The Independent Review of Charging for Household Water and Sewerage Services

Interim Report

June 2009
Dear Secretary of State and Welsh Minister,

You appointed me last August to lead a review of 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.

My report on the work I have undertaken to date is below.

The conclusions I have drawn from looking at the issues you have asked me to address are based on published research, evidence from the call for evidence last autumn, the 5 workshops we have held and work by the review team themselves. However, this is an interim report and the recommendations are provisional. You will see that there are still some questions on which I am seeking further views or evidence before I make my final recommendations to you. I will also welcome comments on the report as a whole. Following this further round of consultation, and more analysis work by the review team, I intend to produce a final report and recommendations in the autumn.

Overall, I have concluded that, whilst the current charging system still works, it needs updating to ensure that people continue to regard it as fair, that essential water and sewerage services are affordable to all and to ensure we can meet the future significant challenges of climate change.

Climate change and population changes mean we will face increasing pressures on the amount of water which is available to us all and the environment. Water supply is already under stress in parts of the country. In future, river flows may reduce by 50%. Storms will also put pressure on the capacity of some of our sewerage system. The sector's costs will continue to rise as a result of environmental quality improvements and the need to replace what can be Victorian infrastructure putting significant upward pressure on bills across the country. Most of us currently consider water cheap and plentiful. This will increasingly not be the case. There is therefore a mismatch between how we value water now and how we will need to do so in the future. Customer and company behaviour, as well as the charging and regulatory systems, need to adapt so the true value of water is fully recognised and we are all incentivised to use it more efficiently. The report makes recommendations to achieve this. The current system still works but we need to act now to avoid future crises.

I have also considered whether pricing by individual company is appropriate. Prices can vary considerably between companies (average bills range from around £280 to £500). Customers are not used to such differences in prices for essential services and, if they are in a high cost area, consider it unfair. The report concludes that regional pricing is generally right. Companies’ costs differ significantly reflecting local factors. Regional prices reflect the costs of local service and provide the right efficiency incentives to local companies and their customers. The report does, however, raise the question of who should pay for environmental improvements from which all customers benefit. Regional pricing will also require solutions on affordability in high cost areas.

I have set out the fairness principles on which I consider a charging system should be based. There was significant agreement on these during evidence gathering. In the light of these principles, the report concludes that paying for services on the basis of what the household uses is the fairest way of paying in future and would incentivise the efficient use of water. This means the direction of travel needs to be towards the metering of most household properties. Metering incurs additional costs.
The report therefore looks at the costs and benefits and concludes there is a strong case for early – and potentially compulsory – metering where water is scarce, for high discretionary use (where customers may not currently be paying enough for what they use) and where metering has been adopted by the majority of customers. The case for metering is less compelling where water is not in short supply. The report consults on the details of this approach. If metering is to become more widespread, this will involve transition from one charging system to another. This cannot be done successfully without leadership. The report recommends that Ofwat, working with others including the Environment Agency, should provide that leadership. It also recommends a working group should be set up to ensure any synergies with smart metering in the energy sector are fully exploited.

I have also concluded that any protection that was afforded to low income families by the rateable value based charging system has been eroded and cannot now provide a solution on affordability. Rising bills and increased metering means that there is an urgent need to ensure such families can afford what is an essential of life. The report recommends a package of measures to tackle water affordability including company run schemes to help those on low incomes make their homes more water efficient, similar to the energy efficiency schemes already in place. Ofwat has a duty to have regard, amongst others, to low income customers and the report recommends that, working with the water companies, it should play a proactive role on issues of affordability including producing an annual report on how affordability is being tackled by the industry.

I am firmly of the belief that bad debt is placing too large a burden on those who are conscientiously paying their bills. The cost to paying customers is about £11; a cost which some can ill afford. I have been particularly struck at how high debt is in the water sector compared with the energy sector where bills are about three times as high. This suggests to me that something is fundamentally wrong here. The report concludes that legislative changes will be needed to ensure that companies have the ability to pursue effectively those that can afford to pay but choose not to do so.

The report also recommends a range of water efficiency measures which have the potential to help everyone reduce their use of water and keep their future bills lower that they would otherwise be. It makes recommendations on the charging arrangements for surface water and seeks views on future arrangements for highways water drainage, recognising how important it is to incentivise alternatives to the use of the sewerage system to help tackle the effects of climate change. Finally, it includes a series of recommendations to ensure water companies work closely with, inform and consult their customers.

I recognise that the emerging recommendations will have an effect on the industry’s costs. We have given an initial view on these where possible in the interim report and are requesting comments on them; we intend to work these through more thoroughly for the final report.

I would like to record my appreciation of the high level of support and input I have received from everyone involved in this review so far, in submitting evidence, attending workshops and providing additional help and information. I would also like to thank my review team for their hard work, good humour and willingness to grapple with what are very tricky issues!

Anna Walker
June 2009
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Introduction

i The review team welcomes views and further evidence on the recommendations and further questions (see Annex J) in this interim report by Friday 28 August 2009.

ii As water supply comes under increasing pressure from changing demographics and the likely effects of climate change, UK Government and Welsh Assembly Ministers decided that it was timely to review the current system of charging households for their water and sewerage services. Water prices have been rising in real terms. More people are opting for metering with the consequence that unmetered customers are seeing their bills increase. Levels of water debt have reached an all-time high and concerns are being voiced about the affordability of bills, particularly in some parts of the country.

iii Against this background, UK Government and Assembly Ministers asked the review 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.

Full terms of reference are contained at Annex A.

iv In order to develop its evidence base, the review team began work in autumn 2008, issuing a call for evidence in November to which it received 78 responses. A list of those responding and a summary of their responses is given at Annex D. In addition, the review team held five workshops across England and Wales (in Plymouth, Warrington, London, Graftham Water and Merthyr Tydfil). These workshops explored questions in our call for evidence and other issues. A full record of the presentations by the speakers and the discussions can be found on our website (www.defra.gov.uk/environment/water /industry/water-charging-review/). The review team also reviewed published research and commissioned some of its own, examining the cost structures of water supply (in conjunction with the Cave Review1)2 and modelling the effects on household bills of a range of charging bases and tariffs.

v The review took as its starting point current UK Government and Assembly Ministers policy on charging, metering and demand management. It also took account of both governments’ guidance to the regulator, Ofwat.

The Big Issues: Water Supply, Demand and Future Costs

vi The review team has concluded that water supply and demand present real challenges and issues for the future.

• Climate change is expected to lead to periods of significantly lower rainfall in summer, affecting river flow and water availability. High rainfall at other times of the year is likely to cause more acute problems for surface drainage in some areas.

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While pressures are greatest in the South and South East of England, where relative lack of rainfall is combined with high population density and anticipated population growth, the Environment Agency’s recent work on catchment areas shows that there are considerable pressures on individual water resources throughout England and Wales. The Environment Agency’s water stress map needs revising to reflect water resource pressures (both water availability and ecological) on a water catchment area or water resource zone basis for both England and Wales. Such an analysis presented in map form and incorporating the 2009 climate change projections would enable water companies to identify where compulsory metering may be justified.

Despite uncertainties about population forecasts and the effects of climate change, increasing household demand for water will continue to put pressure on water resources.

Water is currently not expensive for most customers. But it is clear that over time, the total cost of the water and sewerage systems will keep on rising. The sector is capital intensive, currently investing at the rate of some £4 billion per annum. This is likely to continue, given the need to maintain and increasingly to renew existing infrastructure. European Union (EU) Directives also require significant improvements designed to improve the quality of rivers, bathing waters and shellfish waters, and to provide greater protection for wetlands and Sites of Special Scientific Interest (SSSIs). Climate change pressures will require more investment in the sewerage network, which already is the major component of many bills.

Prices, too, have risen faster than inflation over the last ten years and draft company business plans suggest that in the next five years household water bills could rise by an average of 9 per cent. Price rises will be higher in regions requiring significant new investment (such as Thames, Southern and United Utilities amongst the larger water and sewerage companies). More regions will therefore face higher prices.

Given the upward pressures on industry costs and hence prices to customers, and the pressures on supply, there are real issues involved in making sure that the sector operates as efficiently as possible so that costs to the consumer are kept down and the industry can meet the significant challenges it faces. In this context, the review team recommends that the true value of water, taking account of its future, as well as current, value should be used for operational and investment decision making in the water industry. At present, when the Environment Agency grants abstraction licences, it can charge only the administrative costs of issuing the licence. The review team agrees with the recommendations of the recent Independent Review of Competition and Innovation in Water Markets (the Cave Review) that where water resources are under pressure, a scarcity charge should be introduced to incentivise company and customer behaviour. The review team also recommends that the Environment Agency and Ofwat should continue to work on a methodology for valuing water so that this can be taken into account in future investment and operational decisions as quickly as possible. A revised water stress map should provide the basis for this work.

Current System of Charging for Water

Most customers receive four different services from water and sewerage companies:

- clean water;
- removal of dirty water (foul sewage);
- surface water drainage; and
- highway drainage.
Water companies currently charge customers in one of four ways:

- for most customers, charges based on the rateable value of their property;
- charges based on the volume of water consumed;
- assessed charges; and
- WaterSure, the UK government’s statutory scheme for certain vulnerable customers (and its voluntary equivalent in Wales).

Water and sewerage companies have high fixed costs that are largely unaffected in the short run by either the volume of water supplied and sewage discharged, or the number of customers served. However, any necessary new investment can lead to high additional capital costs.

Households with similar characteristics can receive different water bills for three main reasons: variations in regional costs; different bases for calculating charges, especially whether water supplies are metered or not; and different ratios between standing and variable charges.

In the case of sewerage, the need for new investment is driven both by the volume of waste water and rainwater run-off that discharges into the network and by the need for treatment. What customers are charged for different elements of their sewerage bill varies significantly between companies in England and Wales.

The review team would like to understand better the rationale for the differences in the composition of sewerage bills across England and Wales and would welcome evidence on what might explain the differences.

In addition, as the infrastructure used by the three sewerage services is largely shared, the review team welcomes views on the basis on which costs can be allocated fairly between the three services.

Fairness Principles

The review consulted on the fairness principles that should guide any system of household charging. These are the principles that emerged with significant unanimity:

- Charges should be related to the costs imposed on the system, so that customers in a similar situation should pay a similar amount for the same service;
- Charges should relate to the volume of water used, thus incentivising the efficient use of water;
- Charges should reflect the ‘polluter pays’ principle;
- As water is essential to life, charges should be affordable to those on 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;
- Charges should be simple and transparent – customers should know where their money goes, and why; and
- The charging structure should be neither too expensive nor complex to administer.

These principles are similar to those defined by Ofwat following consultation last year; and they are widely shared by people living in water-stressed areas and elsewhere.
The review team recognised, however, that although the last four principles should apply under any charging system, the first four can involve tradeoffs that may have to be balanced against each other, making it difficult to achieve them all under the same system. As a result, the review team has concluded that while any future charging system should be assessed against the fairness principles emerging from evidence gathering, issues of affordability have to be resolved outside the main charging system.

Discussion of the fairness principles also led the review team to conclude that costs should reflect regional differences and that water prices should continue to be regionally based and geographically averaged.

The arguments as to whether environmental improvements should be paid for by the local water customer, the national water customer or the taxpayer are complex (see paragraphs 3.3.1 to 3.3.19). The review team would welcome views on the arguments it has set out in the interim report before reaching a firm conclusion in the final report.

Whoever pays for environmental improvements, there is an urgent need for greater debate and transparency over the costs before they occur. To achieve this, the review team would welcome views on a potential recommendation that in future the UK government and Welsh Assembly Ministers should make clear in all impact assessments associated with new legislation the effect of changes on water customers’ bills. All impact assessments should quantify the additional cost on the national average bill and those of each water company area. Formal and informal consultations must make specific efforts to engage water customers and take their views into account. Additions to bills must be taken into account in final decisions.

Future Charging System: Options

The review team has looked at a number of alternative charging bases by which companies can cover the costs of providing water and sewerage services and has assessed these against the fairness principles.

The charging systems include:

- continued use of rateable value for some properties alongside volume charges for others (the status quo);
- charges based on council tax bands;
- charges based on occupancy rates, number of bedrooms, property type or a flat rate; and
- charges based on volume (using metering).

When the rateable value system of charging was introduced a century and a half ago, it was linked to ability to pay and, to some extent, water consumption. However, the link between rateable value and income has become very tenuous. Recovering costs according to the rateable value of a property is no longer effective at targeting customers who are struggling to pay their bills, and no longer provides a solution to affordability. Nor does it incentivise the efficient use of water. It is clear that an alternative basis for charging must be found in the near future as the system is so outdated.

Council tax bands offer an alternative property-based charging basis, as average income increases with council tax bands. However, the review team’s analysis shows that low-income households are distributed across a range of bands, and that most households fall into a small number of bands. Reducing bills for low-income households to the extent of making
their bills affordable would benefit too many other households as well. Council tax bands are therefore not an effective basis to target households needing help, nor do they incentivise the efficient use of water. The review team does not recommend council tax bands as a basis for a national charging system.

xxvii We have also considered other proxies for water use. 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 does not recommend occupancy as the basis for a national charging system. The number of bedrooms in a property would also be a poor proxy for water use and is also not recommended for a national charging system.

xxviii Property type and a possible flat rate per household have been considered as basis for charging. However, neither incentivises the efficient use of water and are not recommended for a national charging system.

xxix We have concluded that charging by use of water meets more of the fairness principles than any other method of charging. It is fair because it can be designed to reflect the long-run costs of water consumption, which is critically important where the environmental or investment costs of expanding water supply are high. It provides an incentive to conserve water and conforms to the ‘polluter pays’ principle. And it is fair because equivalent households receive similar bills, calculated in a way that is simple and transparent.

xxx The drawback to volumetric charging is that it imposes additional costs as a result of metering and cannot discriminate between households on the basis of income. So it cannot address issues of affordability for low-income customers. Solving affordability issues will require alternative approaches.

xxxi Continuing to charge some customers on the basis of rateable value and others on the basis of metering is an acceptable interim solution. However, the basis of water charges should move towards volume consumed. The speed of which depends on the costs of metering and finding solutions to the issues of affordability.

Measured Charging and Meters

xxxii The review team has concluded that charging on the basis of metered supplies should be the long-term aim, enabling customers to pay on the basis of the amount of water they use. Metered charging saves money by cutting water consumption and leakage costs, but it costs money to set up and operate.

xxxiii The benefits of metering are that it:

- provides a fair basis for charging; households who use more water pay more;
- introduces an incentive to reduce water consumption;
- reduces carbon emissions;
- gives some control over bills to householders;
- more easily identifies leaks;
- allows the use of more sophisticated tariffs;
- helps postpone or reduce the need for new infrastructure, while minimising the environmental and social impacts of increased abstraction; and
- provides more information on water use.
xxxiv The costs are that metering:

• involves the installation of a meter;
• requires the meter to be read periodically;
• necessitates the meter to be replaced when it wears out; and
• changes the customer service relationship between the water company and its customers.

xxxv In situations where water is expensive to supply and consumption is reduced because customers are charged on the basis of use, metered charging saves money overall, it benefits the environment and it is fairer. In other areas, where water is more plentiful and cheaper to supply, there may be a net cost to metered charging. The question is then whether that net cost is worth incurring to gain the fairness benefits.

xxxvi The value of benefits will vary a lot from situation to situation according to local circumstances and the type of customer. Some benefits are difficult to quantify such as the environmental and social benefits of saving water. Benefits are at a maximum where the true value of water is high – or will be soon – where there is high discretionary use and where meters are already widespread. The review team would welcome views on its cost benefit analysis.

xxxvii On the other hand, the costs of metering are better known. The total cost to the customer over thirty years works out at typically around £30 per household per year above the cost of unmetered charging. These costs could be reduced by up to £7 a year if a programme of compulsory metering was used.

xxxviii As a result, the review team believes that compulsory metering is justified:

• for high discretionary water users;
• where the true value of water is high; and
• where levels of metering are already high.

