and DWI, to ensure that all known and certain statutory requirements in respect of environmental protection and drinking water quality are covered by our proposed investment plan. For example, investment is required to address specific risks at water treatment works, identified under the Drinking Water Safety Plans process (see A1 Safety of drinking water) and to address existing flow compliance issues at specific wastewater treatment works (see B2 Treating used water). The Plan also

9. Outcomes and Measures of Success – at a glance

covers statutory obligations in respect of such matters as health and safety (see G1 Health and safety) and security and emergency measures (see F3 Asset resilience).

There are other significant, potential statutory requirements that may emerge during the period to 2020. These are not covered by our Plan; Section 11 Risks and Uncertainties explains how we intend to respond to these possible requirements.

Improving service and efficiency

Investment is included in our Plan to deliver improvements to the services identified as of the highest value to customers during our extensive customer research and engagement process. Customers' "willingness-to-pay" for service improvements has been assessed together with the marginal cost of achieving those improvements, in order to derive an optimal plan for customers. This element of investment in the plan has been changed since the Consultation Plan, reflecting updated information on customers' preferences. (Such customer driven investment is identified across several of the following Outcomes, for example Outcome D2 "At risk" customer service).

There is also significant investment in the Plan to enable future operating efficiency savings, resulting ultimately in lower bills to customers; an example is investment in more renewable energy generation at our sites. (Outcome H1 Operating efficiency is particularly relevant here.)

9. Outcomes and Measures of Success – at a glance

Outcomes A - H

A. Customers will have complete confidence that their drinking water is safe, reliable and tastes good

1. Safety of Drinking Water
2. Acceptability of Drinking Water
3. Reliability of Supply

B. We will safeguard a sustainable environment that we are proud to hand on to future generations

1. Abstraction of Water for Use
2. Treating Used Water
3. Preventing Pollutions

C. We will adapt our activities to deal with the potential effects of climate change, while reducing our own carbon footprint

1. Adapting to Climate Change
2. Reducing our Carbon footprint

D. Our customer service will be as good as the best utility companies in the UK

1. Service Incentive Mechanism (SIM)
2. “At Risk” Customer Services
3. Sewer Flooding
4. Non-household Customer Satisfaction
5. Earning the Trust of Customers

E. Our prices will reflect good value for money for our customers, with an effective range of help for those struggling to pay

1. Affordable Bills
2. Help for Disadvantaged Customers

F. We will maintain our assets for future generations, at the most efficient cost

1. Asset Serviceability
2. Leakage
3. Asset Resilience

G. We will develop a team of people who will provide a great service to our customers

1. Health and Safety
2. Competence for Role

H. We will continue to be an efficient business with a strong credit quality

1. Operating Efficiency
2. Financing Efficiency

9. Outcomes and Measures of Success – A1 Safety of Drinking Water

Delivering Safe Drinking Water

Our proposal is to reduce risk by improving our asset stock, so that customers can have complete confidence in their drinking water.

Background

We regularly report to the DWI the results of the 275,000 tests or so we undertake every year and these results are then published in table format as part of the Chief Inspector's Report. The published data lists the total number of tests on samples taken at our WTWs, Service Reservoirs (SRVs) or at customer taps and identifies how many test failures have occurred. This is one of our most important indicators and is closely monitored.

Our Objectives and Challenges

- ensure that the water we supply to our customers achieves 99.99% compliance with all required standards, an improvement from its current level of 99.98%;
- operate and maintain our WTWs and distribution networks as efficiently as possible with a view to providing high quality drinking water and protecting public health;
- provide improved treatment at 14 WTWs; and
- undertake improvements to our networks to address iron or discolouration and reduce the lead content of the water.

Current Performance, Customer Views and Rationale for 2020 Target

Currently we meet 99.98% of the required standards in all the tests undertaken with just 50 failed tests out of the total of 268,950 carried out last year.

Providing our customers with a safe supply of drinking water that looks and tastes good is the most important thing we do. It is of utmost importance that customers have confidence in the quality of our drinking water and that we comply with the relevant drinking water directives.

Qualitative research undertaken to test six outcomes in Our Sustainable Future document indicated that our customers rank this as their number one priority. Quantitative research to inform the acceptability of 'Your Company. Your Say' revealed that 68% of customers preferred to see improvements in drinking water services, that included drinking water quality and interruptions to supply, as opposed to 32% who favoured performance to be maintained at current levels.

Although there is some scope for marginal improvement in the already high level of performance, there are a number of factors that impact on this measure performance which are outside our control, e.g. the hygienic quality of taps and the condition of customer owned supply pipes. For example, in 2012, 36 of the 50 failures that occurred were in respect of samples taken from customer taps, of which 11 were attributed to customers' fittings and fixtures.

Through a mixture of planned investment and improved operational practices we aim to achieve 99.99% compliance by 2020. We believe that this would continue to place us amongst the best performing companies in the sector.

We will spend £239m over the course of AMP6 in order to achieve these targets. £211m will be spent on maintaining service and £28m on service improvements and meeting new legal obligations.

9. Outcomes and Measures of Success – A1 Safety of Drinking Water

Our Plan

In preparing our plan for 2015-20 we have:

- reviewed our water quality data and trends to identify potential risks;
- reviewed those contacts where customers have had cause to complain about aspects of their drinking water;
- worked with operational staff to understand the root cause of problems and to identify possible solutions;
- considered options to address risks that are cost beneficial, innovative and deliver wider benefits for the environment; and
- undertaken customer research which has highlighted the need to deliver catchment management solutions.

Our proposed expenditure of £239m will deliver a prioritised programme of activities to meet customer expectations that their drinking water is safe and of good quality. In particular we will:

- maintain, operate and continually review risk at the 63 WTWs which are operational and the 15 standby WTWs;
- continue to improve our operations practices both in terms of efficiency and effectiveness, through the introduction of LEAN operating principles which aim to maximise the efficient use of our assets thereby significantly reducing our operating costs;
- work with universities such as Exeter and Cranfield to evaluate and introduce new techniques or technology into the business. For example we are working with the Centre for Water Systems at Exeter University to examine how we can improve our water network management in order to improve customer service;

- address the risks to our treatment and supply systems, identified through our Drinking Water Safety Plans. We will undertake major capital maintenance schemes at 14 WTWs assessed to be “at risk of compliance failure” against regulatory standards. These include Bolton Hill, Glascoed, and Llywnon WTWs. Improvements at Bryn Cowlyd and Tynywaun WTWs are aimed at tackling known issues around deteriorating raw water quality and follow detailed investigations undertaken during this AMP period. This work will cost £106m in total;
- invest to manage the change in the lead standard. This will include additional treatment at 3 WTWs, namely Builth, Llysven, Pendine (costing £0.9m), lead pipe replacement (where appropriate) and an awareness programme aimed at educating customers;
- invest some £27m in our network systems to deal with the risk of iron and discolouration arising from the condition of our mains. This will include working in areas such as Hereford, Newport, Porthcawl, Cardiff, and Bridgend where the highest number of customer issues around iron levels occur; and
- manage our storage systems to protect against the ingress of contaminants. This includes activities such as repairing structural defects or renewal of membrane roofs at a minimum of 20 of our SRVs.

This plan has been developed with the support and challenge of the DWI to ensure we continue to meet the required standards.

Improving Acceptability of Water

Our proposal is to improve the appearance, taste and odour of customers’ drinking water.

9. Outcomes and Measures of Success – A2 Acceptability of Drinking Water

Background

Every year we report to the DWI the number of contacts that we receive in that calendar year regarding the appearance, taste or odour of drinking water.

The main source of contacts is discoloured water, and the largest contributor is the condition and operation of our network systems. Corrosion of old unlined iron water mains and internal pipes contributes significantly to the problem. In some situations, when large diameter trunk mains burst, the sediment disturbed by the massive change in flow rate can spread through large areas of our network causing rusty brown discolouration of the water.

Other contacts associated with the unacceptable taste and odour of the water supplied can arise from such agents as chlorine, leaching petrol (which can be absorbed through pipe walls) and algal blooms, which can give the drinking water a musty or earthy taste and odour.

Our Objectives and Challenges

- reduce customer contacts due to appearance, taste and odour from the current level of 3.2 per 1,000 to 2.9 per 1,000 population;
- replace 359km of iron distribution mains in order to reduce iron failures and discolouration contacts across our distribution network;
- invest at Cwmtillery WTW to provide enhanced treatment to reduce taste and odour issues;
- continue with our flushing, swabbing and maintenance strategy;
- seek to find innovative approaches to reducing discolouration incidents through our ongoing programme of research; and

- promote and develop catchment management techniques and innovative approaches to reduce algal blooms.

Current Performance, Customer Views and Rationale for the 2020 Target

We currently receive 3.2 contacts for every 1,000 people served. Although there has been a steady improvement in performance over the last few years, whilst we were engaged in a major programme of replacement of unlined iron mains, our performance has now “plateaued” and we have reached a point where we need to invest further. Through a balanced programme of investment and innovative operational practices, we believe that we can achieve a 10% improvement in performance, which is a sensible step towards our longer term aspiration to resolve discoloration issues.

Evidence taken from our willingness-to-pay customer research has indicated that customers value service improvements that reduce discolouration contacts as the second highest, in comparison to other water service measures.

We will spend £91m over the course of AMP6 in order to achieve these targets. £62m will be spent on maintaining service and £29m on service improvements and meeting new legal obligations.

9. Outcomes and Measures of Success – A2 Acceptability of Drinking Water

Our Plan

With a view to understanding what customers regard as important we have compared customer contacts over time for appearance, taste and odour, which make the biggest contribution to the acceptability of water.

The majority of our WTWs sourced by rivers and impounding reservoirs already have treatment in place to address taste and odour issues through the use of dedicated removal processes where carbon is used in the filtration process. Where treatment is not available we have looked at customer contacts and the incidence of algal blooms to assess the level of risk. This review has showed that we have a WTW (Cwmtillery) where customers fed from these works may experience taste and odour problems.

A key element of the overall strategy of reducing the number of “discolouration” incidents which lead to contacts is an “iron compliance programme” of targeted investment. At the end of the current investment programme in 2015, we will still have some 6,500km of unlined iron mains in our distribution system.

A comprehensive survey of all water quality zones has identified those mains which are most at risk and looked at past sample failures and discolouration rates to identify hot-spots. There are a variety of ways of addressing the problem, ranging from operational solutions, such as flushing and swabbing, to the replacement of corroded iron mains. Some of these activities are already underway especially in those areas of the network which pose the highest risk.

Old cast iron water mains can be relined to “cover over” corrosion and reduce the deposition of rusty iron sediment, but the benefit will only last for about ten years. The pre-cleaning and abrasion prior to relining can also damage the pipes and cause leakage and lead to other structural weakness. For this reason we do not consider this to be an effective long-term solution.

Our preferred option is the replacement of corroded cast iron mains with pipes made from new materials manufactured to improved standards and which are forecast to last longer. Replacement of pipes, including the associated valves and other equipment, is the most expensive of these options and can be disruptive. We are also assessing whether we can use new technologies and methods such as pipe bursting, slip lining and swage lining to minimise costs and disruption to the communities affected.

We believe that this analysis has helped us produce a carefully balanced plan of targeted investment, which coupled with innovative practices will deliver the optimal results.

During 2015-2020 we will continue to target known iron hotspots, i.e. those areas that have the highest levels of iron failures and discolouration of water and those zones where there are taste and odour issues.

We are prioritising investment at Cwmtillery WTW, where we propose spending some £10m. The zone supplied by this WTW experiences one of the highest rates of taste and odour contacts. Enhancements to the treatment process including the addition of carbon will help reduce these contacts by up to 40%.

9. Outcomes and Measures of Success – A2 Acceptability of Drinking Water

We are also investing in catchment management through the detailed monitoring and modelling of our sources and the factors that determine water quality. Certain weather conditions accelerate the growth of algae, which is the most common cause of taste and odour contacts. By understanding how activities within the catchment can influence water quality, we can work with landowners and others to address the risk at source rather than through expensive treatment processes.

As part of our distribution mains renewal programme we will replace approximately 159km of unlined iron mains and this will contribute to a reduction of:

- around 15% in our reported iron failure rate;
- approximately 10% in our customer contacts relating to discolouration;
- leakage rates;
- pipe burst incidence; and
- the number of customers experiencing low pressure water supply.

High priority zones for investment include Hereford, Holywell/Mold, Newport, Bridgend/Porthcawl and Cardiff.

Along with this analysis, we will undertake deterioration and service impact modelling to assess how service will change over time. This will allow further assessment of the activity required to reach the targeted level of service.

9. Outcomes and Measures of Success – A3 Reliability of Supply

Reliability of Supply

Our proposal is to maintain a reliable water supply to our customers.

Background

Interruptions to supply are a measure of how reliable our service to customers is. We record all interruptions to supply greater than 3 hours, and the total number of minutes lost is then averaged across the total number of customers supplied to give us the average minutes lost per customer. This includes interruptions to supply which are planned, unplanned or caused by third parties.

Our Objectives and Challenges

- improve the way we operate and maintain our network to reduce the occasions when customers' supplies are cut off;
- undertake approximately 500km of distribution mains renewal, and replace or protect 66 km of trunk mains;
- operate and maintain our 570 SRVs, 7 water towers and 728 water pumping stations as efficiently as possible; and
- focus on innovation with the adoption of techniques such as pipe freezing to reduce job times and ensure that interruptions are avoided or the length of interruptions are reduced.

