

The Independent Review of Charging for Household Water and Sewerage Services

Final Report



Anna Walker CB

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Foreword



Dear Secretary of State and Welsh Minister,

You asked me in August 2008 to conduct a review into charging for household water and sewerage services. The aim of the review was to:

- Examine the current system of charging households for water and sewerage services; and assess the effectiveness and fairness of current and alternative methods of charging including the issue of affordability;
- Consider social, economic and environmental concerns; and
- Make recommendations on any action that should be taken to ensure that England and Wales have a sustainable and fair system of charging in place. This could include changes to current legislation and guidance.

I am now enclosing my final report.

The conclusions are based on responses to an initial call for evidence in 2008 and my interim report in July 2009. We also held workshops across the country, including two in Plymouth. The report draws on published research and some analytical work of our own.

Overall, I have concluded that while the regulatory regime in the water industry has served customers well over the last twenty years, we now face considerable new challenges. Changes are needed to ensure we are ready to meet these. The charging system can play an important role in doing so. It is important that the changes are made soon before the challenges become much bigger and more expensive to handle.

The biggest issue is the mismatch between how we value water now and how we will need to do so in future. Most of us currently consider water cheap and plentiful. Increasingly this may not be the case. Demand for water is growing. Water supply is already under pressure across the south and east of England. Climate change projections suggest the challenges will become more significant. Summers will be warmer and drier; river flows may reduce significantly. At other times of the year, rainfall will be heavier. Severe seasonal flooding will have consequences for our drainage system. In addition, there are continuing upward pressures on costs as we renew our, often Victorian, infrastructure and meet demanding environmental requirements. Affordability is already an issue for some customers and will become more so.

Against this background, there were two clear messages from my consultations:

- It is very important that the charging system should incentivise the efficient use of water to ensure we have a sustainable water supply.
- Water, as an essential of life, also needs to be affordable, particularly to those on low incomes..

The report highlights significant and growing concerns over the current mixed (rateable value and metering) charging system, Rateable Value no longer targets those who need help with their bills. Unmetered bills are rising at a faster rate than metered bills: by 29 per cent over the next five years in the South West. The current system also does not incentivise the efficient use of water. People are voting with their feet and opting for meters to save money on their bills.

Keeping costs down, while ensuring companies can make a fair return on their investments, will be the most effective way of ensuring people can afford their water bills. The report makes some recommendations to help achieve this. It also highlights the importance of ensuring the full value of water is taken into account in any investment decisions, so we value water appropriately.

The report concludes that charging by volume of water used (which requires meters to be installed) is the fairest approach to charging. It can incentivise more efficient use of water. However, installing meters incurs costs. The report therefore looks at the costs and benefits of metering. It concludes that in evaluating the benefits it is necessary to take account of both the potential water savings and the reduced costs of more systematic metering. The current largely optant system is a very expensive way to install meters.

The report concludes that there is a strong case for metering where water is scarce and the benefits therefore outweigh the costs; for high discretionary users (who may not be paying for what they use at the moment); and on change of occupancy. The case for metering is less compelling when water is not in short supply. With metering becoming more widespread, there is a transition from one charging system to another already under way. This cannot be achieved successfully without leadership. The report recommends that Ofwat, working with others including the Environment Agency, should provide this leadership. It also recommends that a working group should be set up to ensure any synergies with the smart metering programme in the energy sector are fully exploited. The report suggests that if these recommendations are adopted, about 80 per cent of households in England will be metered by 2020 (it will be much lower in Wales because they have more available water).

The report highlights that affordability is already a real issue for some groups of customers and in high cost areas such as the South West. It therefore recommends a package of help closely targeted on customers with low incomes. The package includes help with bills and proposes water efficiency schemes alongside similar energy schemes. Decisions will be needed on who should fund this package – government or water customers. The report highlights the key issues. Ofwat already has a duty to have regard to low income customers and the report recommends that, working with the companies, the regulator should play a more pro-active role advising government, where necessary, on any further help which may be needed.

Bad debt is clearly placing too much of a burden on the water customers who pay their bills. The cost to paying customers is about £12 a year, which many customers can ill afford. Debt in the water industry is three times higher than in the energy sector, although bills are a third of energy bills. This suggests that something is fundamentally wrong. The report recommends urgent legislative changes to allow water companies to bill named customers, thereby allowing them to pursue debts through the courts, if necessary.

The report also looks at who should pay for different elements of the current bill. It concludes that prices should continue to be regional reflecting water costs. It also concludes that it is appropriate for water customers to pay for improvements to the quality of water and the disposal of sewerage as they are benefiting from the improvements. It stresses, however, that if water customers are to pay for these improvements, it is vitally important that they are consulted on the additional costs before governments agree to them – or water prices will begin to be seen as a “stealth tax” and face real opposition, as has already occurred in the South West.

The report also concludes that the future challenge from flooding is such that the charging system should incentivise household customers to minimise their surface drainage. It recommends that the highways authorities should become responsible for highways drainage as they are in the best position to influence this.

The report looks at the issues in the South West. Bills are, on average, 43 per cent higher than other areas. Local people feel that this is unfair and it raises questions of affordability. The report concludes that the high prices have been caused by a combination of the need to install new sewerage systems since 1989 requiring significant investment, the costs of which have fallen to the relatively small population. The report sets out some potential remedies including a corrective adjustment paid for either by government or by other water customers; or a package of measures to help customers in the South West, including the possible use of a seasonal tariff.

Finally, I would like to thank everyone who has provided input to this review by way of evidence, attending workshops or responding to our requests for information. We have had very thoughtful input which has been greatly appreciated. I also want to thank my review team very warmly for their continued hard work, their good humour and their willingness to go on grappling with what are very tricky issues! These have not been easy to deal with but we hope we will have contributed to the design of a future charging system which will help ensure sustainable supplies of water for us all at prices that everyone can afford.

A handwritten signature in black ink that reads "Anna Walker". The script is cursive and somewhat informal.

Anna Walker

December 2009



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Executive Summary

Charging for household and water sewerage services is a complex issue and this summary explains the factors and principles that lie behind the main recommendations in this report.

The Water Industry and Future Challenges

- i Water is essential to life. We are used to it being cheap and plentiful and so we tend to treat it as having very little value. That perception is rapidly becoming outdated and as climate change makes itself felt, reality and perception are drawing further apart. Demand for water is growing as a result of demographic changes and we are already facing pressures on water supply in the drier and more heavily populated south and east of England. The most recent climate change predictions mean that these challenges will also become more significant. Summers will be warmer and rainfall will be less predictable. Severe seasonal flooding will have consequences for our drainage system. Already there are concerns about the affordability of water bills in some parts of the country and for some groups of customers, and these are likely to grow.
- ii The regulatory regime has generally served customers well over the past 20 years, introducing significant improvements in the standards and quality of services. We now need to ensure that we have a regulatory regime and incentives in place across the industry that are capable of helping us deal with future challenges. This will require action by all of us: individual customers, government, companies and regulators. The right incentives are needed across the supply chain from the point at which water is abstracted to the way the customer uses it from the tap. This report explores some of the actions we believe will be necessary to encourage more efficient use of water and the role the charging system can play in achieving this goal.
- iii The terms of reference (set out **Annex 1**) asked the review to make recommendations for a fair and sustainable charging system. We issued a formal call for evidence, held workshops around the country, and invited comments on an interim report. The team is extremely grateful for the very thoughtful contributions we received. Two key messages emerged from this consultation. The first is that there are real problems with the current charging system which is based on a mix of metered charging (currently 35 per cent of households) and the rateable value (RV) of the property being served. The RV system is out of date and does not target efficiently those who need help nor does it provide customers with an incentive to save water. Low income customers who are unmetered are seeing their bills rise faster than metered bills, as the sizeable cross subsidies (currently about £600m overall) in the rateable value system are eroded. The second message is that there should be two main objectives for the charging system – to encourage a sustainable supply of water while being affordable to all, particularly those on low incomes.

Chapter 3: Fairness Principles

- iv Although fairness is a matter of judgement, some generally agreed principles of what constituted a fair charging system emerged from the consultation. These were that fair charges should:
 - incentivise the efficient use of water and therefore a sustainable supply of water;
 - charge according to the use made of the system;
 - apply the “polluter pays” principle wherever possible;
 - be affordable to those on low income;
 - be fair to companies;

- be simple and transparent for customers and involve them in decisions on prices;
- not be too expensive to administer; and
- be fair to future generations.

The recommendations in this report seek to apply these principles.

Chapter 4: Industry Costs Need to be as Efficient as Possible

- v There are issues not just about the future supply of water but also its future cost. Water is still generally very cheap – less than £1 a day for many of us. However, some people pay significantly more than this, particularly those living in high-cost parts of the country, such as the South West, and those (including some people on low income) who need high levels of water for essential use. Prices have also risen faster than inflation – 42 per cent in real terms since 1989.
- vi There will be real upward pressures on total costs as a result of changes in population, the need to replace old, often Victorian, infrastructure, the effects of climate change and planned environmental improvements. Capital expenditure is about £4.5 billion annually. If prices are not to rise significantly, whilst at the same time ensuring that water companies still get a fair return on their investments, it is crucially important that the overall structure of the sector incentivises efficiency. Keeping costs down overall will be one of the most effective ways of helping those who find their water bill expensive. Changes are needed at all points in the water distribution chain; from abstraction by water companies to customers' use.
- vii The review team believes there is a disconnect between how we currently value water and its future value. This disconnect means that we are taking decisions now based on an out-of-date attitude to water services which is likely to mean that we are storing up more trouble for the future – when it may be very expensive to avoid quite serious disruption to either water and sewerage services or to the environment. The report makes two recommendations to remedy this:
- governments and the Environment Agency should give careful consideration to the recommendations of the Cave Review to **change the licensing regime for the abstraction** and discharge of water to ensure that, where appropriate, it reflects the scarcity value of water; and
 - in advance of any legislation to achieve this, **Ofwat and the Environment Agency should agree methods of reflecting the full value of water in their regulation** of the industry so that this underpins all future investment decisions in the industry, such as metering or water efficiency, as soon as possible. **This work should be based on the Environment Agency's latest analysis of water availability by catchment areas which includes the harm caused by over-abstraction;**
- viii The overall structure of the industry and its regulation should also reflect the changes that are taking place. Going forward it is important to ensure that cost minimisation and appropriate incentives are exploited to the maximum, to deliver sustainability and affordability. To help achieve this the report recommends:
- **The UK and Welsh Assembly governments should review the merger regime** in the water industry to ensure it is sufficiently flexible to meet future challenges, while ensuring that there are still sufficient comparators to enable Ofwat to regulate effectively;

- **Ofwat should ensure its regulatory approach incentivises companies to promote water efficiency** by treating water efficiency measures as capital expenditure for price setting purposes, where the benefits accrue over a period of time, and calculating the operational efficiency of water efficiency activity separately from other operational activity;
- since Ofwat's current duty to contribute to the achievement of sustainable development encompasses climate change, **the UK and Welsh Assembly Governments should satisfy themselves that their guidance to Ofwat makes clear their current approach to, and priorities on, climate change.**

ix Customers also have a significant role to play in achieving this objective. There are a number of areas where we believe a change would help incentivise the right behaviour to meet future challenges. In particular, the review team recommends:

- A **national campaign on water efficiency**, alongside action on energy efficiency, to ensure customers understand the challenges we face on water supply: **Chapter 10** sets out detailed recommendations including the need for regional and local campaigns underpinning the national approach.

Chapter 5: Distributing Costs Among Customers

x As well as incentives to keep overall costs (and, therefore, prices) down, there is also the question of who should pay for different elements of water and sewerage charges and why.

xi As water is an essential of life, concerns were expressed at the current differential pricing across the country. Pricing in other utilities is broadly similar across the country. However, the review team has concluded that there are real underlying regional differences in water costs and that local ownership of these costs encourages greater efficiency. **The review team therefore recommends that water prices should continue to be regionally based and averaged at an appropriate geographic scale within a company area recognising that the level of averaging may change over time.** However, the review team also recognised that the need to improve water quality can be caused by diffuse pollution. **It recommends that governments should do all they can to ensure the clean-up of diffuse pollution is paid for by the polluter, not the water customer.**

xii There was also strong support for the "polluter pays" principle – those who cause environmental costs or damage should pay for them. It was also felt that those who benefited from a service should pay for it. On this basis, **the review team recommends that water customers pay for the supply of clean water and the disposal of foul sewerage.**

xiii The report also looks at whether water charges should include payment for wider environmental improvements which, it was argued by many respondents, were more appropriate for the taxpayer to pay. The report concludes these costs are primarily incurred as a result of improving the quality of drinking water and meeting appropriate standards for the disposal of sewerage. The review team noted that this expenditure is increasingly affecting all areas. The costs **of these wider environmental improvements are therefore appropriate for the water customer** to pay.

xiv However, the costs of meeting European Directives can be very high and there are choices about how and when they are met. Water customers must be involved in these decisions if they are to pay these costs. As a result **the review team recommends that before any new environmental expenditure is agreed, the UK and Welsh Assembly Governments should be required to:**

- state what the impact of the changes would be on company bills by area;
- ensure household customers are engaged in consultation on the proposed changes through CC Water’s regional committees;
- explore alternative approaches and make sure customers views are taken into account before any decisions are taken.

If customers are not involved, they may well feel prices are unfair and resent paying them, as has occurred in the South West.

Chapter 6: Options for a Future Charging System

- xv **Chapter 6** tackles the question of alternatives to the current charging system. The current mixed charging system is becoming increasingly untenable as more people opt for meters to reduce their own bills and the sizeable transfers and cross-subsidies in rateable value charging unwind without any alternative interventions where these are necessary. The RV system also does not encourage customers to use water efficiently. It therefore needs replacing by a more efficient and effective charging system that best meets the review’s fairness principles.
- xvi Designed as property taxes, neither rateable value nor council tax identifies households who need help with their water bills sufficiently accurately. Basing any tariff on these charging mechanisms also does not provide effective incentives for water efficiency. **The review therefore recommends that neither rateable value nor council tax bands should form the main long-term basis for charging for water.**
- xvii **As charges based on property type or a flat rate per property would neither incentivise water efficiency nor target those who need help effectively, the review team does not recommend their use either. An alternative based on the number of people living in a household is also not recommended,** as information on the number of people in a household is not systematically collected.
- xviii **The review team recommends that the future charging system should generally be based on the volume of water used and therefore on a metered system.** This approach meets all the fairness principles – except affordability in certain circumstances. It is the charging approach most likely to encourage customers to use water efficiently and will best support the development of a sustainable water supply. The basis of water charging should continue to move away from the current mixed system towards one based primarily on the volume of water used by each customer. The speed at which the change to metered charging occurs should depend on the costs and availability of effective help for those who need it.
- xix The review team has concluded that none of the non-measured alternatives to the RV based charging system offers a significant improvement with respect to the fairness principles. **The review team therefore recommends that in the transition to a fully metered system, customers who are currently unmetered should continue to receive bills based on rateable value.**

Chapter 7: Our Proposals on Metering

- xx The costs and benefits of metering are examined in **Chapter 7**, and the detailed analysis set out in **Annex 6**.

- xxi The current policy of government and the regulator on metering is somewhat unclear and in some instances apparently contradictory. As a result, companies are confused as to what is expected of them.
- xxii **The review team therefore recommends that the UK Government and Welsh Assembly Government should revisit the policy on household water metering in the light of climate change projections, expected population growth and the Environment Agency's latest work on Catchment Assessment Management Strategies.** The revised approach recommended by the review team (set out in paragraph 24 below) could deliver 80 per cent metering in England by 2020. Legislation will have to be changed to achieve this.
- xxiii Metering involves the transition from one charging system to another. That transition affects the distribution of costs between customers. The transition is already underway, albeit at different speeds in different places, and with a lack of customer understanding of what is happening and why. To ensure that the transition takes place effectively and efficiently it will need pro-active management and leadership. **The review team recommends that Ofwat should assume proactive leadership in this transition,** giving a lead on both metering and affordability issues. As part of its leadership role, **Ofwat should publish a progress report every two years** on metering.
- xxiv To bring a better understanding to what is, and will, happen, and to ensure that the process is managed effectively a more unified approach is required. **The review team recommends that Ofwat should develop an agreed methodology for assessing the costs and benefits of metering.** Working with the Environment Agency, Ofwat should develop such a methodology, taking account of the wider environmental and carbon benefits which the review team has identified as well as the reduced costs (20 to 50 per cent of installation costs) from a more systematic approach to metering rather than relying largely on optant metering.
- xxv The review team is not recommending universal, compulsory metering., **The review team recommends that in areas where the wider cost benefit analysis (incorporating environmental and carbon emission costs) indicates that it would be beneficial, systematic, area wide metering schemes should be rolled out. Companies should adopt systematic metering of high discretionary users and on change of occupier, unless Ofwat agrees that such an approach would be to the detriment of their customers.** Such policies should be designed to reduce the overall cost of metering to customers. Legislation will be needed to implement this approach. **The current right to opt for a meter should also continue to be offered to all customers.**
- xxvi As metering and billing technology is advancing rapidly for both energy and water, there are potential synergies in co-ordinating water and energy metering. **The review team recommends that Ofwat should set up a smart water meter group,** bringing together the Environment Agency, water companies and others to ensure that metering in the water and energy industries are considered alongside each other and that the water industry does not miss any opportunities to benefit from the national roll-out of smart energy metering.
- xxvii **The review team recommends that every household, including those in multi-occupied buildings, should be individually metered wherever possible. All new properties must be individually metered.**
- xxviii Where properties cannot be individually metered and the owner would like a meter, **the review team recommends that an assessed charge based on local metered consumption is used.**

Chapter 8: Measured Tariffs

- xxix Linking bills to the volume of water consumed is a key element of the proposed reform of charging structures. As metering becomes more prevalent, it is necessary to consider what sort of tariffs should be used. **Chapter 8** looks at this in more detail, applying the fairness principles developed in **Chapter 3**.
- xxx Changing the tariff structure of measured supply can significantly change the distribution of costs between customer types. Tariff design should be responsive to local circumstances and local customer preferences, but there are wider considerations as well, which need to be addressed at a national level. **The review team therefore recommends that the UK and Welsh Assembly Governments should consider updating guidance to Ofwat on the operational principles to be adopted with metered charging, taking into account the following recommendations.**
- xxxi **The review team recommends that the approach to tariffs should be as flexible as possible within a framework of principles** to allow innovative tariffs to develop and companies to reflect both local circumstances and customers' preferences.
- xxxii **The review team recommends that, in line with new government guidance, Ofwat should provide guidance to water companies on the principles to be adopted with metered charging. This should include guidance on the balance between standing and volumetric charges taking account of the importance of the charging system incentivising the efficient use of water.** Detailed proposals are set out in **Chapter 8**.
- xxxiii **Ofwat and companies should ensure that all households pay a fair share of fixed costs** even if they use relatively little of the service.
- xxxiv There is currently little evidence of the effects of different metered tariffs. It is important that **Ofwat and the water companies share information from the wide range of tariff trials that are currently taking place.** On the basis of current evidence, **the review team believes seasonal tariffs have the most potential.** Rising block tariffs need occupancy rates which are not generally available and do not target specifically those who need help. Declining block tariffs do not incentivise the efficient use of water. Trials of rising block, seasonal and peak tariffs need to be assessed to see if they should be used more widely to the benefit of overall customers' interests.

Chapter 9: Sewerage Services

- xxxv There is a large variation between companies on the distribution of prices between different aspects of the sewerage services provided – foul water, surface drainage and highway drainage. The review team has found it difficult to explain these variations – and as long as these services are tightly bundled it probably makes little difference to customers' bills. However, if changes are made to how these services are paid for, the distribution of costs will become more important to customers. **Chapter 9 therefore recommends that Ofwat should explore the current variation in the composition (amount and basis) of sewerage bills (for foul water sewerage services, surface drainage and highways drainage) and establish whether some general principles are needed** for this area of charging.
- xxxvi The cost structures and the volume used in relation to foul sewerage services for household customers are very similar to those of their water supply. **The review team therefore recommends that foul sewerage should be charged for on the same basis as clean water supply.**

- xxxvii Surface water and highway drainage services are currently provided and charged for in ways that do not incentivise least cost-solutions or the efficient use of the sewerage system. As a result of the increased likelihood of flooding with climate change, the **review team recommends that governments and Ofwat consider how the charging system can incentivise customers to drain less rain water** into public sewers. A sliding scale of charges should be considered to encourage appropriate measures to be taken.
- xxxviii As household water customers have no ability to affect the amount of water draining off roads **the review team recommends that governments should consider transferring highway drainage charges from water customers to local highway authorities. This would incentivise highways authorities to minimise the run-off from highways** (particularly into combined sewers) which has now become much more important as a result of more widespread flooding.
- xxxix **Governments should, as a minimum, place a duty on local highway authorities to cooperate with sewerage companies to minimise the total costs of draining highways.**
- xl **Highway drainage costs relating to any new connections to the public sewer should be paid for by local highway authorities.**

Chapter 10: Water Efficiency

- xli One theme running through this report is the need for everyone to use water more efficiently in order to maintain sustainable supplies. **Chapter 10** explores the range of measures needed to achieve this, in addition to a metered charging system.
- xlii **The review team recommends that Ofwat should continue to explore ways of incentivising companies to encourage water efficiency, including by separating out operational expenditure on water efficiency from other operational expenditure and by allowing some water efficiency measures to count as capital expenditure when the benefits will accrue over a period of time.**
- xliii All new homes should be water efficient. The additional costs are small but the benefits could be significant. **The review team therefore recommends that level 3 of the Code for Sustainable Homes for water should become mandatory for all new homes**, irrespective of whether they are being built as social or private housing.
- xliv Most of us will, however, continue to live in the housing that is already built so more effort also needs to go into making existing housing stock more water efficient. While recognising that water efficiency raises some different issues to energy efficiency, **the review team recommends that any energy efficiency scheme for existing homes should incorporate water efficiency measures (for example, the Warm Front programme). Water companies should be encouraged to work with social landlords and housing associations when they are refurbishing homes** to improve the water efficiency of social housing. CO₂ savings from water efficiency measures should also count towards water company CO₂ targets.
- xlvi **Governments should encourage the use of more water efficient fittings and appliances by:**
- **Considering how plumbers and builders can give householders sound water efficiency advice on fittings;**
 - **Ensuring that only water efficient products can be sold on the UK market;** and

- **Reviewing current labelling schemes** to ensure there is a national scheme which provides customers with clear and useful information on fittings and appliances. The scheme should be made mandatory if a voluntary approach cannot achieve these objectives.

xlvi Further work is needed on the costs and benefits of water efficiency measures to ensure such measures are cost effective. **It will be important that this work takes account of the wider benefits (including CO₂ savings and harm from over abstraction) and the full value of water as recommended in Chapter 4 and Annex 6.**

Chapter 11: Affordability

xlvi There are already issues about the affordability of water bills for some customers on low income, and more customers will need help during the transition to metering because of the way the distribution of costs between customers changes. The upward pressures on costs can only increase the problems of affordability going forward. **Any affordability measures should be very carefully targeted to those who need help.** Although the water sector cannot, and should not, be asked to solve problems of general poverty, the companies and Ofwat do have some role to play on affordability. In order to tackle affordability issues more effectively in future, Ofwat and the companies need to be more pro-active and innovative to ensure that people get the help they need.

xlvi Given the significant assistance (approximately £180m per year, out of transfers between customers of over £0.5bn) with bills given to low income customers by the rateable value charging system, **the review team recommends that a new, more closely and effectively targeted, package of help should be put in place:**

- **Watersure should be retained for those on low income with high essential use for medical reasons. But bills should be capped at either the national or regional average bill** – whichever is the lower. The scheme must be promoted. Detailed recommendations are at paragraphs 11.6.1-11.6.8; the estimated cost is up to £16m a year;
- **All metered low income customers should be offered a discount on their bills.** This approach provides help while maintaining the incentives not to waste water. Detailed recommendations are at paragraphs 11.7.1-11.7.4: the estimated cost is £330m a year; or
- If the package above is too expensive, as a minimum **a discount scheme should be introduced for low income households with children.** It is this group that research shows is most at risk. Detailed recommendations are at paragraphs 11.8.1-11.8.8: the estimated cost of this proposal is £110m a year.

The package would need to be mandated by Governments.

xlix **There are strong arguments for government to fund this package.** Respondents to our consultation felt strongly that government should be addressing questions of general poverty, and that paying for it should be on a progressive basis via the national taxpayer. **The alternative is for the local water customer to pay.** There is some logic to this because current transfers in the rateable value system are on a local basis. The review team estimates that there is in total about £600m of existing transfers in the rateable value charging system. Around £180m of this is a transfer from high-income to low-income households. This level of transfer will reduce to zero with universal metering, and the review team believes that assistance of a similar level should be preserved for affordability reasons.

- I However, it is important to note that CC Water's research shows limited willingness by customers to pay for others. Responses to our interim report have made very clear that inter-company transfers to deal with affordability are not acceptable. **It is for the UK Government and Welsh Assembly Government to decide how these measures should be funded.** The report sets out the argument.
- li The review team strongly believes that in addition to help with bills, **water efficiency help should be targeted at low income customers, especially pensioners, as part of existing public programmes such as Warm Front. Ofwat and the water companies should also agree company schemes targeted at priority low income customers in each area; the costs of these should be allowable within the regulatory framework.** High cost areas, and in particular, the South West, should be prioritised for this help.
- lii In view of the changes taking place in the industry and the environment, it is important that affordability and debt issues receive much greater attention going forward than they have in the past, and so **the review team recommends that Ofwat should produce an annual report on affordability and debt issues to ensure all companies are playing a role and that experience about who needs help is shared. Ofwat should advise government if at any time the existing package of help needs extending. Ofwat should also encourage social tariffs which do not involve cross- subsidy between customers** where appropriate.

Chapter 12: Debt

- liii Bad debt levels in the water industry are much higher than in the energy industry, but average bills are much lower. There are complex interactions between legislation, regulation and company behaviour that have resulted in these very high – and increasing – levels of bad debt for water and sewerage companies. Both the unrecoverable bad debt and the costs incurred in trying to recover bad debts are added to the bills of those that do pay – currently adding about an extra £12 a year. It is vital, therefore, that both the level and costs of bad debt are reduced, and that all the issues that give rise to the current level of costs associated with bad debt are addressed.
- liv **The review team recommends as a priority, that the Water Industry Act 1991 should be amended to provide for a named person who is legally responsible for paying the bill.** Detailed proposals are set out in **Chapter 12** and **Annex 9**. Currently water companies have to rely on information from customers or the landlord to know who occupies a property. Given that disconnection is not permitted for household customers, unlike all other utilities, the review team believes that the statutory change to a named customer becomes more crucial. There were strong feelings expressed by respondents for and against the use of reduced flow valves. Given the ban on disconnection, the review team believes that there is a case for strengthening penalties in the system for those who can afford to pay but are wilful non-payers. **The review team therefore recommends that governments consider whether companies should be legally able to pursue debt through magistrate's courts in future.**
- lv Efforts aimed at addressing potential debt should begin before the debt arises. As part of this, **the review team believes that it would be beneficial to customers and companies if central and local government passed on information to the water companies on vulnerable customers on benefits.**
- lvi The regulator also needs to play a part in creating a new climate of debt prevention rather than debt management. **The review team recommends that Ofwat should:**

- With CC Water, **publish an annual report on the debt management** undertaken by companies, to chart progress and ensure best practice among companies becomes normal practice;
- **remove bad debt costs as a notifiable item** in price controls once new legislative provisions are in place to ensure companies can bill a named customer; and
- **encourage the introduction of social tariffs** that help repayment of debt and future bill paying, and so provide benefits to all customers.

lvii Companies must also provide adequate help so that customers can avoid falling into debt and can more easily manage any bad debts they incur. **The review team recommends that companies should:**

- **publicise the help available to those in debt;**
- **ensure bills are easily understood**, issued at a frequency that meets customers' needs and offer a range of methods of payments;
- continue to **offer social tariffs** to those trying to pay their debts. Links with local third party advice organisations have clearly proved very positive;
- **work pro-actively with Job Centre Plus** to ensure that customers who can benefit from the WaterDirect scheme do so; DWP should consider the scope for keeping people on the scheme once a debt has been repaid.

Chapter 13: Putting Customers First

lviii Water and sewerage customers are captive – both to their local water and sewerage company and to local and national governments who can exploit this by transferring costs to water customers without giving them the opportunity to influence what is being added to their bill. **Chapter 13** concludes that much better processes of customer consultation and accountability are needed to help mitigate the negative consequences of this situation. In addition, if this consultation and accountability process is to work, customers must have easy access in a variety of ways to the information they need.

lix **The review team recommends that there should be a new requirement on government to consult with customers before agreeing any water quality improvements that water customers will have to pay for. In doing this, government will need to set out the costs and benefits of such improvements, including the impact on household bills, and ensure effective consultation through CCWater and the quadripartite machinery.** Where there are options, the collective views of customers should normally prevail. **It is important that CCWater**, consulting with government, Ofwat, and members of the quadripartite group, **puts in place arrangements to engage with and consult customers on a regional or water company basis, on price controls and other issues and on an ongoing basis.**

lx In the next price control review, Ofwat is proposing to use a new Service Incentive Mechanism (SIM) to assess how well companies respond to their customers. **The review team recommends that Ofwat, CCWater and companies should publicise and explain information about companies performance against the SIM on their websites and other appropriate channels on a regular basis so customers are aware of how well their company is performing.**

- lxi In order to keep customer service considerations to the fore, **the review team recommends that Ofwat publishes an annual analysis of companies' responsiveness to customers. It also recommends that Ofwat publishes six-monthly 'league tables'** based on quantitative information and survey results, allowing companies to monitor their progress in relation to other companies and the requirements of the assessment criteria.
- lxii Finally, **the review team recommends that** in order to underline the need for companies to take their customers seriously, **the limit for pursuing breaches and penalising companies should be extended to five years.**

Chapter 14: The South West

- lxiii Strong representations have been made to the review team about the unfairness and affordability of the high combined water and sewerage bills in the South West Water company area. Bills are on average 43 per cent higher than other areas. Having looked at the available evidence, the review team has concluded that the current level of bills relative to other areas is a reflection of the poor state of the local sewerage infrastructure at the time of privatisation, below the standards then prevailing in the rest of the country. As a result, in order to bring the South West's infrastructure up to essentially the same levels that now prevail elsewhere there has had to be a much more substantial new investment programme in sewerage infrastructure (per head of population). This sizeable investment (over £1bn), combined with the small local population, explains why bills in the South West are now so high compared to other areas – and why they are seen as unfair. The high average bills, plus the high level of metering, about 70 per cent, also accentuate affordability issues locally because more of the transfers within the rateable value system of charging have been eliminated.
- lxiv In terms of potential remedies to tackle unfairness, the review team considers that broadly there is a choice between:
- Reducing the cost to South West Water's current customers of the investments made since privatisation (and, therefore, the impact of this investment on current bills) through a specific one-off corrective measure; or some form of annual transfer; this could come either from government or water customers generally.
 - A package of proposals to help customers in the South West.
- lxv Any one-off adjustment to address these historic investment issues would require a government financial commitment and would need careful design, explanation and ring fencing. Ofwat would be best placed to consider the possible options for any adjustment and should advise ministers on how this could best be achieved, once a decision has been made that this is the approach to adopt. An alternative approach would be to adjust bills in the South West through contributions by other water customers across the country.
- lxvi An alternative approach would be a series of measures to help South West Water's customers. Residents could be helped by a combination of measures: use of a seasonal tariff which charged additional summer use at a premium rate (water use in the South West in the summer increases by one third); use of the review team's recommended affordability measures, with the full package applying in the South West whether or not it was adopted in the rest of the country, and water efficiency measures targeted at pensioners.

lxvii As a consequence, **the review team recommends that Ofwat is asked to advise on one or more of the following options:**

- **Implementation of a one-off or other financial adjustment by government to address the specific circumstances of South West Water at the time of privatisation, and the resulting implications for water bills in the South West**
- **Adjustment of bills in the South West through contributions by other water customers across the country;**
- **options for a package of measures in the South West Water customer base in a progressive and cost reflective way, potentially taking account of seasonal issues and cost drivers and the package of proposed affordability measures in this report.**

A full list of the review team's final recommendations is at Annex 12.

Chapter 1 – The Review

Scope of this Chapter

1.0.1 This chapter sets out the background to the review, the review team's consultation processes and the main messages from consultation on the interim report.

Review Team's Terms of Reference

1.1.1 Growing pressures on water supply from continuing population growth and projected climate change led the UK Government in 2008 to issue new long-term plans for water in England.¹ In *Future Water*, ministers also recognised that it was timely to look at the current charging regime for households – an issue of interest to Welsh ministers too. Levels of metering are now much higher than they were at the time of the last review of household charging in 1997.² As more customers opt for meters, customers with unmeasured water supplies are seeing large increases in their bills. Levels of water debt have reached an all-time high and concerns are being voiced about the affordability of bills in certain parts of the country.

1.1.2 Against this background, English and Welsh ministers asked the review team to:

- examine the current system of charging households for water and sewerage services, and assess the effectiveness and fairness of current and alternative methods of charging, including the issue of affordability;
- consider social, economic and environmental concerns; and
- make recommendations on any actions that should be taken to ensure that England and Wales have a sustainable and fair system of charging in place. This could include changes to current legislation and guidance.

Full terms of reference are given in Annex 1.

Call for Evidence and Interim Report

1.2.1 The review team began work in autumn 2008, issuing a call for evidence in November 2008. Seventy-eight individuals, companies and organisations responded³ (see Annex 2).

1.2.2 We ran five workshops across England and Wales in December 2008 and January 2009, inviting the public, consumer organisations, water companies, regulators and others with an interest in discussing the charging issues. The workshops were held in Plymouth, Warrington, Grafham Water, London and Merthyr Tydfil. A full record of the presentations made by speakers and the ensuing discussions can be found on our website.⁴

1.2.3 Together with published research and our own investigations,⁵ the evidence gathered was used to develop the analysis, conclusions and emerging recommendations to be found in the interim report published in June 2009. Our analyses at that stage were based on draft company business plans and the companies' Water Resource Management Plans.

¹ *Future Water: The Government's water strategy for England*. 2008. London: Defra

² *Water Charging in England and Wales – A New Approach*. Department of the Environment, Transport and the Regions. April 1998.

³ *The Independent Review of Charging for Household Water and Sewerage Services Interim Report* June 2009.

⁴ www.defra.gov.uk/environment/quality/water/industry/walkerreview

⁵ Reckon (2008) *Cross subsidies in the England and Wales water industry*. London. Also, unpublished work commissioned from ICS Consulting Ltd modelling the effects of a range of tariff structures on households in England and Wales and analysing data from the Family Resources Survey 2005/6 on household incomes, benefits, Council Tax, rateable values and water bills

Responses to the Interim Report

1.3.1 Consultation on the interim report ran until the end of August 2009. Seventy-three individuals, companies, government departments, local authorities, academic institutions and other key stakeholders responded (see Annex 2). Most respondents were positive about the level of detail and insight that the review team had established. These were the main messages that emerged:

- There was general agreement on the key importance of more 'sustainable water' in future and that the charging system needed to underpin this.
- While acknowledging that the review team had identified most of the important drivers of industry costs, respondents emphasised the difference between upward cost pressures and the effects on bills; they also stressed the value of incentivising changes to behaviour rather than employing 'command and control' measures.
- Respondents thought that the emphasis on including the full value of water in decision making was valid but the concept needed unpacking in practice; there was general support for developing a coherent, incentive-based system from abstraction through to billing individual customers.
- There was broad agreement on the proposed fairness principles but concern that the review team had suggested a possible trade-off between affordability and the other fairness principles; all were needed.
- A move to metering was regarded as the right and fair approach to future charging, as long as the pace recognised local water supply and environmental conditions. Respondents further recognised that metering could achieve important carbon savings, and firmly endorsed the need for strong leadership in the transition to metering.
- Using the full value of water and a wider cost-benefit analysis to assess the case for metering were widely supported, as was the metering of high discretionary users and on change of occupier. There were concerns, however, about the team's approach to identifying high discretionary users.
- Respondents were unanimous in their view that local highway authorities should pay for highways drainage in line with the 'polluter pays' principle; there was also a view that environmental goods should be paid for by taxpayers.
- There was widespread support for improving the synergies between energy and water, especially as both industries share the future challenges of responding to climate change with a growing population. Two areas were identified as particularly fruitful to explore: smart metering and efficiency measures. The review uncovered widespread agreement that water efficiency needed tackling through a comprehensive set of measures ranging from changes to regulatory incentives through to educational campaigns and better labelling of fittings and appliances.
- On affordability, there was general agreement of its fundamental importance and that at least some aspects of it should be dealt with outside the main charging system. Respondents generally felt that the review team's approach was insufficiently bold; affordability belonged with the wider issue of poverty and the government (taxpayer) should pay for whatever help was needed. Respondents felt strongly that low-income customers in one water company area should not subsidise those in a high-cost area. They also emphasised that across the country, some customers had difficulty affording their bills; this was not solely a problem for low-income customers with high use or those living in high-cost areas, and they felt that the interim report's proposed measures would not work in practice.

- On bad debt, respondents agreed that customers should be named, establishing a clear liability for paying their bills. Subsequent discussions have been held with the water industry and private landlord associations to improve the detail of the liability recommendations. Opinion was divided on the value of reduced flow valves for those who refused to pay bills even if they could afford them.
- Finally, the review uncovered wide support for a much higher level of customer involvement in future price reviews and proposed environmental legislation before any expenditure affecting customers' bills is decided. Also endorsed was the principle of improving incentives in the regulatory system to encourage companies to improve their relationship with domestic customers, and giving customers better access to key information – although views differed on how these should be achieved.

1.3.2 During the consultation period, the review team held three more public consultation workshops to explain the thinking behind the emerging recommendations and to discuss stakeholder views. One focused on the situation in the South West, the other two concentrated on affordability and debt, and environmental concerns. The feedback and outcomes from these workshops were used to inform the thinking behind the final report. Notes of these meetings can also be found on our website.

1.3.3 The consultation response, workshop discussions and individual meetings all helped to expand the evidence base that has informed this final report, together with more recently published documents. The review team is grateful for the thoughtful contributions from stakeholders and customers. Without these, and the large body of information provided in response to the review team's various formal and informal requests, we would not have been able to substantiate our conclusions and recommendations.



Chapter 2 – The Water Industry

Scope of This Chapter

2.0.1 In examining the scope for improvements to the current charging system for water and sewerage, it is important to understand the context in which the industry operates. This chapter therefore looks at the current water policy objectives of the European Union, the UK Government and the Welsh Assembly Government. It also considers the structure of the industry, its regulatory framework, the nature of the industry's costs and the current charging system.

EU Policy and Legislation

2.1.1 Domestic policy and legislation sit within the framework created by Europe. European Union (EU) water policy forms an important part of the wider European drive to protect human health and the environment. The main overarching legislation is provided by the Water Framework Directive (2000/60/EC), which requires member states to have an integrated approach to managing inland and coastal waters. The Framework Directive is supported by a suite of directives⁶ aimed at protecting water resources, fresh and salt-water ecosystems, and the quality of drinking and bathing waters.

2.1.2 Among its other provisions, the Water Framework Directive (Article 9) requires member states to ensure that water-pricing policies provide adequate incentives to use water resources efficiently by 2010 and that the price charged to water customers reflects the true costs. The Directive allows member states to take into account social and economic considerations when establishing the level of cost recovery for different users. While the Directive requires an adequate recovery of the costs of water and sewerage services for each economic sector (households, industry and agriculture), it allows flexibility as to how the recovery of those costs are distributed within the economic sector.

UK Government and Welsh Assembly Government's Policies

2.2.1 We have taken as our starting point current UK Government and Assembly ministers' policy on water charging, metering and demand management. The UK Government's approach⁷ supports:

- fair, affordable and cost-reflective water and sewerage charges, which incentivise environmentally responsible behaviour;
- the need for near-universal metering in water-stressed areas before 2030;
- targeted and appropriate protection for vulnerable customers and those least able to pay;
- an aspiration to reduce water demand to 130 litres per person per day by 2030 (from the current 150lpd); and
- better customer appreciation of services and benefits paid for through water bills.

2.2.2 In terms of the current charging regime for households, English ministers have issued Ofwat with two sets of statutory guidance: one in 2000 on charging,⁸ and the second in 2008 on social and environmental issues.⁹ Ofwat must take both into account when it takes decisions on companies' charging schemes.

⁶ Includes Bathing Water Directives (76/160/EEC and 2006/7/EC), Urban Waste Water Treatment Directive (91/271/EEC), Groundwater Directives (80/68/EEC and 2006/118/EC), Nitrates Directive (2003/35/EC), Sewage Sludge (Use in Agriculture) Directive (86/27/EEC), Freshwater Fish Directive (2006/44/EC), Shellfish Directive (2006/113/EC).

⁷ Future Water: The Government's Water Strategy for England Defra 2008.

⁸ Water Industry Act 1999 Delivering the Government's Objectives DETR 2000.

⁹ Statutory Social and Environmental Guidance to the Water Services Regulation Authority (Ofwat) 2008.

- 2.2.3 Water policy in Wales is devolved to the Welsh Assembly Government, which earlier this year published its Strategic Position Statement on Water.¹⁰ The core principles in Wales are:
- ensuring access to safe drinking water;
 - maintaining water and sewerage services at an affordable price; and
 - compliance with statutory obligations that govern water quality.
- 2.2.4 Reflecting the Welsh Assembly Government's commitment to citizen-centred delivery, the statement makes clear that citizens need to be at the heart of water service delivery and that those policies should reflect the unique nature of water resources in Wales.
- 2.2.5 In 2008, the Welsh Assembly Government issued Ofwat with statutory social and environmental guidance setting out its agenda for Wales' water industry on both socio-environmental issues and sustainable development.¹¹ The guidance also sets out Welsh ministers' priorities concerning the water industry's role in maintaining social equality. The document clearly supports water efficiency, providing people are not disadvantaged by any changes to the water industry.

Structure of the Industry

- 2.3.1 In England and Wales 70 per cent of the public water supply comes from surface water (lakes, reservoirs and rivers). Underground aquifers supply the remaining 30 per cent. Water is a multibillion pound industry with a turnover of £9.2 billion in 2007/8. It is made up of 10 regional water and sewerage companies and 14 water-only companies. (See Annex 4 for a map of company boundaries and Annex 5 for the numbers of households supplied.) In addition to these companies, the regulatory framework allows for two types of inset appointments ('Greenfield insets' and 'insets by consent') where the water or sewerage company appointed can supply household customers. The inset company becomes the monopoly water or sewerage services provider in its area of appointment, with the same duties and responsibilities as the previous monopoly company. The recommendations of this report apply to inset companies when they supply household customers.
- 2.3.2 The industry provides **four main services** to household customers: **supply of clean water** and **sewerage services**, including the removal and treatment of household sewage and dirty water, but also rainwater from roofs and hard surfaces around the house (**surface water drainage**), and from local highways (**highway drainage**).

The Regulatory Framework

Ofwat

- 2.4.1 Unlike larger business customers, household customers do not have a choice over who supplies their water and sewerage services and so the 22 monopoly water and sewerage companies are regulated under a system of comparative competition. The regulator, Ofwat, employs a system of benchmarking or comparing company performance to encourage less efficient companies to improve their performance. Ofwat uses its performance comparison to decide price limits which determine whether, or by how much, companies can raise their prices to customers. Ofwat also determines the cost of future capital in these five-yearly reviews. The current price review has just concluded. Within the overall price limit, water companies also prepare annual statements of charges that have to be approved by Ofwat

¹⁰ Strategic Policy Position Statement on Water. Welsh Assembly Government 2009.

¹¹ Welsh Assembly Government (2008) Social and Environmental Guidance to Ofwat issued under section 2A of the Water Industry Act 1991 (as amended by section 40 of the Water Act 2003).

before they can be applied. Price controls are intended to allow the companies to finance their statutory functions while protecting customers who have no choice but to use their local company for water and sewerage services.

- 2.4.2 Government is responsible for determining the statutory framework within which regulators and companies must operate. Ofwat's duties as a regulator are laid down in section 2 of the Water Industry Act 1991 (WIA91)¹² as updated by section 39 of the Water Act 2003.¹³ It has economic, social and environmental duties. Ofwat's main statutory duties are to:
- protect the interests of consumers wherever appropriate by promoting effective competition in the provision of water and sewerage services;
 - ensure that the functions of each company are properly carried out; and
 - ensure that companies can finance these functions, in particular by securing a reasonable rate of return on their capital.
- 2.4.3 In carrying out these duties, Ofwat has to have regard to the interests of individuals who are:
- disabled or chronically sick;
 - of pensionable age;
 - living on low incomes; or
 - living in rural areas.
- 2.4.4 Subject to its main duties, Ofwat is required to carry out its duties in a manner best calculated to:
- promote economy and efficiency on the part of the water companies;
 - ensure companies display no undue preference or discrimination in fixing their charges; and
 - contribute to the achievement of sustainable development.
- 2.4.5 Intergenerational fairness (see Chapter 3 on the fairness principles) is part of Ofwat's duties since the definition of customers includes both existing and future customers (under s.2 (5A)). Other duties under s.2 relating to security of supply also point to the need for intergenerational equity on the grounds that cheap water today should not be achieved at the expense of future consumers nor, presumably, of their environment.
- 2.4.6 However, Ofwat's duty to have regard to the interests of certain groups of customers appears to have been constrained by its duty to ensure that companies do not unduly prefer or discriminate between customers in setting charges. In practice, this has meant that while Ofwat has a general and a specific duty to take into account the interests of certain customers, including those on low incomes, it has resisted any new cross-subsidy from the general run of customers to those on low incomes. Its view is that government must mandate any new cross-subsidies between customers through legislation. Such an interpretation of duties has made it hard for companies to promote social and low-user tariffs. Ofwat will allow social tariffs only when they cover their costs do not involve cross-subsidies between customers and result in potential benefits, for example, by recovering more debt. Annex 7 sets out the range of social and other tariffs currently offered by companies.

¹² Water Industry Act 1991 Office of Public sector Information (1991).

¹³ Water Act 2003 Office of Public Sector Information (1993).

- 2.4.7 In terms of environmental duties, Ofwat is expected to contribute to sustainable development (under s.2(3)). Ofwat's view is that this includes the need to respond to climate change.
- 2.4.8 Government issues statutory guidance to help Ofwat interpret its duties. Existing UK Government guidance to Ofwat on price control and tariff structures dates from 2000 and on social and environmental issues from 2008. The Welsh Assembly Government has issued no charging guidance but last year issued its own social and environmental guidance to Ofwat. However, neither English nor Welsh guidance is entirely clear as to the relative priority to be attached to each of the objectives.

Water quality regulators

- 2.4.9 In addition to the economic regulator, there are two water quality regulators for the industry in England and Wales: the Environment Agency (EA) and the Drinking Water Inspectorate (DWI). The EA regulates and enforces water abstraction and discharge through a system of licences and consents. Alongside Natural England (NE), it also advises government and companies on environmental issues arising from companies' investment plans. The DWI sets standards for the quality of drinking water.
- 2.4.10 Taken together, the decisions and actions of the three regulators – Ofwat, EA and DWI – have a very significant impact on the total costs of the water and sewerage system, on how those costs are recovered, and on the prices charged to customers.

Consumer Council for Water

- 2.4.11 The regulatory system also provides for an independent statutory consumer body for the water industry, CCWater, set up by the Water Act 2003. It sees its role as ensuring that customers' collective voice is heard and that customers become and remain central to the water industry's thinking on price reviews and other important issues. Each year it conducts tracking research to gauge customer views about the performance of companies and of itself. In recognition of the regional nature of the industry, it has four regional committees in England and one in Wales. CCWater has made a particular input to the current price review to ensure that customer views are heard.

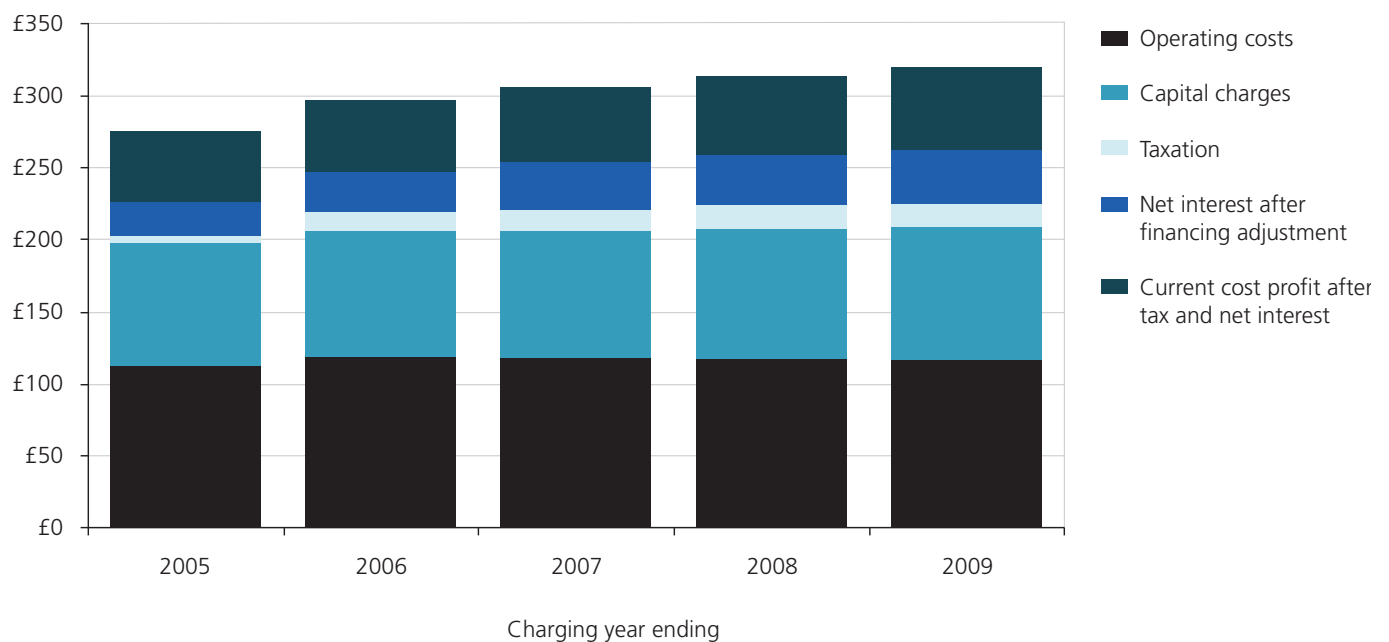
Nature of Industry Costs

- 2.5.1 The cost of water supply and sewerage services is largely determined by the cost of collecting or abstracting water, building and maintaining the network of distribution pipes, and treating water or sewerage to meet water quality standards. Quality standards have tightened significantly in the past 20 years, largely driven by the succession of European Directives.
- 2.5.2 Company costs are made up of two main blocks:
- capital expenditure (investment in new infrastructure and maintenance of existing assets, plus the cost of financing this expenditure); and
 - operating expenditure (for items such as wages, pensions and energy).
- 2.5.3 Costs vary according to the length of the network, the amount of pumping and treatment required and the geographic density of customers served. The industry's costs are therefore largely fixed. Variations in demand for water do not significantly impact on costs unless significant new investment is needed, such as new sources of supply or extensions to the network. These costs can be very significant. The industry therefore faces issues of ensuring that long-term costs (long-run marginal costs) are met, and decisions on how the high fixed costs are allocated.

2.5.4 Since privatisation in 1989, companies have invested more than £85bn, which represents an average annual investment of over £4bn – more than twice the pre-privatisation rate. This has led to significant improvements in infrastructure generally and in drinking water and environmental quality. Capital investment is likely to continue at the same level in future.

2.5.5 Investment has been higher in sewerage services than in water supply, mainly due to the requirements of the Urban Waste Water Treatment Directive.

Figure 1: Breakdown of bills (2005–2010)



Source: Ofwat

2.5.6 Figure 1 above demonstrates:

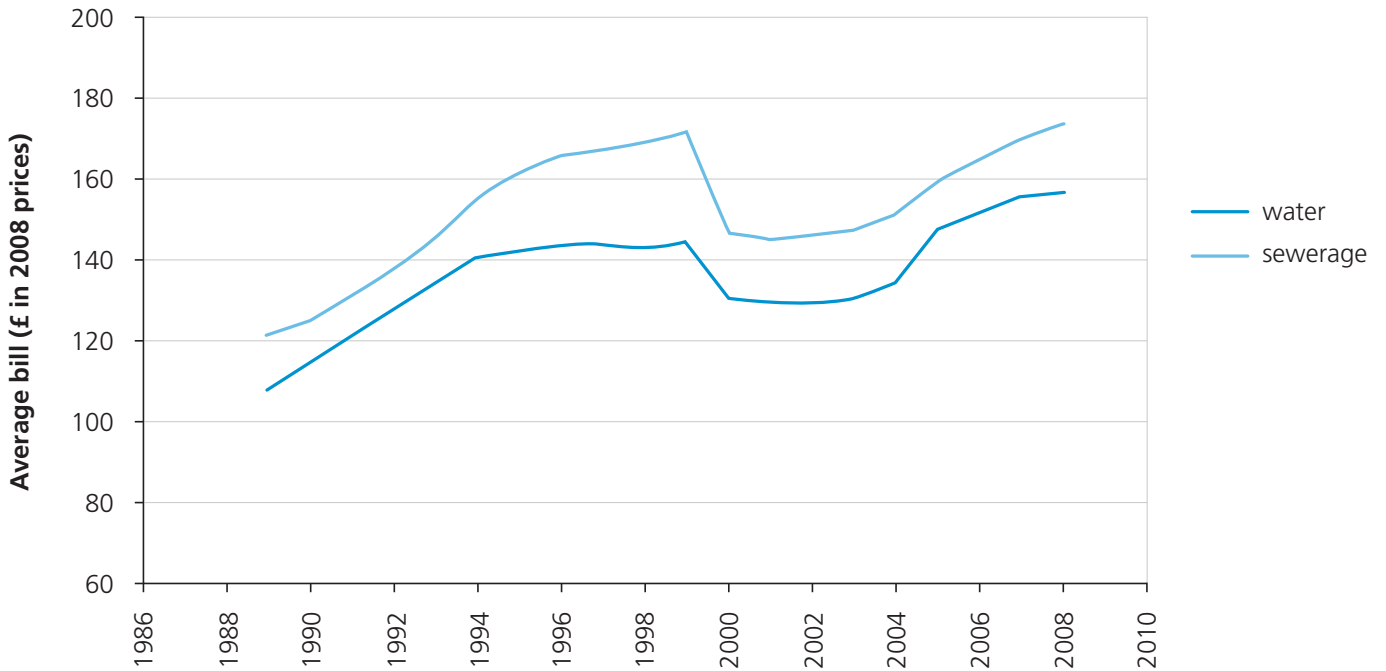
- a reduction in the percentage of operating costs; and
- significant increases in capital charges reflecting increased capital expenditure levels.

2.5.7 Capital expenditure has been largely financed by debt. Customers are therefore paying for these assets and the interest on the debt over a long period, typically 30 years.

Prices to customers

2.5.8 The size of the capital investment programme means that water prices have risen significantly since privatisation – on average about 42 per cent in real terms. Figure 2 illustrates this trend. Sewerage bills are higher than water bills and have risen at a broadly similar rate over the past 20 years.

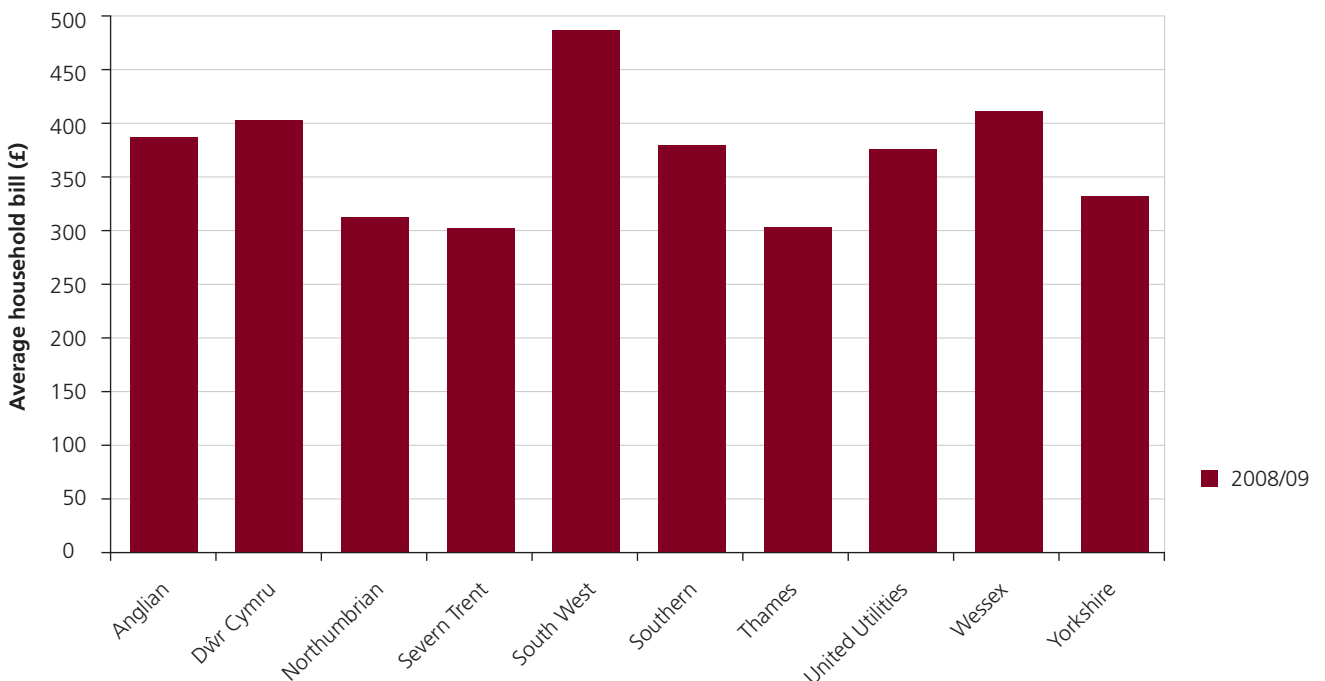
Figure 2: Average household water and sewerage bills in England and Wales since privatisation



Source: Ofwat

2.5.9 However, water prices remain relatively cheap for most households. The average combined water and sewerage bill is £344 in 2009/10 for England and Wales. This means that providing and removing a litre of water costs about 1p. However, this figure masks significant regional variations. Prices are particularly high in the South West, where the average combined bill is around £497 and unmetered customers pay on average over £700 per year.

Figure 3: Average household bills for combined water and sewerage, by water and sewerage company



Source: Ofwat

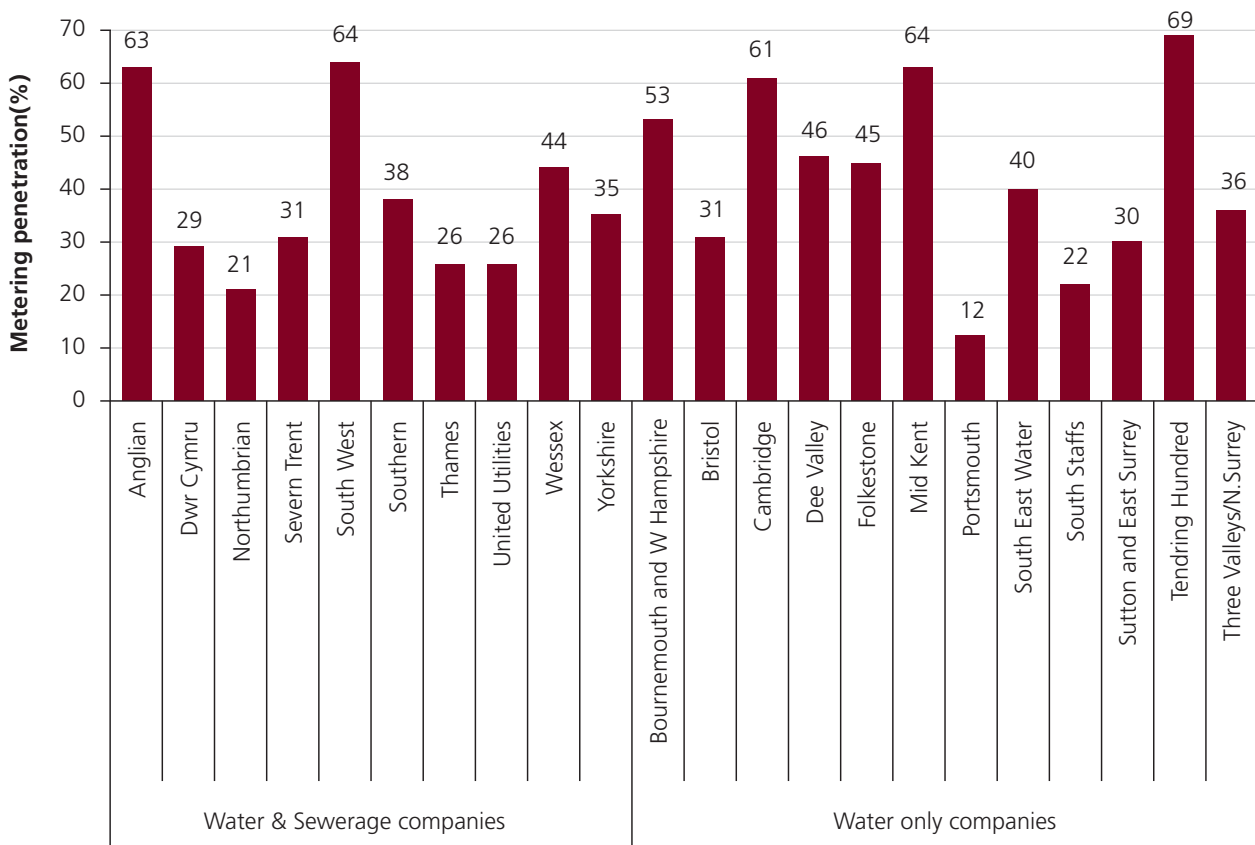
Current Charging System

2.6.1 Most households in England and Wales pay for water and sewerage services on the basis of the rateable value (rental value) of their property. The rateable value basis for charging was introduced in 1847 to fund large-scale sanitation improvements. At that time, there was no real alternative to a local property-based tax to fund the works, as income tax was still being levied on a temporary basis following the Napoleonic Wars. A rateable value approach did, however, mean that those living in more expensive houses paid more for their water. Rateable values were last updated in 1973, although new homes built between then and 31 March 1990 were given a rateable value and households could apply to be re-valued. Rateable values no longer form the basis for any other charging system, as local authorities now raise revenue for their services according to council tax bands, which themselves reflect property values at a certain date.

Metering

2.7.1 All new dwellings are now metered and other customers have a statutory right to opt for a meter. Approximately one third of households in England and around a quarter of those in Wales now pay for water and sewerage on the basis of a meter – therefore according to the volume of water consumed – and that number is increasing. Again, the national figures mask wide regional variations. In the Anglian and South West Water company areas, for example, some 60 per cent of households are metered, compared with 10 per cent in the Portsmouth area, as shown in Figure 4 Folkestone and Dover has already begun a compulsory metering programme under existing legislation. Companies such as Southern have substantial metering programmes planned (see Table 1 below).

Figure 4: Household meter penetration 2008-09



Source: Ofwat

2.7.2 The level of metering is expected to continue to grow. Ofwat's final determination for 2010 to 2015 shows overall meter penetration of 49 per cent by 2014/15 and some companies at around 90 per cent. Meter penetration in Wales is likely to be just over 40 per cent.

Table 1: Metering assumptions 2010/11 to 2014/15 totals

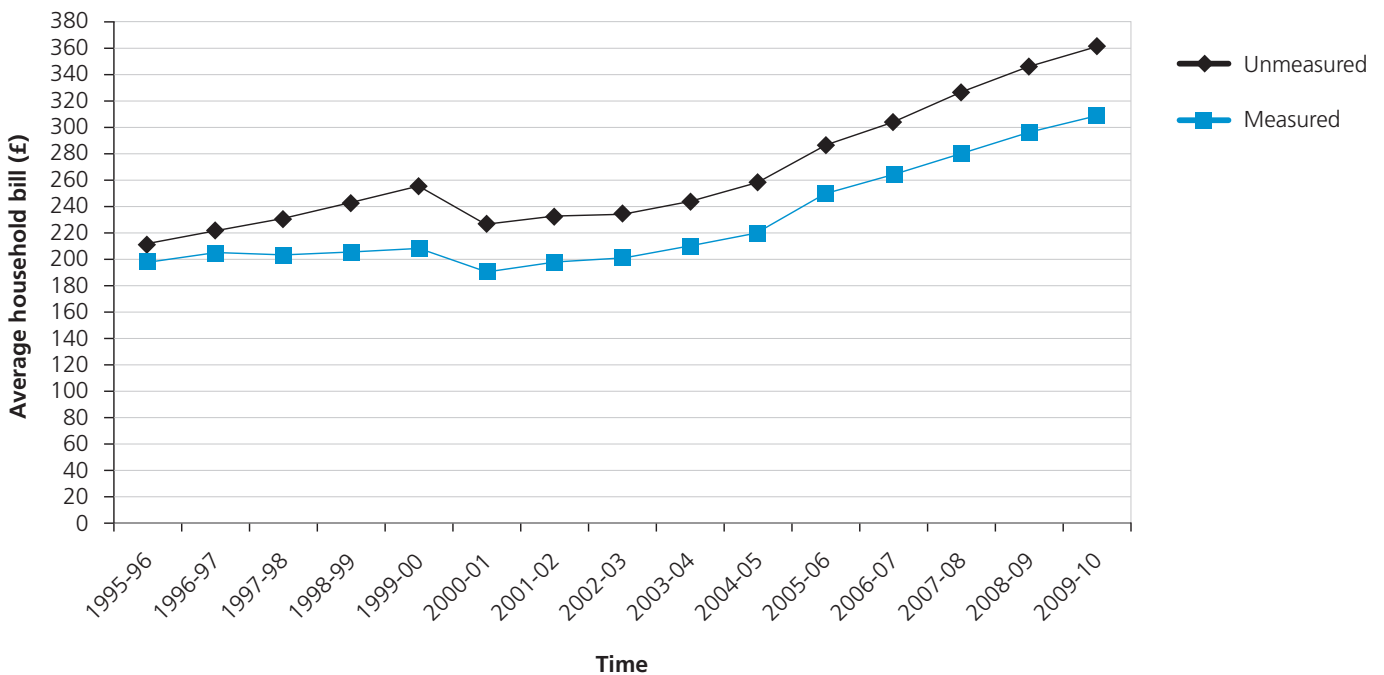
Water and sewerage companies	Optional meters (000)	Additional meters (000)	% of household customers metered by 2014-15
Anglian	124	185	81
Dŵr Cymru	99	0.5	41
Northumbrian	101	55	43
Severn Trent	198	11	42
South West	79	0	79
Southern	22	465	92
Thames	139	86	37
United Utilities	232	3.2	38
Wessex	49	0	58
Yorkshire	163	0	48
Water-only companies			
Bournemouth and W Hampshire	11.3	7.4	66
Bristol	35.4	16.8	46
Cambridge	6.2	0	70
Dee Valley	8.5	0	58
Portsmouth	25	0	24
South East	19.4	176	68
South Staffordshire	30.5	15.9	35
Sutton and East Surrey	8.4	23.5	47
Veolia East	3.9	0	71
Veolia Central	50	0	44
Veolia Southeast	0.8	8.5	90
Industry total	1,405	1,053	50

Source: Ofwat final determinations

Differences between the Metered and Unmetered Bill

2.8.1 The main reason customers opt for charging on a volumetric basis is to save money. This is particularly beneficial for customers living in properties with a high rateable value who consume little water. One water company told us that on average, their optants save over £100 per year on their combined water and sewerage bill. The opportunity of moving onto measured charging is available to all householders where the property owner (or occupier with a lease of more than six months) asks for it, and where it is feasible to fit a meter.

Figure 5: Average metered and unmetered household bill (1995–2010)



Source: review team

2.8.2 Ofwat ensures fairness between the generality of metered and unmetered customers by requiring each company to ensure that the sum total of all unmetered customers' bills equals the total amount they would have paid through equivalent measured tariffs. The costs of the meters are met by metered customers only. Although this means that the two groups are paying their own costs, it may also result in similar households receiving quite different bills. Figure 5 shows the difference between average metered and unmetered bills for all households.

2.8.3 The effect of people opting for meters is that the average use of unmetered households remains higher than the average use of metered households, and this affects their bills. The difference in average consumption between metered and unmetered households can be expected to persist if the increases in metering rates are led by optants. Responses to our consultation suggested that these groups in particular remain unmetered:

- those opposed to metering on principle;
- those who would benefit from metering but are either unaware of the option or frightened that it might lead to a higher bill (we were told that pensioners often fall into this category);
- those on low incomes but with high water usage.

Companies believe that this last group is particularly significant.

2.8.4 Table 2 below shows that even when water prices overall are constrained, bills for unmetered customers will rise significantly.

Table 2: Change in typical metered and unmetered household bills

	Household bills (£)					
	2009-10		2014-15		% change	
	Metered	Unmetered	Metered	Unmetered	Metered	Unmetered
Water & Sewerage company						
Anglian	348	470	336	533	-3	13
Dŵr Cymru	292	456	276	449	-5	-2
Northumbrian	267	335	280	375	5	12
Severn Trent	280	316	267	307	-5	-3
South West	401	723	407	935	1	29
Southern	324	412	352	422	9	2
Thames	280	316	292	343	4	9
United Utilities	344	398	334	413	-3	4
Wessex	358	469	369	565	3	20
Yorkshire	293	364	293	399	0	10
WASC average (weighted)	314	370	313	390	0	5
Water-only companies						
Bournemouth and W Hampshire	131	150	132	169	1	12
Bristol	138	166	146	194	5	17
Cambridge	113	129	110	135	-3	5
Dee Valley	109	146	109	154	-4	1
Portsmouth	88	94	78	87	-11	-8
South East Water	141	197	145	227	3	15
South Staffs	122	126	120	138	-2	10
Sutton and East Surrey	149	170	142	181	-5	7
Veolia Southeast	165	244	174	253	5	4
Veolia East	156	202	144	206	-8	2
Veolia Central	142	169	133	162	-7	-4
WOC average (weighted)	137	159	126	152	-8	-4
Industry average (weighted)	312	367	311	385	0	5

Source: Ofwat Final Determination

- 2.8.5 The problem of affordability for unmetered customers on low incomes is therefore a pressing one now – whatever the future pace of metering.