The review team would welcome views on what the appropriate percentage of metering should be to trigger a compulsory metering programme for the remaining unmetered properties.

xxxix The transition from one charging system to another will need strong, active leadership. The review team recommends that Ofwat is asked to lead the delivery of metering in a proactive way within the policies laid down by the UK Government and Assembly Ministers, publishing a report on progress every one or two years.

xl The review team also believes that the right to opt for a meter should continue to be offered to all customers. Water companies should ensure that their low-income customers who are low users and would benefit from being metered are identified and encouraged to apply for a meter.

xli The incremental cost of adding water meters to the smart energy communications system needs further examination. The review team recommends that Ofwat sets 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.

xlii For those customers who can’t be metered, assessed tariffs should be used which provide as good a proxy for use as possible without being open to deception.
Future Charging System: Measured Tariffs

Tariff design affects the size of customers’ bills and can also provide an incentive for customers to make more efficient use of water, including buying more water-efficient fittings and appliances.

While it is for Ofwat and the companies to decide what tariffs to use, the review team’s work suggests that some tariffs will be fairer and more effective at promoting efficient water use than others. Having evaluated a number of different tariffs, the review team draws the following conclusions on which it would welcome views:

- The main variable in basic measured tariffs is the relationship between the volumetric charge and the standing charge. The review team recommends that a high proportion of the company’s revenue should be collected through the volumetric charge and that the unit price of water should be no less than the true value of water.
- More sophisticated tariffs can provide different incentives to customers and distribute the costs of supply across customers in different ways; although rising block tariffs may merit further consideration in specific circumstances, without a robust way of establishing occupancy, the general adoption of rising block tariffs is unlikely to maximise fairness and cannot be used to target effectively those that need help in paying their bills;
- The declining block tariff is not appropriate for a national charging system as it weakens incentives to reduce discretionary use of water;
- Seasonal tariffs appear to show potential for controlling summer-time peak demand;
- Ofwat should work with companies to ensure that the tariff trials provide robust information on the behavioural response to innovative tariffs and until the trials are completed no definitive conclusions can be drawn on tariff options.

Future charging system: Sewerage services

Sewerage companies generally charge foul sewerage on the same basis as water supply. Although the two services have different characteristics, their similarities and the difficulty of measuring the volume of foul sewage discharged into the sewerage system (which in any case relates to the volume of water supplied) supports the review team’s conclusion that they should be charged on a similar basis.

Surface water drainage is expected to assume greater importance in future, as climate change affects the sewerage capacity required and its associated costs. Implementing the Pitt Review’s recommendations will help to incentivise sustainable drainage systems in new developments, and help reduce the increase of run-off from paving gardens with impermeable materials. How the charging system for surface water drainage can incentivise sustainable urban drainage systems (SUDS) requires more thought, especially for existing homes and the review team would welcome views on how this could be achieved.

Highways drainage is currently paid for by the generality of water customers but customers have no ability to influence the costs of highway drainage. Current charging arrangements do not meet the ‘polluter pays’ principle and local highways authorities have no incentive to minimise the costs of dealing with run-off from the roads.
Drawing on these conclusions, the review team makes the following recommendations:

- **Foul sewerage services should continue to be charged on the same basis as water services.**
- **Defra, the Assembly government, the Environment Agency, Ofwat and sewerage companies should consider how the future charging system for surface water drainage could better incentivise households to install sustainable drainage systems. Ofwat should also look at the variation in charging for surface water drainage.**
- **The review team invites views on the possibility of transferring highway drainage costs to local authorities – both on the principles and the practicalities, including costs and benefits. It also invites views on alternative ways for local highway authorities to be incentivised to reduce the volume of highway drainage run-off to sewerage systems.**

**Affordability**

In the twenty-first century, people must have access to affordable water and sanitation.

Certain areas such as the South West are already experiencing affordability issues. The existing rateable value charging system affords no protection to customers on low incomes, and it is clear that a more durable solution to affordability is needed.

The Welsh Strategic Policy Statement on Water states that keeping water bills at affordable levels is a priority for the Welsh Assembly government, and it is also a key issue for the UK government as a whole.

We have found it difficult to arrive at a precise definition of affordability as it depends on both household income and how much the household has to spend on all essential items, including water. Nonetheless it seems that two main customer groups are likely to experience problems with the cost of water: those on low-incomes who need high volumes of water for essential use, and low-income customers living in areas with high water bills. Low-income customers elsewhere could also struggle to pay their bills. The review team has concluded that it is not appropriate for the water industry to try to address general issues of poverty through water bills.

The review has identified two specific issues around affordability that go beyond general poverty. These are:

- low income customers who have very high non-discretionary use as a result of medical conditions or household composition; and
- low income customers who live in areas of very high costs, and so have very high bills compared to the national average.

Concerning who should pay for this assistance, there are two choices: the national taxpayer or water customers (either regionally or nationally). It has been argued that the taxpayer should pick up the cost of affordability measures, as poverty and affordability are wider societal issues and not just related to water charges. However, the review team notes that:

- the charging system originally included help paid for by other water customers for those on lower incomes via the rateable value based charging system; and
in other regulated sectors (such as energy) some help is provided by national government but much of the cost of affordability measures falls to the industry. Given the difficulty of putting additional costs on other customers in areas of high water costs, the review team seeks views on whether affordability measures should be paid for nationally by all water customers, and what this would mean in terms of complexity and cost for the administration of the charging system.

xlxv The Department of Work and Pensions (DWP) told the review team that income-related benefits are designed to cover expenditure on the essentials of life. However, whereas housing benefit varies according to region due to the substantial differences in housing costs, there is no such recognition of the wide variation in regional water prices. The review team asks for views on the possible option of a regional water benefit, paid for by the national taxpayer. This would allow funding on a progressive basis.

xlxvi A package of measures will be needed to ensure water is affordable for all. On the basis of analyses undertaken, the review team considers that receipt of Council Tax Benefit could be used to determine eligibility for help. The review team proposes that the following actions are taken:

- **WaterSure** (which is designed as a safety net to help those on low income with high usage) should be retained and improved, refining the eligibility criteria for older children in a family, and improving advice on medical criteria. The charge should be capped at the national – not the regional – average bill, and applicants’ medical certificates should be supplied free of charge;

- Customers receiving Council Tax Benefit in high-bill areas should have their metered water and sewerage bill capped at the national average bill through the use of discounts. They should be eligible for a wider range of social tariffs and, along with low income metered customers in debt, for help with improving the water efficiency of their home;

- Ofwat should be more pro-active on affordability issues. The review would welcome views on whether the scope and detail of Ofwat's existing duties are sufficient to tackle affordability issues; and

- Ofwat should produce an annual report on affordability and debt issues and where it is not clear that it is possible to solve the affordability problems within the current regulatory framework, Ofwat should advise the Secretary of State and Welsh ministers on what action is necessary and why.

xlxvii Companies should be statutorily required to develop their own water efficiency programmes which would contribute to their enforceable water efficiency target, with priority given to low income customers in debt or in receipt of Council Tax Benefit.

**Prevention, Management and Recovery of Bad Debt**

xlxviii Water debt is increasing and is likely to continue to do so as incomes are affected by the economic downturn, customers’ overall debt burden increases, and water bills continue to rise. Water bills are on average a third of energy bills yet water debt is significantly higher in percentage terms and increasing at a faster rate. A factor in the rapid rise in bad debt is the ban on disconnection for non-payment of bills introduced in 1999. This has led to water debts being seen as a low priority by debt advice agencies and others. The lack of a legal requirement for a contractual arrangement with a named customer is also a factor.
Effective debt prevention and management is in the interests of the companies and their customers. Identifying customers more readily would permit more effective early interaction, especially on affordability and bad debt issues and should prevent many more ‘at risk’ customers from falling into arrears.

In 2007/8, the water industry had £930 million of household revenue outstanding for more than three months, and wrote off £104 million of household debt. Combined debt write-offs, financing costs associated with outstanding revenue and recovery costs add about £11 each year to each customer’s bill. This is unacceptable and unfair to paying customers.

Those in debt tend to live in private rented accommodation and move on before paying their bills - so called ‘leaver debt’. A significant number of non-payers are people who ‘can’t pay but there are also some who ‘won’t pay’.

The review team believes that as a priority, the Water Industry Act 1991 should be amended to ensure that water companies have a named person clearly responsible for paying the bill, defining a ‘liable person’ along the lines of that used in council tax legislation. The review team suggests that three statutory changes are necessary in order to ensure debt levels are tackled effectively:

- clarify and widen who is liable for paying the bill;
- ensuring that the name of the person responsible for paying the bill has to be supplied to the water company; and
- identifying the property owner as responsible for paying the bill when the property is in multiple occupation.

Ofwat should encourage companies to move towards debt prevention and best practice approaches rather than concentrating on debt management.

Local government should work with water companies to identify low-income customers receiving Council Tax Benefit so that companies can better target assistance.

Companies should consider, as a way of helping customers pay their bills, developing more voluntary agreements with registered social landlords and local housing authorities, so that water bills for unmeasured customers are paid with their rent.

Companies should offer those facing debt issues a range of different methods of payment and ways of seeking help, including social tariffs. Companies should also be more proactive in helping customers to apply for the Water Direct scheme where this would be helpful to them.

Ofwat, together with CCWater, should be required to monitor company performance with regard to debt prevention, management and recovery practices against Ofwat’s debt guidelines. Ofwat should then produce a separate annual report on debt which makes clear which companies are performing well and which should improve; this could be combined with the report proposed on affordability issues.

Some respondents suggested to us that some customers would value prepayment meters as a way of managing their finances even though disconnection is not a possibility. The review team would welcome views on the costs and value of prepayment meters compared to other mechanisms to help customers manage debt.
The review team considers that ‘won’t pays’ (as opposed to ‘can’t pays’) are unacceptable and should be tackled, given the consequences for other customers’ bills. Lifting the ban on disconnection is outside the review’s terms of reference but the review team would like views on the possibility of introducing trickle valves to reduce supply to persistent “won’t pay” customers after rigorous independent safeguards.

Water Efficiency

Water efficiency has an important role to play in managing demand in the face of growing pressures on water supply from population growth and the likely effects of climate change. Awareness is also growing of the links between water and energy efficiency and the way water efficiency can help in mitigating and adapting to the effects of climate change.

Water efficiency holds the key to making water bills affordable in the future. Saving water can reduce energy bills and, for metered households, reduce water bills.

While in the short term, water efficiency measures may have little impact on the system’s total costs, over the longer term they could help postpone or even obviate the need for significant investment in new sources of supply.

Employing the right incentives in the regulatory system is key. More can be done to ensure that the right incentives are in place to encourage the use of water efficiency activity by water companies, customers and Ofwat:

- 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;
- the true value of water should be used in investment decisions and any evaluation of the costs and benefits of water efficiency measures;
- Ofwat should set a minimum percentage of water efficiency targets to be achieved through water efficiency activity targeted at defined low-income metered household customers to help them reduce their water use and their bills. In the longer term, the UK Government and Assembly Ministers should introduce a statutory requirement for all water companies to implement a water efficiency scheme targeted at defined low-income metered customers; and
- Because of the potential impact of climate change on water users and their bills, the review team welcomes views on whether Ofwat’s current sustainable development duty should be extended to make specific reference to consideration of climate change, in particular mitigation and adaptation measures.

Given the expected pressures on water supply in future, it is important that progress on making new housing stock more water efficient is continued. For water efficiency to be successful, substantial progress is needed to improve the water efficiency of existing homes. This can be done in a number of ways, such as: exploiting the synergies with existing refurbishment and retrofitting programmes; ensuring only water-efficient fittings go on sale; improving labelling to allow customers to exercise more informed choices; and giving customers the information they need to adopt more water-efficient living.

Unless water customers understand why it is important not to waste water and how they can cut down on waste easily, progress on water saving will be slow. The review team calls on the UK Government and Assembly Ministers to promote a national education strategy working with stakeholders to influence public behaviour on water use. The review team invites views on who should provide national operational leadership.
Customer involvement and understanding

xlixxxvi As monopoly operators, water companies must make a conscious effort to engage their household customers. The regulatory system needs to have incentives in place for companies to do this, which includes specific new measures required by the UK Government and Assembly Ministers. The review team recommends that the regulatory regime should include measures of customer experience in the Overall Performance Assessment (OPA) which have a real effect on companies and incentivise better handling of customers. The review team welcomes views on the specific measure or measures required.

xlxxxvii Customers need more and clearer information so that they understand what they are being asked to pay for, and why. The review team recommends that companies improve their communications with harder to reach customers to ensure that essential information is available to all. The review team also recommends that water and sewerage bills should be made clearer and more informative, building on best practice in some water, energy and council tax bills (see paragraph 11.8.2).

xlxxxviii The partnership between the company and the customer should be strengthened, so that companies work together with customers and customer representatives on issues and long-term solutions. The review team recommends that a participatory budgeting approach is explored further and welcomes views on the viability of such an approach for the England and Wales water sector. This would have the aim of achieving better and earlier involvement of customers by companies in the formulation of company plans and proposals.
I  Growing pressures on water supply from continuing population growth and projected climate change led the UK government to issue new long-term plans for water in England\(^3\) in 2008. 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\(^4\). 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.

II  Against this background, English and Welsh Assembly Ministers have 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 A.

III  The review team began work last autumn, issuing a call for evidence in November 2008. Responses have helped the review team develop a robust body of knowledge on which to base the development of options and recommendations to government. Seventy-eight individuals, companies and organisations responded (listed in Annex D) highlighting:

- concerns about continuing upward pressures on prices, given the sector’s need for capital investment;
- concerns in some catchment areas about the future availability of water and the environment;
- growing concerns about the affordability of water bills in some parts of the country, as bills rise and more people opt for meters;
- a lack of clarity on future metering policy, reflected in tensions between the government’s position and that of the two main regulators, Ofwat and the Environment Agency (EA).

Other respondents argued that while metering encourages people to use water efficiently, it carries a significant cost for customers, which may not be justifiable in areas where water is plentiful. Although the current charging system still works, the review team encountered a strong sense that current arrangements are unfair and out of date. There is equally little consensus on what should replace them.

IV  As we considered it very important to explore these issues in greater depth, 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 to discuss these and other questions with the review team and other stakeholders. A full record of these discussions and the presentations made by speakers can be found on our website.\(^5\)

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\(^5\) [www.defra.gov.uk/environment/water/industry/water-charging-review/](http://www.defra.gov.uk/environment/water/industry/water-charging-review/)
Together with published research and our own investigations, the evidence gathered has been used to develop the analysis, conclusions and emerging recommendations to be found in this interim report. Our analyses have been based on draft company business plans and Water Resource Management Plans; where final plans are available, they will be used in our final report. Our intention is to consider responses to this document, conclude the further work we have outlined, and provide final recommendations to the UK Government and Assembly Ministers in the autumn.

The review team would welcome your responses to the emerging recommendations and further questions set out in this paper. We would like to receive responses by Friday 28 August 2009.