Current performance, Customer Views and Rationale for the 2020 Target

Historically, 60% of supply interruptions have been due to unplanned events such as mains bursts or asset failures, and 40% have been due to planned works on our network.

The average number of minutes lost per customer in 2012/13 was 53 minutes but this result was affected by non-compliance with company operating and reporting procedures in one region of the company and a high error rate in the implementation of our compliance processes elsewhere in the supply area. Our aim is to reduce the average length of time our customers are without water by 10% as compared to the level achieved in 2014/15.

In response to our customer research it is clear from the outputs of the quantitative willingness-to-pay survey that our customers regard the reduction in the number of and the length of interruptions in supply as their highest priority water service indicator.

We will spend £268m over the course of AMP6 in order to achieve these targets. £235m will be spent on maintaining service and £33m on service improvements and meeting new legal obligations.

Our Plan

The modelling of the risks on our distribution mains has enabled our planned renewal activity to be focused on the mains most at risk of failing and causing widespread interruptions.

We also experience interruptions due to failures of water pumping stations and problems at SRVs. We constantly review the risks at these assets and are prioritising investment through our Drinking Water Safety Plans.

We have also reviewed our operational processes and are identifying ways in which the length of supply interruptions can be reduced and the number of planned interruptions can be minimised.

9. Outcomes and Measures of Success – A3 Reliability of Supply

We will:

- where possible, focus on re zoning whilst remedial work is being carried out and we will also install bypasses to ensure that customers remain on supply;
- renew approximately 622km of distribution mains in order to maintain our current burst rate. Through improved targeting of “hot spots”, we will ensure that work on those mains most at risk is prioritised;
- invest some £33m in replacing and protecting our most strategic trunk mains and crossings many of which are difficult to access, e.g. buried at considerable depth, crossing under rivers, motorways and railways, passing through tunnels or attached to bridges. Others are very old and comprised of materials which are now obsolete. These risks have been factored into our plans and investment is targeted at replacing the mains that have a history of failure or where there is a high risk that failure will cause major interruptions to customers’ supplies;
- implement large schemes on a number of critical systems, including the Bwlch and Dee Tunnels and the higher risk sections of the Taff trunk mains, where we will be replacing some 66km of mains at a cost of around £28m. We will also be targeting maintenance and monitoring vulnerable sections, including those supported by pipe bridges or crossing rivers such as the main at Felindre (where we propose spending £1m); and
- protect steel mains (thereby prolonging the life of these assets) by installing Cathodic Protection to some 146km of main at a cost of £3m.

We have some 689 water pumping stations (WPSs) and in addition to carrying out essential maintenance of the WPSs (at a cost of some £21m) we propose reviewing the particular operating regimes and will also:

- install soft start and automatic re-start pumps to reduce the negative effects on our mains of high and low pressure surges caused by the operation of our existing stop/start pumps; and
- provide standby power supplies and make arrangements for their deployment and connection to maintain the resilience of our assets.

We will also be investing some £17m on maintenance at around 218 of our 570 SRVs. The investment and work proposed will be targeted at repairing known structural defects (especially where there is a risk of ingress), replacing existing valves with automatic control facilities (to improve reservoir filling control) and abandoning service reservoirs where we think that this is the best solution (and the network can be re-configured). By exercising better control over reservoir filling rates we will improve water turnover and reduce occurrences of water stagnation, whilst helping to minimise pressure surges on our mains.

9. Outcomes and Measures of Success – B1 Abstraction of Water for Use

Abstraction of Water for Use

Our proposal is to manage our abstraction of water from the environment effectively.

Background

Water is a valuable resource and we must therefore make sure that it is used effectively to meet the needs of customers whilst minimising the impact our activities (and in particular what we abstract from rivers and other sources) has on the natural environment.

NRW manages this through a permitting system (measuring our performance against such key parameters as daily and annual abstraction) and we have some 160 permits which regulate and control the volumes of water we are able to abstract both generally and under certain conditions. We abstract around 800 million litres of water per day from the environment, with this increasing in the summer by around 10-15%. Compliance with the permits is something that we monitor closely.

Our Objectives and Challenges

- continue to maintain a 100% compliance rate with our abstraction permits, while maintaining the security of supply to our customers;
- operate and maintain our 91 impounding reservoirs, 62 boreholes, 28 river intakes, 19 standby sources, and 10 springs as efficiently as possible;
- improve supplies in five zones to ensure security of supply, deal with a changing population and allow for the impact of climate change; and

- continue to seek opportunities presented by market reform, exploring water trades that would result in net benefits to customers in the form of lower bills.

Current Performance, Customer Views and Rationale for 2020 target

Our current performance is 100% compliance with all the conditions of our abstraction permits. We intend to continue to meet this high level of performance.

Qualitative water resources research found that our customers expect Welsh Water to meet our statutory obligation with respect to abstraction licences, reinforced by customer views from “Your Company. Your Say”

We will spend £175m over the course of AMP6 in order to maintain 100% compliance. The whole sum will be spent on maintaining service.

Our Plan

We undertake long term planning through the Water Resources Management Planning Process. This aims to ensure we can continue to supply water to our customers into the future as needs change. Changes could include population growth, business demand and the impact of tourism, as well as changes to the volumes we are permitted to abstract or conditions applied to abstraction permits.

The changes we need to deal with between now and 2020 mean that we will have to undertake additional work to ensure we can continue to supply water to our customers. We have taken account of two issues

9. Outcomes and Measures of Success – B1 Abstraction of Water for Use

which reduce the amount of water we have available to supply our customers. These are:

1. The “Review of Consents” exercise to be undertaken by NRW in light of the European Habitats Directive; and
2. An updated assessment of the possible impact of climate change on the water environment in Wales.

In addition, the implementation of the WFD requires us to review our operations and, in particular, how we abstract water to minimise the impact on the environment. This is done through a legal framework including licence variations, pumping regimes and screening, as well as understanding the implications on the environment that can arise during drought conditions.

The Flood and Water Management Act 2010 has also meant that there was an increased focus on the storage of water and the way in which it is managed, (e.g. to reduce the health and safety risks associated with dam failures).

With an ever expanding population, an increasing amount of pressure is placed upon Wales’ natural resources.

The implications of these factors are all taken into consideration in planning investment requirements and we routinely undertake risk reviews to understand any issues with the operation of our current abstraction assets.

Our proposals include:

Operating and maintaining our abstraction equipment at boreholes and monitoring the quality of the raw water

This involves CCTV surveys of boreholes to assess their resilience and effectiveness, but where necessary we also drill new boreholes so that water can continue to be abstracted at certain sites at different times of the year. To assess the risk and to ensure continuity of supply we are using models to forecast when this is likely to occur. From this exercise a number of new boreholes are required to supplement the current boreholes at Dunfield, Leintwardine and Pilleth, at a cost £1m.

Decommissioning

Some boreholes will be abandoned where significant additional investment to provide further treatment would be required to continue operating them.

Abergynolwyn WTW in North Wales is a small groundwater source with a limited treatment capability which is subject to surface water infiltration. Instead of providing additional treatment, we are proposing supplying the area from an alternative source. The total cost of decommissioning this WTW and another two similar sites, and reconfiguring the network, is some £3m.

River-gauging stations and weirs

Ongoing maintenance of these assets (including building and structural maintenance and improving/updating telemetry or monitoring equipment) is required to ensure that they operate effectively. We are

9. Outcomes and Measures of Success – B1 Abstraction of Water for Use

looking to construct/refurbish seven weirs, two stream intakes, and four flow monitoring improvements at different locations.

Work within zones

In order to ensure we have sufficient water to meet demand, cope with a changing climate and deal with changes to our licences, we propose the following work in the named zones:

- Bala - Improved leakage detection has identified that mains improvements will ensure the supply demand balance is achieved;
- Tywyn - Development of a new intake to take water from the River Dysynni will provide an additional source to meet demand;
- South Meirionydd; - Measures to educate customers and promote water efficiency;
- Brecon Portis - Modifications to valves at Usk reservoir, increasing the flow to the river and allowing us to maintain our current abstraction licence at a cost of £0.1m; and
- Pembrokeshire - Implementing a scheme to move water from Bolton Hill to Preseli. This will be achieved through utilisation of an alternative licensed abstraction arrangement and the construction of new mains at Cleddau Bridge at a cost of £6m.

Drought scenarios

We will be undertaking investigations (including modelling of the impounding reservoirs across the region) to determine both the quantity and quality of the water available to us. This will help us assess the implications of any potential drought and the potential inability to draw water from our reservoirs or rivers during this period.

Usk and Wye

Future investment is required to manage the anticipated reduction in licences for the Rivers Wye and Usk. Significant operational changes will be required to balance resources across South East Wales to ensure that we meet expected demand. This will include modifications to Memorial, Manorafon and Sor Pumping Stations, automation of the Wye and Usk abstractions, and schemes on trunk mains fed from Talybont and Pontsticill WTWs. This will allow greater flexibility in moving water around. Investment of some £14m will be delivered in the AMP6 period but the wider scope of major trunk mains re-figuration is likely to be phased over 10 years.

Water trading

During the preparation of our WRMP we identified a number of opportunities which we are currently exploring with both neighbouring water companies and third parties. Any resultant trades will comply with our trading and procurement code. Any commercial benefits for such trading arrangements will go to our customers in the form of lower bills.

Metering and leakage detection

We are also investing in “state of the art” technologies in metering and leakage detection. Investment in new meters enables early warning of variations in flow which can indicate leakage or changes in demand. This can inform and drive investment in the areas of mains repairs or more effective and accurate audit and conservation activities. We propose spending £2.5m on this activity.

9. Outcomes and Measures of Success – B2 Treating Used Water

Treating Used Water

Our proposals are aimed at protecting our River and Coastal Waters.

Background

We have 4,600 miles of WFD classified rivers within our area and a 1,000 mile coastline. By operating our assets effectively we are able to treat sewage so as to protect wildlife, habitats and other users of these waters.

This indicator measures the performance of our assets and our ability to treat sewage and discharge effluent in line with the discharge permit conditions issued by NRW relating to individual WWTWs.

Our Objectives and Challenges

- improve compliance with our discharge permits to a level of 99% from the current 97.5%;
- operate and maintain our assets as efficiently as possible to protect river and coastal water quality;
- improve our activities to meet new environmental requirements, allowing for population growth and development; and
- undertake scientific studies of the impact activities have on rivers and coastal waters.

Current Performance Customer Views and Rationale for 2020 target

We aim to improve overall compliance with our discharge permits from the current level of 97.5% to 99% by 2020 – we will measure this by reference to the number of WWTWs in our area.

Protecting our environment was an important element of our customer research. Findings from our willingness-to-pay research revealed that both household and non-household customers rank river water quality (1st) and bathing water quality (4th) amongst their priorities out of the eight environmental measures tested. Environmental qualitative research also suggested that all customers place river water quality improvements high on their preference list and bathing water quality was a high priority for household customers.

We will spend £502m over the course of AMP6 in order to achieve these targets. £425m will be spent on maintaining service and £77m on service improvements and meeting new legal obligations.

Our Plan

To continue to protect and enhance our environment, by ensuring that our assets support achievement of environmental obligations such as bathing water quality standards and WFD river classifications, we must, among other activities, make sure that we comply with the permits for our WWTWs.

This will involve:

- maintaining and improving the assets and updating our processes for treating the used water before it is returned treated to our river and coastal waters;
- developing a better understanding of how our assets and third parties sources impact on river and coastal water;

9. Outcomes and Measures of Success – B2 Treating Used Water

- focusing on catchment management, so that we are not looking at WWTWs and other assets in isolation but instead are adopting a more holistic approach; and
- monitoring our network so that we can identify potential problems before they affect the environment or our customers.

We propose to deliver a prioritised programme of activities, including planned capital maintenance to ensure the reliability and ongoing integrity of operations and structures at our WWTWs and the upstream sewerage network.

We will continue to improve our operational practices, through the introduction of lean operating principles, thereby maximising the efficient use of our assets. This will be delivered through a project which aims to significantly reduce our operating costs by retaining only those activities that add value to good operations and asset management.

Working with suppliers and developers of technology, we will identify innovative technologies and solutions and gain a better understanding of how new products can best meet our needs.

We will secure compliance with legal obligations by reference to the National Environment Programme (NEP).

Our approach to treating used water (and other environmental issues) is consistent with the principles set out in “Valuing our Freshwaters”, published by Wales Environment Link.

Maintaining our assets is an essential element of our plan. This will involve expenditure of some £199m at our WWTWs and some £39m at our SPSs. This will include several major maintenance schemes at selected works, e.g. £7.5m expenditure at Chester WWTW and £5m at Bynea SPS.

Amongst the major categories of expenditure are:

- £15.5m at WWTWs and a further £5.2m at SPSs to implement a forward looking capital maintenance programme across our mechanical and electrical apparatus;
- £18.6m to address operational issues at 31 inlet works;
- £23.4m to address flow issues at up to 30 WWTWs; and
- £80m on reducing the amount of surface water entering our sewer network.

In addition we will:

- make improvements at 12 WWTWs including Keeston and Trimsaran WWTWs (at a cost of £11m) to ensure WFD river standards do not deteriorate. At Luston/Yarpole WWTW we plan to spend £1.6m to improve the discharge and meet a tightened ammonia consent - this will protect 4.3km of the receiving water body;
- reduce phosphorus loads at 25 WWTWs (including Cross Hands WWTW) at a cost of some £45m. Which will improve WFD river standards, e.g. to remove phosphorous to improve some 2.5km of the Nant Dowlais, downstream of Cardiff Rhydlafar WWTW, we propose to invest around £1m; and
- improve the discharge from Llanberis WWTW (at a cost of £1.7m) and enhance the status of approximately 1.2km² of river within the Llyn Padarn SSSI.