Assessed charges

- 2.8.6 Where a customer requests a meter but installation is not feasible, an assessed charge is used. Companies currently employ a variety of assessed charging bases including the number of bedrooms and type of property (detached, semi-detached and flat).

Conclusions

- 2.9.1 The charging system has to sit within the framework created by European and national legislation and the domestic regulatory regime for the water industry.
- 2.9.2 The three regulators – Ofwat, the Environment Agency and the Drinking Water Inspectorate – exercise considerable influence on the size and nature of costs faced by the industry.
- 2.9.3 The industry is very capital-intensive. Capital investment is more than double the pre-privatisation rate and is likely to continue at a similar level in the near future.
- 2.9.4 As a result of this capital investment, prices to customers have risen significantly since privatisation and much faster than inflation: about 42 per cent in real terms. Prices also vary considerably by region.
- 2.9.5 The current charging system is a mixed one. Most households pay on the basis of rateable value but one third pay a metered charge. There are significant differences in the proportion of metered households between companies.
- 2.9.6 The level of metering is expected to continue to grow to 50 per cent by 2015 as people opt for a meter in order to reduce their bill, more new houses are built and some companies undertake area metering programmes.
- 2.9.7 Households remaining on unmeasured bills do so for a variety of reasons – and their bills are rising at a faster rate than metered bills.



Chapter 3 – Fairness Principles

Scope of This Chapter

3.0.1 This chapter sets out the fairness principles which resulted from the review team's consultation and have guided its recommendations.

Fairness Principles

3.1.1 The review team's terms of reference asked us to 'assess the effectiveness and fairness of current and alternative methods of charging' and make recommendations 'to ensure that England and Wales have a sustainable and fair system of charging in place'.

3.1.2 Fairness inevitably entails an element of judgement. The review team was therefore concerned to consult widely on what is generally considered to be fair.

3.1.3 The call for evidence and the various workshops and meetings held by the review team resulted in significant agreement by late summer on the elements and principles of a fair charging system. Some elements of fairness related to equity, ability to pay, and concern that today's cheap water may impact adversely on future generations. Many of the responses reflected concerns with the perceived unfairness of the current system.

3.1.4 The fairness principles that emerged were:

- Charges should relate to the costs imposed on the system, so that customers in similar situations pay a similar amount for the same service. The current mixed charging system does not achieve this.
- Charges should relate to the volume of water used, thereby incentivising the efficient use of water. Even those in water-rich areas thought this was important, both as a demonstration of fairness and to ensure a long-term sustainable supply of water.
- Charges should reflect the 'polluter pays' principle¹⁴ on the grounds that those who benefit from a service should pay for it.
- As water is essential to life, charges should be affordable to everyone, particularly those on a low income, including those whose water usage is unavoidably high.
- Charges should be fair to future generations, ensuring that current customers do not benefit to the detriment of future customers.
- Charges should be fair to companies, allowing them to recover their reasonable costs and to continue to invest.
- Charges should be simple and transparent – customers should know where their money goes, and why. This was considered particularly important as household water customers have no choice of supplier.
- The charging structure should be neither too expensive nor complex to administer.

The team noted that these principles were very similar to those arising from Ofwat's consultation in 2008 on the same subject as part of its 2009 price review.¹⁵

¹⁴ Principle 16 of the Rio Declaration on Environment and Development makes the person responsible for producing pollution responsible for paying for the damage done to the natural environment.

¹⁵ www.defra.gov.uk/environment/quality/water/industry/walkerreview/index

- 3.1.5 The interim report concluded that the last four principles should apply in all circumstances; that is, charges should be fair to future generations and to companies, clear to customers, and not too expensive to administer. It suggested, however, that the first four principles point in different directions and might need balancing against each other; they could not all be achieved within the charging structure alone.

Responses to the Interim Report

- 3.2.1 While responses to the interim report agreed that the principles were generally the right ones on which to base a charging system, a clear view emerged that affordability is imperative, as water is essential to life; it must be delivered while at the same time ways must be found to incentivise the efficient use of water. Respondents generally thought that affordability needed to be dealt with outside the charging system, although many also felt that the charging system could contribute to affordability issues, without finally resolving them. The review team agrees that both affordability and the efficient use of water need to be achieved. This report explores both issues.
- 3.2.2 It was striking that while companies with no water supply problem nonetheless consider that charging by volume is the fairest way to pay, there was also a clear view that where water is plentiful, the costs of metering must be taken into account if affordability concerns are not to be exacerbated. The review team explores this point further in Chapter 7.
- 3.2.3 One respondent made the additional point that charges should not only be simple and transparent, but also represent good value for money. This is important because household customers have no choice about who supplies them with services. Value for money needs to be achieved by keeping costs (and hence prices) down as far as possible, and by ensuring that collectively, customers actually value the services they are getting.
- 3.2.4 This highlights how important it is fully to engage customers in decisions about what services these monopoly suppliers should or should not provide, and the quality of such services, as well as the importance of ensuring that services are delivered as efficiently as possible. This is further explored in Chapters 5 and 13.

Conclusions

- 3.3.1 The review team has therefore concluded that the principles guiding a fair charging system are that it should:
- incentivise the efficient use of water and therefore a sustainable supply of water;
 - charge according to the use made of the system;
 - apply the 'polluter pays' principle wherever possible;
 - be affordable to those on low income;
 - be fair to companies;
 - be simple and transparent for customers and involve them in decisions;
 - be not too expensive to administer; and
 - be fair to future generations.
- 3.3.2 The rest of this report explores the application of these principles.

Chapter 4 – Future Challenges

Scope of This Chapter

4.0.1 This chapter explores the future challenges the water industry will face in terms of supply and upward pressures on costs. It highlights the mismatch between how we value water now and its future value, and considers whether the industry and its regulatory framework are ready for the future challenges we face. The chapter argues that if water supplies are to be sustainable and prices generally affordable, incentives must ensure that the industry operates as efficiently as possible.

Water Supply

4.1.1 The UK Government updated in 2009 its climate change projections (UKCP09) to the end of the century. The specific consequences of these for managing water supply and sewerage services in different parts of England and Wales have not yet been worked through, and work is ongoing to improve understanding of what UKCP09 means for water resource planning.

4.1.2 Using the UKCP09 medium emissions scenario with 50 per cent probability, it is likely that by the 2050s:

- temperatures will increase by around 2°C in winter and 2.5°C in summer;
- evaporation will increase, mainly as a result of higher temperatures;
- there will be little change in average annual rainfall; but
- winter rainfall will increase and summer rainfall will decrease by about 10 to 20 per cent with the largest changes in south west England.

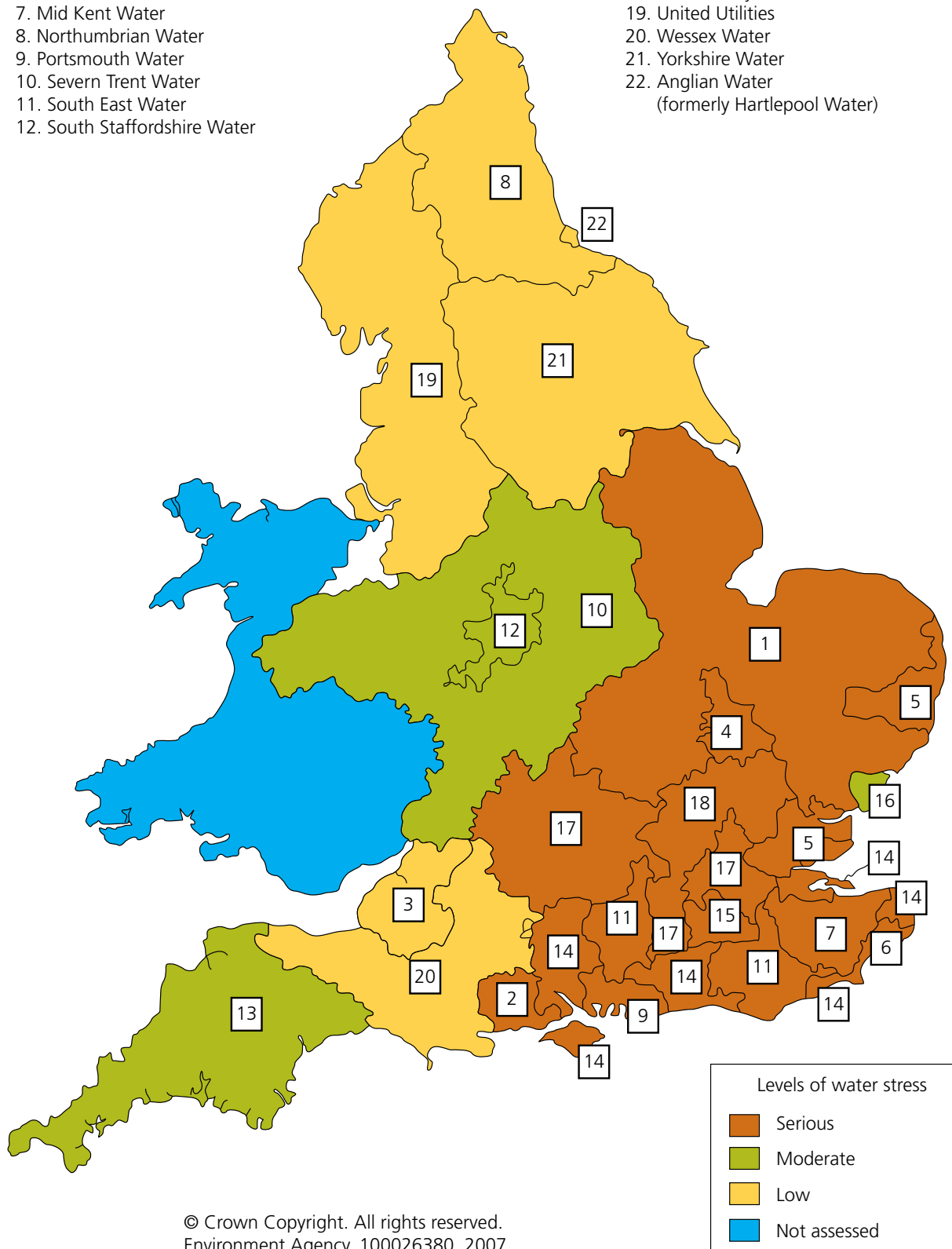
4.1.3 In broad terms, drier summers and more droughts will increase pressures on water supply because of greater demand for water from households and commercial irrigation. Wetter winters, and more heavy rainfall, will create greater pressures on the drainage system when it is already struggling to cope in some areas. River flows will be noticeably lower during the summer and autumn by the 2050s meaning that rivers are less able to dilute sewage effluent and diffuse pollution from urban areas or agricultural land.

4.1.4 The costs of the water supply system are driven by peak rather than average demand.¹⁶ The industry's infrastructure must be capable of meeting not only the base demand for water but also daily and seasonal peaks. In order to provide a long-term, sustainable system, companies have to plan now to deal with greater weather extremes in the future, coupled with substantial population growth. Companies have been asked to plan to meet demand for water in a dry year and in critical periods, subject only to occasional restrictions on supply. They must also demonstrate that any investment in new supply represents the best-value optimal solution for balancing supply and demand, and that they have considered alternative measures such as reducing leakage, improving water efficiency, and incentivising more efficient water use through their tariffs.

¹⁶ Environment Agency (2008) Water Resources in England and Wales – Current State and Pressures

Figure 6: Map of relative water stress by company area: Environment Agency 2007

- | | |
|---|--|
| 1. Anglian Water | 13. South West Water |
| 2. Bournemouth and West Hampshire Water | 14. Southern Water |
| 3. Bristol Water | 15. Sutton and East Surrey Water |
| 4. Cambridge Water | 16. Tendring Hundred Water |
| 5. Essex and Suffolk Water | 17. Thames Water |
| 6. Folkestone and Dover Water | 18. Three Valleys Water |
| 7. Mid Kent Water | 19. United Utilities |
| 8. Northumbrian Water | 20. Wessex Water |
| 9. Portsmouth Water | 21. Yorkshire Water |
| 10. Severn Trent Water | 22. Anglian Water
(formerly Hartlepool Water) |
| 11. South East Water | |
| 12. South Staffordshire Water | |



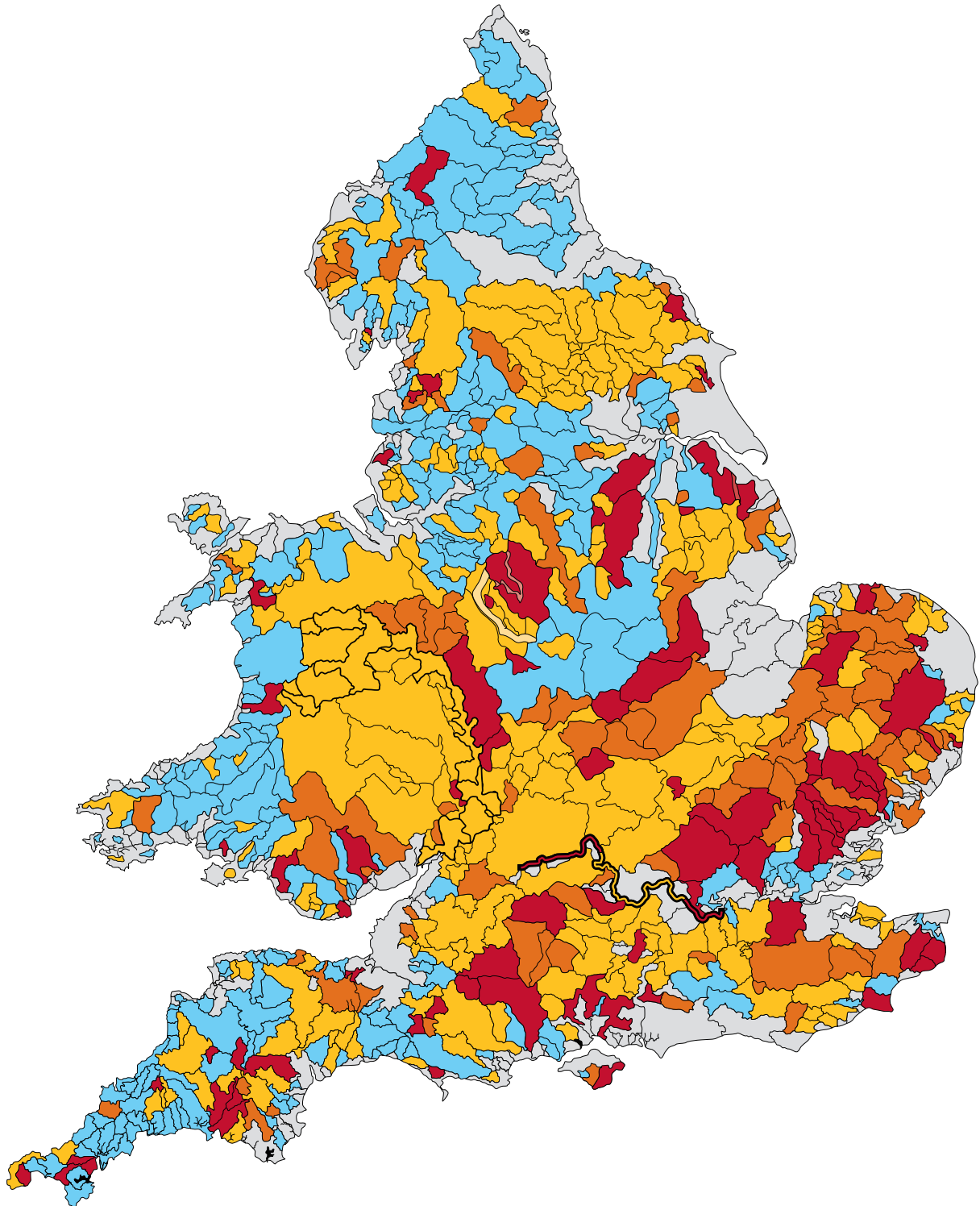
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Environment Agency, 100026380, 2007.

Source: Environment Agency

- 4.1.5 The UK Government and Welsh Assembly Government have already identified areas of relative water stress in England (but not Wales), based on advice from the EA. This is shown in Figure 1 above. To produce this map, the EA looked at potential future stress on public water supply in terms of per capita consumption and population growth. Metering policy in England is based on this 2007 assessment and envisages near universal metering in water-stressed areas in the south and east of England by 2030.
- 4.1.6 In 2009, the EA completed a detailed review of water resources in England and Wales through its current cycle of Catchment Abstraction Management Strategies (CAMS).¹⁷ These strategies consider how much fresh water is readily available for all users, how much water the environment needs, the amount of water licensed for abstraction, and the amount of water being abstracted. The EA has undertaken this assessment by catchment area rather than water company administrative areas.

¹⁷ Water Resources in England and Wales – Current State and Pressures EA 2008.

Figure 7: Map of water available now for abstraction (surface water combined with groundwater) by catchment area: Environment Agency 2009



Legend

Resource availability status

- Water available
- No water available
- Over licensed
- Over abstracted
- GW only/ not assessed/ no status available

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Environment Agency, 100026380, 2008.
Part-sourced from WHS and O D Data.

Source: Environment Agency

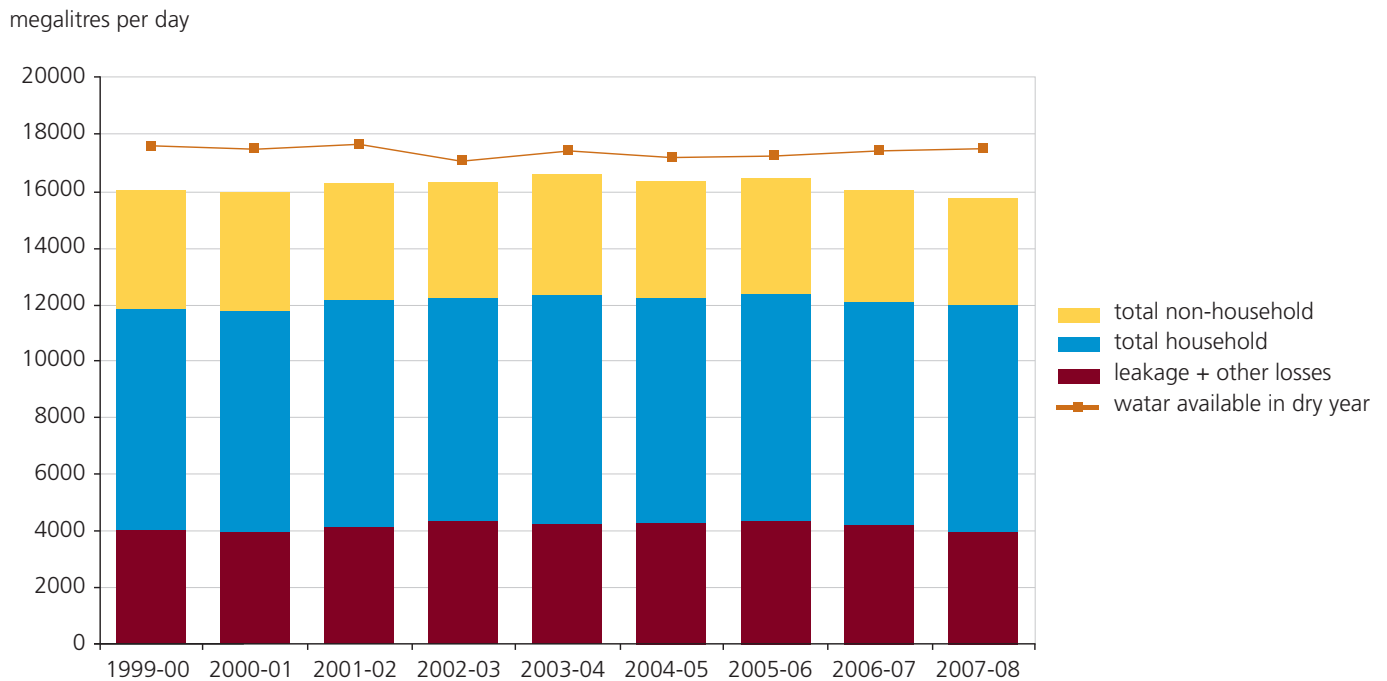
- 4.1.7 As a result of this analysis, the EA has concluded that there are considerable pressures on individual water resources throughout England and Wales, not just in the south east and eastern England. The results are shown in Figure 7 above.
- 4.1.8 The EA's analysis of companies' 'headroom' (whether they can reliably meet customer demand for water in a dry year with existing infrastructure) reveals very varied results across England and Wales. Some areas that could face supply restrictions in a dry year sit next to areas where there is likely to be a surplus, notably in parts of the south east.
- 4.1.9 The EA's recent work addresses for the first time the harm that the abstraction of too much water could potentially cause. It has concluded that action to reduce abstraction will be needed in the next five years across England and Wales to ensure that the ecology of water bodies, such as rivers and lakes, is not put at greater risk. Natural England has observed that 'the effects of over abstraction are evident in fens, rivers and lakes, as well as other wetland habitats such as wet woodlands. Abstraction and inappropriate water levels are considered a cause of unfavourable condition affecting some 12,000 hectares of Sites of Special Scientific Interest in England.' Diffuse pollution means that 81 per cent of ground water bodies in England and 35 per cent in Wales are at risk of not meeting the 'good' ecological standard required by the Water Framework Directive.

Water Demand

- 4.2.1 Issues about water supply have to be considered in the context of demand for water as well. In terms of demand, the total amount of water abstracted has remained fairly constant over the past six years. About half of the water abstracted by water companies is supplied to households. Non-household demand met by the public water supply has declined since 2003/4 and is forecast to fall a further 7 per cent by 2035. The recession has increased uncertainties over the level of future commercial and industrial demand.
- 4.2.2 Pressures on public supply are expected to increase considerably as a result of significant population increase coupled with the trend towards smaller households. Changes in lifestyle are also expected to result in higher water consumption. Latest population projections suggest that the population of England will increase by 15 per cent to nearly 60 million by 2030. The population in Wales is expected to increase by nearly 11 per cent to 3.3 million over the same period.¹⁸ Projections for 2051 are for a potential England and Wales population of 69.4m. The 2007 housing targets for England envisaged 2 million new homes by 2016 and 3 million by 2020 (an increase of about 12 per cent). The 2006 Welsh housing projections forecast a 20 per cent increase by 2026. Much of the forecast growth will be in areas where the environment and water supply are already under stress, such as in the south and east of England. Single-person households are likely to continue to increase in number and they have significantly higher per capita rates of water consumption than other types of household.

¹⁸ Office of National Statistics

Figure 8: Supply demand balance for England and Wales



Source: Environment Agency

4.2.3 Per capita water consumption has remained relatively steady over the past decade. It is low in comparison to Mediterranean countries, but higher than in other European countries with a similar climate. Average household water use in England was 146 litres per person per day (lppd) in 2007/8, and 149 lppd in Wales. Households in metered properties currently use on average 13 per cent less than in unmetered properties but it is not clear to what extent this reflects lower occupancy, householders' efforts to reduce consumption, or the greater water efficiency of new properties where households have no option but to be metered. Companies predicted in their draft Water Resources Management Plans that household consumption will average out at 156 lppd by 2035. This suggests that the UK Government's aspiration for England of 130 lppd will not generally be met. Even if there is a reduction in per capita demand, forecast population increase means that overall household demand for water will increase.

4.2.4 Companies' monitoring suggests that the discretionary use of water (such as garden watering and washing cars) varies widely between households but is generally small. For example, garden watering makes up only about 7 per cent of household demand but tends to be concentrated in the summer period of high demand. Water for essential use, such as cooking, washing and bathroom use, makes up the bulk of household demand although some types of essential use are forecast to change. For example, toilet flushing in 2006/7 represented 25 per cent of household demand. The large reduction anticipated from the use of more water-efficient toilets will be offset by increased shower use (from 22 lppd to 31 lppd). At the same time, the water used in baths, clothes washing and, to a lesser extent, dishwashing is predicted to decline by 2035, reflecting changes in consumers' habits and more water-efficient appliances.

Water Leakage

4.3.1 Not all treated water is used by customers. A substantial amount of treated water is lost from company and customers' supply pipes. Leakage levels currently run at about 25 per cent of all water supplied. A quarter of this is estimated to relate to household customers. Having remained relatively steady for the past eight years, leakage levels are forecast to remain at about 20 per cent due to the current Economic Level of Leakage (ELL) approach. Ofwat has recently amended this approach to reflect the environmental and social costs involved. Any reduction in leakage levels will offset some increased household demand, although eliminating leakage completely is not feasible and would entail a very high cost to customers.

Water Supply and Demand: Conclusions

4.4.1 From the evidence, the review team has concluded that while there are many uncertainties about water supply and demand in future, overall the combination of significant population growth, the effects of climate change and the trend towards more and smaller households means that pressures on water resources are likely to increase. England and Wales face potential reductions in water supply during the summer, as well as the consequences of more significant surface flooding; companies need to plan for both these eventualities.

Future Water Costs

4.5.1 Chapter 2 has already highlighted the capital intensive nature of the water industry. The costs of supplying water and sewerage services are likely to continue to rise as a result of three factors: population growth, the pressure of climate change (described above) and the increasing need to replace outdated – often Victorian – infrastructure.

4.5.2 Ofwat's final determination for 2010–2014 allows for £22.1bn of capital expenditure including expenditure on capital maintenance and quality improvements (£4.6bn on the latter). Capital expenditure is likely to continue at a similar rate in the future.

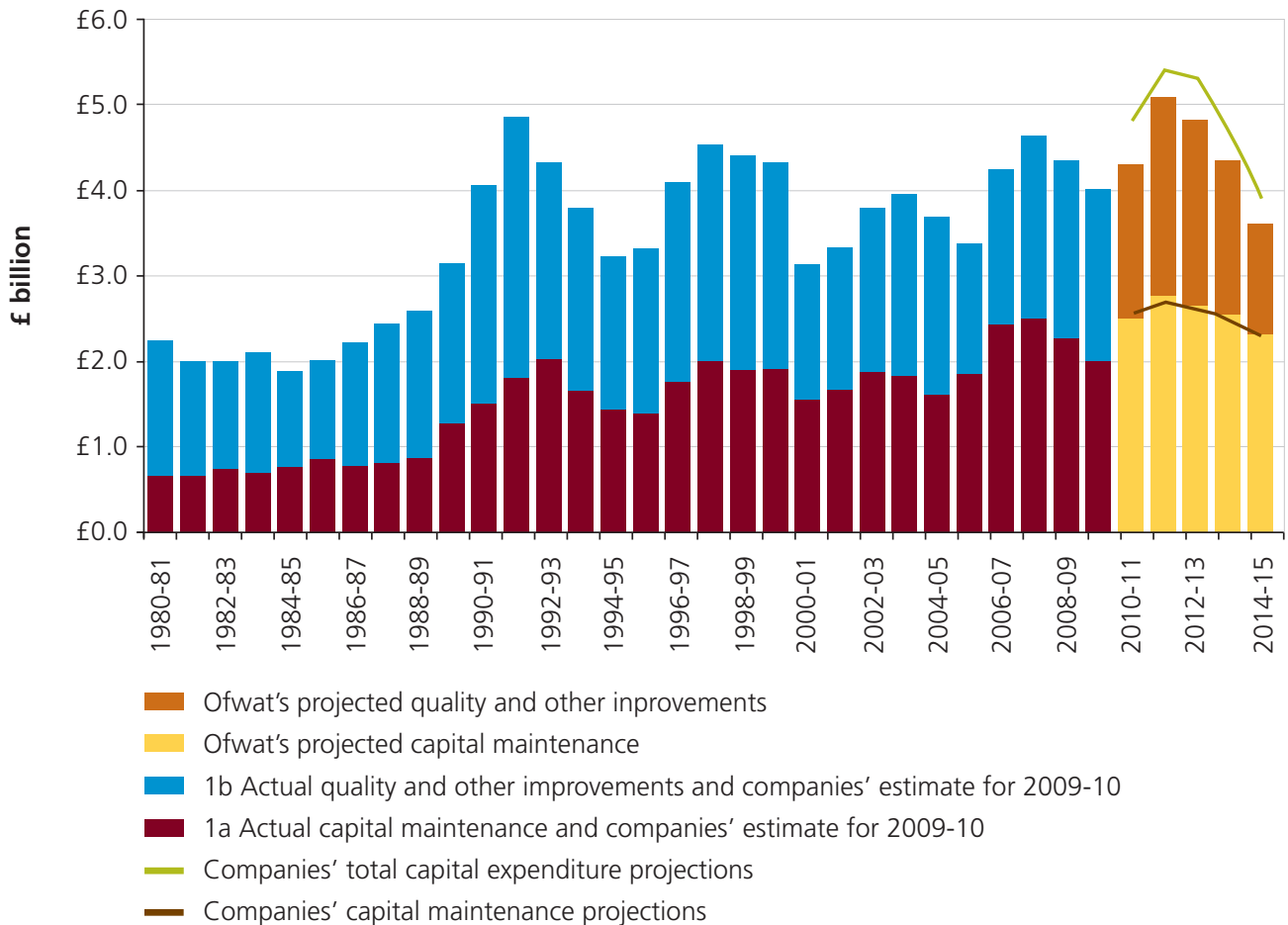
Table 3: Projections of Capital Expenditure 2010-15 (post-efficiency and CIS)

	Final determinations		
	Water	Sewerage	Total
Capital expenditure (five-year total – £bn)	–	–	–
Base service	–	–	–
Infrastructure renewals expenditure	3.2	1.4	4.7
Non-infrastructure capital maintenance	3.6	4.6	8.2
Supply/demand balance	1.4	1.3	2.7
Quality enhancements	1.1	3.4	4.6
Enhanced service levels	0.3	0.8	1.1
Large projects	0	0.9	0.9
Total	9.6	12.5	22.1
£ per property	398	539	937

Source: Ofwat

4.5.3 Table 3 above sets out the capital expenditure for 2010-14 by type and Figure 9 below the actual and projected capital investment from 1981 to 2015.

Figure 9: Actual and projected capital investment (1981–2015) (to be replaced)



Source: Ofwat

4.5.4 Quality improvements are driven by both EU requirements and national legislation and policy initiatives. Ofwat's final determination¹⁹ shows the range of the required improvements. These are primarily to improve the quality of water and the handling of sewerage. Additional significant EU improvements may be required beyond 2010-14, for example, further implementation of the Water Framework Directive, the Drinking Water Directive and the Urban Waste Water Directive. The costs of these could run into billions of pounds.

¹⁹ Future Water and Sewerage Charges 2010-15 Ofwat November 2009, Table 24 refers

Future Challenges

4.6.1 The review team has therefore identified significant future challenges in the water industry as a result of both demographic and environmental changes and upward pressure on costs. A fair charging system needs to keep costs (and therefore prices) as low as possible consistent with companies earning a reasonable return on their investments and the delivery of services to agreed quality levels. The regulatory regime has generally served customers well in the past 20 years, introducing significant improvements in both the standards and quality of services. What we now need to ensure is that we have in place a regulatory regime and incentives across the industry that are capable of dealing with the future challenges we face. This will require action by all of us: individual users, the UK Government and Welsh Assembly Government, companies and regulators. The right incentives will also be needed across the sector covering all stages from abstraction of water to its delivery to the customer's tap. The following discussion explores some of the actions the review team believes will be necessary.

National Campaign on Water Efficiency

4.7.1 **The review team believes a national campaign is needed to ensure customers understand the challenges we face on the supply of water and therefore the importance of water efficiency. The campaign also should be closely allied with ongoing activity on energy efficiency, so that households think about energy and water efficiency at the same time.** Chapter 10 explores these issues further.

Regulatory Framework

4.8.1 The review team has concluded that there is a disconnect between the current valuation of water and its likely future value. Water today is cheap. When companies abstract water they pay very little for doing so. At the other end of the pipe, a litre of tap water costs less than 1p to supply and take away. At about a £1 a day, water bills for most customers are significantly less than energy bills.

4.8.2 Given the pressures of climate change and population growth, the value of water in future will be higher than it is today. Yet this future scarcity and its likely impact is not fully reflected in the current assessment of costs and benefits. This requires urgent action. The environmental and social benefits and costs of taking more water from the environment need to be factored into the water industry's management and investment decisions. Valuing water properly will help to deliver more efficient decisions on investment. Crucially, the legacy of decisions made in the next decade will play a material role in shaping the environment left for future generations. Intergenerational fairness was considered an important element in a fair charging system. The paragraphs below set out two possible ways of achieving the full value of water.

Licensing of abstraction

4.8.3 Reporting in 2009, the Independent Review of Competition and Innovation in Water Markets²⁰ (the Cave Review) looked at the scope for introducing competition into different parts of the water industry. One area considered was the treatment of water abstraction and discharge costs. These are important as they affect costs and values across the water industry. The EA can currently charge only its administrative costs when granting licences and consents. This means that the licensing system does not fully reflect the environmental or social costs of abstracting or discharging water, nor does it adequately incentivise the

²⁰ Independent Review of Competition and Innovation in Water Markets (2009) – Final Report

exploration and use of alternatives to (current or additional) abstraction, such as leakage control, demand management or transporting water across company boundaries. The Cave Review has proposed that where resources are not under pressure, licences should be fully tradable. In areas where water resources are under pressure, a scarcity charge should be introduced. The Cave Review has also recommended a new obligation on incumbent water and sewerage companies to procure best-value outcomes so as to minimise the costs of supply. These changes would require legislation.

- 4.8.4 Overall, such changes would encourage a more sustainable and efficient system of abstraction and provide stronger signals on the long-term value of water. **The review team therefore supports action by the UK and Welsh Assembly Governments and the Environment Agency to consider changing the licensing regime for abstraction and discharge to ensure a more appropriate value for water.**

Full value of water

- 4.8.5 In developing the appropriate full value of water there are a number of factors that should be taken into account. The point in the distribution system where the valuation is being made should determine which factors should be incorporated, and current appraisals will already include many of the factors. What appears to be missing from most, if not all, current valuations is the systematic incorporation of value of water at the point of abstraction. At this point, valuations should include the negative costs to the environment of *not* leaving the water in the environment and/or the value of the water in an alternative use if it was still abstracted but used for another purpose. (Abstraction would not need to take place at the same point, so both environmental benefits and alternative use benefits could arise from not abstracting the water at a particular point.)
- 4.8.6 Another factor that needs to be incorporated systematically into the valuation process (particularly when looking at the benefits of reducing demand) is the reduction in future expenditure on expanding the distribution system as an alternative to demand reduction measures. Although there are uncertainties surrounding the costs of demand reduction measures (see Chapter 10) where demand reduction can be achieved in a cost effective manner, the benefits will include both the foregone expenditure on expanding the system and the environmental benefits of abstracting less water.
- 4.8.7 The trading and – where appropriate – scarcity charge for abstraction licences would help provide a market value for the longer term value of water, and these prices could start to incorporate both environmental and alternative use valuations. However, it may be some time before legislation to permit such trading is put in place. Ofwat and the Environment Agency have already begun work on how water might be valued in the longer term and we would urge them to continue this so that it can be used as soon as possible to inform future investment decisions. In doing this work, the review team recommends that analysis is based on the Environment Agency's 2009 analysis of water availability by catchment area (Figure 2) and takes account of the harm from over abstraction.
- 4.8.8 Some respondents to the interim report understandably raised the question of whether developing a better valuation of water would result in customers facing higher prices more quickly. Incorporating a better valuation of water into decisions made by the regulator, companies and customers could raise prices (slightly) in the short term, while delivering off-setting benefits to the environment and society in general. However, because many of the decisions being made now will have implications for many years to come, a better reflection today of the likely future costs of water can reduce the total costs that customers

will have to pay over the medium to longer term. As a result, using a more accurate valuation of water now in deciding what investment to make to secure water supplies in future is likely to mean that future bills are lower than they otherwise would be.

- 4.8.9 **The review team recommends that the Environment Agency and Ofwat continue to work on methods of valuing water in a way that reflects its full future value, so that this value can begin to inform cost-benefit analyses and underpin future investment decisions. In the first instance, this work should concentrate efforts on establishing values at the point of abstraction in catchment areas with high water stress, using the Environment Agency's latest analysis.** It is here that the highest environmental and alternative use values are likely to be found, so it is in these areas where greatest benefit is likely to arise by getting a more accurate valuation.

Competition and accounting separation in the water industry

- 4.8.10 The Cave Review has also supported greater competition in the business sector. It recommends that consideration should be given to competition in the household sector only when there is more experience of the consequences of such competition. The Cave Review also recommended accounting separation between different activities so as to acquire a better understanding of costs. The review team supports this approach. Before competition is applied to the household sector, it will be important to see how it develops and whether it offers benefits to customers. If it does so, it could help maintain a downward pressure on costs for household customers too. However, it will be very important to ensure that competition in the business sector does not result in more or inappropriate costs being transferred to household customers. Other industries have succeeded in transferring only a proportionate share of costs where appropriate, and there are positive lessons to be learnt from these experiences. Ofwat will also need to ensure that any approaches to cost allocation in the business sector do not establish inappropriate precedents for household customers. The review team believes that accounting separation could foster a better understanding of costs across companies' activities. It has noted the Scottish experience where accounting separation has focused attention on differentiated customer needs.

Special merger regime

- 4.8.11 During our consultations, questions have been raised with us as to whether the special merger regime in the water sector remains appropriate, or whether it is ossifying the sector unnecessarily. Put in place in 1989, the regime was designed to ensure that Ofwat, as regulator, had sufficient comparators between companies to drive efficiency. Of the current 24 water companies, 10 have the bulk of the customers (see Annex 5). Although this issue goes beyond the immediate scope of this review, the team has concluded that the industry's company structure does look complex. It should be possible to preserve important comparators with a more flexible regime. The review team recognises the importance of continuing to have comparators in an industry which, for the foreseeable future, has no competition for household customers. It agrees with the Cave Review that accounting separation may also provide another way of maintaining the supply of some comparative information. Mergers could potentially encourage a reduction in operating and overhead costs and possibly more transfers of water between areas. The EA's recent catchment area map (see Figure 2) suggests that this could be very advantageous. **The review team therefore recommends that the UK Government and Welsh Assembly Government review the merger regime in the water industry to ensure that it is sufficiently flexible to meet future challenges while still ensuring that the industry can provide appropriate comparators to enable Ofwat to regulate effectively.**

Regulatory Incentives to Encourage Water Efficiency by Companies

4.9.1 The regulatory regime has generally encouraged capital expenditure over operational expenditure, even when both types of expenditure can produce the same outcome at the same cost. Companies earn returns on their (approved) capital expenditure over the lifetime of the asset, in line with Ofwat's determination on the cost of capital. However, the level of operating expenditure is subject to annual efficiency targets. As expenditure on water efficiency for customers counts as operating expenditure, increasing this makes the companies look less efficient operationally. Ofwat has sought to correct this by introducing a revenue correction mechanism in the price cap, so that water companies are not incentivised simply to sell their customers more water. This should help to ensure that where it is cheaper for them to do so, companies adopt strategies aimed at reducing demand rather than increasing supply. Ofwat has also put a water efficiency target in place for all companies, which requires them to achieve an overall reduction in demand of an average 1 litre per property per day by the end of the price control period. These are important steps in encouraging companies to promote water efficiency. **It will be important for the regulatory regime to continue to develop mechanisms that encourage companies to promote water efficiency among their customers.** Chapter 10 includes some recommendations including the regulatory treatment of expenditure on water efficiency and the use of the full value of water in decisions on water efficiency investment.

Ofwat: a climate change duty?

4.9.2 One of the questions posed in the interim report was whether Ofwat needs an amendment to its sustainable development duty, requiring it specifically to take account of climate change, in particular through measures that will adapt to and mitigate its effects. Ofwat's current duties already require it to contribute to sustainable development and security of supply, and to consider the interests of future, as well as current, customers. Views were divided on this issue. Some respondents argued in favour of giving Ofwat an explicit duty to contribute to climate change adaptation and mitigation. Ofwat took the view that its existing sustainable development duty already covered climate change considerations and that a specific reference might unbalance the equal weight given to environmental, economic and social aspects of sustainable development. Overall, the review team has concluded that Ofwat's current duties do enable it to act on climate change issues. However, the duties do not give the regulator guidance on priorities. The UK Government and Welsh Assembly Government have the ability to do this through the guidance they can give the regulator. **The review team recommends that the UK Government and Welsh Assembly Government should satisfy themselves that their guidance to Ofwat makes clear their current approach to and priorities on climate change.**

Conclusions

4.10.1 The review team has concluded that:

- Demographic changes coupled with climate change mean that pressures on water supply and the environment are likely to increase;
- The current definition of water stressed areas does not provide a good indicator of likely supply problems or the damage being caused – or likely to be caused – to the environment as a result of extracting too much water;
- Serious consideration must be given to ensuring the right regulatory incentives are in place – most importantly, changes to abstraction licensing and adopting an appropriate full value of water to be used in future investment decisions; in addition, attention should be paid to the scope for competition and accounting separation and changes to the special merger regime;
- Water efficiency needs to be incentivised through the regulatory regime and a national campaign is needed.

Final Recommendations

4.11.1 **As a result the review team recommends that:**

- **a national campaign is needed to ensure customers understand the challenges we face on the supply of water and therefore the importance of water efficiency. The campaign also should be closely allied with ongoing activity on energy efficiency, so that households think about energy and water efficiency at the same time;**
- **the UK and Welsh Assembly Governments and the Environment Agency should consider changing the licensing regime for abstraction and discharge to ensure a more appropriate value for water.**
- **the Environment Agency and Ofwat continue to work on methods of valuing water in a way that reflects its full future value, so that this value can begin to inform cost-benefit analyses and underpin future investment decisions. In the first instance, this work should concentrate efforts on establishing values at the point of abstraction in catchment areas with high water stress, using the Environment Agency's latest analysis;**
- **the UK Government and Welsh Assembly Government review the merger regime in the water industry to ensure that it is sufficiently flexible to meet future challenges while still ensuring that the industry can provide appropriate comparators to enable Ofwat to regulate effectively;**
- **the regulatory regime should continue to develop mechanisms that encourage companies to promote water efficiency among their customers;**
- **the UK Government and Welsh Assembly Government should satisfy themselves that their guidance to Ofwat makes clear their current approach to, and priorities on, climate change.**



Chapter 5 – How Water Charges Should Be Distributed

Scope of this Chapter

- 5.0.1 Chapter 4 highlighted the importance of putting in place the right incentives for the water industry to ensure that it keeps costs down, thereby keeping prices as low as possible for customers. This chapter explores who should pay for different elements of water charges and why. It looks specifically at:
- regional pricing;
 - whether water and sewerage services are public or private goods, and if this should affect who pays for them;
 - the 'polluter pays' principle;
 - who should pay for wider environmental benefits; and
 - intergenerational fairness.

Regional Price Differences

- 5.1.1 The interim report proposed that water charges should continue to reflect regional differences, and that water prices should therefore continue to be regionally based and geographically averaged within each company's area.
- 5.1.2 This approach reflects the real and significant difference in the costs that have been incurred in supplying water in different areas as a result of geography, water availability and population density. The report also argued that if costs are recovered within each region, companies are clearly responsible for their total costs – and hence the bills of their customers – and more likely to control costs vigorously.
- 5.1.3 The interim report noted the argument that as water is an essential of life, water charges should be the same across the country. It recognised that prices are averaged nationally rather than regionally for other utilities, such as post, telecommunications and energy. However, these services are generally supplied by national rather than regional networks. In responses to date, overwhelming support was expressed for continued regional water pricing, and the final report confirms this view. While we recommend that prices should continue to be set regionally, we explore below whether any elements of current water prices convey wider environmental benefits that might take them outside the realm of locally recoverable costs. The team also noted in Chapter 4 that if the current special merger regime were to be relaxed, current company boundaries would change in a way that might affect the scope of regional prices.
- 5.1.4 The interim report recognised that the cost of serving individual customers depends to a large extent on their distance from treatment works or other facilities. However, these costs are currently averaged between customers within company boundaries. The interim report recognised that although this could be considered a form of cross-subsidy, any charging system inevitably contains some element of averaging between customers, as individual pricing is too complex and expensive. Again, there was strong support for this approach.
- 5.1.5 **The review team recommends that water costs should be identified regionally, on a company basis, and that water prices should continue to be regionally based and averaged at an appropriate geographic scale within a company area, recognising that the level of averaging may change over time.**

Public versus Private Goods

- 5.2.1 A significant issue running through the initial submissions to this review and the responses to the interim report was whether water and sewerage services are public or private goods – or a mixture of the two. The definition of private goods is that they are delivered to those who benefit from them, and those who do not pay can be excluded. If customers either cannot or should not be excluded, then questions arise as to whether these services are really private goods and if not, whether the taxpayer should pay for them.
- 5.2.2 Where the taxpayer pays, the progressive nature of the tax system means that the distribution of costs will tend to be progressive, that is, people pay according to their income. For private goods, costs tend to be paid in a way that relates to consumption.
- 5.2.3 Two arguments were put forward in favour of treating water and sewerage services as public goods. The first says that as water is an essential of life it should be paid for on a progressive basis, either nationally (via the taxpayer) or locally (via council tax). This is not so much because the goods in question are public goods, but because on equity grounds, the costs of the service should be distributed according to the customer's ability to pay. As Chapter 6 recognises, however, this approach to charging does not incentivise more efficient use of water, which will become much more important in facing future challenges. In order to create a financial incentive to use water efficiently, a relationship must exist between the amount consumed and the bill paid by each individual customer – which would not occur with a tax-funded supply. The review team also notes that other utilities such as energy and telecommunications are paid for by consumption.
- 5.2.4 The second argument is that water and sewerage services provide a wider public health benefit; in preventing the spread of disease, they benefit the community and nation as a whole. Here there is a public good aspect to these supplies, as the public health (dis) benefits of failure to consume do not fall only on the non-consumers but rather on all those exposed to higher public health risks. Widespread disconnection from these services when charged as private goods would support the case for 'free' provision funded through taxation. The public health aspect of water and sewerage services highlights the question of affordable charges, which is explored further in Chapter 11; but as long as these services are generally affordable, and disconnection from them is not permitted, taxpayer funding is not required to minimise public health risks through universal provision.
- 5.2.5 Responses to the review team also raised the issue of expenditure on water and sewerage services designed to benefit the wider environment, not just the needs of water customers. Here, there are benefits (an improved environment) from which those who have not paid cannot be excluded. However, as with the public health aspects of these services, taxation to secure the provision of the environmental improvements is not necessary.
- 5.2.6 However, this analysis does not indicate how the costs of the 'public goods' aspects of these services should be funded. All it does is show that public health and environmental benefits may arise without taxpayer funding.
- 5.2.7 This issue is considered further below at 5.5.1.

Application of the 'Polluter Pays' Principle

- 5.3.1 The 'polluter pays' principle was an important principle to emerge from the consultation on fairness. It is aimed at ensuring that those who cause environmental costs or damage pay for that damage, thereby incentivising them to behave differently and to reduce the costs incurred overall. The corollary is that those who benefit from a service should pay the costs of it, including the costs of any environmental damage caused by their use.
- 5.3.2 In the light of these principles, and taking account the four services provided to customers within the water and sewerage bill, the review team's view is that:
- Water and foul sewerage services are 'private goods' in that they benefit individual customers using the water supply and putting waste water into the sewers. **Individual customers should, therefore collectively pay the full costs of providing water and foul sewerage services**, including the costs of any damage that provision causes to the environment;
 - Surface water drainage presents an increasing challenge, exacerbated by the heavy rainfall and flooding arising from climate change. Household customers should, over time, be incentivised to reduce the amount of surface water drainage going from their property into public (sewerage company) sewers. This aim can be achieved cost-effectively, in a way that supports the 'polluter pays' principle, if this service, too, is paid for by those customers who use it – that is, by those connecting their hard surfaces to the public sewers;
 - Highway drainage has no direct relationship with domestic customers, except insofar as all customers will derive some benefit directly or indirectly from the fact that their local highways are drained. But the drainage of local highways also presents an increasing challenge, and to create the right incentives to minimise costs, those able to alter how highways are drained should be required to pay for the service. Alternatively, beneficiaries of the service should pay – in this case, local road users, rather than water consumers. However, the individual road user cannot influence how any particular road is drained. Taken together, these two factors suggest that local highway authorities (the upper tier or unitary local authorities) have an important part to play in minimising highway drainage into sewers, and the charging system should reflect this better than it does at present.

Surface water drainage and highways drainage are discussed more fully in Chapter 9.

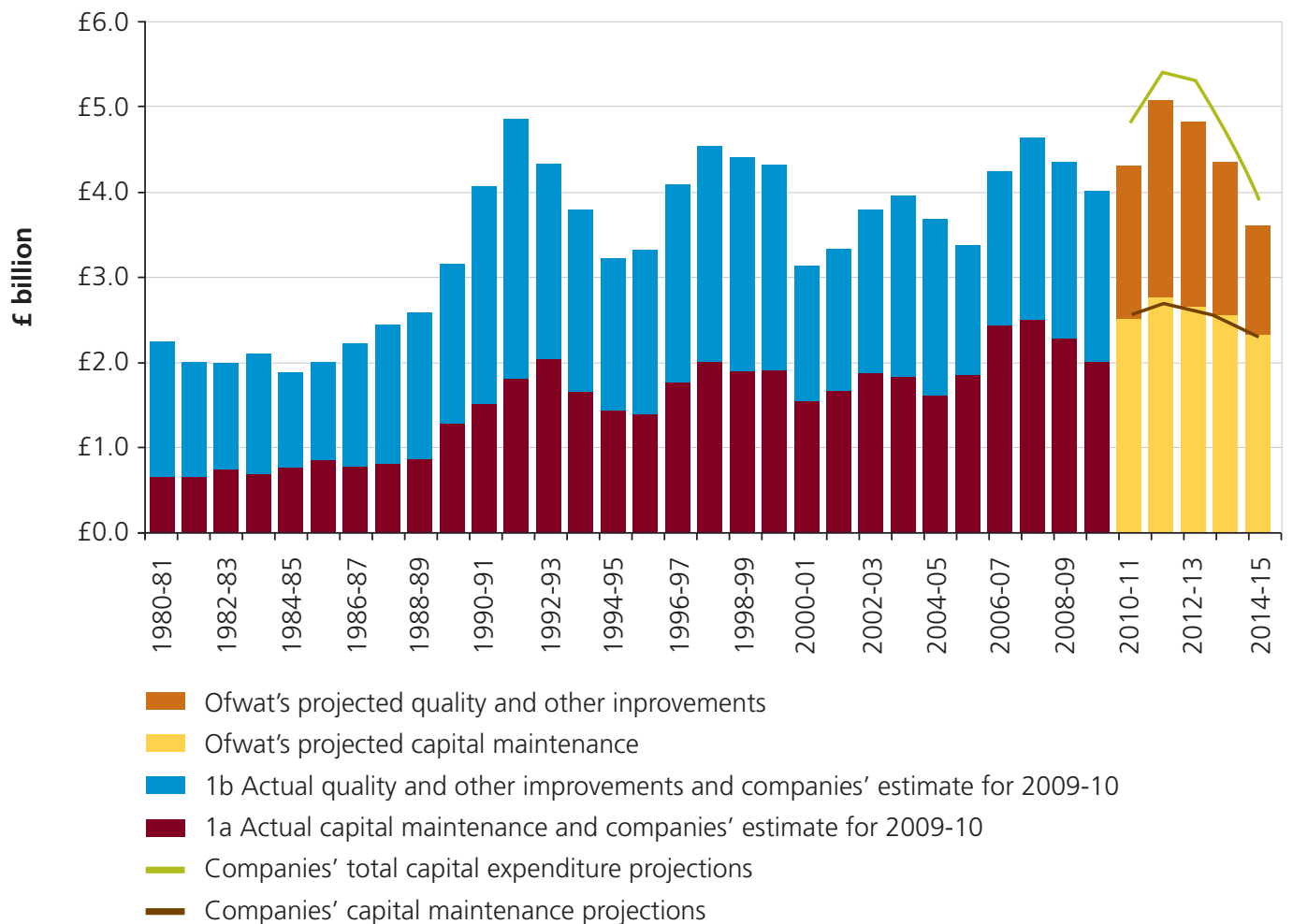
Polluter should Pay for Diffuse Pollution

- 5.4.1 A significant element of water and sewerage charges relates to the cost of ensuring that water is of a high enough quality to drink or return to the natural environment without causing damage. Some of the treatment (particularly with respect to drinking water) is necessary because of diffuse pollution, such as that from farming or from a number of sources in built-up areas. Tracing such diffuse pollution in a way that would allow the polluter to be charged for its clean-up is hard. To ensure that the incentives of the 'polluter pays' principle apply, **the review team considers that government and the Environment Agency should do all they can to incentivise the reduction or elimination of pollution at source**, especially through the medium of River Basin Management Plans. They should not expect water customers – who cannot influence the level of this pollution – to pay for its clean up. This is particularly important given EU requirements for further improvements (see Chapter 4).

Wider Environmental Benefits

- 5.5.1 It has been argued strongly during this review that a considerable proportion of current and future expenditure relates to the delivery of wider environmental benefits, from which people cannot be excluded, and this should be paid for by the taxpayer and not the local water customer.
- 5.5.2 Certainly the costs of environmental improvements are significant as Chapter 4 and Figure 10 below shows.

Figure 10: Actual and projected capital investment (1981–2015)



Source: Ofwat

- 5.5.3 It has been argued that the wider environmental benefits are enjoyed by everyone who visits an area and should therefore be paid for by all that is the national taxpayer. This would also have the advantage of people paying on the basis of ability to pay. It is also argued that it is local people and the local economy (tourism) which benefit most from the improvement and so it is they who should pay.
- 5.5.4 However, as shown in Chapter 4, the spending on environmental improvements is largely required to ensure water is of the appropriate quality to drink and the disposal of sewerage does not harm the environment. As such, this expenditure falls within the "polluter pays" principle and therefore to the local water customer.

5.5.5 The review team also considered whether the cost of environmental improvements has fallen on one area of the country more than others. There are some issues in relation to the South West and those are explored further in Chapter 14. However, forward assessment of environmental improvement expenditure would suggest all areas are incurring these costs. This is not surprising given many areas have some coastline and significant inland water bodies and all areas will need to dispose safely of sewerage.

5.5.6 **The review team has therefore concluded that environmental improvements fundamentally relate to the quality of water supplied and the sewerage disposed of. As such, under the “polluter pays” principle, they are appropriate for the water customer to pay.** However, this conclusion demonstrated how important it is:

- For the government to ensure that whatever the challenges, diffuse pollution is paid for by the polluter, not the water customer;
- Before agreeing any new environmental improvements, governments must consult and listen to the views of customers or customers will be being asked to pay inappropriately high costs.

The next paragraphs set out some practical suggestions for how to achieve this.

Greater Customer Involvement

5.6.1 There are real choices to be made over the standards to be met, how future environmental improvements can be achieved and the period over which they should be carried out, all of which can radically affect costs and which are particularly important if the water customer is to continue paying for them.

5.6.2 During the last price review, CCWater working with Ofwat and others established a quadripartite group (customers, the water company, the Environment Agency and the Drinking Water Inspectorate) to ensure customers views were fully taken into account. **The review team recommends that CC Water, consulting with government, Ofwat and the other members of the quadripartite group, puts in place similar arrangements to engage with, and consult, customers on a regional or water company basis , not just on price control issues but on an ongoing basis.**

5.6.3 If these arrangements are to be effective, there will need to be a requirement on government before any decision is entered into, to cost any proposed EU obligations, to set out the benefits and to describe the impact the obligations could have on bills (regionally if necessary), to make this information publically available and ensure it is fully and effectively consulted on through the new customer arrangements. This would ensure any new costs were justified and all alternatives were fully explored. If customers were resistant, this would have to be taken into account. There is, however, evidence that if the need for improvements are fully explained, customers can be receptive.

5.6.4 If consumer arrangements are set up in this way, on a long term basis, a significant level of engagement will be possible whenever it is necessary, not just for the price control process. This could well result in regional arrangements which become very similar to the negotiated settlements between customers and utilities in countries such as Canada. Where the local utility company and local customers agree prices and quality of service and the regulator only becomes involved where there is a disagreement or a common approach is needed across the industry.

- 5.6.5 **The review team recommends that there should be a new requirement on government to consult with customers before agreeing any water quality improvements which water customers will have to pay for, to set out the costs and benefits including the impact on household bills and ensure effective consultation through CC Water and any agreed customer consultation arrangements. Customers views would have to be taken into account before any commitment to expenditure was made.**

Intergenerational Fairness

- 5.7.1 Finally, there is the issue of intergenerational fairness. Costs incurred today can have a significant impact on future costs. For example, failing to maintain the system now might lead to much more expensive infrastructure replacement in future, just as over-abstracting water now can lead to long-term and possibly irreparable environmental damage. Measures such as these would have the effect of reducing bills now but increasing them in future, shifting the costs of current consumption onto future generations. Ofwat's duty to protect customers already defines customers as both existing and future ones. In developing a fair charging system, the review team feels it is important to give equal weight to the interests of current bill payers and future generations. In order to take these impacts into account it is necessary to look at the long-term impacts on costs of current decisions. As discussed in Chapter 4, the review team believes that it is vital to develop an assessment of the full value of water across the water distribution chain to use in management and investment decisions, in order to produce a fair distribution of costs between generations.

Conclusions

- 5.8.1 In broad terms the review team has concluded that:
- In general, the regional (i.e. company) basis for cost recovery is sound;
 - So too are the links between how much of the core water and sewerage services is used (i.e. the volume) and payment by local water customers;
 - There are less clear links, however, for the smaller amount of overall expenditure on highways drainage, diffuse pollution and some wider environmental improvements;
 - The question of who should pay – taxpayers or local water customers – for a subset of wider environmental improvements is finely balanced but in practical terms it is likely to be cheaper overall for the local water customer to continue paying for them;
 - If that is to be the case, there needs to be much greater customer involvement in both the development of environmental legislation and future price reviews, particularly with respect to decisions that are taken at a national, European or international level, which translate into increases in bills for services that are essential to customers.

Final Recommendations

- 5.9.1 **The review team recommends that:**
- **Individual customers should pay the cost of water and foul sewerage services, including the cost of any damage that service causes to the environment.**
 - **The UK and Welsh Assembly Governments and the Environment Agency should do all they can to incentivise the reduction or elimination of pollution at source.**

- **Water costs should be identified regionally, on a company basis, and that water prices should continue to be regionally based at an appropriate geographic scale within a company area, recognising that the level of averaging may change over time.**
- **there should be a new requirement on government to consult with customers before agreeing any water quality improvements which water customers will have to pay for, to set out the costs and benefits including the impact on household bills and ensure effective consultation through CC Water and any agreed customer consultation arrangements. Customers views would have to be taken into account before any commitment to expenditure was made.**



Chapter 6 – Effects of Current Charging System and Options for Future Charging System for Water Services

Scope of this Chapter

6.0.1 Chapter 5 explored the question of who should pay for water costs. This chapter looks at the effects of the current charging system and reviews alternatives against the fairness principles. It sets out the review team's recommendations. Sewerage services charges are discussed in Chapter 9.

The Current Charging System

6.1.1 Chapter 2 has explained the basis of the current charging system in England and Wales. It is currently a 'mixed' system with about one third of households charged according to the volume of water used, measured by a meter, and two thirds according to the rateable value of the property being supplied. As a result of current metering policies about 50 per cent of household customers will be metered by 2015, although the variations by company area will be significant (see Table 1 in Chapter 2).

6.1.2 Our consultation and research revealed problems with the current mixed system of charging.

Rateable value no longer targets those needing help

6.1.3 Rateable value based charging was thought to be a progressive system, allowing low-income customers to pay less for their water services than high-income ones. But the review team's research has shown that there is a limited relationship between the rateable value of a property and household income (see Figure 11 below). Although some low-income households get a lower bill, so do many higher-income households, and many low-income households face higher bills because they live in a high rateable value property.

6.1.4 Rateable values were last revalued in 1973 and new properties were assigned rateable values until 31 March 1990. Low-income households are now found in properties among all rateable value bands.

6.1.5 A key point to note is that because there is little correlation between rateable value and income, the current transfers in the system are not targeted efficiently at those customers on low incomes with affordability problems. For example, there are only a slightly higher proportion of low-income households²¹ in the lowest rateable value band than middle-income bands, and significantly more middle- and high-income households²² in the lowest rateable value band than low-income households. For each low-income household that benefits from being in the lowest rateable value band, almost twice as many middle- and higher-income households get that same benefit – so only about 30 per cent of the help accorded to the lowest rateable value band is going to the poorest households.

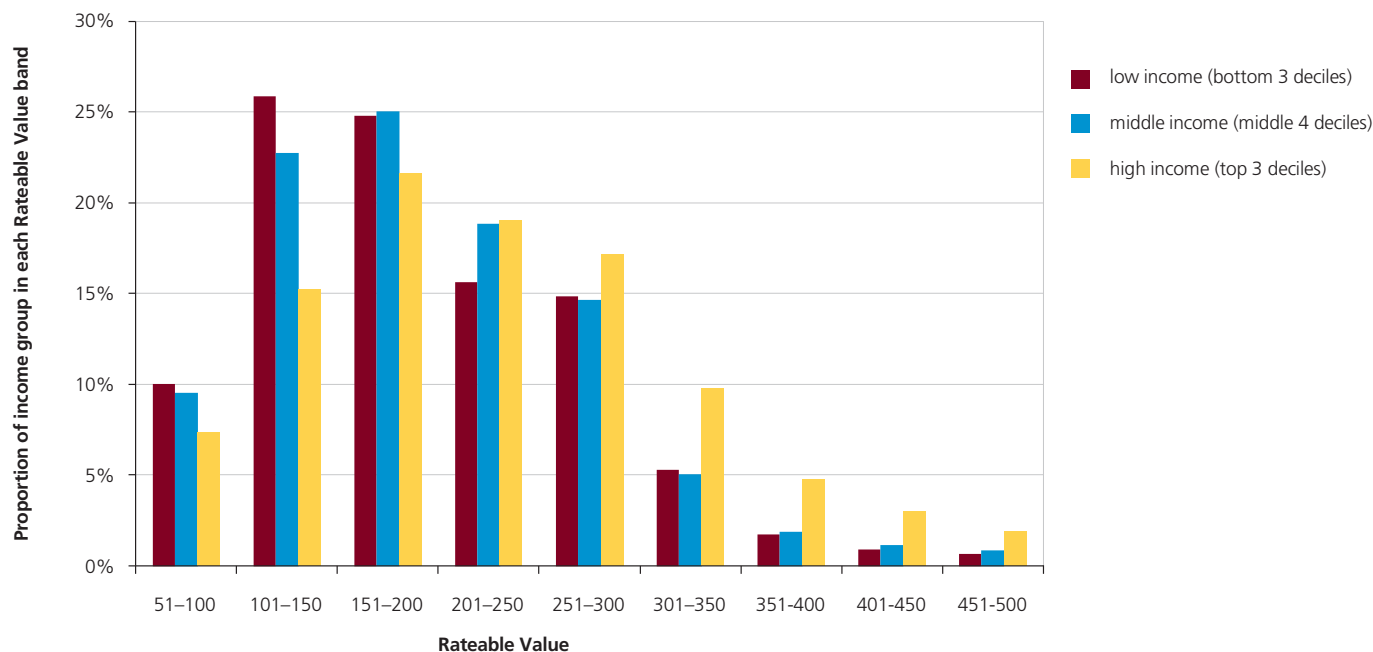
6.1.6 In addition, almost 40 per cent of low-income households live in the top six rateable value bands, and so are unlikely to be benefiting from the link between charges and rateable value, or may actually be paying more for their water services. As a result, in many cases low-income households in higher rateable value properties will be cross-subsidising other households on higher incomes in lower rateable value properties.

6.1.7 Although the rateable value based charging system is still overall mildly progressive, the current system helps households who do not need help and only some of the households that do need help. It is, therefore, not an efficient way of targeting help to those who need it.

²¹ Lowest three income deciles

²² Top 70% of incomes

Figure 11: The proportion of each income group (equivalised income) in each rateable value band



Source: Review team calculations based on data compiled by ICS Consulting from Family Resources Survey

Unmetered bills rising faster than metered bills

- 6.1.8 Unmetered bills are rising faster than metered bills. Those opting for a metered supply tend to be households with low consumption (including single-person households and second homes) and/or those who live in higher rateable value properties. Those not opting for meters tend to be households using a lot of water (including those with large gardens, which they water) and those living in low rateable value properties.
- 6.1.9 The impact of this process is complex. Even if the overall average bill is not rising, individuals making the switch will save; while those remaining on the rateable value linked charges will see their bills rise so that companies recover their costs. As a result, average unmetered bills rise (and this can be quite dramatic as meter penetration rates rise – see 6.1.15).
- 6.1.10 The impact of optants on those already on a metered supply should be neutral. However, optants are likely to include households with a higher demand than the average metered demand, so the average metered bill may also rise, even if no individual metered bill increases.
- 6.1.11 Over time, as individual unmetered bills rise, more and more customers will benefit from switching to a metered supply, until eventually all, or nearly all, properties are metered. Under the current metering framework, the projections in the draft Water Resources Management Plans (WRMPs) predicted that household metering would reach 82 per cent by 2034/2035 (84 per cent in England and 70 per cent in Wales).²³

²³ The figures might be lower in the final WRMPs, as the draft plans predicted a household metering rate of 53% in England and Wales by 2014/15 (53% in England and 43% in Wales), while Ofwat's final determinations approved metering programmes that would mean a lower metering rate of 50% in England and Wales by 2014/2015

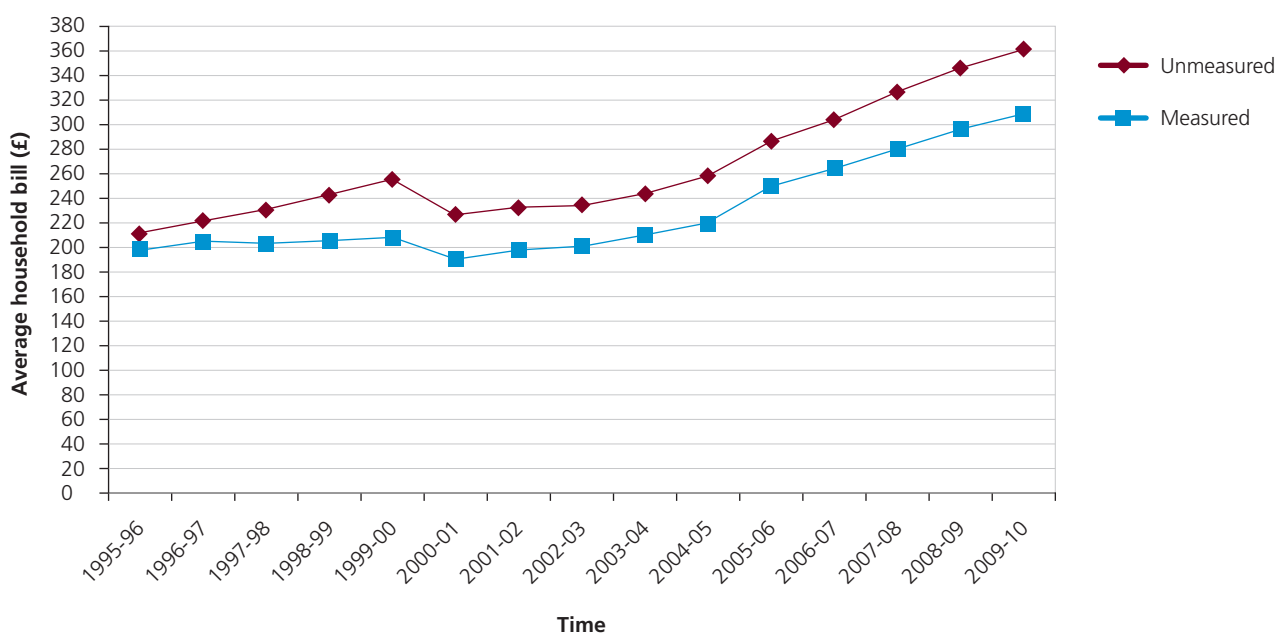
6.1.12 As a result of this somewhat haphazard process, a number of customer types can lose out. Those who fail to ask for a metered supply when it would be in their interest face price rises significantly higher than the overall change in average prices. This group may well include tenants who think it is the landlord's responsibility to seek a change, even though they are officially the water company's customer (as the occupier), and those who do not understand their options. In addition, those low-income customers who were protected to some degree by the rateable value charging system will have that protection gradually removed, even though they themselves have not opted for a metered supply.

6.1.13 Figure 12 shows the difference between average metered and average unmetered bills for all households in England and Wales. The overall difference between the average metered and unmetered bill is explained by the different average consumption between metered and unmetered households, and the additional costs of metering, which are recovered only from those with a metered supply.

6.1.14 The average metered bill in England and Wales stands at £312 for 2009/10, compared to an average unmetered bill of £367.²⁴ The disparity is higher in areas with high metering rates, as the inherent cross-subsidy in the rateable value system unwinds for a higher percentage of households. For example, the average metered bill in South West Water is £401 compared to an average unmetered bill of £723; in Anglian Water the average metered bill stands at £348 compared with £470 for the unmetered bill.

6.1.15 Ofwat's final determinations estimate that the average household metered bill for England and Wales will remain flat (before inflation) during 2010/15, while the average household unmetered bill will increase by 5 per cent (before inflation) over the same period. Again, the differences are higher in areas with higher metering rates. For example, household metered bills are expected to increase by 1 per cent in South West Water and decrease by 3 per cent in Anglian Water, while unmetered household bills are expected to increase by 29 per cent in South West Water and by 13 per cent in Anglian Water.