In developing this interim report we have taken as our starting point current UK Government and Assembly Ministers policy on charging, metering and demand management. Water policy in Wales is devolved to the Assembly government, which earlier this year published its Strategic Position Statement on Water.6 While we have borne in mind the different policy emphases between England and Wales, both governments in their strategy documents encourage responsible water use within the context of sustainable development.

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, and the second in summer 2008 on social and environmental issues. Ofwat must take both into account when they take decisions on companies charging schemes.7 In 2008, the 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.

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.

In relation to future charging for water and sewerage services in England, the UK government’s approach 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 by 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; and
- customer appreciation of services and benefits paid for through water bills.

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XI The Assembly government set out its core principles and policies in the recently published Strategic Policy Position Statement on Water, developed in the context of its consultation on a new Sustainable Development Scheme for Wales, the Environment strategy for Wales and its action plan, and its consultation on the Climate Change Strategy for Wales. The core principles 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.

XII Reflecting the Assembly government’s commitment to citizen-centred delivery, the statement makes clear that citizens are to stand at the heart of water service delivery and that policies should reflect the unique nature of water resources in Wales.

Against this policy background, we begin this interim report by looking at several key issues that have a significant bearing on the cost and effectiveness of both the current charging system and any future system.
Introduction
1.0.1 The size of customers’ bills depends to a very large extent on the total cost of supplying water and sewerage services, and the way these are controlled by the regulatory framework. This chapter sets the context for looking at the fairness and effectiveness of the current household charging system for water and sewerage services, beginning with a brief description of the water industry and its regulatory framework. It then looks at trends in water supply and demand that are driving future costs, especially in the light of climate change and population growth. Finally, we look at how valuing water properly could help rebalance the current regulatory system to deliver a more efficient and effective system in future.

Structure of the Industry
1.1.1 The water industry in England and Wales consists of 10 water and sewerage companies and 12 water-only companies. (See Annex B for a map of company boundaries). It provides two main services: supplying clean water, and sewerage services. The latter includes not only removing and treating household sewage and dirty water but also rainwater from roofs and hard surfaces around the house and from local highways.

1.1.2 In addition to these 22 companies, the regulatory framework allows the appointment of inset companies and water supply licensees. The latter can compete with the monopoly water companies to supply large business customers. They do not supply households, and therefore the recommendations in this report do not apply to them. The same is true for large-user inset companies. There are two other types of inset appointments (‘greenfield insets’ and ‘insets by consent’) where the water or sewerage company appointed can supply household customers. The company becomes in effect the monopoly water or sewerage services provider in its area of appointment, entrusted with the same duties and responsibilities as the previous monopoly company. The recommendations of this report apply to these companies when they supply household customers.

1.1.3 Questions have been raised as to whether these inset appointments undermine the position of the main provider of household services in an area and ultimately affect the prices charged to their customers. Inset appointments can offer benefits to the customer. It is for Ofwat to ensure that the terms and conditions on which inset appointments are made are not unfair either to the incumbent or the inset appointee.

1.1.4 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. The cost of water supply and sewerage services is largely determined by the cost of collecting or abstracting the water and building and maintaining the network of underground pipes, and by water quality requirements, whether these relate to treating water or sewerage. Operating costs vary according to the length of the network, the amount of pumping required and the geographic density of customers served. The cost of serving a customer is largely determined by the cost of the infrastructure required to reach the customer and by the quality requirements of water treatment; variations in demand for water do not significantly impact on costs unless significant new investment (such as new sources of supply or extensions to the network) are needed. These costs can be very significant. There are therefore issues in the water industry of ensuring long term costs (long run marginal costs) are met. There are also decisions to be taken on how these high fixed costs are allocated.

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8 A company which replaces the incumbent company as the appointed water and/or sewerage company for a specified area
1.1.5 By its nature, the sector is very capital intensive. When the industry was privatised, its sale price did not reflect the true replacement cost of its assets and the significantly discounted price of its assets still underlies the prices charged to customers. Because the UK’s water and sewerage network is long established in comparison to many other countries, it inevitably needs renewing at a time when European Union (EU) Directives are driving more stringent environmental and quality requirements.

1.1.6 New assets have to be financed and charged in full, putting upward pressure on prices to customers. This is especially critical in areas such as the South West where the infrastructure has needed renewing or upgrading since privatisation. Such areas have already seen a significant rise in costs, which, in turn, puts upward pressure on prices to customers and exacerbates the difference in the cost of water and sewerage services between regions. Both the upward pressure on prices and regional differences in costs are likely to continue.

1.1.7 Household water and sewerage charges have traditionally been based on the rateable value (rental cost) of properties, reflecting the way local services were financed in the mid-nineteenth century (see Chapter 2). Such a system was considered ‘progressive’ in that richer people paid more for their water. However, rateable values have fallen out of general use as they reflect neither the current value of properties nor the income of people living in them (see Chapter 4).

1.1.8 Water and sewerage services have also been charged on a regional basis, reflecting the regional nature of the water companies’ activities and of the sector’s costs. Chapter 3 considers this further in relation to the principles of fairness. Prices currently include transfers between customers (commonly called ‘cross subsidies’) and do not reflect the exact costs of supplying individual customers, for example, according to their distance from treatment plants. Metered charging is also available; 33 per cent of customers in England and 27 per cent of customers in Wales are metered, most of whom have either opted for meters or are living in newer properties that are metered already. These customers have a charge based on volume of water used and not rateable value. Metering is currently increasing at about 2 per cent per annum in England and in Wales. Assessed charges are also available where households would like to be metered but cannot because meters are not practicable.

The Regulatory Framework

1.2.1 As household customers do not have a choice over who supplies their water and sewerage services, the 22 monopoly water and sewerage companies are regulated under a system of comparative competition. The economic regulator, Ofwat, uses a system of benchmarking or comparing company performance to encourage less efficient companies to improve their performance. Ofwat uses its performance comparison as a basis for five yearly periodic reviews and setting annual price limits for each company covering a basket of tariffs, including those for household customers; these price limits determine whether – and by how much – companies can raise their prices. The 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. Water companies prepare annual statements of charges that have to be approved by Ofwat before they are applied.

1.2.2 Ofwat’s duties as a regulator are laid down in section 2 of the Water Industry Act 1991 (WIA91)\(^9\) as updated by section 39 of the Water Act 2003.\(^{10}\) It has economic, social and environmental duties. Ofwat’s main statutory duties are to:

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• 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.

1.2.3 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.

1.2.4 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.

1.2.5 Intergenerational fairness is already 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 might also be considered as much social as economic in nature, and 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.

1.2.6 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 there is no undue preference or discrimination 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 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 as long as they are closely targeted and result in reduced levels of bad debt within the sector as a whole.

1.2.7 In terms of environmental duties, Ofwat is expected to help achieve sustainable development (under s.2(3)). Some respondents to the call for evidence have questioned Ofwat’s success in this to date with regard to both leakage and water efficiency. Ofwat’s own view is that it has developed an appropriately challenging approach on these issues after public consultation with stakeholders.

1.2.8 Government helps Ofwat to interpret its duties through the medium of statutory guidance. Existing UK government guidance to Ofwat on price control and tariff structures dates from 2000 and on social and environmental issues from 2008.

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11 CIEH response to Call for Evidence
12 Water Industry Act 1999 Delivering the Government’s Objectives DETR 2000
13 Statutory Social and Environmental Guidance to the Water Services Regulation Authority (Ofwat) Defra August 2008
Water Quality Regulators

1.3.1 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). Inheriting the responsibilities of the old National Rivers Authority in 1996, the EA regulates and enforces water abstraction and discharge through a system of licences and consents. The DWI sets standards for the quality of drinking water.

1.3.2 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 faced by customers.

Consumer Council for Water (CCWater)

1.3.3 CCWater is the independent and statutory consumer body for the water industry, set up by the Water Act 2003. It sees its role as ensuring that customers’ collective voice is heard in the water debate and that customers become and remain central to the water industry’s thinking. Each year it conducts tracking research to gauge customer views about the performance of companies and itself.

Water Supply

1.4.1 Customers readily understand the need for a reliable water and sewerage system. Meeting this need has always represented a challenge for companies but it is about to become a far greater challenge as the requirement for substantial capital investment pushes up costs.

1.4.2 According to the government’s official climate change projections to the 2080s (UKCIP02), the UK is expected to get warmer, especially in the South and East, and during summer and autumn. Summers are expected to get hotter and drier with precipitation falling by up to 50 per cent. Winters, by contrast, are likely to be warmer and wetter; bringing more heavy storms that will provide new challenges to drainage systems. The EA\(^\text{14}\) has concluded that there could be a reduction in annual river flows of up to 15 per cent by 2050, a lowering of groundwater levels and a reduction in the recharge of aquifers. Reduced river flows mean that rivers are less able to dilute sewage effluent or diffuse pollution from urban areas or agricultural land. The stress imposed by current levels of water abstraction means that the impact of other pressures on rivers is exacerbated.

1.4.3 A warmer climate is also likely to increase demands for water from households and farmers, for example for watering gardens and commercial irrigation. Several commentators\(^\text{15,16}\) make the point that the costs of the water supply system are driven by peak rather than average demand.

1.4.4 Companies are also looking to replace and improve much of the sewerage system to cope with substantial new development and higher quality requirements driven by EU standards as well as much higher and more unpredictable run-off as a result of climate change.

1.4.5 In order to provide a long-term, sustainable system, companies have to plan now for new water supply infrastructure capable of dealing with greater extremes in weather in the future and with substantial population growth. The industry’s infrastructure must be capable of not only meeting base demand for water but also daily and seasonal peaks. Companies have been asked to plan to meet demand for water in a dry year and in critical periods, subject

\(^{14}\) Water Resources in England and Wales – Current State and Pressures. EA. December 2008

\(^{15}\) Fair and sustainable: Paying for Water What the Government Could Do Bob Hills, Meg Huby and Peter Kenway New Policy institute 1997

\(^{16}\) Analysing and Forecasting Peak Demands on the Public Water Supply in water Resources Planning for Peak Demands Paul Herrington 1996
only to occasional restrictions on supply. They must also demonstrate that investment in new supply represents the best-value optimal solution for balancing supply and demand, and that they have considered measures to control leakage, improve water efficiency, and incentivise more efficient water use through their tariffs.

1.4.6 The UK government has already identified areas of relative water stress in England (but not Wales), based on advice from the EA. This is shown in the map below. To produce these maps, 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.

**Figure 1 – Map of relative water stress (2007)**

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

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Source: Environment Agency
1.4.7 The EA has recently completed its detailed review of water resources in England and Wales through its current cycle of Catchment Abstraction Management Strategies (CAMS)\textsuperscript{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 areas rather than water company administrative areas as used in Figure 1.

1.4.8 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.

\textbf{Figure 2 – Water available now for abstraction (surface water combined with groundwater)}

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\textsuperscript{17} Water Resources in England and Wales – Current State and Pressures. EA. December 2008
1.4.9 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.

1.4.10 The EA has told us that three companies (South West Water, Cholderton and Bristol) are in water supply deficit for the whole period 2006 – 2035, while seven companies will have a water surplus over the same period. In Wales, Dee Valley is likely to be in surplus for the whole planning period but Dŵr Cymru will have 30 per cent of its water resource zones in deficit.

1.4.11 In ecological terms, the EA has identified 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.

1.4.12 The impact of climate change remains uncertain – and we note that the 2009 UK projections (UKCP09) have just been released. However, the overall conclusion must be that England and Wales face potential reductions in water supply during the summer, as well as the consequences of more significant surface flooding; and companies need to plan for both these eventualities. The review team has also concluded that revising the current water stress areas using the catchment areas or water resource zones across England and Wales – as the EA did in its CAMS work – would better pinpoint future ecological and availability pressures than the companies’ administrative areas used at present. Such an analysis presented in map form and incorporating the latest (2009) climate change predictions would enable water companies to identify where compulsory metering may be justified (see Chapter 5). This would act as a proxy for the environmental elements of a true water cost of water, until that is fully developed (see later section on valuing water for the future).

---

18 Natural England response to the Call for Evidence
Water demand

1.5.1 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.

Figure 3 – Supply demand balance for England and Wales

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. In the longer term, the recession has increased uncertainties over the level of commercial and industrial demand, although the EA has flagged the strong likelihood that agricultural use will increase as summers become drier.19

1.5.2 Pressures on supply are expected to increase considerably as a result of significant population increase coupled with the trend to smaller households; lifestyle choices, too, are expected to result in higher water consumption. Although there are clearly uncertainties with the recession, the population of England is projected to increase by 15 per cent to 62 million by 2030. The population in Wales is expected to increase by 9.7 per cent to 3.3m over the same period.20 The 2007 housing targets for England envisaged 2 million new homes by 2016 and 3 million by 2020. 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 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.

20 ONS projections
1.5.3 Per capita water consumption\(^{21}\) has remained relatively steady over the last 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 their efforts to reduce consumption to gain lower bills, 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 be generally met. Importantly, even if there is a reduction in per capita demand, forecast population increase means that overall household demand for water will increase.

1.5.4 Companies’ micro-component monitoring helps us look in more detail at what households do with their water. It seems 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 it 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 in 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). More showering will also produce more carbon emissions. 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 efficient appliances.

1.5.5 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, a quarter of which is estimated to be from household customers. Having been relatively steady for the last eight years, they 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.

1.5.6 From the evidence considered, the review team has concluded that whilst there are a lot of uncertainties about water supply and demand in future, overall, the combination of population changes and the effects of climate change mean that pressures on water resources are likely to increase.

**Future Water Costs**

1.6.1 The water industry is a multi-billion pound industry with a turnover of £9.2bn in 2007/8. Companies have to recover the costs of running, maintaining and improving the water and sewerage system from across their total customer base. Because of the regional and local nature of the water industry, costs (including those of meeting environmental standards) are met in the geographical area where they fall and can vary widely from company to company. The variation in costs is reflected in the different prices paid by customers of different companies.

1.6.2 In broad terms, company costs consist of two main blocks:

- operating expenditure (for items such as wages, pensions and energy); and
- capital expenditure (investment in new infrastructure and maintenance of existing assets, plus the cost of financing that expenditure).

**Figure 4 – Breakdown of the bill (2005 - 2010)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating costs</th>
<th>Capital charges</th>
<th>Taxation</th>
<th>Net interest after financing adjustment</th>
<th>Current cost profit after tax and net interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
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<tr>
<td>2007</td>
<td></td>
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<tr>
<td>2008</td>
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<tr>
<td>2009</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Ofwat

1.6.3 Operating costs currently make up about 35 per cent of an average household bill, down from 50 per cent at privatisation.

1.6.4 Capital costs have risen meanwhile because of the significant capital investment programmes companies have undertaken. Since privatisation in 1989, companies have invested some £80 billion (an average annual investment of about £4bn; more than double the pre-privatisation rate). Investment in the sewerage service has been higher than in water services, mainly due to the requirements of the EU’s Urban Waste Water Treatment Directive. Interest payments have also grown since privatisation as most additional capital expenditure has been financed by debt. The bulk of the costs therefore derive from the companies’ regulated asset base and the associated cost of capital. As a result, customers’ bills are dominated by the costs of paying for capital expenditure on long-lived assets; this cost occurs irrespective of how much clean water they use and how much waste water they produce.

1.6.5 Reflecting the increases in costs incurred by water companies, water prices have risen since privatisation; bills are on average about 42 per cent higher in real terms than they were then. Figure 7 in Chapter 2 shows this trend.