9. Outcomes and Measures of Success – B2 Treating Used Water

We will also safeguard bathing and shellfish water by controlling overflow spills in areas including:

- Swansea Bay: Investing £11.7m to limit spills on CSOs to 3 spills per bathing seasons – this will help ensure that our assets do not prevent Swansea Bay from achieving the revised Bathing Water Directive “sufficient” standard; and
- Conwy Estuary: In order to enable Conwy shellfish water to achieve mandatory standards under the Shellfish Waters Directive, we plan to invest approximately £7m, reducing our CSOs spills to 10 spills per year.

Investment in technology to meet new statutory requirements will enhance our understanding of how our assets perform and will provide robust data which will feed into our studies. This will involve installing:

- event and duration monitors on some 2,300 of our network assets;
- flow monitors at 60 WWTWs;
- flow monitors at 60 storm overflows; and
- flow monitors at 13 WTWs effluent discharges.

In addition, we will undertake studies to evaluate the required improvements to meet the new environmental standards, including:

- coastal modelling (£11.1m) for 29 Bathing and 20 Shellfish waters;
- investigations to understand the risks associated with chemical pollutants (priority hazardous substances, priority substances and specific pollutants and chemicals) at 6 WWTWs (at a cost of £1.1m);

- pilot trials at 3 WWTWs (Llanberis, Llangefni and Flint) to investigate innovative technologies for treating phosphorus to lower limits. (£2.6m);
- investigations into conservation and enhancement of biodiversity for 8 sites (£0.3m); and
- investigation, modelling and source apportionment for meeting WFD compliance region wide (£5m).

These are areas where there is considerable scope to innovate. For example we are working with Aberystwyth University and others to develop new online and real time monitoring for bathing water quality prediction which is accurate and enables more timely interventions.

9. Outcomes and Measures of Success – B3 Preventing Pollution

Preventing Pollution

Our proposal is to help improve the quality of rivers in Wales by reducing pollution risk.

Background

Events may cause disruption to the smooth running of the sewerage network, causing sewage to spill out of the network (typically at overflows built into the network to control discharges during heavy rainfall events), which may cause pollution if the sewage flows into a watercourse.

Pollution events are assessed and categorised by NRW into one of four categories. We are required to report the highest categories (1 to 3), which are those that materially affect the aquatic environment, with category 1 being most serious.

Spills can be caused by a number of factors such as blockages, overloaded sewers, sewer collapses or as a result of unforeseen mechanical or electrical faults, leading to equipment failure. We consider pollution to be a priority area for investment, both now and in the future.

Our Objectives and Challenges

- reduce the total number of pollution incidents;
- enhance our ability to predict and pre-empt pollution incidents before they occur and undertake more planned activities; and
- continue our zero-tolerance to category 1 and 2 pollution incidents that have a major or significant impact on the aquatic environment.

Current Performance Customer Views and Rationale for the 2020 Target

The number of Category 1, 2, and 3 incidents has reduced steadily in recent years and our current performance is 237 per annum (three year average). We aim to reduce the total number of pollution incidents caused by our activities to an average of 150 by 2020. We will review this target as the impact of the transfer of private sewers becomes clearer.

Our extensive willingness-to-pay quantitative research indicated that customers rank significant pollution (2nd) and minor pollution (6th) amongst their priorities out of the eight environmental measures tested. Environmental qualitative research also suggested that customers place river water and bathing water quality as high priorities.

We will spend £221m over the course of AMP6 in order to achieve these targets. £183m will be spent on maintaining service and £38m on service improvements and meeting new legal obligations.

Our Plan

Although our approach to reducing the number of pollution incidents stretches across our entire asset base, we have focused on the wastewater service, where the vast majority of problems occur.

We have analysed actual and forecast data to identify the 'at-risk' assets across our catchments, which have been prioritised to develop cost effective solutions to mitigate the risks. We are leading the way in promoting sustainable, alternative solutions (surface water management) over the traditional, costly "hard" engineering solutions. Although our

9. Outcomes and Measures of Success – B3 Preventing Pollutions

strategy is primarily focused on preventing pollution happening in the first place, we will also be looking to mitigate the impact if they occur.

The following are amongst the key strategies:

Predicting pollution risk

We will continue to host risk identification workshops, undertake proactive surveys and launch regional pollution awareness campaigns (along the lines of our successful “Let’s Stop the Block”) with a view to identifying pollution risks and vulnerable assets. Through statistical analysis, we have to date identified around 800km of high risk sewers which we are surveying in detail. Throughout the period we will continue to develop and enhance our predictive capability - analysis of the flow data generated will improve our understanding of the sewage network’s real-time performance and will increase our ability to intervene before a pollution event occurs, (e.g. mapping event ‘hot-spot’ areas, replacing substandard sewer monitors, and generating 48 hour pollution reports).

River rangers

During 2010-2013 we deployed our six two-man crews of ‘river rangers’ to assess the risks around sewers in close proximity to rivers. They surveyed over 1,200km of river identifying actual and potential pollution risks and locations. Remedial works (such as patch repairs, cleansing, removing obstructions, re-instating fittings, etc) were undertaken where significant issues were recorded. We propose to continue with this approach and they will provide support to our dedicated, regional pollution teams.

Planned maintenance

We will carry out ongoing risk assessments and modelling to identify those assets that pose the greatest risk. From this analysis, we have developed both short and long-term planned capital maintenance schemes, e.g. we propose to deliver major refurbishment at over 70 of our CSOs during AMP6, investing approximately £18m, where intervention will prevent the more serious pollution incidents.

We propose to renew and renovate over 140km of sewers (including rising mains), an investment of approximately £90m. This includes re-habilitation of some 30km of sewers to reduce infiltration and inflows arriving at our WWTWs.

Within our sewer rehabilitation programme, we will address specific, significant pollution risks – for example we propose to replace GRP rising mains at Kinmel Bay, Rhyl and Bynea, Llanelli (at a total cost of £9m). We also plan to continue our programme of sea outfall rehabilitation, investing over £14m at a dozen assets, including outfalls from Burry Port SPS, Penarth Marina SPS, Saundersfoot WWTW and Barmouth WWTW.

Awareness campaigns (e.g. “Let’s Stop the Block”)

We will continue to encourage customers to report pollution incidents through a 24-hour pollution telephone line and will develop the existing web-based reporting application. In known problem areas we will develop local media campaigns using newspapers, television and social media, and face to face meetings in the community, schools and food outlets.

9. Outcomes and Measures of Success – B3 Preventing Pollutions

Sewer cleansing

We will also continue to invest in a large programme of targeted sewer cleansing. We will have undertaken some 900km of CCTV sewer investigations by 2015 and propose a similar programme for the 2015-2020 period. These CCTV investigations allow us to identify and locate blockages or defects.

Surface water management

Our Surface water management programme will continue to play a major role in reducing the volume of water entering our sewerage network from roads and other impermeable surfaces. We will continue to seek opportunities for flow reduction in the network to provide additional capacity to manage storm events and lessen the need for network overflows to operate thereby reducing the risk of pollution.

In Ganol, North Wales, we plan to minimise the operation of our overflows by investing over £5m in re-establishing surface water drainage systems. Where this is not possible, we will reduce the rate at which surface water enters our network by the use of sustainable, environmentally friendly structures (such as ponds).

9. Outcomes and Measures of Success – C1 Adapting to Climate Change

Adapting to Climate Change

Our proposal is to reduce the volume of rainwater draining into our sewerage system.

Background

With more extreme weather events forecast due to climate change, plus the growing pressure from urbanisation and development, the volume of rain water entering our sewers is increasing. As much of our ageing sewer network wasn't designed for today's demands it is important that we consider innovative ways of ensuring that our sewers aren't overloaded, especially by surface water draining from roofs, paved areas and roads. If left unchecked, the additional volume of surface water draining to sewers will increase.

The wastewater flowing through most sewers contains a mixture of foul sewage and rain water, any surplus flow which escapes the network can pollute rivers and affect coastal areas such as bathing waters or lead to sewer flooding at our customers' properties. Pumping surface water also increases our energy use and associated carbon emissions and can be costly.

Increasing the size of our sewers to deal with more rainwater can be expensive and cause significant disruption. By adopting a more innovative approach to surface water management we will deliver a number of benefits and will deal with an escalating problem in a sustainable way.

Our Objectives and Challenges

- reduce the volume of wastewater that is pumped or treated, thereby reducing costs, energy consumption and carbon emissions;

- reduce the number of properties suffering sewer flooding because of excess surface water in the sewerage system;
- reduce the number of incidents of discharges from CSOs, reducing pollution risk;
- promote sustainable drainage projects that deliver wider benefits to the community using an ecosystems approach;
- identify and manage future problems as we face increasingly challenging weather conditions; and
- support housing and commercial development by generating increased headroom in our infrastructure to cater for economic growth.

Current Position, Customer Views and Rationale for 2020

Target

Under the banner "RainScape" (which is an innovative and sustainable approach to managing surface water in our communities), we will build on the good progress made in developing and using innovative, sustainable and cost efficient schemes that catch, treat and re-direct flows back into the natural environment or slow down the speed at which surface water enters our sewers.

This was one of the areas identified during the customer consultation as being of greatest interest to customers. There was good support for our proposals, with customers recognising the multiple benefits that the initiative would deliver. Our qualitative environmental research showed that surface water management was customers' greatest priority and we should look to work with 3rd parties towards a common goal.

The schemes introduced since the launch of RainScape have helped

9. Outcomes and Measures of Success – C1 Adapting to Climate Change

reduce the volume of surface water entering our sewers by the equivalent to the run-off from the roofs of some 1,000 properties. Our target is to reduce the volume of surface water entering our sewerage network even further, so that by 2020 a significant amount of surface water (equal to the run-off from the roofs of some 25,000 properties) will bypass our sewers and be redirected to local watercourses via structures such as landscaped channels.

We will spend £60m over the course of AMP6 in order to achieve these targets. £17m will be spent on maintaining service and £43m on service improvements and meeting new legal obligations.

Our Plan

Our goal is to stop as much surface water as possible from reaching the combined sewerage network. Instead, we will provide an opportunity for surface water to remain separate and soak away, or provide a route to local watercourses without the surface water discharges to the sewerage system becoming contaminated with sewage. In addition we aim to slow down the surface water that does reach our sewers, so that it doesn't hit the system all at once. This will help to limit the effect of large surges during heavy storms.

Tackling the management of surface water requires us to work with others, including our business and residential customers and developers. We will continue to work closely with NRW and various local authorities, to deliver long-term solutions. Drawing on our successes and experience, we are now developing our plans to ensure that surface water management becomes our standard during 2015-20 and beyond.

Surface water management can contribute to a number of other outcomes. Our approach has been to concentrate on schemes that are cost beneficial and manage the risk effectively. For example, in the 2015-20 period we propose that there will be over 100 separate schemes designed to deliver service benefits, including meeting the revised bathing water standards in Swansea Bay. We will be undertaking a number of surface water removal schemes, across the Swansea catchment, to reduce spills. These consist of a variety of retrofit interventions including swales, bio-retention basins, rainwater harvesting, combined kerb drainage and underground storage that will slow, store and treat surface water runoff. This will relieve the pressure on the existing combined sewer network and release capacity for development. This approach will reduce the number of spills to 3 per bathing season at overflows that have a significant impact on water quality in Swansea Bay, and reduce pollution incidents. A number of additional environmental, amenity, social and community benefits will be achieved using this approach by creating new parklands and green spaces in the Swansea catchment. The total cost to deliver these schemes at Swansea will be approximately £11m.

We aim to manage surface water on a catchment basis, to allow us to deal with flooding, bathing water quality, capacity constraints to economic growth, and pollution of rivers by sewage overflows in an integrated way, to obtain the maximum benefits.

For example, we are working to resolve some very difficult problems in the Loughor Estuary, where there have been particular problems with spills. We are now working towards sustainable solutions in conjunction with NRW and the local council. Our proposals include attenuating and

9. Outcomes and Measures of Success – C1 Adapting to Climate Change

diverting surface water so that it soaks into the ground or filters through to the natural water courses. These modifications, which include permeable pavements, soak-aways, bio-retention strips and vegetated channels, have also helped improve the urban landscape for the local community by creating additional green-space.

During the AMP 6 period we intend to invest a further £26m on 60 surface water management schemes within the Llanelli and Gowerton catchments. This will further reduce the volume and speed of surface water entering the sewer network and reduce the spill frequency of the CSOs impacting upon the designated shellfish waters. This will be part of our plan to achieve compliance with the UWWTD by 2020.

A further example of a catchment study is the Conwy/Colwyn Bay area. Work is underway to assess the effectiveness of surface water management across the catchment. We aim to reduce flooding and pollution risk, and safeguard against risks to current obligations at bathing waters in the area. We plan to introduce RainScape schemes in this area during the 2015-20 period (with £5m investment planned).

9. Outcomes and Measures of Success – C2 Reducing Our Carbon Footprint

Responding to Climate Change

Our proposal is to reduce our carbon emissions and the cost of our imported energy.

Background

Supplying high quality drinking water and removing and treating waste water uses a great deal of energy. The topography of our area means that we have to pump large quantities of water and wastewater around our network and the volume of surface water entering our sewers adds to the problem.