Figure 12: Average metered and unmetered household bill (1995-2010)



Source: Ofwat

²⁴ Future water and sewerage charges 2010/15: Final determinations, table 9, Ofwat, November 2009.

- 6.1.16 Finally, households charged by rateable value have no financial incentive to use water efficiently, as reducing the water used by the household does not lead to a reduction in their bill.
- 6.1.17 The rateable value system is out of date, provides only limited help for low-income households, and does not encourage the efficient use of water. Under the current system, some households with high discretionary use are not paying for what they use. It is also seen as increasingly unfair, as two households with similar characteristics have different bills according to the outdated rateable values of their properties, which may now bear very little, if any, relationship to household income. It is therefore clear that an alternative basis for charging must be found in the near future.
- 6.1.18 The current system of largely optant metering is slowly creating an alternative charging basis – volume-related metered tariffs – but the transition is somewhat haphazard and there is no systematic help for those who are disadvantaged by the process, or who end up with a significantly worse affordability problem. This suggests that either an alternative to the rateable value system is required or, if that alternative is metering, the process by which metering is introduced must be improved to protect the vulnerable and to minimise the overall costs of the transition. These alternatives are addressed below.

Industry Costs and Their Implications for the Design of a Future Charging System

- 6.2.1 As discussed in Chapter 2, a very high proportion of costs in the water and sewerage industry are fixed in the short term. This means that a discussion of alternative charging systems is mainly a discussion about how to distribute fixed costs between customers. A number of possible charging systems are possible.

Future Potential Charging Systems

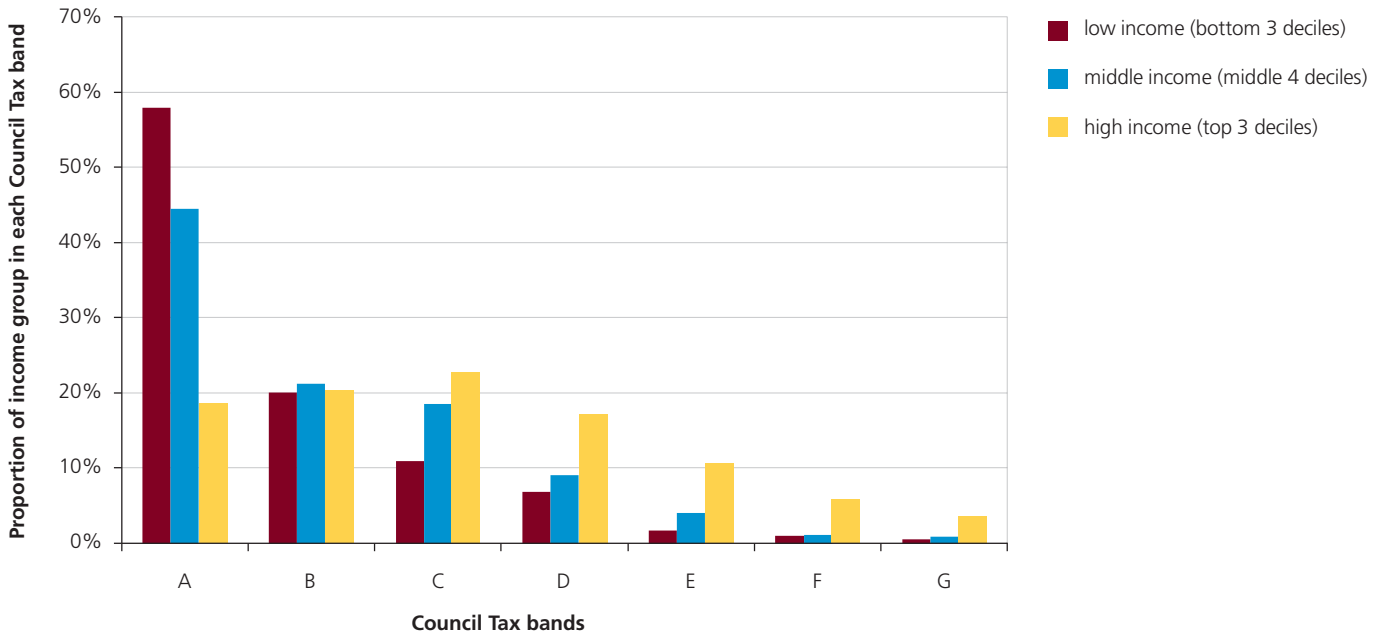
- 6.3.1 The review team examined the following options:
- a mixed system with charges based on council tax bands rather than rateable value;
 - charges based on occupancy rates, number of bedrooms, property type or a flat rate; and
 - charges based on volume (metering).

Council tax bands

- 6.3.2 The council tax banding system provides an alternative property-based charging basis. It is used to calculate water and sewerage charges in Scotland. Council tax bands were introduced in 1993 and reflect the property values as at 1 April 1991. Properties in England and Wales were placed in one of eight council tax bands, from A to H, reflecting the value of the property on 1 April 1991.
- 6.3.3 The Lyons review recommended that council tax bands are regularly revalued. Council tax bands in Wales were revalued in 2005, based on amended bands and reflecting property values as at 1 April 2003. Properties in Wales are now placed in one of nine council tax bands, from A to I. The equivalent revaluation in England has been postponed.
- 6.3.4 Analysis by the review team shows that council tax bands have a better correlation with income than rateable value, with the average income of households increasing in line with their council tax band. This shows that wealthier people tend to live in more expensive houses as defined by council tax bands. However, Figures 13 and 14, which are based on a sample of dwellings in England and Wales, show that there is still a wide mix of incomes within each band. This is because council tax is fundamentally a tax based on property values and is not intended to be a proxy for income. The correlation between council tax bands and income is better for Wales

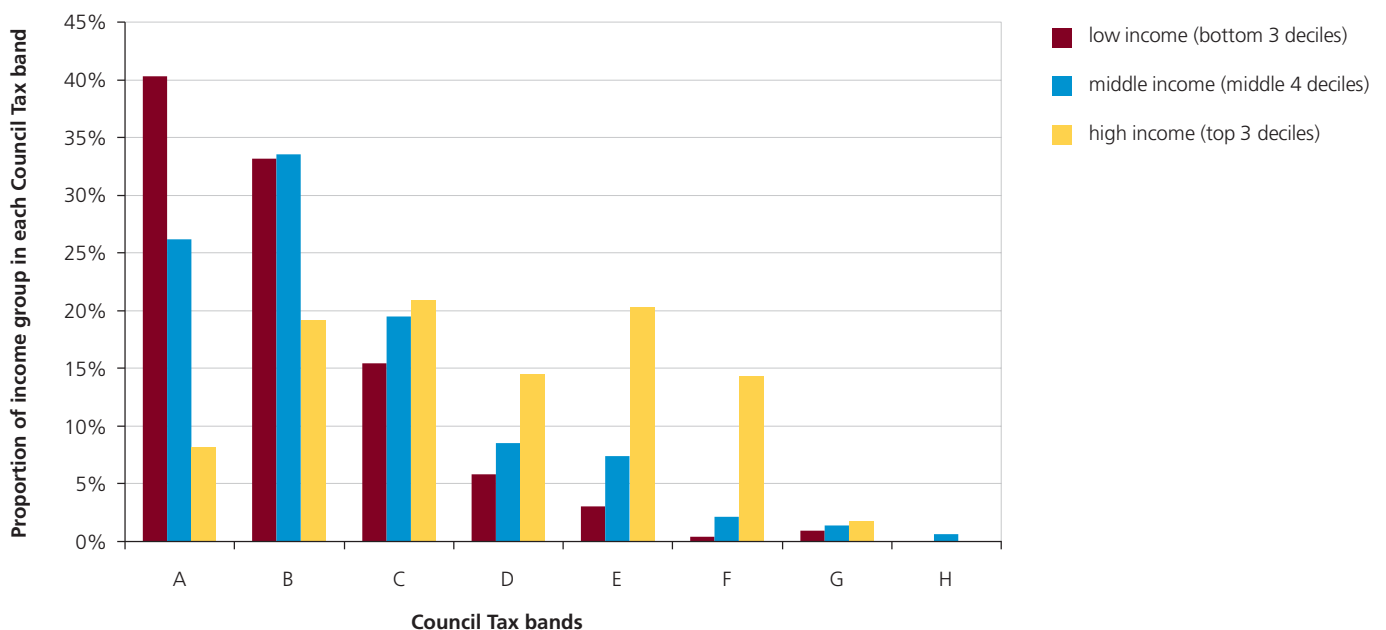
than for England, following the revaluation in Wales. Some 66 per cent of all properties in England fall into council tax bands A to C, compared with 58 per cent of all properties in Wales.

Figure 13: The proportion of each income group (equivalised income) in each council tax band, selected regions of England



Source: Review team calculations based on data compiled by ICS Consulting from Family Resources

Figure 14: The proportion of each income group (equivalised income) in each council tax band, sample of households in Wales

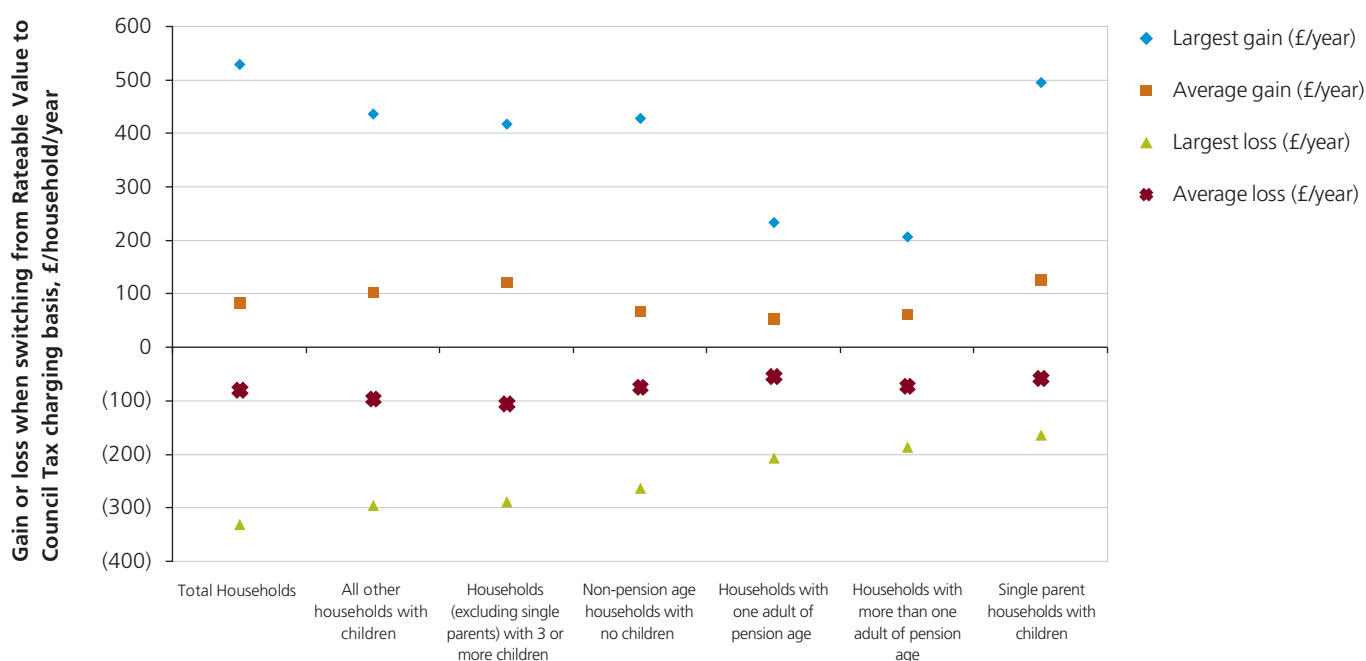


Source: Review team calculations based on data compiled by ICS Consulting from Family Resources Survey

6.3.5 However, using council tax bands to target help to low-income households would not improve the targeting very much without the exemptions and discounts that apply to council tax bills. If help were given to the lowest council tax band, only around 26 per cent of that help would go to households in the lowest three income deciles (in England). In Wales the help would be slightly better targeted but only 48 per cent of the benefit would go to these income groups.

6.3.6 Achieving this slightly better targeting would also produce many winners and losers in the transition. Research undertaken by Maxwell Stamp in 1998 and UKWIR, Ofwat and Defra in 2008 showed that switching to council tax bands would also create large numbers of winners and losers, although some of the larger losses could be reduced by introducing a single-person discount. Analysis by the review team reached similar conclusions. A sample of the results is presented in Figure 15 below. The average gain (for all households that gain) and the average loss (for all households that lose) is around £100 per year – a considerable proportion of the average water and sewerage combined bill of £330 for England and Wales in 2008/09 (£343 in 2009/10).

Figure 15: There would be substantially better off and worse off households of every type after a switch from rateable value to council tax band-based charging



Source: Review team calculations based on data compiled by ICS Consulting from Family Resources Survey

Note: losses are shown in brackets

6.3.7 There are two questions relevant to using council tax bands as the main basis of charging. The first relates to whether council tax bands would be a fair system of charging in its own right; and the second is whether council tax bands would provide a better basis for charging within the current mixed system – that is, to substitute council tax bands for the rateable value part of the current system. The review has concluded that it would not be appropriate to use council tax bands for either purpose. Basing the overall charging system on council tax bands would mean that there is no incentive to use water efficiently, would negate the fairness principle that customers should pay for what they use, and – without a parallel system of discounts and exemptions – would insufficiently target help to address affordability issues. Using council tax bands as an immediate substitute for rateable value in the mixed system is also not recommended on the following grounds:

- Although council tax bands correlate better with income than rateable value, and therefore identify low-income households better, the improvement in targeting is not sufficient to remove the need for mechanisms that will do this systematically and efficiently;
- The move would create a significant numbers of winners and losers in a rather random way, related neither to the costs imposed on the system, nor to ability to pay;
- It would not tackle the problem of the growing differential between metered and unmetered customers;
- Finally, it would not create any additional incentives for water efficiency, which would still need to be addressed.

6.3.8 The review team recognises that the updated council tax bands in Wales mean that these present a better correlation with income than is the case of England. However, the disadvantages outlined above still apply.

Other alternative charging systems

6.3.9 If long-term charging for currently unmetered households is not to be based on rateable volume or council tax, a number of other suggestions were made which the review team has explored.

Occupancy

6.3.10 There is a reasonably close relationship between occupancy and water use. Basing charges on the number of people living in a household would tend to bring charges more into line with usage, without having to install meters. However, companies have no right to know how many people reside in a property, and even if they had, there is no national register of residents on which the companies might draw. In some other countries, such as Belgium, this information is collected by the government and used in water tariffs.

6.3.11 In the absence of official data on occupancy, relying on voluntary disclosure is, in the view of the review team, impractical (at least on a large scale) because it would be open to deception and subject to constant changes, and enforcement would be extremely difficult.

6.3.12 In addition, occupancy is not the *only* indicator of usage. The presence or absence of a garden, the water efficiency of fittings and appliances and the behaviour of customers can all have a significant impact on water usage. Unless these other factors are also taken into account, water bills would not match usage for a significant number of customers. As with all non-volumetric tariffs, the incentive to use water efficiently is absent.

6.3.13 For these reasons, and particularly as England and Wales do not routinely record occupancy data, the review team is not recommending its use as the main basis of charging in England or Wales.

Number of bedrooms

6.3.14 An alternative that is currently used by some companies in their assessed charges is the number of bedrooms. Again, companies rely on voluntary disclosure. Although the scope for deception is perhaps less than under the occupancy basis, and the number of bedrooms may also be a proxy for income, without knowing the occupancy of the bedrooms the link to use will be less effective than occupancy. Hence this approach is not really robust enough to support an entire charging system, although it might be considered where other means of charging are neither practical nor economic.

Property type

6.3.15 Some companies base their assessed charges on property type, calculating different bills for flats, semi-detached and detached houses. This method offers little scope for deception, but again it is obviously not a good proxy for use unless occupancy is also known. Furthermore, it is not a reliable indicator of income, nor does it incentivise the efficient use of water. Again, this is not a robust enough basis for a national charging system.

Flat-rate charge per property

6.3.16 The simplest charging arrangement is a uniform charge for all households. This charging base is the cheapest to administer; but it is in no way a proxy for water use or income, and therefore fails the fairness principles for the charging system as a whole.

Charging by Volume: Metering

6.4.1 The overwhelming view expressed in both the original call for evidence and responses to the interim report was that charging by volume of water used is, overall, the fairest charging system. This view was held even among those from water-rich areas. Customers in general also believe that volumetric charging is fair. Nearly two-thirds of respondents in a survey for CCWater said that the amount of water used is a fairer charging basis than rateable value and a similar number supported increased use of water meters. (In the same survey, around a quarter of respondents were opposed to compulsory metering. However, this figure may well have been influenced by the personal impact that a change to metering would involve.) These findings have been reported consistently in recent years.^{25,26,27,28}

6.4.2 The volume of water consumed is a charging base widely used internationally. Most OECD countries have widespread water metering and charge for water according to the volume used. Here in the UK, consumption is the basis of charging for electricity and gas, and many (or even most) other goods and services provided by the private sector. However, charging on the basis of water used requires a meter to be fitted to the customer's supply pipe and then read periodically, which involves some additional costs compared to non-volumetric systems of charging.

6.4.3 Some concerns were raised about volumetric charging because the operational costs of serving a household vary only a little with water usage, while most of a water company's costs are fixed and depend primarily on the extent of the network coverage, rather than the throughput of water in the pipes. It was argued that charging by volume does not reflect this cost structure and could lead to inefficiencies. However, the review team has concluded that:

²⁵ Customer priorities and WTP, Accent, 2007.

²⁶ CCWater charging research 2007, ORC International, 2008.

²⁷ Deliberative research into consumer views on fair charging for the Consumer Council for Water, Corr Willbourn Research, 2007.

²⁸ Using Water Wisely: Quantitative research to determine consumers' attitudes to water use and water conservation, MVA Consultancy, 2006, page 9.1

- High fixed costs still have to be allocated between customers and it is *fairer* to recover them in proportion to use than by applying a high fixed charge per customer.
- How the costs are allocated depends upon what the objectives of the charging system are. The review team believes the charging system must incentivise the efficient use of water if we are to maintain a sustainable water supply, and volumetric charging that recovers the fixed costs does this.
- If additional capacity is needed, this increases the marginal costs significantly, so it is important that the charging system is designed in a way that reflects long-run marginal costs.

6.4.4 These issues are explored in more detail in the next chapter on metering (Chapter 7).

Overall Assessment

6.5.1 The review team assessed the options for charging bases against the fairness principles in Chapter 3. The results are summarised in Table 4 below. Of all the charging bases analysed, charging by volume is the option that performs better against all the fairness principles. All the other options meet fewer of the fairness principles. Charging by volume will require issues of affordability to be addressed. The review team notes, however, that there are real issues of affordability under the current mixed system. Chapter 11 explores those issues in more detail.

6.5.2 **The review team has concluded that charging by use of water should be the preferred charging method and recommends that the basis of charging for water should continue to move away from the current mixed system towards a charging system based primarily on the volume of water used.** The review team considers that continuing with a mixed system while more widespread metering is achieved is an acceptable solution in the interim. The speed at which the transition to metering should be made depends on the costs and benefits of metering (see Chapter 7) and implementing solutions to the issues of affordability (see Chapter 11). Chapter 7 also explores how households should be charged where metering is not feasible.

Table 4: Summary of assessment of charging bases against fairness principles

Principle	Flat rate	Volume	Rateable value	Council Tax band	Household occupancy	Bedrooms	Property type
I, Water efficiency incentive	no	yes	no	no	no	no	no
II, Cost-related	no	it can be	no	no	no	no	no
III, Polluter pays	no	yes	no	no	partly	no	no
IV, Affordable	no	no	no	no	no	no	no
V, Fair to companies	yes	yes	yes	yes	yes	yes	yes
VI, Simple and transparent	yes	yes	no	no	yes	no	no
VII, Administratively feasible	yes	yes	yes	yes	no	yes	yes
VIII, Intergenerational equity	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Review team

Final Recommendations

- 6.6.1 **Neither council tax nor rateable value identifies those who need help with their bills sufficiently accurately; nor do they incentivise the efficient use of water. Therefore neither should form the long-term basis for charging for water.**
- 6.6.2 **There is a close relationship between occupancy and water use, but occupancy rates are not collected nationally and could be open to deception. The review team therefore does not recommend occupancy as the basis for a national charging system. The number of bedrooms would be a poor proxy for water use and is also not recommended for a national charging system. Neither incentivises the efficient use of water nor do they reflect income.**
- 6.6.3 **We have also considered property type and a possible flat rate per household as basis for charging. However, neither incentivises the efficient use of water nor do they reflect income.**
- 6.6.4 **We have concluded that the fairest way to apportion the costs of water services is by volume of water supplied. This is the only charging basis that incentivises the efficient use of water, as well as meeting most of the fairness principles set out in Chapter 3.**
- 6.6.5 **The basis of water charges should continue to move away from the current mix of rateable value and volume consumed (the current system) towards volume consumed. The speed at which this is achieved depends on the costs of metering and finding solutions to issues of affordability.**
- 6.6.6 **The current mixed system should continue in the interim period, although the review team notes that the help it provides on affordability is not targeted to those who need help.**

Scope of this Chapter

- 7.0.1 Chapter 6 recommended that the basis of charging for water should continue to move away from the current mixed system towards charging all suitable properties by reference to the volume of water used. How long this takes will depend on the costs of metering and finding solutions to issues of affordability.
- 7.0.2 This chapter summarises the benefits and costs of metering and sets out the review team's recommendations on the future approach to metering. Chapter 11 sets out the review team's proposals on affordability.

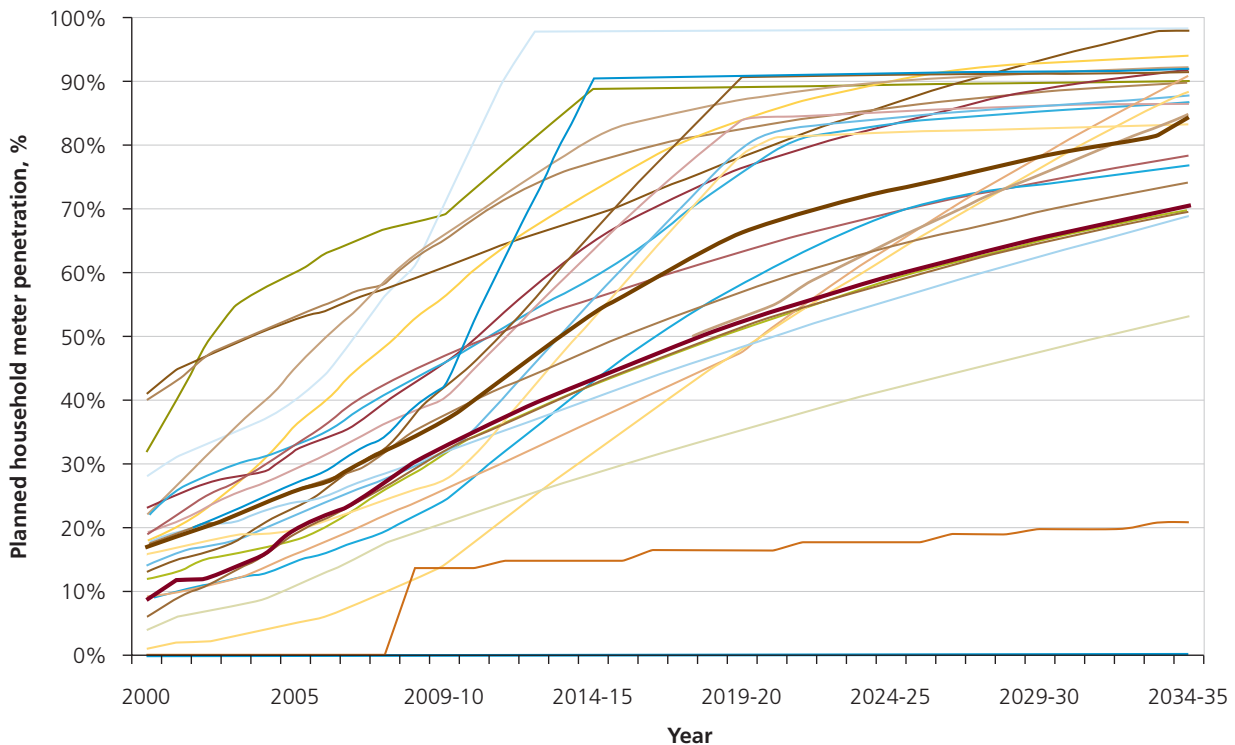
Background to Metering

- 7.1.1 The current level and pace of metering originate in legislation passed in 1989, 1999 and 2007. In 1989, companies were first allowed to meter households compulsorily, and a deadline of 2000 was set for replacing rateable value as a charging basis.
- 7.1.2 The Water Industry Act 1999 established the current regulatory framework for metering policy in England and Wales. This Act gives household customers the right to continue to pay on an unmetered basis, or to opt to have a meter installed with no initial installation charge. This option is known as the 'free meter option'. It is a misleading term because metered households do pay for the costs of meter installation and metered billing over time, albeit across the company's metered customer base rather than individually. Having opted for metering, households are charged on a measured basis, unless they choose to revert to unmetered charging, which they have the right to do within 12 months of having a meter installed. This report refers to this process as *optant* metering.
- 7.1.3 For a few households, installing a meter is impractical and they can choose to pay an assessed charge rather than by reference to the rateable value of their property, if they wish. The right of households to continue paying on an unmetered basis does not apply in certain circumstances.²⁹ Water companies can compulsorily meter households if they are using water for some types of discretionary (non-essential) purposes, such as garden watering with sprinklers, automatically re-filling ponds or swimming pools or using a reverse osmosis unit. The Act also enables companies to meter homes upon change of occupier if they choose to. Only some companies have made use of these powers. New housing is metered.
- 7.1.4 The Prescribed Conditions Regulations 1999 also provide for water companies to meter households compulsorily if the company applies for, and is granted, the status of an area of water scarcity. Folkestone and Dover Water was designated an area of water scarcity and started to roll out a programme of compulsory metering on 1 April 2007. In 2007 the UK Government, after consultation, amended the Prescribed Conditions Regulations for England. As a result, from 2010 a company in an area of serious water stress in England can compulsorily meter households if metering is proven to be a least-cost option to balance supply and demand in its Water Resources Management Plan.
- 7.1.5 Under the current regulatory framework, metering has been increasing across England and Wales at a rate of roughly two per cent of all households a year. This has been largely driven by household customers opting for a meter, metering of new homes and a few, relatively small, company schemes of selective metering using the provisions in the Prescribed Conditions Regulations. Ofwat's final determinations approved metering proposals from water companies that would result in about 50 per cent of households in England and Wales

²⁹ Water Industry (Prescribed Conditions) Regulations 1999.

being metered by 2014/15 (50 per cent in England and 41 per cent in Wales). Figure 16 below gives the long-term projections of household meter penetration under the current regulatory framework. The figures are based on projections from water companies in their draft Water Resources Management Plans.

Figure 16: Long-term projections of household meter penetration from water companies 2008 draft Water Resources Management Plans



Source: Environment Agency (2009) based on water companies' 2008 draft Water Resources Management Plans

Note: Ofwat's final determinations did not approve all the metering proposals in the draft Water Resources Management Plans. Therefore, the figures for 2014/5 differ between draft WRMPs (53.5 per cent for England and Wales) and the final determinations (50 per cent). In the absence of revised long term projections, the review team has used the WRMPs figures for its analysis to show the long term trends.

Governments and Regulators: Current Policy on Metering

- 7.1.6 There is broad agreement across governments and regulators about the merits of increased use of meters for charging for water. The UK Government's water strategy for England³⁰ set out its belief that near universal metering was needed by 2030 in water-stressed areas in England. It also announced its intention to commission this review to look at metering and charging issues more generally.
- 7.1.7 Welsh ministers set out their views on metering in their recent Strategic Position Statement on Water,³¹ which observes that increased metering has a long-term part to play in driving water efficiency, but that there is no need to move towards compulsory metering. Neither does it encourage accelerated uptake of metering in Wales for the sake of managing water resources, given the water resource situation there. The Welsh Assembly Government considers that metering should be targeted in the first instance at high discretionary users.

³⁰ Future Water, Defra, 2008

³¹ Strategic position statement on water, Welsh Assembly Government, 2009

- 7.1.8 While industry regulators do not set metering policy, they have issued position statements on metering which affect the level of metering in practice. The Environment Agency has called for the majority of homes in seriously water-stressed areas in England to be metered by 2015, with full metering in these areas by 2020.³² In areas that are not seriously water stressed, the EA calls for metering to form the basis of charging over time, with water companies vigorously promoting optional and change-of-occupancy metering. A gradual approach has been taken in Wales over the years but the EA has stated that the impact of climate change now makes this more urgent.³³ We understand that the EA is currently reviewing its policy position.
- 7.1.9 Ofwat supports increased levels of metering where the benefits outweigh the costs. As part of the 2009 price review, it expected each water company to justify the economic merit of its metering programmes, including the timing and method of roll-out, before it gave its approval for the expenditure that metering would entail.³⁴
- 7.1.10 As noted in the interim report, although the UK Government, Welsh Assembly ministers and the regulators all agree about the overall direction of increasing metering, their detailed positions on metering have differed, leaving water companies unsure about what precise course of action they should actually take. The UK Government's position, outlined in *Future Water*, was issued before climate change projections were updated and before the Environment Agency completed its detailed review of water resources through the current cycle of Catchment Abstraction Management Strategies. Against this background, the review team believes that a fresh statement of policy objectives on metering is needed both by governments and Ofwat. Recommendations are made in the following paragraphs.

Location of Meter

- 7.2.1 In considering metering, an important consideration is the location of the meter, as it affects both metering costs and benefits. At the moment it can be installed on the property boundary, externally (but not on the property boundary) and internally. Some 80 per cent of metered properties have their meters located externally, mostly at the property boundary.
- 7.2.2 External meters are usually more expensive to install, but cheaper to replace and read. Responsibility for maintaining the customers' supply pipe, i.e. the pipe on the customer's property, lies with the household. Fitting a meter at the boundary gives the customer the financial incentive to repair leaks that occur in their stretch of pipe. It also makes it much easier to detect (underground) leaks. This is an important benefit, as it is estimated that one third of water lost through leakage is lost in customers' supply pipes. Without a meter at the boundary, a customer's supply pipe leak is unlikely to be detected at all unless it is very large.
- 7.2.3 The interim report concluded that ownership of the customer supply pipe should remain with customers. A number of respondents have highlighted that having an external meter might have an impact on the type of smart meters that could be installed in the future, as it might be difficult to connect an external meter to a telecommunications network inside the home, such as the type to be rolled-out for energy smart metering. This would limit the synergies between energy and water smart metering.

³² Position statement: household water metering, Environment Agency (undated)

³³ www.environment-agency.gov.uk/news/106221.aspx?month=3&year=2009

³⁴ Ofwat's future strategy for customer charges for water and sewerage services: consultation conclusions, Ofwat, August 2008

7.2.4 While the review team recognises that this issue needs to be further analysed and addressed, it believes this is an issue to be addressed through the type of meter and technology rather than through amending the location of the meter and not realising the benefit of reduction in leakage. This is especially the case when the pressures on water supply are expected to increase over time. Given that the issues surrounding the deployment of smart water meters are not well understood, the review team believes that this is an issue to consider as part of the work of the smart metering group led by Ofwat.

7.2.5 **The review team therefore recommends that meters continue to be installed on the property boundary whenever possible, but that the group on smart water metering (see section 7.6 below) keeps the issue under consideration.**

Assessment of Costs and Benefits of Metering

7.3.1 From information provided to the review team, it is evident that to date, no single consistent methodology has been used to examine the costs and benefits of metering. The work that has been done tends to put greater emphasis on costs rather than benefits. The interim report set out a revised approach to assessing costs and benefits and asked for comments. We have received a number of helpful suggestions and further evidence. A revised cost-benefit analysis, taking into account the new data and comments received, can be found in Annex 6. A summary of the costs and benefits is given below.

Benefits of metering

7.3.2 Consultation responses to the interim report confirmed that the main benefits to be derived from metering (in comparison to non volumetric charging) are as follows:

- households who use more water pay more, which is generally considered fairer;
- metering incentivises more efficient use of water, reducing costs and carbon emissions;
- it helps identify leaks in the customer's supply pipe;
- it allows the development of more sophisticated tariffs;
- it can reduce or delay future expenditure on increasing water supply or expanding the system's capacity;
- it can reduce the effect of water abstraction on the environment or make water available for other uses;
- it provides more information to customers and water companies on water use.

7.3.3 Annex 6 sets out the benefits in more detail. It estimates that, in physical terms, the benefits of metered charging are:

- reduced consumption of about 15 litres per person per day (13 cubic metres per household a year) on average;
- reduced customer supply pipe leakage of around 10 litres per person per day (9 cubic metres per household a year); and
- reduced carbon emissions of no more than 100 kg carbon dioxide per household a year (estimated at £3 per household a year).

7.3.4 This represents average total water saving of around 25 litres per person per day (22 cubic metres per household a year). At a national level, this translates into considerable potential water saving: about 16 per cent of average household demand. On this basis, metering could have a major impact on companies' future investment in water supply and could bring forward substantial environmental improvements.

7.3.5 The question is what the value is for the company of the water saved. The marginal cost of supplying water varies considerably. It is estimated at 10p a cubic metre where water is plentiful. The companies themselves have estimated long-run marginal costs from 14p to 66p per cubic metre with 200p per cubic metre (for a desalination plant) as an outlier. These calculations take account of capital expenditure costs but not the potential harm from over abstraction and the alternative uses for the water. These broader calculations will vary from area to area depending on the supply of water. The review team believes the results (benefits against costs) will be positive where water is scarce. The review team recommends that Ofwat, working with the Environment Agency and others, agrees a common methodology for assessing the costs and benefits of metering, taking account of the wider benefits including the full value of water.

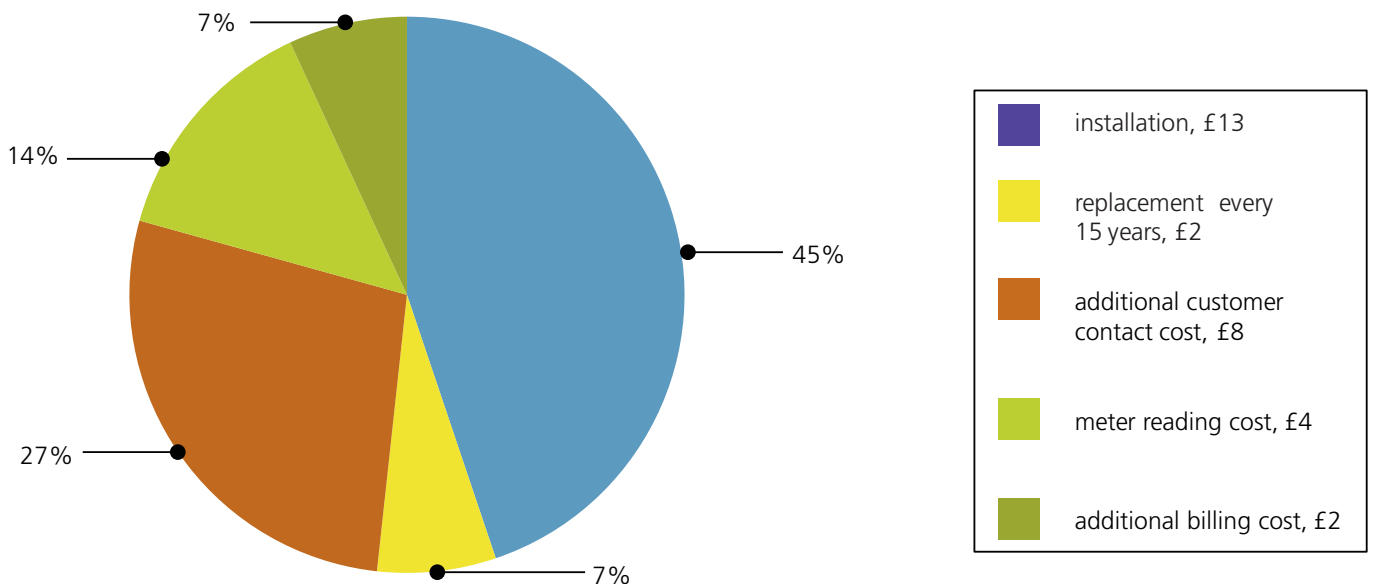
Costs of metering

7.3.6 There are additional costs to the industry of installing meters. The main costs include:

- installation of the meter and the financing of installation costs;
- costs of replacing the meter when it wears out;
- costs related to meter reading; and
- costs of additional billing and handling of customer queries over and above the costs of unmetered charging.

7.3.7 Annex 6 shows very considerable variations in company estimates of these costs. Figure 17 below sets out the review team’s estimate of the costs in the light of the information given to us and Annex 6 sets out how we have arrived at these costs. It suggests that the cost of installing a meter for an optant customer is about £220 per household and, combining that with the additional on-going costs of metered billing, the total cost is around £30 a year per household, although it is recognised that some of these costs may reduce over time (e.g. the cost of meter reading and customer handling could reduce as smarter meters are installed and there is more familiarity with metered billing).

Figure 17: Composition of typical effects on bills for household measured charging based on installation of a simple meter for an optant



Source: Review team analysis

Systematic vs. Optant Metering

- 7.4.1 However, it has also been pointed out that a systematic metering programme allows more efficient installation and results in a reduction in *installation* costs of between 20 and 50 per cent. Average installation costs would fall to between £110 and £175 per property, which translates into a fall in the average annual costs per household to between £22 and £26. (See Annex 6 for more detail.) It should be noted that this figure is still significantly above the costs that some companies have indicated to the review that they would incur in undertaking a systematic metering programme.
- 7.4.2 It also needs to be recognised that the choice being faced is not metering or no metering, but metering through the current largely optant policy (where estimates are that 80 per cent metering would be achieved by 2030 in England and Wales) or metering through a more systematic approach. Metering with a more systematic approach has the potential to reduce the installation costs of metering overall by 20-50 per cent. The overall impact of exploiting the cost advantage of systematic metering is a saving of between £600m to £1.5bn (to meter all remaining 14 million unmetered households).
- 7.4.3 The cost-benefit analysis therefore concludes:
- The benefits in principle of metering are significant as it incentivises more efficient use of water, potentially saving 16 per cent of household demand;
 - There is no consistent methodology for estimating the costs and benefits of metering at the moment;
 - Estimates of cost vary widely. Estimates of benefits do not systematically take account of wider benefits – the full costs of carbon savings, harm as a result of over abstraction and the value of alternative uses of water. The wider benefits are likely to be high where water is scarce.
 - The systematic installation of meters can reduce installation costs by 20 – 50 per cent. This is important as the choice facing us is not whether to meter (because current policy allows individuals to opt for meters) but over what time period near universal metering is achieved. The issue is therefore whether the policy enables the installation costs to be reduced through a systematic approach to metering.
 - Ofwat, working with the Environment Agency and others, needs to agree a cost-benefit assessment methodology which takes account of the wider benefits of metering, including the full value of water.

Future Metering Policy

- 7.5.1 In the interim report, the review team suggested that compulsory metering would be justified and should be actively encouraged by the regulator:
- for high discretionary water users;
 - where the full value of water is high; and
 - where levels of metering are already high (60 or 70 per cent).
- 7.5.2 Respondents to the interim report were generally in agreement with compulsory area-based metering in areas of water stress and environmental damage. The majority of respondents also supported the *principle* of metering high discretionary users but expressed concerns about using an outside tap to identify such users.

7.5.3 The majority of respondents did not support the recommendation for compulsory metering where metering had reached a certain level, but for a number of different reasons. A number of respondents believed that any such trigger would need to be different in each area. Other respondents recognised that, while there were savings to be made from avoiding running two charging systems side-by-side and metering high users that are likely to remain unmetered, these would already be picked up in any cost-benefit assessment. The review team recognises these points and is not pursuing this recommendation.

7.5.4 In response to these points, the team reached the following conclusions:

Metering where the Cost-Benefit Analysis is Positive

7.5.5 Metering should take place where the cost-benefit analysis is positive. This recommendation will require Ofwat, working with the Environment Agency and others, to establish an agreed methodology for cost-benefit analysis taking account of the wider benefits of metering, including the full value of water (see above); the costs, including savings from systematic metering, and taking account of the Environment Agency's recent work on Catchment Abstraction Management Strategies. This approach would extend those who could meter from seriously water stressed companies to all water companies in England and Wales. The legislation on metering would need to be changed to require water companies to act where the cost-benefit analysis is positive, not just permit them to do so.

Metering of High Discretionary Users

7.5.6 Households with high discretionary use are likely to offer the highest benefit from metering in terms of reduced water use, as they have more scope to save water. There is the added benefit that these households are likely to be paying (often significantly) less than they would with a volumetric rate, and are therefore not paying their fair share of the costs of the system. Metering such households is likely to increase the revenue from them, which means that less revenue needs to be recovered from other customers. Therefore, the metering of these customers also increases the fairness of the charging system overall without exacerbating any affordability issues in the remaining unmetered customers.

7.5.7 How to identify these customers remains an issue. Most respondents agreed that the Prescribed Conditions Regulations (which currently allow companies to compulsorily meter specific water users) are too tightly drawn and the circumstances in which high discretionary users can be metered need to be widened. The review team believes that local areas of high average discretionary use can be identified using district meter readings combined with information on the number of households and any indication of average occupancy in that area. A combination of factors will need to be used, and the companies should be given significant freedom to use whatever information is available within their areas. The critical point is to ensure that properties with high discretionary use are moved systematically onto metered tariffs as this is likely to deliver high levels of water savings, and ensures that those with above average use pay their fair share of the total costs. The review team, therefore, recommends that companies should agree with Ofwat a plan to systematically meter high discretionary users. There may be circumstances in which such metering is not appropriate. Companies should have the scope to agree with Ofwat not to go ahead if it was to the overall detriment of their customers.

Metering on Change of Occupier

- 7.5.8 As indicated above (and in Annex 6), a systematic approach to installing meters can result in significant cost reductions. Realising these cost reductions is likely to be in the interests of customers overall. Systematically metering properties on change of occupier would deliver the benefits of lower installation costs and cause minimal disruption to customers. Analysis of data from the Family Resources Survey indicates that within the first five years of a change of occupier programme, some 35-40 per cent of the remaining households could be metered. Ensuring that all the benefits of a systematic approach are realised might mean that not all properties were metered on their first change of occupancy, but the scale of occupancy changes suggests that metering rates could be accelerated significantly under this policy. The upper boundary of this acceleration would be that if the meter penetration at the start of the programme was 50 per cent, five years later it would be around 70 per cent. The rate of installation declines as the pool of properties remaining unmetered declines. Within the first ten years of a change of occupier programme, the review team estimates that around 55 per cent of the remaining households would be metered. In this case, from a 50 per cent metering rate in year zero, meter penetration would reach around 77 per cent ten years later solely through systematic metering on change of occupier. This is in part because nearly a quarter of households stay more than 20 years before moving house.
- 7.5.9 Given the costs advantages of systematic metering, the review team recommends that companies should systematically meter on change of occupier, unless – as with discretionary use – Ofwat agrees that such an approach would be to the overall detriment of their customers.

Optant metering policy

- 7.5.10 Given the cost savings from systematic metering, there are questions as to whether the current expensive optant option should continue. **The review team believes that it should** so individual customers are incentivised to use water efficiently. There will also be areas where metering does not pass the cost-benefit analysis test. Allowing people to opt for meters also increases the fairness of the charging system, as it allows those who use less water than average to reduce their bills. This includes some low-income households, as research shows that single pensioner households are the most likely to benefit from a move to metering (see Chapter 8).

Overall recommendations on metering

- 7.5.11 **UK government and Welsh Assembly Government should update their policy on metering in the light of issues raised in this report. The updated policy will need to take account of the Environment Agency's latest work on water supply and the recommendations in this report and the other factors that are changing the water environment in England and Wales.**
- 7.5.12 **Legislation should be changed so that companies are required to meter where a widely based cost-benefit analysis is positive and to systematically meter high discretionary users and on change of occupier. The legislation should permit companies to agree alternative arrangements with Ofwat where the systematic metering of high discretionary users or on change of occupier is not in customers' interests. If these recommendations are accepted, it is the review team's view that metering penetration could reach 75-80 per cent of households in England and about 65 per cent in Wales by 2020. The review team recommends that the UK Government sets this as a general objective for England for Ofwat and the companies. Wales, with its own local circumstances, will wish to consider whether they want such a general objective.**

- 7.5.13 **Moving in this way towards much higher metering penetration involves quite a complex transition from one charging system to another. This requires leadership. Government should ask Ofwat to undertake this leadership working with the Environment Agency, the companies and others. This would involve setting out a common cost-benefit methodology and sharing experience of, and best practice in, metering proactively. Ofwat should produce a progress report on metering every two years.**

Smart Meters

- 7.6.1 The bulk of the meters currently being installed would not allow the use of more sophisticated tariffs such as those seasonal or peak-demand tariffs that require all meters to be read more frequently, or all read over a relatively short period of time. In the interim report the review team noted that smart meters would allow such a use as they can store data and/or be interrogated remotely. The most common type of smart meter currently in use allows automatic meter reading (AMR) by touching a display, walking or driving by the meter, or through a telecommunications link. Reading these meters is cheaper than reading simple meters, although this must be balanced against the higher cost of the meter and any telecommunications network costs involved.
- 7.6.2 Advances in technology mean that additional functions are being developed for water meters, such as automatic leak detection, and other functionality is likely to be developed.
- 7.6.3 The roll-out of the electricity and gas smart metering programme means that there is an opportunity to piggyback smart water metering on the communications system for smart energy metering. This may reduce the communication costs associated with smart water metering, although the precise costs and benefits of this approach have not been quantified.
- 7.6.4 The evidence available to us on smart water meter costs in the UK is not sufficient to allow us to summarise their costs and benefits in any meaningful way, but there is clearly potential to cut meter reading and customer contact costs.
- 7.6.5 In the interim report we also suggested that as part of its leadership on metering issues, Ofwat should set up a smart meter group to determine the costs and benefits of water smart meters and to ensure any synergies with the energy sector are maximised as a result of the estimated £8.6 billion energy smart metering programme recently announced by government. We suggested that this group should include the Environment Agency and water companies among others. This recommendation was supported by respondents to the interim review.
- 7.6.6 As a result the **review team recommends that Ofwat sets up a smart meter group, including the Environment Agency, water companies, energy companies, Ofgem and customer representatives such as CCWater, to determine the costs and benefits of smart meters to inform any decisions on approach and potential roll-out of smart meters.** This group should also direct the data strategy and analysis for smart meter trials and exploit any potential synergies.

Properties that Cannot be Metered

- 7.7.1 Companies told us that the proportion of households where meter installation is either too expensive or not feasible is about 10 per cent, a figure we queried in the interim report as relatively high. The review team considers that, given a wider move to metering, companies should look very hard to find ways of installing meters in individual properties at reasonable cost.

- 7.7.2 For households where a meter is not feasible, companies already offer an assessed tariff (see Chapter 6). The companies use a variety of assessed charging bases including number of bedrooms, property type (detached, semi-detached and flat) and occupancy. The detailed design of these tariffs remains a matter between Ofwat and the companies. **The review team recommends that assessed charging bases should provide as good a proxy as possible for water use (preferably one based on local comparable metered consumption).**
- 7.7.3 In the case of apartment buildings, the review team recommends that individual meters should be the preferred option, as with all other properties. However, meter installation costs are often relatively high for multi-occupied buildings. The interim report suggested that a single meter could be used to measure consumption by the whole building and the water company could distribute the measured volume across the households in the building when preparing their bills. A majority of respondents did not support this recommendation, as they believed that a single meter would be unfair in buildings where action by one household to reduce their water consumption could have little influence on their final bill.
- 7.7.4 A number of respondents highlighted that new blocks of flats do not necessarily have individual meters, as developers have not installed them during construction and it is too expensive for water companies to retrofit meters once the building is connected to the water supply. Another reason given not to install individual meters in new buildings is that there will be communal use that needs to be metered and charged to all occupiers (for example, garden or shared water supplies). The problem of both individual and shared use of utility supplies applies to electricity as well. In that utility both the shared usage and the individual customer usages are metered separately, or there is agreement on how the shared use should be apportioned. The same approach should be adopted for water, and the change to a named customer will help this happen.
- 7.7.5 **The review team therefore recommends that individual meters should be provided for all homes in new multi-occupied buildings and in existing buildings where the cost is not prohibitive. In the case of existing buildings where it is too prohibitive to install individual meters, a meter for communal water use should be installed and billed direct to the landlord; individual homes should then be billed on the basis of an assessed charge direct to the owner or tenant by the water company.**

Conclusions

- 7.8.1 The review team has concluded that:
- The UK Government and the Welsh Assembly Government need to reset the policy and legal framework on metering because the context has changed as a result of new climate change projections, projected population growth and recent work by the Environment Agency on the damage caused by abstraction;
 - There is a pressing need for strong, consistent leadership on metering to ensure a smooth and least cost transition for customers and Ofwat should be asked to provide this;
 - Assessments of metering proposals have not adopted a consistent methodology and there is a strong case for an agreed approach which incorporates the wider environmental and carbon emissions costs;
 - The benefits of metering will be greatest in areas where the full value of water is or will soon be high and where there is high discretionary water use; systematic metering on change of occupier will speed up the transition to metered charging, reduce overall metering costs and disruption to customers;

- This approach could deliver 75-80 per cent metering in England and 65 per cent in Wales by 2020;
- Individual meters for each customer should be the preferred option as they establish a direct relationship between company and customer, as well as the other wider benefits identified;
- Where this is not possible an assessed charge preferably based on local metered consumption should be used;
- Increased frequency of meter reading could reduce customer contact costs and reduce customer uncertainty;
- The evidence on smart meters is not sufficient for us to reach any satisfactory conclusion but they do appear to offer benefits in terms of meter reading and customer contact costs as well as providing difficult to quantify benefits to customers in terms of better real time information on water use or better tariffs. They also allow more innovative tariffs and some might help identify customers' supply pipe leakage.

Final recommendations

7.9.1 The review team recommends that:

- **the UK Government and the Welsh Assembly government should revisit the policy and legal frameworks on household water metering in the light of climate change projections, expected population growth and the Environment Agency's latest work on Catchment Assessment Management Strategies;**
- **Ofwat should be asked to lead on the delivery of metering, publishing a progress report every two years;**
- **Ofwat should develop an agreed methodology for assessing the costs and benefits of metering, incorporating the wider benefits identified by the review team, including taking into account the full value of water;**
- **in areas where the wider cost benefit analysis (incorporating environmental and carbon emission costs) indicates that it would be beneficial, systematic, area wide metering schemes should be rolled out;**
- **companies should adopt systematic metering of high discretionary users and on change of occupier, unless Ofwat agrees that such an approach would be to the detriment of their customers;**
- **the right to opt for a meter should continue to be offered to all customers;**
- **the UK government should set an objective for metering penetration to reach 80 per cent in England by 2020; the Welsh Assembly government will wish to consider whether they want such a general objective, given their local circumstances;**
- **Ofwat should set up a smart meter group, including the Environment Agency, water companies, energy companies, Ofgem and customer representatives such as CCWater, to determine the costs and benefits of smart meters and to take advantage of any synergies with the roll-out of energy smart meters;**
- **individual meters for each property should be the preferred option;**

- **assessed charges should be used as a basis of charging for households where it is not feasible to install a meter; such charges should provide as good a proxy for use as possible (preferably being based on local comparable metered consumption);**
- **individual meters should be provided for all homes in new multi-occupied buildings and in existing buildings where the cost is not prohibitive. Where this is the case, a meter for communal water use should be installed and billed direct to the landlord; individual homes should then be billed on the basis of an assessed charge direct to the owner or tenant by the water company;**
- **meters should be installed in the property boundary whenever possible. The water smart meter group should keep this issue under review.**

Scope of This Chapter

- 8.0.1 The previous chapter explained why basing charges to customers on the volume of water used provides a fairer means of distributing the costs between customers as well as incentives to use water efficiently. Installing meters provides not only the means to measure the flow of water, but also information on consumption that can be used in the design of tariffs.
- 8.0.2 As metering becomes more widespread there is a question of what sort of tariffs to introduce. Metering allows a much wider range of tariff structures. The choice of tariff influences how the total costs of the services are recovered from customers, and how customers are likely to behave. This chapter explores these issues.

Tariff Structures within Regulation

- 8.1.1 Subject to competition law, Ofwat and the companies currently decide what tariffs to introduce. In approving any tariff that is proposed (either in general or as a trial) Ofwat has to bear in mind its duties, including its overall duty to protect the interests of customers. The tariff trials currently under way are listed in Annex 7. The review team believes that the approach to tariffs should be as flexible as possible within a framework of principles, allowing innovative tariffs to develop and companies to respond to their customers' requirements, which may differ regionally and between customer groups.
- 8.1.2 As set out in the previous chapter, the review team has concluded that there is no general tariff that will directly address all current or future affordability issues. Tackling affordability will require specifically targeted interventions, explored further in Chapter 11. However, the detailed tariff design can have some influence on the size and type of remaining affordability issues; this is explored in more detail in this chapter.

Principles of Tariff Design

- 8.2.1 The detail of any tariff design can have an influence on:
- The precise distribution of costs between customers. Different designs can raise or lower the price paid by a particular customer for a particular level (or pattern) of consumption. As designs change, different customers experience different changes – some customers' prices go up, others go down, but the *total* revenue generated from all customers remains stable and is related to the *total* costs incurred by the supplier;
 - The incentives on customers to behave in a particular way as they respond to prices and pricing structure. This may include different levels of volumetric price, resulting in customers spending more, or less, on each additional unit of water they use;
 - The incentives on suppliers to try to sell additional water, or to help their customers use water more efficiently. Here, the tariff design can influence the incentives on the companies themselves to run their systems in a water-efficient way.

Incentives, Costs and Tariff Design

- 8.3.1 As explained in Chapter 2, most of the costs incurred by water and sewerage companies are fixed in the short term. When additional capacity needs to be added, or quality of service raised, additional capital expenditure is required, but once this has been made, costs do not vary significantly according to the volume of water (or sewage) put through the system. However, the costs currently faced by companies do not include the costs to the environment of abstraction.

- 8.3.2 Where a customer is faced with the price of an additional unit of consumption (i.e. the next litre of water) that is below the costs incurred by the water company in providing that additional unit, the customer's consumption has the effect of raising the bills of all customers. The individual does not pay the full costs, so the shortfall is recovered from other customers. This is one of the negative effects of the existing rateable value (RV) based tariffs. This suggests that unless there are exceptional circumstances, the volumetric price faced by any customer should not be lower than the additional costs incurred by the company.
- 8.3.3 In addition, on the basis of the 'polluter pays' principle, customers should also pay for the environmental degradation their additional use is causing. This suggests that if customers are to have the correct incentives to use water efficiently, the environmental cost should also be included in the price they pay for that additional consumption.
- 8.3.4 Finally, given the long-term nature of many of the infrastructure assets used, and many of the water efficiency measures customers may adopt (such as water-efficient washing machines), and given that customer behaviour changes over time, the consumer should be faced with the average cost of additional supplies, taking account of the future need to expand capacity and the costs of any associated future environmental damage.
- 8.3.5 This suggests that in order to give customers the right kind of incentives, and to avoid one customer's additional consumption leading to higher prices (including the price of environmental damage), the volumetric price they face should be no lower than the future long-term costs of additional water supplies, including the environmental costs of those supplies (that is, the full value of water at the tap). This is in line with the fairness principles set out in Chapter 3.
- 8.3.6 One disadvantage of this approach, which was brought to the review team's attention in the responses to the interim report, is that if customers respond to this level of volumetric prices by reducing their use of water significantly, then in the short run the unit price of their supplies would have to rise to partially offset the reduction in use. Although this could happen, over the longer term this reduction in use should reduce future expenditure and bring additional environmental benefits. In addition, customers would still pay less overall (all other matters being equal).
- 8.3.7 Another theoretical disadvantage is that this level of volume charge could result in companies recovering more than their total costs. Under these circumstances, prices should be set lower – so that customers do not create excessive profits for monopoly providers.
- 8.3.8 More likely is the situation where if the volumetric rate is set at this level, and that is the only charge paid by customers, the suppliers would not recover their total costs. At present, if such a tariff were adopted (a volumetric charge set at the long-term future costs of additional water supplies and no standing charge), there is likely to be a significant shortfall in revenue. This is because for most companies, the fixed costs in any given year incurred in running the system are about 90 per cent of their total costs, with only around 10 per cent of costs varying by the volume of water supplied. The long-term value of water at the point of abstraction would need to be more than £2.00 to £2.50 per cubic metre to result in a higher volumetric rate than would be necessary to recover total costs. Although Ofwat and the EA have not yet carried out their valuation of water at the point of abstraction, the review team has seen no evidence that it would be likely to be this high.
- 8.3.9 The following discussion of tariff design focuses mainly on how to distribute fairly the remaining costs of the system that would not be recovered from the minimum volumetric rate outlined above. This is likely to be most of the fixed costs.

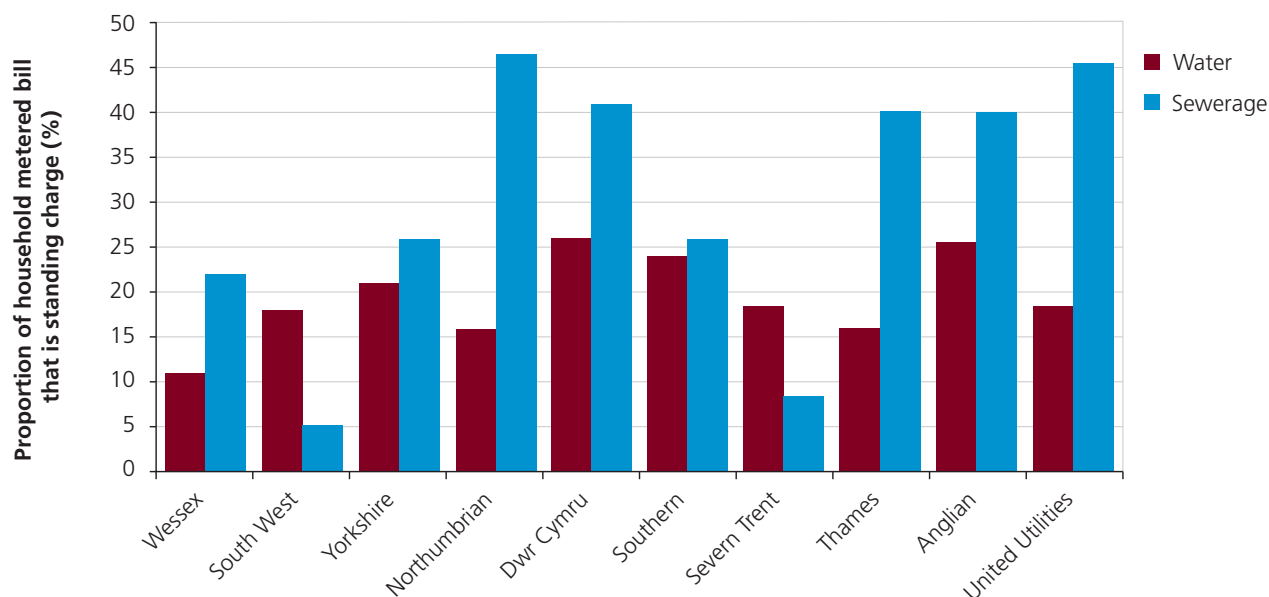
Recovery of Fixed Costs

- 8.4.1 The nature of fixed costs means that the company will incur these irrespective of how much of the service customers actually use. As a result, the customer might be expected to pay at least some of that fixed cost. If a customer at least pays any additional fixed cost that is incurred to serve them, then all other customers are no worse off. But this additional fixed cost is often very small – the bulk of the fixed costs of the system is shared between all customers.
- 8.4.2 From the company perspective, if costs are fixed there are some advantages if revenue is also fixed, or at least not very volatile. However, the base demand for essential water use is also likely to be quite stable, with more volatility attached to discretionary use.
- 8.4.3 As a result, there are not very strong economic reasons for recovering the water industry's fixed costs in any particular way. The issues surrounding tariff design are therefore more to do with the perceived fairness of the resulting distribution of costs between different customers with different usage, usage patterns and differences in other characteristics – which might include, for example, relative need for water, relative income and so on.
- 8.4.4 The simplest variation within tariff design where volume of use information is available is between the unit price of water and the standing charge. As one goes up the other goes down, so that overall the company recovers its costs (which in the short run will be similar whatever the balance between the volumetric rate and the standing charge).

Balancing the volumetric and standing charges

- 8.4.5 The most common metered tariff is a two-part tariff with a standing charge that is the same for all customers, and a volumetric charge that depends on the volume of water used by each household. The main variable in the design of this tariff is the relationship between the volumetric charge and the standing charge.
- 8.4.6 It would be possible to have a pure volumetric tariff with no (or only a very small) standing charge. As indicated above, as long as the standing charge covers the fixed costs that are incurred just because of that customer – for example, the need to open an account and send out bills – the economic rationale requiring a bigger standing charge is limited. For the purposes of this argument, the pure (or almost pure) volumetric tariff is treated as just one extreme end of a two-part tariff. However, if such a tariff was applied to a large number of customers, then the fixed costs of the system would only be recovered from a subset of customers, which would not be consistent with our fairness principles.
- 8.4.7 At present, different water companies set a wide range of prices for the standing charge and for the variable element. At one extreme, the average metered bill would split around 30:70 into standing charge and volumetric charges, while at the other extreme the split would be more like 10:90 – see Figure 18. No explanation for this variation has been forthcoming from the industry or the regulator. For the average customer, the differences in this split do not make any difference to the total bill. However, for the non-average customer the impact can be very significant, and this is explored further below.

Figure 18: The proportion of household metered bills made up of standing charges varies greatly across England and Wales and within companies across services and charging bases



Source: Ofwat

8.4.8 The effects of altering the balance between volumetric and standing charges are set out below.

High volumetric charge with low standing charge:

- creates a larger incentive for the customer to use less water, fix leaks and purchase efficient fittings and appliances;
- produces bills that are more proportionate to water use;
- creates big differences in bills between households of different sizes (because they will tend to use significantly different amounts of water);
- produces small differences in bills per person, so that the bills of two two-person households will be similar to the bill of a single four-person household, thus recovering the company's costs on an approximate per capita basis;
- creates big differences in bills between customers with high and low discretionary water use – so watering the garden becomes relatively expensive (as does a high level of essential water use); and
- results in low bills for homes not occupied all year (for example, second homes) and where annual consumption is low.

High standing charge with low volumetric charge:

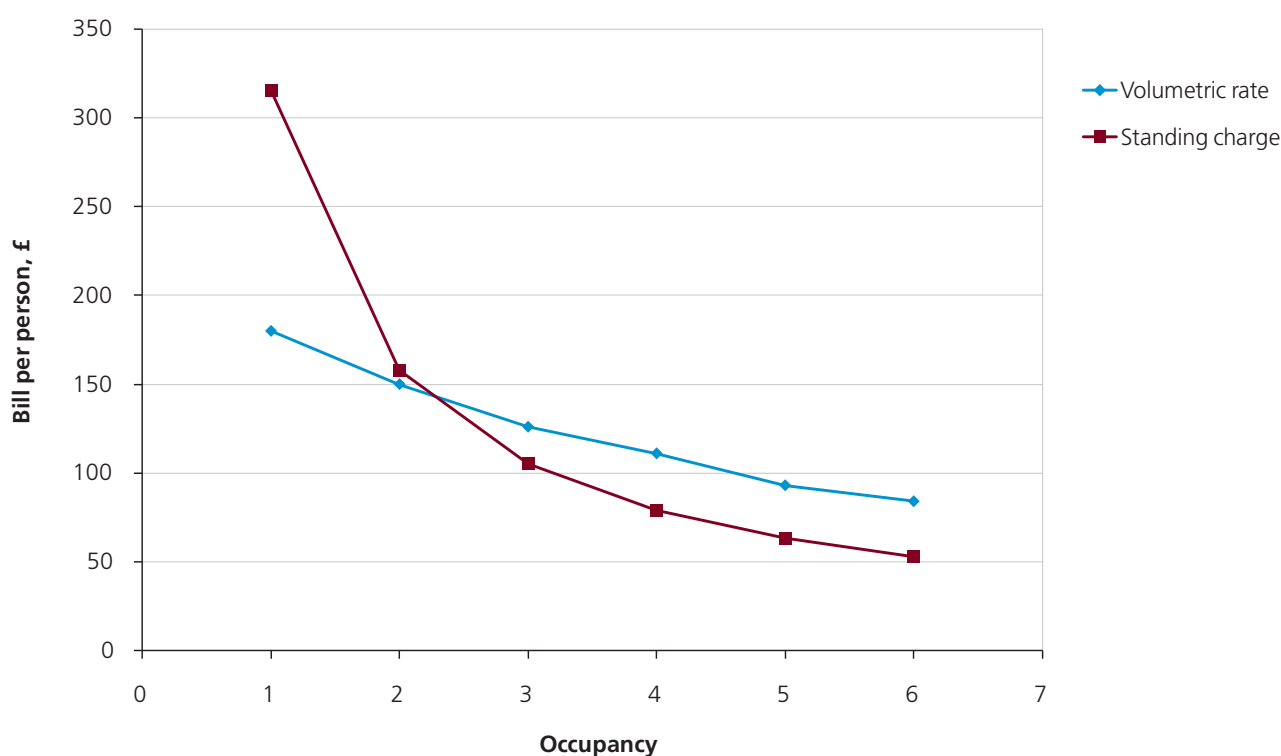
8.4.9 The effects of a high standing charge with low volumetric charge are the opposite.

8.4.10 Tariffs set with a high volumetric/low standing charge and low volumetric/high standing charge both produce outcomes where customers who impose the same costs on the system (that is, who use the same amount of water) pay the same. However, tariffs with high volumetric prices will tend to mean that customers using twice as much water pay twice as much, while high standing charges mean that they pay more, but not twice as much.

From that perspective a higher volumetric charge is fairer, as it tends to even out the amount paid per person and it distributes the fixed costs approximately in the way that customers value the product. It also tends to increase the amount paid by customers with high discretionary use, but unless there is a special tariff (such as WaterSure – see Chapter 11), it will also tend to increase the bills of those with high essential use.

8.4.11 This effect on households is illustrated in Figure 19, using data from a single company and some typical assumptions. The figure shows that a high standing charge generates a much greater disparity between bills paid per person by households of different sizes. The high volumetric charge generates a much more even set of charges per person. The volumetric charge still results in lower bills per person for larger households because water use per person declines with the number of people in the household; but the effect is much less strong, particularly between single-occupancy and multiple-occupancy households, than the outcome under a high standing charge.

Figure 19: The pattern of household bills per person when a tariff comprises solely a volumetric charge or solely a standing charge



Source: Review team analysis

Note: The tariffs and bill levels in the figure are illustrative only and do not relate to the actual bills in the company's area. The illustrative tariffs are set so that at average occupancy (2.25 persons per household) the bills would be identical

8.4.12 As already indicated, a high volumetric tariff that is set above the additional costs incurred to supply it can have other consequences if it results in customers significantly reducing their consumption. As customers cut back on their use of water to reduce their own bills, the company might have to make up some of the shortfall in revenue by increasing the standing charge or the volumetric price of water. This is because the short-term cost savings for the water company, caused by not supplying the water saved, are lower than the revenue the company has lost as a result of its customers cutting back on their consumption. In order for the company to recover its total costs it will have to raise either the standing charge or the

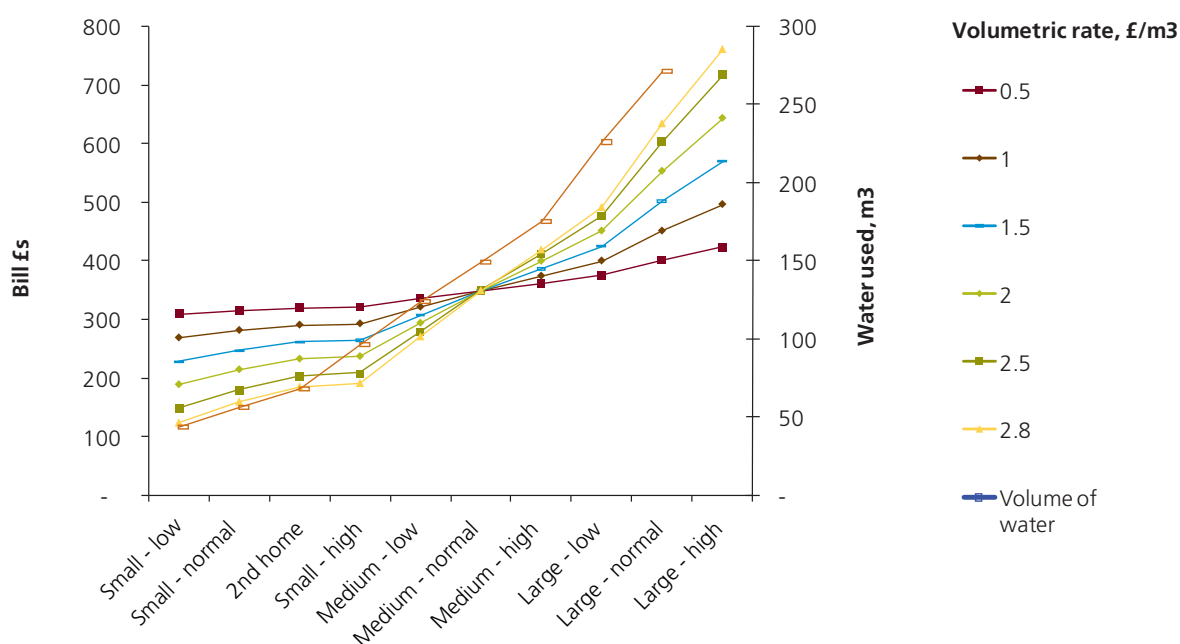
volumetric rate per unit of water. This has been criticised as customers 'paying more for less'. However, it is important to note that although the unit price customers pay will have risen, those customers who have cut back will still pay a lower total bill and the total paid by all customers will also have fallen (given all other matters being equal). Over the longer term there are a number of circumstances where saving water would avoid or postpone the need for future investment in water supply and/or the water saved can be supplied to new customers without spending money on increasing the capacity of the system. In this case, the overall savings to customers will be more significant.