1.6.6 Until recently, average bills have not risen faster than the average rise in real incomes. This average picture masks wide regional variations in actual bills and incomes, however, and equally wide variations in year-on-year increases, both past and those projected in companies’ proposed annual price increases. The impact on bills is also different for measured and unmetered customers, and particularly for customers who move from unmetered to metered supply. The average combined household bill for 2008/9 in England and Wales for water and sewerage is £330 (£157 for water and £174 for sewerage). But
there are wide regional differences. South West Water has the highest combined water and sewerage bill (£497 in 2008/9) and Thames Water the lowest (£286). This is illustrated in Figure 8 in Chapter 2.

1.6.7 The costs of supplying water and sewerage services are likely to continue rising to cope with the twin pressures of climate change and population growth. Replacing and maintaining the existing infrastructure and continuing the programme of environmental and drinking water quality improvements will also result in higher bills into the foreseeable future.

1.6.8 On the basis of the draft business plans submitted by companies in August 2008, bills could increase on average by about 9 per cent in real terms over the five-year period to 2015. This means that the average water and sewerage bill could reach £355 by 2015. Distinct regional differences will remain. Existing high-cost areas such as South West, Wessex and Wales may see small bill increases but their bills will remain high. Areas such as Thames and Southern where bills had previously been relatively low will see sizeable increases, by contrast.

1.6.9 Most of the proposed increases in bills to 2015 are due to a big leap in capital expenditure and the financing costs that flow from this. Draft business plans propose the biggest-ever programme of new capital investment (over £27 billion, and 40 per cent higher than in the last price review). Companies are proposing significant increases in investment in supply/demand balance measures and in capital maintenance.

Figure 5 – Industry proposals for capital investment

Actual and projected net capital investment by purpose category

![Graph showing investment by purpose category from 1990-95 to 2010-15](#)

Source: Ofwat
Table 1: Company projections of average annual household bills from 2009-15

<table>
<thead>
<tr>
<th></th>
<th>2008/09 prices (£)</th>
<th>2009/10</th>
<th>2010/11</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water</td>
<td>Sewage</td>
<td>Combined</td>
<td>Water</td>
</tr>
<tr>
<td><strong>Water &amp; sewerage companies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglian</td>
<td>168</td>
<td>209</td>
<td>377</td>
<td>167</td>
</tr>
<tr>
<td>Dŵr Cymru</td>
<td>164</td>
<td>222</td>
<td>386</td>
<td>166</td>
</tr>
<tr>
<td>Northumbrian</td>
<td>128</td>
<td>166</td>
<td>294</td>
<td>128</td>
</tr>
<tr>
<td>Essex &amp; Suffolk</td>
<td>161</td>
<td>209</td>
<td>371</td>
<td>165</td>
</tr>
<tr>
<td>Severn Trent</td>
<td>147</td>
<td>145</td>
<td>292</td>
<td>153</td>
</tr>
<tr>
<td>South West</td>
<td>204</td>
<td>293</td>
<td>497</td>
<td>202</td>
</tr>
<tr>
<td>Southern</td>
<td>126</td>
<td>233</td>
<td>359</td>
<td>127</td>
</tr>
<tr>
<td>Thames</td>
<td>171</td>
<td>115</td>
<td>287</td>
<td>178</td>
</tr>
<tr>
<td>United Utilities</td>
<td>163</td>
<td>196</td>
<td>359</td>
<td>167</td>
</tr>
<tr>
<td>Wessex</td>
<td>196</td>
<td>199</td>
<td>395</td>
<td>196</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>151</td>
<td>172</td>
<td>323</td>
<td>151</td>
</tr>
<tr>
<td><strong>Water &amp; Sewerage companies average:</strong></td>
<td><strong>178</strong></td>
<td><strong>216</strong></td>
<td><strong>394</strong></td>
<td><strong>180</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water only companies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bournemouth &amp; W Hampshire</td>
<td>138</td>
<td>199</td>
<td>337</td>
<td>130</td>
</tr>
<tr>
<td>Bristol</td>
<td>152</td>
<td>199</td>
<td>351</td>
<td>149</td>
</tr>
<tr>
<td>Cambridge</td>
<td>114</td>
<td>209</td>
<td>324</td>
<td>119</td>
</tr>
<tr>
<td>Dee Valley</td>
<td>127</td>
<td>222</td>
<td>350</td>
<td>126</td>
</tr>
<tr>
<td>Folkestone &amp; Dover</td>
<td>181</td>
<td>233</td>
<td>414</td>
<td>175</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>090</td>
<td>233</td>
<td>322</td>
<td>092</td>
</tr>
<tr>
<td>South East</td>
<td>161</td>
<td>233</td>
<td>394</td>
<td>167</td>
</tr>
<tr>
<td>South Staffs</td>
<td>118</td>
<td>145</td>
<td>263</td>
<td>120</td>
</tr>
<tr>
<td>Sutton and East Surrey</td>
<td>159</td>
<td>115</td>
<td>274</td>
<td>160</td>
</tr>
<tr>
<td>Tendring Hundred</td>
<td>166</td>
<td>209</td>
<td>375</td>
<td>169</td>
</tr>
<tr>
<td>Three Valleys</td>
<td>150</td>
<td>115</td>
<td>265</td>
<td>155</td>
</tr>
<tr>
<td><strong>Water only companies average:</strong></td>
<td><strong>130</strong></td>
<td><strong>176</strong></td>
<td><strong>306</strong></td>
<td><strong>130</strong></td>
</tr>
<tr>
<td><strong>Industry average:</strong></td>
<td><strong>154</strong></td>
<td><strong>196</strong></td>
<td><strong>350</strong></td>
<td><strong>155</strong></td>
</tr>
</tbody>
</table>
1.6.10 Sewerage costs rather than water costs are the major component of many bills. Major enhancements are planned to the sewerage system in order to deliver environmental improvements and tackle flooding.

1.6.11 Environmental improvements required by three EU Directives (the Urban Waste Water Treatment Directive, Habitats Directive, and the Water Framework Directive) could add £16 per year to the average bill. The Directives are designed to improve river quality, and to enhance wetlands, bathing waters and shellfish waters, as well as to offer greater protection for Sites of Special Scientific Interest (SSSIs). The lack of capacity in the sewerage network means that sewerage companies have proposed £1.6bn of investment aimed primarily at tackling flooding. Sewer flooding is a high priority for customers and while affecting only the few, it is expensive to remedy.

**Figure 6 – Changes in bills up to 2015**

![Chart showing changes in bills up to 2015](chart.png)

Source: Ofwat

1.6.12 The review team’s overall conclusion is that the need to replace and maintain existing infrastructure, combined with pressures from climate change, population growth and higher European requirements on environmental improvements, will mean significant upward pressure on water bills in the medium to long term. Such pressures will continue to grow, despite the regulatory system delivering increased efficiencies through Ofwat and the companies.
Valuing Water for the Future

1.7.1 Water prices have traditionally been cheap. Some areas already face much higher prices than they did in the recent past and more will do so in the future. The review team has concluded that it is very important for the government, the water companies and the regulators to act now, to make sure that the regulatory system minimises costs while maintaining effective water and sewerage services, and safeguarding (or even improving) the water environment. The system is not currently ‘broken’ overall but it is critically important to ensure that the right incentives are in place to prevent future crises.

1.7.2 Given our growing understanding of future challenges, the review team has concluded that there is a disconnect between the current valuation of water and its likely future value. The value of water in future – because of the pressures of climate change and population change – will be higher than it is today. Yet this future scarcity and 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 management and investment decisions taken by the water industry. Valuing water properly will help to deliver more efficient decisions on investment, including investment aimed at extending the scope of leakage prevention and improved water efficiency. Crucially, the legacy of decisions made in the next decade will play a material role in shaping the environment left for future generations. There is no ready answer on how to do this; wider environmental and social costs and benefits are hard to value precisely. However, the Environment Agency and Ofwat have begun work on this.

1.7.3 We have noted also that the Independent Review of Competition and Innovation in Water Markets22 (the Cave Review), which reported recently, considered the treatment of abstraction and discharge costs. These are important as they affect costs and values across the water sector. 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 incentivise the exploration of alternatives to 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.

1.7.4 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, Welsh Assembly Government and the Environment Agency to change the licensing regime for abstraction and discharge to ensure a more appropriate value for water.

1.7.5 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 decisions on future investment.

22 Independent Review of Competition and Innovation in Water Markets Professor Martin Cave April 2009
1.7.6 Questions were also raised with us as to whether the special merger regime in the water sector remains appropriate, or whether it is ossifying the sector unnecessarily. This is important and relevant as different parts of the country increasingly need different solutions, depending on what is happening to their water supply and to their population. This issue goes beyond the scope of the review but we note that the regulatory regime will need to encourage and realise all the efficiencies it can, if the industry is to meet its future challenges at a reasonable cost. We agree with the Cave Review that accounting separation may give Ofwat an important alternative source of comparative information; and that any future review of whether a merger can be permitted should take full account of water supply implications and the value of water issues when evaluating whether or not the merger is in the interests of customers.

The Impact of Business Competition on Domestic Customers

1.8.1 The Cave Review has recommended greater competition in the business sector only, at least initially. As the UK government has announced that it will pursue this recommendation, 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 only transferring 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 effect of competition in the business sector will also need monitoring to ensure any advantages also accrue to household customers.

Emerging recommendations

1.9.1 The review team recommends:

- The true value of water should be used for decision making in the regulatory system. The Environment Agency and Ofwat should continue to work on a methodology for valuing water so that this can be taken into account in future investment and operational decisions as quickly as possible.
- The Environment Agency should be asked to revise its water stress map for England and Wales on the basis of catchment areas or water resource zones, to fully reflect water resource pressures (both water availability and ecological) and the latest (2009) climate change projections. These revised maps should be used to identify where compulsory metering may be justified (see Chapter 5).
Chapter 2 – Current system of charging for water

Introduction

2.0.1 This chapter sets out the services provided by water and sewerage companies. It summarises the nature of costs in the water sector, the origins of the current charging system, and the different methods of charging used at present.

Background

2.1.1 Most households receive both water and sewerage services from water and sewerage companies. These services are separate, although related, and are provided through different networks. Water companies abstract or collect water, treat it to drinking water standards and deliver it to customers through a water supply distribution network. Sewerage companies collect waste water from homes, as well as rainwater run-off from properties and highways, transport it to treatment plants through a sewerage network and treat it to required standards so that it can be discharged back into the environment.

2.1.2 As Chapter 1 explained, the water industry in England and Wales consists of 10 combined water and sewerage companies, and 12 water-only companies. Household customers of water-only companies receive their sewerage services from the company that has the appointed sewerage monopoly for that area. Water-only companies and sewerage companies work together so the household customer receives one bill covering both services.

2.1.3 Most customers, therefore, receive a single bill covering four different services:
   - clean water;
   - removing dirty water (foul sewage);
   - surface water drainage; and
   - highway drainage.

2.1.4 The costs and cost structures of water and sewerage services are naturally different, although they share similar main characteristics, with high fixed costs to set up and run the infrastructure that do not vary significantly with either the volume of water supplied or sewerage collected, or the number of customers. The actual amount of clean or waste water put through the system is a small part of the costs of the service, unless and until new investment is needed. At this point the costs increase significantly, so the long-run costs can be significant. Charging for these services requires taking account of the longer term costs, and decisions on how the fixed costs are apportioned between customers.

2.1.5 There are a wide variety of ways to recover these costs, but any charging system must take into account both the need for the allocation to be fair and the need to put in place the right incentives to behave in a way that minimises future pressures on costs by keeping future investment at a minimum, that is, it takes account of long-run marginal costs. Issues of fairness are discussed in Chapter 3, and options for future charging systems are discussed in Chapter 4 (for water services) and 7 (for sewerage services).

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23 A small proportion of households receive a private supply of water or are not connected to the sewerage system of a sewerage company.
2.1.6 As water and sewerage companies are monopoly providers to their household customers, Ofwat sets each company overall price limits over a five-year period in Periodic Reviews. The price limits cap the average increase for bills for household and most non-household customers for each year of the five-year period. Ofwat sets prices with regard to its statutory duties. Water and sewerage companies have to submit their charges schemes to Ofwat annually for approval. These schemes of charges set out how the water and sewerage companies propose to charge different types of customers for each service. The overall increase in charges cannot exceed the price limit set in the Periodic Review.

2.1.7 Sewerage bills are higher than water bills and have risen at a broadly similar rate over the last 20 years. Figure 7 tracks the movement of average water and sewerage bills since privatisation in 2008 prices. The bills for 2010/15 in the figure are derived from the companies’ draft business plans. Figures for 2015/20 are a projection based on the trend of prices in 2010/15.

**Figure 7: Average household water and sewerage bills in England and Wales since privatisation**

Nature of costs in the water sector

2.2.1 Both water and sewerage companies provide a similar service that requires the transport and treatment of water (in the case of water companies) or foul sewage and rainwater run-off (in the case of sewerage companies). This calls for an extensive pipe network connected to the properties served, and implies substantial pumping and treatment costs. Chapter 1 has already highlighted the main characteristics of the water sector’s costs: that they are very capital intensive, largely fixed in the short-term, and subject to significant regional variations, as Figure 8 shows. There is now considerable variation in the size of bills across regions and companies draft plans for 2010/11 to 2014/15 show that this variation will continue.
Basis of charging for water supply

2.2.2 Water companies recover their costs in four ways:

- charges based on the rateable value of the property;
- charges based on volume of water consumed;
- charges based on an assessment, where customers would like to be metered but cannot be; and
- WaterSure for vulnerable customers in England. This is a UK government-mandated scheme to support low-income customers with high essential usage. The Welsh non-statutory equivalent is Water Assist. These schemes are explored further in Chapter 8.

2.2.3 Table 2 below shows the percentage of households whose water and sewerage bills calculated on each basis, and the average cost share of each service in the bill.
2.2.4 Most households in England and Wales still pay for water on the basis of the rateable value (rental value) of their property. The rateable value basis for charging for water was introduced in 1847 to fund large-scale sanitation improvements, linking payments for public works to those who would benefit most from them financially. At the time, central government had little 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. Rateable values were last updated in 1973, although new homes were given a rateable value until 31 March 1990 and until then, households could ask to be revalued. Rateable values no longer form the basis for any other charging system, as local authorities now raise revenue for their services based on council tax bands, which themselves reflect property values.

2.2.5 Approximately one-third of households in England and around a quarter of those in Wales now pay for water on the basis of 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 9.

Table 2: Basis on which combined water and sewerage bills are calculated (2007/08)

<table>
<thead>
<tr>
<th></th>
<th>Linked to Rateable Value</th>
<th>Linked to metered volume</th>
<th>Fixed or Assessed</th>
<th>Proportion of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>65%</td>
<td>33%</td>
<td>2%</td>
<td>47%</td>
</tr>
<tr>
<td>Foul Sewerage</td>
<td>65%</td>
<td>33%</td>
<td>2%</td>
<td>37%</td>
</tr>
<tr>
<td>SWD</td>
<td>28%</td>
<td>7%</td>
<td>65%</td>
<td>9%</td>
</tr>
<tr>
<td>HWD</td>
<td>35%</td>
<td>8%</td>
<td>57%</td>
<td>7%</td>
</tr>
<tr>
<td>Percentage of customers’ bills</td>
<td>60%</td>
<td>29%</td>
<td>11%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Ofwat response to Call for Evidence

Figure 9: Household meter penetration 2007/08

Source: Ofwat

Share of average bill does not necessarily reflect share of total revenue recovered from household customers.
2.2.6 Chapter 5 summarises the legislative framework for metering, from privatisation to the present. Differences in metering rates between water companies can be partly explained by the number of new households built in different regions since 1990, as all new homes are automatically metered. However, the main drivers for the difference in metering rates are the number of meters installed at the request of customers (called ‘optants’) and the rather more limited use by companies of existing powers to require that a meter is installed on a change of occupier, or for customers with high discretionary use. In the South West Water area, where water bills are the highest of any area, the increase in metering has been fast, driven by households opting to install meters in order to reduce their bills.