Whilst we do what we can to minimise costs and mitigate the impact, e.g. through promoting sustainable drainage schemes, there are still some significant pressures. With electricity becoming more expensive and sources of energy becoming less secure it is important that we maximise the opportunities to generate electricity from renewable sources.

Our Objectives and Challenges

- increase our total energy generated from the current figure of 40 GWh to 100 GWh per year by 2020;
- increase our total energy generated from 15% in 2015 to 25% by 2020;
- reduce the energy consumed at our assets by 5% by 2020 compared with 2012;
- reduce our operational carbon emissions by a further 7% by 2020 making the total reduction 32% since the 2007 baseline;
- target savings of £8m per year in operating costs from a net cost of £42m for power in 2015;

- reduce the volume of water and extent of treatment needed by promoting water efficiency, improving catchments, reducing leakage and diverting surface water from sewers; and
- Reduce the volume of sewage needing treatment by diverting surface water from sewers.

Current Performance, Customer Views and Rationale for 2020 target

Our approach to reducing our carbon emission will involve investment in energy efficient plants and processes and reducing the volume of water entering our sewers. Investing in renewable energy to both reduce our carbon emissions and make us more resilient to external energy market influences is a key part of our strategy.

This will include increasing energy produced at our sites from recycled sludge. We have already made a good start with WWTWs such as the one at Cardiff, where 50% of the electricity used is generated from the biogas produced from the anaerobic digestion of sludge. Our plans are to increase generation from this anaerobic digestion source and also to focus on other renewable sources such as photo voltaic generation.

Customer research showed general support both for improving our environmental performance and for reducing our operating costs.

We believe that these proposals will allow us to increase the volume of energy generated from renewable sources from the 2012/13 figure of some 40GWh of electricity to 100GWh by 2020.

9. Outcomes and Measures of Success – C2 Reducing Our Carbon Footprint

We will spend £42m over the course of AMP6 in order to achieve these targets. £23m will be spent on maintaining service and £19m on service improvements.

Our Plan

The technology around both advanced anaerobic sludge digestion and photo voltaic generation is well established. Modelling the capabilities at our operational sites and building a portfolio of schemes, introduced in the current AMP, has provided sufficient evidence and confidence in our ability to achieve our target.

It is important that these schemes are economically viable and in the course of planning our investment we have undertaken robust cost benefit analysis. Our proposals include:

Anaerobic digestion

We will complete our programme for recycling sewage sludge to generate renewable energy via anaerobic digestion plants. This will generate an additional 39GWh and will cost some £30m. It will affect 3 sites so that by 2020 our 5 largest sludge treatment centres will all have anaerobic digestion.

Highlights of this programme include

- a new advanced anaerobic digestion plant at Treborth (£11m); and
- upgrading the sludge treatment facility at Five Fords WWTW, converting it from conventional digestion to the advanced (thermal-hydrolysis) technology and constructing a facility to export 'bio-methane' direct into the national gas network. This will cost £18.2m

and the new technology will generate a net export of 231MWh a year of bio-methane.

Hydro generation

We will continue to add to our portfolio of assets with the capacity to generate electricity from hydro sources as opportunities arise. For example, our proposals to introduce hydro generation as part of the improvement to the water treatment process at Bryn-Cowlyd WTW near Betws y Coed (costing £2.5m) will generate 2.5GWh a year. This will be achieved through installation of non-conventional hydro-electric schemes within our network of pipes, rather than at reservoirs and dams.

Our plan is to generate a total of 8GWh per year through schemes that will cost £10m.

Solar photo-voltaic generation

We plan to have 15 sites operational by 2015 with a capacity to generate 1.5GWh/year. Amongst the sites for planned future investment is Felindre WTW which will generate some 460MWh a year and cost £750k.

There may also be opportunities to install solar panels at a further 10 sites but, before doing so, we will fully appraise the schemes to ensure that they are viable.

Wind generation

We will continue to look for opportunities for on-site wind generation to add to the 2 turbines that we intend to have operational by 2015.

9. Outcomes and Measures of Success – C2 Reducing Our Carbon Footprint

Energy efficiency

An important part of our strategy up to 2020 will be to explore opportunities to improve energy efficiency at our 400 or so medium and smaller powered sites. Initiatives will include:

- improved control to optimise water networks to get water to customers at lowest cost;
- redesigned blowers and improved aeration control on our waste water treatment works;
- using new technology for the more efficient use of ultraviolet light in our treatment processes; and
- continued monitoring of pumps to identify when they need attention.

We estimate that these initiatives will deliver a saving of some 2.2GWh each year and the total cost associated with delivering these initiatives will be some £10m.

We will continue to identify technologies for water and waste water treatment with lower energy and carbon impact and where feasible we will introduce pilot schemes and small scale trials.

9. Outcomes and Measures of Success – D1 Service Incentive Mechanism (SIM)

Service Incentive Mechanism

Our proposal is to provide an improved service to our household and non-household customers, consistently achieving top quartile performance on Ofwat's Service Incentive Mechanism.

Background

As an incentive mechanism which is designed to encourage companies to provide a better service to customers and allow customers to compare the performance of their company with others, we regard this as an important measure and an appropriate way of measuring customer satisfaction. Both the quantitative and qualitative elements are embedded into the way we run the business and we will continue to use the measure as a means of satisfying ourselves and demonstrating to customers that we are providing them with a service of the very highest standard. As part of our "business as usual" activities we closely monitor the different components, e.g. complaint numbers and abandoned calls, as well as a qualitative element based on Ofwat surveys of customers who have had direct contact with us. We also have an independent customer satisfaction survey carried out by us each month, providing reports for each service team and depot.

Our Objectives and Challenges

Ensure that our customer service will be as good as the best utility companies in the UK.

Current Position Customer Views and Rationale for the 2020 Target

In 2012/13 our company combined score was 84, placing us third amongst the ten WASCs. We believe it important that we maintain this level of performance.

In the research undertaken whilst preparing our plans, customer were generally supportive of this measure and the individual components of the willingness-to-pay research demonstrated that customers place high importance on service improvements and had no appetite for service deterioration.

In the last two years our performance on SIM has been upper quartile having been in the top 3 of the 10 WASCs measured and it is our intention to remain top quartile in the period up to and including 2020.

We will spend £193m over the course of AMP6 in order to achieve these targets. £178m will be spent on maintaining service and £15m on service improvements.

Our Plan

We believe the key to good customer service is ensuring that we provide a 'joined up' customer service by limiting the risk of anything going wrong and putting it right quickly and courteously when it does. We will continue to make sure that that customers can contact us easily in the event of a problem, in a way that is convenient for them. Equally, when they have needed to contact us, we will take ownership of any problem and will make sure that we keep customers informed of what we are doing to rectify the problem. At the end of the job, for example on

restoration of supply, we will contact customers to check that they are now satisfied with the service received, thereby effectively closing the loop.

The following initiatives, designed to help us maintain upper quartile performance, will be introduced during 2015-20:

- a new billing system offering new billing options, e.g. multi site consolidated billing and new tariff options;
- tackling those customers who would be regarded as amongst the worst served;
- greater use of technology such as texting and web-chat;
- a focus on “one shop” and first time resolution of contacts with call backs to the customer to “close the loop”;
- assistance in dealing with payment difficulties;
- investment in the remote monitoring of our networks to predict and prevent service failures;
- better communication through a revamped website; and
- delivery of the Customer Service Improvement Programme.

9. Outcomes and Measures of Success – D2 “At Risk” Customer Services

“At Risk” Customers

Our proposal is to improve the level of service received by our most ‘at risk’ customers.

Background

Unfortunately, a small number of our customers do not experience the high level of service that most of our customers enjoy. These are the customers who suffer from repeat problems with the services we provide, e.g. interruptions to supply or sewer flooding. Our aim is to reduce the number of customers affected repeatedly by poor service.

Our Objectives and Challenges

- improve the service received by 50% of our most ‘at risk’ customers by 2020; and
- target reductions in the number of repeated supply interruptions, discoloured water, low pressure, odour and sewer flooding incidents.

Current Performance, Customer Support and Rationale for 2020 target

The customers we regard as being “at risk” are those whose service has repeatedly fallen short in one of the following five areas:

1. **Discolouration of water** - Customers who have contacted us at least once in each of the previous three years with regards to discolouration of their water supply;
2. **Interruptions to supply** – Customers who have contacted us at least once in each of the previous three years with regards to an interruption to their water supply;

3. **Low pressure** - Customers identified on the DG2 register as having experienced poor pressure without sufficient remedial action for at least the last three years;
4. **Odour** – Customers who have contacted us about odours from our waste water assets (WWTWs, SPSs or network) at least once in each of the last three years; and
5. **Sewer flooding** - Customers who have experienced internal sewer flooding in the previous year and at least once in the preceding ten years (internal or external, hydraulic overload or other causes).

In total we have approximately 850⁵ customers that have repeatedly experienced unsatisfactory levels of service and who fall into this ‘at risk’ category. Based on customer research we found that there was widespread support for the inclusion of this measure in our plan. Willingness-to-pay quantitative research indicated that customers prioritise internal sewer flooding (the 3rd most important of the service measures tested), short term interruptions to supply (the 5th), discoloured water (the 6th), odour from sewage treatment works (the 8th) and low pressure (the 12th). Further quantitative research to inform the acceptability of ‘Your Company. Your Say’ revealed that customer support for reductions in the number of ‘at risk’ customers was strong (74%).

Customers had firm views on this measure and we have responded to the consultation by modifying our proposals. For example, tackling low

⁵ An indicative figure of 1,200 was put forward in “Your Company. Your Say”. This has been revised downwards over the course of the summer of 2013 as the precise definition of “at risk” has been refined.

9. Outcomes and Measures of Success – D2 “At Risk” Customer Services

pressure was not something we included in the proposals contained within the customer consultation document. Instead, we listed this as one of the difficult questions and explained that eliminating the problem for those customers with long standing problems would cost £1.5m in total. We have listened to our customers and have now included some investment to tackle problems experienced by those customers who have suffered poor pressure for at least three years.

We will spend £71m over the course of AMP6 in order to achieve these targets. £57m will be spent on maintaining service and £14m on service improvements.

Our Plan

We will be focusing on the following areas:

Low pressure

By 2020, we plan to improve the water pressure received by customers who have experienced poor water pressure for more than three years through targeted work around the:

- installation of domestic water pressure booster pumps;
- renewal of sections of distribution main that are deemed to be either undersized and restricting water flow or in poor condition and at risk of burst; and
- introduction of 100% pressure logging across our network to enable an improved approach to proactive pressure management.

Interruptions to supply

Analysis of around 600 ‘at risk’ customers has been undertaken and the causes of each of the contacts made by these customers evaluated. We will improve the reliability of water supply to our most “at risk” customers as part of our planned investment by:

- renewing approximately 500km of distribution mains where bursts have been frequent;
- renewing critical sections of trunk mains and pipe crossings;
- maintaining and improving the operation of up to 570 SRVs and seven Water Towers; and
- undertaking essential maintenance of water pumping stations.

Discolouration of water supply

Some of our customers may receive water into their homes that appears rusty brown, orange or white in colour. This will not cause any harm but it is considered unacceptable for use in homes for drinking, bathing and washing clothes. By 2020, we aim to have improved the appearance of water received by our ‘at risk’ customers through a mixture of targeted interventions such as mains flushing and renewal and will also undertake:

- ‘Hot spot’ mains cleansing and renewal through our established Distribution Operation and Maintenance Strategy (DOMS) programme; and
- Distribution Zonal Studies to target investment for our most “at risk” customers.

Further detail of the work we will be carrying out to help these customers is set out in the Measure of Success “Acceptability of Drinking Water” (A2).

9. Outcomes and Measures of Success – D2 “At Risk” Customer Services

Odour from waste water treatment assets

We will, deliver a prioritised programme of cost beneficial odour mitigation schemes and initiatives including:

- one WWTW scheme, one scheme at a SPS and seven schemes on the sewerage network;
- 30 odour mapping surveys;
- 50 odour trending monitors for future investigations; and
- schemes to address odour issues associated with private sewage pumping stations and private sewers which transferred into our ownership recently.

This will allow us to tackle the odour nuisance experienced by the 17 customers who currently experience repeat problems. AMP6 schemes planned will also solve problems for around an additional 2,000 or so customers.

Sewer flooding

Whilst our willingness-to-pay outputs do not support investment in “external only” flooding, there is strong support from our customers around supporting measures to tackle internal sewer flooding. Therefore, by 2020, we plan on having reduced the number of our customers who have experienced repeat sewer flooding due to hydraulic overload or other causes such as sewer blockages or collapses from the 2012/13 figure of 103 to 66 by 2020.

In addition to specifically targeted interventions, our approach to future investment planning will be to prioritise proposed investment to areas where it will deliver the greatest benefit to the largest number of customers. We will do this through real time monitoring of our asset

performance and the coverage of our network hydraulic modelling and asset deterioration modelling to enable us to identify and react to issues more quickly to minimise impact on our customers.

9. Outcomes and Measures of Success – D3 Sewer Flooding

Number of properties affected by sewer flooding

Our proposal is to tackle sewer flooding by reducing the number of properties flooded each year.

Background

Tackling sewer flooding has always been a top priority for the company. We are committed to addressing these problems by reducing the number of properties that are at repeated risk of sewer flooding as well as taking mitigating measures to either reduce the risk or deal with the severity of the flooding where permanent solutions aren't economically feasible.