8.4.13 In some places, where the full value of water is low at present, its value is expected to rise in future as climate change and increasing population impose more pressure on water resources. In these places, setting a high volumetric price now, even if it is above the current full value, has the advantage that it familiarises people with the prices they will face in the future, thereby encouraging them to use water efficiently and invest in efficient appliances. Reducing consumption in these cases can also lead to the postponement or avoidance of new investment in supply.

8.4.14 If the volumetric price of water were to become significantly higher than the full value of water – having taken into account future possible cost increases resulting from climate change and demographic changes, and taking into account the environmental damage of current and future abstractions – and this resulted in a significant reduction in water usage, this could be both unfair and inefficient.

8.4.15 Varying the level of the standing charge and the volumetric charge can have a significant impact on the size of different households' bills. Figure 20 shows the pattern of cost recovery from different household types as the volumetric element of a two-part tariff is varied – from a nominal amount to recovering all costs through this element, without a standing charge.

Figure 20: The distribution of household bills varies with the share of standing and volumetric charges, household bills, £/year



Source: Review team analysis

Note: the assumptions are that a small household contains one person, ranging to a large household, which contains four persons. Low users consume 120 litres per person per day (lppd), normal users 150 lppd and high users 180 lppd.

- 8.4.16 The difference in the distribution of costs is significant. With a high volumetric tariff the bills of the small household are less than 50 per cent of what they would be with a high standing charge. Similarly, the bills of the large household with high discretionary use are more than double with a high volumetric charge. However, the fairness principles suggest that if bills are to reflect usage and the value of water, and customers are to be given a significant incentive to use water efficiently, the high volumetric tariffs score better than the tariffs composed mainly of standing charge. A possible exception is where the full value of water is, and is likely to remain, very low.
- 8.4.17 It is important to note that setting the unit price of water so that it is no less than the full value of water does not mean that water companies will receive additional revenue and profits, as a few respondents to our interim report raised. Although a higher volumetric rate means that more revenue is recovered through the volumetric charges, the standing charge would be adjusted so that the revenue collected by the water company is the same, and equal to its approved costs.
- 8.4.18 There is, therefore, a trade-off to be struck in relation to tariff design, even at this relatively uncomplicated level of a simple two-part tariff.
- 8.4.19 It is important that Ofwat looks at the relationship between standing charge and volumetric rate and provides guidance on the appropriate relationship between the two, recognising the overall objectives of the charging system (the sustainable use of water) as well as the desirability of maximum possible local flexibility.
- 8.4.20 Some of the disadvantages of high volumetric tariffs, such as the low contribution made by second-home owners to the fixed costs of the system, can be overcome by using seasonal tariffs or by introducing a minimum bill that ensures all users make a significant contribution to the fixed costs. These, and other variations, are discussed below.

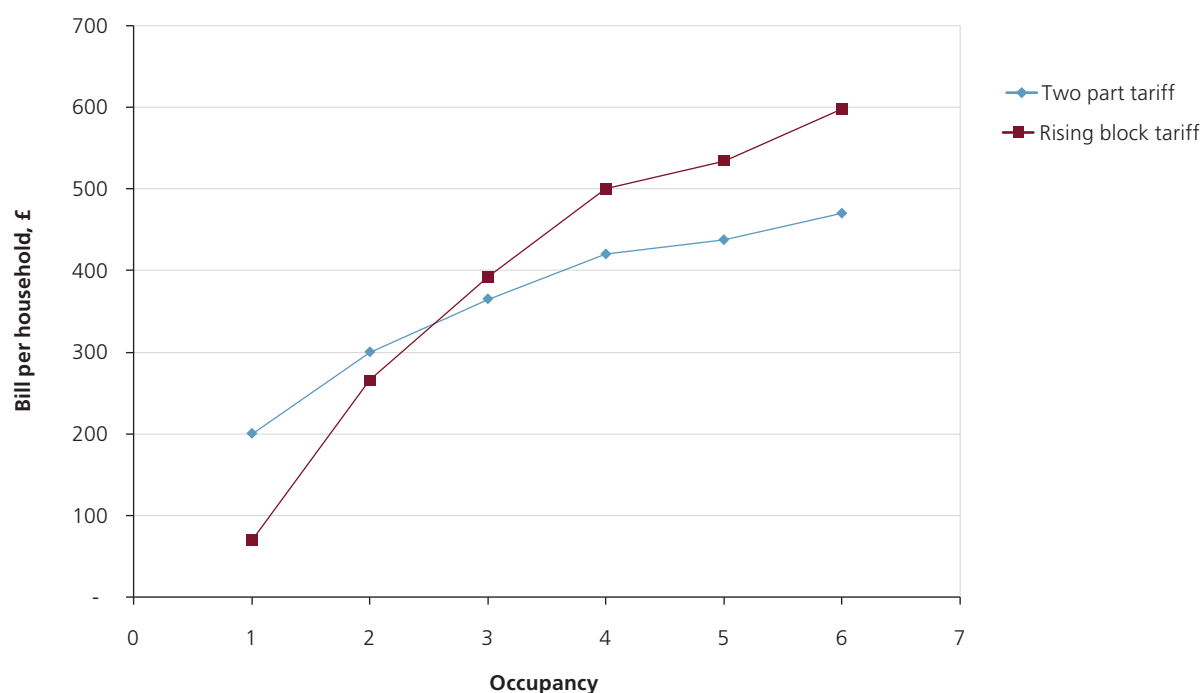
More Innovative Tariffs

- 8.5.1 In addition to a simple two-part tariff, a number of variations can be used and, with more frequent meter reading or smart meters that offer continuous monitoring of consumption, tariffs can be even more sophisticated. Sophisticated tariffs can provide different incentives to customers and distribute the costs across customers in different ways.
- 8.5.2 A number of experimental tariff trials are already taking place and Annex 7 contains a list of the tariffs currently being trialled. These include a rising block tariff, with usage blocks set without reference to occupancy; a rising block tariff with usage blocks that vary with occupancy; a seasonal tariff with differential summer and winter rates and a fixed date on which the rates change; and a seasonal rising demand tariff with the winter period determining the household's essential use.

Rising block tariffs

- 8.5.3 A *rising block tariff* charges more per volumetric unit of water for each subsequent block of water used. One of the effects of a rising block tariff is that it can raise the marginal price of water to very high levels – and so provide a significant financial incentive not to consume additional water (for discretionary use, for example) while still giving people access to low-price water for essential use.
- 8.5.4 For any given level of standing charge, a uniform rising block tariff will increase the bills of high-consuming households and lower the bills of low-consuming households, so it has an approximately inverse impact compared to raising the standing charge and lowering the (average) volumetric charge. Therefore the combination of a relatively high standing charge with a very low (or even free) initial block of water, followed by significantly rising prices for subsequent blocks, can create a tariff with the following characteristics:
- a reasonable minimum price reflecting the high fixed costs of the network;
 - a low price for the initial block of water for essential use to discourage too low a consumption of water for essential use;
 - a reasonably strong incentive to use water efficiently and to think about the value of water before using it for discretionary purposes; and
 - an incentive to invest in water-efficient appliances once the initial block is exceeded by even a small amount.
- 8.5.5 In a simple two-stage rising block tariff, if the initial block of water is free and the standing charge is set to the level where it equals the volume of the free block multiplied by the unit price in the second block, this is equivalent to a single volumetric price and no standing charge, but with a minimum bill.
- 8.5.6 Notwithstanding the flexibility of the rising block tariff, especially when combined with a standing charge of some sort, one disadvantage is that households with high essential use (such as households with high occupancy) tend to be charged much more. So as a way of targeting high discretionary users, it is imperfect because it picks up some other types of households as well.
- 8.5.7 In this context, it has often been suggested that rising block tariffs are the best way to address the affordability of metered water bills for low-income households, as they provide the first block of water at a reduced price. However, rising block tariffs that do not size the cheaper block of water according to occupancy do not distinguish between small households with high discretionary use and large households with high essential use. Simple rising block tariffs with very low standing charges mean that large households pay significantly more than the combination of two smaller households using between them the same amount of water, even if all the water used is for essential use.
- 8.5.8 This is illustrated in Figure 21, which compares the effects of rising block tariffs and simple two-part tariffs on households of different sizes.

Figure 21: The illustrative pattern of bills per household for a simple two-part tariff and a rising block tariff



Source: Review team analysis

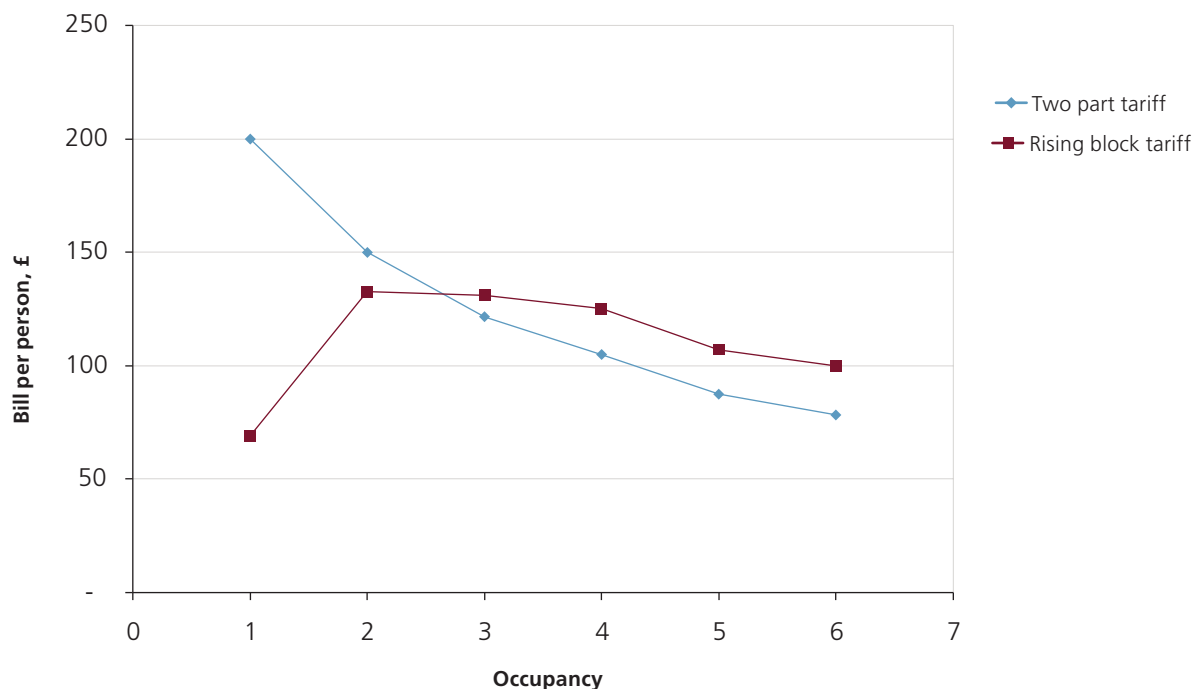
Note: the illustrative tariffs are set so that at average occupancy (2.25 persons per household) the bills would be identical

8.5.9 The effect of the rising block tariff can be modified by linking the size of the block of low-priced water to the number of people in the household, but in England and Wales it is not possible to make this link in a robust way because data on household occupancy are not routinely collected nationally.

8.5.10 The review team also considered another property of a rising block tariff – it can reduce disparity in bills per person across households of different sizes, compared with a simple two-part tariff. This is because the effect on bills per person of an average price paid per cubic metre rising with occupancy is offset by the effect of the standing charge split between more occupants. The result could be a low variation in bills per person. This is shown in Figure 22, using the same tariffs as in Figure 21. Single occupancy households especially benefit from this tariff, as the size of the first block of cheaper water is the same for all household occupancy levels. This is the case even if the single occupancy household is not low-income.

8.5.11 However, if the intention is to achieve a reasonably flat structure of bills per person, this could also be achieved with a two-part tariff in which the volumetric and standing charges are set so as to achieve this effect. The rising block tariff offers the potential advantage over a two-part tariff in that it gives more flexibility in delivering parity of bills per person while maintaining a marginal price of water no lower than the full value of water. This outcome could be useful if setting the volumetric price of water at its full value resulted in the company over-recovering its total costs of operation.

Figure 22: The illustrative pattern of household bills per person for a simple two-part tariff and a rising block tariff



Source: Review team analysis

Note: the illustrative tariffs are set so that at average occupancy (2.25 persons per household) the bills would be identical

8.5.12 In addition, where a household's high consumption results largely from discretionary use – for example, garden watering – then recovering more of the fixed costs from these customers may be seen as reasonably fair, and it might reduce the bills of those who use water only for non-discretionary purposes.

8.5.13 Notwithstanding some of the theoretical advantages that a rising block tariff can deliver, the difficulties of ensuring that in practice the outcome is fair are significant. **Overall, the review team's view is that there are benefits of rising block tariffs which may merit trial and development in specific water company areas. However, without a robust way of establishing occupancy, the general adoption of rising block tariffs is unlikely to maximise fairness within the charging structure, and would provide everyone with cheaper blocks of water, rather than targeting those who really need help.**

8.5.14 **The review team does not therefore recommend a rising block tariff as a national system of charging now.** Most respondents agreed with this view.

Declining block tariffs

8.5.15 A *declining block tariff*, by contrast, sets lower unit prices for each subsequent block of water used. It is used frequently in the energy sector to reflect the fact that the higher initial unit costs include a payment towards the fixed costs of supply, while the lower unit costs reflect the marginal costs of the additional supply. When combined with no or a very low standing charge it is sometimes used to reduce the total bill paid by very low users, compared to a two-part tariff with a significant standing charge. Depending on how it is set up, it could instead increase bills for low users. More commonly, it is designed to reduce bills for very high users and although it weakens incentives for them to reduce discretionary water use,

in commercial tariffs it can reflect the economies of scale from bulk supplies. However, **the review team's view is that the declining block tariff is not appropriate for a general national household charging system as it weakens incentives to reduce discretionary use of water.** This was supported by most respondents.

Seasonal tariffs

- 8.5.16 A simple *seasonal tariff* is designed to reflect the additional costs of summer water supply without setting the volumetric element at a high rate year-round. It is also designed to reflect the fact that fixed costs are driven largely by the peak demand placed on the system, which is likely to be in the summer. Reduced demand in the summer has a significant impact on future costs, but reduced demand in the winter may have no impact at all. By concentrating the recovery of costs into the summer period, a tariff like this increases the amount paid by properties that are occupied only in the summer months. This impact can be accentuated by applying the (significantly) higher summer unit price only to the amount used in summer above the 'normal' winter use. This approach has the advantage of not penalising unduly households with year-round, high essential use. However, such tariffs may be practicable only for households equipped with smart meters.
- 8.5.17 The response of customers to such tariff structures is still rather uncertain. The current trials should uncover useful evidence on the behavioural response to seasonal tariffs. Once more information is available, the impact on peak load reduction can be assessed so as to estimate the impact on costs in the future. These benefits should be taken into account, along with the distributional benefits of such tariffs, in their evaluation.
- 8.5.18 **The review team believes that seasonal tariffs show potential for controlling summer peak demand and for operating in the customers' interests. However, no definitive conclusions can be made until the ongoing trials are completed.**

Time-of-day tariffs

- 8.5.19 Another variant of dynamic tariffs are *time-of-day tariffs*, where the unit rate varies according with the time of the day when the water is used. Such tariffs are usually used when peak demand at certain times of the day causes or will cause additional costs to the supplier, typically by requiring investment in additional sources of supply or additional pumping. These tariffs would require smart meters. Examples of this type of tariff are electricity tariffs where the unit price at night is lower than the unit price in the day, to reflect the significantly higher cost of supplying electricity at peak demand times. However, like seasonal tariffs, the demand response is unknown and until there is further information from trials it is not possible to decide whether this type of tariff is in the customers' interests. It may be worth trialling time-of-day tariffs as some water companies told us they increasingly face demand peaks during the day as well as seasonally.
- 8.5.20 In addition to the distributional consequences of different tariff structures outlined above, different tariff designs may also affect customer behaviour, which in turn can influence total cost. It is one of the primary objectives of these tariffs that changes in consumer behaviour would result in lower overall cost, for example, by encouraging more efficient use and reducing the need for more supply infrastructure. At present, however, the behavioural responses to different tariff designs are largely unknown. So in practice, further research is needed to establish the value to customers of these tariffs. The current trials should help considerably here. **The review team is of the view that no definitive conclusions can be made on the final desirability or otherwise of any of these tariff options before the completion of these trials. It also believes that it will be very important for**

Ofwat and the water companies to monitor and share information on those trials so that companies can adopt an increasing range of approaches for their customers.

Standing and/or volumetric rate linked to ability to pay

- 8.5.21 Changing the relationship between the standing charge and volumetric rate, and the use of rising or declining blocks, or seasonal or peak pricing, changes the distribution of costs between customers while still linking the final bill to the volume consumed (or to the pattern of the volume consumed) and presenting the customer with an incentive to use water efficiently. Generally, if the *only* difference between customers is the volume consumed, the bills of those who consume more will be higher than the bills of those who consume less. The fairness principle that the more that is consumed, the more that is paid is preserved, albeit there is no longer a uniform and simple relationship between the size of the bill and the volume of consumption.
- 8.5.22 However, it is also possible to introduce another variable into the mix so that as well as volume and pattern of use, the size of the bill also varies according to a customer's ability to pay. For the reasons set out in Chapter 6, the review team has concluded that it is not appropriate to vary the size of the bill solely by reference to ability to pay, or some proxy for this. As a consequence, it is not appropriate simply to replace bills based on rateable value with those based on council tax bands because both do not provide the right incentive to use water efficiently and because council tax bands are not a good proxy for ability to pay (even though better than rateable values). However, this conclusion does not necessarily rule out any link to ability to pay in tariff design – reflecting both the affordability principle and the fact that some of what is being purchased through the water bills is not a pure private good, and not all of such goods are necessarily consumed in proportion to the volume of water used.
- 8.5.23 It is therefore possible to have a charging basis that reflects both volume used and some other household characteristic related to ability to pay, such as household income. A number of respondents suggested that tariffs could help to address affordability as well as incentivising the efficient use of water by relating the charge paid both to volume and income. The justification for using this tariff as the basis for the charging system would be to address affordability and to recognise that some of the costs in the system (such as costs related to wider environmental benefits) could be recovered in a progressive way (see Chapter 5). Therefore, it could be argued on fairness grounds that the cost recovery should be tilted towards recovering a higher proportion of these costs from households with higher income. (This would also be the case if these goods were paid for using taxpayers' funds.)
- 8.5.24 On the other hand, the prices for other utilities and essential goods, such as food, energy or housing, are not related to income, where affordability is addressed through the tax and benefits system. In the case of energy, the Government has decided to introduce a system of mandated social price support. A tariff not related to income would reflect the fact that most of a water company's costs are not due to wider environmental goods, but are related to the private benefits to customers of having safe drinking water and sewerage disposal.
- 8.5.25 In order to tilt the charging structures towards those with higher incomes, a good proxy for income is needed. However, no such information exists that the water companies could use. In reality, the only rough income proxy available is the council tax band of the property, as suggested by a number of respondents to the interim report.

- 8.5.26 In a tariff of this sort, households in lower council tax bands would pay a lower volumetric charge and/or standing charge than households in higher council tax bands. As there is some limited relationship between average household income and council tax band, this kind of tariff structure could help to a degree with the affordability of bills while retaining the incentive for customers to use water efficiently. However, Figures 13 and 14 in Chapter 6 based on a sample of dwellings in England and Wales, show that there is still a wide mix of incomes within each council tax band. The help would not be very targeted, and as a result it would be inefficient, as discussed in Chapter 6.
- 8.5.27 The Environment Agency and the Greater London Authority jointly undertook research³⁵ to improve the understanding of how increased metering and different approaches to metered tariffs in South East England would impact on the affordability of water charges, particularly for lower-income and/or socially vulnerable groups (identified as pensioner households, single-parent families and households with three or more children). The report considered the impact on affordability of using the current two-part metered tariff under three household metering scenarios (50 per cent, 60 per cent and 90 per cent) as well the impact of a range of alternative metered tariff structures (including zero standing charges, rising block tariffs, seasonal tariffs and a metered tariff based on council tax bands) assuming 90 per cent household metering penetration.
- 8.5.28 The key findings are:
- As metering becomes more widespread, some households will have lower bills and some higher bills. In general, there will be more households with lower bills than higher bills;
 - For the lowest-income households there is evidence of an improvement in affordability under the 50 per cent and 60 per cent metering scenarios, with these improvements concentrated in smaller size households such as pensioners;
 - Only under the 90 per cent metering scenario is there evidence that affordability will worsen overall. This is concentrated in categories such as single-parent households and households with three or more children;
 - Single pensioner households are most likely to experience lower bills as a result of more widespread metering;
 - The analysis of the alternative metered tariffs provides no strong evidence that any of the alternatives would significantly soften the effects of moving to higher levels of household metering. The overall impact for low-income households is small, and water charge burdens would remain high for this group. However, lower-income households appear to benefit most from a metered tariff related to council tax bands (although low water users like single pensioner households would benefit from rising block tariffs).
- 8.5.29 This report shows that in the case of large, low-income families tilting the tariffs in relation to council tax bands can play a limited role in addressing affordability issues. However, adjusting tariffs in this way cannot address all affordability issues. **While the review team does not recommend this approach, it is not ruled out if companies want to adopt it. However, it will not solve all affordability issues, which are explored further in Chapter 11.**

³⁵ The impact of household water metering in South East England, August 2009

Social Tariffs

8.6.1 As the design of general tariffs does not provide a sound basis for dealing with all affordability issues, more targeted social tariffs and other measures will be needed to address these issues. Because of their importance in creating a sustainable and affordable charging structure, these tariffs are considered separately in Chapter 11.

Conclusions and Final Recommendations

8.7.1 There is no single general tariff design that is ideal in all circumstances. Different designs have different advantages and disadvantages, and local circumstances are likely to play a significant part in determining the design of a general tariff for any particular area. However, some principles have emerged which should be included in any tariff design.

8.7.2 **The review team recommends:**

- **The UK Government and Welsh Assembly Government should consider updating the guidance to Ofwat on the operational principles to be adopted with metered charges taking into account the recommendations in this report;**
- **The permitted variation in tariff structures should be as wide as possible to reflect both local circumstances and customers' preferences;**
- **Ofwat should provide guidance to water companies on the principles to be adopted with metered charging, in line with new government guidance. This should include guidance on the balance between standing and volumetric charges, taking account of the importance of the charging system incentivising the efficient use of water;**
- **The volumetric element of the tariff should normally be set at, or above, a level that covers the long-term costs of expanding supply or meeting increased demand for water (including any element of environmental degradation caused by abstraction not already included in the company's costs). The only exception should be if this would result in the company being overcompensated for its total costs;**
- **In recovering a company's fixed costs there should be a presumption that these will largely be recovered from the variable element of the tariff, unless it can be shown that it would put customers in general at a severe disadvantage. More research needs to be done to assess the impact on consumption of varying the volumetric charge to establish if there is a real danger of inefficient outcomes where the volumetric charge is set significantly higher than the minimum set out above;**
- **Tariffs should ensure that those benefiting from connection to the water and sewerage networks pay a fair share of the fixed costs, even if they use relatively little of the services;**
- **More evidence is needed of how customers react to different types of tariff and whether they regard them as fair. Both Ofwat and the companies have a major role to play here. On the basis of current evidence, the review team believes seasonal (or in due course time-of-day) tariffs have the most potential. Rising block tariffs need occupancy rates which are not generally available and do not target specifically those who need help. Declining block tariffs do not incentivise the efficient use of water. Trials of rising block, seasonal and peak tariffs need to be assessed to see if they should be used more widely to the benefit of overall customers' interests.**

Chapter 9 – Future Charging System: Sewerage Services

Scope of this Chapter

- 9.0.1 This chapter makes recommendations on future charging for the collection, transport and treatment of:
- foul sewage;
 - rainwater run-off from customers' buildings and hard-surfaced areas (surface water drainage); and
 - rainwater run-off from roads (highway drainage).

Pressures on Sewerage Costs

- 9.1.1 Research shows that most customers (72 per cent) are unaware that they are paying for surface water drainage and highway drainage.³⁶ In the quantitative research into customers' priorities³⁷ undertaken for the Periodic Review 2009, only 12 per cent of customers considered road drainage an important service provided by water and sewerage companies. Sewerage services account for just over half the average combined water and sewerage bill and there are significant upward pressures on sewerage costs due to:
- more demanding standards for the quality of water discharged back into the environment (for example, because of the Urban Waste Water Treatment Directive);
 - the likely effects of climate change and the related increased risk of flooding, which is putting pressure on the sewerage network in some areas; and
 - the transfer of private sewers and lateral drains connected to the public system by sewerage companies in England, planned from 2011. The responsibility and costs for maintaining those sewers and drains will pass from their current 'owners' (usually individuals or small groups of domestic customers) to sewerage companies. Preliminary estimates indicate that the transfer will increase average customers' sewerage bills by around £4 to £12 a year, although those customers currently responsible for these sewers and drains will no longer face potentially high bills when they fail. The Welsh Assembly Government has announced that Welsh ministers will introduce regulations in 2011 to facilitate a similar transfer in Wales.
- 9.1.2 Due to these pressures on future sewerage costs, it is important to make decisions now on who should pay for what in the future, how they should be charged, and whether the charging system incentivises those who can take action to reduce their future demands on the sewerage system and to adopt least-cost solutions.
- 9.1.3 Respondents to the interim report highlighted transparency of surface water and highway drainage charges as one area where billing could be improved. **The review team recommends that the cost of providing surface water and highway drainage is identified separately on the bill.**

³⁶ CCWater Charging research 2007, ORC International, April 2008

³⁷ Understanding Customer views – PR09 Quantitative Research Into Customers' priorities, February 2009

Current Charging Basis for Sewerage Services

9.2.1 As the three services use largely the same infrastructure, overall sewerage costs are determined by the maximum volume of waste water to be collected and carried, and its pollution load. The first determines the size of the pipe network, while the second determines the need for treatment before waste water can be discharged back into the environment. In combined sewers, which carry both foul sewage and rainwater run-off from properties and highways, the peak rainwater volume determines the peak volume carried, while the foul sewage component determines the pollution load. In recent developments rainwater run-off from properties and highways is carried separately from the foul sewage, so rainwater run-off does not have to be treated, and peak levels of run-off do not threaten to overwhelm the foul sewers, leading to foul water flooding.

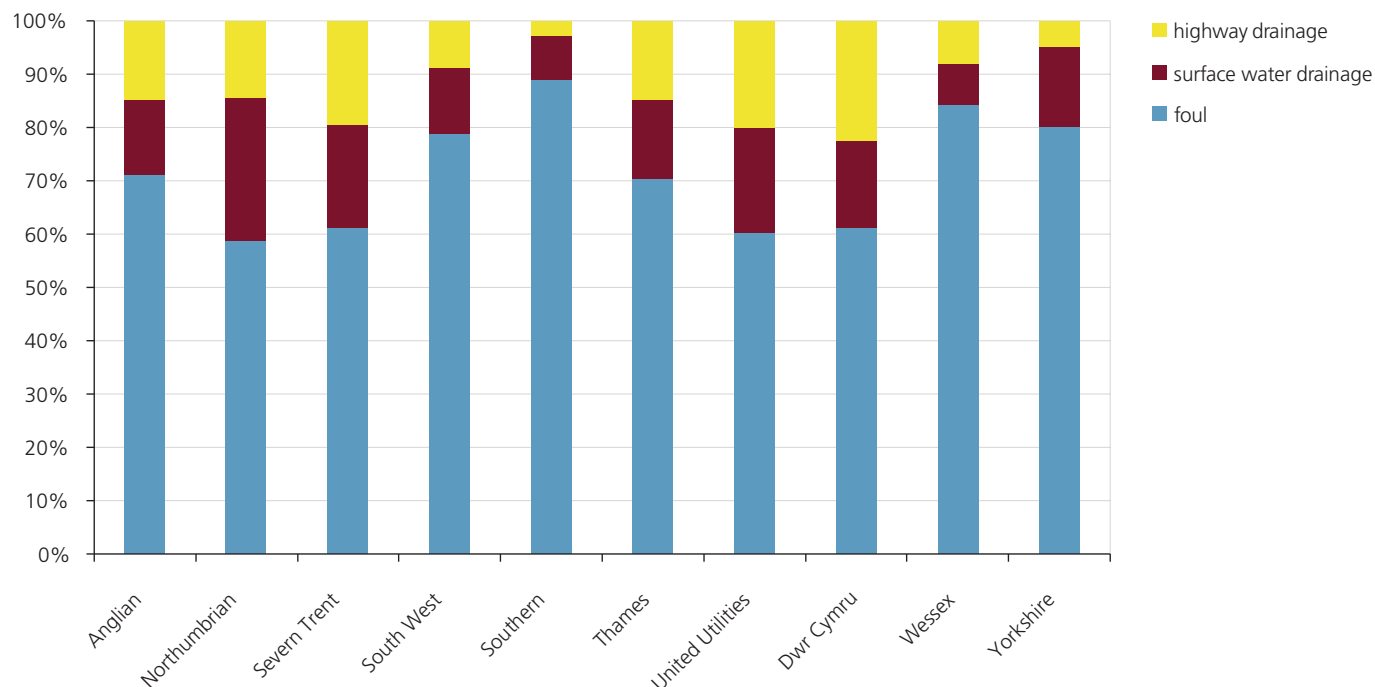
Variations in sewerage charges

9.2.2 The structure of the sewerage bill for different companies varies significantly. Figure 23 below shows that the proportion of sewerage bills relating to drainage charges (surface water and highway drainage) varies from just over 10 per cent to 40 per cent across all companies.

9.2.3 The interim report asked for evidence on what variables might explain the differences in the composition of the sewerage bills, such as household water consumption, population density or amount of rainfall. A number of respondents agreed that these variables do explain part of the difference. Another factor is that Ofwat does not provide a detailed methodology to apportion costs, allowing a degree of flexibility in how sewerage companies allocate costs between the three services. A number of respondents suggested that having a common methodology might reduce variations in the structure of sewerage bills, although there will always be differences due to the different characteristics of the sewerage companies and their areas. At present, because these three services are charged across the same customer base, different methods of allocating costs have little impact on the size of any one customer's bill. However, if in future responsibility for paying for the different elements were split, the method of apportioning costs would have a much more significant impact on the distribution of costs between customers.

9.2.4 **The review team recommends that Ofwat should explore the variation in the composition (amount and basis) of the three elements of the sewerage bills and establish whether some general principles are required.** As part of this work, Ofwat should work with sewerage companies on more detailed methodology for apportioning sewerage costs between the three services. The review team recognises that there may be genuine differences between the composition of sewerage bills of different companies that reflect the different characteristics of each region. Ofwat's ongoing work on accounting separation could further aid transparency, but more work may also be required.

Figure 23: Structure of the sewerage bill for different companies – expressed as proportion of revenue recovered from the different elements of the sewerage bill



Source: Ofwat

Variations in basis of charging for sewerage services

9.2.5 The basis of charging for each service also varies between sewerage companies. Table 5 shows the current bases used for charging for the different elements of the sewerage bill. Most households are charged on a different basis for their foul sewerage and for their drainage (surface water and highway drainage). The charge for the foul sewerage element of the bill is usually calculated on the same basis as the water charge, with a small percentage of households paying a fixed or assessed charge. Charges for surface water and highway drainage are usually a fixed charge for the majority of households. All sewerage companies waive the surface water drainage charge (but not the highway drainage charge) for households with no surface water connection to the public sewer.

Table 5: Breakdown of average combined water and sewerage bill (2007/08)³⁸

	Linked to rateable value	Linked to metered volume	Fixed or Assessed	Percentage of average bill
Water	65%	33%	2%	47%
Foul Sewerage	65%	33%	2%	37%
SWD	28%	7%	65%	9%
HWD	35%	8%	57%	7%
Percentage of customers' bills	60%	29%	11%	100%

Source: Ofwat response to Call for Evidence

³⁸ Share of average bill does not necessarily reflect share of total revenue recovered from household customers.

Future Charging Basis

9.3.1 When considering the future basis of charging for sewerage services, the review team has taken the fairness principles as its starting point as well as the need to establish the right incentives to influence behaviour so that the future challenges identified in Chapter 4 are minimised.

Foul sewerage charges

9.3.2 Foul sewerage charges are usually calculated on the same basis as the water supply charge, that is, unmeasured households pay for foul sewerage charges according to their rateable value and metered households pay according to the volume of water used. **The review team considers that** the similarities between the water supply and foul sewerage services are such, and the services are related to such an extent, that **it is right to continue to charge for foul sewerage on the same basis to water supply**. Most respondents supported this view.

Surface Water Drainage

9.3.3 Surface water drainage charges relate to the collection, removal and treatment of rainwater run-off from roofs and hard surfaces in a customer's property, such as driveways. The surface water drainage charge represents on average 9 per cent of the combined household water and sewerage bill, but varies significantly between companies. Surface water drainage will become an increasingly significant issue in the future, as the likely effect of climate change has implications for the capacity of the sewerage system.

9.3.4 Existing statute provides a general right to connect surface water drainage to a public sewer and enables a one-off fee for connection to the network to be charged. Household sending rainwater run-off from their properties into a public sewer pay an annual charge as part of their combined water and sewerage bill, the basis for which varies between sewerage companies. Some sewerage companies use a standing charge (65 per cent of properties), others charge on the basis of volume used (for metered households) or rateable value (for unmetered households).

9.3.5 Sir Michael Pitt's review of the lessons learned from the floods of 2007³⁹ in England recognised that a key factor was the high proportion of flooding from surface water rather than from rivers. His report included a number of recommendations aimed at reducing the likelihood of flooding and its impact in the future. These included:

- removing the right of households to lay impermeable surfaces;
- amending developers' automatic right to connect surface water drainage from new developments to the public sewer; and
- calling on the UK Government and Welsh Assembly Government to resolve which organisations should be responsible for the ownership and maintenance of sustainable drainage systems (SUDS).⁴⁰

9.3.6 In April 2009, the UK Government and Welsh Assembly Government consulted on a draft Flood and Water Management Bill, which set out proposals for incorporating sustainable drainage systems in new developments. The final Bill was published in November and introduced to Parliament for the current 2009/10 parliamentary session.

³⁹ The Pitt Review: Lessons learned from the 2007 floods, Sir Michael Pitt, June 2008

⁴⁰ Sustainable drainage systems are systems that mimic natural drainage, managing more water above-ground, close to the source, to reduce the volume of waters flowing into sewers and watercourses resulting from storms.

- 9.3.7 The proposals in the Flood and Water Management Bill would help to manage flood risk as well as improve water quality. The key proposals are:
- Establish a SUDS Approving Body (SAB) in upper tier or unitary local authorities;
 - Issue a set of National Standards for the design, construction, operation and maintenance of SUDS (after formal consultation);
 - Require the SAB to approve surface water drainage systems in all new developments, including commercial and domestic property developments and redevelopments, and roads. The UK Government and Welsh Assembly Government propose to set out exemptions and de-minimus thresholds for approval;
 - Approval to be based on National Standards;
 - Make connection to surface water or combined sewers contingent on having drainage systems approved by the SAB, by amending section 106 of the Water Industry Act 1991; and
 - The SAB in England and Wales to adopt and maintain all SUDS serving more than one property. Local highway authorities will maintain SUDS in and alongside adopted roads.
- 9.3.8 These measures would have an impact on the future costs for sewerage companies for the provision of surface water and highway drainage. New developments can increase the total amount of rainwater flowing to the sewer, and the proposals for new developments to apply SUDS drainage techniques, which are approved by the SAB and meet National Standards, will help mitigate this increase. Where the new requirements for approval apply to redevelopments, sustainable water drainage systems may reduce the rate of water that runs off into the sewerage system.
- 9.3.9 SUDS help reduce the rate of surface water flows to sewers during storms and heavy rainfall by slowing the flow, attenuating the water and releasing it into the drainage system at a more constant rate. This will potentially help to alleviate pressures in the network and therefore reduce the risk of surface water flooding. It will be important to establish the right incentives to encourage SUDS where appropriate, as SUDS offer an alternative to increasing the capacity of the sewerage system, potentially reducing the need to invest in additional infrastructure and helping to achieve lower bills in future.
- 9.3.10 There are also opportunities to retrofit SUDS in existing properties, where the buildings or drainage are being altered. The Construction Industry Research and Information Association (CIRIA) has commissioned guidance for its members on retrofitting surface water infrastructure in urban areas to manage flood risk and address concerns about water pollution. The guidance will be backed by a process to support practitioners to make the right decision for what can and cannot be incorporated into the existing urban area, and will include measures such as green roofs and retrofitting SUDS.
- 9.3.11 The review team considered whether more could be done through the charging system to incentivise households to minimise the amount of rainwater run-off from existing and new households, including incentives to install small-scale sustainable drainage systems. Currently the only incentive is an exemption from the surface water drainage charge when a property is not connected at all to the sewer for the purposes of draining its surface water. There is, however, no financial incentive for householders to take action to minimise the amount of rainwater run-off from their property while remaining connected to the sewer to drain the remainder.

- 9.3.12 The review team considers that such an incentive could be useful in future and might, for example, be delivered by a sliding scale where the surface water drainage charge is discounted in a set proportion according to the measures taken by the householder. Under the UK Government and Welsh Assembly Government's proposals for the SAB to approve new drainage systems, developers will need to lodge a drainage application. This will need to show both residual flow rates to the sewer (if needed) as well as the location, size and type of sustainable drainage systems for the development. A sliding scale might, therefore, be easier to apply in the future if the Flood and Water Management Bill's proposals are introduced.
- 9.3.13 The review team considered whether a fully cost-reflective charge for surface water drainage based on the drained area of each property would introduce a more nuanced incentive for households to take action to minimise their rainwater run-off drained into public sewers. This would be consistent with Ofwat's preferred approach for more cost-reflective charges for non-households. We note, however, the difficulties involved in introducing this method of charging for surface water drainage for non-households in areas where charges have risen very sharply. Any extension of site-based charging to households would need to take account of the lessons learnt from that recent debate. Measuring the drained area of all households is administratively complex and is likely to be neither practical nor justified, given that the difference in drained areas in households varies much less than in non-households. **The review team therefore does not recommend switching to a charging system for surface water drainage based on the drained area in the case of households, at least in the short run.** This was supported by those who responded on this issue.
- 9.3.14 Given the importance of putting in place the right incentives for households to minimise rainwater run-off from a property, **the review team recommends that Defra, the Welsh Assembly Government, the Environment Agency, Ofwat, sewerage companies and local authorities should consider how the charging system could incentivise households to drain less rainwater run-off into public sewers, including incentives to install small-scale sustainable drainage systems.** The majority of respondents supported this recommendation. **This could take the form of a sliding scale of charges for surface water drainage depending on measures taken by households to minimise rainwater run-off.**

Sewerage charges in households with rainwater and greywater recycling

- 9.3.15 The cost of treating foul sewage is linked to the volume and the load of the sewage discharged to the system. Foul sewerage charges for metered customers are set in relation to the amount of water supplied to a property, of which a proportion (typically 90 per cent or higher) is assumed to be discharged into the sewerage system. Rainwater harvesting and greywater reuse systems affect these factors, and so the review team has considered whether sewerage charges need to be adjusted for metered households that have these systems installed.
- 9.3.16 Greywater reuse consists of recycling water used in the home (typically from baths) for another use – usually to flush toilets. In this case, the volume of water supplied to the dwelling is lower than in a comparable household without greywater reuse, but the effluent strength (load per unit) is slightly higher, while the total load to be treated remains the same. Using this system, the amount that the household pays for sewerage services falls – because the volume of water used falls – but the costs loaded onto the sewerage system remain the same. However, the effect is likely to be fairly minor in the short and medium term, and not adjusting the sewerage bill upwards increases the incentives for water efficiency. **The review team does not believe that the use of greywater recycling justifies adjusting household sewerage charges upwards.**

- 9.3.17 Rainwater harvesting systems⁴¹ collect rainwater to be used as non-potable water within the home – usually to flush toilets. In the case of rainwater harvesting, the load and the effluent strength discharged into the sewerage system does not change, although the amount of water discharged is higher than the amount of water supplied to the property. In such circumstances, a sewerage charge based on the volume of water supplied underestimates the volume discharged into the sewerage system, and a case could be made for levying an additional assessed charge on these properties.
- 9.3.18 However, the number of properties with rainwater harvesting systems is small and while it may increase over time, we would not expect it to add a significant volume to merit separate treatment in their charging in the short and medium term. **The review team therefore does not believe that the use of rainwater harvesting justifies adjusting household sewerage charges upwards.** Such systems reduce the amount of potable water used, as well as reducing surface area drainage as rainwater is diverted from the drains when rainfall occurs. The review team believes that these benefits are recognised by the reduced sewerage charge these properties pay when they are charged on the basis of volume supplied.
- 9.3.19 Most respondents to the consultation supported these recommendations. Water UK supported them for the time being, while a sewerage company pointed out that this might need to be reviewed if these systems become more common as more individual households install such systems. **The review team accepts that the charging for rainwater and greywater recycling will need to be reviewed again if these systems become more widespread.**

Highway drainage charges

- 9.3.20 Highway drainage charges pay for the service provided by sewerage companies to collect, remove and treat rainwater run-off from roads and pavements. The highway drainage charge represents on average 7 per cent of the combined household water and sewerage annual bill, around £25 per household. The total annual highway drainage charges recovered from all sewerage customers amounts to approximately £700 million.
- 9.3.21 The basis of charging varies between sewerage companies. Most households (57 per cent) pay through a standing charge. Other households are charged on the basis of volume used (for metered households) or rateable value (for unmetered households). The amounts also vary considerably between sewerage companies, as discussed above.
- 9.3.22 As with surface water drainage, highway drainage is expected to assume greater significance in the future as the likely effects of climate change lead to more flooding where the sewerage network is close to capacity at times of peak volume. Sewerage networks might need increased capacity in some areas to deal with the predicted run-off. An example of this is the Thames Tideway project, as the Victorian sewerage network in London is already experiencing capacity problems at peak-volume times.
- 9.3.23 Although sewerage customers pay for highway drainage, they are not in a position to influence the way highways are drained and therefore the volume of water that goes into the drains and the costs of dealing with it. Local highway authorities own 97.5 per cent of the road network (in mileage). The remaining 2.5 per cent of the network is the trunk network, for which the Highways Agency is responsible. The trunk network is not connected

⁴¹ The review team does not consider here the use of water butts, as these collect limited volumes of rainwater, which are usually used to water gardens and therefore do not get discharged into the sewerage system.

to any public sewer owned by sewerage companies, apart from a few historical exceptions, and the Highways Agency regularly installs sustainable drainage systems. Following the recommendations in the Pitt Review, upper tier or unitary local authorities (who are also the local highway authorities) have become responsible for promoting sustainable drainage systems in England and will draft Surface Water Management Plans.

- 9.3.24 The Water Industry Act 1991 did not give local highway authorities a right to connect to a public sewer (unlike the right to connect surface water drainage), but allows the connection of highway drains to sewers by agreement between the local highway authority and the sewerage company. Sewerage companies cannot unreasonably refuse a connection. The Act also explicitly states that sewerage companies cannot require payment from local highway authorities for ongoing highway drainage, once the connection is made. In practice, local highway authorities generally pay a nominal fee for the connection, leaving the ongoing costs of providing the service to be levied against all sewerage customers. In effect, therefore, local highway authorities can currently transfer most, if not all, of the costs of dealing with rainwater run-off from their roads onto sewerage customers.
- 9.3.25 The wording on the Act reflects the fact that older sewerage networks were paid for by local taxpayers at a time when local authorities were both the local highway authorities and the sewerage authorities. When the new water authorities were created in 1974, these assets were transferred from the local authorities to the new water authorities and later privatised. An agreement was reached at the time that local highway authorities would continue to discharge highway drainage free of charge. The agreement was reciprocal, so that sewerage authorities could continue to discharge surface water drainage free of charge into the local highway authority's road drains. This agreement did not extend to a right for local highway authorities to connect to existing and future sewers, so any new connection was by agreement.
- 9.3.26 Regardless of the historic origin for the current charging arrangements, charging sewerage customers for highway drainage does not meet the 'polluter pays' principle. Under the current charging system local highway authorities have no incentive to minimise the total costs of dealing with rainwater run-off from roads, as it is cheaper for them to connect the drainage to a public sewer thereby passing ongoing costs to sewerage customers. Given the growing pressures on the sewerage network, it is important that the body that can take action to minimise the amount of highway run-off has the incentive to do so where this reduces total costs.
- 9.3.27 There is therefore an argument for transferring highway drainage costs to local highway authorities, as it would accord with the 'polluter pays' principle and would create incentives for local highway authorities to adopt the least-cost solution to highway drainage, whether by SUDS, separate highway drains, or continuing with the present approach.
- 9.3.28 However, it is also important to consider the practicalities involved. A transfer of existing highway drainage charges to local highway authorities would be subject to current UK Government and Welsh Assembly Government rules on funding 'new burdens'. Finding this funding in the current economic circumstances could be difficult.
- 9.3.29 The interim report invited views on both the principle and the practicalities of transferring highway drainage costs to local highway authorities, including costs and benefits. It also invited views on alternative ways by which local highway authorities might be incentivised to reduce the volume of highway drainage run-off to sewerage systems.

- 9.3.30 Although a clear majority of respondents supported transferring highway drainage costs to local highway authorities, the Local Government Association (LGA) is strongly opposed to such a transfer, both because it would want to see the new burdens financed, and because of the difficulty of fairly apportioning costs between local authorities. However, we did not receive any proposals on alternative mechanisms for local highway authorities to be incentivised to reduce the volume of highway drainage run-off to sewerage systems. The LGA suggested that local highway authorities and sewerage companies should work together to minimise drainage run-off.
- 9.3.31 A number of respondents suggested that road users should pay for highway drainage charges (through revenues from the vehicle excise duty); as they benefit most from highways, this would meet the 'polluter pays' principle. Such a change would also be a more progressive way to recover the costs. However, charging directly for highway drainage in this way would not incentivise local highway authorities to change their approach and minimise the amount of highway drainage into public sewers. Motorists would also have very little influence on how the highways were drained, so the system would still have few, if any, incentives to adopt least-cost solutions to dealing with rainwater run-off from roads.
- 9.3.32 The review team has limited evidence on the costs and benefits of retrofitting SUDS in existing highways. What evidence there is points to a very limited scope for retrofitting SUDS or minimising rainwater run-off in existing highways cost-effectively. This is because most highways draining to public sewers are in urban areas, where the built area restricts the scope for retrofitting. There may be opportunities to incorporate SUDS in areas adjacent to the road, or to incorporate infiltration or attenuation techniques. Permeable paving or permeable roads are not always an option as road durability needs to be taken into consideration – the biggest opportunities for permeable surfaces are in local roads with little traffic. As technology develops, however, more solutions may present themselves.
- 9.3.33 **The review team considers that the 'new burdens' argument should not, of itself, prevent the transfer of highway drainage charges to local highway authorities if, in the longer run, this could incentivise more imaginative and cost-effective highways drainage solutions. It therefore recommends that the UK Government and Welsh Assembly Government consider this option, particularly once the evidence base on the scope and cost of retrofitting SUDS to existing highways is improved.**
- 9.3.34 The review team recognises that if there is little practical scope for improving drainage in existing roads, such a transfer would have little practical benefits. **The UK Government and Welsh Assembly Government should, as a minimum, place a duty on local highway authorities to co-operate with sewerage companies to minimise drainage into their network where this reduces total costs.** The aim of this would be to ensure that local highway authorities become part of the solution rather than continuing to cause some of the pressures on the local infrastructure.
- 9.3.35 The case is different for new connections of highway drainage to public sewers. In this case there is much more scope to install measures to minimise rainwater run-off from the outset. Although connecting new highway drains to public sewers is by agreement, only one sewerage company seems to have formal agreements in place with local highway authorities.
- 9.3.36 The Flood and Water Management Bill proposes to amend the right to connect highway drainage by agreement, creating a right to connect if the local authority SUDS approval body (SAB) gives approval to the drainage systems for the new road. This is part of the proposed approval process for new developments and highways (some exemptions or de-minimis

thresholds may apply). In this case, the SAB will approve the drainage systems to ensure they meet SUDS National Standards. Sewerage undertakers are statutory consultees to the process, and can highlight issues with sewer capacity. This would ensure that new highway designs consider the minimisation of rainwater run-off at the earliest stage, and SUDS are incorporated where possible. However, this approach does not tackle the question of whether there is capacity in the sewerage network to cope with even this more environmentally friendly run-off.

- 9.3.37 While this is a welcome development, **the review team believes that highway drainage costs related to future connections to the public sewer should be paid for by local highway authorities.** This would be in accordance with the 'polluter pays' principle and would ensure that there is an ongoing incentive for local highway authorities to take the most beneficial decision on highway drainage. It does not reopen the agreement made at the time of transfer of sewerage assets to the new water authorities and the review team considers that it would not be a new burden as, at present, local highway authorities do not have a right to connect highway drainage to public sewers.
- 9.3.38 Proposals in the Flood and Water Management Bill would provide for a right to connect to a public sewer where the road is also a SUDS providing drainage to properties, and it has been approved by the SUDS Approving Body. The Bill also proposes that the local highway authority will be responsible for maintaining SUDS in and alongside adopted roads. The review team considers that charging for future connections of highway drainage is necessary if there is to be a new right to connect, subject to approval by the SAB that the drainage for the road meets SUDS National Standards.

Final Recommendations

9.4.1 The review team recommends that:

- **The cost of providing surface water and highway drainage is identified separately on the bill;**
- **Ofwat should explore the variation in the composition (amount and basis) of the three elements of the sewerage bills and establish whether some general principles are required;**
- **Foul sewerage should continue to be charged for on the same basis as water supply;**
- **Defra, the Welsh Assembly Government, the Environment Agency, Ofwat, sewerage companies and local authorities should consider how the charging system could incentivise households to drain less rainwater run-off into public sewers, including incentives to install small-scale sustainable drainage systems. This could take the form of a sliding scale of charges for surface water drainage depending on measures taken by households to minimise rainwater run-off;**
- **The UK Government and Welsh Assembly Government should consider transferring the highway drainage charges from existing connections from sewerage customers to local highway authorities, particularly once the evidence base on the scope and cost of retrofitting SUDS to existing highways is improved;**
- **The UK Government and Welsh Assembly Government should, as a minimum, place a duty on local highway authorities to co-operate with sewerage companies to minimise the total costs of draining highways;**
- **Highway drainage costs related to new connections to the public sewer should be paid for by local highway authorities.**

Chapter 10 – Water Efficiency

Scope of this Chapter

10.0.1 One theme running through this report is the need for everyone to use water more efficiently in order to maintain sustainable supplies. Chapter 4 explored the future pressures on water resources in England and Wales, while this chapter explores the range of measures needed alongside the charging system to achieve this objective.

Background

- 10.1.1 When comparisons are made with international water use, it is clear that more can be done to reduce water demand in England and Wales. Projected climate change and pressures on demand from demographic changes all point towards increasing costs if we continue with our current consumption patterns, both in terms of investment in infrastructure and environmental damage from abstraction. Furthermore, water use in the home accounts for 89 per cent of greenhouse gas emissions associated with water.⁴² Reducing demand for water could therefore also help reduce CO₂ emissions by reducing or eliminating the need to develop new sources of supply. Reducing hot water use in the home not only reduces household CO₂ emissions but also energy and measured water bills.
- 10.1.2 As most domestic customers are charged on a rateable value based system, they currently have very little financial incentive to reduce their household water use. Although customers on a volumetric charge do have a financial incentive not to waste water, in many areas the standing charge constitutes a significant part of the water bill which dilutes that incentive (see Chapter 8). Even for metered customers the price effect is unlikely to be the only mechanism required to encourage them to waste less water. For example, recent Defra research⁴³ found little awareness neither of water as a serious environmental issue or of the severity of water scarcity issues in the UK. A strong driver for behavioural change was not to 'waste' water.
- 10.1.3 Responses to the interim report generally welcomed the emphasis the review team had given to using water more efficiently. Action was needed across the supply chain to achieve this, from abstraction right through to turning on the tap. Respondents also emphasised that metering was only one element in a strategy to encourage water efficiency. Metering could provide more information on how much water was being used but using water more efficiently needed a change in behaviour, too.
- 10.1.4 Respondents pointed to the need to target high discretionary use, as here the scope for increasing efficiency and reducing waste was likely to be highest in this area. As water efficiency measures could entail a cost, such as the cost of retrofitting houses with water efficient fittings, respondents felt it was important to undertake water efficiency measures that were cost-effective and did not simply result in upward pressure on water prices to customers, with little or no reduction in consumption. The review team recognises both these points.

The Regulatory Regime

Treatment of water efficiency costs

10.2.1 Ofwat's duties include promoting water efficiency through its sustainable development duty and its duty to promote economy and efficiency on the part of water companies. The Water Industry Act places a duty on water companies to promote the efficient use of water by its customers. Ofwat has set annual activity-based water efficiency targets for water companies of one litre per property per day for the period 2010-15 (or around 0.3 per cent of

⁴² Environment Agency (2008a) Greenhouse gas emissions of water supply and demand management options. Science Report SC070010

⁴³ Defra (2009) Public Understanding of Sustainable Water Use in the Home. London

consumption per year). These targets have a two-tier structure, setting a baseline service undertaken by all companies and a sustainable economic level of water efficiency above this baseline level for those companies where the economic case supports a higher level of activity. It is up to the water company how it achieves this target. The company is not required to do so through activity related to domestic properties alone. Ofwat has also introduced a revenue correction mechanism which means that where water companies implement water efficiency measures, they are not penalised through revenue loss if customers reduce their demand for water; conversely, if customers do not reduce their consumption the companies do not benefit. This removes a perverse incentive whereby water companies were financially penalised if they persuaded their customers to use water more efficiently. Water efficiency expenditure is generally classified as operating expenditure notwithstanding the long-term benefits it creates through more efficient usage. As operational expenditure is subject to regulatory pressure, water company expenditure on water efficiency measures is less than 1 per cent of total expenditure.

- 10.2.2 **As a result, the review team recommends that the companies' activities related to water efficiency should be separated out from their other operations and that Ofwat should reassure itself that the regulatory incentives for water efficiency are fully applied. Ofwat should also calculate the operational efficiency of a company's water efficiency separately, instead of including it in the overall operational efficiency calculation.**

Treatment of water efficiency expenditure

- 10.2.3 A number of respondents suggested it is very important to incentivise companies to pursue water efficiency measures. The review team agrees. Ofwat's revenue correction mechanism should help, as should the ability to count CO₂ savings against Carbon Reduction Commitments. Importantly, however, **the likely future benefits of increased water efficiency should be taken into account and, where a company invests significantly in water efficiency measures, consideration should be given to treating this as capital expenditure for regulatory price setting purposes – reflecting the fact that the increased efficiency (and hence reduced demand) will continue over many years.**

Measures to Increase Water Efficiency

Raising awareness

- 10.3.1 The UK Government and Welsh Assembly Government, Ofwat, water companies and customers must recognise that securing a resilient future supply of water for everyone will require significant behavioural change to ensure that everyone uses water as efficiently as possible. Respondents agreed that at present, the financial incentive to save cold water is fairly small for metered customers. However, given the pressures on water resources, identified in Chapter 4 it is important to realise the benefits of cold water savings. For unmeasured customers there is no incentive to save water and so other, more localised, behavioural drivers must be realised and exploited. Respondents pointed out that this would require consultation with individuals, community groups and water customers at the local or regional level so that messages can be tailored to local customers. Water efficiency cannot be tackled solely by installing and retrofitting water efficiency equipment; it will require a package of measures that informs customers why it is important not to waste water, how to make simple changes to reduce water use and how to maintain those efforts in the future.

- 10.3.2 All respondents to the interim report agreed on the need for a national education strategy and campaign to raise awareness of household water efficiency, led by the UK Government and Welsh Assembly Government or at least centrally co-ordinated. Several companies stressed that education is the cheapest and most effective way of improving water efficiency among household customers. The Energy Saving Trust or Waterwise were favoured to lead the campaign operationally. The review team endorses the need for such a water efficiency campaign and its messages.
- 10.3.3 As a priority, awareness needs to be increased about the environmental impacts of current and future water stress, and about simple lifestyle changes and ways of reducing water wastage. The national brand and messages should then be used as a co-ordinating framework to raise awareness of regional issues, according to regional pressures on water resources. The messages should be sustained at all levels and periodically developed to reflect changing conditions. Local councils should play a significant role in localised education strategies, and be given the autonomy to adapt it to local circumstances and culture.
- 10.3.4 The review team welcomes the inclusion of water saving advice on the website and literature of Act on CO₂, and in ongoing work by the Energy Saving Trust, Waterwise and the Environment Agency to raise awareness of the link between reducing hot water use and subsequent reductions in customers' energy and (metered) water bills.
- 10.3.5 **The review team recommends that the UK Government and Welsh Assembly Government should promote a national education strategy working with stakeholders to influence public behaviour on water use, and building on the Act on CO₂ water saving campaign. Regional and local community-based campaigns on water efficiency should be developed using the key national messages and brand, but targeting local issues. Local councils, the private sector and other local stakeholders should be closely involved.**

Product labelling

- 10.3.6 At present, customers who wish to refurbish their houses are still largely unaware of the benefits of opting for water efficient fittings and products.⁴⁴ Consumers who are interested in saving water find it hard to identify and buy water efficient products. Labelling would allow consumers to make more informed choices,⁴⁵ offer water companies and others an independent endorsement of products for promotion and retrofitting, and provide a point of reference to building professionals for compliance with regulatory and voluntary water standards. Products and fittings are, in general, poorly labelled for water consumption and performance.
- 10.3.7 Currently there are estimated to be over 70 different water-efficient labels in the market, the vast majority of which are a marketing tool and do not represent any agreed estimate of relative water efficiency, or potential water savings. The fact that so many labels are in circulation suggests that customers want information on water-efficient products.
- 10.3.8 Waterwise runs a water-efficiency marque scheme incorporating 52 water products and has worked with retailers to promote these products. The Bathroom Manufacturers Association (BMA) has developed a voluntary labelling scheme for bathroom products, which is now a rated label and is supported at the point of sale by retailers. The review team supports the ongoing work by the BMA and other stakeholders to widen the number and variety of water products that are covered by the scheme.

⁴⁴ Defra (2009) Public Understanding of Sustainable Water Use in the Home. Defra: London

⁴⁵ 70% of people would like retailers to provide more help with choosing the greenest products. 65% expressed interest in water efficient taps and showers, but only 30% know where to buy them. Attitude Tracker March 2009, Energy Saving Trust

- 10.3.9 **The UK Government and Welsh Assembly Government should review the efficacy of current and proposed labelling schemes and decide what information consumers need as a matter of priority. The UK Government and Welsh Assembly Government should work with Waterwise, water companies, the BMA, other manufacturers, stakeholders and retailers to ensure voluntary schemes are effective. A mandatory scheme should also be given consideration.**

Fittings, fixtures and appliances

- 10.3.10 The Water Supply (Water Fittings) Regulations 1999 set minimum standards for toilets, washing machines, dishwashers and washer-driers, including standards of water consumption. It is unlawful to connect to the public water supply system fittings or appliances that do not comply with the requirements of the Regulations – but this does not stop them being sold. Defra and the Welsh Assembly government are currently undertaking a review of the regulations.
- 10.3.11 **The review team believes that the UK Government and Welsh Assembly Government should ensure that only water-efficient fittings, fixtures and appliances can be sold on the UK market.** The review team acknowledges that this might need EU approval for trade implications.

New Homes

- 10.4.1 Projections in 2007 were for 220,000 new homes per year across England and Wales up to 2026, including a significant proportion of single-occupancy dwellings. This would amount to over 3 million new homes, or about 15 per cent of the housing stock. Although current economic conditions have slowed construction, projections continue to suggest that this amount of new housing is required.
- 10.4.2 All new homes built with public funds are required to meet level 3 of the *Code for Sustainable Homes*, which sets a water efficiency standard of 105 litres per person per day (lppd), excluding garden use. Regulations to amend Part G of the Building Regulations will come into force in April 2010. This will require all new homes to meet a performance standard of 125lppd (which includes 5 lppd for external water use), effectively making levels 1 and 2 for water of the *Code for Sustainable Homes* mandatory. This means that privately-built new homes are being constructed to lower water-efficient standards than social housing. The cost of meeting levels 3 and 4 of the Code for water has been calculated as £125 above the cost of meeting level 1.⁴⁶
- 10.4.3 Compared to the total overall costs of a development, the extra cost of meeting level 3 of the *Code for Sustainable Homes* for all new homes in some areas is negligible. Level 3 of the *Code for Sustainable Homes* will be mandatory for all new homes in Wales from September 2010. **The review team recommends that level 3 of the Code for Sustainable Homes should become mandatory for all new homes in both England and Wales.**

⁴⁶ Cost Analysis of the Code for Sustainable Homes, CLG, July 2008

Making existing homes more water efficient

- 10.5.1 Since the bulk of the housing stock is of pre-World War II origin, improving the water efficiency of existing homes has a greater role to play in reducing water demand. There are around 22 million households in England and Wales, which allows considerable scope for saving water through improved efficiency.
- 10.5.2 The review team has looked at improving the water efficiency of the existing housing stock through:
- encouraging the take-up and use of more water-efficient fittings and appliances; and
 - aligning work with energy efficiency schemes, particularly exploiting synergies with existing refurbishment and retrofitting programmes.
- 10.5.3 Waterwise⁴⁷ recommends that plumbers and fitters are given appropriate training because many efficiency devices are relatively new and unfamiliar, and both fitting rates and the quality of installation have a major impact on the costs and savings of retrofitting. It is important to note that plumbers will be primarily involved in carrying out water efficiency measures and they can be a valuable resource for disseminating efficiency information to water customers. Many plumbers are not registered and do not have a recognised qualification, however. The Chartered Institute of Plumbing and Heating Engineers responded to the interim report to highlight a training scheme (GreenPlumb) for plumbers in water efficiency issues and practicalities. GreenPlumb also helps consumers find plumbing and heating engineers who are qualified and have experience in installing renewable technologies. **The review team considers working with plumbers and heating engineers as an important route to encouraging more sustainable behaviour and recommends that the UK Government, Welsh Assembly Government and the proposed national water efficiency campaign consider how plumbers and builders can help to promote water efficiency**, for example by featuring it in national accreditation programmes sponsored by the UK Government and Welsh Assembly Government.

Existing homes: alignment with energy schemes

- 10.5.4 Both respondents and the review team were struck by the current lack of co-ordination between the more developed energy efficiency initiatives and the drive for water efficiency. The Energy Saving Trust, Waterwise and the Act on CO₂ campaign have started to look at energy and water together, which is to be welcomed. Both water efficiency and energy efficiency measures include retrofitting the existing housing stock. Since visiting the property represents a significant part of the costs, combining water and energy initiatives in the same visit where possible could deliver substantial cost reductions compared to separate initiatives. To achieve water (and energy) efficiency improvements effectively and economically these synergies must be captured.
- 10.5.5 **The review team therefore recommends that where possible any energy efficiency initiative should also include hot water efficiency objectives and vice versa. Coordination between companies, regulators and consumer bodies is critical.** Some examples of where such coordination could deliver benefits are described below.

⁴⁷ Waterwise (2008) Evidence Base for Large-Scale Water Efficiency in Homes. London

- 10.5.6 The UK Government's *Heat and Energy Saving Strategy* consultation document aims to deliver a 'whole house' package for energy efficiency in every existing UK home by 2030, and make all homes and buildings zero carbon by 2050. At present, hot water efficiency measures are mentioned only in connection with solar heating for hot water, whereas there are simple retrofit fittings that can help reduce essential hot water use. **To meet these goals, the review team considers that hot water efficient fittings should be included in any energy efficiency retrofitting schemes.**
- 10.5.7 The *Community Energy Saving Programme* (CESP) was created as part of the £1bn *Home Energy Saving Programme* launched in September 2008. CESP will target low-income households to deliver high standards of energy efficiency for those least able to afford efficiency measures in their homes. The scheme will be administered by Ofgem, but energy generators and suppliers will be expected to achieve their share of the targets. The objective of this programme is to reduce fuel bills for low income households. This will be delivered through the development of community-based partnerships along with suppliers in order to generate initiatives suited for local conditions and motivations.
- 10.5.8 The Government's *Decent Homes Programme* aims to have improved 3.6 million existing social houses by 2010, at an investment cost of £40bn. Sustainable Homes and the Housing Corporation have developed a web-based tool called Green Street⁴⁸ which informs landlords of the costs and benefits of water efficiency measures for their properties. Although the *Decent Homes Programme* is nearing completion, a proportion of the 3.6 million homes may be revisited to comply with the *Heat and Energy Saving Strategy* once it is published. **The review team recommends that the retrofitting of water-efficient devices should be undertaken at the same time as energy efficiency measures to reduce costs and disruption to residents. Water companies should be encouraged to work with social landlords and housing associations when they are refurbishing homes to improve the water efficiency of social housing.**
- 10.5.9 A recent Energy Saving Trust publication⁴⁹ identified CO₂ savings in the home through efficiency measures for hot water use. Hot water in the household currently accounts for 5 per cent of the UK's greenhouse gas emissions. Savings from hot water measures could be significant. **The review team considers that any savings should count against either the energy companies' CO₂ savings targets or water companies' water efficiency targets and should be factored into any analysis of the costs and benefits of water efficiency measures or to use the CO₂ savings against their own Carbon Reduction Commitment.**
- 10.5.10 Under the Carbon Emission Reduction Target (CERT) scheme, hot water efficient fittings and devices are now accepted in principle for accreditation. A device that regulates the water flow in showers has already been accredited. This is a welcome development as it will expand the range of possible activities available to energy companies to meet their targets under the CERT scheme. **The review team considers that where water companies undertake retrofitting projects by themselves, the water companies should be able to accrue any CO₂ savings for measures accredited in the CERT scheme, and then be able to sell the CO₂ savings to energy companies to use against their targets, or to use the CO₂ savings against their own Carbon Reduction Commitment.**

⁴⁸ www.greenstreet.org.uk

⁴⁹ Energy Saving Trust (2009) *Quantifying the energy and carbon effects of water saving*. London

Costs and Benefits of Water Efficiency Measures

- 10.6.1 It has been recognised that in the past the evidence base for the costs and benefits of water efficiency measures was in need of further refinement. Waterwise's ongoing work on large-scale retrofitting of social housing and the development of its evidence base for large-scale water efficiency in homes is therefore very important. The first phase has been very useful to water companies and Ofwat in the 2010-2015 price determination, resulting in an increase in the scale of retrofitting programmes. With support from the UK Government, Welsh Assembly Government and regulators, Waterwise is now refining and improving this evidence base, which will include new, more robust data, larger projects, and will attach carbon emissions and energy savings to individual water efficiency measures.
- 10.6.2 This will enable a more refined analysis of the costs and benefits of water efficiency measures that can be applied. In undertaking this analysis it will also be important to capture the environmental benefits that arise from reduced abstraction. **The review team therefore recommends that, as with metering, a cost-benefit analysis of any water efficiency proposals should take account of wider benefits including the full value of water (see Chapter 4) and the potential for CO₂ savings.**
- 10.6.3 There is a degree of uncertainty about the effect of water efficiency activity on the amount of water actually used by households. This is partly because water consumption depends on both the efficiency of the fittings and appliances used and on the behaviour of individuals; and since most households in England and Wales are unmetered, it is difficult to measure changes in water use. However, information is emerging from the trials that have (and are currently) taken place. This information can be used to calculate the costs of achieving a reduction in water usage.
- 10.6.4 Using information from large-scale trials,⁵⁰ the average incremental cost of retrofitting houses is around 197 pence per cubic metre saved (the actual savings from the pilots ranged from 47 to 720 pence per cubic metre). This figure does not include social and environmental costs or benefits, and it assumes that the work is not done in partnership with other bodies. As already noted, the home visit accounts for most of the cost.
- 10.6.5 Waterwise estimated the average cost of household retrofit under different scenarios, considering the synergies with other visits to the home such as water audits, meter reading for energy or water meters, or working in association with energy retrofits. The estimated costs of water saving in these scenarios was lower, and ranged from 36 to 135 pence per cubic metre of water saved, showing considerable savings over schemes that simply address water efficiency.
- 10.6.6 The cost of saving a cubic metre of water through retrofitting water-efficient fittings has to be compared with the cost of supplying an additional unit of water. The Water Resource Management Plans submitted by water companies for the current Periodic Review estimated the long-run costs of supplying an additional unit of water from 14 to 66 pence per cubic metre, with one company quoting an upper figure of 200 pence per cubic metre. As already noted, these figures do not take the full value of water into account. Nor do they include the energy or emission savings linked to a reduction in hot water use – although these would be savings accrued either to the customer or to society more widely and not to the water company.

⁵⁰ Waterwise (2008) Evidence Base for Large-Scale Water Efficiency in Homes. London

- 10.6.7 The review team recognises that the evidence available on the cost-effectiveness of water efficiency measures is limited – but it does indicate that retrofitting is likely to be most cost-effective in areas of water stress where the full value of water is high. The range of the costs of achieving a reduction in use overlaps with the range of the costs of additional supplies, particularly where the environmental damage of abstracting more water is high.
- 10.6.8 The costs of water efficiency projects are likely to be significantly lower if they can realise synergy efficiencies with other initiatives that are designed to improve the housing stock, or with other visits by the water company. Economies of scale would apply to retrofitting; a scheme that retrofits a whole street would be more cost-effective than one targeted at dispersed households. If synergies with other local programmes such as energy efficiency retrofitting schemes, water company metering programmes or Decent Homes refurbishments are fully exploited costs are likely to be lower again.
- 10.6.9 However, the review team recognises that if water efficiency activity by water suppliers is set at a level that is not cost-effective, average water bills will rise by more than they would in the absence of a water efficiency scheme. In particular circumstances other objectives may still make such activity worthwhile – for example, helping low-income metered customers to save water may help to lower their bills and address affordability issues.