2.2.7 If a domestic property has no historic rateable value and a meter cannot feasibly be fitted, the household’s water bill will be based on an assessment. The same applies when a household opts to have a meter fitted but it is not feasible. The Department of the Environment, Transport and the Regions issued charging guidance in 2000 that sanctioned assessed charges for these cases. Each company currently applies its own assessment based on, for example, property type, number of bedrooms or other similar features. Table 2 shows that 2 per cent of households have an assessed charge for their water supply.

Basis of charging used by sewerage companies

2.3.1 Sewerage companies provide three different services:

- the collection, carriage and treatment of foul sewage;
- the collection, carriage and treatment of rainwater run-off from roofs and other drained areas (surface water drainage); and
- the collection, carriage and treatment of rainwater from roads (highway drainage).

2.3.2 Sewerage companies use a variety of different basis for charging for the different services – both within companies and between companies.

2.3.3 These three services use largely the same infrastructures, and their overall costs are driven by two factors. The first is the maximum volume of waste water that needs to be collected and transported, which determines the size of the pipe network. The second is the load in that waste water, which determines the need for treatment before treated waste water can be discharged back into the water environment.

2.3.4 Where a water system collects both foul sewage and rainwater, the load to be treated is determined by the foul sewage component, while the volume is determined by the peak rain volume. In practice, the two cost drivers are not easily separable, although much of the pumping cost can be attributed to rainwater and the costs of chemicals and sludge disposal to foul sewage. In some places, especially in more recent developments, rainwater is carried separately so that it does not have to be treated.

2.3.5 Climate change is expected to put more pressure on drainage systems. As a consequence, sewerage bills are expected to rise in the future to pay for major enhancements planned to the sewerage system in order to deliver environmental improvements and tackle flooding. Lacking spare capacity in the sewerage network, sewerage companies proposed £1.6 billion of investment in their draft business plans submitted to Ofwat as part of the Periodic Review 2009, largely to deal with localized sewer flooding.
2.3.6 Bills sent out by the sewerage companies will also increase as a result of the UK government’s announcement in December 2008 that responsibility for maintaining private sewers and lateral drains connected to the public system will be transferred to sewerage companies in England from April 2011. The Assembly government’s Strategic Policy Position Statement in Water published in March 2009 announced that Welsh Assembly Ministers will pursue regulations in 2011 to facilitate the transfer of private sewers to sewerage companies. At transfer, the responsibility for maintaining and repairing these sewers will pass from their current owners (often individual or small collections of domestic customers) to sewerage companies, and their costs are expected to be passed on to all sewerage customers. Preliminary estimates by Ofwat indicate that transferring the costs of maintaining and improving these sewers in the future will increase customers’ sewerage bills by around £4 to £12 per year. The timing of the price increases will depend on when the private sewers are adopted. Current owners will experience a corresponding reduction in their financial liability for maintaining their private sewer, which can represent a very large one-off bill if the sewer fails or becomes blocked.

2.3.7 Table 2 shows the basis 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 charges for the foul sewerage element of the bill is usually calculated on the same basis as the water charge; that is, unmetered households pay for foul sewerage according to their rateable value, while metered households pay according to the volume of (clean) water used, and a small percentage of households pay a fixed or assessed charge.

2.3.8 By contrast, most households are charged for their drainage on a fixed basis, which is calculated as a uniform charge per property, unrelated to either their water use or to the rateable value of their property. Some sewerage companies identify the highway drainage charge as a separate item on customers’ bills; others include highway charges within the standing charge for sewerage services; the rest make highway charges part of the variable charge (either related to volume of water used, or the rateable value of the property). Sewerage companies treat the surface water drainage charges similarly to highway drainage. All sewerage companies waive the surface water charge (but not the highway drainage charge) for households with no surface water connection to the sewer (for example, when all the rainwater from their roof drains into soakaways).

2.3.9 Figure 10 shows the structure of the sewerage bill for different companies in England and Wales. The proportion of the 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. Conversely, the proportion of sewerage bills relating to foul sewage varies from 60 per cent to just under 90 per cent of the sewerage bill. Such variations are significant and merit further exploration to ensure they are justified by differences in costs.

2.3.10 The review team would like to understand better the rationale for these differences in the composition of sewerage bills across England and Wales. We would welcome evidence on what might explain the differences (for example, household water consumption, population density, amount of rainfall). We believe that Ofwat should explore this variation to see if it is justified.

25 Private sewers and drains are pipes that convey foul sewage or surface water (or both) from properties. Unlike public sewers, they are not owned and maintained by sewerage companies, but are generally the responsibility of the owners of the properties served by them.
2.3.11 In addition, as the infrastructure used by the three sewerage services is largely shared, the review team would welcome views on the basis on which costs can be allocated fairly between the three services.

Figure 10: Structure of the sewerage bill for different companies – expressed as proportion of revenue recovered from the different elements of the sewerage bill

Source: Ofwat

Variation in household bills between similar customers in the same area

2.4.1 Households with similar characteristics can have different bills solely because they live in different parts of England and Wales. These regional differences in average bills reflect the cost differences that different water and sewerage companies incur, as explained in Chapter 1. In addition, households with similar characteristics may also receive different bills even when they live in the same company area, where the total level of costs to be recovered is the same.

2.4.2 There are two main reasons for this. First, two unmetered households that are similar now will receive different bills if the properties were given different rateable values in the past, even if the property values are the same now because the neighbourhoods have converged or the houses have been modified.

2.4.3 Second, the bills may be different if they are calculated on a different basis. For example, one may be calculated on the basis of volume of water consumed and the other on the basis of rateable value. Existing rateable values bear little relationship to water consumption today, even if they did in the past. Rateable values are further discussed in Chapter 4.

2.4.4 The main reason customers opt for charging on a volumetric basis is to save money. A customer in a property with a high rateable value who consumes little water can reduce the bill by moving onto a measured basis. 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 on a lease of more than six months) asks for it, and it is feasible to fit a meter.
2.4.5 Ofwat ensures fairness between the generality of metered and unmetered customers by stipulating that the total of all bills of unmetered customers must be equal to the total of their equivalent measured tariffs. It also makes an adjustment so that unmetered customers do not pay for the costs of the meters used by measured customers. Although this creates equality of contribution between the two groups as a whole, two similar households may still receive quite different bills.

2.4.6 Figure 11 shows the difference between average metered and average unmetered bills for all households. Metered households consume less water on average, which explains the difference in average bills between the two groups. Households with lower than average consumption or those living in properties with very high rateable values (or both) have a clear incentive to opt for a meter. The effect of this decision is that 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 (and may even grow), if the increase in metering rates is lead by optants. We do not know definitively what types of customers are choosing to remain unmetered but, clearly, households with high levels of consumption have no financial incentive to opt for a meter. The review team would welcome further information on what type of customer remains unmetered and why.

Figure 11: Average metered and unmetered household bill (1995/2010)

Source: Ofwat

Variation in customer bills between company areas

2.5.1 Household with similar characteristics can have different bills because they are customers of different water and sewerage companies, with different regional costs. In addition, households in different company areas who have similar water consumption or rateable values can receive different bills which are not explained by regional cost differences because companies set different prices for the standing charge and for the variable basis (volume or rateable value) for water and sewerage bills.
2.5.2 One company may set a relatively high standing charge for all individual households and low volumetric and rateable value charges (that is, the part that varies with consumption or the level of the rateable value). As most of the bill is made up of a fixed charge, this approach produces little variation in bills between customers with different levels of consumption or rateable value. Another company may have the reverse arrangement, which then accentuates the differences in bills between its customers. The standing charge can also differ for metered and unmetered customers in the same area. Table 3 below shows a theoretical example of this effect for three households where one uses twice as much water as the other, and the average household (with a bill of £100) lies in the midpoint between the two extremes.

### Table 3: Comparing 3 theoretical houses for consumption patterns

<table>
<thead>
<tr>
<th></th>
<th>Tariff with high standing charge (80% of average bill) (£)</th>
<th>Tariff with low standing charge (20% of average bill) (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standing charge</td>
<td>Volume charge</td>
</tr>
<tr>
<td>Household 1 – 150 lppd</td>
<td>80</td>
<td>13.33</td>
</tr>
<tr>
<td>Household 2 – 300 lppd</td>
<td>80</td>
<td>26.66</td>
</tr>
<tr>
<td>Average household – 225 lppd</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Difference between the bill of households 1 and 2 (£)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.5.3 As a result of these arrangements, bills within some company areas vary greatly from household to household. In other company areas, they vary much less. This is further explained in Chapter 6.

2.5.4 The situation is further complicated because a company may employ one approach for water charges and another for sewerage charges and may also have different policies for measured and unmetered bills. The widely varying pattern this produces is shown in Figure 12.
2.5.5 The combined effect of the variation in company costs and the variation in standing charges is that customers paying by volume face very different prices for water. In the highest-price area of England and Wales, the cost to the customer of consuming an additional unit of water is two and half times more than it is in the lowest price area. This is shown in Figure 13.

2.5.6 This means that in some areas, metered customers can save more money by purchasing water-efficient appliances and by being careful with their consumption, while in other areas the savings available are much less.
Figure 13: The total volumetric rate charged to measured households varies across England and Wales, 2007/08 bills and prices

![Bar chart showing the total volumetric rate charged to measured households across different companies in England and Wales, 2007/08.](chart.png)

Source: based on data from Ofwat tariffs and charges report, 2007/08

**Emerging recommendations**

2.6.1 Ofwat should explore the variation in the composition of the sewerage bills between companies in England and Wales to see if it justified.
Introduction

3.0.1 The review team has been asked to look at the fairness of the current charging system and to suggest fairer ways of recovering the costs of water and sewerage services in future. The review team has found little to suggest that fairness was ever considered explicitly in arriving at the current mixed charging system. In order to provide the review team with a consistent basis for decision on whether any one charging system could be considered ‘fair’, we begin by considering what fairness principles we should adopt.

Fairness Principles

3.1.1 The call for evidence and the various workshops and meetings held by the review team elicited significant agreement on the elements of a fair charging system. Some elements of fairness related directly to costs and who should pay, others related more to issues of social equity, ability to pay, and concern about how today’s cheap water may impact adversely on future generations.

3.1.2 The fairness principles that emerged from these discussions are:

- Charges should be related to the costs imposed on the system, so that customers in a similar situation should pay a similar amount for the same service;
- Charges should relate to the volume of water used, thus incentivising the efficient use of water;
- Charges should reflect the ‘polluter pays’ principle;26
- As water is essential to life, charges should be affordable to 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;
- Charges should be simple and transparent – customers should know where their money goes, and why; and
- The charging structure should be neither too expensive nor complex to administer.

3.1.3 We note that these broadly reflect the conclusions reached by Ofwat last summer following consultation on its strategy for future charges.

3.1.4 Although all these fairness principles are important, some point in quite different directions and all may not be achieved by the same charging structure. The review team recommends that while the first four principles involve trade-offs that may have to be balanced against each other and therefore need further explanation, 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.

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26 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.
3.1.5 If charging were based on the costs imposed on the system and the volumes used, this would aggravate problems of affordability for those customers on low incomes and/or with inescapably high water needs. Charging by volume requires metering, which imposes additional costs on the system. Incentivising the efficient use of water is difficult when the system does not charge the wider costs and benefits of water use – its true value. If, however, the notion of true value is introduced, there is a risk that prices will go up. Our research revealed strong support for the idea that a fair charging system should make the polluter pay, although identifying who the polluter is may be difficult, for example, in cases of diffuse pollution. Such a system may also be complex to administer.

3.1.6 Despite these complexities, the review team recommends that a fair charging system should:

- charge according to the costs imposed upon the system;
- incentivise the efficient use of water by charging by volume;
- embrace the ‘polluter pays’ principle wherever possible; and
- be affordable where affordability is a problem.

3.1.7 We have used these principles to assess both the current charging system and possible alternatives in the following chapters.

3.1.8 Discussion on the fairness principles raised four wider issues which are discussed below:

- regional price differences;
- whether services are public or private goods;
- the ‘polluter pays’ principle; and
- intergenerational fairness.

Regional Price Differences

3.2.1 One major question raised with the review team is whether it is fair that prices charged for water and sewerage services should vary significantly across the country. Two factors underpin regional differences: real differences in the underlying costs of supplying water in a particular area, and the rate at which assets and infrastructure need replacing following privatisation.

3.2.2 Costs of supplying water and sewerage services reflect population density, geographic differences such as the topology and geology of an area, and the availability of raw water. Water companies charge the same prices throughout their operating area or across large geographic areas within their company boundaries, regardless of an individual customer’s distance from a treatment plant, for example. In terms of fairness, the review team has already concluded that prices charged to consumers should relate to the costs of the system. The question is what this should mean in practice.

3.2.3 It could be argued that, as an essential of life, water prices should be the same across the country. There are some examples in other utilities where prices are averaged nationally rather than regionally, for example, Royal Mail, BT and mobile phone companies. However, these are national not regional, suppliers and they average prices within a single company, not across companies. Gas and electricity prices show some small variation but the difference

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27 Those who live in lower rateable value property and who use larger amounts of water (on a household basis) will tend to see their bills rise. Where these households have a low income this change will tend to exacerbate the affordability problem. However, others on low incomes may actually gain from metering – low income single person households in higher rateable value property for example.
is much less marked than with water because the supply networks are interconnected and the cost of the basic input to the system (gas and electricity) is a more significant element of the final bill. In contrast, there are real cost differences in supplying water regionally and networks are not invariably interconnected. The review team has concluded therefore that regional pricing is generally correct, but see the discussion below on public versus private goods. The review team further notes that the special merger regime in the water industry means that company boundaries may not always reflect the most geographically rational grouping.

3.2.4 There is also the question of whether the charging system should continue to average prices between customers in the same area, whatever their distance from a treatment plant or other facility. Although this could be deemed a cross-subsidy, any charging system will inevitably have some element of averaging; individual pricing is too complex and expensive to undertake. The review team does not, therefore, consider geographically averaged pricing to be wrong. The review team has concluded that costs should reflect regional differences and that water prices should continue to be regionally based and geographically averaged.

Public versus private goods: who should pay?

3.3.1 In the main, water and sewerage services have the characteristics of normal goods and services – i.e. they are delivered to those who benefit and those who don't pay can be physically excluded from consuming them.\(^28\) The response to the call for evidence indicates that there is strong support for payment by use as it is fair. However, there are aspects of the services provided by water companies that do not fit neatly into this category. In particular, some of the benefits of water and particularly, sewerage services are realised by those who have not been delivered that particular service. The public health benefits of properly functioning water and sewerage networks through a reduction in infectious disease are a general benefit to at least the local community, and arguably to the nation as a whole (as the costs of any disease outbreak would fall on the national taxpayer through the NHS). As the Victorians found, a healthy society is dependent on everyone being able to access these services, at the right standard.