Our Objectives and Challenges

- alleviate internal sewer flooding at 214 properties and external sewer flooding affecting 178 properties / areas;
- reduce the number of properties suffering internal sewer flooding per year (not including flooding due to the most severe weather) to an average of 155 (from 219 in the year to March 2013);
- reduce the number of properties at significant risk of repeat internal flooding (those properties that have a greater than 1 in 10 chance of internal flooding occurring per year), from an estimated 193 properties in 2015 to 168; and
- implement lower cost measures to reduce the chance of flooding occurring, and the severity of flooding if it does occur, with a view to benefitting 16 properties/areas.

Current Performance, Customer Support and Rationale for 2020 Target

Last year (April 2012 to March 2013) 219 properties suffered internal

sewer flooding, as a result of all causes. This was above our annual target of 186 but this was not surprising as 2012 was the third wettest year on record. Our current performance is on track to achieve our target for 2015.

In our willingness-to-pay quantitative research our customers ranked internal sewer flooding 3rd and external sewer flooding 7th out of the eight environmental measures tested. In response to our customers views, we have reprioritised our immediate plan to invest more in preventing internal flooding and less in external flooding prevention.

We will spend approximately £60m over the course of AMP6 in order to achieve these targets. £53m will be spent on maintaining service and £7m on service improvements.

Our Plan

Our work will focus on the following:

Improving service by reducing the number of properties at significant risk of repeat internal flooding

We estimate that at the start of AMP6, 193 properties will be at significant risk of repeat internal flooding.

We will invest to alleviate significant internal flooding risk at 190 properties. This investment will also address internal flooding at approximately 25 properties with a lower risk assessment. External flooding will also be alleviated at approximately 125 properties or areas (in the vicinity of the internal flooding), and capacity will be created for additional homes to connect to the network.

9. Outcomes and Measures of Success – D3 Sewer Flooding

For all flooding investment, we will only deliver a scheme where the benefits of doing so out-weigh the cost of the work we need to undertake.

We are planning to offer more help to those at risk of sewer flooding, in locations where it would cost so much that we will not be able to carry out the work by 2020. We will identify lower cost measures to reduce the chance of flooding occurring, and/or the severity of flooding if it does occur. Historically, such measures have included fitting stop or ‘flap’ valves to the property drains. These valves can be closed at times of heavy rainfall and stop the surcharged sewage from flooding homes. Future proposals allow for more extensive measures, such as replacing doors and gates to offer greater protection against flooding. We estimate that we will be undertaking such mitigation measures at 16 properties, spending over £1m.

Alleviating flooding of gardens, roads and other open spaces

We will continue our work to reduce external flooding due to hydraulic overload. We are planning to deal with about 178 external flooding sites – gardens, roads and open spaces – between 2015 and 2020. We will focus on long standing cases and sites where the limited capacity of the sewerage system is stopping economic development.

Avoiding flooding caused by sewer network failures

We will also invest to keep on top of flooding due to causes other than lack of capacity, (e.g. sewer blockages). Information on past blockages will be used to predict where this is likely to happen again. This will enable us to introduce a programme of targeted cleaning of about 650km of sewers, where we have identified such pinch-points. We will continue

with investigations aimed at identifying preventative measures and with campaigns to inform our customers of the role they can play in keeping our sewers clear, by not flushing away items that can lead to blockages.

Implementing sustainable solutions to reduce the risk of flooding

Most sewer flooding is caused by surface water from rainfall overwhelming the capacity of the sewerage system and pipe-work. Instead of the major expense of increasing the size of all the sewers, we have been diverting some surface water from entering foul wastewater sewers. This separation of surface water also allows more capacity to manage heavy rainfall, which with climate change has become a more frequent occurrence.

Where possible we will adopt a catchment approach thereby protecting the whole area drained by a sewerage network from the risk of sewer flooding, rather than focusing on a few properties. As we gather more information we may need to alter our plans, but our overarching objective of reducing the risk of sewer flooding for all customers in the most cost effective way will be unchanged.

Investment targeted at sewer network failures will increase the capacity of the sewerage network and help unlock economic development and is also predicted to make a significant contribution to our target of maintaining sewer blockage numbers at approximately 12,700 per year.

9. Outcomes and Measures of Success – D4 Non-Household Customer Satisfaction

Non-Household Customer Satisfaction

Our proposal is to provide an improved level of service to our non-household customers.

Background

Whilst for the most part the expectations of our non-household and household customers align, we acknowledge that in some areas their priorities may differ and we think it important that we recognise these differences and that, alongside the Service Incentive Mechanism, we measure levels of satisfaction amongst this group separately.

In recent years, we have undertaken independent research to get the views of those 1,700 business customers who consume more than 5Ml p.a. This involves conducting bi-annual qualitative and quantitative surveys that provide us with feedback on how non-household customers believe we are performing and also an insight into what aspects of the service these customers regard as the most important. We have recently extended this exercise so that the views of all non-household customers are included in this research. This is a very important indicator and a measure which we track carefully, as it allows us to tailor our offerings to their requirements.

Our Objectives and Challenges

Improve the levels of satisfaction across our non-household customer base.

Current Performance Customer Views and Rationale for 2020 Target

To date there have been four surveys and the respective scores have been as follows:

- August 2011 - 85.20%
- February 2011 - 89%
- September 2012 – 87.60%
- May 2013 – 88.43%

The average score over the last 2 years has been 87%. In the last survey we broadened the exercise by including the 100,000 or so customers whose consumption is below 5Ml p.a.

Whilst these are high satisfaction scores, with the various initiatives that are underway around improving service to this group of customers, we are aiming to improve the percentage satisfaction score even further. We are looking to improve the position from current average of 87% to a satisfaction of 90% in 2020.

We will spend £35m over the course of AMP6 in order to achieve this target. £34m will be spent on maintaining service and £1m on service improvements.

9. Outcomes and Measures of Success – D4 Non-Household Customer Satisfaction

Our Plan

The following are amongst the initiatives which will help us achieve these targets:

- a dedicated non-household customer team, supported by a marketing plan and dedicated website;
- better communication and ensuring that non-household customers are kept informed of key developments;
- a “John Lewis” type promise to always aim to be competitive on price;
- single billing for multi-site organisations;
- introducing a “My Business Account” facility for non-household customers to manage their water account, update personal details, contact preferences etc;
- introduction of a B2B portal to support developers’ accessing all relevant information relating to their applications;
- more dedicated customer relationship managers to deal with the largest commercial customers on an individual basis; and
- developing a widening portfolio of offerings including flexible account and tariff structures, and a new range of service offerings which will include:
 - telemetry
 - leakage detection
 - water efficiency advice
 - trade Effluent logging
 - consent advice
 - private jetting
 - DBO

- utility mapping
- process and treatment consultancy
- surface urban drainage systems
- discount linked to payment methods
- reduce and reuse facilities.

9. Outcomes and Measures of Success – D5 Earning the Trust of Customers

Earning the trust of customers

Our proposal is to earn customers' trust by increasing customer education and improving public engagement.

Background

Customers must trust that the services we deliver are safe and of the highest standard and that we can be relied upon to do the right thing on their behalf. As a company that is owned on behalf of its customers, we believe that we should build the trust of our customers through raising awareness of what we do and by working with them and other organisations to bring even greater benefits to our customers, their communities and the environment.

Our Objectives and Challenges

- increase customer trust to 75% by 2020;
- roll-out ambitious behavioural change campaigns (e.g. "Stop the Block") to help meet key business targets;
- increase the number of children and young people attending our education classes from 40,000 to 50,000 per year; and
- become a more visible presence in our communities.

Current Performance Customer Views and Rationale for the 2020 Target

We periodically measure our customers' perception of the company and the level of trust they have in us to do the right thing on their behalf.

We recently asked customers whether or not they trusted the company to do the right thing on their behalf. 63% of respondents answered

positively with only 12% saying that they did not agree with this sentiment. Until recently, we have consciously chosen to maintain a comparatively low profile as a company, but research has now shown that our customers expect us to be more visible and play more of a role in their communities. This was not one of our original measures of success but it became clear during the customer research that this was a matter of great importance to our customers and other stakeholders.

Qualitative research to inform both our sustainable future and acceptability of 'Your Company. Your Say' revealed that customers' desire for improved communications and greater focus on education about such matters as water usage. Our research programme for PR14, "Your Company. Your Say", identified a clear theme across all research activities –that customers want to know more about where their money goes, what challenges we face and how they can help.

Through improving and increasing our general communication activity – coupled with improved company performance – we aim to increase the level of trust in the company from 63% to 75% by 2020.

In the AMP6 period we will be spending £8m in order to achieve the target.

9. Outcomes and Measures of Success – D5 Earning the Trust of Customers

Our Plan

Trust is a very subjective measure and can be influenced by perception rather than fact. Also, the last interaction a customer has had with the company has a significant influence on their perception. However, investing in proactive communication to improve customer and stakeholder trust in the company – to develop a reservoir of goodwill – will strengthen our position during difficult times – such as drought or following a water quality incident that affects our customers.

There is evidence that Increasing awareness of our activities, through education, direct communication, community engagement and more visible campaigning, increases customer trust in the company. Building our customers' trust will take time and any measurable impact of such activity could take a number of years to track effectively.

We will:

- develop media and stakeholder relations, community engagement activity, behavioural change campaigns, education and publications that will help address the increasing expectations of our customers;
- learn from and build on the success of recent customer engagement campaigns and initiatives such as “Your Company, Your Say” and “Let’s Stop the Block” by developing ambitious, cost effective campaigns that are targeted to offer greatest impact and value for money;
- build closer relationships with key politicians, stakeholders and community groups;
- review the quality and impact of all customer communications and publications;

- review the most cost effective way of reaching the target audience, e.g. face-to-face, social media, radio and television advertising;
- develop partnerships with local organisations and bodies to promote our campaigns;
- increase our education outreach programme and align it to our behavioural change campaigns, capital projects and innovation in the water sector such as RainScape;
- work closely with capital partners to help raise the profile of our work within the communities;
- engage with our own staff to promote and participate in our key campaigns;
- use limited advertising on social media, TV, radio and in newspapers where it delivers good value for money;
- develop a social media strategy to communicate with our customers when and how they want; and measure how we are perceived by key stakeholders in order become the most respected of all Welsh organisations (we are currently 2nd according to 2012 Ipsos Mori poll).

9. Outcomes and Measures of Success – E1 ‘Affordable Bills’

Affordable bills

Our proposal is to continue to make bills more affordable, by keeping the increase below the rate of inflation and by comparison with bills across the rest of the industry.

Background

Water and wastewater bills in Wales have historically been amongst the highest in England and Wales, reflecting in part our comparatively challenging operating environment. Since the acquisition of Welsh Water by Glas Cymru in 2001 the gap between our bills and the industry average has been steadily closed, and we are poised to become a below-average bill company during AMP6.

Our Objectives and Challenges

To reduce water and wastewater bills in real terms, so that they become less than the average for the sector.

Current Position, Customer Views and Rationale for 2020 Target

By 2015 our average household bill is projected to be 3% above the industry average.

During the course of the customer research, customers showed considerable support for lower bills in AMP6 if possible. The Customer Challenge Group pressed the company to absorb the £13 increase that would otherwise come into effect on 1st April 2015 to reflect the cost of the private sewer transfer.

By 2020 the average household bill is projected to be 5% lower than in 2014-15 in real terms; a reduction of 12.5% since 2009/10 in real terms. This is the lowest bill profile consistent with our objective of maintaining financeability in the medium term and not jeopardising our credit rating.

Our Plan

Our plan is predicated on delivering the outcomes and measures of success of the greatest importance to our customers, within the envelope of keeping increases in customer bills to 1% below the rate of inflation each year. This objective reflects the challenge from the CCG to keep bill increases to a minimum.

9. Outcomes and Measures of Success – E2 Help for Disadvantaged Customers

Help to disadvantaged customers

Our proposal is to develop a range of tariffs that provide assistance to more of those customers who genuinely struggle to pay their bills.

Background

Although keeping bills increases as low as possible will help, we are well aware that some customers find it difficult to make ends meet and when they do not pay their bills the cost is passed on to our other customers. Social tariffs provide assistance to those who are struggling to pay their bills. This is a particular problem in our area as around 30% of our household customers spend more than 3% of their disposable income on their water and sewerage bill and almost 15% of our customers spend more than 5% of their income on their bill. Recognising that there is a need to support these customers, we currently have 3 “customer assistance tariffs” which provide a degree of support, as well as our Customer Assistance Fund. We believe that there is scope to increase this so that other less well off customers also benefit.

Our Objectives and Challenges

To increase the support we give to our most disadvantaged customers so that they are able to pay their bills, helping to keep down the level of costs to customers as a whole.

Current Position, Customer Views and Rationale for 2020 Target

We have some 52,000 customers registered for one of our “customer assistance tariffs” and, although we have a higher number than any other company, we believe that there is scope to increase the number to

100,000 by 2020. However, this will be dependent on us securing broad customer support and getting approval from Ofwat.

Achieving the targets for assistance will have only a small impact on the costs incurred by the company – around £2m, reflecting the comparatively small cost of administering the tariff arrangements. This is because Ofwat’s regulation of prices provides for reductions to one group of customers to be re-balanced on to other groups, within an overall cap on the amount of such cross subsidy. Under the current Welsh Government guidance this stands at 2.5% of the average household bill.