Final Recommendations

10.7.1 The review team recommends that:

- **Changes should be made to the regulatory framework to encourage water efficiency activity by water companies, customers and Ofwat. The changes proposed are as follows:**
 - **The activities related to water efficiency should be separated out from companies' other activities, allowing Ofwat to reassure itself that the regulatory incentives for water efficiency are fully applied. The operational efficiency of a company's water efficiency activity should be calculated separately by Ofwat, instead of included in the overall operational efficiency calculation.**
 - **Future benefits of increased water efficiency should be taken into account and, where a company invests significantly in water efficiency measures, consideration given to treating this as capital expenditure for regulatory price setting purposes, reflecting the fact that increased efficiency (and hence reduced demand) will continue over many years.**
- **The UK Government and Welsh Assembly Government should promote a national education strategy working with stakeholders to influence public behaviour on water use, and building on the Act on CO₂ water saving campaign. Regional and local community-based campaigns on water efficiency should be developed using the key national messages and brand, but targeting local issues. Local councils, the private sector and other local stakeholders should be closely involved.**
- **The UK Government and Welsh Assembly Government should review the efficacy of current and proposed labelling schemes and decide what information consumers need as a matter of priority. The UK Government and Welsh Assembly Government should work with Waterwise, water companies, the BMA, other manufacturers, stakeholders and retailers to ensure voluntary schemes are effective. A mandatory scheme should also be given consideration.**

- The UK Government and Welsh Assembly Government should ensure that only water-efficient fittings, fixtures and appliances can be sold on the UK market.
- Level 3 of the Code for Sustainable Homes should become mandatory for all new homes in both England and Wales.
- The review team has made recommendations to improve water efficiency in existing homes:
 - The review team considers working with plumbers and heating engineers as an important route to encouraging more sustainable behaviour and recommends that the UK Government, Welsh Assembly Government and the proposed national water efficiency campaign consider how plumbers and builders can help to promote water efficiency.
 - Where possible any energy efficiency initiative should also include hot water efficiency objectives and vice versa. Coordination between suppliers, regulators and consumer bodies is critical.
 - Hot water efficient fittings should be included in any energy efficiency retrofitting schemes.
 - The retrofitting of water-efficient devices should be undertaken at the same time as energy efficiency measures to reduce costs and disruption to residents. Water companies should be encouraged to work with social landlords and housing associations when they are refurbishing homes to improve the water efficiency of social housing.
- Any CO₂ savings should count against either the energy companies' CO₂ savings targets or water companies' water efficiency targets and should be factored into any analysis of the costs and benefits of water efficiency measures or to use the CO₂ savings against their own Carbon Reduction Commitment.
- The review team therefore recommends that, as with metering, a cost-benefit analysis of any water efficiency proposals needs to take account of wider benefits including the full value of water and the potential for CO₂ savings.



Scope of this Chapter

11.0.1 This chapter looks at the affordability of water and sewerage bills in England and Wales, both currently and into the future, when there will be increased metering. It sets out the different options for helping customers who are struggling to pay their water bills.

What is Affordability in the Water Sector?

- 11.1.1 Water is essential to life and as such the UN has recognised it as a basic human right.⁵¹ Ready availability of water for essential use provides health and hygiene benefits to the individual as well as wider social and financial benefits to society through improved public health and a reduction in communicable disease. There was a clear view from our consultation that everyone should have access to an affordable basic water supply and sanitation service, and that government has a responsibility to ensure that this occurs. In England and Wales, companies have a statutory duty to supply water and disconnection is banned, so individuals are not at risk of going without water.
- 11.1.2 Evidence submitted to the review suggested that the affordability of bills is an issue for some households across the country and is more acute where bills are high. A clear message was that affordability issues must be resolved, both now and, in particular, as metering increases.
- 11.1.3 Metering changes the distribution of industry costs between different groups of customers (see Chapter 7) and tends to increase the bills of large households and reduce the bills of small households. Although there are customers with affordability issues in both customer groups, low-income, large households will experience faster increases in their bills than most other customers. For this customer group, increased levels of metering will exacerbate any affordability problems they currently face.⁵²
- 11.1.4 Notwithstanding this transitional issue, water affordability is part of a broader issue of general poverty, where households struggle to afford the necessities of life and pay other bills, too. There was a strong view that the water industry alone cannot solve the broader issue of general poverty. The review team agrees with this but it also considers that the industry and its regulators have some role to play in tackling the affordability of water bills. This chapter addresses ways in which the UK Government and Welsh Assembly Government, the regulator and the water industry can contribute to reducing water affordability issues.

Who Needs Help?

11.2.1 It is very difficult to pinpoint who has difficulty paying their water bill – and this is likely to change over time. Some households with low incomes in low rateable value (RV) houses have low bills as a result of using RV as the charging base. As metering levels increase, this help is eroded. Some low-income households can benefit from moving to a metered charge, but others will not. Because the RV system is out of date, neither this system, nor metered tariffs, effectively address affordability issues or target those who really need help.

⁵¹ Sub-Commission on the Promotion and Protection of Human Rights, Final Report of the Special Rapporteur on the relationship between the enjoyment of economic, social and cultural rights and the promotion of the realisation of the right to drinking water supply and sanitation, 14 July 2004

⁵² This can occur even if the individual customer is not metered, because with the optant system, unmetered bills will tend to rise faster than the metered price – see Chapter 6.

- 11.2.2 Evidence received showed that there are customers in all company areas who can find it difficult to pay their water charges. The review team also received evidence showing that affordability issues are particularly acute where overall income levels are low and where average water bills are high. The review team carried out its own analysis of the relationship between bills and income over time, and found that the percentage of households in the lowest three income deciles spending over 3 per cent of their disposable income (before housing costs) varied from just over 6 per cent (Thames region) to 72 per cent (South West Water region).⁵³ Research commissioned by Ofwat and CCWater into household customers' views on competition⁵⁴ found that 25 per cent of respondents thought their charges were not affordable. This figure was higher among customers in the lowest socio-economic group (36 per cent in group E). These two sources demonstrate that affordability is a particular issue for households with a low income who live in a high-cost area and those with low incomes more generally.
- 11.2.3 We also know that affordability can be an issue where households have a low income but a high essential use of water for medical reasons or because the household is large. If these households are metered, for public health reasons they must be protected from restricting their essential water use because of concerns over their bill.
- 11.2.4 Research has shown that where 90 per cent of households are metered, affordability is likely to worsen for low-income single parents and low-income households with three or more children.⁵⁵ Both now and during the transition to metering, low-income households with children are therefore a further group that might need help with affordability. This differs from the energy sector, where it tends to be older pensioner households who need assistance because they are more vulnerable to the cold.
- 11.2.5 In summary, the groups which the review team has identified as potentially experiencing affordability issues and benefiting from intervention, particularly during the transition to metering, are:
- Customers with a low income and high essential water use for medical reasons;
 - Customers with a low income, living in a high-cost area;
 - Customers with a low income and children; and
 - Customers with a low income more generally.

What Help is Currently Provided?

- 11.3.1 As set out in Chapter 6, the current rateable value charging structure delivers some help to some of those who need it. However, it is not very well targeted, and so help is being given to some who do not need it, while customers who need help themselves are paying for help for others. There are considerable transfers between customers, compared to what they would pay if they were charged a flat rate which took no account of the rateable value of their property. At the current level of metering, total transfers between rateable value customers are likely to be around £600 million per year. As metering increases, the level of help in the system falls. If metering reaches 50 per cent by 2015 the transfers at that time are more likely to be in the region of £500 million per year.⁵⁶

⁵³ See Interim report, page 193, www.defra.gov.uk/environment/quality/water/industry/walkerreview/interim-report.htm

⁵⁴ www.cwater.org.uk/upload/pdf/r7508_final_report.pdf, Ofwat/CCWater Research into Household Customers' Views on Competition in the Water and Sewerage Industry, October 2008

⁵⁵ Environment Agency and Greater London Authority, The impact of household water metering in South East England, August 2009

⁵⁶ Review team analysis suggests that the average benefit in the form of a reduction in their bills for customers whose bill goes down as a result of the link to RV (because they live in a low RV property) is around £80 per year, and that this would affect just over half of customers. This is matched by just under half of customers (in high RV properties) who pay more to fund this transfer. With around 14m customers currently unmetered, the total transfer between these groups is, therefore, around £600m per annum.

- 11.3.2 It has not been possible to calculate accurately how much help is going to low-income households. However, given the weak link between household income and rateable value (see Chapter 6), it is likely that about 30 per cent of transfers are going to low-income households, and some of that will be paid by other low-income households. So at present, the rateable value part of the current system appears to be delivering help of around £180m a year to low-income households. The remaining transfers of around £420m are going between those who do not need help, and from those who do need help. With the increase in metering to 2015 both the total transfers and the part that is directed to those who are likely to need help will fall. As metering becomes universal, this level of transfer will reduce to zero.
- 11.3.3 Transferring something like the current level of help to low-income households while eliminating the help which comes from low-income households would improve the fairness of the charging structure and provide significant assistance for those who need help. The review team believes that because these cross-customer transfers are already an integral part of the water charging system, there are real arguments for preserving assistance of a similar level.
- 11.3.4 In addition to this largely hidden and poorly targeted help provided by the rateable value charging system, there are more explicit interventions to help address affordability:
- The tax and benefits system, which effectively provides a basic minimum income for all and is designed to cover normal day-to-day living costs including food, water, fuel and clothing. Water prices are not identified separately in relation to these benefits, nor is there any element reflecting regional differences in water prices.
 - WaterSure,⁵⁷ a UK Government mandated scheme (adopted on a voluntary basis in Wales) which caps the bills of low-income metered customers with high essential use for medical reasons or with three or more children. The scheme currently helps around 29,000 customers and is funded by water customers at an estimated cost of £0.40 per household per year.
 - Charitable trusts and other company schemes, which allow companies to determine their own criteria for schemes aimed at assisting local customers experiencing difficulties in paying their bill or who are in arrears. Companies spent around £10m on these activities in 2007-8.
 - Company specific social tariffs, as detailed in Annex 7. Ofwat currently allows social tariffs which are closely targeted and are 'win-win' tariffs with a positive impact on debt recovery, and therefore for customers as a whole, but it considers that its duty on 'undue discrimination' precludes the introduction of social tariffs that result in new cross-subsidies between groups of customers.

Help with Fuel Poverty

- 11.4.1 The assistance available in water contrasts with the help given to fuel customers, some of which is funded by government (i.e. the taxpayer) and some through supplier obligations, which are passed onto energy customers through their bills. In energy this includes grants and supplier investment in heating and energy efficiency measures for priority households (such as Warm Front, the Carbon Emissions Reduction Target and the Home Energy Efficiency Scheme in Wales) and direct payments when there are spells of particularly cold weather.

⁵⁷ The Water Industry (Charges) (Vulnerable Groups) Regulations 1999 SI 1999/3441, amended by SI 2000/519, SI 2003/552, SI 2005/59, SI/2008/1879.

The UK Government and Welsh Assembly Government have spent £20 billion since 2000 on benefits and programmes to tackle fuel poverty. In 2008 the Government negotiated a voluntary agreement with energy suppliers under which they agreed to offer assistance through social programmes to vulnerable customers. The combined spending by suppliers will be at least £100m in 2008/09, £125m in 2009/10 and £150m in 2010/11. The government has decided to build on the success of these programmes by introducing legislation to mandate a system of social price support when the voluntary agreement comes to an end in 2011. As part of this new statutory framework, the government will ensure there is an increase in resources available and give suppliers greater guidance and direction on the types of households eligible for future support, and how that support should be offered. The government hopes to announce the size of the final package around the time that primary legislation is introduced and is hoping to include this as part of the fifth session Energy Bill.

- 11.4.2 In telecommunications, BT and KCom apply special tariffs to certain groups of customers, and the government is intending to subsidise the availability of some new services in areas not attractive for commercial investment. The Digital Britain White Paper⁵⁸ has set out the government's intention to introduce a £6 per annum supplement on fixed lines for most households and businesses, to fund greater availability of next-generation broadband.

What Help Should be Provided?

- 11.5.1 As discussed in Chapter 4, it is essential that incentives in the system as a whole are designed to minimise the total costs of providing water and sewerage services so that all customers receive the lowest bills possible. This will do more than anything else to help with affordability for those on low incomes.
- 11.5.2 However, the review team considers that there are certain adjustments that should be made to the system now, aimed at helping customers who are struggling to pay their current water bills. These changes should continue into the future, anticipating much higher levels of metering. Given that either the taxpayer or the water customer will have to pay for this, help will inevitably be constrained and needs to be very carefully targeted to ensure bills remain reasonable.
- 11.5.3 The review team believes that responsibility should primarily rest with government to tackle the underlying problems of general poverty and to mandate any new schemes involving cross-subsidies between customers. However, Ofwat and the water companies are best positioned to understand who needs help in any particular area and they should play a significant role in providing and targeting assistance.

Responses to the Interim Report

- 11.6.1 The interim report proposed two approaches to providing help. The first was a regional benefit to reflect higher water prices in some areas of the country. Responses to the interim report showed strong support for this. However, the Department for Work and Pensions (DWP) has been clear that there is not a basket of goods which informs benefit levels, but instead, rates of means-tested benefits are intended to cover all normal day-to-day living expenses. DWP is also strongly opposed to introducing new benefits into an already complex benefits system. With the exception of Housing Benefit, benefits paid in different regions are not differentiated to take into account regional variations in prices of goods and services. DWP is committed to simplifying the benefits system, and, they argue, additional regional benefits would only add to its existing complexity.

⁵⁸ Digital Britain, Department for Business, Innovation and Skills and Department for Culture, Media and Sport, June 2009

- 11.6.2 The wider policy objectives surrounding the design of the benefits system as a whole are clearly important. However, set against that is the clear possibility that because of regional variations in costs for essentials, the benefits system will create significant regional inequalities. If alternatives are then needed to address these inequalities, the costs of these other measures should also be taken into account. Within this wider framework, the review team believes that regional benefits to address significant differences in the cost of essentials – in this case water – would have the advantage of addressing the root cause of the problem. However, the review team recognises that the introduction of a regional benefit to address the variation in water prices does not look feasible at present. But this recognition does not make the problem go away, and it will need to be addressed by other means, described below. As the South West Water region remains the outlier for high prices, potential solutions to the particular issues of the South West are discussed in Chapter 14.
- 11.6.3 The second proposal for payment was a cross-subsidy between water customers nationally, to provide a package of help for certain groups of low-income customers. The package was designed to give more help to those in higher cost areas. However, responses were clear that it would be unacceptable for low income customers in low cost areas to subsidise low-income customers in high cost areas. The review team has recognised the strength of feeling on this point.
- 11.6.4 The following paragraphs explore a potential package of help and then look at who should pay for it.

Proposed Affordability Measures

- 11.7.1 The review team proposes a package of measures that will provide a basic safety net for people with high medical need for water and targeted assistance for low income households as part of the transition to metering. It comprises:
- Revised WaterSure scheme – capped bills for low-income metered households with high essential use for medical reasons;
 - Discounted bill for low-income metered households; or
 - Discounted volumetric tariff for low-income metered households with children.
 - Water efficiency scheme for low-income households, particularly in high cost areas.

Revised WaterSure Scheme – Capped Bills for Low-income Metered Customers with High Essential Use for Medical Reasons

- 11.8.1 Low-income metered customers with high essential use because of a medical condition must be protected from restricting their water use because of concerns about their bill. It is vital to have a safety net to protect this limited group of customers. For this group of people, the review team believes it is appropriate to make sure their bill is reasonable and to remove the volumetric element of their charges.
- 11.8.2 The WaterSure scheme, which was designed for this purpose as well as for families with three or more children, should be modified to apply to medical conditions only. Low-income metered families with children will be eligible for the proposed new discounted volumetric tariff (see below).

- 11.8.3 The review team proposes that customers with one of the specified medical conditions or any condition necessitating a significant extra amount of water, and in receipt of at least one of the specified means-tested benefits⁵⁹ listed in the Vulnerable Groups Regulations, should be eligible for the WaterSure tariff.
- 11.8.4 The review team proposes that the new WaterSure scheme offers eligible recipients a cap on their bill at least as low as the national average metered bill or the regional average metered bill, or their actual metered charges, whichever results in the lowest bill to the customer. This is a lower cap than the current WaterSure cap, so in almost all cases recipients will receive a greater benefit from being on the scheme. The review team's analysis shows that the benefit received will be worth between £50 and £160 per year,⁶⁰ with customers in the South West Water area receiving a greater reduction than, for example, a Thames Water customer. This estimate is based on giving each WaterSure recipient household an extra allowance for water of around 100 litres per day. If uptake increases to around 133,000 recipients under universal metering and with better promotion of the scheme, this would cost around £16 million. If this cost is distributed across all customers (including non-domestic customers, as it is at present) this would cost around £0.50 per bill per year. Where the local bills are highest, relative to the national average, the cost could be nearer £1.30 on each bill.
- 11.8.5 **The review team also believes that companies should review their promotion of the WaterSure scheme** and ensure that their customer-facing employees such as billing and call centre workers are aware of the scheme and able to give accurate advice on eligibility, in order to help customers process their applications. Community healthcare professionals could also increase awareness of the scheme and the review team suggests that there is a role for the Royal College of General Practitioners, other healthcare and consumer organisations and CCWater. Medical certificates which are required to gain access to the tariff are currently not always provided free of charge, so in many cases there is a further cost to the customer or the company. For GPs to provide free certificates would require a change to their contracts. **The review team suggests that the Department of Health should review this issue with the British Medical Association with a view to agreeing free certificates for this group of customers. The review team also suggests that Primary Care Trusts should be encouraged to reimburse costs of any certificates as part of a patient's healthcare package.** A similar arrangement currently applies for electricity costs arising from the use of home oxygen. Patients can receive a rebate paid directly to them or to their electricity supplier.
- 11.8.6 **The review team recommends that the current WaterSure scheme is refined and restricted to low-income metered customers with medical conditions. This will require a change to the Vulnerable Groups Regulations.**
- 11.8.7 **The review team recommends that WaterSure recipients' bills are capped at a level at least as low as the national average metered bill, the regional average metered bill, or their actual metered charges, whichever is the lowest.**⁶¹
- 11.8.8 **The review team recommends that companies and healthcare professionals should increase awareness of the WaterSure scheme to improve uptake levels.**

⁵⁹ Income Support, Income Related Employment and Support Allowance, Income based Job Seeker's Allowance, Pension Credit (guaranteed element), Working Tax Credit (with an income of less than £16,040), Housing Benefit. Council Tax Benefit (not single person discount), Child Tax Credit (other than just the family element)

⁶⁰ Review team analysis – see Annex 8

⁶¹ Please see Annex 8 for indicative impact of measure

- 11.8.9 **The review team suggests that the Department of Health should review this issue with the British Medical Association with a view to agreeing free certificates for this group of customers. The review team also suggests that Primary Care Trusts should be encouraged to reimburse costs of any certificates as part of a patient’s healthcare package.**

Discounted Bill for Low-income Metered Households

- 11.9.1 The review team suggests that all metered and assessed charge households in receipt of certain means-tested benefits or lower-tier tax credits should be eligible for a 20 per cent discount on their water and sewerage bill. The proposed benefits and tax credits giving eligibility for this tariff should be:

- Income Support
- Income-Related Employment and Support Allowance
- Job Seeker’s Allowance
- Pension Credit (guaranteed element)
- Working Tax Credit (for those with an income of less than £16,040).

This list of means-tested benefits is more limited than the proposed eligibility for WaterSure, which includes Housing Benefit and Council Tax Benefit as qualifying benefits. These last two go further up the income scale than the other benefits, and so the review team suggests that they are not included to ensure this tariff is targeted at the lowest-income households both in and out of work, and is affordable. We also suggest that Child Tax Credit is not included because low-income households with children will be able to qualify for this scheme (or the proposed scheme for low-income metered households with children) through proof of receipt of Child Benefit.

- 11.9.2 This scheme would offer a discount of about £70 per household, which would vary depending on the volumetric charges in each company area. Those in the highest bill areas would receive closer to £100. Helping 4.4 million households under a universal metering scenario would cost around £340 million overall, the equivalent of around £13 added to non-recipient household annual bills, or around £15 where local bills are higher.⁶²

- 11.9.3 **The review team recommends that low-income metered and assessed charge households in receipt of certain means-tested benefits and tax credits should be eligible for a 20 per cent discount on their bill.**

- 11.9.4 The comprehensive nature of the scheme means that the costs are very large. The review team has therefore also looked at a more targeted scheme designed to help a subset of these low-income households most likely to experience affordability problems in the transition to metering: households with children.

⁶² Review team analysis – see Annex 8

Discounted Volumetric Tariff for Low-income Metered Households with Children

- 11.10.1 Under increased metering scenarios, single parents and customers with three or more children are also more likely to spend an above-average proportion of their income on their water bill. A reduced volumetric tariff targeted at low-income households with children would deliver some support, while acknowledging that water use should not be unrestricted. Unlike cases where there is a medical condition requiring very high levels of essential usage (see 11.8), there is still a case for providing some incentives to households with children to use water efficiently and not to waste it. A volumetric discount would provide each child with a daily amount of water to ensure essential needs are met and to deliver a lower bill for the household, while still retaining an incentive for water efficiency.
- 11.10.2 The proposed reduced volumetric tariff would reduce bills in all areas, but would have a greater absolute impact in areas where bills are generally higher. The review team envisages that this intervention would take the form of a government mandated tariff that will go into statute.
- 11.10.3 The design of such a tariff would need careful consideration to ensure that it delivers the right level of support at an acceptable cost to the taxpayer or the water customer. The review team suggests that the best form of this intervention is to determine nationally a volume of water per child per day which ensures essential water use is met, and that eligible customers then receive this as a discount from their bill. The review team suggests that this volume should be 50 litres per child per day, in line with the level suggested by the World Health Organisation as assuring consumption and not compromising hygiene.⁶³
- 11.10.4 The review team suggests that eligibility for the tariff is determined by the household having one or more children under 19, as proven by receipt of Child Benefit, and where someone in the household is in receipt of one of the following means-tested benefits or tax credits:
- Income Support
 - Income-Related Employment and Support Allowance
 - Job Seeker's Allowance
 - Pension Credit (guaranteed element)
 - Working Tax Credit (for those with an income of less than £16,040).
- 11.10.5 This list of benefits is consistent with the benefits proposed for the discounted bill for low-income metered households.
- 11.10.6 The cost of this scheme would vary depending on the volumetric charges in each company area. If the benefit were equivalent to 50 litres per child per day, or just over 18 cubic metres per year, the average benefit received would be around £40 per child per year, or around £80 per year per home benefiting.⁶⁴ In high-bill areas this would be close to £80 per child per year. If a discount were applied in respect of 1.26 million homes with 2.3 million children under a universal metering scenario, the overall cost of the scheme would be £110 million per year, or an extra £3.60 per year on non-recipient household customers' bills. This would be closer to £4.70 per bill per year in high water cost areas. This can be offset against the current cost of WaterSure, and provides a more generous scheme, because households with one or two children would also be eligible.

⁶³ World Health Organisation, 2003, Howard G, Bartram J, Domestic water quantity, service and health.

⁶⁴ Review team analysis – see Annex 8

11.10.7 Respondents to the interim report suggested that there is potentially an affordability issue where there are elderly dependents in a household. If these elderly dependents have a low income and a medical condition, the household water bill would be capped through the revised WaterSure scheme. Otherwise, the level of benefits in terms of income or pension support that the individual can claim will tend to guarantee a minimum income level, which should provide an adequate contribution to the household water bill. The benefits income level in respect of children is much lower.

11.10.8 **The review team recommends that in the absence of a wider scheme to help low-income customers, a volumetric discount tariff should be offered to metered and assessed-charge customers in receipt of means-tested benefits and tax credits and with one or more children. Households should receive a discount equivalent to 50 litres per child per day.**

Water Efficiency Scheme for Low-income Metered Customers in High-cost Areas

11.11.1 As metering increases, water efficiency will have a greater role to play in ensuring that the bills of low-income households are as low as possible. While research suggests that discretionary use of water in low-income households is already generally low, the review team believes that targeting essential water use in the home, for example, through retrofitting appliances and water efficiency devices, will have a useful impact on the bills of low-income households, especially in high-cost areas.

11.11.2 Any efficiency measures that target reductions in hot water use, such as installing aerating showerheads, refurbishing bathrooms to include showers instead of, or as well as, baths would see significant reductions in both energy and water bills. Water efficiency measures to target cold water use, such as toilet retrofits and tap inserts, will also help reduce bills – and have less of a behavioural element than hot water measures. Combined with water efficiency advice to help change the way customers use water, this could significantly help with affordability. A recent report⁶⁵ focusing on London and Thames Water stated that the installation of a £10 aerating showerhead in a typical household can save around £41 per year on the combined water and energy bill (at present day prices).

11.11.3 The review team has looked at the introduction of a water efficiency scheme for low-income metered customers and believes that it should be aimed at alleviating affordability issues in the first instance. In addition to water audits, retrofitting of water efficiency measures such as tap inserts, efficient showerheads and dual-flush toilet mechanisms, the scheme would also include other elements of addressing more general affordability issues such as benefit entitlement checks, which have been shown to provide additional income for many households. The review team believes that such a scheme should be company specific and targeted initially at high-cost areas.

11.11.4 Responses to our interim report recommendation on this issue suggested water efficiency schemes should target social housing and work in partnership with existing energy efficiency schemes. The review team supports this approach. It is often more difficult for residents of social housing to change fittings or appliances to more water-efficient models and so risk having unavoidable high essential use of water. This approach will also yield economies of scale that a house-by-house approach would not.

⁶⁵ LCCP (2009) Economic Incentive Schemes for Retrofitting London's Existing Homes for Climate Change Impacts.

11.11.5 The evidence the review team received on the South West Water Watercare scheme, which delivers similar benefits to those proposed by the review team, suggested a cost of £130 for each household assisted, leading to annual savings of about £40 per year per household. If help went to some 250,000 households a year, this would cost £32.5m per year. It is expected that savings could be made through joining up any new water efficiency activity with ongoing energy efficiency activity, for example through Warm Front or the Home Energy Efficiency Scheme in Wales.

11.11.6 **The review team recommends that targeted water efficiency measures and benefit entitlement check programmes are introduced where possible as part of existing programmes such as Warm Front, the Home Energy Efficiency Scheme in Wales and the Decent Homes initiative. In all water company areas, Ofwat and the company should look at the potential for a targeted scheme for low-income priority customers, similar to WaterCare in the South West, with the costs allowable within the regulatory framework. High water cost areas, and in particular the South West Water region, should be prioritised for targeting.**

Who Should Pay for Affordability Interventions?

11.12.1 In practice there are only two choices for the funding of affordability measures: government (which in practice means the taxpayer), or the water customer, who could contribute either regionally or nationally.

11.12.2 There is some logic to the water customer paying, as there are already transfers of around £600m occurring because of the RV based charging system. Of this, only about £180m is transferred in the right direction to low-income households (see section 11.3). These transfers currently take place within company regions, and so the residual problem of higher prices in high cost areas is dealt with within that area – there are no transfers between company areas. So within the context of what is currently achieved (albeit in not a very targeted way) through the rateable charging system, a policy of addressing affordability issues independently within each company area can be seen as a continuation of the current arrangements. However, it would also be possible for affordability help within the water industry to be spread nationally, which would bring the impact closer to what would happen if the funding was from the national taxpayer. It is important to note however the resistance to transfers between company areas which emerged from the interim report.

11.12.3 Responses to the interim report showed the strength of feeling that it should be government's responsibility to pay for affordability measures for the following reasons:

- There is a basic human right to water. As such, government should ensure that everyone has access to an affordable basic water and sewerage service;
- Governments are responsible, on society's behalf, for tackling general poverty and re-distributing income on the basis of democratically agreed processes. Difficulties with affording water and sewerage bills are part of a broader problem of poverty;
- Payment via the taxpayer has the advantage of being on a progressive basis;
- Transfers between customers are effectively an inappropriate privatisation of the tax and benefits system and water companies should not be expected to assume central government's role – or, at a minimum, transfers between customers should be made a statutory requirement and subject to democratic scrutiny through the normal legislative channels.

11.12.4 Section 11.6 outlined DWP's concerns about a new regional benefit to correct disparities in water and sewerage bills. It would however be possible for government to fund the proposed affordability package as a special scheme for an essential of life. Our recommendations on affordability propose two possible packages – a broader one for all low-income customers costing around £340 million per year, or a narrower package at £110 million per year. Either package is small in contrast to government funding for the energy sector.

11.12.5 If the national taxpayer pays for resolving affordability through the tax and benefits system, no transfers would be needed within the water industry, and the existing transfers between local water customers could disappear without exacerbating affordability issues. The payment for the interventions would also be on a more progressive basis. In this context it is important to note the review team's conclusion that affordability problems with water and sewerage bills rarely occur on their own – they are usually associated with a much larger problem of affording the necessities of life, and so are part of the problem of general poverty. If intervention were not to be funded by the national taxpayer, but by local or national water customers, the scale of the help would need to recognise the scale of the current transfers in the RV system, but would also need to take account of the views of the local customer base and their willingness to pay.⁶⁶

11.12.6 Given both the rationale for intervention and the historic pattern of prices under the rateable value system, the choice of funding mechanisms is, in the end, one for government, albeit with input from water customers.

11.12.7 The review team has concluded that:

- The RV system of cross subsidy for low income customers is poorly targeted and is unwinding as metering develops;
- A package of affordability measures is needed for those on low incomes. The report offers some alternative, targeted proposals; it is for government to decide how to fund this package;
- There are strong arguments for government to fund this package. The problem is part of general poverty and payment by the taxpayer is on a progressive basis. It would be small (about £360m per year) compared with government support for fuel poverty;
- The alternative is for the water customer to pay. There is some logic to this, because of the transfers in the current RV system – £600m in all, of which we estimate about £180m is targeted effectively;
- If the water customer pays, this could be on a regional or national basis. The current transfers are regionally based. Strong concern was expressed during the review about transfers between regions. The option of water customers contributing to affordability measures could however be explored as there are precedents for this in other utility sectors, for example, energy and telecommunications;
- However, any payment by water customers to alleviate affordability issues should take account of customers' views, albeit within the context of the sizeable transfers within the current RV system;

The review team recommends government should consult further once they have taken a decision on who should pay for affordability measures.

⁶⁶ See CCWater/Ofwat research, 2007, www.ccwater.org.uk/upload/pdf/Charging_Final_Report.pdf

Ofwat's role – Identifying and Monitoring Affordability Issues

- 11.13.1 There is no government definition in England or Wales of what constitutes water affordability. Some respondents to the review's consultations have proposed that 3 per cent of disposable income before housing costs be used as a measure of affordability issues or 'water poverty'. However, the review team has concluded that the issues surrounding the affordability of water and sewerage services are too complex to be captured in a single and somewhat arbitrary measure of a percentage of disposable household income used for their purchase. Consumer preferences, the price of other essential goods and services, the volume of water needed for essential use and other factors will all have an effect on the affordability of the water bill. The level of prices over time, and particularly any significant price rises over a short period of time is also going to have an effect on the budgets of those struggling to pay essential bills. A simple measure like 3 per cent of disposable income will not capture such dynamics and could also bias any interventions so that they address the benchmark rather than underlying problems. However, making sure that essential water and sewerage services are – and remain – affordable to all is an important objective for the water industry. As a result, a more holistic approach is needed, and as the body charged with both the economic regulation of the industry and protecting all consumers' interests, Ofwat should have a central role here.
- 11.13.2 Ofwat already has a statutory duty to have special regard to those who are chronically sick or disabled, of pensionable age, or with low incomes. Ofwat must take its duties on affordability and vulnerable customers seriously, part of which will involve it ensuring that companies are doing all they can to minimise affordability problems. The review team believes that Ofwat should be given a clear responsibility to monitor what is happening to affordability, make adjustments to its own policies where necessary and possible, and provide advice to UK Government and Welsh Assembly Government where the action needed lies outside its responsibilities or powers. The complexity of the affordability issue and the growing impact of the transition to metered tariffs mean that as a matter of some urgency, much more needs to be understood about household income and its relationship to problems with the affordability of water and sewerage services.
- 11.13.3 The review team welcomes Ofwat's willingness, expressed in its response to the interim report, to publish information on tariff trials, consumer research, and monitoring of companies' activities, and to promote the sharing of good practice. The review team remains convinced that an Annual Report by Ofwat on debt and affordability would raise awareness of these linked issues and provide better information to government, companies and customers on progress and remaining issues.
- 11.13.4 **The review team therefore recommends that Ofwat should track the affordability problems facing the water industry and should then take appropriate action and/or provide advice to the UK Government and Welsh Assembly Government, to ensure that water and sewerage services remain affordable over the medium and longer term. Ofwat should report on the position on affordability in an Annual Report on affordability and debt.**

11.13.5 The review team understands Ofwat's duty to uphold licence condition E⁶⁷ in relation to social tariffs. Responses to the review suggested that it would be helpful to clarify the interpretation of 'undue discrimination' which some regard as an obstacle to the development of further social tariffs. Some companies have indicated to the review team that they would like to be able to do more, particularly in relation to social tariffs. The review team welcomes progress recently on the introduction of social tariffs that are cost neutral and designed to help customers in debt. The review team supports the view that if a substantial new cross-subsidy between groups of customers is to occur, the UK Government and Welsh Assembly Government need to mandate this through legislation, as the UK Government does for WaterSure.

Companies

11.13.6 Companies also have a role to play in addressing affordability issues for their customers. They should ensure that they are doing all they can to identify and communicate with their customers, particularly vulnerable and harder to reach customers. They should ensure that they publicise sources of information and assistance and water efficiency and affordability through bills and through alternative channels – see Chapter 13.

11.13.7 The review team recognises that trust funds and charitable schemes operated by companies serve a valuable role in helping people who are not eligible for any other assistance, and should be continued and introduced where not already in place. However, these do not take away the need for Ofwat and the companies to develop a proper understanding of affordability issues.

Conclusions

11.14.1 Affordability is an issue now, and evidence suggests that during the transition to metering, as the sizeable protection currently provided through the RV system is eroded, more low-income families could face affordability problems.

11.14.2 Affordability proposals need to be carefully targeted and there needs to be a comprehensive package of measures tackling different aspects of the issue.

11.14.3 A discounted bill should be available for low-income metered households. If the proposed scheme is regarded as too costly, there should, as a minimum, be a scheme more closely targeted to households with children. WaterSure for low-income metered customers with high essential use for medical reasons is an essential safety net and can be regarded as part of their overall healthcare package. Water efficiency measures could help low-income customers reduce their bills especially in high water cost areas.

11.14.4 It is for UK Government and Welsh Assembly Government to decide how these measures should be funded. We note that there is about £600m in total of existing transfers as a result of the RV system and that customers' willingness to pay in addition to that is limited. Around £180m of this comprises transfers from high-income to low-income households. However, this level of transfer will reduce to zero with universal metering, and the review team believes that assistance of a similar level should be preserved for affordability reasons.

⁶⁷ The duty that no undue preference is shown and that there is no undue discrimination in the fixing [...] of water and drainage charges'.

Final Recommendations

11.15.1 The review team recommends that a new, more closely targeted, package of help should be put in place:

WaterSure:

- The current WaterSure scheme should be refined to include low-income metered customers with medical conditions only. This will require a change to the Vulnerable Groups Regulations.
- WaterSure recipients' bills should be capped at a level at least as low as the national average metered bill, the regional average metered bill, or their actual metered charges, whichever is the lowest.
- Companies and healthcare professionals should increase awareness of the WaterSure scheme to improve uptake levels.
- The Department of Health should review the provision of medical certificates with the British Medical Association with a view to agreeing free certificates for WaterSure applicants. Primary Care Trusts should also be encouraged to reimburse costs of certificates as part of the patient's healthcare package

Discounted bill for low-income metered households:

- Low-income metered households in receipt of certain means-tested benefits and tax credits should be eligible for a 20 per cent discount on their volumetric bill.

Discounted tariff for low-income metered households with children:

- In the absence of a wider scheme to help low-income customers, a volumetric discount tariff should be offered to metered and assessed-charge customers in receipt of means-tested benefits and tax credits and with one or more children. Households should receive a discount equivalent to 50 litres per child per day.

Water efficiency and benefit entitlement check programme:

- Targeted water efficiency measures and benefit entitlement check programmes should be introduced where possible as part of existing programmes such as Warm Front, the Home Energy Efficiency Scheme in Wales and the Decent Homes initiative. In all water company areas, Ofwat and the company should look at the potential for a targeted scheme for low-income priority customers, similar to WaterCare in the South West, with the costs allowable within the regulatory framework. High water cost areas, and in particular the South West Water region, should be prioritised for targeting.

Government and Ofwat:

- Government should consult further once they have taken a decision on who should pay for affordability measures.
- Ofwat should track the affordability problems facing the water industry and should then take appropriate action and/or provide advice to the UK Government and Welsh Assembly Government, to ensure that water and sewerage services remain affordable over both the medium and longer term. Ofwat should report on the position on affordability in an Annual Report on affordability and debt.

Chapter 12: Helping Customers – Debt

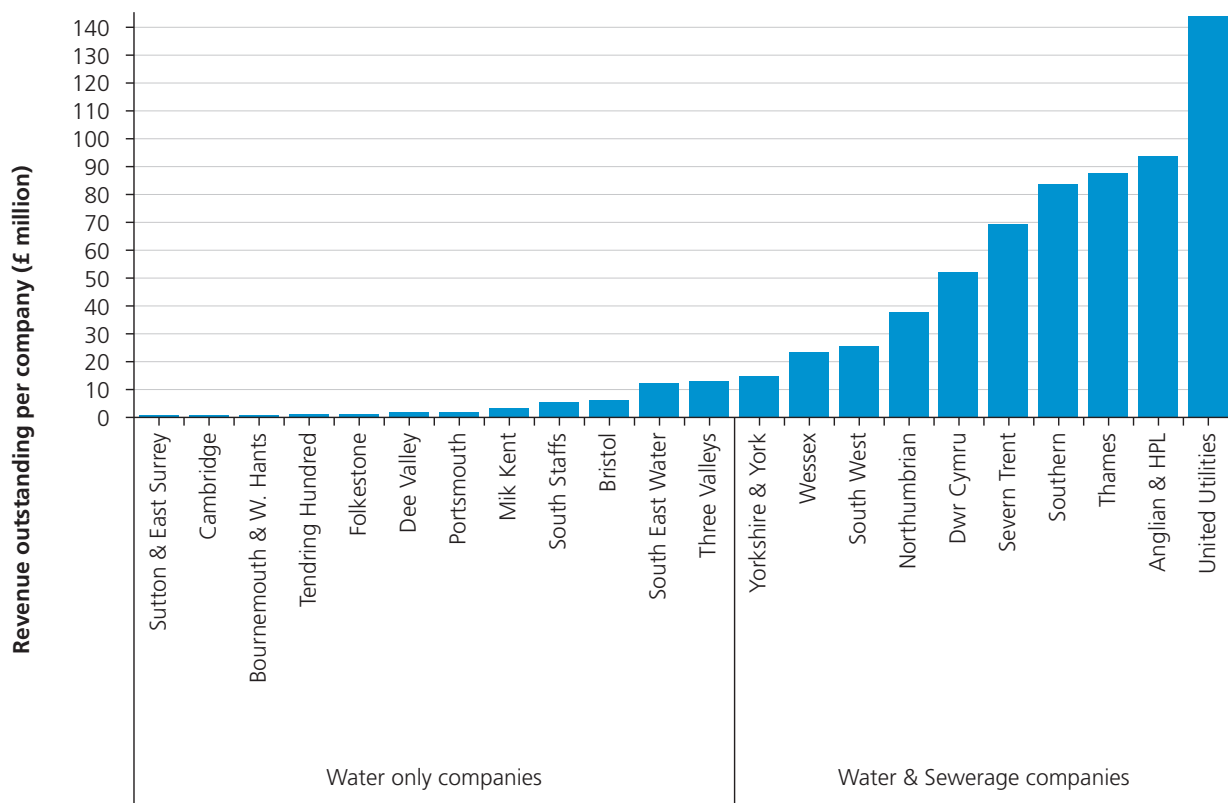
Scope of this Chapter

12.0.1 Bad debt currently costs those water customers who settle their bills around £12 each a year. This chapter puts forward urgent recommendations to remedy this through changes to the law, and makes recommendations for further action by the UK Government and Welsh Assembly Government, Ofwat and the water companies to reduce debt.

Summary of the Issues

12.1.1 Following privatisation, water bills have risen significantly (42 per cent increase in real terms), outstripping both general price inflation and more recently incomes. In 2008/09, Citizens Advice Bureaux saw a 21 per cent rise in water debt problems on the previous year. Figure 24 compares company performance on revenue that has been outstanding for more than 12 months. It should be noted, however, that each company has significantly different customer bases, socio-demographic circumstances and level of bills.

Figure 24: Revenue outstanding per company (>12 months) 2007-08



Source: Ofwat (2008)

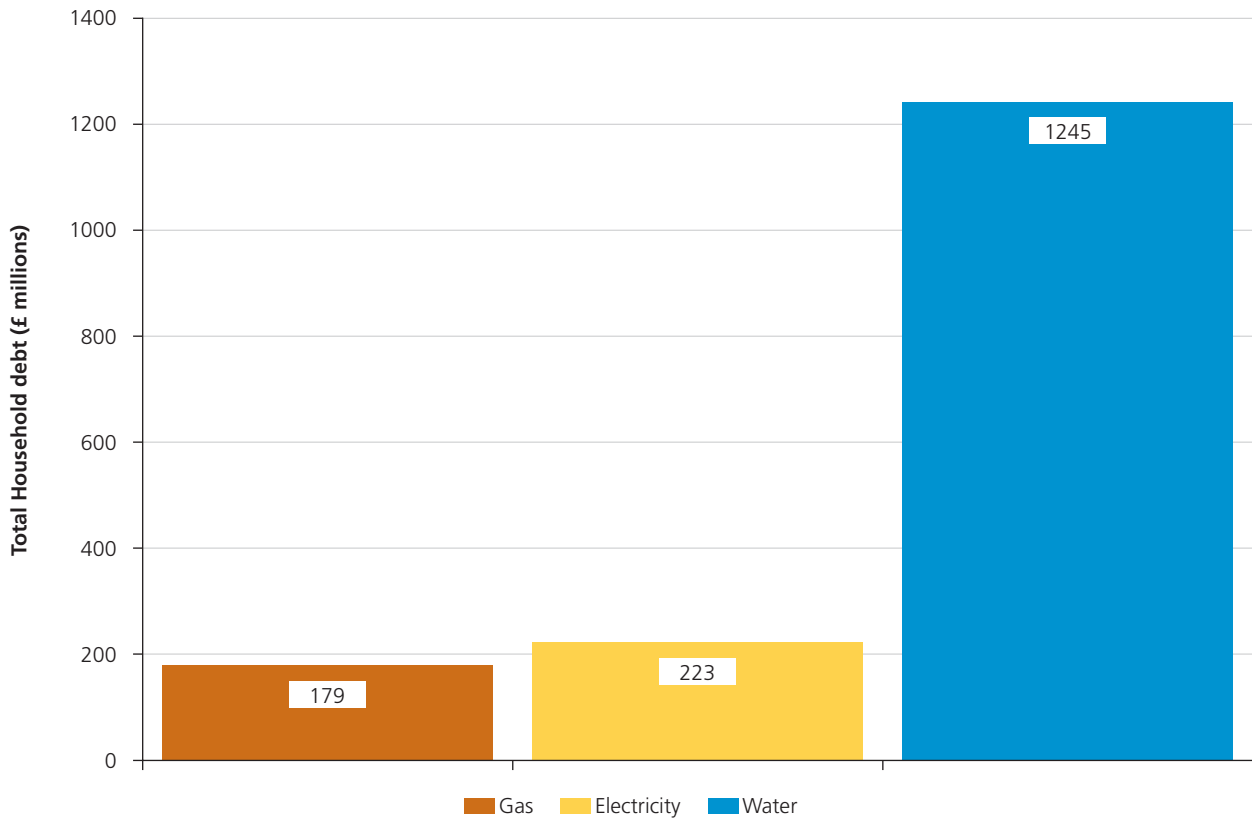
- 12.1.2 2008/09 figures⁶⁸ show that bad debt has now reached £1.245 billion. Debt outstanding for more than 12 months, which is harder to recover, has increased 15.8 per cent on the previous year to £804 million.
- 12.1.3 Customers in water debt are almost always in other forms of debt as well, so the increasing overall debt burden upon customers in the UK is also relevant. While the ban on disconnection introduced in 1999 may have been a significant factor in the rapid rise in bad debt within the water industry, it is worth noting that general debt levels have also risen significantly over the same period.
- 12.1.4 In 2008, one in five household customers was in arrears with their water company, considerably more than in the energy sector (Figure 26). Water companies point to a variety of reasons to explain the increasing level of arrears, including the ban on disconnection, their inability to use prepayment meters (such as those used in the energy industries), the lack of a contractual arrangement with customers or a named person responsible for charges, changing demographics, increases in other household bills, and an increasingly transient population.
- 12.1.5 Since the statutory ban on disconnection, water debts are not considered a priority debt because non-payment does not result in loss of supply, or any other penalty. According to third-party advice agencies, they are listed below debts relating to mortgage payments, council tax, and other utility bills. These debts are considered priority debts because the ultimate sanction for non-payment is repossession or eviction, imprisonment or disconnection. The Office of Fair Trading also omitted water debt from its list of priority debts in 2008.⁶⁹ It is, however, important to note that a customer's current water bill for ongoing consumption will be treated by money advisers as 'essential expenditure' and prioritised accordingly. Money advisers therefore aim to prevent clients building up further arrears.
- 12.1.6 Since 2006, both short- and long-term water debt has increased. Household revenue outstanding for more than three months increased by 11 per cent between 2006/07 and 2007/08 – more than the 7 per cent increase in household water bills over the same period.
- 12.1.7 Unlike the energy companies, who have a contractual relationship with their customers and are allowed to disconnect for non-payment of the bill, there are no immediate penalties for non-payment of a water bill. Non-payment does not result in a loss of service and companies find it difficult to pursue remedies through the civil courts without a named customer. The statutory duty to supply (set out in the Water Industry Act 1991) means that customers do not need to provide their name in order to receive water and sewerage services. As a result, the water industry faces a unique set of circumstances – unlike any other utility or local authority service.

⁶⁸ Ofwat (2009) June return figures, table 6a

⁶⁹ Office of Fair Trading (2008) Arrears information sheet

How Does Water Debt Compare with Energy?

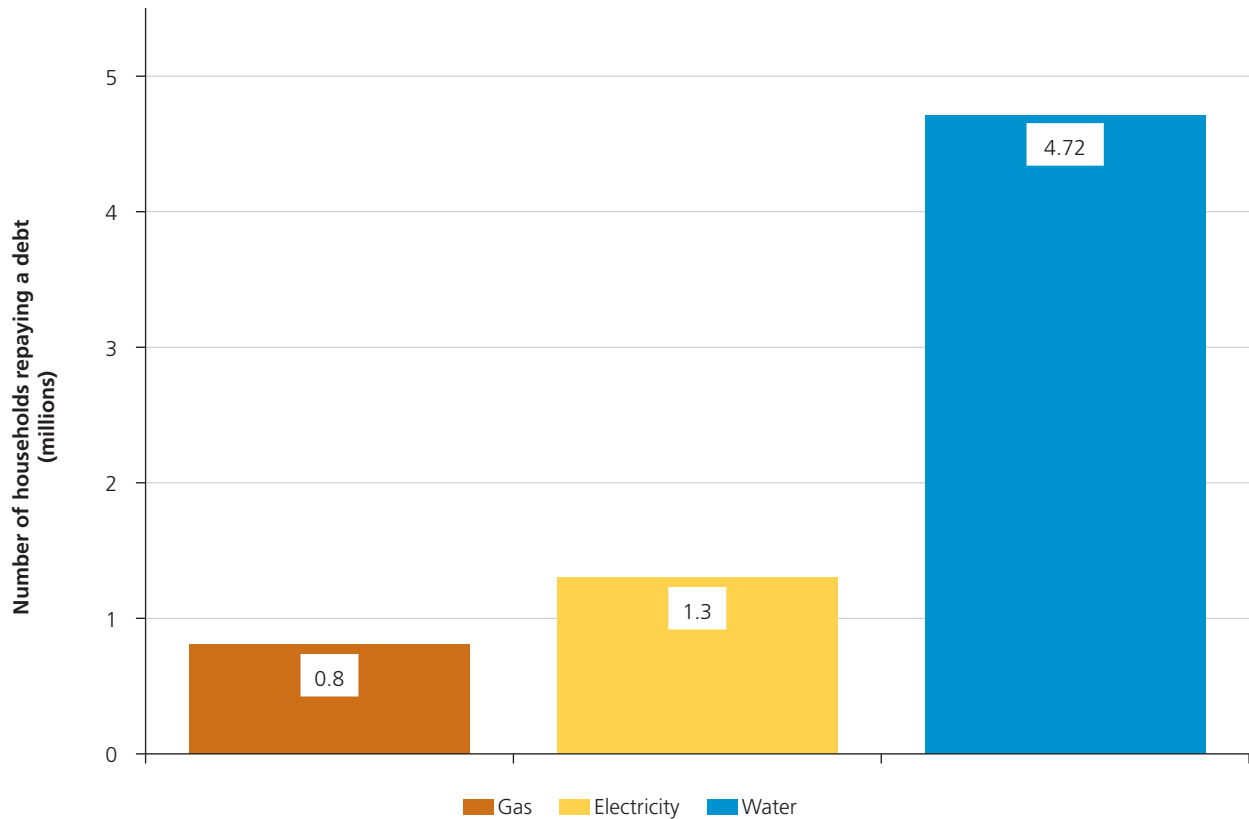
Figure 25: Comparing total household debt levels between the electricity, gas and water industries (2008-09)



Source: Water UK & Ofgem

12.2.1 Bad debt in the water industry is increasing at a significantly faster rate than other utilities and is more than three times that of the energy sector, where bills are three times higher. Household debt is relatively stable in the energy sector, but energy companies are allowed to disconnect for non-payment of bills or install a pre-payment meter (PPM), which is a significant deterrent to non-payment. In 2008, 2.4 million gas customers and 3.6 million electricity customers were paying through a PPM and therefore unable to build up new debt. However, Ofgem reports that around 70 per cent of the PPMs fitted in 2008 were installed to recover old debt.

Figure 26: Comparing the number of household customers in debt in the electricity, gas and water industries (2008-09)



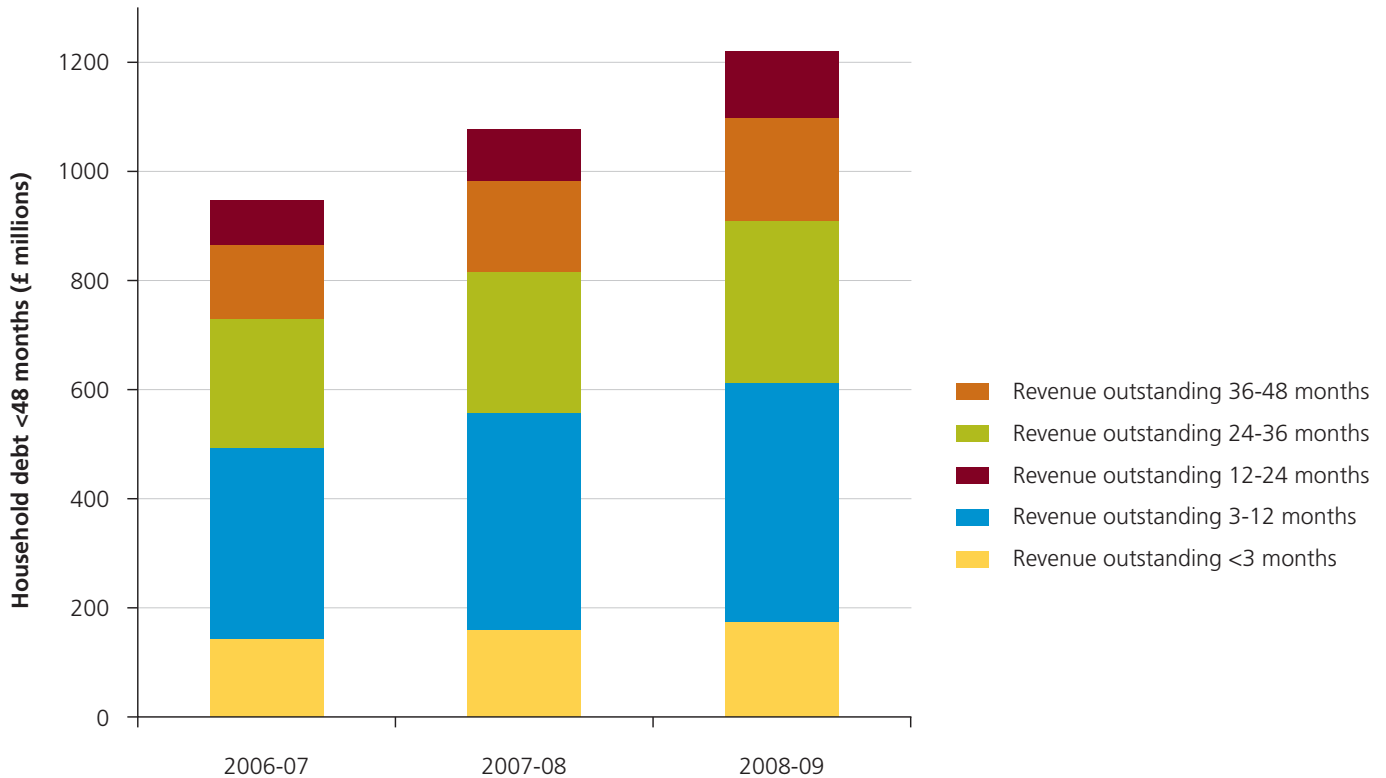
Source: Ofwat (2009), June returns (table 6a) and Ofgem (2009)

12.2.2 Figure 26 shows that the number of households with revenue outstanding in the water industry is now close to 5 million, over twice as many as in the gas and electricity industries combined.

The Nature of Debt in the Water Industry

12.3.1 For metered customers, a large percentage of the outstanding revenue is up to three months old. Much of this is likely to be recovered, however, a steadily increasing proportion of this debt remains outstanding beyond 12 months and is increasingly more difficult to recover. Across all customers, over half of the household revenue outstanding is more than 12 months old, although for some companies this varies.

Figure 27: Increasing household revenue outstanding 2006/07 to 2008/09



Source: Ofwat (2009), June returns (table 6a)

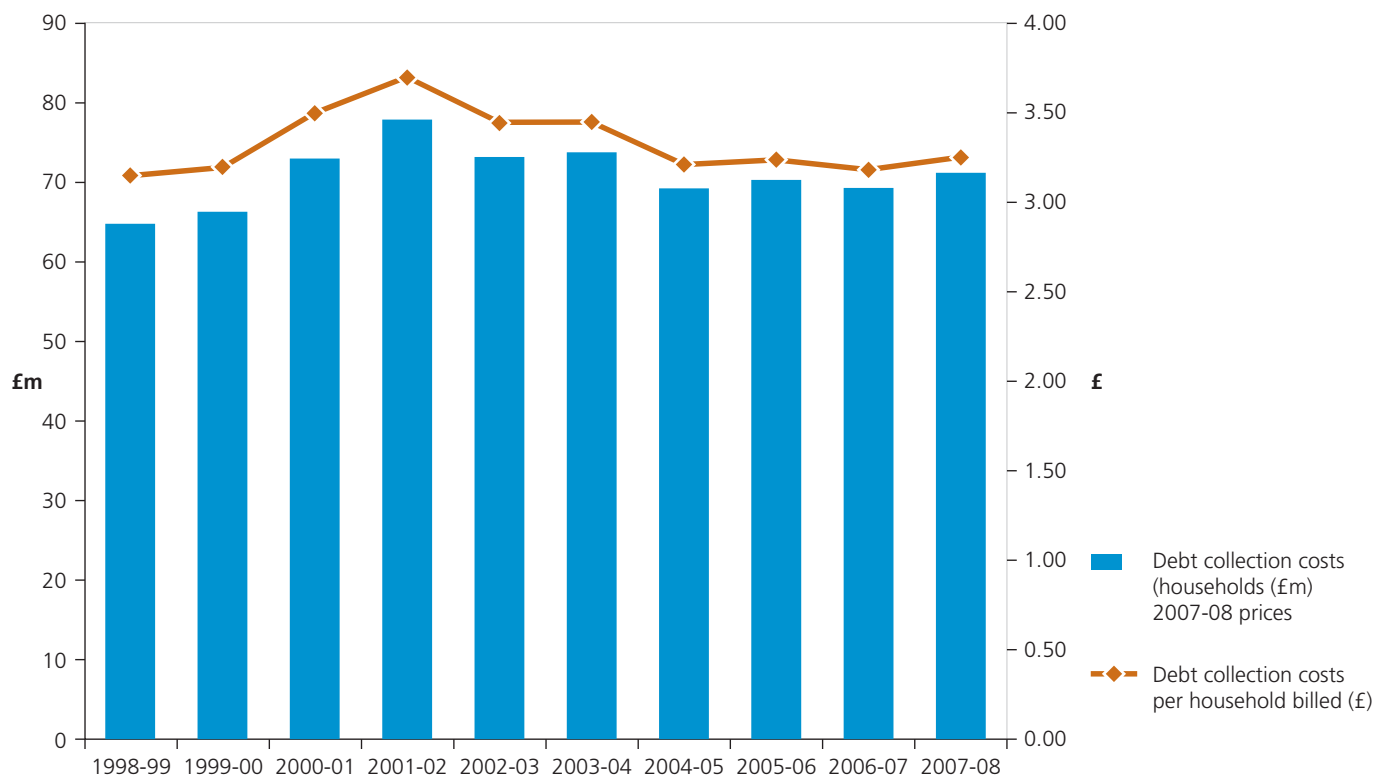
12.3.2 Long-term debt is much lower but is also much harder to collect, and it is increasing annually by around 16 per cent (Figure 27). Revenue outstanding for up to 12 months accounted for 8.6 per cent of revenue billed in 2008/9. Revenue outstanding for between one and two years in 2008/9 (which would have been billed in 2007/8) was equivalent to 4.4 per cent of the revenue billed in that year. Figures fall each year as outstanding revenue is recovered or written off.⁷⁰ After four years, around 2.1 per cent of revenue billed was still classified as outstanding; the remainder had either been collected or written off.

What are the Costs of Recovering Debt?

12.4.1 Bad debt recovery, write-off and financing add approximately £12 per year to each customer’s bill. While the number of properties billed has increased over time, the average cost per household of debt-recovery activities was only marginally more in 2007/8 than in 1998/9 (Figure 28). A considerably larger sum of around £8.50 is added to each customer’s bill for writing off bad debt and financing the costs associated with unrecovered revenue.

⁷⁰ Revenue written off each year has an impact on the amount of revenue that is reported as still outstanding.

Figure 28: Outstanding revenue collection costs



Source: Ofwat

Who are the Bad Debtors?

12.5.1 Most water debtors are high risk in credit terms. Research has shown that 20 per cent of debtors owed 70 per cent of the total debt, 46 per cent of debtors are in the highest 10 per cent credit-risk category, and a significant proportion of debtors (34 per cent) are likely to live in rented accommodation (they owe 44 per cent of the total debt).⁷¹ 23 per cent of debt is due to 'leaver debt' where companies cannot trace customers who have moved before settling their water bill. According to Citizens Advice, debtors are most likely to be single parents with one or more children living in privately rented households, and aged between 25 and 49.⁷²

12.5.2 A proportion of 'leaver debt' is due to short-term tenants assuming that water bills are included in their rental payments, or miscommunicating with their landlord. Affluent single people and couples in exclusive urban neighbourhoods account for around 4 per cent of debt and should be able to afford their bills.

⁷¹ UKWIR (2006) Quantifying Different Types of Water Industry Debt. 06/CU/04/4

⁷² Citizens Advice (2008) Citizens Advice's response to the Walker Review. London

12.5.3 Unlike other utilities or credit companies, water companies do not distinguish in their terms of supply between customers of differing credit risk. Other utilities will assess the risk of a potential customer defaulting, and tailor the tariffs they offer to suit the customer's needs and the likelihood of their maintaining consistent payments. Water companies generally possess very little data on customers in rented accommodation so have very little ability to assess whether customers will maintain consistent payments or indeed, what tariff or payment plan might best suit their needs.

'Can't Pay' vs. 'Won't Pay'

12.6.1 Historically, water debtors have been described as 'can't pays' or 'won't pays' but the situation is more complex than those labels suggest. The 'can't pays' may include customers on low income who struggle to pay their weekly bills, customers who have experienced a sudden fall in income and can no longer afford their bills, and customers with social and health issues that prevent them from managing their finances successfully. This last group of customers could be considerable; for example it is estimated that one in six people is living with a mental health problem, which represents more than 7 million people between the ages of 17 to 74⁷³ at any one time. Evidence shows that customers with mental health problems are more likely to be in debt.⁷⁴

12.6.2 The 'won't pays' may include customers withholding money on principle: ex-partners withholding payment, for instance, or customers who can afford to pay but choose not to. There is also a large group of transient debtors who may not have received a bill while occupying a property or been unaware of their liability. Although water companies struggle to differentiate between 'can't pays' and 'won't pays', they have submitted evidence to suggest that anywhere between 40 and 60 per cent of their debtors could be 'won't pays'. Thames Water responded to the interim report with evidence of a recently completed survey of 50,000 homes in debt. Where contact was made, some 60 per cent of debtors had left the property.

12.6.3 Ofwat's analysis⁷⁵ shows that on a company level there is no statistically significant relationship between an area's income deprivation and its debt situation, although on a local level there may be more of a relationship.⁷⁶ This suggests that companies could do more to identify customers who are vulnerable and at risk of falling into arrears', and target billing and payment options accordingly. Some companies have implemented extensive debt management and recovery practices, but considerable variation remains.

Difficulties in Collecting Customer Data

12.7.1 The Water Industry Act 1991 makes 'the occupier' liable for water bills, but water companies have to rely on information from customers or their landlord to know who occupies a property. Water companies have no statutory powers to gather information to assist in billing and revenue collection. Data protection currently prevents companies obtaining information from other utilities or from UK Government and Welsh Assembly Government departments. Companies cannot legally require landlords to provide information on the occupier(s). This lack of data means that companies cannot accurately target vulnerable customers with assistance, or 'won't pay' customers for payment.

⁷³ Office of National Statistics

⁷⁴ Mind (2008) Response to the Call for Evidence

⁷⁵ Ofwat (2009) Response to the Walker Review call for evidence

⁷⁶ UKWIR (2009) Debt collection performance and income deprivation. 09/CU/04/6

What is Being Done Currently to Tackle Bad Debt?

Government

- 12.8.1 The Department for Work and Pensions (DWP) runs a third-party deduction scheme (commonly known as WaterDirect⁷⁷) that covers water bills among nine different expenditure items. In respect of utilities, the scheme provides for deductions to be made from certain means-tested benefits direct to the creditor. The scheme protects vulnerable customers from legal action and provides a mechanism for repaying debts plus ongoing use on a weekly basis. Once the debt is repaid, eligibility to remain on the scheme is assessed on a case-by-case basis having regard to the interests of the household. If someone is likely to remain on benefit over the long term and has a history of recurring debt, he or she may be kept on WaterDirect.
- 12.8.2 The Joint Statement of Intent between DWP and the utilities was amended in 2004 to clarify that companies can apply for Third Party Deductions on their customers' behalf, once all other ways of resolving the repayment problem between customer and supplier have been tried. The number of customers clearing water arrears in this way currently stands at around 74,000, compared with 17,000 for electricity and 22,000 for gas.⁷⁷ Eleven per cent of customers paying through WaterDirect are paying for current use only; this demonstrates that some customers are being kept on the scheme to prevent them falling back into arrears.
- 12.8.3 DWP⁷⁸ is developing a new IT system to deal specifically with third-party deductions, which would allow companies to fill in data in real time online. DWP has also run training schemes with other utility providers to enable their customer service teams to record better personal data from customers to complete application forms. **However the review team believes that companies should be more proactive in preventing 'at risk' customers from falling into debt in the first place. DWP should consider the scope for widening the third-party deduction scheme to keep more customers on the scheme once a debt has been repaid. DWP should consult with companies on ways to improve the scheme and how companies can contribute to the costs of administering the scheme.**
- 12.8.4 The UK Government and Welsh Assembly Government have given water companies a statutory duty to provide a social tariff called WaterSure for people who have a water meter, low income and high essential water needs; this is examined in more depth in Chapter 11. By ensuring people in such circumstances have affordable bills, they are less likely to fall into debt.
- 12.8.5 The UK Government and Welsh Assembly Government also provide funding to Citizens Advice Bureaux and other third-party advice centres. These agencies offer independent advice in a confidential environment. However, the review team notes that these same agencies are often advising customers not to prioritise their water debts.

Ofwat

- 12.8.6 Ofwat acted in the 2005 price review to stop water companies from increasing their prices to cover future debt costs but retained bad debt as a notified item.⁷⁹ In the Periodic Review 2009, Ofwat challenged requests from companies for increased bad debt costs and

⁷⁷ Ofgem (2007) Domestic suppliers' social obligations: 2007 annual report

⁷⁸ There has been considerable debate about the number of customers on WaterDirect. DWP figures show around 74,000 customers on the scheme whereas water industry figures show around 175,000.

⁷⁹ Notified items cover items not allowed for, in full, or at all in price limits because the uncertainty surrounding them is too great. They allow companies to seek revised price limits if specified changes occur in the period since price limits were last set which have an impact on the company amounting to at least 10% of the company's turnover

considered whether to remove the notified item. Ofwat concluded that bad debt should remain a notified item, the review team thinks that this should be reviewed if the recommendations in this report prove insufficient to reduce bad debt.

- 12.8.7 Ofwat has published⁸⁰ debt management guidelines to companies. As there is no duty on companies to adopt the guidance, and because each operating company area has different demographics, companies choose which debt prevention and management options are appropriate for their customers. Ofwat consulted upon and reviewed these guidelines in 2006, concluding that they were robust and comprehensive.
- 12.8.8 There are limited monitoring and reporting structures on debt currently in place. CCWater monitors how companies comply with the guidelines and collects annual data on the levels and nature of outstanding revenue. The review team notes that Ofgem requires energy suppliers to submit performance data for publication in an annual report as part of their licence conditions to highlight company performance in reducing bad debt. Ofwat has no similar mechanism, nor does it produce an annual report to identify progress in preventing and managing debt.
- 12.8.9 At present, Ofwat includes the results of CCWater's assessments of water company debt recovery activities and procedures in the debt and revenue assessment section of its Overall Performance Assessment (OPA) of companies. Although CCWater communicates its findings to Ofwat regarding water company debt practices, this is published as a small part of a larger report; it does not stand alone as befits such a critical issue.

Companies

- 12.8.10 Approaches to debt vary from company to company. Some companies have shown reductions in the amount of debt they write-off annually through innovative payment methods, early intervention and special tariffs. The review team believes that identifying customers at risk of falling into arrears and incentivising them not to fall behind with payments will improve the affordability of bills for all customers. For new customers, specialist contact teams are essential; these can obtain a customer's personal information and financial status, as well as preferences for contact and payment method, and billing frequency.
- 12.8.11 Some water companies have – or are working to develop – voluntary agreements with local authorities and registered social landlords to include unmeasured water bills within rents, to reduce the incidence of water debt.
- 12.8.12 Companies maintain that litigation is still the most effective way to reduce debt levels; often this involves a reminder letter explaining that the next step will be to pursue the arrears through the judicial system. Customers identified as able to pay are then pursued through a range of options such as county court judgements, charging orders and warrants of execution. As courts increase their fees, however, this route is becoming more costly. Courts are also imposing higher de-minimus values for debt, so a water-only company may have to wait several years for the customer's debt to accrue to a sufficient level before commencing court action.

⁸⁰ Ofwat (1992) Dealing with Customers in Debt

12.8.13 In 2007/8, the water industry was awarded over 145,000 court judgments for the non-payment of water bills. Of the various enforcement methods, the most popular continue to be warrants of execution⁸¹ and attachment of earnings. Some companies considered charging orders⁸² to be effective, whereas orders to obtain information in court⁸³ and third-party debt orders⁸⁴ were felt to be the least effective. The number of pre-claims notices issued increased by 23⁸⁵ per cent in the year from between 2006/7 to 2007/8, whereas the number of county court claims made and judgments awarded for non-payment of water bills fell slightly. For most customers who can be identified, a threat of court action is enough to incentivise immediate payment or contact with their water company to commence a repayment scheme. However, the lack of data on customers makes tracing the person liable for arrears very difficult.

Citizens Advice Bureaux (CAB)

12.8.14 From 2005/06 to 2008/09 Citizens Advice recorded a 42 per cent rise in water debt problems, suggesting that water debt is becoming increasingly problematic for customers. Citizens Advice has told the review team that in line with widely accepted money advice principles, CAB and other advisers in the free debt advice sector advise their clients to first pay debts that result in disconnection, imprisonment or eviction. It has been suggested that advice to give water debts a lower priority than other arrears is one of the primary reasons for the steep rise in the water industry's level of bad debt.

12.8.15 Wessex Water has been working actively with Citizens Advice on its Assist Tariff. Once a customer with water arrears has approached the CAB, they offer the customer holistic debt advice and ensure that the customer is receiving their full entitlement to benefits. The CAB then contacts the water company to make a case for the customer's eligibility to join the Assist Tariff. The water company has the final decision on how to handle the customer's payments. Analyses have shown that the scheme reduces all customers' bills because it is better for the company to get some money rather than nothing. The review team believes that there is scope for expanding this approach.