3.3.2 Lying behind the call for evidence’s support for ensuring that services are universally affordable is recognition of the need for these services to be universally provided. That raises questions about who are having real difficulty in paying their bills, what should be done to help them and how this should be paid for. These issues are explored in Chapter 8.

3.3.3 In addition to the public health aspects of these services a considerable proportion of current and future expenditure is designed to deliver benefits to the wider environment. Most of these benefits are local – so there is a link between those who currently pay for them and those who benefit. But not all benefits are felt by local water customers and local customers currently have no real say in whether these improvements are made or not and whether they have to pay for them or not. Most of the decisions that cause the costs to be incurred are made at either a national or, increasingly, European level.

3.3.4 These environmental benefits also have the characteristic that people who have not helped pay for them cannot realistically be excluded from the benefits. So, for example, visitors to the seaside benefit from the elimination of the discharge of untreated sewerage to the sea, but are not directly charged for this improvement.

\(^28\) Although the legal restriction on disconnection means that in practice exclusion may be difficult.
3.3.5 In addition, some environmental benefits are very specialised – with potentially very few direct (human) beneficiaries (e.g. protecting SSSIs). They are something that the country as a whole has decided is worth having – for reasons of general good stewardship of the environment. These wider benefits, and the fact that people cannot be excluded from enjoying the benefits even if they have not contributed to the costs, gives these services characteristics of a public good.\textsuperscript{29}

3.3.6 Respondents to the call for evidence have highlighted this and raise the issue of whether there are fairer ways of paying for these wider environmental benefits.

3.3.7 The costs of these environmental benefits are significant and vary greatly by region (see Figure 5 in Chapter 1). Changing the basis of how these services are paid for could make a significant difference to both the level of bills in different regions and/or the distribution of the costs between different customers (either directly, in changes to the water bills, or indirectly if some of the expenditure is funded from national taxation).

3.3.8 It could be argued that if the decision making is at a national level, the incentives on decision makers would be better aligned if the costs were spread nationally. Since customers cannot opt out of either the costs or the benefits it might be fairer to pay for them on the basis of ability to pay rather than on the basis of consumption of water. Water consumption and rateable value are not good indicators of disposable income, so neither the current system of charging, nor metering, would meet this criterion. This points in the direction of charging through national taxation.

3.3.9 On the other hand, these environmental improvements and public health benefits are realised by local people. They are the ones who would experience the cleaner seas, the better river environment, the safer disposal of sewerage and so on. Even some of the economic benefits of visitors are felt by local people through, for example, tourism. So even if the decisions on costs are taken nationally, a considerable proportion of the benefits will actually accrue to those who currently pay for these improvements, that is, local water customers. There is also a ‘polluter pays’ argument; that it is local water customers who should pay for the quality of water or disposal of sewerage considered appropriate for the twenty first century. There are therefore real arguments for these costs falling to those who benefit from the service – water customers.

3.3.10 In addition, transferring the payment from the local level to the national level may not have a particularly big impact on what customers actually pay in total, at least over the longer term. As existing infrastructures need to be renewed those areas where spending has been high in the past – because new infrastructure was already needed – will see bills in other areas catching up.

3.3.11 In the short term, however, the effect of moving the costs of the environmental improvements onto a national basis would be to reduce the regional variation in bills – so that customers in current high-cost areas would see their bills go down, while those in low cost areas would see their bills go up. Moving some of the expenditure onto the national tax base would have the effect of increasing the combined water and tax bills of those on higher incomes, and reducing the combined water and tax bills of those on lower incomes. On a regional basis, customers in relatively high income areas would see their contributions go up, while those in low income areas would see their contributions fall.

\textsuperscript{29} Public goods are non-rival and non-exclusive; access to them cannot be controlled and their consumption by one person does not reduce their availability to another person. As a consequence, it is not possible to charge for access to public goods.
3.3.12 In addition, if the review team’s proposals to help those having difficulty in paying are implemented (see Chapter 8), some, but by no means all, of a transfer from low cost areas to high cost areas will be achieved, albeit only for those that qualify for help. So the net impact of an additional general move from a local to a national basis of charging would be muted.

3.3.13 There would also be some practical challenges with paying for some environmental improvements nationally, whether by all water customers or by the national taxpayer.

3.3.14 There would need to be some definition of what expenditure counted as an environmental benefit for national treatment, or taxpayer funded treatment. For example, should this include investment in sewerage to which the principle of “polluter pays” could be argued to apply? Such a definition could get bogged down in wrangling within the regulatory system. For as long as water companies are monopoly suppliers of household customers the impact of different definitions and/or approximations would be minimal. If there was ever serious competition between suppliers there would be much more at stake for companies on arguing for a particular expenditure in their patch to be included (and to argue for expenditure in other suppliers’ patches to be excluded). It is generally accepted that water costs should relate to the region they serve (see paragraphs 3.2.1 to 3.2.4). Too many centralized costs, whether paid by the taxpayer or national water customer, would weaken that link potentially leading to less effective management of costs.

3.3.15 Finally, if a volumetric charge is considered to be the most effective way of promoting water efficiency, then costs falling on the taxpayer would reduce the size of the customer’s bill recovered by use, and thus weaken the water efficiency incentives.

3.3.16 There are also questions about the administrative consequences of charging for some costs on a central basis. Any change to current arrangements could result in additional administrative costs. The more complex the system, the higher the overall costs to be met by water customers or tax payers.

3.3.17 As more areas incur additional costs similar in scale to those borne by the South West, the advantages of spreading some expenditure nationally are reduced (because its net impact is smaller). Bringing some expenditure into a progressive national taxpayer system still has some fairness merits, but in the current economic climate, the practical implementation of shifting significant expenditure to the taxation base would not be easy. The review team is also proposing other methods of reducing bills for those least able to pay, which will be targeted at the high cost regions.

3.3.18 The arguments as to whether environmental improvements should be paid for by the local water customer, the national water customer or the taxpayer are complex. The review team would welcome views on the arguments it has set out in the interim report before reaching a firm conclusion in the final report.

3.3.19 Whoever pays, the review team believes there is an urgent and pressing need for much greater transparency and debate over the costs of implementing environmental improvements in the water industry before they occur. There are real choices to be made over the standards to be met, how future environmental improvements are achieved and the period over which they should be carried out, all of which can affect the costs radically and which are particularly important if the water customer—locally or nationally is expected to pay for them. Chapter 11 proposes much greater formal involvement of customers in decisions on what is to be spent. But more needs to be done earlier in the decision making process. There are consultations on proposed legislation now but it is not clear that customers
understand what it means in terms of their bills or the service they receive. It is for government ultimately to agree the level of environmental standards and the timescale over which they are achieved whether these are EU or national standards, but in doing so it should take full account of those who will actually be paying the bill, either through their water bills or through taxation. The review team would welcome views on a potential recommendation that in future the UK Government and Assembly Ministers should make clear in all impact assessments associated with new legislation the effect of changes on water customers’ bills. All impact assessments should quantify the additional cost on the national average bill and those of each water company area. Formal and informal consultations must make specific efforts to engage water customers in the debate on proposed improvements and take the views of customers who will pay. Additions to bills must be taken into account in final decisions.

Polluter Pays Principle

3.4.1 The review team believes the ‘polluter pays’ principle is important. It is aimed at ensuring that those who cause environmental costs or damage pay for it, thus incentivising them to behave differently. Where the incentives can be aligned in this way the polluter pays – or alternatively – those who reduce pollution benefit. This principle is important in delivering better outcomes in an efficient way, and should be incorporated into the charging structure.

3.4.2 However, not all pollution can be traced back in a way that allows the polluter to be charged. For example, water quality can be seriously affected by diffuse pollution from agricultural land and urban areas which arises from a number of different sources. In such circumstances, it can be difficult to identify who the polluter is and ensure that they pay to clean up the environmental damage caused.

3.4.3 Of the four services provided by the sector, the review team believes two could be more closely related to ‘the polluter’ or those who have the ability to affect the costs of the service: highways drainage and surface water drainage. Chapter 7 explores these issues in more detail.

Intergenerational Fairness

3.5.1 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 replacement of infrastructure 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 (i.e. 30 years or more) impacts on costs of current decisions. As discussed in Chapter 1, the review team believes that it is vital to develop a true value of water (including environmental and social costs) to use in management and investment decisions, in order to produce a fairer distribution of costs between generations.
Emerging recommendations

3.6.1 The review team recommends that a fair charging system should:

- Always ensure that charges are fair to future generations and to companies, be clear to customers, and not too expensive to administer;
- charge according to the costs imposed upon the system;
- incentivise the efficient use of water by charging by volume;
- embrace the ‘polluter pays’ principle wherever possible; and
- be affordable where affordability is a problem.
- Costs should reflect regional differences and water prices should continue to be regionally based and geographically averaged.

3.6.2 The review team is minded to recommend that, in the long term, the net benefits are likely to be limited of moving to national or taxpayer charging for some environmental benefits. However, the review recognises the complexity of the interactions between different fairness principles here and would welcome views on which environmental improvements, if any, should fall to either water customers nationally or the national taxpayer.

3.6.3 The review team would welcome views on a potential recommendation that in future the UK Government and Assembly Ministers should make clear in all impact assessments associated with new legislation the effect of changes on water customers’ bills. All impact assessments should quantify the additional cost on the national average bill and those of each water company area. Formal and informal consultations must make specific efforts to engage water customers in the debate on proposed improvements and take the views of customers who will pay. Additions to bills must be taken into account in final decisions.
Introduction

4.0.1 This chapter looks at the alternative charging bases by which water companies can recover their revenues for water services and assesses them against the fairness principles in Chapter 3. It sets out the review team’s recommendations on these issues. Sewerage charges are discussed in Chapter 7.

4.0.2 The review team has looked at the following options for charging for water:

- continued use of rateable value as part of a ‘mixed’ system of charging (the status quo);
- charges based on council tax bands;
- charges based on occupancy rates, number of bedrooms, property type or a flat rate; and
- charges based on volume (metering).

Rateable value

4.1.1 Two-thirds of households currently receive a bill calculated according to the rateable value of the property in which they live. Introduced some 150 years ago and based on property rents, the rateable value system represented a progressive basis for charging, where the wealthier paid more and the less wealthy paid less. It may also have reflected consumption; larger houses tended to have more people in them and had more affluent lifestyles, thus using more water. The system worked well initially because most properties were rented and property rents tended to reflect the incomes of the people who lived in them.

4.1.2 Household rating assessments were last revalued in 1973 although new properties were assigned rateable values until 31 March 1990. Householders continued to have the right to appeal their assessment until that date, and local authorities were required to keep rateable value records until 1995. The rateable value basis of local taxation was replaced in England and Wales with the community charge in 1990, which in turn was replaced in 1993 by council tax. Thus rateable values ceased to play any role in local taxation many years ago.

4.1.3 Analysis by the review team reveals that there is now little correlation between rateable values and household income, as Figure 14 shows. Low-income households are now found in properties in all rateable value bands. The consequence of this is that rateable values cannot be used as an efficient proxy for income or the ability to pay.
4.1.4 The responses the review team received support the temporary use of rateable values for charging unmetered households, but it is clear that an alternative basis for charging must be found in the near future, as the system is so outdated. The assumed help for low-income households through the use of the rateable value system does not in fact exist. Nor does the use of rateable values link the amount paid to the use made of the services, and so it does nothing to encourage more efficient water use.

Council tax bands

4.2.1 The council tax banding system provides an alternative property-based, charging basis; it is used to calculate water and sewerage charges in Scotland. When the council tax was introduced in 1993, bands based on property values as at 1 April 1991 were constructed and enshrined in law. These continue to apply in England. Properties in England are placed in one of eight council tax bands, from A to H, depending on an assessment on what the property would have sold for on 1 April 1991. Council tax band A comprises properties valued up to £40,000, while council tax band H comprises properties valued over £320,000.

4.2.2 A general revaluation was undertaken in Wales 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. Council tax band A comprises properties valued up to £44,000 as at 1 April 2003, while council tax band I comprises properties valued over £424,001.

4.2.3 The Lyons Review\(^{30}\) has recommended that council tax bands are regularly revalued. The equivalent revaluation in England was postponed, however, and the Government declared that there will be no revaluation of council tax bands in the lifetime of the current Parliament. The average income of households still increases with their council tax band, underlining that wealthier people tend to live in more expensive houses as defined by council tax bands.

4.2.4 There is however a wide mix of incomes within each band. This is because the council tax is fundamentally a tax based on property values and is not intended to be a proxy for income. This mixing is much greater in England, where council tax valuations are older than in Wales. This is illustrated in Figures 15 and 16, based on a sample of dwellings in England and Wales. Some 66 per cent of all properties in England\textsuperscript{31} fall into council tax bands A to C, compared with 58 per cent of all properties in Wales.\textsuperscript{32}

**Figure 15: The proportion of each income group (equivalised income) in each council tax band, selected regions of England**

![Bar chart showing the proportion of income groups in each council tax band]

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

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\textsuperscript{31} Department for Communities and Local Government.

\textsuperscript{32} ‘StatsWales’, Assembly Government.
4.2.5 Nevertheless, council tax bands are undoubtedly more relevant than rateable values, and have therefore been studied repeatedly as a basis for water charging. Maxwell Stamp looked at them in work for Defra’s predecessor, the Department of the Environment, Transport and the Regions.33 He concluded that switching to council tax bands would create large numbers of winners and losers, although some of the larger losses could be reduced by introducing a single person discount.

4.2.6 In early 2009, UKWIR, Ofwat and Defra completed similar research on water charging.34 Their work also looked at council tax bands. The review team has extended this work and found that across all household types, some households would be much better off and others much worse off after a switch from rateable value to council tax bands. In other words, the switch of charging base would result in a significant redistribution of bills. A sample of the results is presented in Figure 17, which shows that the average gain (for all households that gain) and the average loss (for all households that lose) is around £100 per year. This is a considerable proportion of the average water and sewerage combined bill of £330 for England and Wales in 2008/09. Moreover, the largest gain is over £500 per year, and the largest loss is over £300 per year in the sample considered. Most single parent households in the sample experience bill reductions.

33 Incidence effects of charging for domestic water and sewerage services, Maxwell Stamp plc, 1998
34 Future methods of charging for the water industry (draft), UKWIR, 2008
4.2.7 The review team concludes that council tax bands do not offer an effective means of distinguishing between lower-, middle- and higher-income households in England or Wales. They are therefore unlikely to differentiate between measures of total wealth, rendering council tax of limited use either as a progressive charging basis for water or as a means of targeting households with low incomes. A charging system designed to help most low-income households would have to provide lower bills for council tax bands A to C, but as most households are grouped into these bands, such a charging system would help a significant proportion of middle- and high-income households as well. And charging based on council tax bands would not incentivise the efficient use of water, as the charges would not relate to volume used.

4.2.8 Local authorities address the affordability of council tax bills through discounts for single people and provision of means-tested Council Tax Benefit. While a similar system of discounts and reductions could be made for water charging to target help to low-income households, charging on the basis of council tax bands would still provide no incentive to households to increase the efficiency of their water use.

4.2.9 Notwithstanding that a move from rateable value to council tax bands would create a better link to the ability to pay, and hence make some impact on affordability; such a move would not be very efficient. Some low-income households would see their bills rise, and some households not struggling would see their bills fall, without achieving any better match between bills and usage. Furthermore, it is known that people particularly dislike losses, so the effect of creating both losers and winners will be perceived overall as having made
households worse off. The review team has concluded that, although council tax is a more accurate basis for identifying income levels, neither it nor rateable value identifies those who need help with bills sufficiently accurately; nor does it incentivise the efficient use of water. It has therefore concluded that neither should form the long-term basis for charging for water.