The guidance from the Welsh Government was published in March 2013 and since then we have designed a new social tariff framework (consistent with the guidance). We are unlikely to be able to support all of those 190,000 customers in Wales paying over 5% of their income on water and sewerage and a realistic broad aspiration would be to target half of those who struggle to make ends meet by 2020.

In the summer of 2013 we carried out qualitative research with six groups of customers (both ‘benefactors’ and ‘potential beneficiaries’) across Wales to determine their support for a cross subsidy at various levels. We have also worked with CCW Wales and other stakeholders on the design of the research and met the Welsh Government regularly to keep them up to date with our progress. Telephone based quantitative research with 400 customers is planned for December 2013 plus a small number of face to face interviews with ‘hard to reach’ customers.

9. Outcomes and Measures of Success – E2 Help for Disadvantaged Customers

Our Plan

Our aim is to have a new social tariff ready for inclusion in our Scheme of Charges for 2015/16 along with a transition plan for customers currently benefiting from our Welsh Water Assist tariff. Timing takes account of the implementation of our new billing system, scheduled to go live in November 2014.

We will also liaise with customer groups such as CCWater and Money Advice Agencies and will launch campaigns aimed at maximising the take up by eligible customers. We will test customer support for customer assistance tariffs and will adopt a flexible approach, having regard to guidance issued by the Welsh Government, and will fully explain the rationale behind our proposals in our tariff discussions with Ofwat.

In addition, we will continue to improve our performance in recovering debts from those customers who are able to pay, in particular by making greater use of customer information, credit referencing and appropriate litigation.

9. Outcomes and Measures of Success – F1 Asset Serviceability

Asset Serviceability

Our aim is to deliver a reliable and stable service that will benefit both today's customers and future generations and will also protect the environment.

Background

In terms of the service we provide our customers and the environment, a key measure of performance is the serviceability assessments upon which we report annually. There are four sub services (water and sewerage; infrastructure and non-infrastructure) and within each of these there are sub-measures. Collectively, these determine whether a company assesses its own performance as improving, stable, marginal or deteriorating.

Managing the serviceability of assets involves assessing asset condition, collecting reliability and performance data, analysing that data, developing reliability models and performance monitoring strategies and adopting maintenance regimes founded on sound principles of risk management.

Our Objectives and Challenges

- maintain all of our assets to a high standard so that we are able to provide services to customers today and over the longer term, while protecting the environment. This equates to stable serviceability; and
- utilise the serviceability indicators in the operational and investment decision making process, ensuring that the relevant assets are properly maintained in a timely manner.

Current Performance, Customer Views and the Rationale for the 2020 Target

We are currently stable on all four sub services and our Business Plan is predicated on remaining Stable during 2015-20. Maintaining assets properly is also key to achieving other outcomes. We believe that the sub measures contained within each service are the most appropriate ones and we therefore propose retaining the current suite of sub-measures during 2015-20. We will however consider whether there are any supporting indicators of asset and operational capability which we may want to add to what is currently in place.

Following assessment of the current serviceability trends and associated expenditure alongside statistical analysis of each of the indicators, and given the level of investment proposed, we believe that projecting a "stable" assessment during 2015-20 is achievable. Qualitative research to inform Our Sustainable Future revealed that customers' thought that serviceability of our assets is fundamental to achieving all the other outcomes.

We will spend £438m over the course of AMP6 in order to maintain serviceability.

9. Outcomes and Measures of Success – F1 Asset Serviceability

Our Plan

We monitor our performance against the serviceability indicators listed at a company level on a monthly basis as part of our business reporting. Where emerging issues are identified then we put in place action plans to ensure performance recovers within a reasonable period.

Risk reviews are continuously undertaken within the business to identify and manage any emerging issues. Our investment management system and deterioration models enable asset managers to take a forward-looking, risk-based approach to asset renewal, maintenance and management that align with asset serviceability.

In 2008 we achieved PAS55:2008 accreditation for the first time and it continues to be the yardstick by which we measure our ability to operate, maintain and improve our assets and ensure that our plans accord with good asset management practice. We are committed to developing integrated end to end strategies and policies and procedures that comply with all legal and regulatory requirements and our decisions around optimising our asset management capabilities cover all phases of the asset life cycle.

We have both strategic (forward-looking) and tactical (day-to-day) plans to ensure that performance on each of the sub measures making up the respective sub service assessments remains stable. This will be achieved through investment in planned maintenance including strategic maintenance (where it is considered necessary), reactive maintenance for situations where we are unable to anticipate problems or which arise from unforeseen circumstances, as well as operating strategies that are customer focused and forward thinking. We have programmes for replacing, renewing and refurbishing equipment as they approach the

end of their asset lives or show evidence of deterioration and use sophisticated predictive tools to assess the most cost beneficial solutions.

Our operating strategies are developed with a focus towards serviceability. Leading Edge Assets and People (LEAP) is a programme of project work streams designed to help achieve our serviceability targets and associated operational efficiency challenges by utilising operational field teams and optimising the way the assets are maintained and repaired on a day to day basis. A new initiative, called LEAN, creates diverse cross functional teams that contribute to operational efficiency and will help deliver overall stable service and demonstrates our commitment to continuous improvement.

In completing this plan, we have had to allocate our investment programme across the respective serviceability indicators. Investment in our assets often delivers multi benefits, for example whilst investment in water mains is primarily to reduce burst activity it also addresses discolouration of drinking water or low pressure problems.

By way of illustration we have briefly set out our proposals against each of the sub services.

Water Infrastructure

A large proportion of the investment relates to our targeting of distribution mains bursts. During AMP5 we estimated spending around £78m in renewing or re-laying some 530km of distribution network. We will continue with this programme but better targeting and improved asset information will enable us to reduce the level of activity and cost required; we anticipate investing £65m to tackle around 500km of mains during 2015-20.

9. Outcomes and Measures of Success – F1 Asset Serviceability

Water Non Infrastructure

We assess risk at our WTWs through the Drinking Water Safety Plan process and deterioration modelling by reference to risks captured in our investment manager system. This allows us to quantify service impact and solution costs over a 40 year horizon. For example, a large proportion of the investment relates to our risk based approach to WTWs. We therefore propose spending some £66m of base maintenance at WTWs to protect water quality against specific risks including:

- ‘run to waste’ capability at 6 WWTWs;
- filter refurbishment at 24 WWTWs; and
- sludge treatment and disposal facilities at Felindre, our largest WTW.

Waste water Infrastructure

Again, deterioration modelling will determine the priorities and we will focus on the worst performing assets. The investment portfolio includes assets such as gravity sewers, rising mains, sea outfalls and CSOs. A large proportion of the investment relates to our risk based programme to tackle sewer flooding at customer properties. Our investment during this period is likely to be some £55m, and we propose a similar level of investment for AMP6.

Waste water Non Infrastructure

Our investment portfolio covers SPSs and other ancillary assets as well as WWTWs, where our plans include addressing operational issues at inlet works, structural concerns and flow issues. We propose to invest some £199m in capital maintenance at our WWTWs, which will include major schemes to address operational and performance issues at Chester, Dyffryn Ardudwy, Leominster, Ganol, Hereford, Gowerton and Ponthir

WWTWs. This expenditure compares with a likely expenditure of £160m during AMP5, but includes a more extensive scope of work. The need for the increase in investment is largely driven by the need to address existing flow compliance issues, which would otherwise compromise our ability to meet our full statutory responsibilities in this area.

Our expenditure on sludge processing and disposal will be some £44m which will focus on reducing the quantities of sludge we transport and maximising the opportunities to reduce costs, generate energy and develop commercial opportunities. Our proposed advanced anaerobic digestions schemes at Five Fords and Treborth WWTWs will help us achieve these objectives.

9. Outcomes and Measures of Success – F2 Leakage

Leakage

Our proposal is to maintain an economic level of leakage.

Background

We are required to produce a Water Demand Forecast for an 25 year period and to manage demand in accordance with this plan. A key component of this is the Sustainable Economic Level of Leakage (SELL) assessment which provides leakage targets for operational leakage management. In order to achieve these targets and to manage the demand for water a range of activities such as Active Leakage Control, Water Efficiency promotion, Pressure Management and Network Flow recording activity is undertaken.

Our Objectives and Challenges

- reduce our leakage levels from 184.8 mega litres a day (MLD) (our regulatory target for the end of 2014/15) to 169.2 MLD in line with the Sustainable Economic Level of Leakage assessment;
- predict and plan for future water demand expectations to help secure continuity of supply for our customers;
- promote and encourage the efficient use of water at both our own premises and those of our customers through the installation of more efficient technologies;
- rationalise our pressure management strategy and ensure that we continue to operate the network as efficiently as possible whilst maintaining optimal pressures for our customers; and
- implement a structured meter replacement programme thereby reducing the maximum age of the meter stock to 20 years and optimising our pressure control and data logging capabilities, increasing network visibility and reducing customer minutes lost.

Current performance, Customer Views and Rationale for 2020 target

Since its peak of 413 MLD in 1996/97, leakage has been reduced by some 228 MLD to our 2013/14 estimated out turn of 185 MLD.

Customers were generally supportive of our proposal to reduce leakage to a new SELL of 169mld and leakage was one of the areas which they were most interested in when we consulted earlier this year. It also featured highly in our willingness-to-pay quantitative research. The results indicated that reducing leakage was the most popular choice, when tested against nine other choices such as water efficiency and water recycling, amongst households and non-households.

Within the overall leakage target there are also individual targets for each of the 24 Water Resource Zones. The costs of achieving these targets during 2015-20 is £129m. £55m will be spent on maintaining service and £74m on service improvements.

Our Plan

Our leakage strategy covers all assets from source to tap including raw water mains, water treatment works and trunk mains. We will achieve our target of managing the demand for water and reducing leakage to the SELL through a combination of operational activities and improvements and investment across the range of assets that make up our distribution network.

The key risks to delivering leakage targets are extreme weather conditions, such as harsh winters. For 2015-20 we will introduce alternative delivery interventions to reduce our reliance on routine leak

9. Outcomes and Measures of Success – F2 Leakage

detection activity. This includes (non-mains) asset replacement and advanced pressure management and control, supporting a smart networks initiative.

In particular we will:

- focus on reducing the level of leakage to the sustainable economic level through find and fix activities, targeted pressure management schemes and asset renewal;
- innovate and improve our leakage targeting techniques to identify leakage areas as quickly, accurately and efficiently as possible;
- continue to forecast how the water demand components will alter over time in order to plan for future changes and to ensure the continuity of supply to our customers;
- continue to implement water efficiency initiatives to promote and encourage the efficient use of water which in turn will help our customers save money, reduce per capita consumption and ensure that the environment is protected;
- invest some £12.6m to maintain and improve the accuracy and quality of the flow data provided for leakage calculation, by repairing or replacing failed meters or loggers. This will reduce the risk of loss of supply to customers. The benefits realised will include a reduction in average asset age, increased knowledge of the network, awareness of network issues at a very early stage, increased efficiencies in leakage targeting, reduced risk of failure within the estate and integration with 'live' network models as they are developed;
- invest some £10.6m to maintain and improve our stock of 4,700 pressure management assets through pressure reduction valves

(PRVs) replacement, modulation, new installations and maintenance. This will ensure that the benefits of pressure management are optimised and that burst instances are reduced, asset life is extended, network pressures are stabilised, energy costs are reduced and customer levels of service are met and maintained; and

- invest some £3.2m to maintain and improve air valves, thereby improving the operation and resilience of the network through tackling the cause of bursts at source.

9. Outcomes and Measures of Success – F3 Asset Resilience

Asset Resilience

Our proposal is to protect the service to our customers by making our assets more resilient to extreme events or other risks.

Background

Even though our assets are designed to withstand inclement weather and other known risks, we constantly face other threats such as those posed by increasingly challenging and volatile climatic conditions, (e.g. flooding, coastal erosion and power failures) as well as crime and terrorism. There is evidence that the frequency and severity of some of these hazards may be increasing due to the effects of climate change.

Although these risks are beyond our control, we recognise that they can adversely affect the services we provide to our customers and the impact we have on the environment. Improving the resilience of our assets to the risks associated with such extreme events is therefore a key element of our programme.

Our Objectives and Challenges

- Improve the resilience of our critical assets from the current level of 77% to 85% by 2020;
- Increase our understanding of the resilience of our most critical assets;
- Add protection to reduce the risk of flooding at critical sites; and
- Improve the monitoring of our critical sites to ensure that failures are prevented where possible.

Current Performance, Customer Views and the Rationale for the 2020 Target

In the qualitative phases of the customer research undertaken in the course of preparing this plan, our customers acknowledged that the resilience of our assets and our ability to maintain a service during extreme events or other risks was a matter of great importance.

We have reviewed our approach to understanding and managing extreme events and have created a framework by which we can measure the resilience of our assets and our ability to cope during these conditions. The exercise has also helped us prepare for such occurrences and we have been able develop plans and target investment to those areas where we believe there is the greatest vulnerability.

Our approach has been to identify those assets where significant problems could arise were they to fail. This included WTWs, WWTWs, key IT centres and strategic sections of pipe. A new register of 122 of our most critical assets has been produced. By systematically measuring the tolerance of these assets to specified risks (and having regard to the mitigation measures that are in place), we are able to track performance against a base position. Taking into account the investment planned during the 2015-20 period and the operational practices in place our aim is to improve the “percentage resilience score” from the current figure of 77% to 85% by 2020.