Changes Needed

Government

12.9.1 **As a priority, the Water Industry Act 1991 should be amended to provide for a named customer and clarify who is responsible for paying the water bill; the 'liable person' should be the property owner unless they discharge their liability to the water company by providing tenancy information correctly and in a timely manner.** We would suggest that in the case of rented accommodation, the liability should be along the lines of the scheme set out in Annex 9. The review team also suggests that on change of occupier, the owner would have to provide the name of the person liable for the bill to the water company.

12.9.2 A significant proportion of bad debt is owed by rental tenants (34 per cent)⁸⁶ of which a significant proportion is debt accrued by tenants who leave a property without receiving or paying their bill (known as 'leaver debt'). The review team believes that private landlords or

⁸¹ Where a bailiff of the court is ordered to seize property to the value of the amount owed by the debtor, to satisfy the debt.

⁸² An order of the court placing a charge on the debtor's property, such as a house or piece of land. The charge means that if the property is sold, the charge has to be paid first before the proceeds of the sale can be given to the debtor.

⁸³ Where the debtor is ordered to attend court to provide details of their finances.

⁸⁴ Where the court orders funds to be deducted directly from the debtor's bank account to settle the debt.

⁸⁵ Ofwat RD 19/08

⁸⁶ UKWIR (2006) Quantifying Different Types of Water Industry Debt. 06/CU/04/4

property managers should set out clearly in their tenancy agreements whether the landlord or tenant is liable for the water bill, and also be legally bound to provide basic information on tenants to water companies (see details in Annex 9). This will ensure that water companies have the correct information to bill the liable person before they leave the property and to pursue that person, through the courts if necessary, if they choose to leave without paying their bill. It could also refer them to credit reference agencies to ensure any future credit is more difficult to secure.

- 12.9.3 Provision of information to the water company by the landlord would discharge their liability for the water bill. We would suggest that the responsibility of the landlord to provide this information should be on the first change of tenancy after the legislative change has been made, to stagger the flow of information to water companies. This legal change would provide a clear incentive for the landlord to identify the tenant to the water company on occupation of their property and there would be a clear incentive for the tenant to tell the water company when they are leaving the property. The review team suggests that if a landlord does not provide information on their tenant to the water company within 21 days of occupation they should then become liable for the water bill.
- 12.9.4 In certain accommodation, for instance some houses in multiple occupation (HMOs), the short-term nature of tenancies means that the landlord should be able to assume liability for the water bill and charge tenants accordingly. However, given the move to metering and because it is more difficult for the landlord to incorporate water charges in rent for measured properties, the review team suggests that where the property is supplied through a single meter, the landlord should be allowed to ask for an assessed charge for the property, as long as it meets the water efficiency requirements of level 3 of the *Code for Sustainable Homes*. This would ensure that everything is being done to improve water efficiency within the property, but allows for the practicality of a known annual charge, which can then be incorporated into rents.
- 12.9.5 Without a named customer and without the right to disconnect for non-payment of bills, the penalties in the existing system are very weak. While having a named customer could help companies tackle debt more effectively, the review team has considered whether penalties for non-payment should follow those available for non-payment of council tax, as a way of raising the priority status of the water bill. The situation is similar to local authority services, where services such as waste disposal continue even in cases of non-payment. Council tax can be pursued via a liability order in the magistrates' court, provides a stronger incentive for payment than civil courts (see Annex 9). This process of debt recovery would have the added benefit of identifying customers that are struggling with affordability; it would also allow companies to recover or partially recover outstanding revenue, while preparing future debt prevention strategies with the customer. **The review team recommends that the UK Government and Welsh Assembly Government consider whether companies should be legally able to pursue debt through the magistrates' courts in the future.**
- 12.9.6 The review team's conservative analysis shows that if more information were provided to water companies concerning rental tenants, this would have a positive impact to reduce 'leaver debt'. The average bill could reduce by £1.20 to £2.40 after four to five years as a result of less outstanding revenue leading to reduced financing costs associated with that lost revenue, reduced debt recovery activity and less debt written off. The legacy of bad debt could take four to five years to work through the system.

12.9.7 Local authorities and the UK and Welsh Assembly Governments hold information on vulnerable customers through the benefits they receive and it would be beneficial to customers in general and companies if they passed on that information to companies, where the intervention would have a clear benefit to the customer. Data protection and human rights issues must be taken into consideration, but the UK Government and Welsh Assembly Government are providing additional help to energy suppliers with identifying elderly vulnerable customers. The review team believes this help should also be extended to water companies.

12.9.8 **The review team believes that it would be beneficial to customers and companies if central and local government passed on information to water companies on vulnerable customers on benefits.**

Ofwat

12.9.9 Ofwat intends to review the information it receives from companies to better present companies' performance on debt prevention, management and recovery. Although company data, demographics and regional conditions make comparisons difficult, the review believes that rigorous independent monitoring of company debt procedures by CCWater is essential to maintaining progress in this area. **The review team recommends that Ofwat should produce an annual report focusing on continuing issues in bad debt performance and affordability** (see Chapter 11); **this report should incorporate CCWater's monitoring results and highlight transferable good practice where possible. This would ensure that good practice becomes normal practice for all companies.**

12.9.10 Once the suggested legislative changes have been made, **Ofwat should consider removing bad debt as a notified item at the next price review**, in order to increase the incentive for companies to improve debt prevention, management and recovery processes.

12.9.11 Ofwat has approved trials of different social tariffs (see Annex 7) designed to ensure that customers pay something towards their bill rather than nothing. As debt reduces, these tariffs provide benefits for all customers as a result. **In the light of information from trials, Ofwat should continue to approve tariffs that encourage the payment of debt and therefore advantageous to all.**

Companies

12.9.12 If statutory changes provide for a greater flow of information from landlords to water companies, water companies must make available simple mechanisms that allow landlords to register this information, and send confirmation to the landlord that liability for the bill has been discharged. The water company should then ensure that the tenant receives a final bill at least 30 days before the end of their tenancy.

12.9.13 Within a regional monopoly framework with spiralling debt impacting on all customers, companies must be more flexible with their billing systems so that payment options and billing suit customers' needs. Chapter 13 also makes the point that customers need better information on the help available to them. More regular and timely billing that suits customers' financial arrangements could significantly reduce the amount and duration of outstanding revenue.

12.9.14 As more information flows from local authorities, landlords and customers, water companies should be better placed to implement more effective debt prevention and management processes to suit the preferences of individual customers. Strong customer service, flexible and more frequent billing and payment options: all these relate better to customers' personal circumstances and are essential for encouraging payment.

12.9.15 **The review team recommends that companies should publicise the help available to those in debt and insure bills are easily understood.**

Prepayment Meters (PPMs)

12.10.1 In the interim report the review team asked stakeholders about the use of PPMs. PPMs were used extensively before the ban on disconnection and were popular with customers. Dŵr Cymru had 25,000 customers on their 'Watercard' scheme, but following the ban, they found that once customers defaulted the concept of prepayment became totally ineffective and had to revert to current debt recovery processes.⁸⁷ There are also some initial and maintenance costs for PPMs (approximately £100). It has been suggested to the review team that PPMs could be used as a budgeting tool by customers without a facility for disconnection. Given the ban on disconnection, PPMs may be of limited value. However, **the review team would recommend further exploration of their use if there is a demand from customers for them as a budgetary tool.**

Reduced-Flow Valves (RFVs)

12.11.1 The review team's terms of reference preclude us from looking at the ban on disconnection. A number of respondents have raised the use of reduced flow valves (RFVs) commonly misnamed 'trickle-valves'. RFVs would reduce the flow of water to a household, supplying enough water for basic hygiene but posing a significant inconvenience and a strong deterrence to non-payment.

12.11.2 Responses were polarised for, and against, the introduction of these devices. Many respondents, particularly including water companies, supported the deterrence benefit of using such devices for non-payment of the water bill. Those same respondents conceded that installing either a PPM or RFV is expensive and so would be rarely used, but consider it still important as a deterrent. On the other side of the debate people were staunchly opposed to the introduction of either device, citing that they consider RFVs a form of disconnection and so banned under the Water Industry Act. UNISON, CCWater and Citizens Advice all opposed the use of these devices. UNISON said they would mount a legal challenge if they were to be introduced. CCWater submitted evidence from their research⁸⁸ to show that customers and money advisers would not welcome the reintroduction of either PPMs or RFVs. Respondents opposed to their introduction cautioned that as water companies have little current ability to know who their customers are, many customers genuinely struggling with affordability could be put at risk. The review team recognises both sides of the debate and concludes that, in today's society, other less draconian debt recovery methods should be employed.

12.11.3 Since the interim report was published, Water UK and the industry research organisation (UKWIR) have agreed to undertake a research project into the impacts of introducing RFVs on society. This research will commence in 2010. The Review believes that if disconnection is to remain in the system, the statutory change to a named customer becomes more crucial in tackling bad debt.

⁸⁷ Dŵr Cymru (2009) Response to the interim report

⁸⁸ Accent (2003) Paying for Water

Final Recommendations

12.12.1 The review team recommends that:

- Water companies should be more proactive in preventing 'at risk' customers from falling into debt in the first place. DWP should consider the scope for widening the third-party deduction scheme to keep more customers on the scheme once a debt has been repaid. DWP should consult with companies on ways to improve the scheme and how companies can contribute to the costs of administering the scheme
- As a priority, the Water Industry Act 1991 should be amended to provide for a named customer and clarify who is responsible for paying the water bill; the 'liable person' should be the property owner unless they discharge their liability to the water company by providing tenancy information correctly and in a timely manner.
- The UK Government and Welsh Assembly Government consider whether companies should be legally able to pursue debt through the magistrates' courts in the future.
- The review team believes that it would be beneficial to customers and companies if central and local government passed on information to the water companies on vulnerable customers on benefits.
- Ofwat should produce an annual report focusing on continuing issues in bad debt performance and affordability (see Chapter 11); this report should incorporate CCWater's monitoring results and highlight transferable good practice where possible.
- Ofwat should consider removing bad debt as a notified item at the next price review.
- Ofwat should continue to approve social tariffs that encourage the payment of debt and therefore advantageous to all.
- The review team recommends that companies should publicise the help available to those in debt and ensure that bills are easily understood.
- There should be further exploration of the use of PPMs if there is a demand from customers for them as a budgetary tool.

Chapter 13 – Putting Customers First

Scope of this Chapter

13.0.1 This chapter looks at the role of companies, regulators, and consumer bodies in a regional monopoly water industry and discusses their relationship with water customers. It makes recommendations on improved customer engagement, how companies are incentivised to respond to customers better, and the provision of information to customers.

Context

13.1.1 Because water companies are regional monopolies, household customers have no choice about which company they use to supply their drinking water and sewage disposal service. Customers also have very little direct control over the key decisions that affect the size of their bill.

13.1.2 It is therefore vital that customers are given both adequate information and sufficient opportunity to engage with companies, the regulator and the UK Government and Welsh Assembly Government on matters affecting their service and the price they pay for receiving this service. A number of improvements should therefore be made:

- Customers must be consulted properly. They should be engaged more closely, especially in key decisions that directly affect their bills;
- Regulatory mechanisms must incentivise responsive customer engagement – the Overall Performance Assessment (OPA) and Service Incentive Mechanism (SIM) must really count, and customer experience really has to matter;
- The type and flow of information must ensure customers are as well informed as possible. Information empowers the customer.

13.1.3 The review team has looked at a number of facets of the relationship between the water industry and its consumers. Two-way sharing of information and active customer involvement are key to managing future demand and supply successfully. Transparency and accountability are vital if customers are to understand what and how much they are paying for and why. This will ensure that they have the opportunity to influence decisions in these areas.

13.1.4 Two points at which customers should be involved in spending decisions are the price review process, and before the UK Government and Welsh Assembly Government commit to EU or UK legislation on improvements to environmental quality for which the water customer might be asked to pay.

Consultation and Customer Engagement

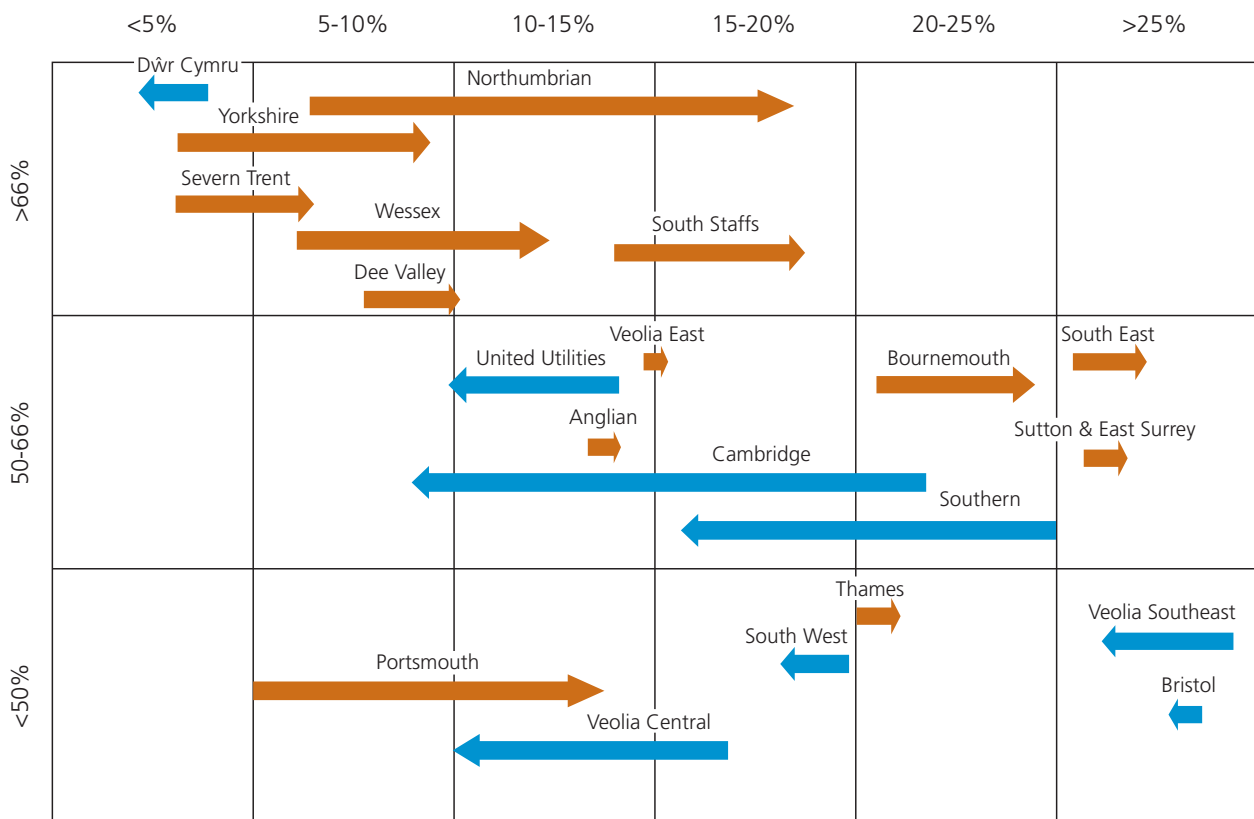
13.2.1 As water companies are regional monopolies, mechanisms are needed to ensure that customers have an effective input to decisions on both price controls and improved quality standards. The review team has explored a variety of approaches aimed at better involving customers, including participatory budgeting and negotiated settlements. We recognise the success of the quadripartite group approach used in the 2009 price review (PR09), which demonstrated the value of greater constructive engagement and the consumer research studies which collectively involved several thousand customers.

- 13.2.2 For PR09, CCWater set up quadripartite working groups for each of the companies in England, bringing together for each group a representative from CCWater, the water company, the Environment Agency and the Drinking Water Inspectorate. Wales had a single group organised by the Welsh Assembly Government. The aim of these groups was to ensure local representation and input into companies' strategic planning from an earlier stage than previously, when consumer representations were made only at the end of the process.
- 13.2.3 The consultation process for PR09 took place in three stages. In 2007, each company carried out consumer research with input from CCWater as part of the development of its strategic direction statement. CCWater led a joint stakeholder regional deliberative consumer research project in late 2007, the results of which informed each company's draft business proposals. In late 2008, Ofwat and other stakeholders⁸⁹ carried out joint consumer research into customers' views of the proposals in company draft business plans, involving over 6000 participants. This then informed final business plans, along with further work by some companies.
- 13.2.4 The results of this research demonstrated that most companies' draft business plans were acceptable to the majority of their customers (64 per cent), while just under a quarter found them unacceptable. This varied widely between companies, however. Customers of companies where the proposed bill changes and impact were lowest were more accepting of their company's overall plan.
- 13.2.5 The quadripartite group processes worked well in ensuring that many companies incorporated customers' priorities into their business plans. Figure 29, taken from Ofwat's Final Determinations,⁹⁰ shows the degree of consumer acceptability on the vertical scale measured against the increase in bills proposed in companies' draft and final business plans. A pink arrow indicates that bill proposals rose between draft and final plans; a blue arrow that proposals were reduced. The length of the arrow indicates the scale of the change. As Ofwat recorded in its Final Determinations, this shows that companies responded to the results of the consumer engagement, reducing bill impacts where acceptability was low. It also appears that some companies with a high level of acceptability for their plans felt able to increase the impact on bills of their later proposals.
- 13.2.6 In the past, companies were incentivised to 'overbid' in their initial proposals, but with greater customer input on willingness to pay at an earlier stage it seems that companies were able to self-regulate to a greater extent, delivering plans that were more in line with customers' priorities. Compared with the last price review, the bids which companies made were £1 billion lower overall, equivalent to £40 to £50 per customer. This bears out the value of early and in-depth regional customer involvement in the price control process to ensure that customer preferences are properly reflected in decisions.

⁸⁹ Ofwat, CCWater, Defra, Welsh Assembly Government, Drinking Water Inspectorate, Environment Agency, Natural England, Water UK

⁹⁰ Ofwat, Final Determinations 2009, Chapter 3 The Right Outcome For Customers, www.ofwat.gov.uk/pricereview/pr09phase3/det_pr09_finalfull.pdf

Figure 29: Consumer acceptability and proposed price limit increases



Source: Ofwat

- 13.2.7 Ofwat plans to carry out a post-project review of PR09 and CCWater also intends to review the effectiveness of the quadripartite group process. The review team supports these reviews, as there will clearly be lessons to draw. However, it believes that more radical reform is needed of the processes for engaging household consumers in the water industry, and that these arrangements should be put in place as soon as possible, and certainly before the next price control review.
- 13.2.8 Chapter 4 revealed that the water industry is likely to face significant environmental costs in the next decade. Capital expenditure is likely to continue to be significant as are proposals for improvements in quality standards. This clearly has the potential to have a significant impact on customer bills in the longer term. Chapter 5 pointed out that if water customers are not aware of these costs, and not properly consulted about them, they will consider them unfair (as customers in the South West consider their current prices) and view them increasingly as a 'stealth tax'. There are also choices to be made about the level of the quality improvements agreed in future directives, and the time period over which improvements are made. **The review team therefore recommends that CCWater, consulting with the UK Government and Welsh Assembly Government, Ofwat, and members of the quadripartite group, should put in place arrangements to engage with and consult customers on a regional or water company basis, on any issues affecting their bill, particularly proposals for future quality improvements, not simply on price control issues. The quadripartite machinery set up for the latest price review should be established on an ongoing basis.** See also recommendation in Chapter 5.

- 13.2.9 If these arrangements are to be effective, the UK Government and Welsh Assembly Government must be required to cost any proposed EU obligations, to set out the benefits and to describe the impact the obligations could have on bills (regionally if necessary), before any decision is made, and they will need to make this information publicly available and ensure full and effective consultation through the new consumer arrangements. This would ensure that any new costs are transparent and justified and their alternatives are fully explored. If customers resist paying for these improvements, this should be taken into account in both the negotiating position in Europe and in how any resultant costs are paid for.⁹¹
- 13.2.10 If consumer consultation arrangements are set up in this way, on a long-term basis, a significant level of engagement will be possible, between as well as throughout the formal price review process. This could well result in regional arrangements very similar to the negotiated settlements between customers and utilities in countries such as Canada, where the local utility company and local customers agree prices and quality of service, and the regulator becomes involved only where there is a disagreement, or where a common approach is needed across the industry.

Regulatory Mechanisms – Measuring Customer Experience so it Counts

- 13.3.1 Because customers are not able to choose another company to supply their water, it is imperative that companies are incentivised to find out what their customers want, and that they act on this information to improve customer satisfaction levels. Recent consumer research commissioned by Ofwat and CCWater⁹² shows that household customers generally have a high level of satisfaction with the water and sewerage service they receive, with 90 per cent reporting that they were satisfied, and not more than 10 per cent reporting dissatisfaction with any single aspect of the service. Seventy-three per cent of customers were satisfied with the value for money they received from their water and sewerage services.
- 13.3.2 While complaints to companies reduced last year, they have almost doubled in the past five years. Future incentive mechanisms need to be ambitious and must penalise companies who are not performing well in resolving and reducing complaints, in order to mimic the effect of poor performance in a competitive market.
- 13.3.3 Ofwat has recently consulted on the introduced the new Service Incentive Mechanism (SIM) which replaces the Overall Performance Assessment (OPA). It is designed to encourage water and sewerage companies in England and Wales to improve the quality of the service they provide. Responses to the interim report showed general agreement that the OPA needs revision, and support for the new SIM.⁹³
- 13.3.4 Service standards and safeguarding of basic service levels will continue to be monitored by the regulators. Ofwat will publish regular performance information on how each company performs on these key service attributes. Current standards of service will therefore be maintained, and the new SIM will strengthen the quality of service aspects. The SIM will be based on two consumer experience measures.

⁹¹ See Chapter 5

⁹² Ofwat/CCWater Research into Household Customers' Views on competition in the water and sewerage industry, FDS, October 2008, http://www.ccwater.org.uk/upload/pdf/r7508_final_report.pdf

⁹³ See Annex 10 for details of OPA measures and new SIM measures

- 13.3.5 The financial incentive and penalty for the SIM will remain the same as for the OPA, at +0.5 to -1.0 percentage points. This is used when setting new price limits to make a positive or negative adjustment to each company's price limit based on their past performance. Price adjustments will initially be based on a comparative approach, because the data measures are new; thereafter, consultation on Ofwat's approach to price adjustments will take place when consulting on draft determinations.
- 13.3.6 In order for customer experience to carry real weight, it is important to have the correct balance of incentives and penalties, and that Ofwat uses the whole range. Companies that perform poorly should be penalised more heavily. Research carried out by Ofwat and CCWater⁹⁴ showed that 4 per cent of customers would switch suppliers because of poor service; this can be compared with the 3 per cent loss in market share British Gas experienced following problems with its billing systems, and it demonstrates the effect of poor customer service in a competitive market. The Cave review recommended a penalty of -3 per cent and a +3 per cent incentive associated with negotiated settlements to encourage high performance levels. However, a potential +/-3 percentage rise could raise bills for customers in a way that would not be appropriate under a regional monopoly system. A -1 per cent to +0.5 per cent range and the reduced operational costs of avoided complaints arising from better customer service should deliver this incentive in a more appropriate way.
- 13.3.7 The results of the SIM only affect companies in the next price control period. Companies need to respond to their customers on an ongoing basis. Ofwat should therefore continue to report on companies' performance against both quantitative and qualitative measures. Responses to the interim report expressed some concerns about increasing the regulatory burden if further reporting is required. There were also concerns about comparing customer satisfaction between companies; where metering programmes are underway, for example, unwanted customer contacts are likely to increase. In this case, there should be an appropriate appeals procedure in place that allows companies to explain any particular situation affecting their customers' satisfaction levels. CCWater would like to see the publication of league tables at six-monthly intervals, allowing companies to deal with potential issues as they arise and to consider their position in relation to the performance of other companies. The review team believes that more frequent reporting would be helpful to customers and companies, particularly as the SIM is linked to the 5 yearly price review process. This information should be presented in a way that clearly shows the comparative performance of companies and the likely financial impact of their performance if it continues. All such reporting must be readily understood by customers.
- 13.3.8 **The review team recommends that Ofwat, CCWater and companies should publicise and explain information about companies' performance against the Service Incentive Mechanism (SIM) on their websites and through other appropriate channels. Ofwat should publish six-monthly 'league tables' based on quantitative and qualitative information and survey results from the SIM to allow customers to assess the performance of their water and sewerage companies, and companies to monitor their progress in relation to other companies and the requirements of the assessment criteria.**

⁹⁴ www.cewater.org.uk/upload/pdf/r7508_final_report.pdf

Information for Customers

- 13.4.1 The review team recognises that much work has already been done to provide customers with better information. CCWater offers the industry ongoing advice and has best practice guidance detailing essential and desirable bill contents;⁹⁵ Ofwat also reviews the provision of information to customers as part of its annual reporting process. There are certain regulatory requirements which govern the contents of bills, but consumer research has suggested that because of space limitations, too much information on bills can be counter-productive. Companies welcomed new ideas on improving information on and with bills and the review recommends that research and trials continue in this area. The review team welcomes Ofwat's suggestion that it will hold a workshop to share best practice on billing and engagement with harder to reach customers.
- 13.4.2 Companies showed in their responses that they understood the importance of good engagement with consumers, particularly harder-to-reach and vulnerable consumers, but their lack of customer data can hinder successful engagement with consumers. New provisions in Chapter 12 on named customers will go some way towards helping companies to identify their customers and the review team expects that companies will make full use of these powers to engage with their customers in appropriate ways.
- 13.4.3 The Ofwat and CCWater joint consumer research⁹⁶ showed that customers' priorities include:
- clear bills;
 - ease of contact; and
 - relevant, timely information.

Billing

Efficiency, Affordability and Debt Information

- 13.5.1 Responses to the interim report confirmed that companies want to retain their local corporate approach to billing and the review team agrees that this should be the case. However, the review team notes two key areas where it is important that every company makes efforts to improve its communications: water efficiency, and affordability and debt information.
- 13.5.2 Water efficiency information should be personalised to the household and tied in to the local company's water efficiency strategy. Metered households should receive comparative consumption and meaningful information related to their individual use; for example, the volume of water used compared to the previous year, comparisons with other local customers or similar households, or the cost of a bath or shower would all be useful. Annex 10 shows an example bill from a smart billing trial, showing the sort of information the review team thinks should be provided on bills. Companies should also provide information to households on water efficiency methods and advice, although not necessarily on bills.

⁹⁵ Review of Water Company Bills – CCWater Good Practice Guidelines on Bill Design and Layout, October 2005

⁹⁶ Household customer views on competition in the water industry and PR09 quantitative research, Ofwat & CCWater

- 13.5.3 Affordability and debt information and advice, including what help is available and how the customer can access it, should also be provided with water bills, particularly where the customer could benefit from an alternative tariff or qualify for WaterSure. Companies have a key role to play in promoting WaterSure and any other assistance they provide on debt and affordability. They should ensure that their customer-contact employees such as billing and call centre workers are aware of what is available, and that they can give accurate advice on eligibility and help customers process their applications. Companies need to provide accessible information on schemes that help low-income earners who want to stay out of debt, providing more publicity on water debt advice and help, and making greater use of third-party advice organisations. Bills should clearly indicate methods of payment, provide contact details for third-party debt advice agencies and be written in plain English.
- 13.5.4 **The review team recommends that companies should ensure that water efficiency, affordability and debt information and advice are provided to their customers in accessible formats, either on and with bills or through any other appropriate methods.**

Frequency of meter reading and metered bills

- 13.5.5 Clarity, transparency and accuracy of billing are all important in maintaining a successful relationship between a company and its customers. Water is effectively the only utility where leakage can have a long-term but undetected impact on customers' bills, and yet it is currently the utility with the lowest frequency of meter reading and standard billing frequency. Energy customers can often read and submit their own meter readings with relative ease, which is more difficult for metered water customers whose meters are located in less accessible locations. In the responses to the interim report, respondents identified that the uncertainty caused by moving to metered charging can be a deterrent to opting for a meter for households that could benefit from lower bills. Some customers, especially those on lower incomes, prefer a predictable bill, even if it is higher, than an annual bill they find difficult to budget for. Uncertainty is higher in the first year that a household is charged by volume, as the majority of customers are not aware of how much water they use or how much they can expect to pay per unit used.⁹⁷ Another concern is the possibility of leakage on customers' supply pipes leading to an unexpectedly large bill when it is not detected quickly due to infrequent meter readings.
- 13.5.6 Although there is no legal requirement on meter reading, Ofwat collects this information under the DG8 indicator. Companies aim to read meters once a year and at least 99.85 per cent of meters are read once every two years. The total cost of meter reading partially depends on the frequency that meters are read. The cost and benefit assessment in Annex 6 is based on meter reading costs related to reading meters twice a year, which is more frequent than current industry practice. Increasing the frequency of meter reading would increase costs but the review team believes that this cost could reduce over time, by reducing customer contacts as well as giving water companies an increased incentive to adopt more efficient and cheaper meter reading processes. However, there is currently no evidence on costs and benefits of more frequent meter reading. Companies should also consider allowing customers to submit their own meter readings where this is practicable.

⁹⁷ CCWater, Living With Water Poverty, June 2009.

13.5.7 Most companies bill unmetered customers annually and metered customers every six months, although practice varies. Customers are also usually able to pay in instalments of varying frequencies from weekly to annually. The review team believes that while potentially increasing costs to the companies, more frequent meter reading and billing will ultimately reduce customer contacts as a result of fewer disputed bills, increase customers' awareness and consideration of their water usage and efficiency, allow customers to budget more effectively and provide early detection of any large leak on the customer's supply pipe. As discussed in Chapter 12 greater billing frequency is also likely to have a positive impact on revenue collection. **The review team recommends that metered customers should receive at a minimum twice-yearly bills based on a minimum of twice a year actual meter readings.**

Penalties for Non-Compliance

- 13.6.1 The regulatory system has some redress for customers if companies do not comply with their statutory or regulatory requirements, but the review team believes that this can be improved. Ofwat can only penalise a company for non-compliant activity that has occurred in the previous 12 months, even if it has been happening for a longer period.
- 13.6.2 It was proposed in the interim report that this limit be extended to five years, in line with the price review process. This would enable Ofwat to better protect the consumer interest, by ensuring that there is sufficient time for it to exercise its existing powers. The Department of Energy and Climate Change is considering a similar extension of Ofgem's enforcement powers.
- 13.6.3 Responses to the interim report supported this extension, with caveats about companies having an appropriate avenue of appeal.
- 13.6.4 **The review team recommends that the limit for pursuing breaches and penalising companies should be extended to five years, and that there should be an appropriate avenue of appeal for companies wishing to contest Ofwat's decision.**

Conclusions and Summary of Recommendations

- 13.7.1 As customers have no choice about their water or sewerage company, it is essential that they are given sufficient opportunity and information to participate in decisions that affect their bills. Regulatory mechanisms must incentivise good performance, and penalise companies which do not perform well. Information to customers must be clear, useful and targeted, containing water efficiency and affordability information to empower the customer. Companies must seek to communicate with their customers in a range of ways that meet customer requirements.
- 13.7.2 The review team recognises the progress which has been made in customer engagement and proposes a series of measures to underpin the existing and developing work of companies, regulators and consumer bodies.

13.7.3 The review team recommends that:

- **CCWater, consulting with the UK Government and Welsh Assembly Government, Ofwat, and members of the quadripartite group, should put in place arrangements to engage with and consult customers on a regional or water company basis, on any issues affecting their bill, particularly proposals for future quality improvements, not simply on price control issues. The quadripartite machinery set up for the latest price review should be established on an ongoing basis;**
- **Ofwat, CCWater and companies should publicise and explain information about companies' performance against the Service Incentive Mechanism (SIM) on their websites and through other appropriate channels. Ofwat should publish six-monthly 'league tables' based on quantitative and qualitative information and survey results from the SIM to allow customers to assess the performance of their water and sewerage companies, and companies to monitor their progress in relation to other companies and the requirements of the assessment criteria;**
- **Companies should ensure that water efficiency, affordability and debt information and advice are provided to their customers in accessible formats, either on and with bills or through any other appropriate methods;**
- **Metered customers should receive at a minimum twice-yearly bills based on a minimum of twice a year actual meter readings;**
- **The limit for pursuing breaches and penalising companies should be extended to five years, and there should be an appropriate avenue of appeal for companies wishing to contest Ofwat's decision.**



Scope of this Chapter

14.0.1 Throughout the review our attention has been drawn to the concerns of water customers, the water company and local representatives in the South West Water company area about the size of combined water and sewerage bills that customers there are currently paying. They regard these bills as both unfair – compared with the rest of the country – and unaffordable for many on low incomes. This chapter explores the reasons for the differences and proposes potential solutions.

Current Situation

14.1.1 On the two visits the team made to the south west, and in responses to the call for evidence and the Interim Report, the review team was left in no doubt that customers in the area covered by South West Water, feel that their bills are very unfairly high compared to other areas, and the issues of affordability are particularly acute – both because of the high level of the average bills and because incomes locally are below average for England and Wales.

14.1.2 At an average of £401 for metered customers and £723 for unmetered customers (averaging across these customer groups at £490) these bills are, on average, significantly higher than those faced by customers living elsewhere in the country. The national average bill is £343. The next highest bill area is Wessex (£412). Locally, individual bills could be much higher or lower depending on actual water use or whether a customer was metered or not. On the basis of the final determinations issued by Ofwat, there is likely to be a decrease of around 1.4 per cent over the next five years in the average bill in the South West Water area, down to £483. The next highest bill (Wessex) would rise to £424, and the overall average would decline very slightly to £340.⁹⁸ The South West Water bills are outliers at around 43 per cent higher than the average, and 19 per cent higher than the next highest average bill. Under Ofwat's final determinations South West Water becomes a bit less of an outlier at 42 per cent higher, and only 14 per cent (£59) higher than the next highest by 2015.

14.1.3 The South West Water company area also has a high level of metering (mainly because the size of the unmetered bill has encouraged people to opt for a meter). By 2010 70 per cent of customers will be on a water meter and a further 80,000 are forecast to switch to a meter during 2010-2015, saving on average £400 each.⁹⁹ This saving of £400 per switching customer will need to be made up from the bills of those remaining on an unmetered tariff – a rise for them on average of £212 or around 29 per cent, bringing their average total bill to around £935 pa.¹⁰⁰ This rise in bills for those who remain unmetered is causing very significant concern and adds to the perception of both unfairness and problems of affordability. By 2015 82 per cent of customers are expected to have a metered supply and by 2024/25 over 90 per cent of customers are expected to be metered.

14.1.4 The high average bills will, on their own, tend to accentuate the affordability problems with water bills, In addition the South West Water Company area has certain demographic and economic characteristics that also tend to reinforce affordability issues:

- Over 22 per cent of the population are pensioners – much higher than elsewhere in the South West or in England as a whole;
- a high proportion of its population live in rural areas making it expensive to serve;

⁹⁸ Ofwat, Future water and sewerage charges 2010-15: Final determinations, November 2009, Table 7

⁹⁹ South West Water figures & projected saving

¹⁰⁰ Ofwat, Future water and sewerage charges 2010-15: Final determinations, November 2009, Table 9

- the issue of housing affordability in the South West is most acute after London;
- disposable incomes are about 10 per cent lower than the UK average;
- there is significant dependence on seasonal, low paid work because of tourism and agriculture;
- tourism dominates the local economy – the South West region is the UK's top domestic holiday destination which means that in peak weeks the SWW area population goes up by 25 per cent and demand for water is a third higher than for the year as a whole (the highest variation in seasonal demand for water of any WASC¹⁰¹);

14.1.5 Locally the view is that the size of the South West Water company bills has been driven by the Clean Sweep programme to clean up local bathing beaches by stopping raw sewage being discharged from 200 sea outfalls. The strongly held local view has been that 3 per cent of the country's population was being expected to clean up 30 per cent of the country's bathing waters. Clean Sweep has cost local customers £1.5bn and was a result of Bathing Water Directive requirements that meant bathing waters (inland waters and sea water) had to meet common European microbiological standards to prevent illness in people using them. However, as discussed in Chapter 5, this could be regarded as providing an updated sewerage system to meet modern standards and local customers are paying to clean up the pollution they have caused. But this absolute level of investment combined with a small customer base (about 700,000) has meant that individual customers have been faced with high bills.

Evidence about Past Investment

14.2.1 In order to build a comparative picture, the review team has looked back at how much it has cost the South West Water company, and other companies, to build its current set of infrastructure (current asset base). Table 6 below sets out how much it would cost by company to build the current asset base (including its current level of quality and state of repair) if starting from scratch today (i.e. MEA – the Modern Equivalent Assets), per (sewerage) customer.¹⁰² The MEA per customer would be expected to act as an indicator of whether or not customers were paying for gold plating' of their infrastructure with higher MEA per customer indicating higher levels of service quality.¹⁰³ Table 6 provides the level of MEA per customer at privatisation and for 2007-8.

¹⁰¹ South West Water Final Water Resource Management Plan

¹⁰² This, and the following, tables are calculated by taking the relevant financial indicators for both the water and sewerage infrastructures in the area served by the water and sewerage companies sewerage service. To calculate a value per property served this total value is divided by the number of sewerage customers (domestic and non-domestic) served in 2009.

¹⁰³ MEA per customer would not be the only factor to take into account in a full analysis, but it would be unlikely that MEA levels per customer could be significantly below average and still be a result of much higher standards being imposed on, say, the discharge quality of sewerage treatments.

Table 6: changes in current asset base (MEA) by company

Water & sewerage companies	MEA per sewerage property served (in 2007-8 prices)		Company Ranking	
	1990/91	2007/08	1991/91	2007/08
Anglian	7,220	9,543	1	2
Dŵr Cymru	8,761	12,770	5	9
United Utilities	10,135	15,460	8	10
Northumbrian	7,764	11,419	2	6
Severn Trent	8,707	8,307	4	1
South West	7,932	11,898	3	8
Southern	10,140	10,312	9	4
Thames	10,964	10,049	10	3
Wessex	9,148	11,729	6	7
Yorkshire	9,168	11,302	7	5
Average	9,372	10,910		

Source: review team

- 14.2.2 Table 6 shows that South West Water went from the position of having one of the lowest levels of assets per customer (85 per cent of the average) at the time of privatisation to being closer to the average (109 per cent) by 2007/08. Notwithstanding that South West Water's relative position has changed significantly, the fact that the MEA per customer is not particularly different from the average now suggests that the service levels imposed on water and sewerage services is not out of line with the rest of the country.
- 14.2.3 However, given the regulatory regime, in terms of the prices that customers have to pay, the important relationship is between the regulatory asset base (i.e. the Regulatory Capital Value – RCV – the amount the company paid for the assets at privatisation, plus any additional capital assets that have been added, less depreciation etc) and the number of customers. The change in regulated asset base (RCV) per property is set out in Table 7 below.

Table 7: change in regulated asset base per property by company

	RCV per sewerage property served			Company Ranking	
	1990/91	2007/08	increase	Order 1990/91	Order 2007/08
Water & sewerage companies					
Anglian	796	2,053	1,257	10	4
Dŵr Cymru	449	2,591	2,142	2	9
United Utilities	557	2,427	1,870	6	7
Northumbrian	567	2,483	1,917	7	8
Severn Trent	472	1,604	1,132	4	2
South West	397	3,450	3,053	1	10
Southern	574	2,070	1,496	8	5
Thames	469	1,460	991	3	1
Wessex	581	2,124	1,542	9	6
Yorkshire	542	1,975	1,433	5	3
Average	539	1,980	1,441		

Source: review team

14.2.4 Table 7 shows that South West Water has gone from the company area with the smallest regulatory asset base (RCV) per property to the one with the most. This is as a result of the amount of investment South West Water had to put into its sewerage system after privatisation to meet EU requirements. As the price paid by customers is related to RCV rather than directly to the MEA, this explains why South West Water bills have risen faster. South West Water is an outlier on this measure. Its RCV per property is now around 175 per cent of the average, with the next highest (Dŵr Cymru) being around 130 per cent of the average. South West Water is also an outlier in terms of the change in RCV per customer, being around 210 per cent of the average, compared to the next highest (Dŵr Cymru) at around 150 per cent.

14.2.5 Finally, the amount of new capital expenditure per property since privatisation was looked at. The more capital expenditure per property, the higher the bill needs to be to pay for it. Again, South West Water has had the most capital expenditure per property, measured either to date, or to the (projected) position in 2014. Table 8 below sets this out.

Table 8: capital expenditure per property by company

Water & sewerage companies	Capital expenditure from privatisation			
	To 2009	% of average	To 2014	% of average
Anglian	3,557	103%	4,029	101%
Dŵr Cymru	4,454	129%	4,880	122%
United Utilities	4,022	117%	4,760	119%
Northumbrian	3,767	109%	4,203	105%
Severn Trent	3,165	92%	3,524	88%
South West	5,197	151%	5,755	144%
Southern	3,144	91%	3,847	96%
Thames	2,712	79%	3,342	84%
Wessex	3,156	91%	3,624	91%
Yorkshire	3,965	115%	4,516	113%
Average	3,449	100%	3,998	100%

Source: review team

Conclusions on the Causes of High Bills

14.3.1 From the evidence above the review team has concluded that:

- At the time of privatisation South West Water had the lowest regulatory asset base per property;
- Since privatisation, South West Water has had to spend a lot on infrastructure to raise the standard of infrastructure to around the same level as everywhere else;
- The South West Water company has a comparatively low number of households. This plus the amount of capital expenditure means the amount of new investment per property is higher in the South West Water area than elsewhere;
- This means because new investment has to be paid for in full, whereas pre-privatisation investment in assets is currently paid for at between 5–10 per cent of its real costs, bills in the South West Water area are now considerably higher than the average, but for essentially the same level of service experienced elsewhere in the country.

14.3.2 These high (average) prices compared to the rest of the country cause the sense of unfairness. They also, of course, aggravate issues of affordability.

Potential Remedies

14.4.1 In terms of potential remedies, to address the issue of unfairness, the review team considers that broadly there is a choice between:

- Reducing the cost of the investment since privatisation and its impact on bills through a specific one off corrective measure; or annual transfers;
- A package of proposals to help customers in the South West Water area in a progressive but also cost-reflective way.

“Corrective” Adjustments

- 14.5.1 The review team has estimated how large these transfers would need to be to bring the bills in the South West Water area more into line with other areas. In 2014/15 average domestic bills in the South West Water area are predicted to be about £59 higher than the next highest company (Wessex). To reduce average domestic bills in the South West by, say, £50 a year would require a total transfer into the area of around £33m a year. This could be funded directly by the government or, it could be generated by adding about £1.50 to every household water and sewerage bill in the rest of the country, although the latter would raise more complex fairness issues.
- 14.5.2 Alternatively, the same effect could be achieved through a one-off financial package equivalent to reducing the financial burden of the RCV per customer in the South West Water area. In order of magnitude terms, and using Ofwat’s weighted cost of capital of 5.1 per cent, this would be equivalent to a one-off transfer in some form to the South West Water company of around £650m. Again, it could be funded directly by government or it could be funded by other water customers. In the latter case other customers’ bills would have to go up by the same approximate amount (£1.50 per customer per year), and would again raise different issues around fairness.¹⁰⁴
- 14.5.3 A one-off ‘corrective’ package of £650m could resolve what has been an intractable issue in water charging, without undermining wider principles around cost reflectivity, ‘polluter pays’ and economic incentives. This would directly address the distorting pressures arising from the significantly different historic experience of the South West Water company, freeing water charging and markets to develop over time in a coherent way to promote water efficiency and sustainable use of resources. The logic behind a corrective adjustment would be that South West Water as a company area had an underdeveloped set of assets at privatisation due to the reliance on sewage disposal at sea, allowing the region to have the lowest asset base per property at that point in time. The need to substantially upgrade and re-engineer sewage disposal post-privatisation has then driven substantial bill increases. There are therefore strong arguments in favour of a one-off adjustment.
- 14.5.4 A one-off adjustment might take the form of a government-backed financial package, implemented in a way that would allow South West Water to continue to be regulated in the same manner as other water and sewerage companies. Clearly there would be a range of legal, technical, financial and economic issues to think through, and any one-off correction would need to avoid distorting markets and state aid considerations. The review team’s view is that Ofwat is best placed to explore what the specific options might be, how these could be implemented bearing in mind the various constraints, and respective pros and cons because they would be able to ensure the least possible regulatory distortions. But ultimately, since it would inevitably involve funding and / or other commitment by the taxpayer (or, with a different set of fairness challenges, other water customers) the decision would need to be one for the government.

¹⁰⁴ This calculation is to illustrate the order of magnitude of the impact of the size of transfers that would be required. It is not meant to be an accurate reflection of the precise size of the transfers that would be involved. In addition, no account has been taken of the need to distribute the transfer between companies and, hence, their customers.

Package of Proposals for the South West Water Area

- 14.6.1 The very high peak demand for water in the summer months suggest that residents are bearing the costs of additional demand that visitors place upon the system (although further work would be needed to establish the degree to which Clean Sweep costs reflect summer peak demands). Introduction of a seasonal tariff on the lines of that being trialled by Wessex Water which establishes a winter baseline consumption and then charges a premium rate in the summer for water use above the winter level could provide a much fairer distribution of costs. If the summer additional use was charged at three to four times the normal unit cost this could result in average residents bills reducing by about £40-60 a year.
- 14.6.2 In addition, Chapter 11 sets out a number of affordability measures that the review team considers should be put in place for all customers. Some of these measures would benefit South West Water customers in particular because of the relative size of the bill compared to other company areas. For example, capping the Water Sure tariff in future at the regional or national average would help low income customers with high essential use because of medical conditions by about £280 per annum – significantly more than customers get under the current scheme which provides a bill capped at the regional average. A discounted bill of the type suggested for all low income households would reduce bills by about £90 a year and the proposed scheme for low income families with children would reduce bills by about £80 a child. Finally, the recommendation that water efficiency measures should be targeted on priority low income households and tied up with Warm Front and other energy efficiency programmes should benefit pensioners in particular – of which the South West Water area has significantly more than elsewhere. Help with the bill for low income households along these lines would cost other South West Water customers between £5 and £14 a year depending on which schemes were adopted. The affordability chapter proposes that the full package of affordability measures should be adopted for the South West whatever the decisions in the rest of the country. This redistributive approach would tackle the issues of affordability but because of its impact on other South West Water customers, could perpetuate the sense of unfairness.

Conclusions

- 14.7.1 Having looked at the particular economic, social and geographical circumstances of the South West Water area, the review team has concluded that:
- Current high bills in the South West Water area relate to the poor state of the sewerage assets at privatisation;
 - Dealing with the historic issues would address the root cause of the issue directly and could be addressed through a specific one-off adjustment or through annual transfers funded by government or, with a different set of fairness challenges, other water customers;
 - A one-off adjustment would require a government financial commitment of some form and would need careful design, explanation and ring fencing;
 - Ofwat would be best placed to consider the options for implementing a one-off or other adjustment, and advising ministers accordingly;

- Alternative approaches would rely on redistributing the financial burden among South West Water's customers. Residents could be helped by a combination of measures: use of a seasonal tariff which charged additional summer use at a premium rate; use of the review team's recommended affordability measures, with the full package applying in the South West Water area whether or not it was adopted in the rest of the country, and water efficiency measures targeted at pensioners. Ofwat should press South West Water to consider its costs drivers in detail to assess this approach if it is adopted.

Final Recommendations

14.8.1 **This chapter has set out the reasons for the current high prices in the South West Water area and potential solutions. If government wants to pursue these, the review team recommends that Ofwat is asked to advise on one or more of the following options:**

- **Implementation of a one-off or other financial adjustment by government to address the specific circumstances of South West Water at the time of privatisation, and the resulting implications for water bills in the South West Water area;**
- **Adjustment of bills in the South West Water area through contributions by other water customers across the country;**
- **A package of proposals for South West Water customers, potentially taking account of seasonal issues and cost drivers and the package of proposed affordability measures in this report.**

Annex 1 – Terms of Reference

Terms of reference

The terms of reference for the Review were:

To examine the current system of charging households for water and sewerage services, assess the effectiveness and fairness of current and alternative methods of charging and consider and make recommendations on any actions that should be taken to ensure that England and Wales has a sustainable and fair system of charging in place. It will look at social, economic and environmental concerns.

In order to reach its conclusions the review team will assess:

- the effectiveness and fairness of methods of charging, given current trends in water metering and the use of the Rateable Value based system;
- the appropriate pace of change and method of moving to near universal metering needed to ensure sustainable abstraction in areas of water stress, taking into account:
 - the current projections of growth in metering; and
 - the proposals brought forward in water resources management plans;
- the effectiveness of different types of innovative social, rising block, seasonal and other tariffs in helping vulnerable households and/or reducing demand;
- the effectiveness of measures to manage affordability concerns for low income households within the current or any future system of charging, including the role of water efficiency measures and potential links between water and energy efficiency measures and existing Government initiatives;
- the cost and benefits of metering, taking into account all costs including the full social cost of carbon, and the cost effectiveness of different approaches to metering;
- the impact on health and health inequalities for individuals, communities, areas and social groups, of current and alternative methods of charging;
- the costs and benefits of smart metering; and
- the effectiveness of measures to incentivise people to pay for their water and sewerage services and minimise the impact of bad debt on customers that do pay, excluding disconnection.

The review team will advise on options for a new framework for charging if recommended and implications for legislation or guidance needed to achieve changes from current arrangements.

The review team will include a robust evidence base that will support the development of future policy and Impact Assessments.

The review team will report to the Secretary of State for EFRA and Welsh ministers



Annex 2 – Respondents to the Review

Respondents to the Call for Evidence: (82)

All Party Parliamentary Water Group	Ofwat
Anglian Water	The Society of British Water and Wastewater Industries
Bristol University	Scottish and Southern Energy
Bristol Water	Severn Trent
CAB	South East Water
CCWater	South West Water
Chartered Institute of Heating and Plumbing Engineers	Southern Water
Chartered Institute of Environmental Health (CIEH)	Sutton and East Surrey Water
The Chartered Institution of Water and Environmental Management	The National Trust
EAGA	The Structure Group
Energy Savings Trust	Three Valleys Water
Engage Consulting	UKWIR
Environment Agency	Unison
Halcrow Group	United Utilities
Intelligent Metering Initiative	Veolia Water
Institute of Civil Engineers	Water UK
IPHAS	Waterwise
MIND	Welsh Water (Dŵr Cymru)
Mouchel	Wessex Water
Natural England	WRc
Northumbrian Water	Yorkshire Water

There were also 37 responses from individuals, Andrew George MP, Linda Gilroy MP and Matthew Taylor MP; all from the South West.

Respondents to the Interim Report: (112)

Companies/Organisations (55)	Individuals (57)
Age Concern and Help the Aged	Andrew George MP
Anglian Water	Doug Henderson MP
All Parliamentary Party Water Group (APPWG)	Jim Cousins MP
Blueprint for Water	John Cummings MP
Bournemouth & West Hampshire Water	Julia Goldsworthy MP
Bournemouth Borough Council	Linda Gilroy MP
Bradford University	Dan Rogerson MP
Budock Parish Council	Matthew Taylor MP
British Property Federation	Roberta Blackman-Woods MP

Companies/Organisations	Individuals
Citizens Advice Bureau (CAB)	Dari Taylor
Consumer Council for Water (CCWater)	George Lidbury
Chartered Institute of Environmental Health (CIEH)	Les Pengelly
Civil Service Pensioners Alliance	Pauline Cowen
Department of Work and Pensions (DWP)	Peter Devenish
Dwr Cymru/Welsh Water	Deidre Saint John
Eaga	Jim Green
Energy Saving Trust	Dieter Helm
Engage Consulting	Kevan Jones
Environment Agency (EA)	Peter Atkinson
Experian	Roland Rench
Greater Lincoln & Gainsborough Division	Sir Ian Byatt
Intelligent Metering Initiative (IMI)	Bill Roberts
Kent County Council	James Biscoe
Landlords Associations	Mr Dixon
Mawnan Parish Council	Shona Adams
Mayor of North Tyneside	Alan Campbell
Middlesborough Council	Anthony Atkins
Mouchel	Andy Thomas
National Consumer Federation	Carol and Alan Wilson
National Trust	John Utting
North East Chamber of Commerce (NECC)	Christopher Maher
Northumbrian Water	Brenda Pitter
Ofwat	Nicola Jarvis
Onzo consulting	Paul Ambrose
Perranaworthal Parish Council	Wendy Kellet
Portsmouth Water	B Saunders
Public Utilities Access Forum	M Barber
Society of British Water & Wastewater industries (SBWWI)	Ken Gibbs
Scout Association	John Fairbanks
Serio, University of Plymouth	Ralph Solomons
Southern Water	Paul Cairney
South West Water	Carole Williams
Severn Trent Water	L Steele
St Day Parish Council	Geoffrey Revill
Thames Water	Lesley Rafferty
University of East Anglia (UEA)	Brian D'Eatn
UNISON	Einan Baker
United Utilities	Renee Bayfield
Veolia Water	Mike Ayers

Companies/Organisations	Individuals
Water Industry Commission for Scotland (WICS)	Alan Woodburn
Water UK	Rod Lampen
Waterwise	John Fleet
Wessex Water	Paul Simmons
World Wildlife Fund (WWF)	John Phillips
Yorkshire Water	David and Christina Wheeler
	David Stone
	Charlotte MacKenzie



Annex 3 – Summary of responses to the interim report consultation

The Big Issues

- 1.0.1 The review team recommended that the true value of water be used in future decision making processes and that the Environment Agency and Ofwat continued to work on a methodology for valuing water as quickly as possible. It also recommended that the Environment Agency should revise its water stress maps on the basis of catchment areas or water resource zones to fully reflect water resource pressures and the updated projections from UKCIP 09.
- 1.0.2 Blueprint for Water, Energy Saving Trust, Kent County Council, Ofwat, most of the water companies, UNISON, Waterwise and WWF welcomed the recommendation that the true value of water be used in future decision making. Bournemouth & West Hampshire, CCWater, South West Water, Southern Water, UNISON, Wessex Water supported the recommendation in principle, but were concerned that this would drive up costs and therefore bills. Bournemouth & West Hampshire also stated that even if affordability concerns are addressed then other customers would have to bear the increase in bills which contradicts the review team's fairness principles. CIEH did not support this proposal and added that it will be a very hard concept for economists to agree on and for the public to understand. Water UK had concerns that the notion of true value of water was vague and about how it would be assessed. It could also lead to higher bills, at least in the short term, as more expensive investment decisions are taken. Ofwat agreed that the definition of the true value of water is crucial and believed that the way to reveal it is through free trading within the environmental limits for abstraction set by the Environment Agency. United Utilities stated that most water companies' WRMPs already do take into account the true value of water to some extent.
- 1.0.3 Bournemouth & West Hampshire, Ofwat, Portsmouth Water, Waterwise, WWF and Yorkshire Water welcomed the recommendation that the EA reassess their water stress maps. Bournemouth & West Hampshire, CIEH and Portsmouth Water went on to state that the EA should revise its methodology for assessments of water stress. United Utilities and Wessex Water added that as the methodologies are so flawed at present that the maps should not be the only tool used to inform decision-making. The Environment Agency agreed that the methodology needs reassessment and will continue to develop this to inform future investment decisions and operational decisions.
- 1.0.4 Severn Trent added that through all of these measures there needs to be more research on whether these measures will actually deliver the more efficient use of water and change behaviour at the tap.
- 1.0.5 APPWG stated that at present the charging system is fundamentally unfair and that where certain investments have a clear public benefit that this should be funded by the taxpayer.
- 1.0.6 Anglian Water stated that since the revisions to the Water Industry Act 1999, there is now a lack of clarity with regards to responsibility for charging policy, this has allowed Ofwat to be highly prescriptive in some areas of charging policy but to avoid taking responsibility for other issues surrounding affordability. This reduces companies' ability to innovate.
- 1.0.7 Age Concern and Help the Aged stated that water bills are going up and that affordability is already a concern. They went on to state that although environmental improvements are essential for securing future supplies and water quality, that the decision makers have paid too little attention to the impact that they are having on customers' bills.

Current system of charging for water

- 2.0.1 A number of respondents supported the need for an alternative system of charging. APPWG, SBWWI, UNISON and WWF added that the current system of charging is unsustainable and unfair; it needed to move to a volumetric based system whilst protecting those least able to afford their water bills. Severn Trent, Southern Water and Yorkshire Water believed that the rateable value based charging system was increasingly untenable. A member of the public was concerned that the differential between metered and unmetered bills needed to be calculated property so that there were no cross subsidies between metered and unmetered customers.
- 2.0.2 The review team recommended that Ofwat should look at the variation between sewerage bills in England and Wales and assess whether they are justified.
- 2.0.3 Most respondents supported this recommendation. Many water companies and Water UK believed that a number of factors influence the composition of the bills, such as local circumstances, historic reasons and differences in methodology used. They added that there was no correct way to recover sewerage costs and if consistency was required then Ofwat should provide a standard methodology for companies to follow. Anglian Water and CIEH thought that costs should be based on the primary cost drivers (volumes, strengths, peak loads etc.). Severn Trent Water pointed out that companies allocate their costs differently, some companies collect surface water drainage by surface area whereas others by volume and highways drainage can be recovered differently too.
- 2.0.4 CCWater believed that any rebalancing of charges arising from this recommendation would need to take careful account of the views and impacts on both household and non-household customers. CIEH agreed that the review team need to look at the impact that commercial tariff structures have on domestic bills. Ofwat agreed that there is no definite best way to allocate costs, with different companies using different methods, and stated that they are developing their understanding on cost allocation as part of their work on accounting separation.
- 2.0.5 The review team also asked for responses on why customers remain unmetered and why.
- 2.0.6 Bournemouth & West Hampshire, Severn Trent and South West Water thought that it is either demographics, localised lack of pressure on water resources, reassurance of a certain bill, customers on a joint supply, those properties that cannot easily be metered and those high use customers that would lose out by switching to a measured charge. United Utilities estimated that on average around 10 per cent of households will not be able to be metered because of prohibitively high costs. Eaga stated that many customers are still unaware of the issues surrounding metering and so are not informed as to the potential need or benefits in their area, they went on to add that meter optant checking can help with this process.
- 2.0.7 CCWater added that from their research¹⁰⁵ it is low-income groups who are the most resistant to metering and that more generally customers can be resistant because of a belief that water is an essential of life and should not be measured and a distrust of companies' motivations for metering. Wessex Water thinks that many of their low-income customers would lose out financially with metering. South West Water believed that they should be allowed to compulsory meter customers in debt that would benefit from being charged on a metered basis.

¹⁰⁵ Living with Water Poverty – Creative Research (CCWater 2009)

Fairness Principles

- 3.0.1 The review team stated that a fair charging system should be fair to future generations without being prohibitively expensive, should charge to recover the costs of the system, incentivise the efficient use of water, be based on the 'polluter pays' principle and address affordability.
- 3.0.2 Respondents were broadly in agreement with these principles including Age Concern, CCWater, most of the water companies, Eaga, Environment Agency, Ofwat and Water UK. Many respondents went on to add that the key principle is that water is affordable to all, Wessex Water wanted to add another principle that no household should have their basic water use rationed by an ability to pay. Many water companies also stated that water poverty should not be dealt with through water bills but by Government.
- 3.0.3 There was more debate around the principle that costs should reflect regional differences and remain on a regional basis and geographically averaged. Age Concern highlighted that many of the regional differences in water bills is what is exacerbating the affordability problem. CIEH were concerned that there was great variation in the cost-efficiency of different companies meaning that some customers were disadvantaged within their regional monopoly. South West Water was disappointed that many of the costs imposed on their charging system for improving bathing waters that they consider a national asset are not recommended to be funded by the national customer or taxpayer. Whereas all of the water companies (except South West Water), CCWater, Ofwat and Water UK all agreed with this principle.
- 3.0.4 The review team then asked for comments on which environmental improvements should be funded nationally either by the customer or taxpayer. Many respondents agreed that all environmental improvements should be paid for by the national taxpayer, the reasons being that Government signs up to the EU Directives that have a wider public benefit and that they should be paid for through the tax system as it is more progressive than through charging the water customer. Many water companies stated that national taxation was the only payment system that would not be administratively burdensome whereas inter-company transfers would not be cost-effective. Many respondents stated that any investment that goes beyond the 'polluter pays' principle and has wider public benefit should be funded nationally. CCWater highlighted that in many European countries environmental costs are paid for from a system separated from the water customer. Ofwat was cautious as to moving towards either the national water customer or the taxpayer because water companies have developed a good understanding of local conditions and learnt to manage resources locally. Ofwat went on to add paying for environmental improvements nationally would remove the incentive for companies to deliver all of their services in an environmentally sustainable manner and weaken the 'polluter pays' principle. Portsmouth Water stated that although Government decides what improvements must be made, it is the water company that decides on investments and that they are the ones directly accountable to their water customer. Many water companies stated that since privatisation, many investments could be deemed to have been environmental costs with a wider public benefit; therefore moving to a new charging system would need to recognise historic investment and costs should be paid retrospectively.

- 3.0.5 Finally the review team asked respondents to comment on the need for all new burdens on the water customer to undergo a full impact assessment taking into account the impact on bills, a consultative process with local customers and 'willingness to pay' studies. Most respondents agreed with this proposal. Age Concern stated that they would go further and ensure that impact assessments would need to be completed before Government signed up to additional EU legislation, they went on to state that because it is the water customer that is impacted and not the taxpayer, government is not minded to consider the full impact. CIEH was cautious as to the effectiveness of these impact assessments, CIEH stated that they thought it difficult to predict accurately the impact on all water companies and demonstrate the full costs of new legislation.

Future Charging System: Options

- 4.0.1 The review team concluded that neither council tax band nor the RV system should form the long-term basis for charging for water.
- 4.0.2 Most respondents agreed with this conclusion. Many of the water companies agreed that the RV system was increasingly untenable and Unison added that the RV system is no longer a fair and reliable system. CCWater however cautioned that, although the RV system should not be the long term basis for the charging system, the transition to a new charging system should be subject to a robust cost-benefit case. Dŵr Cymru pointed out that council tax bands in Wales are more accurate and that the Welsh Assembly Government may want to keep this option open in Wales. CIEH preferred a system based on council tax bands to one based on rateable value.
- 4.0.3 The review team also ruled out using occupancy as the basis for the main charging system. All respondents agreed with this stating that the collection and maintenance of such data would be unpractical and expensive. One member of the public supported charging based on an estimate of water use calculated with a water calculator. The review team also concluded that the number of bedrooms should not be the basis for the main charging system. All respondents agreed with this. The review team did not recommend either using property type or a flat rate as the basis for the main charging system. All respondents agreed with these conclusions.
- 4.0.4 The review team concluded that the charging system that met all of the fairness principles in Chapter 2 was to charge by volume used. Most respondents supported this conclusion. Unison added that metering needs to be linked to the right tariff and CAB stressed the need to ensure the protection of vulnerable and low-income households in any future system. Ofwat supported the acceleration of metering where the benefits outweigh costs, while the Civil Service Pensioners' Alliance believed the transition to metering should take place through optants. CCWater agreed with the need for cost-benefit analyses but pointed out that affordability issues need to be addressed before metering is accelerated. Dŵr Cymru accepted that metering may be the right long-term goal, but remained cautious about the costs and benefits of widespread metering in Wales and pointed out that, as a collective, unmeasured customer do pay for what they use. The Public Utilities Access Forum and CIEH did not support this conclusion stating that the review was too heavily weighted towards metering and needed to explore further alternative measures for unmetered customers. Age Concern also disagreed with this conclusion, as the majority of the costs reflected in the water bill was not related to the volume consumed.

- 4.0.5 The review team concluded that for the mixed charging system was acceptable for the interim period. Most of the respondents supported this conclusion. Northumbrian Water added that there is not a case for introducing a new unmeasured basis of charge, as it would only delay metering and there are no logical alternatives. United Utilities pointed out that when the number of unmeasured customers is so low that optant rates drop significantly there may be a need to create an alternative charging system for those left. Age Concern and Help the Aged however were disappointed that the review team had not concluded that the RV system should be replaced in the interim as the relationship to income has become eroded. They added that there is an urgent need to replace the RV system and that there should be a cut off date for the RV system, with social tariffs becoming mandatory. Eaga suggested that large families will need to be incentivised to use water more efficiently in areas that remain unmetered for some length of time.
- 4.0.6 The review team stated that the pace of metering will depend on its costs and benefits and on finding solutions to the issues of affordability. Most respondents supported this recommendation. A number of respondents believed that solutions to affordability for low-income households were needed quickly. Ofwat, CCWater and the EA all agreed that the transition to metering needs to be carefully managed. Dŵr Cymru was not convinced that in Wales the cost-benefit analysis would stack up in favour of accelerated metering. Many other respondents also agreed that cost-benefit analyses should determine the speed of transition in each company area. Mouchel Consulting added that in areas with a high number of properties with a low RV it is unlikely that the economic business case will be justified. Northumbrian Water pointed out that in most company areas, almost universal metering will be achieved by 2020-25 and that the remaining unmeasured customers should be then moved onto an assessed charge. Even in water rich areas such as Northumbria they expect to see all RV charges replaced by meters.
- 4.0.7 The review team also concluded that affordability issues will need to be addressed outside of the main charging system. Almost all the respondents agreed with this conclusion. The Civil Service Pensioners' Alliance supported this conclusion, provided it is able to take into account the specific difficulties of customers from South West Water and parts of Wessex Water. A number of water companies and Water UK stated that affordability issues need to be addressed through the tax and benefits system to be most effective, anything else would be second best. Wessex Water however disagreed with this conclusion, stating that affordability measures needed to be addressed within the main charging system, so that only a small group of customers required additional help from outside the main charging system. They added that it would be unsustainable to provide help to more than 1-3% of customers outside the main charging system, as any more than this would threaten other customers' acceptability.

Measured Charging and Meters

- 5.0.1 A number of respondents provided general comments on the metering chapter. There was general agreement that the transition to a charging system based on volume used needed to be managed. Sir Ian Byatt believed that the imposition of universal compulsory metering would be problematic and suggested instead that water companies should be able to insist on metering on change of occupier. Wessex Water also believed metering on change of occupier was the best approach. Ofwat highlighted that metering is a means to achieve other objectives, and not an end by itself. CCWater believed that a full examination of distributional impacts of metering should be a pre-requisite of any decision making process and drew attention to the fact that 27 per cent of consumers would oppose compulsory metering. Citizens Advice Bureaux and Age Concern and Help the Aged stressed the importance of having solutions for affordability issues. A number of respondents stressed that any metering programme should be justified by the cost-benefit analysis, which depends on the circumstances of each company. CIEH believed that metering is too expensive a way to reduce demand, and a better approach would be to help households become more water efficient. A number of respondents highlighted the need for Government leadership, with a clear policy for water companies and regulators to follow that would ensure consistency of approach. WWF believed that universal metering was needed by 2020 in England and Wales, with the pace of roll-out determined where the benefits are highest.
- 5.0.2 The review team recommended that the true value of water should be built explicitly into investment and operational decisions until such time as it is reflected in the abstraction regime. The review team also recommended that the Environment Agency and Ofwat should continue to work on a methodology for valuing water as quickly as possible. The responses to these recommendations are summarised in section 1 of this annex.
- 5.0.3 The review team noted that the information submitted to the call for evidence showed a significant variation in the water companies' estimates of unit costs for meter installation. Some of this variation was explained by the differences in costs dependent on meter location or type of metering programme, but these factors did not explain the whole difference. The review team asked whether installation costs deserved greater regulatory scrutiny. The Energy Saving Trust supported the need to scrutinise these differences. The majority of respondents – mostly water companies – believed that the difference was due to the different ways in which different companies calculate the costs, due to a lack of regulatory clarity on how installation costs should be assessed. Water UK and Yorkshire Water suggested that Ofwat and water companies could work together to develop definitions and methodology to calculate these costs so they are comparable in the future.
- 5.0.4 The interim report analysed the benefits and costs of metering and invited comments on the review team's cost-benefit analysis. It also asked for more evidence on costs and benefits, information on the proportion of meters that are located at the boundary and the cost of leak repair. The responses on these issues are summarised in annex 6.
- 5.0.5 The interim report recommended that compulsory metering should be introduced for high discretionary water users, where the true value of water is high and where the levels of metering are already high.

- 5.0.6 In the case of households with high discretionary use, the review team concluded that it is both fair and advantageous to compulsory meter these properties. The review team believed that the current Prescribed Conditions Regulations are too limited, and that the current regulations needed to be extended to cover other circumstances of high discretionary use. In particular, the review team invited views on whether the powers to compulsory meter households should be extended to all properties with an outside tap.
- 5.0.7 The majority of respondents supported the principle of metering high discretionary users and the need to extend the current Regulations, but expressed concerns about using an outside tap to identify such users. Blueprint for Water, the Energy Saving Trust, the Environment Agency, most water companies, Water UK, Waterwise and WWF supported this recommendation. CCWater supported this approach if it is applied consistently and is clearly defined, well communicated and policed to ensure compliance. Severn Trent and Water UK stressed that it is key that any provisions to meter these properties are practical and easy to interpret, police and enforce. South West Water did not support metering in these circumstances because the provisions rely on self-declaration and are not realistically enforceable. Wessex Water did not support compulsory metering as it could cause affordability problems and loss of customers' goodwill. They believed a better approach was to meter on change of occupier. Finally, CIEH and the Public Utilities Access Forum did not support metering in these circumstances.
- 5.0.8 Only two respondents supported compulsory metering properties with an outside tap. One of them (Environment Agency) believed that more evidence was needed on the relationship between the presence of the outside tap and outdoor water consumption before the policy was adopted. Most respondents – CCWater, CIEH, Ofwat and most water companies – believed that the presence of an outside tap did not necessarily mean that the household had a high discretionary use of water. Dŵr Cymru and United Utilities believed the proposal was impractical. Water UK was concerned that, given the number of properties with outside taps; this policy would be akin to compulsory metering. South West Water thought that a policy of metering properties with outside taps would be divisive and was not necessarily a good indicator of discretionary water use. It suggested that a better measure of high discretionary water use would be whether a property had a garden. However, a policy of metering properties with gardens would bring industry into conflict with customers and, therefore, could not be supported.
- 5.0.9 A majority of respondents did not support the recommendation for compulsory metering where metering had reached a certain level. Views were more split than for other recommendations. The Environment Agency, the Energy Saving Trust, four water companies, UNISON and WWF supported this recommendation. Sir Ian Byatt, CCWater, CIEH, the Civil Service Pensioners' Alliance, Ofwat and five water companies did not support the recommendation, although this was for a number of different reasons. Ofwat believed that the trigger would vary between companies and that any decision to compulsory meter should be subject to a cost-benefit analysis, rather than have an automatic trigger. Portsmouth Water did not believe the policy would be cost-effective. Water UK was concerned that no water company should be forced to introduce compulsory metering, as it might not be the appropriate way forward for the company's circumstances. Dŵr Cymru found hard to envisage any threshold that should trigger compulsory metering in their circumstances. United Utilities thought that compulsory metering in areas of low water stress might make it difficult to maintain customers' goodwill. CCWater and South West Water believed affordability was key. Wessex Water supported instead metering on change of occupier. The Civil Service Pensioners' Alliance believed it was best if metering continued to

grow through optants; if it was necessary to consider compulsory metering, a clear majority of households in any area should already be using meters. CIEH believed that the savings would be low. On the other hand, Northumbrian Water believed that there will be a level of metering at which compulsory metering for the remaining properties would be a necessary and logical step.