**Proxies for volume of water**

4.3.1 If charging is not to reflect the ability of the customer to pay, then it would at least be fair if bills reflected the customer’s use of the water supply system. A number of proxies for use were suggested as part of the call for evidence, including occupancy, number of bedrooms and property type.

**Occupancy**

4.3.2 There is a close relationship between occupancy and water use. Data collected by companies during studies of water consumption confirm this. One company has begun tariff trials involving occupancy, relying on voluntary disclosure.

4.3.3 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.

4.3.4 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.

4.3.5 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, there would be constant changes and enforcement would be extremely difficult.

**Number of bedrooms**

4.3.6 An alternative 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 better 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 not practical or economic.

**Property type**

4.3.7 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, and neither is it a reliable indicator of income or incentivises the efficient use of water. Again, this is not a robust enough basis for an entire charging system.

**Flat-rate charge per property**

4.3.8 The simplest charging arrangement is a uniform charge for all households. One company argued that this is the best basis for an assessed charge because it 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.
Volume of water

4.4.1 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 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. The call for evidence (and previous studies) shows that charging on the basis of use is generally considered to be fair, and it is the fairest of the options usually considered. However, charging on the basis of water used requires a meter to be fitted to the customer supply pipe and then read periodically, which involves some additional costs compared to non-volumetric systems of charging.

4.4.2 Customers are strongly of the opinion that volumetric charging is fair. Evidence from companies and CCWater confirms this. Nearly two-thirds of respondents in a recent survey for CCWater said that the amount of water used is the fairest means of charging and a similar number support increased use of water meters. These findings have been reported consistently in recent years.35,36,37

4.4.3 Some households use much more water than others. The volume of use primarily reflects household occupancy, but also varies with lifestyle, the type and use of fittings and appliances, and outside uses for garden watering, swimming pools and ponds, car washing and so on.

4.4.4 Since use varies greatly between households, so do bills based on use, at least in areas where the volumetric part of the tariff is high. By contrast, the operational costs of serving a household vary only a little with water use, because 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.

4.4.5 Even though volumetric charging (or at least where the volumetric charge is high) does not reflect this cost structure, volumetric charging can still be appropriate because:

• in recovering the fixed costs of the system it is still fair (even if it is not economically efficient) to recover these costs more or less in proportion to use;
• volumetric charging tends to recover the fixed costs in a way that reflects the number of users (that is, beneficiaries) of the system; and
• most importantly, it encourages customers to be careful in their use of water and to buy water efficient fittings and appliances. Although not definitive, the evidence suggests that among those who are metered, water use reduces by around 10 per cent just because the bill relates to the volume of water used.

4.4.6 In the long run, such savings help to keep down the company’s costs of maintaining a reliable supply and they bring benefits to the environment, either by avoiding further damage or achieving actual improvements.

4.4.7 Another advantage of charging for use is that it gives householders a degree of control over their bills, raising awareness of the amount of water used.

4.4.8 Charging by use does not reflect income, however. If a volumetric approach is adopted to the charging of water, other solutions will be needed on affordability. These are explored in Chapter 8.
How fair are these charging options?

4.5.1 We have assessed how well the options for charging bases meet the fairness principles described in Chapter 3. Table 4 summarises the results of that assessment.

4.5.2 The option that performs consistently well across the fairness principles, with the exception of affordability, is volumetric charging. Its performance is clearly better than the other options. All the other options satisfy fewer of the fairness principles, and they do not offer any relative advantage over volumetric charging where the fairness principles are met.

4.5.3 Volumetric charging is the only basis whereby households with similar water use pay the same, and where the differences in bills reflect the relative use of the services – so that those who use twice as much of the service consistently face significantly higher bills. It is also the only charging base that has the potential to be both cost-reflective and encourage the efficient use of water. Although most of a water company’s costs are fixed, it is important that the charging system reflects the long-run costs of supplying water, in order to incentivise the efficient use of water. Charging on a volumetric basis is the only charging basis that allows setting the price of water supplied at a level that reflects these costs.

4.5.4 As a result, the review team has concluded that charging by use of water is the preferred method, although continuing to charge some customers on the basis of rateable value and others on the basis of metering is an acceptable interim solution. The speed at which the transition to metering should be made depends on the costs and benefits of fitting meters to the two-thirds of households still without a meter, and how quickly solutions on affordability can be put in place for those that need them. These issues are explored in Chapters 5 and 8.

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

<table>
<thead>
<tr>
<th>Principle</th>
<th>Flat rate</th>
<th>Vol</th>
<th>Rateable Value</th>
<th>CT band</th>
<th>Household occupancy</th>
<th>Bedrooms</th>
<th>Property type</th>
</tr>
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<tbody>
<tr>
<td>I, Cost-related</td>
<td>no</td>
<td>it can be</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
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<tr>
<td>II, Equivalence</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>III, Water efficiency incentive</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>IV, Affordable</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>V, Polluter pays</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>partly</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>VI, Intergenerational equity</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>VII, Simple and transparent</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
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<tr>
<td>VIII, Administratively feasible</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Source: Review team
Emerging recommendations

4.6.1 Neither council tax nor rateable value identifies those who need help with bills sufficiently accurately; not does it incentivise the efficient use of water. Therefore, neither should form the long-term basis for charging for water.

4.6.2 There is a close relationship between occupancy and water use, but occupancy rates are not collected nationally and could be open to deception. Therefore, the review team does not recommend it as the basis for a national charging system. Number of bedrooms would be a poor proxy for water use and is also not recommended for a national charging system.

4.6.3 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.

4.6.4 We have concluded that the fairest way to apportion the costs of water services is by volume of water supplied. It is the charging basis that meets more of the fairness principles set in Chapter 2.

4.6.5 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 the issues of affordability. Measures outside the main charging system will be needed to address the difficulties low-income households may face in paying their bills.
Introduction

5.0.1 The review team has concluded that metered charging is the right basis for a charging system. This chapter shows that the pace of metering will differ according to the availability of water supplies. There is a good case for compulsory metering in certain circumstances. If metering is going to be introduced more widely, it will involve transition from one charging system to another, and this will need clear leadership.

5.0.2 The review team’s conclusions on the future approach to metering emerge from an analysis of the benefits and costs involved. Metered charging saves money by cutting water consumption and leakage costs, but it costs money to set up and operate.

5.0.3 The benefits are that metering:

- results in households who use more water paying more, so that the costs of water supply and foul sewerage services are charged in a way that is considered fair;
- introduces an incentive to reduce water consumption (through a reduction in waste, or an improvement in the efficiency of use), such that consumption falls by 10 to 15 per cent, although this figure is subject to some uncertainty;
- reduces carbon emissions from the water industry as a result of reduced water and sewerage volumes, and from homes as a result of lower hot water use;
- gives some control over bills to householders;
- more easily and efficiently identifies leaks in the customer’s supply pipe, and – as metering becomes almost universal – similarly helps to identify and so reduce leakage in the distribution network;
- allows more sophisticated tariffs to be used, including ones that can smooth peak demand;
- indirectly helps to postpone or reduce the need for future investment in new infrastructure, by reducing consumption and controlling leakage, thereby helping to meet future supply while minimising the environmental and social impacts of increased abstraction; and
- provides water companies, government and customers with more information on, and greater understanding of, water use.

5.0.4 The costs are that metering:

- involves the installation of meter;
- requires the meter to be read periodically;
- necessitates the meter to be replaced when it wears out; and
- changes the customer service relationship between the water company and its customers.

5.0.5 The benefits can outweigh the costs in situations where water is expensive to supply and consumption is responsive to being charged on the basis of use. In these circumstances, metered charging saves money overall, it benefits the environment and it is fairer too. In these situations, compulsory metering is clearly beneficial. In other areas, where water is more plentiful and cheaper to supply, there may be a net cost to metered charging. In these areas, the question is whether the net cost is worth incurring to gain the fairness benefits of metered charging.
5.0.6 For the majority of properties, where metered charging is justified on a combination of benefits, the question arises as to how metered charging is introduced. At the moment, households mostly choose to switch to a meter, which they are likely to do only if they think their own bill will decrease. Metering on a compulsory basis saves costs, as whole areas can be metered at the same time.

**Background to measured charging**

5.1.1 Twenty years ago, at privatisation, virtually no households in England and Wales had a water meter but by 2007/08, meters had been installed in one-third of households in England and around one-quarter in Wales.

5.1.2 Meter penetration has been increasing at a rate of 2 per cent per year; companies in water-stressed areas promote metering most vigorously. Figure 18 shows this trend.

**Figure 18: Historic and planned levels of meter penetration**

![Figure 18](image_url)

Source: Ofwat (2009)

5.1.3 The trends in metering have their origin 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 the replacement of rateable value as a charging basis.

5.1.4 The Water Industry Act 1999 established the current regulatory framework for metering policy in England and Wales. This Act gives most people using water in their own homes 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 became known as the ‘free meter option’. It is a misleading term because metered households do in fact pay for the costs of meter installation and billing over a period of time albeit across the company’s customer base rather than individually. Having opted for metering, these households are charged on a measured basis unless they choose to revert to unmetered charging, which they have the right to do only within 12 months of having a meter installed.

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38 Response to the Review call for evidence, Ofwat, 2009
5.1.5 For a few households installing a meter proves to be impractical and they can choose to pay an assessed charge rather than by rateable value, if they wish.

5.1.6 The right of households to continue paying on an unmetered basis does not apply in certain circumstances. Water companies can compulsorily meter households wherever they are using water for some types of discretionary (non-essential) purposes, such as garden watering with sprinklers, and automatically re-filling ponds or swimming pools or a reverse osmosis unit. The Act also enabled companies to meter homes upon change of occupier. Only some companies have made use of these powers.

5.1.7 From 2010, a company in an area of serious water stress in England can compulsorily meter households if metering is proven to be cost-effective in its Water Resources Management Plan. This power was introduced in an amendment to the Prescribed Conditions Regulations in 2007.

5.1.8 As a result of these and other factors, the proportion of metered households now varies considerably between water companies, from only 10 per cent for Portsmouth Water to around 60 per cent for Anglian Water and South West Water. The metering plans in Figure 19 indicate that these differences will persist.

5.1.9 Six out of the 11 water companies in seriously water-stressed areas in England have put forward compulsory metering programmes starting in 2010 in their draft Water Resources Management Plans for the current Periodic Review. If the companies’ proposed plans are accepted, a majority of households in those areas in England will be metered in five years’ time.

Figure 19: Long-term projections of meter penetration from water companies, 2009 draft Water Resources Management Plans

Source: Environment Agency (2009) based on water companies’ 2008 draft water resources management plans

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39 Water Industry (Prescribed Conditions) Regulations 1999
40 Response to Review call for evidence, Ofwat, 2009
5.1.10 There is broad agreement across governments and regulators about the merits of increased use of meters in charging for water.

5.1.11 The Cross-government Review of Affordability of Water Charging in 2004 concluded that companies should target promotion of the free meter option. The UK Government’s water strategy for England published in 2008 stated the belief that near universal metering was needed before 2030 in water stressed areas in England. It also announced the intention to commission this review to look at metering and charging issues more generally.

5.1.12 The Welsh Ministers set out their views on metering in its recent Strategic Position Statement on Water. It considers 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 Assembly government considers that metering should be targeted in the first instance at high discretionary users.

5.1.13 The industry regulators do not set policy, but they have issued position statements on metering. The Environment Agency calls 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. 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.

5.1.14 Ofwat supports increased levels of metering. As part of the 2009 price review, it expects each water company to justify the economic merit of its metering programmes, including the timing and method of roll-out, before it gives its approval.

5.1.15 Although the UK Government and Assembly Ministers and the regulators all agree about the overall direction of increasing metering, their detailed positions on metering have sometimes differed, leaving water companies unsure as to what course of action they should actually take.

The benefits of measured charging and meters

5.2.1 We now set out in more detail each of the benefits of metered charging listed at the start of this section.

Fairness

5.2.2 Measured charging results in households who use more water paying more, which is a fairer way to charge for water and sewerage services, as described in Chapter 4.

An incentive to reduce demand

5.2.3 The best available studies indicate that when people pay for water use, their water consumption falls by 10 to 15 per cent. The companies draft Water Resource Management Plans indicate a reduction in use of between 5 per cent and 15 per cent, but these estimates are quite uncertain. It is likely that they vary between households and with water prices, although how they vary is not known. A more detailed description of the evidence in this area can be found in Annex E.

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42 Cross-government review of water affordability, Defra, 2004
43 Future Water, Defra, 2008
44 Assembly Government (2009), Strategic position statement on water, January
45 Environment Agency (undated), Position statement: household water metering
47 Ofwat (2008), Ofwat’s future strategy for customer charges for water and sewerage services: consultation conclusions, August
5.2.4 Beyond these changes in demand brought about by standard 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.

5.2.5 For example, a typical person might reduce their water consumption by 10 per cent, which is 15 litres per day. Thus, over the course of a year an average household might save around 13,000 litres of water (13 cubic meters). The reduction in use could be greater for price-responsive or high water-usage households and lower for other households. To illustrate the effect on a household’s bill, at a price of 200 pence per cubic meter (0.2 pence per litre) the household’s annual bill would reduce by £26.

Better information and incentives to reduce leakage

5.2.6 At the moment meters can be installed in 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, but we do not know what proportion has been fitted at the boundary. We would welcome information on the proportion of meters that are located at the boundary.

5.2.7 Responsibility for maintaining the customers’ supply pipe, i.e. the pipe on the customer’s property, lies with the household because the pipe is on the customer’s property. Fitting a meter at the boundary gives the customer the financial incentive to repair leaks that occur in that pipe. For these reasons the review team believes that ownership of the customer supply pipe should remain with the customer. It also makes it possible to detect (underground) leaks. Without a meter, a customer supply pipe leak is unlikely to be detected at all unless it is very large.

5.2.8 Again, smart meters offer additional benefits, because remote meter reads or leak alarms can alert the customer (or the company) to a leak much more quickly. Meters, especially smart meters, can help companies detect leakage in the distribution network as well, but only if almost all properties have meters, allowing the company to observe differences between the volume of water put into the network and the volume taken out of it by their customers.48

5.2.9 Ofwat reported average total leakage of 149 litres per property per day (54 cubic meters per year) in 2005/06,49 which is about 25 per cent of all water put into the distribution network. One-third of all leakage occurs between the property boundary and the building, which is around 20 litres per person per day (18 cubic meters per household per year) and double this amount occurs in the distribution network.50 A study by one company found that a quarter of all customer supply pipes leak, and that one in 25 leak badly.

5.2.10 If leakage from supply pipes could be cut in half, then the water saved would be 9 cubic meters per household per year, equivalent to around 10 litres per person per day. This is a 7 per cent reduction in household metered consumption. To this can be added leakage reduction from the distribution network where meter penetration is high. If leakage on the distribution network were also cut in half the resultant saving would be a further 13 cubic meters per household year, equivalent to 15 litres per person per day.