We will spend £152m over the course of AMP6 in order to achieve these targets. £110m will be spent on maintaining service and £42m on service improvements and meeting new legal obligations

9. Outcomes and Measures of Success – F3 Asset Resilience

Our Plan

We have a comprehensive risk register of assets, which is maintained by our operational teams. This has provided much of the source information relating to operational resilience and the history of events at particular sites.

In the case of the risks arising from risk of flood and coastal erosion (awareness of both of which have increased significantly in recent years), we have used the latest mapping techniques to gain a better understanding of the risk and identified that 14 of our WWTWs are at risk of being flooded in the event of storm event with a frequency of less than 1 in 100 years. We have also identified a major coastal erosion risk at one of our biggest WWTWs, which we will be investigating further.

We have also had regard to legal obligations such as those around the security of our sites (and obligations under the Security and Emergency Measures Direction - SEMD) as well as such factors as the availability of alternative sources of power or our ability to transfer water in the event of an incident occurring.

We are proposing a phased improvement in our level of resilience that will take us to 85% by 2020. For those assets which we cannot improve in the first phase we will be reviewing the monitoring arrangements to ensure the level of risk is understood and actively managed.

Improvements include:

- adding additional assets or modifying them to provide treatment resilience;

- improving site access roads and paths to ensure that we are able to access the sites far easier (especially during the bad weather) and keeping them operational. In total 55 of the 122 sites identified will benefit from these improvements;
- adding flood defences and flood proofing some of the critical points within sites to ensure that the site remains operational. This involves a wide range of flood protection measures, from flood defences protecting an entire site, through to minor alteration to building construction, e.g. improved doors or air bricks;
- ensuring that the highest risk sites for both water and waste water meet the relevant SEMD standards for security; and
- investment to improve treatment resilience where there is a risk that we may lose any part of the treatment process so that we remain compliant and are able to deliver outputs.

Beyond 2020 we will continue to review the resilience of the critical assets and make further improvements at an appropriate and affordable pace.

9. Outcomes and Measures of Success – G1 Health and Safety

Health and Safety

Our proposal is to develop the safest possible working environment for our people, so that everyone can return home safely at the end of each day.

Background

It is vital that our staff work in a safe environment and the health and safety of our staff is a key part of our strategy of developing our people so that they can provide a great service to our customers. To this end, we have in place the relevant policies and procedures, ensure that our colleagues are properly trained and have available the proper tools and equipment. We also promote health and safety through a programme of initiatives. The indicator by which we measure performance is the number of reports to the Health and Safety Executive under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) per annum.

Our Objectives and Challenges

Reduce the frequency of RIDDOR incidents to achieve “best in class” performance, as part of our aspiration to “Journey to Zero”.

Current Performance, Customer Views and Rationale for 2020 Target

Over the last three years the average number of RIDDOR incidents reported was 26.

We have BS OHSAS 18001 accreditation independently audited annually.

Our target for 2020 is to report no more than 20 RIDDOR incidents (combined employee and contractor). The rationale for these targets is that we should aspire to the industry benchmark and aim to achieve top quartile performance. We recognise that further developing our safety culture will take time and believe that this is a challenging yet achievable target for 2020.

Customer research did not specifically address investment and preferences for health and safety, as this is considered to be a “given” by customers

We will spend £94m over the course of AMP6 in order to achieve these targets (£89m on maintaining service and £5m on service improvements).

Our Plan

We will be investing some £18m in making improvements to around 500 of the 800 private pumping stations that will be transferred over in the coming years. We will have in place a rolling programme of refurbishment of an asset class where the lack of maintenance (when they were privately owned) is a potential health and safety risk to the staff that will be operating these assets. In addition, we propose spending some £16m on improving the Health and Safety of local asset management teams and some £26m on such areas as Electricity at Work compliance, Dangerous Substances and Explosives Atmospheres Regulations, Gas Safety etc.

We will also be continuing our programme to work with our contract partners to help them to raise their health and safety standards and behaviours to the highest level, including through our innovative programme of cross-partner audits.

9. Outcomes and Measures of Success – G1 Health and Safety

We are confident that this investment, together with our ongoing behavioural safety campaign, will deliver the anticipated improvements and allow us to achieve our targets.

9. Outcomes and Measures of Success – G2 Competence for Role

Competence for Role

Our proposal is to continue to develop a qualified and well-trained workforce.

Background

To maintain operational performance, compliance and deliver the best outcomes for customers we will continue to invest in developing and maintaining a skilled and competent workforce. In April 2013, we launched “Progression in Role” and established clear role profiles that define key criteria which we can now use to assess and measure individuals’ knowledge, skills and competence to undertake their respective roles. Progression in Role is now embedded into the business and is founded on:

- objective and consistent principles;
- knowledge and skills frameworks which are clear, factual and current; and
- a rigorous governance procedure.

This will be the framework by which we will make sure that our people are competent, committed and motivated to deliver the services our customers expect.

Our Objectives and Challenges

Provide sufficient training for all our staff to be competent in their role.

Our current position, Customer Views and Rationale for 2020 Target

The percentage of staff achieving the required level of competence against current measures currently stands at some 86%. This includes professionally qualified scientists and engineers, roles which are customer facing, as well as operational roles such as technicians, inspectors and operators. Energy Utility Skills, on behalf of Water UK, measure and benchmark all water companies on operational competence every 5 years. The last assessment was in December 2012 and where possible we use the results to benchmark ourselves. Where there is no relevant external industry benchmark we rely on operational assessments and other factors such as compliance and customer service criteria.

Our objective is that by 2020 (and beyond), 95% of the outlined key roles will be deemed competent. We recognise that due to the turnover of staff at any time, there will need to be transitional arrangements and a need to train, assess and qualify new employees. This accounts for the 5% who will at any one time not be regarded as fully competent for the role.

We will spend £17m over the course of AMP6 in order to maintain service.

Our Plan

We are committed to investing in continually developing a competent workforce. During AMP5 we have invested heavily in introducing best practice accredited training and assessment programmes to enhance workforce competence. This theme will continue into AMP 6. Our current operational training programmes are accredited by external

9. Outcomes and Measures of Success – G2 Competence for Role

bodies such as City & Guilds and the Certification and Assessment Board for the Water Industry (CABWI). We encourage and support our scientists and engineers to develop and maintain professional and recognised qualifications through our Professional Development Policy, Engineering Chartership Policy, or our Chartered Scientist Policy. During 2015/20 we will maintain the appropriate level of training and development to facilitate this programme.

In addition we now have well established programmes to bring new graduates, apprentices and trainees into our business, with formal development programmes supported by external education and training bodies. We are developing long-term partnership arrangements with UK universities, to give our people further opportunities to develop their skills and to tap into innovation across the industry. Further afield, we are also starting to develop long-term exchange programmes with other leading European water and waste water utilities, to encourage personal development and the exchange of best practice.

Finally, our customer service training programme 'How to Wow' was recently assessed and awarded with the full Mark for accreditation by the Institute of Customer Service. This modular training programme is mandatory for all customer facing colleagues and is offered as part of our induction programme. We will continue to promote this programme.

9. Outcomes and Measures of Success – H1 Operating Efficiency

Operating Efficiency

Our proposal is to minimise the costs of service delivery through a combination of innovation and the adoption of best practice.

Background

The sole object of Welsh Water is to deliver high quality water and wastewater services to the communities that it serves, at least cost. Operating efficiency therefore has a central role to play in the achievement of that objective.

Our Objectives and Challenges

Our objective is to exploit all opportunities to reduce our cost base during AMP6.

Our current position, Customer Views and Rationale for 2020 Target

We have led the industry in cost reduction in recent years (see section 6 above).

Customers have indicated that they do not want bills to be any higher than they need to be, which means that there is no place for operating inefficiency.

We have set our targets for operating efficiency using a combination of external benchmarking and internal forecasts. See section 6 for details.

Our Plan

A summary of our proposed efficiency initiatives and investment plans are set out in section 6.

9. Outcomes and Measures of Success – H2 Financing Efficiency

Financing Efficiency

Our proposal is to finance the delivery of water and wastewater services as efficiently as possible.

Background

The single biggest component of customers' bills is the return on capital. Since 2001 one of our overriding objectives has been to minimise financing costs.

Our Objectives and Challenges

Our objective is to maintain our single A credit rating, so as to minimise bills to customers in the long term

Our current position, Customer Views and Rationale for 2020 Target

We are currently rated A/A3/A by S&P, Moody's and Fitch respectively, and are one of the highest rating companies in the sector.

In qualitative research carried out independently by Accent Research, customers have consistently expressed the view that they would like bills to be no higher than is necessary, a major element of which is the minimisation of financing costs. Customers also frequently expressed a view that they would not support reductions of bills in the short-term which would risk higher bills for future customers.

The rationale for our 2020 target of maintaining our credit rating is that any credit downgrade would cost customers more in the longer term (see section 7 for further details).

Our plan

Our plan is based on an assumed cost of capital and set of financial projections which we assess, in the round, would enable us to maintain our current credit ratings. We will continue to foster open and positive relations with the core, long-term investors in UK infrastructure debt, to ensure that we can continue to access the finance necessary to continue with the long-term investment plans supported by our customers, at the lowest long-term cost.

10. Outcome Delivery Incentives

We welcome, and have embraced, Ofwat's suggestion that companies put in place a scheme of Outcome Delivery Incentives (ODI) to drive performance and outcomes for the AMP6 period and beyond.

Our ODI Scheme has been developed as an integral part of the Business Planning process and has been subject to detailed Board oversight. It has been shaped by the following over-riding principles.

First, our scheme will **build on what is in place already**. There already exists a detailed framework of legal and regulatory rewards and sanctions, such as:

- fines imposed by Ofwat;
- enforcement action taken by Ofwat;
- payments to customers under the "Guaranteed Standards Scheme";
- sentences imposed by courts in connection with prosecutions brought by the quality regulators (NRW and DWI) and other organisations (e.g. the health and safety executive); and
- other regulatory measures, such as interim determinations of K, "logging-down" and "short-falling".

We believe that it is important not to attempt to "re-invent the wheel" and there is also a need to avoid any risk of putting the company in a position of "double jeopardy", because this could itself distort incentives. Our Scheme has been designed, therefore, to complement and strengthen what is in place already.

Second, we want to put **customers at the heart of our Scheme**. So, where we fall short of the high standards to which we commit, our first priority will be to provide appropriate redress to the customers affected.

At present, like all water companies, we compensate customers in accordance with the statutory "Guaranteed Standards Scheme" (GSS). Payments are made for specified service failures in relation to matters such as making and keeping appointments and interruptions to supply. In addition, we commit to additional compensation payments in relation to water quality queries, incorrectly issued summonses, and failures to fit water meters within specified time limits, and we make *ex gratia* payments in certain circumstances where we have significantly let customers down. A major component of our Scheme will be the introduction of a suite of new commitments to compensate individual customers for service failures in connection with our chosen "Measures of Success" (e.g. sewer flooding).

Third, although our Scheme incorporates some positive financial rewards in the form of positive price control adjustments, its essential thrust is that the company should deliver what it says it will deliver for all customers, and that the **emphasis should be on penalising** circumstances where it lets individual customers down, rather than on rewarding situations where it delivers better outcomes for others.

Fourth, we plan to introduce a new set of **penalties for failures that are not individual customer-specific**. Some of our Measures of Success do not relate to identifiable individual customer experiences. For example, "Abstraction of Water for Use" and "Treating Used Water" relate to the environment. Whilst there may be statutory sanctions such as prosecutions for polluting a watercourse, these are not always applicable or applied. A further major component of the Scheme, therefore, will be a provision that endeavours to penalise the company by requiring it to

10. Outcome Delivery Incentives

provide appropriate, targeted, and proportionate compensation of a social or environmental nature, wherever feasible. So, for example, where a pollution event has occurred and no statutory sanction has been applied, remedial and restorative measures might be identified and implemented that would seek to repair the assessed damage (re-stocking of fish stocks in the affected catchment, say) or an equivalent financial contribution to an appropriate cause might be made (e.g. a local ecology-related charity).

Fifth, although our Scheme prioritises restitution to individual customers or communities/localities, it also provides for general **price control adjustments** in respect of certain Measures of Success, because we think they have a supporting role to play in specific ways:

- where customers as a whole can be said to have been affected by poor performance, but it is not possible or practical to identify and compensate individuals;
- where a price control adjustment has a useful “symbolic” role in reinforcing the reputational effects of a major failure in performance that is not otherwise addressed through other means;
- where a price control adjustment might not be made; and
- as a reward, in circumstances where out-performance of the Business Plan delivers particularly worthwhile benefits for customers or the environment, e.g. the “preventing pollution” Measure of Success.

For some measures, price control adjustments will only apply following a second year of failure, e.g. where the leakage target had been missed on account of exceptional winter conditions in one year, but the company had failed to act to recover the position in the following year.

In the event that a price control penalty is applied it will be spread over the remaining years of the price control period. (If it were all applied in, say, year 3, then customers could face sharp increases in their bills in year 4 once the penalty ceased, which could prove unpopular.)

In the event of a price control reward being earned, then this will be returned to customers by way of prices being set at a level below the adjusted price cap, under our policy that all gains go to customers. Thus, customers will not end up paying more in practice as a result of good performance.

The Outcome Delivery Incentive Scheme Annual Report

Although the over-riding principles on which our Scheme is based may be clear, the execution of certain aspects of it will require a degree of subjective judgement. For example, where environmental damage has been caused by company action the practical question will arise as to what (if any) further compensation should be made, and what form it should take. In some circumstances restitution may not be practically feasible (e.g. following the killing of fish stocks in estuarial waters), so the question to be addressed will be one of “equivalent restitution” (e.g. a donation to a research institute dedicated to the sustainability of marine species).