- 5.0.10 The interim report also asked for views on what the level of metering that trigger compulsory metering should be. Most respondents believed that any trigger would need to be different in each area, as it would vary from company to company. Severn Trent believed any trigger would vary with the extent of water scarcity in the water company's area. The Energy Saving Trust believed that 60-70 per cent seemed an appropriate threshold.
- 5.0.11 The review team recommended compulsory metering should be introduced where the true value of water is high. The majority of respondents supported this recommendation. Blueprint for Water, CCWater, the Energy Saving Trust, the Environment Agency, the Mayor of North Tyneside, UNISON, three water companies, Waterwise and WWF supported the recommendation. CCWater supported the recommendation in principle, subject to a robust cost-benefit assessment and affordability solutions for low-income customers. Ofwat supported extending compulsory metering where the benefits outweigh the costs, subject to a framework of checks. Northumbrian Water supported the recommendation in principle, subject to cost-benefit analysis and taking into account local circumstances. UNISON supported compulsory metering linked to revised water stress maps. The Energy Saving Trust believed that all water companies, regardless of level of water stress, should be allowed to compulsory meter here it is the most sustainable option for maintaining the supply demand balance. On the other hand, Water UK believed that no water company should be forced to introduce compulsory metering. Portsmouth Water did not support the recommendation and believed the concept of true value of water is too vague. Wessex Water did not support compulsory metering, as it could cause affordability issues and loss of customers' goodwill. In any case, it believed that any metering proposals should be based on the analysis of the costs and benefits. CIEH did not support the recommendation, and believed a better approach would be to constrain the demand of incomers into water scarce areas. Finally, the Civil Service Pensioners' Alliance believed it was best if metering continued to grow through optants.
- 5.0.12 The review team recommended that the right to opt for a meter should continue to be offered to all customers. All respondents who commented on this recommendation supported it. CIEH supported the recommendation, subject to ensuring that opting for a meter ceased to be at the detriment of other consumers.
- 5.0.13 The interim report recommended that water companies must ensure that their low-income customers who are also low users and would benefit from being metered are identified and encouraged to apply for a meter. Respondents' views were split on this issue. Eaga and the Civil Service Pensioners' Alliance supported this recommendation. CCWater believed that water companies should do this, but recognised that identifying these customers could be difficult. Ofwat would support water companies who wanted to do this, but pointed out the difficulty of identifying these customers. Bournemouth & West Hampshire already do this if they identify a customer that would benefit, but again the lack of information was identified as a barrier to do this more systematically. South West Water supported the recommendation in principle, but would need the information to identify low-income households.

- 5.0.14 On the other hand, Water UK did not support the recommendation, as water companies do not have information on customers' income. These customers might also be least able or willing to respond to the incentives created by metering, therefore being limited benefits to balance the costs incurred. Portsmouth Water did not believe metering should be targeted at low-income customers, as many would see their bill rise. Southern Water, United Utilities and Wessex Water did not support the recommendation, as it was impractical in the absence of data on income and water use by individual unmeasured households. Wessex Water also had concerns about a water company being expected to encourage customers to make a determined financial decision. CIEH did not support the recommendation, as whether a customer benefits or not from metering depends not only on volume used, but also on the tariff. Meters also expose low-income customers to costs pressures they do not face while unmeasured.
- 5.0.15 The review team recommended that, where optant metering is the driving force behind the increase in metering penetration, it might be appropriate for companies to be under an obligation to ensure that low-income customers are supplied on the lowest possible tariff. Most respondents opposed this recommendation. CIEH pointed out that optants opt for a meter because of the financial advantage, so it is unclear why they would need a lower tariff as well. Instead, those who need help are customers who are compulsorily metered or who remain unmeasured and their bill rises. A number of water companies and Ofwat explained that most water companies only have one standard metered tariff. Bournemouth & West Hampshire, Water UK and Wessex Water pointed again that water companies do not have information on customers' income. United Utilities believed that treating low-income customer differently would breach their duty for no undue discrimination, and therefore would need to be mandated by Government.
- 5.0.16 The review team also recommended that Ofwat set up a smart meter group, including the Environment Agency and water companies, to determine the costs and benefits of smart meters to inform any decisions on approach and potential roll-out of smart meters. This group should also direct the data strategy and analysis of smart meter trials and exploit any potential synergies. All respondents who commented on this recommendation supported it. Mouchel suggested that Water UK should lead the smart meter group. A number of respondents – Age Concern and Help the Aged, Energy Saving Trust, the Intelligent Metering Initiative, Onzo Ltd, SBWWI, UNISON – supported the need to look at the links with the roll-out of energy smart meters as soon as possible. Northumbrian Water and Yorkshire Water believed that the integration with energy smart metering has merit, but this was likely to be challenging with respect to the practical issues. Mouchel highlighted that with external meters (such as meter in the boundary of the property) there will be challenges on communications and power source to the internal communication network. Sir Ian Byatt stated that smart meters are more suited for the world of retail separation and internal metering. Northumbrian Water pointed out that energy smart metering would just provide access to a communications network at a lower cost than the water industry could achieve on its own.

- 5.0.17 CCWater believed that more evidence was needed on the costs and benefits of smart meters before any conclusions could be drawn, and indicated that they would wish to be actively involved in this group. Blueprint for Water and Waterwise suggested that energy representatives and Ofgem should be members of the group. The Energy Saving Trust volunteered to help facilitate joint working between energy and water smart metering. UNISON believed that Ofwat must be directed to allow for the general installation of water smart meters during 2015/20, linked to suitable tariffs. The APPWG and SBWWI would like to see adoption of smart meters, as they would achieve better control of demand and would give customers information to increase their awareness of their water use and how to control it. Both believed that neither customers nor taxpayers should pay the full costs of smart meters, but that the benefits on debt management and reducing peak demand would need to be taken into account. The National Consumer Federation thought that smart meters looked very desirable in that water use is transparent to customers. IMI and SBWWI believed that a water metering strategy needs to be in place by 2012 to make the most of the links between water and energy smart metering. CIEH pointed out that smart meters are expensive and it is not yet clear what benefits they accrue.
- 5.0.18 The interim report sought views on whether the smart meter group should evolve from the Intelligent Metering Initiative. The majority of respondents believed that, while the work done by IMI would be key for the work of the smart meter group, the smart metering group would have different objectives and members. A number of respondents – the Energy Saving Trust, engage, Environment Agency, United Utilities – pointed out that the membership of IMI is limited, while the smart metering group would need to include a wider number of stakeholders. IMI and SBWWI suggested that IMI should provide the technical secretariat to the smart meter group lead by Ofwat. Northumbrian Water suggested that IMI could evolve to consider the potential synergies between energy and water smart metering. United Utilities suggested that IMI could be the vehicle for the water industry to engage the energy sector.
- 5.0.19 The review team recommended that, when designing metering programmes that use dumb meters, water companies should consider how to minimise the costs of any potential future transition to smart metering. A majority of respondents supported this recommendation. Water UK expressed concern that this recommendation would increase costs, and asked that the review team indicated when such increased costs were justified. Bournemouth & West Hampshire stated that whether companies do this depended on whether Ofwat agreed that the plans were reasonable and cost beneficial so they were funded considering the longer term.
- 5.0.20 The review team recommended that assessed tariffs provide as good a proxy for water use as possible without being open to deception by unscrupulous householders. The majority of respondents supported this recommendation. Southern Water believed that number of bedrooms combined with average occupancy by number of bedrooms is a good proxy for water use. Sir Ian Byatt suggested that the use of assessed charges should be checked by sampling and investigation of complaints. CIEH believed there was a good case for the basis for assessed charges to be set nationally. A member of the public believed that the best proxy for water use was for the household to provide an estimate using a water calculator.

- 5.0.21 The review team sought views on whether multi-occupied buildings where individual meters cannot be installed should have a single meter for the whole property and the water company bill the individual household by apportioning the measured volume across the households in the building. A majority of respondents did not support this recommendation for different reasons. CCWater and the Environment Agency supported this recommendation, although CCWater expressed some concerns about the method of distributing the bill. Water UK believed that the issue needed to be explained in more detail, as there is a trend for more communal use. Ofwat and some water companies highlighted that bulk metering is not without problems, such as the blunted incentive to use water efficiently and problems with the division of the bill being seen as unfair. CIEH did not support bulk metering in this case, as it is unsatisfactory that bills are affected by other households' consumption. Sir Ian Byatt believed that innovation is required to deal with metering of apartment blocks and other multi-occupied buildings, such as a common meter with occupiers and landlords having the opportunity for subsidiary meters.
- 5.0.22 A number of water companies believed that bulk metering can work well where there is an agreed single legal entity liable for the bill – typically the landlord, a management company or the council for social housing – who then apportions the bill to the different households. Most water companies believed they should not have to apportion the bills as they do not have the data required to do this e.g. on occupancy. South West Water believed that, if there is no single legal entity responsible for the bill, the best solution is assessed charges given to individual units. A member of the public supported bulk metering these properties, with the bills apportioned according to a customised estimate of water use of each household through a water calculator. Any difference between the volume metered by the bulk meter and the total of the estimates would help identify any estimate that is not correct and initiate penalties if that is due to dishonesty by the household.
- 5.0.23 A number of respondents highlighted that new blocks of flats do not necessarily have individual meters in each household, as developers have not installed them during construction and it is too expensive for water companies to retrofit meters once the building is connected to the water supply. In these cases, the property is bulk metered. Bournemouth & West Hampshire, Kent County Council, Northumbrian Water, South West Water and United Utilities suggested that regulations should be amended to require new and significantly modified multiple occupation buildings to have individual meters for each household. Ofwat agreed that, where possible, new apartment blocks should have individual meters installed.
- 5.0.24 The review team recommended that the UK Government and Welsh Assembly Ministers should set out their policies on metering and make any necessary changes to the regulatory framework; and the regulatory agencies should work together to achieve the desired outcome efficiently. Most respondents supported this recommendation. In particular, Water UK and a number of water companies stressed the importance of key regulators working together, with Ofwat allowing the revenue to finance agreed metering programmes. CCWater believed that any planned transition to metering needs to be a step by step approach to ensure that customers' interests are protected and that the costs do not outweigh the benefits; check the desired results of water savings are achievable; the effect on the tariff basket is understood and that protection for vulnerable customers is in place. United Utilities believed that compulsory metering was needed in the long term and the Government should commit to a timetable for it. Blueprint for Water and Waterwise supported full water metering in England and Wales by 2020, supported with measures to protect vulnerable groups. They believed a regulatory or political driver is needed alongside incentives and the removal of legal barriers.

5.0.25 The review team recommended that Ofwat was asked to lead the delivery of metering in a pro-active way, publishing a report every one or two years. A majority of respondents supported this recommendation. The Environment Agency highlighted the need for Ofwat to work closely with others, including the EA. Ofwat agreed that the transition to metering needs to be carefully managed to ensure that customers, particularly where water is not scarce, do not have costs placed upon them without clear benefits. Water UK did not support the recommendation, as it believed that leading on metering is not consistent with Ofwat's duties to customers and companies. It is for Government to set the policy in metering, and Ofwat to ensure that the policy is implemented in a way that protects customers' interests. Southern Water and Wessex Water agreed that there will be no clear role for Ofwat to lead on metering, unless there is a clear ministerial direction. Northumbrian Water did not believe it appropriate for Ofwat to have such a role, but that the delivery of metering should be based on a robust cost-benefit assessment.

5.0.26 Only two respondents commented on the proposal that Ofwat should produce a report on metering every one or two years. Waterwise supported it and Northumbrian Water opposed it as it was not convinced of the benefits.

Future Charging System: Measured Tariffs

6.0.1 Respondents to this chapter submitted numerous general observations and opinions. Sir Ian Byatt pointed out that although meters are necessary for the future charging system, they alone are insufficient to meet all the policy objectives and that tariffs are crucial for this. Veolia stated that a tariff system should reflect the cost of water and not increase cross-subsidies between customers. Northumbrian Water added to this that there is very little willingness to pay for cross-subsidies between customers. Both these companies believed that help to low-income customers should come from the tax and benefits system. Northumbrian Water also believed that it is inappropriate to have a standardised national approach to tariffs, as tariff structures should be designed to meet the specific requirements of the company. Mouchel Consulting stated that the key is to decide what the objective of tariffs is: whether to incentivise demand reduction, tackle affordability or fairness. They added that the result of demand reduction may mean that the unit price would increase to recover the necessary revenue.

6.0.2 Unison believed that tariffs must ensure that all customers receive enough water for essential needs and the APPWG, Blueprint for Water, EA and SBWWI all agreed that metering together with tariffs are key to address demand and tackle affordability. Dieter Helm stated that rising block tariffs could be used so that consumers received a first block of cheap water and then extra demand would be charged at a higher price. Wessex Water thought that there is a need to encourage more sustainable water use while ensuring that no household has their basic water use rationed by their ability to pay. They believed this can be best achieved through progressively extending metering on change of occupancy, combined with seasonal tariffs and social protection built in into metered tariffs, with a safety net for those who are unable to afford charges. Wessex Water also added that there is a place in the main charging system for council tax bands or another progressive indicator combined with volumetric charging. WWF thinks that tariffs should incentivise sustainable water use while being simple and transparent for customers to understand. Age Concern and Help the Aged stated again that all social tariffs should become mandatory with minimum standards.

- 6.0.3 The review team asked for views on how the guidance from Government to Ofwat on metered tariffs should be cast and whether it was needed. CIEH stated that customers should pay broadly the same for the same service, notwithstanding regional pricing. Northumbrian Water, Ofwat and Southern Water believed no additional guidance is necessary. Yorkshire Water supported the need for revised charging guidance from Government to Ofwat, providing it reflected the review's fairness principles. CCWater stated that any revised guidance to Ofwat and companies should take into account customer acceptability as well as the effectiveness and practical implications of alternative metered tariffs. Finally, Bournemouth & West Hampshire Water believed that whether revised guidance was needed would depend on how the issue of affordability was dealt with.
- 6.0.4 The review team recommended that a high proportion of the metered tariff should be collected through the volumetric charge, with the unit price being no less than the true value of water. CIEH pointed out that there is little point to metering unless the majority of revenue is collected through volume, but added that most of the costs are fixed. The EA, Energy Saving Trust, United Utilities and Bournemouth & West Hampshire were supportive of this recommendation. Dŵr Cymru however had concerns that a high volumetric charge could cause more affordability problems, as there is no relation between income levels and water use, while most costs are fixed. Water UK and Northumbrian Water were concerned that the true value of water was vague and it was too early to use it in a policy context. Northumbrian Water added that it is important to balance the incentives to reduce demand against the nature of the costs, the majority of which are fixed. CCWater reiterated that, as the majority of costs are fixed, a fall in demand would lead to a rise in the unit price leading to customers feeling that they are paying more for less service. Sir Ian Byatt stated that water companies like high standing charges because it provides a level of certainty about cost recovery. The University of East Anglia (UEA) thinks that consideration needs to be given to how customers respond to the unit price of water and think that the unit price should not exceed the full value of water. The Public Utilities Access Forum did not agree with this recommendation stating that the review needs to take in to account that most of the costs are fixed.
- 6.0.5 The review team also recommended that Ofwat review the division between standing charge and volumetric charging in metered tariffs. UEA, Yorkshire Water, United Utilities and Ofwat all supported this in principle. Age Concern and Help the Aged were against standing charges altogether stating that, provided bill were more transparent, all water usage should be charged on volumetric basis. Water UK pointed out that this might not be in keeping with the 'polluter pays' principle. Dŵr Cymru pointed out that it is stated in the interim report that there is a need to ensure second home owners contribute to the costs on the network which means a high standing charge. Wessex Water believed that the ratio between standing and volume charges should not be too prescriptive and needed to reflect that most costs are fixed. The ratio might vary through the year, to reflect that the true value of water is different in winter and summer.

- 6.0.6 The review team concluded that Rising Block Tariffs (RBT) could not be recommended as a general tool to address affordability, as there is no robust data on household occupancy. Almost all of the respondents supported this conclusion. South West Water added that there needs to be more work on the costs and benefits of RBT and they are currently undertaken a trial. Southern Water agreed with the review team stating that their modelling suggests that RBT is no better for affordability than the current two-part tariff. UEA however pointed out inconsistencies in the interim report stating that we said that affordability was to be dealt with outside of the main charging system and then dismiss RBT because it does not tackle affordability. Unison thinks that a RBT could be designed with a large first block that suited most households. A member of the public believed that the fairest tariff would be a RBT that took into account occupancy and where the charge per block varied with the council tax band. The occupancy data would be obtained by self-declaration, with penalties for providing false information.
- 6.0.7 The review team also ruled out Declining Block Tariff (DBT) as the main basis for charging, as it weakens incentives to reduce discretionary use of water. All respondents supported this conclusion; UEA added that DBT should be dismissed because the marginal costs of water are increasing, not because it does not incentivise efficient use of water.
- 6.0.8 The review team also concluded that, until tariff trials are completed, no definite conclusions can be made on the different tariff options. Most respondents agreed with this conclusion. Dŵr Cymru added that more trials were needed for seasonal tariffs to provide information on whether they are beneficial in the round. The Public Utilities Access Forum stated that the results of all tariff trials must be made publicly available for scrutiny. UEA believed that innovative tariffs should be given more consideration and were disappointed that the review team had overlooked international studies focusing on them.
- 6.0.9 The review team proposed that Ofwat should work with the water companies to ensure that tariff trials provide robust information on behavioural change aspects. All respondents supported this recommendation.
- 6.0.10 The review team also concluded that seasonal tariffs showed potential to control summer time peak demand. Most respondents agreed with this conclusion. Bournemouth & West Hampshire added that seasonal tariffs would be their preferred option with customer specific baselines – based on winter household use - which would target both high discretionary use and household occupancy. Wessex Water pointed out that it is essential to incentivise sustainable water use and that can be best achieved through progressively extending metering on change of occupancy, seasonal tariffs with social protection built in into metered tariffs and a safety net for those who are unable to afford those charges. United Utilities pointed out that a seasonal tariff would require smart meters.
- 6.0.11 The review team finally proposed that wherever there are distributional consequences from the introduction of changes to tariffs, they should be assessed and considered against the review's fairness principles. Again most respondents agreed with this recommendation. The Scout Association added that Government should issue guidance to Ofwat requiring an Impact Assessment is undertaken before any new charging policy is implemented in the future. Northumbrian Water added that it is essential that customers regard accept any new tariffs as fair for it to be acceptable. Severn Trent stated that Ofwat should first consider how well a tariff addresses its objectives, how will it impact on customers' bills, how any transition will be managed, how easy is it for customers to understand and react to the tariff in the way it is intended and is it cost-beneficial.

6.0.12 A number of respondents raised social tariffs. Water UK believed that social policy was a matter for Government and any social tariff should be set in guidance by ministers. The Scout Association believed the Government should issue new guidance to Ofwat allowing water companies to develop social tariffs with Ofwat's approval. Age Concern and Help the Aged supported mandatory social tariffs with minimum standards. UNISON believed social tariffs are needed to help certain customers with affordability problems and Ofwat should be empowered to require water companies to operate a social tariff. Portsmouth Water thought social tariffs could be costly and complex to implement, as well as reduce the incentive to reduce demand.

Future Charging System: Sewerage Services

- 7.0.1 In general this chapter received the smallest number of responses from stakeholders. However, in general, respondents thought that the sewerage system needed upgrading. Blueprint for Water stated that there should be the universal adoption of SUDS and Yorkshire Water added that it should be sewerage undertakers who adopt and maintain SUDS. Both the APPWG and SBWWI thought that the review team should consider whether there should be further connections to existing combined sewers for highway drainage.
- 7.0.2 The review team proposed that foul sewerage should continue to be charged on the same basis as water supply. This was supported by all respondents.
- 7.0.3 The review team also proposed that all the main players should consider how the future charging system could incentivise householders to minimise the amount of rainwater run-off entering the sewerage system. The EA, Blueprint for Water, various water companies and WWF all supported this proposal. South West Water was concerned about the potential administrative costs of a revised charging system. In particular, it believed that giving discounts on SWD charges for partial SUDS would be costly to operate while providing little benefits in costs savings. CIEH pointed out that combined sewers do need some rainwater for flushing, so should be careful not to divert too much rainfall away from the network. On the other hand, Water UK and Wessex Water did not support this proposal, stating that the incentives are not large enough to incentivise sustainable behaviour and would be too expensive to operate. Ofwat stated that they were in favour of promoting the reduction of rainwater run-off entering the network in areas at risk of sewer and surface water flooding. However, incidence effects had to be taken into account.
- 7.0.4 Respondents were asked for views on how the charging system could incentivise more sustainable SWD. Only water companies responded to this question. Southern Water stated that in theory the fairest way was to charge on the basis of impermeable surface area; however they cautioned that this would potentially produce some variation in customers' bills and be expensive. Wessex Water added that charges could vary with property type, but the aim of this change would be to help affordability rather than change behaviour. South West Water remained doubtful over the feasibility of retrofitting small scale SUDS in urban areas, and the costs.

- 7.0.5 The review team recommended that Ofwat looked at the variation in charging households for SWD as part of the work on future charging system to ensure that the distribution of costs is fair and the right incentives are in place. The views of respondents varied on this recommendation. Dŵr Cymru did not support charging by drained area and added that drainage decisions need to be influenced at the planning and development stage to be effective. Northumbrian Water supported charging by SWD as a fixed element of the standing charge. CCWater supported in principle charging according to the demands place in the network, but in practice a cost-benefit analysis would need to be carried out to see whether the costs outweigh the benefits, as the variation in size of households is much smaller than in non-households. There might be a case for treating tower blocks differently to reflect their relative small area per household and for a reduced charge for households that can demonstrate that SUDS in site reduce the amount of run-off they drain to the system. Linda Gilroy MP, on behalf of a group South West Water's customers, stated that SWD should be linked to water usage and not a flat rate. CIEH stated that the review should take into account the experience of SWD charging non-households. Ofwat stated that there is already an incentive for households not connected to the sewer for SWD and any further incentive should not dilute this. In principle it is difficult to see how the costs vary for individual households that drain partially to the sewer, as size of households does not vary widely.
- 7.0.6 The review team asked for views on transferring Highway Drainage (HD) charges to local authorities (LAs), both on the principle and practicalities, including costs and benefits. Most respondents supported transferring HD charges to local authorities. CCWater believed that all HD charges should be transferred to LAs rather than only future charges. Severn Trent and Ofwat both agreed that transferring charges to LAs could incentivise Highway Authorities to reduce the volume of HD run-off that drained into the network, but the costs and benefits needed to be fully explored. Dŵr Cymru believed that charges needed to be related to the load for the incentive to work properly. Yorkshire Water supported the recommendation in principle, but it must first be shown that the change would incentivise behaviour change beyond measures in the draft Flood and Water Management Bill. APPWG, SBWWI and Water UK stated that charging highway authorities for HD could create the right incentive for LAs to determine when to replace connections to existing combined sewers with their own infrastructure. UNISON stated that HD should be removed from the water bill and recovered through council tax. CAB and CIEH, although supporting the proposal, were cautious about the reallocation of the costs as moving to council tax recovery would be costly and essentially have the same result for customers. CAB added that affordability could be helped due to the effect of council tax benefits on charges.
- 7.0.7 Four respondents – Age Concern and Help the Aged, CAB, CIEH and Public Utilities Access Forum – suggested that HD charges should be paid for with road tax revenues, as it would be in accordance with the polluter pays principle and make the recovery more progressive. Anglian Water did not support the transfer, stating that it is the quid pro quo for sewerage companies not paying rates on their sewers. Bournemouth Borough Council did not support the transfer, as much of the sewerage infrastructure was built and paid for by councils, transferred to water authorities in 1970s and privatised without councils receiving any recompense. It would be unfair to now charge LAs. It stated that there is also very little scope to retrofit SUDs on roads. The Civil Service Pensioners' Alliance and Bournemouth Borough Council were also not in favour as would simply increase council tax bills. United Utilities pointed out that charging LAs for HD charges could be restricted to new connections and not unwind the current pricing structure as the most pragmatic approach. The Local Government Association also opposed the transfer in conversation with the review team.

- 7.0.8 The review team asked for alternative ways for highway authorities to be incentivised to reduce the volume of highway drainage run-off. Only two respondents commented. Northumbrian Water stated that highway drainage should be designed so that it does not drain to public sewers and Water UK believed that highway authorities should not be able to connect to sewers in the future. Water UK believed that the report should include a timetable for this prohibition.
- 7.0.9 The review team concluded that greywater recycling did not justify increased sewerage charges. Most respondents agreed with this conclusion. South West Water disagreed stating that it is not consistent with the polluter pays principle. Water UK agreed for the time being, although this would need to be reviewed if these systems become more common.
- 7.0.10 The review team also concluded that charges should not change for households with rainwater harvesting systems. Again most respondents agreed with this conclusion. South West Water again disagreed on 'polluter pays' principle grounds and that they have concerns over the installation of these systems without informing the water company. Water UK agreed for the time being, although this would need to be reviewed if these systems become more common.

Affordability

- 8.0.1 In general respondents were concerned that there was no clear solution to affordability issues for measured and unmeasured customers. Although there were different positions adopted by respondents towards the areas that need addressing, overall respondents were disappointed that the interim report did not go further. CCWater were concerned that the Review had dropped the 3 per cent water poverty indicator and Water UK were concerned that any cross-subsidies across company boundaries would not be popular and would erode the link between customer and service provider. Portsmouth Water and CAB both pointed out that there are affordability issues in areas outside of high cost areas which are not addressed in the report.
- 8.0.2 Almost all respondents agreed that solutions to the affordability issues needed to be found outside of the main charging system with most respondents stating that it is the role of Government. Wessex Water was cautious; stating that in their operating area, over 9 per cent of customers would be eligible for a discount if council tax benefit was the indicator which would be unsustainable for their other customers.
- 8.0.3 The majority of respondents including United Utilities, CCWater, Water UK, CIEH, APPWG, CAB, Age Concern, Bournemouth & West Hampshire Water, Yorkshire Water, Blueprint for Water, Waterwise and Wessex Water agreed with the recommendation that Government should consider introducing a regional water benefit. There were strong concerns over the complexity and administrative burden of the proposed scheme. Bournemouth & West Hampshire Water were concerned about what would happen to customers at company boundaries and with water only companies resulting in more winners and losers. CAB was concerned that bills need to be reduced to affordable levels rather than average levels. DWP were concerned about the administrative complexity and that this proposal goes against the grain of the benefits system. The Water Industry for Scotland stated targeting would be difficult and would probably result with Government having to give the money directly to companies which would remove the incentive for companies to engage with their customers.

- 8.0.4 The majority of respondents were opposed to the proposal that in high bill areas, low income customers on council tax benefit would receive a percentage discount in their bill paid for nationally (either water customer or tax payer). MPs in the northeast were vociferous in their concerns that customers already struggling in the northeast would be disadvantaged. Many water companies operating in the north and northeast were also opposed to national cross-subsidies which would be difficult to administer. The Public Utilities Access Forum (PUAF), CIEH and northern water companies were concerned that those outside of high bill areas were not being considered, that there are affordability issues in all operating areas and that reducing the bill to an average level is still unaffordable for many customers. Most respondents stated that if this proposal went ahead then it would need to be funded through the national taxation system.
- 8.0.5 Respondents were asked to comment on proposals to widen the eligibility criteria for WaterSure and to cap the bill at either the national or regional average depending on which would be lower. Although there was some debate about the solutions for WaterSure all respondents were in agreement that the uptake of the scheme was poor and needed widening to include more customers. CCWater and CAB were concerned that WaterSure does not provide an appropriate mechanism to address affordability problems. Ofwat, CCWater, South West Water, Water UK, Eaga, Jim Cousins MP, Julia Goldsworthy MP, Matthew Taylor MP, Dan Rogerson MP, and Bournemouth & West Hampshire Water all agreed that WaterSure needed to widen the eligibility to include more medical conditions. Most respondents also agreed that the medical certificates that are needed to qualify for the scheme be provided free of charge. There was considerable debate regarding the cap at the national or regional level, United Utilities, Ofwat, Yorkshire Water, Wessex Water, Northumbrian Water and Peter Atkinson MP all disagreed with capping the bill at the national level. Whereas Bournemouth & West Hampshire and the South West MPs thought there could be some benefit. Many respondents were concerned at the unnecessary administrative burden of a national customer funded scheme. Many respondents from the North of England were concerned that their water customers were already struggling with affordability and couldn't afford to cross-subsidise non-regional schemes.
- 8.0.6 Most respondents were opposed to a water efficiency scheme targeted at low income households. On this point most respondents were adamant that this was inefficient and would be ineffective on both water efficiency and affordability. The objective should be to either address affordability or to reduce the wastage of water and trying to blend the two objectives would not achieve either goal. Waterwise, the South West MPs and Blueprint for Water supported the proposal, but thought that the scheme should be focussed on social housing for efficient and cost-effective delivery. Eaga supported the proposal but thought the scheme should be rolled out nationally as an extension to WarmFront rather than limited to low income customers. Ofwat also supported the scheme on the proviso that more was understood about the effectiveness of large-scale water efficiency schemes. Many of the water companies thought the all water efficiency schemes should be devised locally and that companies should have the flexibility to implement the most effective schemes.
- 8.0.7 In response to the emerging recommendation that Ofwat should build on its current duties to become more proactive in helping companies tackle affordability problems, respondents were generally in agreement. Although most of the water companies thought that Ofwat's duties are sufficient to help companies address affordability. South West Water stated that the undue discrimination duty on Ofwat has been the biggest obstacle to implementing innovative social tariffs. Ofwat and Wessex Water both called for a clear clarification of the undue discrimination duty and a framework for delivering affordability policy.

- 8.0.8 Respondents were asked to comment on the proposal that Ofwat should produce an annual report on affordability and debt issues. Almost all respondents agreed that this would be of benefit. However, Bournemouth & West Hampshire and Northumbrian Water were not convinced that this would benefit either issue and Water UK went further to comment on the additional regulatory burden. Ofwat stated that they would publish information on affordability from tariff trials and will draw together information for publishing on consumer research and monitoring of company activities. Ofwat also plan to collect and share good practice in promoting availability of schemes to support vulnerable customers in 2010/11 and will hold workshop to share good practice.
- 8.0.9 Respondents were then asked to comment on guidance provided by Ofwat and government on developing new social tariffs. Both CAB and Aged Concern stated that social tariffs should be mandatory and have minimum standards. Many respondents including South West Water, Wessex Water, the Scout Association and UNISON all agreed with the recommendation. However, many other water companies were opposed to new guidance stating that it is up to government and not the regulator or water companies to drive social policy and that there needs to be a stronger framework and leadership from government. The Water Industry for Scotland went on to say that increasing household cross-subsidies would require strong political motivation. Ofwat stated that they would be happy to develop social tariffs when cross-subsidies were mandated through legislation and that new guidance on these issues would be helpful.
- 8.0.10 Respondents generally agreed that there should be more flow of information to water companies to identify low income and vulnerable customers where there is an identified benefit. However this should not be limited to customers in receipt of council tax benefit.

Prevention, Management and Recovery of Bad Debt

- 9.0.1 There was almost unanimous support for amending the Water Industry Act (1991) so that companies are required by statute to bill a 'named person' rather than 'the occupier'. The Review Team received numerous contact expressing arguments against the landlords of private rental properties being ultimately responsible for their tenants unpaid bills.
- 9.0.2 Other respondents expressed that if the hierarchy of liability was to follow the council tax liability format, then there would also need to be equitable penalties to enforce payment. This would mean that non-payment of the bill could be pursued through the magistrates' courts rather than county courts, ultimately resulting in incarceration; this would significantly elevate the priority status of the water bill.
- 9.0.3 Most respondents agreed that it is beneficial to all concerned parties if customers are prevented from falling into debt rather than companies recovering debt. In order to move towards a more debt preventative system the water industry would need to know considerably more about their customer base.
- 9.0.4 There was a mixed response to the interim reports recommendation concerning an annual report from Ofwat specifically concerning affordability and debt and the performance of companies in this respect. Most respondents appreciated the need to improve debt management processes within companies but argued that the companies are not comparable in their debt procedures and the way the debt data is submitted is not standardised and therefore any comparisons drawn by an annual report would be misleading. Ofwat have responded saying that they will produce an annual report to document the ongoing efforts to reduce debt in the industry.

- 9.0.5 Respondents generally agreed that there should be more flow of information to water companies to identify low income and vulnerable customers where there is an identified benefit. However this should not be limited to customers in receipt of council tax benefit.
- 9.0.6 The majority of respondents supported the recommendation that water companies should look to develop voluntary agreements with Registered Social Landlords (RSLs) and Housing Associations (HAs) so that water bills can be collected alongside rent. Although some respondents pointed out that some RSLs and HAs have retreated from these arrangements due to debt liabilities and there was some concern that non-payment of the water element of the rent would result in homelessness.
- 9.0.7 Respondents agreed that bills need to be as concise and clear as possible. It was noted that most companies have consulted with their local customer base and have formatted their bills accordingly.
- 9.0.8 Most respondents supported the recommendation that should be more publicity on water debt advice and greater funding of third-party advice agencies. The advice from these agencies needs to be standardised though.
- 9.0.9 Most respondents were agreed that the third-party deduction scheme (known as WaterDirect) needs expanding so that more customers are eligible to use it, customers who are at risk of falling into debt should be allowed to apply and customers should have the option to remain on the scheme for current use once their debt has been repaid. Water companies stated that they do proactively apply on customers' behalf for WaterDirect, however the application procedure is a barrier in that they need personal data to apply on a customer's behalf which companies do not have. It was highlighted that there is not a standardised approach by regional DWP offices with regards to WaterDirect.
- 9.0.10 Respondents supported the recommendation that companies need to have accessible schemes for low income households.
- 9.0.11 Regarding the questions concerning the reintroduction of reduced flow meters (RFM), also known as trickle valve, or prepayment meters (PPMs), without the function to disconnect for non-payment, there was a wide scope of responses on both sides of the debate. Dŵr Cymru, Portsmouth Water, Anglian Water and Thames Water believe that there would be a benefit to reintroducing RFMs as it would provide a strong incentive to pay. However, Severn Trent Water and Yorkshire Water both believe that the expense of installing a RFM would mean that it is sparingly used, but all water companies agreed that even if rarely used the threat of installation would be an incentive for payment. CAB, UNISON, CIEH and CCWater all firmly reject the proposal to reintroduce RFMs claiming that it is tantamount to disconnection and illegal under the Water Act 1991. Regarding PPMs most respondents agreed that more research needs to be carried out regarding cost-effectiveness before introduction of these devices could be considered.

Water Efficiency

- 10.0.1 Many respondents were under the impression that the interim report suggested that the only water efficiency measures recommended were to target metered low income customers in order to improve affordability. On this point most respondents were adamant that this was inefficient and would be ineffective on both water efficiency and affordability. The objective should be to reduce the wastage of water and leave affordability concerns to government mechanisms.

- 10.0.2 Many respondents were not in favour of a climate change duty for Ofwat, citing that not only would this be ineffective but climate change mitigation is already included as one of the tenets of the sustainable development duty they already have. Some respondents pointed out that more importantly it would be for the Environment Agency to update their water stress maps using the UKCIP 09 climate change projection figures in order to give a clearer idea of how companies should plan their water resource management.
- 10.0.3 There was overwhelming support for moving water efficiency from within the operational efficiency calculations of companies and to be a stand-alone scheme. Many respondents were in favour of companies including the true value of water in their choice of resource options, although caution was stressed as to the complexity around this system. Ofwat stated that the current system incentivises water efficiency and allows companies to innovate. Many respondents did not agree with this view, all of the environmental groups and the Environment Agency stated that the regulatory framework is actually what stifles meaningful demand reduction and innovation. Severn Trent Water stated that Ofwat needs to recognise that significant water efficiency programmes will require significant investment within business plans. The majority of respondents did not support a water efficiency scheme targeting low income households as this is two confused objectives, neither of which would be achieved. Wessex Water thinks that tackling middle to high income, high discretionary use households would have more impact on demand reduction. Waterwise stated that it would be easier and cheaper to target social housing. CIEH submitted that the water industry needs a Water Efficiency Commitment, the reason being that it was the Energy Efficiency Commitment that generated energy service companies which become specialists in delivering efficiency measures.
- 10.0.4 All respondents supported the continued work on existing and new housing in terms of water efficiency. Many respondents highlighted the need to focus on existing housing, which comprises the largest proportion of the housing stock, to make the biggest impact. CIEH stated that focusing on efficiency measures is more beneficial in terms of effectiveness and cost than metering for reducing demand. United Utilities stated that until most households are metered, water efficiency is not incentivised in households. The Chartered Institute of Plumbing and Heating Engineers submitted that there is a current scheme underway called Green Plumb that trains plumbers to deliver water efficiency information to customers to a standardised level and that the Review should support registered plumbers to carry out future water efficiency work.
- 10.0.5 Most respondents agreed that there should be more synergy between water and energy companies to deliver efficiencies, suggestions that water audits should be carried out at all household visits in order to determine potential savings. Severn Trent Water stated that the lead for this needs to come from Government to coordinate all the messages and tie up synergies across utility sectors. Bournemouth & West Hampshire Water thinks that either there should be a Water Saving Trust or the terms of reference of the Energy Saving Trust should be extended. CIEH pointed out that the energy companies would benefit far more from these arrangements than the water companies.
- 10.0.6 All respondents agreed that water companies should work closely with Registered Social Landlords and Housing Associations to improve water efficiency, although it was highlighted that the majority of the decent homes programme has been completed and we may have missed a trick on water efficiency. CIEH pointed out that as the Decent Homes Programme is almost completed (18 per cent left at last count) we may have 'missed a trick'.

- 10.0.7 Most respondents agreed that water companies should be able to benefit from water efficiency measures under the Carbon Emission Reduction Target (CERT), however it was pointed out that many hot water products and fittings are not accredited under the scheme and that the scheme is due to finish in 2012 anyway. Blueprint for Water and Waterwise both stated that there needs to be more robust data on hot water fittings to gain accreditation within CERT and monitoring to ensure that savings are maintained. CCWater pointed out that it is difficult to identify hot water savings within the home and that most hot water is used for heating houses. CCWater went on to say that hard solutions are only part of the solution and that instigating behaviour change towards water use in the household is more important for long-term savings. Eaga stated that the CERT scheme runs out in 2012 and that there are many barriers within the system to utilising many fittings and products.
- 10.0.8 All respondents agreed that the labelling of water fittings and products needed to be clearer, more transparent and linked with the energy labelling scheme. Waterwise, Blueprint for Water and the Environment Agency suggested improving the incentives to buy water efficient products and fittings, whereas Energy Saving Trust pointed out that for any scheme to be successful there would need to be quality monitoring of products to ensure they performed as well as older fittings or products and so not send the wrong signals. The Environment Agency and Energy Saving Trust pointed out that there is already a voluntary BMA labelling scheme under development and that this should be supported.
- 10.0.9 All respondents supported the recommendation on a national education campaign, although caution was given that this needed to lead a package of measures including metering, education, and demand management schemes and for it to be sustained nationally with coordinated messages. The All Parliamentary Party Water Group stated that Waterwise would be best placed to coordinate this work, waterwise agreed with this. Yorkshire Water stated that either CCWater or the Energy Saving Trust could also coordinate this work. CIEH stated that the major catastrophe is the planning system that allows the major population/housing growth points in the country to continue within water stressed areas. Dŵr Cymru stated that education about water efficiency is still the most cost-effective way to improve household demand reductions.
- 10.0.10 All respondents agreed that the link between hot water and the energy bill is not well known amongst consumers and that the savings on the combined water and energy bill can be significant; which is a strong incentive. EST, Waterwise and Blueprint for Water all pointed out that the government has recently published their 'heat and energy saving strategy' which is a holistic approach to improving the existing housing stock and includes hot water efficiencies. CIEH stated that the financial saving on multiple bills is the 'hook' for raising awareness. Northumbrian Water cautioned that most of the savings would be on energy bills and not be the most effective way of reducing demand.

Customer Involvement and Understanding

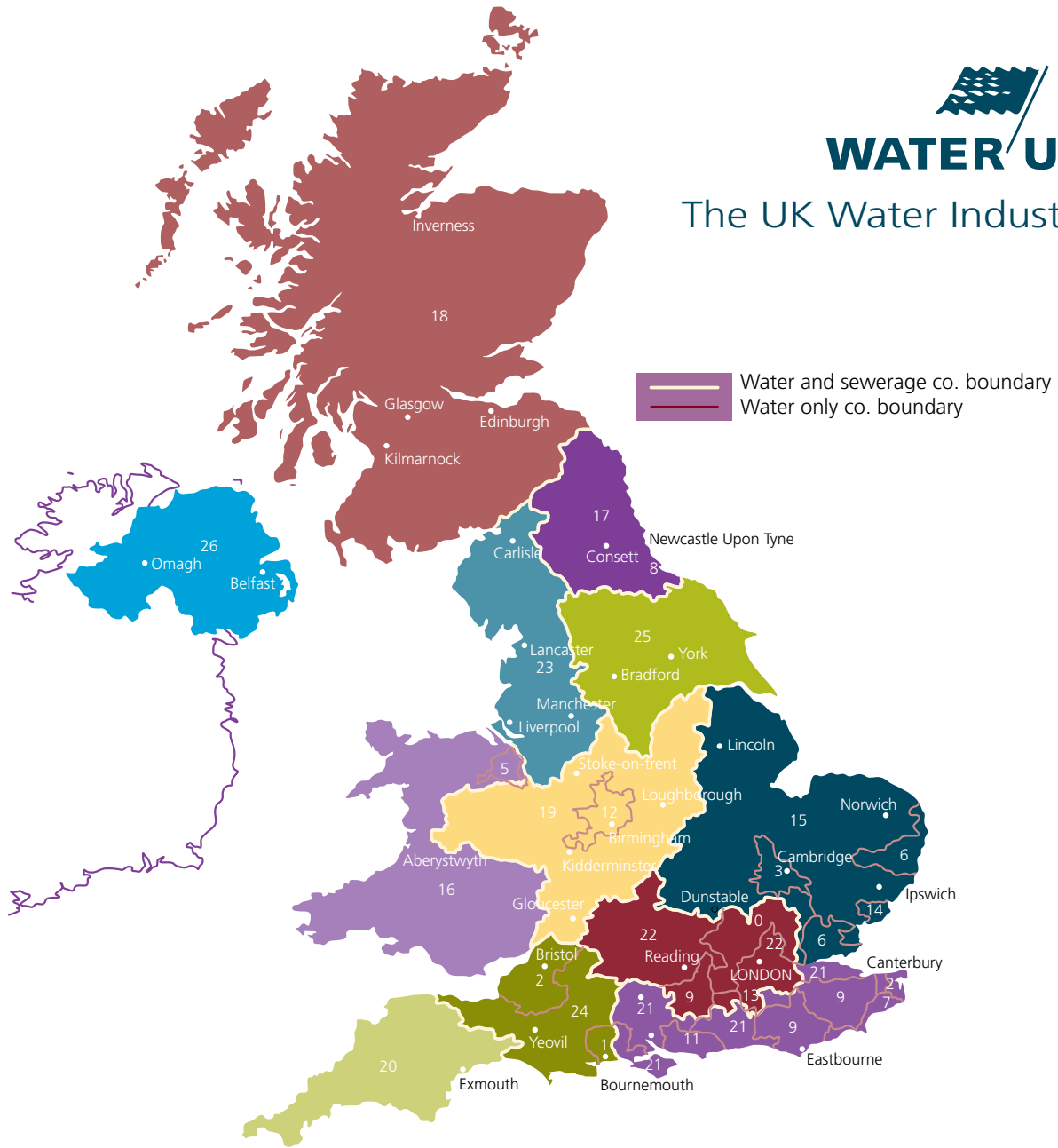
- 11.0.1 Many respondents including Wessex Water, Northumbrian Water, Severn Trent Water, Yorkshire Water, Bournemouth & West Hampshire Water and CCWater all supported the recommendation that companies' OPA should include measures on customer experience that have a real and visible effect on company customer services. Portsmouth Water cautioned that many measures would not be comparable across all companies, pointing out that conditions such as compulsory metering in one area will result in increased customer complaints. Kerry Gardner and the University of East Anglia (UEA) both stated that OPA measures do not include the number of contacts a customer has to make; only looks at

timeframe. Water UK pointed out that Ofwat are currently consulting on the OPA replacement and they will respond to that. United Utilities were cautious that the incentives would not make customer experience better, the measures may become purely financially penalising as most customers have no contact with their customers. CIEH stated that ultimately this is the role of CCWater to take the lead on this issue.

- 11.0.2 The Civil Service Pensioners' Alliance, Yorkshire Water, Northumbrian Water and CCWater all supported the recommendation that Ofwat should provide an annual report on companies' responsiveness to customers. Severn Trent Water and CIEH both stated that Ofwat already does this to an extent and should use currently provided information to do this rather than increasing the regulatory burden.
- 11.0.3 Ofwat and CCWater both supported the recommendation that the period within which Ofwat can pursue breaches and penalise companies is extended from 12 months to 5 years. Northumbrian Water and United Utilities had no objection in principle as long as there was a route of appeal and that retrospective reviewing is against compliance. Bournemouth & West Hampshire Water thought the period should only be extended for 3 years.
- 11.0.4 Wessex Water, Eaga, Energy Saving Trust and the APPWG all supported the recommendation that customers' bills should include information on their bills that reflect the best practice in water, energy and council tax bills. Most of the water companies stated that they regularly review the information on bills in consultation with consumer groups to develop bill formats that best suit their local customer base. CCWater supported customer consultation on bill information as the best way to develop local solutions. The Water Industry Commission Scotland stated that providing information on water efficiency can reduce all overall industry costs and combined with metering information can improve overall affordability. CIEH stated that missing off the list of bill requirements was the cost of preparing information.
- 11.0.5 All respondents agreed with the recommendation that companies should consider best practice to engage with customers particularly harder to reach and vulnerable customers. Many respondents recommended that CCWater should take over the reporting of this rather than Ofwat. Bournemouth & West Hampshire Water and two individuals submitted that often there is little trust in the industry by customers so is better engaged with through local government or media. CAB and APPWG both agreed that Ofwat should take a more proactive role in providing best practice to companies on customer accessibility. Ofwat supported this recommendation and added that already publish guidelines setting expectations for the support they expect companies to provide and are running a workshop to share good practice within the industry.
- 11.0.6 Most respondents supported the recommendation on the development of a UK model for a participatory budget approach by Ofwat and CCWater. Bournemouth & West Hampshire were cautious of participatory budgeting being influenced by non-professionals and whether such a system could operate where ministerial/statutory guidance is the driver. United Utilities were unsure that participatory budgeting would bring to the overall methodologies. Wessex Water added that there should be further consideration of negotiated settlements of + or - 3 per cent. UNISON thinks that there should be public forums set up for each catchment and companies should be incentivised to do more for customer engagement. APPWG and CIEH agreed that CCWater should fully explore participatory budgeting as a way of representing consumers. CCWater thinks that formal constructive consumer engagement is the next natural step and gives the regulatory process more credibility. Ofwat stated that they would explore the concept further in consultation.



Annex 4 – Company Operating Areas



Water and Sewerage Companies

- 15 - Anglian Water
- 16 - Dwr Cymru (Welsh Water)
- 17 - Northumbrian Water
- 18 - Scottish Water
- 19 - Severn Trent
- 20 - South West Water
- 21 - Southern Water
- 22 - Thames Water
- 23 - United Utilities
- 24 - Wessex Water
- 25 - Yorkshire Water
- 26 - Northern Ireland Water

Water Only Companies

- 1 - Bournemouth and West Hampshire
- 2 - Bristol Water
- 3 - Cambridge Water
- 4 - Cholderton and District Water
- 5 - Dee Valley Water
- 6 - Essex and Suffolk Water (Northumbrian Water)
- 7 - Folkestone and Dover Water (Veolia)
- 8 - Hartlepool Water (Anglian Water)
- 9 - South East Water (Mid Kent) (Veolia)
- 10 - Three Valleys Water (Veolia)
- 11 - Portsmouth Water
- 12 - South Staffordshire Water
- 13 - Sutton and East Surrey Water
- 14 - Tendring Hundred Water

Produced by Water UK - September 2008

Source: Water UK – Figure includes Northern Ireland and Scottish Water



Annex 5 – Number of Households Served by each Water company

Number of household customers per company operating area (2008/09)

Water & Sewerage Companies (WASC)	Number of household customers
Anglian	1,842,600
Dŵr Cymru	1,207,700
Northumbrian (NE operating area)	1,066,000
Severn Trent	3,112,100
South West	686,600
Southern	965,400
Thames	3,281,700
United Utilities	2,808,700
Wessex	508,400
Yorkshire	1,962,000
WASC total	17,441,200
Water only Companies (WOC)	Number of household customers
Bournemouth & W Hampshire	183,800
Bristol	457,700
Cambridge	116,700
Cholderton	700
Dee Valley	108,900
Folkestone & Dover	68,400
Portsmouth	280,700
South East incl Mid Kent	793,700
Northumbrian (Essex & Suffolk Water)	710,200
South Staffordshire	508,100
Sutton & East Surrey	254,300
Tendring Hundred	67,300
Three Valleys	1,193,200
WOC total	4,743,700
Industry total:	22,184,900

Source: Ofwat



Annex 6 – Measured Charging and Meters: Cost-Benefit Analysis

- 6.0.1 This report concludes in favour of charging for water by volume. Charging on this basis requires meters to be installed and this incurs costs. It is clear from the very wide range of costs that have been quoted to us that there is no agreed approach to the cost-benefit analysis of metering. It is also clear that analyses tend to concentrate on the costs rather than the benefits. This annex looks at the factors that the review team believes should be taken into account in any cost-benefit analysis of metering.
- 6.0.2 It is also important to recognise that the choice is not between metering/not metering but between the continuation of the current metering policy (largely optant led metering with some company programmes) and metering on a more systematic basis. This annex explores the cost of both approaches.

Benefits of Metering

- 6.1.1 The main benefits of metering compared to non-volumetric charging systems are:
- households pay according to what they use – which is generally considered fairer;
 - it incentivises more efficient use of water;
 - it helps identify leaks;
 - it can reduce carbon emissions;
 - it allows the development of more sophisticated tariffs, for example, smoothing peak (seasonal) demand thus reducing costs further;
 - it can postpone or avoid the need for future investment in new infrastructure;
 - it can make more water available for use in the environment and for alternative purposes; and
 - it provides more information on water usage overall.

Costs of Metering

- 6.2.1 costs of metering are:
- the installation of a meter – which may involve changing the arrangements of pipes, the installation of a meter box and the installation of the meter itself;
 - periodic meter readings;
 - replacement of the meter in due course; and
 - additional costs of customer enquiries and billing over and above the costs incurred with unmetered charging.
- 6.2.2 In addition, some companies have argued that more customers pay in arrears under metered charging and that this increases the companies working capital requirements.
- 6.2.3 The following paragraphs explore these benefits and costs in more detail.

The Benefits of Measured Charging and Meters

- 6.3.1 We now set out in more detail each of the benefits of metered charging listed above.

Fairness

- 6.3.2 Measured charging results in households who use more water paying more. This link between consumption and contribution towards the total costs of providing the services is seen as a fair way to charge for water and foul sewerage services. Depending on the metering technology introduced this link can be very simple – just relating to annual volumes – or it can address more sophisticated relationships between patterns of use and bills. For example, seasonal variations in tariffs could reflect seasonal changes in costs or peak demand pricing to reflect the fact that the system has to be designed to meet peak demand.
- 6.3.3 In addition, relating charges to volume consumed does not *preclude* the use of additional factors in designing the tariff and influencing the distribution of costs. In theory, additional links to, say, ability to pay are possible either within the general charging structure or through social tariffs.

An incentive to reduce demand

- 6.3.4 The best available studies indicate that when people pay for water according to volume used, total water consumption falls by an average of around 10 to 15 per cent. The companies indicate a range of between 5 per cent and 15 per cent in their draft Water Resources Management Plans, but these estimates are quite uncertain. It is also likely that different types of households respond to volume charging and different prices in different ways – although how the responses vary is not well known. Some customers are likely to reduce their demand considerably (particularly if they have taken very little notice of their water usage previously and/or are high discretionary users) while others may not change their use very much at all, if they were already mindful of their water consumption.
- 6.3.5 A water company suggested that innovative tariff structures can add to the volume of water saved through encouraging more efficient use of water. For example, studies in United States and Barcelona achieved reductions of 10 to 14 per cent in average demand through changing the *type* of volume related tariff used – in these cases, a shift from two-part volumetric tariffs to rising block tariffs (which impose a higher price on additional water use).
- 6.3.6 The effect of measured charging on demand has attracted the interest of some water companies who have set up their own studies, although generally the results of these are not (yet) published. Recent results seem to indicate a variation in effect area by area. One company which has embarked on quite a sophisticated trial of metered tariffs attributes a demand reduction of 16 per cent to measured supply. Another has suggested total savings at around 25 per cent of household use; and a third has found a smaller effect.
- 6.3.7 Beyond these changes in demand brought about by simple meters, more advanced ‘smart’ meters enable the introduction of more sophisticated tariffs, including seasonal tariffs, and these might result in further use reductions at peak times. In addition, more accessible meter displays associated with smart meters might facilitate a greater response in customer behaviour, and a greater understanding of how water is used.
- 6.3.8 The Environment Agency has also taken an interest in metered charging and has published reviews of evidence. It concludes that measured charging makes people more careful in their use of the water, even when some individuals claim that they would not be more careful. The Environment Agency states that a switch to measured charging reduces consumption by a sustained 10–15 per cent, but that customers who switch voluntarily may reduce their consumption by less, around 2–14 per cent, depending on the price of water.

- 6.3.9 The empirical evidence on the size of the demand reduction is contained within a handful of studies, which have been examined by the Environment Agency. This literature involves complex details of trial designs and statistics which are critical to the interpretation of the results. Unfortunately, some of this detail is difficult to test, in part because some of the literature is 20 years old.¹⁰⁶
- 6.3.10 No national controlled metering trials have been conducted recently in the UK. Recent information on the effect of compulsory metering is limited although more is expected to become available over the next couple of years. The Environment Agency has assessed the available evidence and it concluded that the evidence for a reduction in consumption with metering of the order of 10 per cent is quite strong. However, most of this comes from studies of optants, many of whom are water conscious before they switch to a meter.
- 6.3.11 There is also further evidence that measured charging has a greater effect on peak summer demand than winter base demand. In the peak season, demand might be reduced by as much as 20 per cent to 30 per cent. Unfortunately, little is known about the way the size of this demand reduction varies across households or according to the price of water.
- 6.3.12 Overall, the review team has concluded that there is a lack of high quality data on the effect of moving from unmetered to metered supplies, and the effect on demand from more sophisticated tariff design. Taking a conservative approach to the evidence that is available, the review team have concluded that the evidence points to a demand reduction of around 10 per cent from the introduction of measured charging and this is the effect that has been assumed in the analysis of the costs and benefits. However, it should be noted that there is uncertainty around this estimate.

Better information and incentives to reduce leakage

- 6.3.13 At the moment meters can be installed at three locations: the property boundary, on the external wall of a building, and internally. Some 80 per cent of metered properties have their meters located externally, and the proportion fitted at the boundary varies by area. However, boundary fitting of external meters is the norm.
- 6.3.14 Responsibility for maintaining the customers' supply pipe, i.e. the pipe on the customer's property, lies with the household. Fitting a meter at the boundary gives the customer the financial incentive to repair leaks that occur in that pipe. It also makes it possible to detect (underground) leaks in that pipe much more easily. Without a meter, a customer supply pipe leak is unlikely to be detected at all unless it is very large.
- 6.3.15 Again, smart meters offer additional benefits, because remote meter reads or leak alarms can alert the customer (or the company) to a leak in the supply pipe much more quickly.
- 6.3.16 The amount of leakage from the distribution system is considerable. Ofwat reports average total leakage of about 25 per cent of all water put into the distribution network. This averaged about 149 litres per property per day (54 cubic metres a year) in 2005/06.¹⁰⁷ One-third of this leakage occurs between the property boundary and the building, which is around an average of 50 litres per property per day, or 20 litres per person per day (18 cubic metres per household a year) and double this amount occurs in the distribution

¹⁰⁶ The detail is laid out in reviews and commentaries by Herrington and others, see UKWIR (2006), Critical review of relevant research concerning the effects of charging and collection methods on water demand, different customer groups and debt, Reference report 05/CU/02/1, by Herrington, P.; Herrington P. (2007), Waste note, want not? Water tariffs for sustainability, report to WWF-UK, September; Nera (undated), The economics of balancing supply and demand (EBS) guidelines report, reference 02/WR/27/4, UKWIR.

¹⁰⁷ Ofwat (2006), Security of supply, leakage and water efficiency, 2005-06 report, November.

network.¹⁰⁸ A study by one company found that a quarter of all customer supply pipes leak, and that one in 25 leak badly.

- 6.3.17 Once a leak is identified it has to be repaired for the benefits of reduced leakage to be realised. Companies have given us different estimates of costs; one estimated an average of £3.60 a year per meter installation, and another £500 per customer supply pipe repaired. There is likely to be a synergy between leak repair and meter installation, so that leaks detected and fixed when the meter is installed are cheaper to repair than leaks identified later – and similarly installing the pipe-work, meter box and even the meter when a supply pipe repair is being undertaken anyway will be cheaper than installing the meter on its own later. To incorporate both the costs and benefits of improved leakage control arising from metering, the review team have taken the view that the additional expenditure of an average of £3.60 a year per meter installation will reduce the loss in the supply pipes by 50 per cent. Under these assumptions the water saved would be an average of 9 cubic metres per household a year, equivalent to around 10 litres per person per day.
- 6.3.18 Companies explain that leakage reduction from the distribution network is unlikely to be reduced by high household meter penetration because meters within the distribution network already detect leaks, so no benefits have been assumed.

Reduced carbon emissions

- 6.3.19 The companies use energy to distribute and collect water and waste water, and to treat them. Most of the energy comes from fossil fuels, which emit carbon dioxide when they are burned, resulting in damaging climate change. The Environment Agency estimates that the supply of water and waste-water services is associated with the release of around 100 kilogrammes of carbon dioxide per household a year.¹⁰⁹
- 6.3.20 The Environment Agency points out that the energy consumed by water-using appliances and fittings in the home has a carbon footprint around eight times greater, 800 kilogrammes of carbon dioxide per household a year, and that by encouraging reduced consumption of hot water, measured charging contributes to the abatement of these carbon dioxide emissions. Measured water charging can therefore claim a proportion of the benefits from this reduction in emissions from heating up water, because without it there would be higher carbon dioxide emissions.
- 6.3.21 Using these estimates, the total carbon dioxide emissions from the supply of water services to the home, and the heating of water in it, amounts to around 900 kilogrammes of CO₂ per household a year. DECC recommends that appraisals should value the benefits of reduced emissions at £25/tCO₂ for activities falling within the EU Emissions Trading Scheme and from £30 to £90/tCO₂ for those outside it in 2020.¹¹⁰
- 6.3.22 Although we have some evidence that the consumption of water by households reduces by 10 to 15 per cent when measured charging is introduced, we do not know what effect this has on hot water consumption. If we assume that emissions linked to water use are reduced by 10 per cent as a result of measured charging, which is likely to be an upper limit, the climate change benefit for an average household is a reduction in emissions of 90 kgCO₂ per household a year. To this figure should be added the carbon savings associated with leakage

¹⁰⁸ Ofwat (2008), Leakage — recent performance and the long term view, slides by Paul Hope, Water UK leakage Conference, October.

¹⁰⁹ Environment Agency (2008), Greenhouse gas emissions of water supply and demand management options, science report SC080010/SR, and accompanying briefing note, The greenhouse gas implications of future water resources options.

¹¹⁰ DECC(2008), 'Carbon valuation in UK policy appraisal, a revised approach'.

reduction, making a total of around 100 kgCO₂ per household a year. At £30/tCO₂ this is worth £3.00 per household.

6.3.23 If meters were installed for all remaining 14 million households in England and Wales, the upper limit of the total carbon saving would be 1.4 million tonnes of carbon dioxide a year, which is 1 per cent of household end-user emissions in 2008.¹¹¹ At £25-£30 per tonne, this represents a total saving of £35m-£42m a year. Part of these savings might be captured by the roll-out of energy smart metering, as customers receive real time information on energy use linked to water use.

Summary of water and carbon savings

6.3.24 In summary, in physical terms the benefits of a high level of metered charging are:

- reduced average consumption of around 15 litres per person per day (10 per cent of 150 litres per day average consumption) or 13 cubic metres per household a year (at an average of 2.4 people per household);
- reduced customer supply pipe leakage, which could be around 50 per cent of the current supply pipe leakage (which is currently around 50 litres per property per day) – so averaging at around 25 litres per property per day (9 cubic metres per property a year) or 10 litres per person per day.

6.3.25 This combined total reduction in the need for water inputs is significant – 22 cubic metres per household a year or around 15 per cent of the total actually used by households, and it is easy to see how it could have a major influence on companies' water supply investment expenditure and could bring forward substantial environmental improvements.

6.3.26 Associated with these reductions are reduced carbon emissions of no more than 100 kg carbon dioxide per household a year.

6.3.27 In order to take forward these physical estimates of water savings into the cost-benefit analysis we must identify how much they are worth.

The value of these water savings – to the company and the environment

6.4.1 The value (reductions in costs) of water savings is equal to the avoided financial and environmental cost of the supply of water.

6.4.2 In the short term, reducing water use and leakage avoids very little of the water and sewerage companies' current costs. This is because the cost of supplying an additional cubic metre of water or of collecting and treating a cubic metre of waste water from a household is no more than 10 pence, using the existing infrastructure, i.e. the short-run marginal cost. So, for example, the company's costs would fall by only £1.30 a year as a result of the reduced consumption of 13 cubic metres, for an average household, and another 90p from the reduction in supply pipe leakage (9 cubic metres) totalling £2.20.

6.4.3 However, in the long run the avoided cost of supplying additional water and collecting more waste water can be much more significant, especially if the construction of new infrastructure is avoided, in particular:

- When the building of new infrastructure or network capacity can be cancelled or postponed. These benefits are realised by the company and passed on to customers from the date the investment would otherwise have been made.

¹¹¹ DECC (2009), Statistical release, UK climate change sustainable development indicator: 2008 greenhouse gas emissions, March

- When the current or future level of abstraction is causing, or will cause, environmental damage. These benefits accrue to society at large and in the future.
- When the current level of abstraction for public water supply prevents water being used for alternative productive uses, such as agriculture.

6.4.4 In some cases these costs (both infrastructure and environmental damage) will be large but in other cases they will be small, for example where water is plentiful and there is spare capacity in the existing infrastructure. Some water companies have estimated the value to their customers of long-run savings in water supply, publishing them in their draft Water Resources Management Plans. The estimates range from 14 to 66 pence per cubic metre,¹¹² and in one exceptional case, 200 pence per cubic metre.¹¹³ These estimates are for the infrastructure elements only and do not include the environmental benefits of reduced abstraction or the value of releasing abstraction for alternative use. The EA and Ofwat are at the early stages of working together on how best to estimate these elements of the full value of water so that they can be included in regulatory and investment decision making.

6.4.5 The effect of this value is likely to be significant where water resources for the environment are scarce. For example, if the value to society of the environment benefits of *not* abstracting water is, say, 50p per cubic metre, the average value to society from the environmental improvements achieved by putting in a meter is £11 a year (arising from the reduction in usage and leakage of 22 cubic meters). Therefore, if the value to society is £1 per cubic metre, this benefit rises to £22. As indicated, Ofwat and the EA are still at the very early stages of undertaking this valuation but, particularly with the predicted effect of climate change on the environment, this value may be significant, and is likely to vary from place to place reflecting the local water environment.

Summary of benefits

6.4.6 The value of water savings will vary a lot from situation to situation. Part of the value is the water company costs avoided. The companies have estimated a wide range of avoided costs, from 10 pence per cubic metre in the short run, to between 14 pence and 200 pence per cubic metre in the long run.

6.4.7 Thus a saving of 22 cubic metres per household a year (from both the reduction in usage – 13m³ – and reduction in leakage – 9m³) is worth £2.20 per household a year to the company in the short run,¹¹⁴ but £3 to £15, and exceptionally £44 per household a year in the long run.¹¹⁵ On top of these figures should be added the benefits from reduced abstraction for public water supply, for which no estimates are yet available, either in the form of environmental benefits or increased value of output from some alternative use of the water – for example, agriculture.

6.4.8 The benefits set out above relate to the cost reductions (or damage reductions) from reducing water usage. The cost reductions to the companies will feed through into lower prices. In the short term, however, an individual customer will experience a different effect in relation to the price they pay.

¹¹² Prices are described in pence per cubic metre while consumption is described in different units, litres per person per day. We have used these units because they allow us to report prices and consumption in figures of a convenient order of magnitude.

¹¹³ All three figures are estimates of the long run marginal costs of supply. The figure of 200 pence per cubic metre relates to the costs of desalination.

¹¹⁴ Thirteen cubic metres of water saved from reduced usage, and 8.5 cubic metres from reduced leakage, so a total of 22 cubic metres at 10 pence per cubic metre equals a cost reduction of £2.20.

¹¹⁵ Thirty-five cubic metres of water saved avoiding company costs of 14 to 200 pence per cubic metre.

Effect on customers' bills

- 6.4.9 The cost savings set out above will be reflected in the total costs that the companies will recover from their customers. Thus in the longer term the effect on customers' bills reflects the longer-term changes in the company costs. However, for individual customers, the short-term effect on their own bill is rather different. Under the current metered tariffs that are applied by water companies, a typical volumetric charge is around £2.00 per cubic metre (the variation is between £1.67 and £4.01 per cubic metre in 2007/08). At this typical level customers will see a reduction in their own bill of an average of around £26 per household a year by reducing their consumption by 10 per cent (13 cubic metres) and will avoid spending another £18 a year on average for water leakage from their supply pipe, where their meter is fitted at the boundary (from the 9 cubic metres of leakage fixed). (These figures will vary between water companies because the companies set different prices for water.)
- 6.4.10 In the longer term, the prices that customers face will need to be adjusted to reflect the cost savings, and this will override the immediate effect on bills.

The costs of metering

- 6.5.1 The costs of installing and operating meters should be reasonably well known because companies have been installing meters for two decades. However, reported unit costs show a significant variation and very little detailed information has been made available to the review on either the actual costs that have been incurred, or the unit costs that companies have used in their submissions to Ofwat. As a result, there is some uncertainty surrounding the actual unit costs that would be incurred in installing meters in the remaining unmetered households.
- 6.5.2 Some of this variation is explained by meter location and type of metering programme and some may be explained by the way in which the costs are defined. However, it is difficult to know whether this explains all the variation between company estimates, so meter installation costs deserve both careful definition and close regulatory scrutiny. It may be that the analysis that follows is using costs that are on the high side.
- 6.5.3 The costs of metered charging comprise:
- installation and the financing of installation costs;
 - replacing meters at the end of their useful life;
 - meter reading; and
 - additional billing and handling of queries over and above the costs of unmetered charging.
- 6.5.4 A number of companies shared with us their estimates of the costs of installing meters. The figures vary significantly from company to company. The estimates for installing meters internally ranged from £106 to £385; externally within an existing boundary box from £57 to £196 and externally with a new boundary box from £293 to £471. The Environment Agency published a report on metering costs in 2008. It concluded that, for an optant metering programme, average costs were: internal £170, external in existing boundary box £45 and external with new boundary box £220. This analysis agrees well enough with the companies' estimates to offer a reasonable illustration of the scale of costs involved.

- 6.5.5 A one-off installation cost of £220 per household is a weighted average of internal and external installations based on cost estimates published by the Environment Agency and Ofwat's figures on meter location (around 80 per cent external location). Some companies supported the use of this figure for the purposes of illustration while others explained that they used different figures, although neither Ofwat nor the companies were prepared to share their full calculations. In one case, where meter boxes are put in during leakage control work, the company claims that the installation costs are much lower.
- 6.5.6 The costs of the initial installation of the first meter (re-arranging pipes, installing a meter box if required, installing the first meter) are not recovered in a lump sum from the customer, but are spread over a number of years. In our calculation, using the £220 one-off installation cost translates as an increase in the bill of around £13 per new meter installation a year where the cost elements are recovered over 10 to 30 year periods (depending on the appropriate depreciation profile of these elements), but one company told us that their figures suggest a much lower cost than this.
- 6.5.7 The literature, companies and experts told us variously that the meter lasts for between 10 and 20 years before it wears out and has to be replaced. One company told us that meter replacement costs £50/meter once every 15 years. WRc plc, in its work for the Environment Agency, suggested that replacement costs are around £100/meter every 15 years. This replacement cost is not incurred until 10-20 years after the initial installation. Anticipating this future (and recurring) cost, at £50, now adds about a further £2 a year to the bill.¹¹⁶
- 6.5.8 According to some companies, around 30 per cent of the cost of metering is associated with more frequent and complex customer enquiries. Others disagree and claim the costs are much lower. Some enquiries will concern meter readings, some will involve leak reporting and repair, and others will be disagreements relating to the reported volume of water consumed. These queries are all in addition to the customer contacts received under unmetered charging. Many of these might be avoided or reduced by using smart meters, as discussed later.
- 6.5.9 In addition, although more frequent customer contact has a direct cost to both the water companies and customers, these contacts can also deliver benefits if the companies make good use of them, allowing the company to respond better to customer concerns. This is particularly important as household water customers cannot change companies. The Environment Agency agrees that customer enquiries are higher for metered customers. The rate of enquiries from unmeasured customers is 0.52 contacts/customer/year but this rises with metered customers to 3.7 under a compulsory metering scheme and to 2.0 under an optant scheme. The enquiries also become more complex. The unit cost of an enquiry from an unmeasured customer was £2.17 but rose to £2.60–£2.80 for a measured customer, according to WRc's analysis of company data for the Environment Agency.
- 6.5.10 Under rateable value charging customer contact costs average at around £1.10 per customer a year, while under metered charging to between around £5.20 to £10.40. The *increase* in customer contact costs therefore ranges from around £4.10 to £9.30. For the purposes of the analysis we have chosen an increase of £8.00 a year to be conservative. (This figure could reduce over time as companies learn how to interact better with their customers, and may actually produce real advantages for both customers and companies through additional contacts.)

¹¹⁶ This figure represents the costs of one meter replacement in the 30 year period considered, as the cost of the first meter installed is included in the installation costs (£13 a year).

6.5.11 Meter reading itself is a small component of the total cost at around £2 per read. If the recommendation to read the meter every six months were adopted, the average annual cost of meter reading would be £4 for a visual-read meter.

6.5.12 There are also some other increases in billing costs over and above just the reading of the meter. WRc in a study for the water companies has indicated that these add about another £2 a year.¹¹⁷

Summary of costs

6.5.13 For a simple meter installation, the total cost to the company works out at typically in the following way:

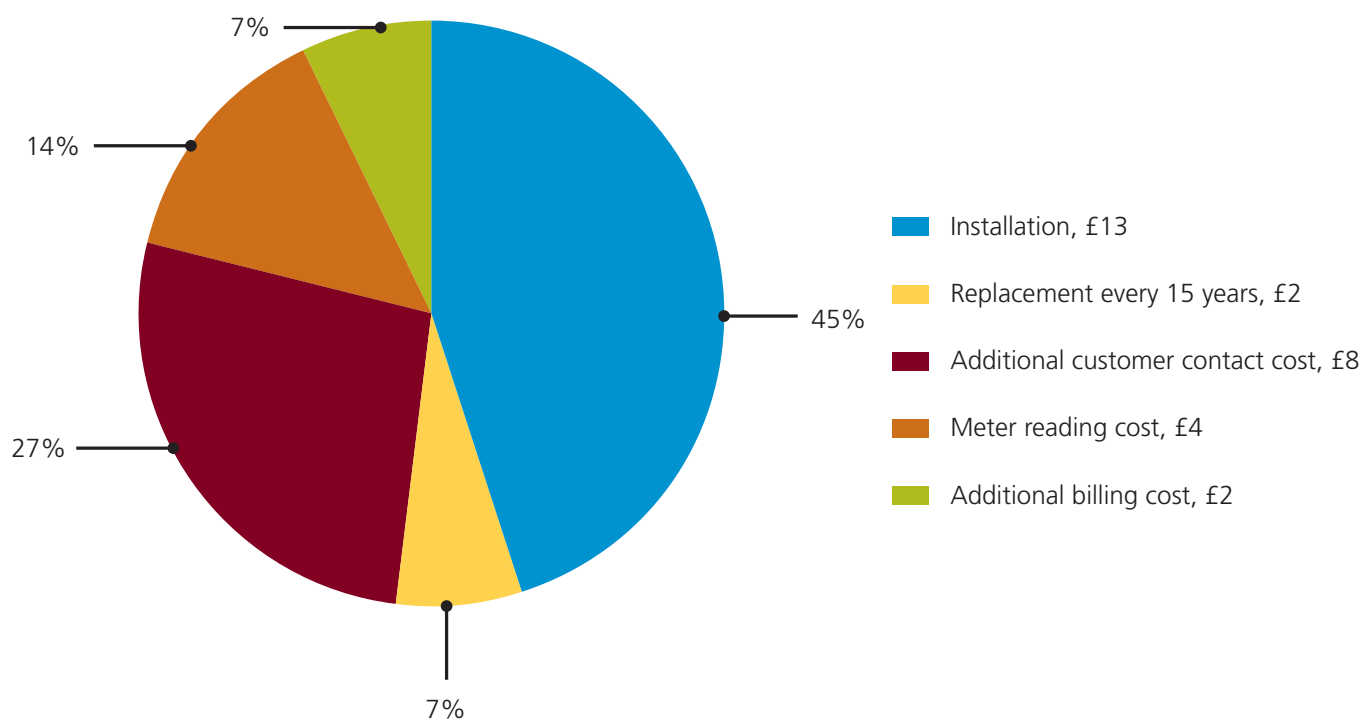
- An initial installation cost of around £220 (converts to around £13 a year)
- An additional cost of meter replacement incurred about every 15 years (converts to around £2 a year)
- Ongoing meter reading costs of about £4 a year
- Additional costs associated with billing of £2 a year
- Ongoing additional customer contact costs of around £8 a year

6.5.14 Converting this into an approximate additional a year annual cost results in a cost to the customer of around £30 per household a year over and above the cost of unmetered charging, although given the uncertainty of some of the cost estimates provided by the industry, there is a wide range around this figure. This figure makes use of the water industry method of accounting depreciation for one-off costs. The short-term effect on bills is higher, but it declines over time. In the long term, the costs being incurred are the replacement meters, the additional meter reading costs and the increased customer contact costs – which are in the order of £16 a year. Figure 30 shows the breakdown of the initial costs by activity. In addition, the costs of meters could fall over time and smart metering could also reduce total costs – see below.

6.5.15 The analysis set out above is based on information provided with respect to the current system of largely optant meter installation in the existing housing stock. However, a planned and/or high-density programme of installations allows teams of meter fitters to work more productively street by street or to be utilised more fully and some companies told us that this reduces the initial installation costs by 20 to 50 per cent compared with a low-density optant or selective programme. Section 6.6 below explores the implication of this potential reduction in installation costs.

¹¹⁷ WRc (2007), Cost-benefit analysis of metering policies, collaborative project CP222A, April

Figure 30: Composition of typical effects on household bills for measured charging based on installation of a simple meter for an optant



Source: Charging Review

Example comparisons of costs and benefits

- 6.6.1 In this part of the chapter, we compare the costs of metering against the benefits, valuing them where we can.
- 6.6.2 The metering costs set out above can be combined with the reduction in water use and the reduction in leakage to calculate the cost that are incurred per cubic metre of water not put through the system. This can then be compared relatively easily with the costs of providing that cubic metre or, where capacity constraints are being reached, the costs of providing additional cubic metres, of water.
- 6.6.3 At a metering cost of £30 a year and a reduction in usage of 13 cubic metres a year, the cost per cubic metre of water saved is around £2.30. Added to this is the leakage reduction where 9 cubic metres a year of water is saved for £3.60 a year, a cost of 40p per cubic metre. This produces an average of £1.50 per cubic metre. Over the longer term, once the initial installation costs have been paid for, this drops to £0.80 as the on-going costs of metering have dropped from around £30 a year to £16 a year.
- 6.6.4 This estimate is in line with those of others who have looked at this issue. WRc plc estimates that a 10 per cent reduction in use from optant metering translates into a cost of water saved of £1.50 to £3.80 per cubic metre. If the more systematic approach to installation is adopted, the WRc estimates that the costs for street-by-street metering programmes are half as large, 80p to £1.70 per cubic metre. One company's estimates are much lower, at 40p to 60p per cubic metre. In its work, the Environment Agency observed a cost of water saved of £1.46 per cubic metre. Additionally, cost reductions in the range of 20–50 per cent were estimated for compulsory metering. Overall, we have been presented with a large range of estimates.

- 6.6.5 Overall, therefore, the estimates on the costs of saving one cubic metre of water by installing meters lie in the range of 40p to £3.80, with the central estimates generated within this analysis being around £1.50 in the short term to £0.80 in the longer term. Off-set against this are the cost savings (i.e. cost reductions) to the company, which lie in the range 14p to 66p (with an outlier of £2.00) per cubic metre. On top of that should be added the carbon costs saved of 14p per cubic metre (which increases the total cost savings to between 28p and 80p per cubic metre), and the value of the reduction in environmental damage (which is so far not quantified).
- 6.6.6 As can be seen, using a nominal 50p per cubic metre as the value of the reduction in environmental damage, the total cost savings lie in the region of 80p to £1.30 per cubic metre, and total costs of making that saving around £1.50 (short term) to £0.80 (long term). However, it should be noted that the review team has been given significantly lower estimates of the costs of installing and deploying meters (particularly if installed systematically), and if these turn out to be realistic, the costs incurred to save a cubic metre of water will fall. The effect of this will be to *increase* the areas of the country where the benefits delivered to society are higher than costs incurred by installing and using meters. This arises because as the cost of achieving water savings via metering falls, the minimum value that society attaches to leaving water in the environment that is needed to balance this cost also falls.
- 6.6.7 With this level of costs and benefits, the outcome of the cost-benefit analysis is quite finely balanced when the environmental costs of water abstraction are set at 50p per cubic metre. As this value is likely to vary significantly around the country (see above), the outcome of any cost-benefit analysis will also vary depending on the local conditions. Therefore, even if some approximate average value for water abstraction was known, this would not be particularly useful – much more detailed and local analysis is needed to come to a conclusion that is applicable in a particular area.
- 6.6.8 An additional benefit of metering – the ability to implement tariffs that are seen to be fair – has not been included in this analysis.
- 6.6.9 As can be seen, the outcome of the cost-benefit analysis of the options of installing, or not installing, meters depends quite critically on the value placed on the reduction of environmental damage of current or future abstractions and the ability to reduce or eliminate additional expenditure on expansion of the capacity of the system to deliver water services. Where there is little or no damage to the environment from current or future abstraction levels and where the current system has no capacity constraints, the value of the water saved from both reduced demand and better leakage control is likely to be low, and below the additional costs that will be incurred if the option is metering or no metering. The value of the ability to charge in a fairer way (which is not included in the above analysis) would need to be high (~£25 per household a year) to justify the additional costs of metering.
- 6.6.10 The other side of this analysis is, however, that where the environmental costs of current or future abstractions are high and where significant expansion of the system is required, metering can offer a cheaper solution than expansion of supply, *and in addition provide a fairer system of charging.*

The implications of the current optant policy

6.6.11 The analysis undertaken above assumes that the option of not installing meters at all is the default option. However, this is not the case. With the continuation of the policy of allowing customers to choose a meter if they think this will result in a lower *bill for them* the metering of most properties is not a question of *if* metering takes place, but is actually a question of *when* metering takes place.

6.6.12 As indicated above, if companies could adopt a more systematic approach to metering properties, the review team believes that the initial installation cost (estimate £220) could be reduced by between 20 and 50 per cent (i.e. in the range £175 to £110)

6.6.13 Taking these two factors into account changes the cost-benefit analysis in the following way:

- The additional costs of metering are not avoided, so the difference in costs between continuing with the current policy and adopting a more systematic approach to installing meters is the timing benefit of 'delaying' expenditure on metering while the optant programme works its way through the stock of property.
- The lower unit cost of installing meters systematically means that the total costs of arriving at the same end point (where all properties are metered where this is practical) are likely to be significantly lower under such an approach.
- The timing of the benefits (cost savings, both financial and environmental) will also change, and the benefits will arrive earlier. This is because when metering occurs as a result of customers choosing, those who choose first will tend to be low users of water and as a result the average demand reductions will be smaller than the average until metering becomes reasonably widespread. The system-wide benefits resulting from cost reduction as a result of the reduced demand from installing metering under an optant system are, therefore, mostly concentrated at the end of the period over which metering is being installed.

6.6.14 The current largely optant approach is likely to result in around 80 per cent of properties being metered by 2030 (although some areas will be more or less fully metered considerably before this), with the remaining suitable properties metered in the following decade (although the experience of South West Water suggest that optant metering rates may accelerate as metering penetration rises because of the effect on unmetered bills). A more systematic approach would be likely to shorten this timescale, and to allow the companies to exploit fully the cost advantages of such a policy.

6.6.15 Accelerating the installation of meters, and exploiting the lower unit costs, has the effect of increasing the total expenditure of the companies in the short term, but reducing it in the medium and long term. The relevant question for the costs benefit analysis of these two scenarios is whether, or under what circumstances, the costs of the earlier expenditure on systematic metering are more than off-set by the lower costs occurring in the medium and long term?

6.6.16 Using scenarios, these two options can be compared.

- Scenario 1: (business as usual – current metering framework)
 - i. about 80 per cent metering by 2030¹¹⁸ and
 - ii. all practical properties metered by 2040

¹¹⁸ Projection from water companies' draft Water Resources Management Plans. The figure may be lower in the final WRMPs, as Ofwat's final determinations approved metering programmes that result in 50% metering penetration in England and Wales by 2014/15, compared with a proposed 53.5% in the draft plans.

- iii. installation cost of £220 per metered property¹¹⁹
 - iv. bias for low user households to switch to metering first
 - Scenario 2: (systematic approach to meter installation)
 - i. 80 per cent penetration by 2020¹²⁰ and
 - ii. all practical properties metered by 2025
 - iii. installation costs of between £110 and £175 per meter
 - iv. the water consumption characteristics of those becoming metered are randomly distributed throughout the transition process.
- 6.6.17 If the minimal unit cost reduction for installation is used (20 per cent reduction so a cost of £175 per meter installed), which is the least favourable cost reduction for scenario 2, and the cost of water is around 70-80p per cubic metre (from any combination of cost savings to the company), annual expenditure by the companies is higher over the first 10 years of the policy, and then reduces to levels below that of scenario 1. The overall effect on customers is neutral using the social time preference discount rate of 3.5 per cent.¹²¹
- 6.6.18 If the full cost savings on installation can be realised (ie a 50 per cent reduction so a cost of £110 per meter installed and the most favourable outcome) then at a water cost in the range 20-40p per cubic metre the overall effect is positive at the social time preference rate of 3.5 per cent.¹²²
- 6.6.19 The interaction of the cost savings from more systematic installation of meters and the cost of additional water mean that both the full cost of water and the actual installation costs of systematic metering of properties are very important in evaluating the comparison between largely optant driven increase in metering and a more systematic approach. As indicated, the figures relating to meter installation costs are subject to some uncertainty. However, unlike the comparison between installing meters or not installing meters, the comparison between these two approaches is driven more by the *relative* costs of the systematic v optant approach, not the absolute cost of meter installation.
- 6.6.20 As a result, within quite wide boundaries, the advantages of the more systematic approach over the largely optant approach outweigh the fact that expenditure on installing meters is bought forward in time.

Summary

Overall scale of a metering programme

- 6.7.1 The total expenditure to date on the installation of meters is around £1.5 billion, assuming an average installation cost of £220 per meter at each of 7 million metered households.¹²³ Under scenario 1 above – a business as usual – it would cost around another £3 billion to fit meters to all remaining households. The current policy would result in meter installation in around 50 per cent of all households by 2015 (with significantly higher rates in some

¹¹⁹ The calculations are based on the cost of optant metering, as the review team does not have figures of the costs and number of meters assumed to be installed under compulsory programmes in the projections of the draft WRMPs.

¹²⁰ This projection assumes that the review team's recommendations are implemented from 2015/16, which produces a conservative estimate of the benefits.

¹²¹ This means that the value to customers of the lower prices after 10 years just offsets the costs to them of higher bills in the first 10 years.

¹²² The range takes account of different patterns of installation of meters through time under a change of occupier policy.

¹²³ The number of meters remaining to be installed does not explicitly take into account companies' metering plans for the years 2010/11 to 2014/15.

company areas), rising to an average of around 80 per cent of all households by 2030 (with some company areas having completed metering by then) and completing the installation in all practical households by around 2040 in all, or at least most, areas.

- 6.7.2 Between 5 and 10 per cent of meters require replacement each year, involving additional expenditure of around £35–70 million a year if all properties are metered, compared with current meter penetration. The additional annual expenditure on meter reading, billing and customer enquiries could be around £200 million a year, although some companies claim unit costs which would suggest a much lower figure. There would also be additional expenditure on leakage control (and water efficiency, which has not been estimated here but may have an effect on bills).
- 6.7.3 The total commitment in continuing towards universal metering on the current basis could be a one-off investment of around £3 billion and ongoing expenditure of around £270 million a year or less, plus other smaller components influencing bills. This will be built up over a long period, to around 2040.
- 6.7.4 Alternatively, by exploiting the reduction in unit costs from a more systematic approach, the one-off investment costs can be reduced by between £600m and £1.5bn, incurring the same ongoing costs (£270m or less), but building up quicker, to complete metering by about 2025.
- 6.7.5 In return, fitting meters to all remaining households might avoid 13 cubic metres a year of water use and perhaps 9 cubic metres a year of leakage, for each metered household. Across 14 million households, this amounts to just over 300 million cubic metres a year. At a long-run marginal cost of 50 pence per cubic metre, the avoided supply costs would be £150 million a year. At a long-run marginal cost of £1 per cubic metre, the avoided supply costs would be £300 million a year. To these figures should be added the value of carbon emissions avoided of around £35 million a year and the value of the environmental and social benefits arising from reduced wastage and hence reduced water abstraction. Similarly to the costs, the quantity of benefits will build up over time, at a pace of increase determined by the policy adopted.
- 6.7.6 The *difference* between these two approaches in terms of costs to the customer depend crucially on the savings on installation costs that can be made from the systematic approach. If these are at the higher end of the range then fairly low company cost for additional water will result in customers being overall financially better off under the more systematic approach. If the savings are towards the lower end then the value of the water saved is more critical – but if the wider environmental benefits are reasonably positive or there are capacity constraints requiring additional capital expenditure that will have to be undertaken in the absence of metering, then overall customers will be better off with a systematic approach.
- 6.7.7 The conditions where the more systematic approach would not be beneficial would be:
- Where the rate of increase in meter penetration under the optant system is very low;
 - Where the full cost of water is very low;
 - Where there are no capacity constraints in the system.
- 6.7.8 Where these conditions do not exist, the systematic approach shows significant potential to be significantly beneficial for customers and the environment.

Benefit	(Average) quantity per meter installed	Value	Comments
Allows fairer tariffs	n/a	Transfers unwound may be around £100 pa on average	General agreement that metered tariffs are fairer. Transition to metered tariffs unwinds current transfers between customers producing winners and losers. Requires explicit intervention to address affordability for low-income consumers.
Incentive to reduce demand	13m ³ pa	From £1.30 pa to £26.00, likely range £6–£13	Actual reduction in demand varies significantly between customers. Those using more under rateable value linked tariffs are likely to reduce use and wastage more. Could create an incentive to reduce demand too far, unless addressed. Value will depend on state of the local water environment and state of local infrastructure.
Incentive to identify and reduce leakage	9m ³ pa	From £0.90 to £18.00 pa. Likely range £4.50 to £9.00 pa	Applies to supply pipe leaks. Extent of leaks varies between supply pipes. Value will vary – see above.
Reduction in carbon emissions	100kg CO ₂ per annum	£3.00. Likely range £1.50 to £6.00	Reduction in hot water consumption contributes to most of this saving.

Cost	(Average) quantity per meter installed	Value	Comments
Installation of initial meter	£220 one off	£13pa	There are significant largely unexplained variations in installation costs across different companies. A more systematic approach to installing meters might reduce the unit cost by 20% to 50%.
Meter replacement	Once every 10-15 years	£2–£3 pa	
Meter reading	£2 per reading	£4 pa (if read twice a year)	Smart meters could reduce this (at the cost of higher per-meter costs).
(Additional) customer contact	~3 extra per year	£8 pa	Additional contact could be beneficial if it enables companies to be more responsive to customers. Smart meters could reduce this.
Additional billing/administration costs		£2 pa	

Source: Ofwat

Note: in table heading that all the figures quoted are £/household where a new meter is installed

Smart Meters

- 6.8.1 Simple meters may be unsuitable for seasonal or other more sophisticated tariffs requiring meters to be read over a short period. Smart meters may be the solution. Smart meters, which can store data or be interrogated remotely, cover a variety of meters that have additional functionality. The most common type allows automatic meter reading (AMR) by touching a display, walking or driving by, or through a telecommunications link. Reading these meters is cheaper than reading simple meters, although this must be balanced against the increased cost of the meter and any telecommunications network connection fee.
- 6.8.2 Advances in technology mean that additional functions are being developed, such as automatic leak detection. There are parallel developments in energy metering technology. In electricity, smart meters can register consumption in half-hour intervals, and as part of an intelligent household system may in the future be able to time-shift demand from some appliances away from peak demand periods. Smart meters can also give companies more information on customers' behaviour. This helps the energy companies to understand the way energy is used, and they in turn can advise customers on how to use energy more efficiently. The information on consumption can also be provided to customers through an in-home display, which may help customers become more energy efficient.
- 6.8.3 The UK government has undertaken a comprehensive analysis of the costs and benefits of smart meters for electricity and gas. Following this, the government announced in October 2008 that electricity and gas smart meters will be rolled out to all households by the end of 2020. The UK government published a consultation document in May with proposals on smart meter functionality and the market arrangements for installing and managing such meters in England and Wales. The consultation proposed meters with two-way communication between the energy company and the customers, to maximise the benefits from smart metering, and also a customer display unit and network for communicating with appliances. The Government recently announced¹²⁴ that energy suppliers will be responsible for the installation of smart energy meters by 2020, with communications between smart meters and energy companies being organised centrally. Standalone display units should be provided with the smart meter to make it easy for customers to see and understand their energy use and carbon emissions in real time.
- 6.8.4 The roll-out of the electricity and gas smart metering programme means that there is an opportunity to piggyback water metering on the communications system for energy metering. This may reduce the communication costs associated with smart water metering, although the precise costs and benefits of this approach have not been quantified.
- 6.8.5 The benefits from smart water meters include:
- reducing reading costs (this becomes more significant the more frequently the meter has to be read);
 - reducing carbon costs through automatic meter reading, especially when the readings can be remotely transmitted to the company;
 - enabling a wider range of tariffs, such as seasonal tariffs;
 - helping identify customer supply pipe leaks quickly if the meter is in the boundary of the property, by identifying continuous use and reporting it;

¹²⁴ Towards the smarter future; Government response to the consultation on electricity and gas smart metering, DECC, December 2009.

- displaying real-time information on water use and cost to customers, raising their awareness and encouraging the efficient use of water;
- helping customers manage bills and reduce bad debt through more frequent billing based on actual meter readings rather than less frequent estimates and manual reads;
- reducing the cost of customer queries as bills are based on actual readings, which the customer can also read at home; and
- perhaps encouraging a shift in water use to off-peak periods.

6.8.6 These benefits are similar to those provided by electricity and gas smart meters, except for identifying leakage; and the benefits of managing peak demand may be different in water. Furthermore, water use in the house is not continuous, so in-house displays for water may have a different effect on customer behaviour.

6.8.7 Some companies already have plans to roll out automated meter reading (AMR). Companies may want to consider a more sophisticated capability, particularly if the (smart) water meter can be incorporated into smart energy metering communications systems.

6.8.8 The evidence available to us on smart water meter costs in the UK was not sufficient to allow us to summarise their costs here, but there is clearly potential to cut the estimated £2 per household per reading cost (£8 a year with quarterly reading) and the claimed £8 per household a year customer contact costs (though the costs of the meters will be higher presumably at least in the short term).



Annex 7 – Tariffs and Tariff Trials

The table below summarises current and approved tariff trials for water charges. It includes trials of social tariffs.

Company	Tariff on trial	Other comments on design
Anglian Water	AquaCare Plus	Tariff for metered customers with high essential use – higher standing charge but lower volumetric rate.
Anglian Water	SoLow	Tariff for metered customers with low use (using less than 75 cubic metres per year) – no standing charges but higher volumetric rate.
Dŵr Cymru	Welsh Water Assist	Extends the equivalent to Vulnerable Groups Tariff (WaterSure) to unmetered customers and reduces the capped charge.
Dŵr Cymru	Water Direct	Reduces bill by £25 per year for customers who pay by direct deductions from qualifying DWP benefits.
Dŵr Cymru	Water Collect	Offers specified customers a £10 annual discount when they pay their bill through a participating local authority or housing association.
Veolia Water South East (formerly Folkestone & Dover Water)	Rising block	Offers larger blocks of water at a cheap rate for households with three or more children.
South East Water	Seasonal	Ratio of summer to winter prices is 4:1
South West Water	Rising block	Block sizes are linked to household occupancy
Three Valleys	Seasonal	Ratio of summer to winter prices is approximately 5:2
United Utilities	Discount	Offers reduced charges to customers living in the property of a specific Housing Association and agree to pay water bill with the rent.
United Utilities	Support tariff	Capped bills for household customers receiving certain benefits or tax credits.
Wessex Water	Assist	Allows debt advice agencies to recommend customers for lower charges if they are unable to pay.
Wessex Water	Rising block	Ratio of prices in high-priced and low-priced blocks is 3:2
Wessex Water	Seasonal	Ratio of summer to winter prices is 3:2
Wessex Water	Seasonal peak	5% discount on base demand calculated in winter period, and 90% premium charged on consumption above baseline in the summer.



Annex 8: Affordability measures

This annex gives further information about the indicative figures presented in Chapter 11 on Affordability. Several separate calculations have been made and are discussed here:

- the proposal to change the basis of WaterSure for claimants with eligible medical conditions, receiving a specified benefit or tax credit;
- the proposal to introduce a discounted bill scheme for all households which include a recipient of a specified income-related benefit or tax credit; and
- the proposal to support a reduced bill for all households with children and which include a recipient of a specified income-related benefit.

The following table summarises the impact of the package of affordability recommendations.

Recommendation	Outputs	Total cost or transfer, £m/yr	Impact on household bills, £/hhold/yr	Assumptions
Social tariffs				
Revised WaterSure for customers with high essential water use for medical reasons	133k people with medical conditions on specified benefits have bills capped to lower of local or national metered average. Average benefit is around £100 per household per year.	Transfer + admin estimated at £16m per year (Replaces the current cost of the medical element of WaterSure).	22m non-recipients each pay an average £0.50 extra per year.	Claimants use 100 litres more water per day than average. 100% metering. Business customers fund 30% of the total cost.
Discounted bill for low income metered households	4.4m homes on specified benefits receive a 20% discount on their bills. Average benefit is around £70 per year per eligible household.	Transfer + admin estimated at £340m per year.	18m non-recipients each pay an average £13 extra per year.	2005-06 FRS survey data for households on benefits. 4.4 benefit homes face average local bills. 100% metering. Business customers fund 30% of the total cost.
Discounted volumetric tariff for low income metered households with children	1.3m homes on specified benefits (containing 2.3m children) get volumetric discount equivalent to 50 litres per day per child. Average benefit is around £40 per child per year.	Transfer + admin estimated at £110m per year (Replaces current cost of large families in WaterSure)	21m non-recipients each pay an average £3.60 extra per year.	2005-06 FRS survey data for families on benefits. 100% metering. Business customers fund 30% of the total cost.

Proposal to change the basis of Watersure for claimants with eligible medical conditions, receiving a specified benefit or tax credit

In 2008/09 there were 28,879 successful claimants for WaterSure¹²⁴ in England and Wales, and June returns data from the previous year showed that 42 per cent of recipients¹²⁵ were claiming for medical conditions. The combination suggests that about 12,000 people are claiming for medical reasons today. However, take-up is low and it is believed that at least three times that number are eligible today – i.e. are already metered, and with the relevant medical conditions.¹²⁶ Better promotion might ensure high take up, and the roll out of metering will raise the eligible number. To be eligible a person must be metered, have a medical condition which necessitates a high use of water, and be on at least one qualifying benefit.

The figures quoted in Chapter 11 assume that the number of recipients rises to 133k, based on assuming that the national proportion of metered households receiving the benefit rises fourfold to reach the current rate in South West Water area (0.6 per cent of metered homes¹²⁷), and assuming 100 per cent metering.

To calculate the approximate national figures, in the absence of accurate matching data, we have assigned Water Only Company customers to the main sewerage company that serves each of their geographic areas, and have combined relevant water and sewerage volumetric charges on that basis.¹²⁸

The proposed benefit is calculated by first assuming that the average recipient requires an extra 100 litres of water per day, compared with the average customer in his area.¹²⁹ Depending on the (water and sewerage) volumetric charge in the company area, our approximate calculations suggest that this water might be worth between £50 and £160 a year. Adding this local value to the local expected average bill,¹³⁰ gives the “reference case” or a proxy for what the customer would be paying in the absence of a capped bill.

The benefit proposed caps the bill to (at most) the local average metered bill or the national average metered bill, whichever is less. Companies may be more generous and cap bills lower than that. This gives each recipient on average £100, with recipients in the highest bill areas having their bills capped to the national average metered bill – our estimates suggest a high end value of £280. For 133k recipients, the value of the subsidy is £14m per year, nationally.

WaterSure administration costs today average £17 per recipient household.¹³¹ If this per recipient cost remains, applied to 133k recipients, this adds £2m to the cost, nationally, so the total cost for the proposed scheme is £16m per year.

If this cost is distributed across water customers, business customers will fund about 30 per cent (based on their share of volume supplied¹³²), leaving £11m to be funded by households. Across 22m non-recipient households,¹³³ that equates to an average 50p each per bill per year. However where the local bills are highest, relative to the national average, the additional cost to fund the scheme might be more like £1.30 for each funder.

¹²⁴ See www.ofwat.gov.uk/consumerissues/problemspayingbill/rpt_tar_2008-09watersure.pdf

¹²⁵ Ofwat June returns 2008 table 6B

¹²⁶ See Walker Review Interim Report paragraph 8.18.2

¹²⁷ This assumes that 42% of the 6.8k Watersure recipients in the SWW area in 2008/09 were claiming for medical reasons, as per the national average.

¹²⁸ Pages 28 and 32 in www.ofwat.gov.uk/regulating/reporting/custchgs2009-10/rpt_tar_2009-10completetables.pdf

¹²⁹ Review team estimates based on Chartered Institute of Environmental Health calculations of additional water use, see page 16, www.cieh.org/library/Knowledge/Environmental_protection/Water/Water_charging_review_Dec08.pdf

¹³⁰ See Table 7 in Ofwat's Future Water and Sewerage Charges 2010/2015 Final Determinations

¹³¹ From table 6a and 6b June Returns, Ofwat, 2008

¹³² From Tables 10, 14 and Table 23 June Returns, Ofwat, 2008/09

¹³³ Based on the full customer base given in table on p13 in www.ofwat.gov.uk/regulating/reporting/custchgs2009-10/rpt_tar_2009-10completetables.pdf

To net off against this is the current cost of the medical part of WaterSure, for which we do not have good data. Recipients may also have to pay for the cost of medical certificates, and these costs are not included in our calculations.

Our figures are indicative and approximate, especially in the absence of data on the uncapped bills of existing and potential recipients, and on the pool of potential eligible claimants. However, the assumptions probably produce a high end estimate by assuming 100 per cent metering, and an average take up across all company areas that is four times the national average take up rate of WaterSure (including families) today, although we have not projected bills and volumetric charges into the future.

Proposal to introduce a discounted bill scheme for all households which include a recipient of a specified income-related benefit or tax credit

FRS data¹³⁴ suggests that in England and Wales there are 4.4m households that include at least one recipient of one of the qualifying income related benefits proposed for this scheme. To calculate the figures in Chapter 11, we assume that all homes are metered.

To calculate the approximate national figures, in the absence of accurate matching data, we have assigned Water Only Company customers to the main sewerage company that serves each of their geographic areas, and have combined relevant expected average water and sewerage estimated bills for 2014/15 on that basis.¹³⁵ This indicates a national average bill of around £340.

The proposed benefit is calculated by first assuming that the average recipient would be paying the local average bill in the “reference case”, or in the absence of a capped bill.

The benefit proposed reduces the recipient’s bill by 20 per cent. This gives the average recipient household around £70 per year, with those households in the highest bill areas receiving closer to £100 per year. For 4.4m recipient homes, the subsidy totals £300m nationally per year.

Across all companies, WaterSure administration costs today average £17 per recipient home. If this per recipient cost remains, applied to 4.4m recipients, this adds £75m to the cost, nationally, so the total cost for the proposed scheme is £370m. It seems likely that at such scale, economies will be achievable in the administration costs (they are very varied today across companies). Using half the administration cost – so £8.50 per recipient household – the scheme cost is £300m plus £40m = £340m.

If this cost is distributed across water customers, business customers will fund about 30 per cent (based on their share of volume supplied), leaving £240m to be funded by households. If recipient households do not contribute, the cost is borne by 17.8m funding households, making an average of around £13 each per year, or around £15 where local bills are highest.

Figures are approximate since the number of beneficiaries is based on FRS sample data, and other figures are best available. The assumptions probably produce a high end estimate, by assuming 100 per cent metering and 100 per cent take up among eligible households, although we have not projected bill levels into the future.

¹³⁴ Calculations for the Charging Review by ICS Consulting Ltd based on 2005-6 Family Resources Survey data

¹³⁵ Table 7 in Ofwat’s Future Water and Sewerage Charges 2010-2015 Final Determinations

Proposal to support a scheme for a reduced bill for households with children and which include a recipient of a specified income-related benefit or tax credit

FRS data suggests that in England and Wales there are children in 1.26m out of the 4.4m households that include at least one recipient of one of the qualifying specified income related benefits proposed. Using FRS data and assuming an average of 3.5 children in the homes with “three or more children”, we estimate there are 2.3m children in these homes (an average of 1.9 children for those of the 4.4m that contain children). To calculate the figures in Chapter 11, we assume that all 4.4m homes are metered.

To calculate the approximate national figures, in the absence of accurate matching data, we have assigned Water Only Company customers to the main sewerage company that serves each of their geographic areas, and have combined relevant water and sewerage volumetric charges on that basis.

The benefit proposed reduces the recipient’s bill by an amount that would fund 50 litres per child per day¹³⁶ in the home, at the local volumetric rate. This gives the average recipient around £40 per child per year, or around £80 per year per *home* benefitting (since on average there are 1.9 children per benefit home). The value of the 50 litres per day in the highest bill areas comes closer to £80 per child per year. For 1.26m recipient homes with 2.3m children, the subsidy totals around £100m per year, nationally.

WaterSure administration costs today average £17 per recipient household. If this per recipient cost remains, applied to 1.26m recipient households, this adds around £20m to the cost, nationally, so the total for the proposed scheme is nearly £120m. Again it seems like that at such scale, economies will be achievable in the administration costs (they are very varied today across companies). Using half the administration cost – so £8.50 per recipient household – the scheme cost is £100 plus £10m = £110m per year.

If this cost is distributed across water customers, business customers will fund about 30 per cent (based on their share of volume supplied), leaving around £75m to be funded by households. Assuming recipients do not contribute, this is funded across 20.9m households, adding an average £3.60 to the annual water and sewerage bill. This is closer to £4.70 where local volumetric charges are highest.

To net off against this is the current cost of the family-related part of Watersure, for which we do not have good data.

Our figures are approximate since the number of beneficiaries is based on FRS sample data, and other figures are best available. The assumptions probably produce a high end estimate, by assuming 100 per cent metering and 100 per cent take up among eligible households, although we have not projected bills and volumetric charges into the future.

¹³⁶ Based on guidelines to assure consumption and not compromise hygiene, from World Health Organisation, 2003, Howard G, Bartram J, Domestic water quantity, service and health

Changes to legislation

9.0.1 Currently the Water Industry Act 1991 gives water companies the power to levy charges on the 'occupier' of a property but the Act does not define the term 'occupier'. The Act should be amended so that liability for rented properties is as follows:

- If there is an agreement in place it should be the person specified by the agreement with the water company who would be liable. Landlords should ensure that tenancy information specified below is provided to the water company.
- In the absence of an agreement, the default arrangement should be that the landlord is liable for charges. The landlord should be able to discharge their liability for a tenancy period by ensuring that the information specified below is provided to the water company within 21 days of the tenant / licensee occupying the property.
- Where the premises are tenanted or subject to a licence and the landlord has discharged their liability by providing the information specified below, it would be the tenant/licensee who would be liable for the bill for the specified tenancy period.
- At the end of this tenancy period, the default position would be that the landlord would become liable for charges. If the tenancy had been extended, or if a new tenant had occupied the property, the landlord should be able to discharge that liability by ensuring that the information specified below is provided to the water company. In this case, the tenant / licensee would be liable for charges for the specified tenancy period.
- Where the premises are unoccupied then the owner would be liable.

9.0.2 The owner would also be liable for charges in the following situations:-

- Where the premises are occupied by an employee of the owner;
- Where the premises are subject to licences (i.e. more than one licence agreement) If the premises in question are subject to a single licence of the whole premises then the licensee would be liable;
- Holiday lets/licences;
- Residential accommodation where the common parts/shared accommodation remains under the control of the owner or property manager;
- If the owner of the property wilfully provides false information on their tenants to the water company.

Information to be provided by landlords and timescales

9.1.1 The information that water companies would require from landlords is as follows – information to be provided within 21 days of tenant occupying property:

For tenant(s) moving in:

- Tenant's full name
- Tenant's date of birth
- Contact details (telephone & email where they have one) of tenant
- Start date of tenancy
- End date of tenancy
- Previous address of tenant (as notified to the landlord)
- Name and contact details (telephone & email) of Landlord and/or managing agent

Optional, if known:

- National Insurance number of tenant
- Length of tenancy at previous address (as notified to the landlord)
- Meter reading on moving in (where applicable)

Penalties for non-payment of the water bill

The review team has suggested that if the legislative changes on named customer and clearer liability prove insufficient then consideration should be given to pursuing customers through the Magistrates' courts via a process following that for Council tax.

If Council Tax is not paid then the Council can take the following action:

- 1) **FIRST REMINDER** – The local authority will send a reminder if any Council Tax payment is overdue. If payment of the instalment is made within seven days of the issue date no further action will be taken. If payment is not made the right to pay by instalments is forfeited and the full amount of Council Tax will become due in a further seven days. If the claimant has genuine difficulty in paying they should contact the revenue section of the local authority as soon as possible to try to arrange payment or assistance.
- 2) **SECOND REMINDER** – If a second reminder is issued in a financial year the liable person will become liable for the whole of the outstanding balance following a third failure to pay.
- 3) **FINAL NOTICE** – If a third failure to pay occurs a final notice will be issued. The liable person forfeits the right to pay by installments. The final notice will inform the liable person(s) of the amount that is owing and that the local authority will be seeking a **LIABILITY ORDER**.
- 4) **SUMMONS** – To obtain a **LIABILITY ORDER** the local authority must apply to a magistrates' court for a summons to be issued to the debtor. The summons instructs the debtor to appear at magistrates' court and explain why they have not paid. The debtor does not have to attend and the hearing may take place in their absence. The debtor will be charged with the costs of issuing the summons. If the amount owing plus costs is paid the local authority cannot proceed with the application for a liability order. Some local authorities may accept an agreement to pay (usually by direct debit) even at this stage. In some circumstances the local authority may be persuaded to relinquish their costs.¹³⁷
- 5) **LIABILITY ORDER** – A **LIABILITY ORDER** may be granted to the local authority that giving them the power to:
 - a. Obtain financial information about the debtor and therefore assess the best means of recovery action
 - b. Make an attachment of earnings
 - c. Make an attachment order on an elected members allowances
 - d. Apply to the DWP for deductions to be made from the debtors Income Support, JSA or Pension Credit
 - e. Use bailiffs to seize the debtor's goods (also known as distress)
 - f. Apply for a charging order against the dwelling in respect of which the debtors liability arose
 - g. Apply to bankrupt the debtor (if they are an individual) or to wind up the company (if the debtor is a corporate body)

¹³⁷ If this was considered then the Magistrates' court would have to be given the power to deal with disputes.

Attachment of earnings

Deductions made from earnings after a successful LIABILITY ORDER are taken from NET earnings

Deductions from weekly earnings

Net Earnings	% deduction
Not exceeding £75	0
Exceeding £75 but not exceeding £135	3
Exceeding £135 but not exceeding £185	5
Exceeding £185 but not exceeding £225	7
Exceeding £225 but not exceeding £355	12
Exceeding £355 but not exceeding £505	17
Exceeding £505	17 in respect of the first £550 and 50% in respect of the remainder

Deductions from monthly earnings

Net Earnings	% deduction
Not exceeding £300	0
Exceeding £300 but not exceeding £550	3
Exceeding £550 but not exceeding £740	5
Exceeding £740 but not exceeding £900	7
Exceeding £900 but not exceeding £1,420	12
Exceeding £1,420 but not exceeding £2,020	17
Exceeding £2,020	17 in respect of the first £2,020 and 50% in respect of the remainder

Deductions based from daily earnings

Net Earnings	% deduction
Not exceeding £11	0
Exceeding £11 but not exceeding £20	3
Exceeding £20 but not exceeding £27	5
Exceeding £27 but not exceeding £33	7
Exceeding £33 but not exceeding £52	12
Exceeding £52 but not exceeding £72	17
Exceeding £72	17 in respect of the first £72 and 50% in respect of the remainder

Deduction from Income Support, JSA or Pension Credit

If a liability order has been obtained the local authority may apply for deductions from the debtor's Income Support, JSA or Pension Credit.

The maximum weekly amount that can be deducted from IS, JSA or PC is £3.00 (£4.55 for a couple). If there are other deductions being made from the benefit the maximum weekly deduction for all debt repayment is £9.00 (3X£3.00).

Deductions cannot be made if:

- There is not enough benefit in payment to allow a deduction to be made; in this case the amount payable after deductions is 10 pence per week.
- If there are deductions for higher priority debts i.e. rent, fuel or water.

The maximum amount of deduction that can be made from Contributory JSA is one third of the weekly amount of JSA for a person of the debtor's age.

Distress

"Distress" is the power that enables bailiffs to enter the debtor's property to remove possessions to sell at auction to pay off the Council Tax debt and any charges incurred by levying the distress

If all amounts due are paid:

- Distress can be prevented.
- If distraint has been levied a sale of goods can be prevented.

Distress cannot be attempted unless:

- A written notice has been sent to the debtor
- The written notice MUST specify:
 - The fact that a LIABILITY ORDER has been issued
 - The amount for which the LIABILITY ORDER was made for and the amount outstanding
 - A warning that unless the amount specified is paid within 14 days distress may be used
 - A warning that further costs may be incurred
 - A copy of the fees payable
 - The local authority's address and telephone number.

Certain goods cannot be seized when distress is levied. These are:

- Goods on lease or hire purchase
- Goods belonging to the landlord or other members of the household
- Tools, books, vehicles and any other items of equipment that is needed for the debtor's employment, business or vocation
- Clothing, bedding, furniture, household equipment and provisions necessary for the basic need of the debtor or their family

Bailiffs' powers

Bailiffs have no formal powers to force initial entry or break open an outer door that is locked or bolted. The bailiff must enter PEACEABLY through an UNLOCKED DOOR or WINDOW. They may not open a closed window even if it is not locked.

- Bailiffs cannot obtain a court order to gain entry
- An occupier cannot be sent to prison merely for refusing entry to a bailiff
- The police have no power to force entry on behalf of a bailiff or local authority
- A householder is entitled to:
 - Refuse entry to bailiffs
 - Use reasonable force to resist bailiffs who are unlawfully trying to push their way in

If a local authority gains a LIABILITY ORDER granting distress seek advice

Charging orders

This method of recovery is available if the debtor is owner/part owner of the property and the debt is at least £1,000 and is for the property that gave rise to the Council Tax arrears.

A charging order “mortgages” the property with the debt. If the debt is not paid the local authority may apply to the court for the property to be sold to pay the debt. This entitles the local authority to receive money from the sale after any charge with a higher priority has been met (such as mortgage lender debt).

In practice the court rarely orders the property to be sold.

Bankruptcy proceedings

If a LIABILITY ORDER has been issued a local authority can apply to bankrupt an individual or wind up a company (if they owe £750 or more) the court will make an order following a hearing and no other recovery action can be taken.

An individual facing bankruptcy proceedings should seek professional help as soon as possible.

Imprisonment

Local authorities can in certain circumstances apply to magistrate’s court for a warrant to commit the debtor to prison. This is a coercive measure designed to extract payment from someone with the means to pay. It is not a punishment for failure to pay the debt.

If the amount is paid before the warrant is issued or offered to the local authority it must accept the payment and no further action should be taken. If the amount owed is paid after the local authority has applied for the warrant but before it is issued or a term of imprisonment has been fixed and the issue of a warrant is postponed, a local authority may recover reasonable costs in connection with the committal proceedings.

A warrant to commit to prison is only issued if the court is satisfied that the failure to pay is:

- Willful refusal by the debtor OR
- Culpable neglect by the debtor AND
- The debtor has means to pay the debt

The maximum period of imprisonment is three months, but the maximum period should be reserved for the most extreme cases e.g. deliberate refusal to pay.

Once a warrant for commitment to prison is issued the liability for Council Tax, including any joint liability must be written off. No further recovery action can be taken in relation to the relevant amount.



Annex 10 – Putting Customers First

Overall Performance Assessment

The measures included in the current OPA are:

- water supply (low water pressure, unplanned interruptions to supply and drinking water quality);
- security of supply (hosepipe restrictions, leakage and performance against Ofwat's security of supply index);
- sewerage service (sewer flooding incidents and risk of sewer flooding);
- consumer service (written complaints, billing contacts, billing metered customers, telephone answering, telephone access, services to consumers with special needs, supply pipe repair policies, debt and revenue policies, complaint handling, compensation and providing information to consumers); and
- environmental impact (sewage treatment works, pollution incidents from water and sewerage activities and sludge disposal).¹³⁸

Service Incentive Mechanism (SIM)

Service standards and safeguarding of basic service levels will continue to be monitored by the regulators. Ofwat will publish regular performance information on how each company performs on these key service attributes. Current standards of service will therefore be maintained, and the new SIM will strengthen the quality of service aspects. The SIM will be based on two consumer experience measures:

- quantitative measure based on the number of complaints and unwanted contacts a company receives.
- qualitative measure derived from a consumer experience survey.

The quantitative measure combines the following five individual separate measures of performance:

1. All lines busy and calls abandoned.
2. Unwanted telephone contacts.
3. Written complaints.
4. Written complaints not dealt with at the first stage of a company's complaint procedure.
5. Complaints not resolved by a company and accepted for investigation by CCWater.

The qualitative measure aims to gauge how a consumer feels about a specific, actual interaction with their company. It will seek views on the consumer's experience from first contact to resolution of the issue. It will be obtained from a consumer experience survey. For each company the survey will seek to establish consumers' views on the:

- company's handling of their contact or service issue;
- outcome of the contact or service issue;
- level of satisfaction with overall experience; and
- reasons for dissatisfaction or satisfaction.

¹³⁸ Ofwat, Service Incentive Mechanism – a consultation on moving forward from the overall performance assessment, August 2009

The survey will also ask consumers to compare their company with the service they have received from similar organisations. This will enable comparisons between the water and sewerage and other sectors in terms of consumer satisfaction.

The survey will cover the different forms of communication and stages a consumer has been through as their issue is addressed. Consumers will be asked to rate their overall satisfaction with how the company dealt with their issue, from the first contact to the final resolution. The possible scores range from 1 (very dissatisfied) to 5 (very satisfied). The mean score of total responses to this question will form the company's qualitative measure score. To ensure comparability between water and sewerage companies and water only companies, the mean score for the qualitative measure will be weighted so that 50 per cent of it will be made up from billing contacts and 50 per cent from operational contacts.

Weighting of individual measures:

All lines busy/calls abandoned	1
Unwanted telephone contacts	1
Written complaints	5
Escalated written complaints	100
CCWater investigations	1,000

Figure 31: Example smart bill from Veolia Water Southeast (Formerly Folkestone and Dover Water Services)



Customer Reference No.: **123456**



Mr & Mrs Customer

Are you wasting money?

Let us show you how you can be more water efficient and reduce your water & energy bills

Your water use in the last bill period was:

13 m³

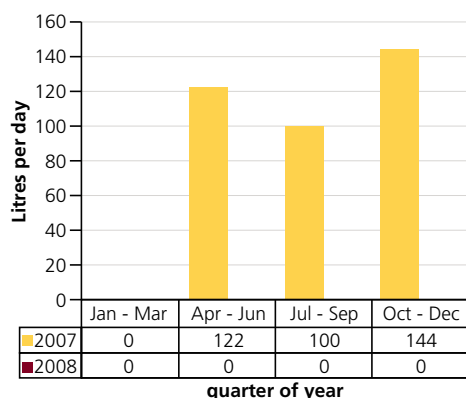
Your average daily water use was therefore:

144 litres/day

Compare your average daily water use with the table below to see how water efficient you are and the potential monetary savings of becoming water efficient.

Occupancy	Property type	Typical total water use (litres/day)	Water efficient water use (litres/day)	Value of potential saving per year
1 person	House with garden	198	166	£15.11
	Flat	158	133	£12.08
2 people	House with garden	337	283	£25.68
	Flat	269	226	£20.54
3 people	House with garden	429	360	£32.74
	Flat	343	288	£26.19
4 people	House with garden	544	457	£41.47
	Flat	435	365	£33.18
5 people	House with garden	646	542	£49.25
	Flat	516	434	£39.40
6 people	House with garden	736	618	£56.15
	Flat	589	495	£44.92

Your average daily water usage



This quarter

Your consumption this quarter is higher than last quarter. Do you know why? Have you had extra visitors?

If you think it should have been lower or the same, carry out a leakage check as shown overleaf

This year

We do not yet have a full year of quarterly data collected. When we do we will advise how your annual consumption compares to previous years

For ways to make your home more water efficient visit www.fdws.co.uk

How much do you spend?

Table of approximate costs in pence for everyday water use

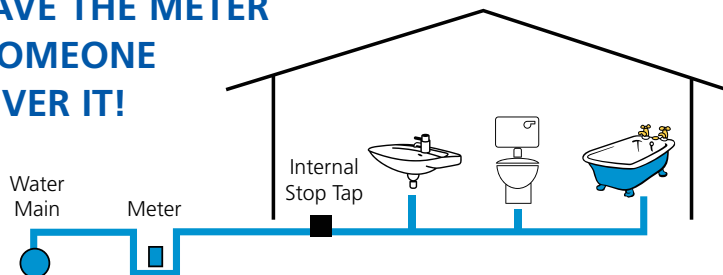
	Litres per use	Water	Wastewater	Energy	Total cost
Boil kettle	2	0.2	0.2	1.7	2 pence
Normal shower for 5 minutes	30	3.7	3.6	7.7	15 pence
Power shower for 5 minutes	75	9.2	9.0	22.8	41 pence
Bath	80	9.8	9.6	22.6	42 pence
Toilet flush	6	0.7	0.7	n/a	1.5 pence
Sink washing up	8	1.0	1.0	3.1	5 pence
Dishwasher	14	1.7	1.7	5.6	9 pence
Washing machine	50	6.1	6.0	9.9	22 pence
Hosepipe for 10 minutes	99	12.2	11.8	n/a	24 pence
Sprinkler for 1 hour	990	121.6	118.4	n/a	240 pence

The information contained in the table above gives indicative values and costs only

If you suspect you have a leak on your supply and your meter is at the boundary of your property you can carry out a simple test to check:

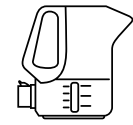
1. Start the test when there is no water use in the property and all tanks and cisterns are full.
2. Locate the external meter pit and open it, removing the sponge frost plug if fitted.
3. Check to see if the central silver disc on the meter is rotating.
4. If it is stationary there is no leak, job done. Don't forget to replace the meter lid.
5. If it is moving, you need to do a further check as there may be a leak.
6. Replace the meter pit lid and go back inside.
7. Locate and close the internal stop tap, this is usually under the kitchen sink.
8. Return outside and re-open the pit. Is the central silver disc still moving?
9. If it is stationary there is either water use in the house or an internal leak. Contact a CORGI registered plumber if you are sure no water is being used.
10. If it is still moving there is an external leak. Phone the Company for advice on what to do next. **Call 0845 888 5 888**

DO NOT LEAVE THE METER PIT OPEN, SOMEONE MAY TRIP OVER IT!



This quarter's water saving tips:

- Check all exposed pipework is lagged against the cold
- Locate your internal stop tap and check it works
- If you go away, leave your heating on low to prevent systems freezing up



Boil kettle
2p



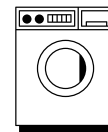
Bath
42p



Toilet flush
1.5p



Sink washing up
5p



Washing machine
22p

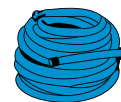


Dishwasher
9p



5 minute normal shower
15p

5 minute power shower
41p



10 minutes use of hosepipe
24p



1 hour sprinkler
240p

Source: Veolia Water Southeast (Formerly Folkestone and Dover Water Services)

Annex 11 – Changes to Legislation and Guidance

This report makes a number of recommendations that, if accepted by the UK and Welsh Assembly Governments, will require changes to primary and secondary legislation and statutory guidance. An indication of the possible changes is set out below.

Possible Changes to Primary Legislation

- new requirement on government to consult with customers before agreeing water quality improvements (Chapter 5);
- new metering requirements (area based metering with positive cost benefit analysis, high discretionary users and change of occupier) (Chapter 7);
- new requirement for individual meters in all new homes (Chapter 7);
- new duty on local authorities to co-operate with sewerage companies to minimise the total costs of draining highways (Chapter 9);
- local authorities to be charged for highway drainage from future connections (Chapter 9);
- change to named customer and clarification of liability for bill (Chapter 12);
- change in penalties for non-payment (Chapter 12);
- provision of central and local government information on vulnerable customers to water companies (Chapter 12);
- extend limit for Ofwat pursuing breaches and penalising companies to 5 years (Chapter 13);
- new requirement on meter reading frequency (Chapter 13).

Possible Changes to Secondary Legislation

- Level 3 of the Code for Sustainable Homes to be mandatory for all new homes (Chapter 10);
- New mandatory affordability measures (Chapter 11);
- Revised WaterSure Scheme (Chapter 11).

Possible Changes to Guidance

- New Ofwat guidance to companies on the methodology to be used for cost benefit analysis including full value of water (Chapter 4); on relation between standing charge and volumetric charge (Chapter 8);
- Revised government statutory guidance to Ofwat on charging – new charging principles to include fairness principles (Chapter 3) and requirements for a minimum charge and minimum volumetric rate (Chapter 8);
- Revised government statutory guidance to Ofwat on environment – in respect of Ofwat's sustainable development duty setting out the government's current approach and priorities on climate change (Chapter 4);
- Revised government statutory guidance to Ofwat on social issues – affordability issues and annual report on affordability and bad debt (Chapter 11, Chapter 12).



Annex 12 – Final Recommendations

Chapter 4 – Future Challenges

1. A national campaign is needed to ensure customers understand the challenges we face on the supply of water and therefore the importance of water efficiency. The campaign also should be closely allied with ongoing activity on energy efficiency, so that households think about energy and water efficiency at the same time.
2. The UK and Welsh Assembly Governments and the Environment Agency should consider changing the licensing regime for abstraction and discharge to ensure a more appropriate value for water.
3. The Environment Agency and Ofwat continue to work on methods of valuing water in a way that reflects its full future value, so that this value can begin to inform cost-benefit analyses and underpin future investment decisions. In the first instance, this work should concentrate efforts on establishing values at the point of abstraction in catchment areas with high water stress, using the Environment Agency's latest analysis.
4. The UK Government and Welsh Assembly Government review the merger regime in the water industry to ensure that it is sufficiently flexible to meet future challenges while still ensuring that the industry can provide appropriate comparators to enable Ofwat to regulate effectively.
5. The regulatory regime should continue to develop mechanisms that encourage companies to promote water efficiency among their customers.
6. The UK Government and Welsh Assembly Government should satisfy themselves that their guidance to Ofwat makes clear their current approach to, and priorities on, climate change.

Chapter 5 – How Water Charges Should be Distributed

7. Individual customers should pay the cost of water and foul sewerage services, including the cost of any damage that service causes to the environment.
8. The UK and Welsh Assembly Governments and the Environment Agency should do all they can to incentivise the reduction or elimination of pollution at source.
9. Water costs should be identified regionally, on a company basis, and that water prices should continue to be regionally based at an appropriate geographic scale within a company area, recognising that the level of averaging may change over time.
10. There should be a new requirement on government to consult with customers before agreeing any water quality improvements which water customers will have to pay for, to set out the costs and benefits including the impact on household bills and ensure effective consultation through CC Water and any agreed customer consultation arrangements. Customers views would have to be taken into account before any commitment to expenditure was made.

Chapter 6 – Effects of Current Charging System and Options for Future Charging System for Water Services

11. Neither council tax nor rateable value identifies those who need help with their bills sufficiently accurately; nor do they incentivise the efficient use of water. Therefore neither should form the long-term basis for charging for water.

12. There is a close relationship between occupancy and water use, but occupancy rates are not collected nationally and could be open to deception. The review team therefore does not recommend occupancy as the basis for a national charging system. The number of bedrooms would be a poor proxy for water use and is also not recommended for a national charging system. Neither incentivises the efficient use of water nor do they reflect income.
13. We have also considered property type and a possible flat rate per household as basis for charging. However, neither incentivises the efficient use of water nor do they reflect income.
14. We have concluded that the fairest way to apportion the costs of water services is by volume of water supplied. This is the only charging basis that incentivises the efficient use of water, as well as meeting most of the fairness principles set out in Chapter 3.
15. The basis of water charges should continue to move away from the current mix of rateable value and volume consumed (the current system) towards volume consumed. The speed at which this is achieved depends on the costs of metering and finding solutions to issues of affordability.
16. The current mixed system should continue in the interim period, although the review team notes that the help it provides on affordability is not targeted to those who need help.

Chapter 7 – Metering

17. The UK Government and the Welsh Assembly government should revisit the policy and legal frameworks on household water metering in the light of climate change projections, expected population growth and the Environment Agency's latest work on Catchment Assessment Management Strategies;
18. Ofwat should be asked to lead on the delivery of metering, publishing a progress report every two years;
19. Ofwat should develop an agreed methodology for assessing the costs and benefits of metering, incorporating the wider benefits identified by the review team, including taking into account the full value of water;
20. In areas where the wider cost benefit analysis (incorporating environmental and carbon emission costs) indicates that it would be beneficial, systematic, area wide metering schemes should be rolled out;
21. Companies should adopt systematic metering of high discretionary users and on change of occupier, unless Ofwat agrees that such an approach would be to the detriment of their customers;
22. The right to opt for a meter should continue to be offered to all customers;
23. The UK government should set an objective for metering penetration to reach 80 per cent in England by 2020; the Welsh Assembly government will wish to consider whether they want such a general objective, given their local circumstances;
24. Ofwat should set up a smart meter group, including the Environment Agency, water companies, energy companies, Ofgem and customer representatives such as CCWater, to determine the costs and benefits of smart meters and to take advantage of any synergies with the roll-out of energy smart meters;
25. Individual meters for each property should be the preferred option;

26. Assessed charges should be used as a basis of charging for households where it is not feasible to install a meter; such charges should provide as good a proxy for use as possible (preferably being based on local comparable metered consumption);
27. Individual meters should be provided for all homes in new multi-occupied buildings and in existing buildings where the cost is not prohibitive. Where this is the case, a meter for communal water use should be installed and billed direct to the landlord; individual homes should then be billed on the basis of an assessed charge direct to the owner or tenant by the water company;
28. Meters should be installed in the property boundary whenever possible. The water smart meter group should keep this issue under review.

Chapter 8 – Measured Tariffs

29. The UK Government and Welsh Assembly Government should consider updating the guidance to Ofwat on the operational principles to be adopted with metered charges.
30. The permitted variation in tariff structures should be as wide as possible to reflect both local circumstances and customers' preferences.
31. Ofwat should provide guidance to water companies on the principles to be adopted with metered charging, in line with new government guidance. This should include guidance on the balance between standing and volumetric charges, taking account of the importance of the charging system incentivising the efficient use of water.
32. The volumetric element of the tariff should normally be set at, or above, a level that covers the long-term costs of expanding supply or meeting increased demand for water (including any element of environmental degradation caused by abstraction not already included in the company's costs). The only exception should be if this would result in the company being overcompensated for its total costs.
33. In recovering a company's fixed costs there should be a presumption that these will largely be recovered from the variable element of the tariff, unless it can be shown that it would put customers in general at a severe disadvantage. More research needs to be done to assess the impact on consumption of varying the volumetric charge to establish if there is a real danger of inefficient outcomes where the volumetric charge is set significantly higher than the minimum set out above.
34. Tariffs should ensure that those benefiting from connection to the water and sewerage networks pay a fair share of the fixed costs, even if they use relatively little of the services.
35. More evidence is needed of how customers react to different types of tariff and whether they regard them as fair. Both Ofwat and the companies have a major role to play here. On the basis of current evidence, the review team believes seasonal (or in due course time-of-day) tariffs have the most potential. Rising block tariffs need occupancy rates which are not generally available and do not target specifically those who need help. Declining block tariffs do not incentivise the efficient use of water. Trials of rising block, seasonal and peak tariffs need to be assessed to see if they should be used more widely to the benefit of overall customers' interests.

Chapter 9 – Future Charging System: Sewerage Services

36. The cost of providing surface water and highway drainage is identified separately on the bill.

37. Ofwat should explore the variation in the composition (amount and basis) of the three elements of the sewerage bills and establish whether some general principles are required.
38. Foul sewerage should continue to be charged for on the same basis as water supply.
39. Defra, the Welsh Assembly Government, the Environment Agency, Ofwat, sewerage companies and local authorities should consider how the charging system could incentivise households to drain less rainwater run-off into public sewers, including incentives to install small-scale sustainable drainage systems. This could take the form of a sliding scale of charges for surface water drainage depending on measures taken by households to minimise rainwater run-off.
40. The UK Government and Welsh Assembly Government should consider transferring the highway drainage charges from existing connections from sewerage customers to local highway authorities, particularly once the evidence base on the scope and cost of retrofitting SUDS to existing highways is improved.
41. The UK Government and Welsh Assembly Government should, as a minimum, place a duty on local highway authorities to co-operate with sewerage companies to minimise the total costs of draining highways.
42. Highway drainage costs related to new connections to the public sewer should be paid for by local highway authorities.

Chapter 10 – Water Efficiency

43. Changes should be made to the regulatory framework to encourage water efficiency activity by water companies, customers and Ofwat. The changes proposed are as follows:
 - The activities related to water efficiency should be separated out from companies' other activities, allowing Ofwat to reassure itself that the regulatory incentives for water efficiency are fully applied. The operational efficiency of a company's water efficiency activity should be calculated separately by Ofwat, instead of included in the overall operational efficiency calculation.
 - Future benefits of increased water efficiency should be taken into account and, where a company invests significantly in water efficiency measures, consideration given to treating this as capital expenditure for regulatory price setting purposes, reflecting the fact that increased efficiency (and hence reduced demand) will continue over many years.
44. The UK Government and Welsh Assembly Government should promote a national education strategy working with stakeholders to influence public behaviour on water use, and building on the Act on CO₂ water saving campaign. Regional and local community-based campaigns on water efficiency should be developed using the key national messages and brand, but targeting local issues. Local councils, the private sector and other local stakeholders should be closely involved.
45. The UK Government and Welsh Assembly Government should review the efficacy of current and proposed labelling schemes and decide what information consumers need as a matter of priority. The UK Government and Welsh Assembly Government should work with Waterwise, water companies, the BMA, other manufacturers, stakeholders and retailers to ensure voluntary schemes are effective. A mandatory scheme should also be given consideration.
46. The UK Government and Welsh Assembly Government should ensure that only water-efficient fittings, fixtures and appliances can be sold on the UK market.

47. Level 3 of the Code for Sustainable Homes should become mandatory for all new homes in both England and Wales.
48. The review team has made recommendations to improve water efficiency in existing homes:
- The review team considers working with plumbers and heating engineers as an important route to encouraging more sustainable behaviour and recommends that the UK Government, Welsh Assembly Government and the proposed national water efficiency campaign consider how plumbers and builders can help to promote water efficiency.
 - Where possible any energy efficiency initiative should also include hot water efficiency objectives and vice versa. Coordination between suppliers, regulators and consumer bodies is critical.
 - Hot water efficient fittings should be included in any energy efficiency retrofitting schemes.
 - The retrofitting of water-efficient devices should be undertaken at the same time as energy efficiency measures to reduce costs and disruption to residents. Water companies should be encouraged to work with social landlords and housing associations when they are refurbishing homes to improve the water efficiency of social housing.
49. Any CO₂ savings should count against either the energy companies' CO₂ savings targets or water companies' water efficiency targets and should be factored into any analysis of the costs and benefits of water efficiency measures or to use the CO₂ savings against their own Carbon Reduction Commitment.
50. The review team therefore recommends that, as with metering, a cost-benefit analysis of any water efficiency proposals needs to take account of wider benefits including the full value of water and the potential for CO₂ savings.

Chapter 11 – Helping Customers: Affordability

51. A new, more closely targeted, package of help should be put in place;

WaterSure:

- The current WaterSure scheme should be refined to include low-income metered customers with medical conditions only. This will require a change to the Vulnerable Groups Regulations.
 - WaterSure recipients' bills should be capped at a level at least as low as the national average metered bill, the regional average metered bill, or their actual metered charges, whichever is the lowest.
 - Companies and healthcare professionals should increase awareness of the WaterSure scheme to improve uptake levels.
 - The Department of Health should review the provision of medical certificates with the British Medical Association with a view to agreeing free certificates for WaterSure applicants. Primary Care Trusts should also be encouraged to reimburse costs of certificates as part of the patient's healthcare package
52. Discounted bill for low-income metered households:
- Low-income metered households in receipt of certain means-tested benefits and tax credits should be eligible for a 20 per cent discount on their volumetric bill.

53. Discounted tariff for low-income metered households with children:

- In the absence of a wider scheme to help low-income customers, a volumetric discount tariff should be offered to metered and assessed-charge customers in receipt of means-tested benefits and tax credits and with one or more children. Households should receive a discount equivalent to 50 litres per child per day.

54. Water efficiency and benefit entitlement check programme:

- Targeted water efficiency measures and benefit entitlement check programmes should be introduced where possible as part of existing programmes such as Warm Front, the Home Energy Efficiency Scheme in Wales and the Decent Homes initiative. In all water company areas, Ofwat and the company should look at the potential for a targeted scheme for low-income priority customers, similar to WaterCare in the South West, with the costs allowable within the regulatory framework. High water cost areas, and in particular the South West Water region, should be prioritised for targeting.

55. Government and Ofwat:

- Government should consult further once they have taken a decision on who should pay for affordability measures.
- Ofwat should track the affordability problems facing the water industry and should then take appropriate action and/or provide advice to the UK Government and Welsh Assembly Government, to ensure that water and sewerage services remain affordable over both the medium and longer term. Ofwat should report on the position on affordability in an Annual Report on affordability and debt.

Chapter 12 – Helping Customers: Debt

56. Water companies should be more proactive in preventing 'at risk' customers from falling into debt in the first place. DWP should consider the scope for widening the third-party deduction scheme to keep more customers on the scheme once a debt has been repaid. DWP should consult with companies on ways to improve the scheme and how companies can contribute to the costs of administering the scheme

57. As a priority, the Water Industry Act 1991 should be amended to provide for a named customer and clarify who is responsible for paying the water bill; the 'liable person' should be the property owner unless they discharge their liability to the water company by providing tenancy information correctly and in a timely manner.

58. The UK Government and Welsh Assembly Government consider whether companies should be legally able to pursue debt through the magistrates' courts in the future.

59. The review team believes that it would be beneficial to customers and companies if central and local government passed on information to the water companies on vulnerable customers on benefits.

60. Ofwat should produce an annual report focusing on continuing issues in bad debt performance and affordability (see Chapter 11); this report should incorporate CCWater's monitoring results and highlight transferable good practice where possible.

61. Ofwat should consider removing bad debt as a notified item at the next price review.

62. Ofwat should continue to approve social tariffs that encourage the payment of debt and therefore advantageous to all.
63. The review team recommends that companies should publicise the help available to those in debt and ensure that bills are easily understood.
64. There should be further exploration of the use of PPMs if there is a demand from customers for them as a budgetary tool.

Chapter 13 – Putting Customers First

65. CCWater, consulting with the UK Government and Welsh Assembly Government, Ofwat, and members of the quadripartite group, should put in place arrangements to engage with and consult customers on a regional or water company basis, on any issues affecting their bill, particularly proposals for future quality improvements, not simply on price control issues. The quadripartite machinery set up for the latest price review should be established on an ongoing basis.
66. Ofwat, CCWater and companies should publicise and explain information about companies' performance against the Service Incentive Mechanism (SIM) on their websites and through other appropriate channels. Ofwat should publish six-monthly 'league tables' based on quantitative and qualitative information and survey results from the SIM to allow customers to assess the performance of their water and sewerage companies, and companies to monitor their progress in relation to other companies and the requirements of the assessment criteria.
67. Companies should ensure that water efficiency, affordability and debt information and advice are provided to their customers in accessible formats, either on and with bills or through any other appropriate methods.
68. Metered customers should receive at a minimum twice-yearly bills based on a minimum of twice a year actual meter readings.
69. The limit for pursuing breaches and penalising companies should be extended to five years, and there should be an appropriate avenue of appeal for companies wishing to contest Ofwat's decision.

Chapter 14 – The South West

70. This chapter has set out the reasons for the current high prices in the South West Water area and potential solutions. If government wants to pursue these, the review team recommends that Ofwat is asked to advise on one or more of the following options:
 - Implementation of a one-off or other financial adjustment by government to address the specific circumstances of South West Water at the time of privatisation, and the resulting implications for water bills in the South West Water area.
 - Adjustments to bills in the South West Water area through contributions by other water customers across the country.
 - A package of proposals for South West Water customers, potentially taking account of seasonal issues and cost drivers and the package of proposed affordability measures in this report.

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