In addition, although the proposed price control adjustment penalties will be primarily “formulaic”, there will be occasions on which judgement has to be exercised, e.g. if there are exceptional circumstances, or where

10. Outcome Delivery Incentives

there is a case for offsetting the size of the adjustment on account of remedial commitments already made by the company.

Where there is need for judgement to be exercised, the legitimacy of the resulting decision will be enhanced if it is properly explained and subject to formal disclosure and governance process. Accordingly, it is proposed that the introduction of the Scheme will be accompanied by the creation of a new formal annual report, which will be submitted for approval by the Members at the Annual General Meeting. The report will include:

- details of compensation payments made to customers, both statutory and non-statutory;
- details of payments made in relation to community-based “compensation”, together with the reasons for the choice of projects and an explanation of the process, including consultation with relevant third parties, by which the Board arrived at its decision; and
- any price control adjustments that have been considered.

The report will be incorporated into the Welsh Water Regulatory Account and the Glas Cymru Annual Report and Accounts.

10. Outcome Delivery Incentives

Outcome			Measure of Success	Units	Performance now	Performance 2019/20	Totex £m	Wholesale Water	Wholesale Waste	Retail	Reputational	Enhanced GSS Customer payment	Social / environmental	Regulatory Action	Additional Financial Implications	Price control adjustments Penalty	Price control adjustments Reward
								Price Control									
1. Safe drinking water	A1	1	Safety of drinking water The number of tests on samples taken at our Water Treatment Works (WTWs), Service Reservoirs (SRVs) or customer taps that have failed in the year	%	99.98	99.99	239	√			√	√		√		√ £10 million	
	A2	2	Customer acceptability The number of contacts we receive from customers regarding drinking water quality (Appearance, taste, and odour). Reported as number of contacts per 1,000 population	Per 1,000 population	3.2	2.9	91	√			√	√		√	√		
	A3	3	Reliability of supply Any interruption to customer supply of > 3 hours. Reported interruptions are then averaged across the number of customers affected.	Minutes	53	10% below 2014/15 Figure	268	√			√	√			√		
2. Protecting our environment	B1	4	Abstraction water for use To comply with our abstraction Licenses as regulated by NRW	%	100	100	175	√			√		√	√			
	B2	5	Treating used water Comply with the permits for our wastewater treatment works as regulated by NRW	%	97.1	99	502		√		√		√	√			

10. Outcome Delivery Incentive

Outcome			Measure of Success	Units	Performance now	Performance 2019/20	Totex £m	Wholesale Water	Wholesale Waste	Retail	Reputational	Enhanced GSS Customer payment	Social / environmental	Regulatory Action	Additional Financial Implications	Price control adjustments Penalty	Price control adjustments Reward
								Price Control									
	B3	6	Preventing pollution Reduce the number of pollution incidents as regulated by NRW	Number	237	150	221		√		√		√	√		√ £10 million	√ £10 million
3. Responding to climate change	C1	7	Adapting to climate change Reduce the amount of surface water entering our systems.	Equivalent to x properties	1,000	25,000	60		√				√		√		
	C2	8	Carbon footprint Reducing our carbon footprint	GWh	40	100	42	√	√						√		
4 .Best in class' customer service	D1	9	Service Incentive Mechanism (SIM) A assessment of customer satisfaction based on both a qualitative and quantitative analysis	Industry score	Top quartile	Top quartile	193	√	√	√	√	√				√	√
	D2	10	At risk' customer services A measure of five sub areas (low pressure, supply interruptions, odour, customer contacts and sewer flooding) where customers have experienced poor service	No. of Customers	850	425	71	√	√			√					
	D3	11	Properties Flooded in the year The number of properties flooded due to Hyradulic Overload or other Causes (excluding severe weather)	No of Properties	196	155	60		√			√			√	√ £5 million	√ £5 million

10. Outcome Delivery Incentive

Outcome			Measure of Success	Units	Performance now	Performance 2019/20	Totex £m	Wholesale Water	Wholesale Waste	Retail	Reputational	Enhanced GSS Customer payment	Social / environmental	Regulatory Action	Additional Financial Implications	Price control adjustments Penalty	Price control adjustments Reward
								Price Control									
	D4	12	Business customer satisfaction Satisfaction scores for all non household customers	%	87	90	35			√					√	£5 million	
	D5	13	Earning the Trust of Customers % of customers	%	63	75	8	√	√	√	√						
5. Affordable prices	E1	14	Affordable Bills Our customer bills are kept affordable	Annual Increase	Below inflation	1% below inflation	0	√	√	√	√						
	E2	15	Help for disadvantaged customers We provide additional assistance for those disadvantaged customers	Number	52,000	100,000	15			√	√				√		
6. Asset Stewardship	F1	16	Asset Serviceability Keep our assets in a stable condition		Stable	Stable	438	√	√						√	£10 million	
	F2	17	Leakage To maintain an economic level of leakage	MI/Day	189.8	169	129	√			√				√	£5 million	
	F3	18	Asset resilience Ensuring our key assets are resilient to major influences such as extreme weather event, terrorism etc	%	77	85	152	√	√						√	£5 million	

10. Outcome Delivery Incentive

Outcome			Measure of Success	Units	Performance now	Performance 2019/20	Totex £m	Wholesale Water	Wholesale Waste	Retail	Reputational	Enhanced GSS Customer payment	Social / environmental	Regulatory Action	Additional Financial Implications	Price control adjustments Penalty	Price control adjustments Reward
								Price Control									
7. Developing our People	G1	19	Health & Safety To reduce the number of RIDDOR incidents	Number of Incidents	26	20	94	√	√	√	√			√			
	G2	20	Competence for role To ensure our staff are trained & competent to undertake their role	%	85	95	17	√	√	√					√		
8. Business Efficiency	H1	21	Operating Efficiency % reduction of controllable costs	Reduction In cost	20%	18%	93	√	√	√					√		
	H2	22	Financing Efficiency Credit Rating	Grade	A/A3/A	A/A3/A	0	√	√		√				√		

11. Risks and Uncertainties

Introduction

For the purposes of our Business Plan projections we have taken a central view of normal business risks (input prices, weather, macroeconomic growth, and so forth) but a one-sided view of regulatory and legal risks. Specifically, where a regulatory or legal requirement has been finalised we factor the consequences into our projections. Where there remains uncertainty, however, we do not include anything in our projections. Additional obligations that are firmed up during the course of a price control period and that need to be addressed promptly may be accommodated in a number of ways:

- through the interim determination provisions of our licence, as a relevant change of circumstance (RCC) or as a Notified Item; or
- through the “change protocol” and “logging up” arrangements (for wholesale only); or
- absorbed by the company, especially if the amounts involved are comparatively small, and would not breach “triviality” thresholds.

Potential new or changed legal obligations

In the AMP6 period we are facing several potentially significant new or changed legal obligations, none of which have been factored into our plans, and all of which we are putting forward to be treated as Notified Items in AMP6.

In all cases, we will argue most strongly that any new obligations imposed upon us should be cost effective, should be based on sound science and firm evidence, and should represent good value for money for our customers. The expanded programme of environmental and scientific research that we plan for AMP6 is designed to help achieve that objective.

These prioritised new statutory requirements include:

- UWWTD - The European Commission is challenging the UK’s interpretation of certain aspects of the UWWTD in the European Court of Justice. The final decision is still awaited but it may impose global spill limits on CSOs in catchments serving populations of greater than 2,000. It is estimated, very roughly, that this would cost £1bn-2bn over a period of several years, as we would have to convert most of our sewerage network from a combined to a separate system. No costs have been included in our current assessment for PR14;
- With the installation of over 2,300 spill monitors on our assets between 2015-2020, we are very likely to find more assets that are spilling more frequently than expected. We expect that we will be able to work with NRW and the Environment Agency to agree improvements over this AMP period and the next. Given the timing of these and our experiences in the Loughor Estuary, there could be £100-200m of cost pressure if the requirement to reduce spills down to levels intimated by the European Commission is enforced within AMP6. This has not been factored into our cost plan;
- Given cases under the UWWTD elsewhere, the Welsh Government is keen to take action to reduce the likelihood of any legal action being taken in respect of the frequency of CSO spills into the Burry Estuary. We have agreed to carry out schemes to reduce the volume of storm sewage spilt from our network. There is a risk that the EC will want

11. Risks and Uncertainties

this programme completed by 2020, in which case the proposed AMP7 investment of £99m for surface water management would have to be brought forward into AMP6 with the added increase of costs of having to carry out traditional storage solutions rather than sustainable surface water management solutions;

- Sustainability/Habitats – there remains considerable uncertainty around the impact of the review of consents process under the Habitats Directive;
- The adoption of a precautionary approach in implementing changes to abstraction licences could reduce dramatically the volume of water we are allowed to abstract from designated rivers in South Wales in particular. Offsetting such reductions could require significant investment, but this has not been included in our plans;
- WFD. There remain significant uncertainties as to what obligations will arise as a consequence of the WFD and various daughter directives, including the new Dangerous Substances directive;
- Other consequences of current or prospective UK or Welsh legislation, including the potential transfer of private supply pipes;
- Business Rates – There is a risk that business rates liabilities will increase substantially from 1 April 2017. This arises from a combination of factors including:
 - the next rating revaluation of business properties in Wales and England has been deferred until 31 March 2017; and

- the rateable values of both waste water treatment works and the water network are assessed by reference to special methods based on construction costs and profitability respectively. Construction costs have risen since the last rating revaluation and profitability is likely to increase due to the increase in the regulatory asset base of the company;
- However, the rateable value of most business properties is assessed by reference to open market rentals which have fallen since the last rating revaluation in March 2010. The expectation is that the Welsh Government will collect the same amount of cash rates from year to year, with increases in the Uniform Business Rate (“UBR”) being limited to inflation. Therefore there is a risk that a higher proportion of cash business rates will be collected from water and waste water assets;
- the methodology for assessing business rates for the water network is subject to appeal by Welsh Water and other water companies and it is unlikely that the outcome of the appeal will be known by the final determination; and
- there is no transitional relief for increases in rateable values in Wales. As a result, there will be no mitigation, as in England, of the full effect any increase in rateable values with effect from 1 April 2017.

Given the significant uncertainties regarding the scope of statutory obligations during the AMP6 period, we have given careful consideration to what process for managing change best meets customer priorities and provides an appropriate balance of risk. We have a good track record of dealing with such changes in the past (e.g. the absorption of changes to

11. Risks and Uncertainties

the NEP and drinking water quality requirements in AMP5, as well as the transfer of private sewers), and have been able to treat these through the established mechanisms (change protocol and logging up/down) at subsequent periodic reviews, rather than through unexpected short term changes to price limits (IDOKs). We believe that these tried and tested provisions should remain in place for AMP6 and PR19, so that medium term uncertainty in bills is minimised, with the continued reassurance that the IDOK provisions can be applied in the unlikely eventuality that they need to be used.

Risk modelling

As is evident from the examples given above, the risks we bear associated with regulatory and legislative events are asymmetric: all of the uncertainties would add to cost, none would reduce cost. Whilst acknowledging that the regulatory framework contains provisions that pass a substantial proportion of the risks on to customers, we retain a portion of the risk and there is invariably a lag between the incurring of such costs and the effect on bills.

In addition, although we take a central view of most business risks, some are, by their nature, “one-sided”. One example is the welfare reforms being rolled out by the UK Government. The results of early pilots show that the new arrangements are associated with a sharp increase in rent arrears, which is indicative of the likelihood of renewed upward pressure on bad debt and debt management costs.

It is important that our business plan can absorb the financial impact of risks outside the company’s control that would not be fully addressed by the established regulatory mechanisms.

To test the robustness of the financial plan we have modelled a number of scenarios and measured their impact on the key financial measures; interest cover ratios and gearing and whether these can be maintained. These scenarios include:

- new obligations which are below the IDoK threshold;
- substantial cost increases arising from circumstances not addressed by regulatory protections;
- not achieving the challenging efficiency targets we have set ourselves; and
- the impact of inflation being significantly different to our central assumption of 3%.

Our modelling demonstrates that at a cost of capital of 4.5% we are able to manage reasonable level of uncertainties and to deal with the associated risks on behalf of customers. Our A-grade credit rating (see Section 7) , supported by the customer equity that we have built up to some £1.5 billion, means that we are well-placed to insulate customers from any such adverse “cost shocks” during the AMP6 period.

11. Risks and Uncertainties

Conclusion

In preparing our business plan we have taken into account the risks and uncertainties to which the company and the services that we provide will potentially be subject over the course of the price control period. We face a number of normal (mainly symmetrical) business risks, such as fluctuations in input prices, economic growth, and the weather, all of which may lead to financial performance that is better or worse than projected. However, it should be noted that as set out in Section 8, any “windfall gains” will go to our customers.

In addition, we bear a number of (mainly asymmetrical) risks associated with changes in legal and regulatory obligations. Notable and potentially material examples include the potential consequences of legal processes currently under way that could lead to a significant re-interpretation of the UWWTD, and the major uncertainty that prevails regarding the effect of the WFD (including its daughter directives) over the AMP6 period.

Our scenario modelling shows that we would be able to deliver our plan in the face of a reasonable level of such risks, without the need to seek unexpected price increases from our customers during the price control period.