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48 Environment Agency (2008), The costs and benefits of moving to full water metering, science report SC080016/SR1 (WP2), a report by WRc plc, May
49 Ofwat (2006), Security of supply, leakage and water efficiency, 2005/06 report, November
50 Ofwat (2008), Leakage — recent performance and the long term view, slides by Paul Hope, Water UK leakage Conference, October
5.2.11 In summary, a substantial proportion of total water used in public supply, around 25 per cent, is lost through leakage. If metering enables the level of leakage to fall by half, to 12 per cent, there might be considerable savings in cost, and the water abstracted from the environment could fall by around 25 litres per person per day, or 22 cubic meters per household per year.

5.2.12 The customer is currently encouraged to repair leaks in their supply pipe through a subsidy offered by the companies, and the company gains by allocating any resultant reduction in supply pipe leakage to its own leakage reduction target. We presume that companies will be willing to continue this approach.

5.2.13 **We would welcome information on the cost of leak repair in a form that allows us to include it in the cost–benefit analysis.**

**Reduced carbon emissions**

5.2.14 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 per year.\(^{51}\)

5.2.15 The Environment Agency points out that the energy consumed by water-using appliances in the home has a carbon footprint around eight times greater, 800 kilogrammes of carbon dioxide per household per year, and that by encouraging reduced consumption of hot water, measured charging contributes to the abatement of carbon dioxide emissions. Measured 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.

5.2.16 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 per household per year. Defra recommends that appraisals should value the benefits of reduced emissions at £28/tCO\(_2\) in 2009.\(^{52}\)

5.2.17 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, the climate change benefit for an average household is 90 kgCO\(_2\) per household per year. This is valued at £2.50 per household per year. To this figure should be added the carbon savings associated with leakage reduction, making a total of around 100 kgCO\(_2\) per household per year.

5.2.18 If meters were installed at all remaining 14 million households in England and Wales, the carbon saving would be 1.4 million tonnes of carbon dioxide per year, which is 1% of household end-user emissions in 2008.\(^{53}\)

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\(^{52}\) Note that the Shadow Price of Carbon increases by 2% above inflation each year. Defra (2008), ‘How to use the Shadow Price of Carbon in policy appraisal’.

\(^{53}\) DECC (2009), Statistical release, UK climate change sustainable development indicator: 2008 greenhouse gas emissions, March.
Summary
5.2.19 In summary, in physical terms, the benefits of a high level of metered charging are potentially:

- reduced consumption of around 15 litres per person per day (13 cubic meters per household per year);
- reduced customer supply pipe leakage of around 10 litres per person per day (9 cubic meters per household per year); and
- enabling reduced distribution network leakage of around 15 litres per person per day (13 cubic meters per household per year).

5.2.20 This is a total water saving of around 25 litres per person per day (35 cubic meters per household per year). This is a considerable water saving potential because it equates to 27 per cent of average household metered demand. It is easy to see how it could have a major impact on companies’ water supply investment expenditure and could bring forward substantial environmental improvements.

5.2.21 Associated with these reductions are reduced carbon emissions of around 100 kg carbon dioxide per household per year.

5.2.22 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 true value of water
5.3.1 The value of water savings is equal to the avoided financial and environmental cost of the supply of water.

5.3.2 In the short term, reducing water use and leakage avoids very little water and sewerage company costs. This is because the cost of supplying an additional cubic meter of water or of collecting and treating a cubic meter of waste water from a household is no more than 10 pence, using 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 meters, for an average household. Meanwhile, that household would pay £26 a year less in charges (if the volumetric charge is 200 pence per cubic meter, which is typical).

5.3.3 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 have been made.
- When the current or future level of abstraction is causing, or will cause, environmental degradation, producing higher benefits than the cost savings made by the water company alone. These benefits accrue to society at large and in the future.
5.3.4 In some cases these costs (both infrastructure and environment) will be large but in other cases they will be small, for example where water is plentiful and there is spare infrastructure capacity. 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 meter, and in one exceptional case, 200 pence per cubic meter. These estimates are for the infrastructure elements only and do not include the wider environmental and social benefits that arise from reduced abstraction.

5.3.5 The wider benefits to society of reduced water use have not yet been estimated. The EA and Ofwat are at the early stages of working together on the value of water. For the purposes of this review, we therefore need a working definition that can be used as a template for analysing the benefits of metering.

**Working definition of the true value of water**

5.3.6 The true value of water takes into account:

- the costs of abstracting water, treating it and moving it through the network (including the related carbon costs);
- any operational costs caused by moving more waste water through the sewerage system – but this likely to be low;
- the negative costs to the environment of water not remaining where it was before it was extracted;
- the forgone alternative use to which the water might have been put;
- the capital costs saved by not having to build additional abstraction, treatment and distribution infrastructure because the total water needed has remained static or has actually decreased.

5.3.7 It is predicted in some areas that additional infrastructure will be needed to ensure adequate supplies throughout the year as a result of increasing total demand on the water supply system and the effects of climate change. In these areas the right price to use would be the long-run marginal cost. Although clearly subject to some uncertainty, the cost estimate should also include the future costs to the environment.

5.3.8 In practice, at any particular point where water is being valued, there may be the option of obtaining water from somewhere else. So the true value of water should take into account the possibility of an alternative supply – valued on the same basis.

5.3.9 Trading in abstraction rights could accomplish some of this, but it would still be necessary to capture the environmental damage and social disbenefits that could be caused by additional abstraction (or the environmental and social benefits that could be achieved by reducing abstraction). Unless and until the abstraction regime reflects the true value of water, this value should be built explicitly into investment and operational decisions.

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54 Prices are described in pence per cubic meter 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.

55 All three figures are estimates of the long run marginal costs of supply. The figure of 200 pence per cubic meter relates to the costs of desalination.
5.3.10 Under this definition, the true value of water is likely to be high where there is no spare capacity, where the environment is particularly sensitive to additional abstraction (or to reducing current abstraction levels), and/or where climate change is likely to produce greater environmental sensitivity to abstraction levels in the future. In these areas the external benefits (that is, those benefits accruing to society in general, rather than to customers) are likely to be significant.

Process

5.3.11 This process of bringing the true value of water into decision making will need to be driven by the regulatory system. Both Ofwat and the EA have a central role to play in identifying the right values for environmental and social benefits, and in making sure that these are incorporated into the water companies’ decision-making processes. Both the EA and Ofwat should concentrate on establishing the true value of water in those areas already identified by the EA as being or coming under resource pressure. Establishing a true value for water should become a requirement on both regulators, so they accomplish this quickly.

Summary of benefits

5.3.12 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 meter in the short run, to between 14 pence and 200 pence per cubic meter in the long run.

5.3.13 Thus a saving of 22 to 35 cubic meters per household per year (the former without distribution leakage savings and the latter with them) are worth £2.20 to £3.50 per household per year in the short run, but £3 to £70 per household per year in the long run. On top of these figures should be added the as yet un-estimated wider societal benefits from the reduced production of treated water.

5.3.14 Customers will save on average around £26 per household (of average occupancy 2.3 people) per year by reducing their consumption and avoid spending £17 per year on paying for water leakage (where their meter is fitted at the boundary). This figure varies between water companies because the companies set different prices for water. This needs to be compared with the costs of metering and leakage management.

The costs of metering

5.4.1 We now turn to the costs of metering. The costs of installing and operating meters are well known because the companies have been installing meters for two decades. However, notwithstanding this experience, the estimates provided by the companies showed a significant variation in unit costs.

5.4.2 Some of this variation is explained by the differences in costs dependent on meter location, for example, or type of metering programme. However, after controlling for this, we still received a wide range of cost estimates for the same type of installation in response to the call for evidence. For example, for an internal meter installation, water companies quoted typical costs of between £120 to £400 (see Annex E), a surprisingly large range. This raises a question whether installation costs deserve greater regulatory scrutiny.

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

57 Thirty-five cubic meters of water saved avoiding company costs of 14 to 200 pence per cubic meter.
5.4.3 The costs of metered charging comprise:

- installation;
- 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.

5.4.4 Almost half of the cost is the meter and its installation. We have calculated that on average this is around £220 per household, by assuming a weighted average of internal and external installations based on cost estimates published by the Environment Agency and Ofwat’s figures on meter location. The cost to the customer works out at, on average, about £13 per year on the household bill over a 30 year period when installation costs are amortised over ten years and financing charges are taken into account.\(^{58}\)

5.4.5 We have used this figure in the illustrations in this chapter. However, the cost of installation varies a lot between households and by type of installation. It can be as low as £50 per meter for the simplest case, installing a meter in an existing box on the property boundary, and as high as £400 per meter for a complex external fit.

5.4.6 The meter lasts for about 10 years before it wears out and has to be replaced. This costs the customer about £4 per household per year, assessed over a 30 year period.

5.4.7 According to the companies, around 30 per cent of the cost of metering is associated with more frequent and complex customer-billing enquiries. This is a surprisingly high figure. Some of these will concern meter readings on change of occupier, some will involve leak reporting, and others will be customer queries or 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. In any case, they are sufficiently large to merit further scrutiny.

5.4.8 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 customers’ concerns. This is particularly important as household water customers cannot change suppliers.

5.4.9 Meter reading itself is a surprisingly small component, only 6 per cent, of the total cost. This may partly explain why companies read meters visually, and in the past did not find it worthwhile installing remote-read meters. The cost of the technology has also been falling and its capability has grown so that some water companies are now planning to roll out automated meter reading and intend to move completely to this type of meter over the next few years. Furthermore, now that the government has committed to roll out smart energy metering to all households by 2020, the incremental cost of adding water meters to the smart energy communications system might be quite low. This needs further examination.

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\(^{58}\) If a shorter appraisal period is used the impact on bills is reported as higher than £13. If the appraisal period is reduced to 10 years, the reported effect of the cost of installation on bills increases from £13 to £24 per household per year. The total impact of metering on bills then rises to £43 per year.
Summary of costs

5.4.10 For a simple, ‘dumb’ meter, the total cost to the customer over 30 years works out at typically around £30 per household per year over and above the cost of unmetered charging, although there is a wide range around this figure. The short-term impact on bills is higher, but it declines over time. Figure 20 shows the breakdown by activity.

5.4.11 A universal compulsory programme allows teams of meter fitters to work more productively street by street and the companies told us that this reduces installation costs by 20 to 50 per cent compared with an optant or selective programme. This is substantially more cost efficient.

5.4.12 A 50 per cent saving in installation costs would reduce the typical average costs of metered charging from £30 to £23–£27 per household per year. The cost savings from compulsory universal metering demand that it is given careful consideration, especially when one considers that the high level of meter penetration possible through universal compulsory metering releases one third of the benefits of water savings (from distribution network leakage reduction). We will return to this question later in the chapter.

5.4.13 As a clarification, universal compulsory metering means the fitting of meters to all feasible properties in an area, via a street-by-street programme of installations. It does not mean that a whole company area has to be converted to meters in a short period of time.

Figure 20: Composition of typical effects on bills (on average over a 30 year period) for measured charging based on installation of a dumb meter for an optant
Example comparisons of costs and benefits

5.5.1 In this part of the chapter we compare the costs of metering against the benefits, valuing them where we can. We use examples because the parameters vary from location to location and the companies’ cost estimates span a wide range. They illustrate both the value to society and how much customers would pay for a metering programme.

5.5.2 Based on these examples and sensitivity analysis around them, we have judged that the greater fairness of measured charging justifies the options we recommend. **We would welcome comments on the cost-benefit analysis, on our assumptions, the evidence we have used and on the merits of our recommendations.** Further details are set out in Annex E.

Example of a meter optant programme

5.5.3 The first example shows a typical household in an area with a moderate value of water, 50 pence per cubic meter. Here, the future water bill in the short run, if metered, is £188 per household per year, which is higher than it would be without metering, at £157 per household per year. This is because the cost of metering, £30 per household per year, is hardly offset at all by short-run cost savings. In the long run, £12 per household per year of avoided costs are realised, and, when the wider environmental benefits and carbon dioxide savings are included, metering represents only a small net cost to society, £6 per household per year.

5.5.4 In these circumstances, metering is desirable because it is fairer and available at a low net cost to society. However, it will increase the bills of certain customers by a noticeable amount, so a general optant programme is an appropriate means of achieving a gradual transition in bills, reserving selected compulsion for high discretionary users. The components of the calculation are shown in Figure 21.

Example of a universal compulsory metering programme

5.5.5 In the second example, the same typical household is located in an area where water has a high value, 200 pence per cubic meter. In this example, bills without metering of £157 per household per year, rise by £25 initially to £182 per household per year. The initial rise in bills is lower than in the first example because meters are installed as part of a universal compulsory metering programme.

5.5.6 In the long run, company cost savings of £44 per household per year are realised, driving down bills. On top of this, there are wider environmental benefits. Society is overall better off by £31 per household per year. Customers and society are both better off, which justifies the compulsory programme. The components of the calculation are shown in Figure 22.

Explanation of Figures

5.5.7 The elements in Figures 21 and 22 are interpreted as follows. The short-run effect of moving households to measured charging is that household bills rise to accommodate the costs of meter installation and leakage repair. There is a small short-run offsetting reduction in water supply costs. These elements are shown in the left-hand side of the charts.

5.5.8 The right-hand side shows what would have happened without metering. In the absence of the demand and leakage reductions from metering, bills would have risen to accommodate new investment in water supply. Overall bills end up below or above the level they would have attained in the absence of a metering programme, depending on the size of demand reduction and the long-run costs of water supply in the region.
5.5.9 The overall costs to society without metering in addition take into account the environmental and social costs of water abstraction as well as damage from climate change due to emissions of carbon dioxide. In situations where these elements are valuable, this could be a significant adjustment.

Figure 21: Effects on household bills of universal metering and cost-benefit analysis, typical household and moderate value of water

Source: Review team

Notes: (i) this figure and the following figure use assumptions that are appropriate for dumb meters; (ii) elements shown in yellow are costs and elements shown in red are savings.
These examples show how, in the cost–benefit analysis, a universal compulsory metering programme can be more attractive than an optant programme because it has lower costs, and that metering is more attractive in areas where water is scarce (using the proposed Environment Agency’s new definition). It also shows that bills rise initially, and therefore some care needs to be taken to avoid immediate rises in bills unless they are justified by significant savings in the long run. An optant programme has the property that those who switch to a meter are choosing to do so, and usually their bills go down when they switch. Although set against this, the bills of those who do not opt for metering go up, as the average unmetered consumption rises.

**Optant versus compulsory metering**

This leads us to consider when an optant metering programme should continue and when compulsion should be used, either with selective or universal coverage.

There are three grounds for continuing the right to opt. The first is that in some places the value of water is not high enough to justify universal compulsory metering. The second is that compulsory metering will take some time to roll out. The third is that switching to a meter can make the bills of low-income households with high rateable value properties more affordable.

The reason why optants switch to measured charging is because it reduces their bills. They are generally households with few occupants and low water use, often living in properties with a high rateable value. Some of the companies have found this to be the case by comparing the bills of optants with usage profiles from their domestic consumption monitors.
Their water savings are correspondingly small when they change to measured charging, and some of the other benefits from switching listed earlier are also small for this group.

5.6.4 Nevertheless, the optant system of metering is fair so long as all households who would benefit from reduced bills are encouraged and able to switch. This is because it is fair for people to pay for what they use and it is fair for people whose use is small to pay less.

5.6.5 Households with high water use will often be among the last groups to switch. These households use a lot of water, and in moving to measured charging they are encouraged to moderate their use; so their reduction in water usage is likely to be correspondingly large. As more and more households switch to metering, the case in favour of moving the rest of a company’s customers onto measured charging becomes ever stronger.

Selective compulsory metering

5.6.6 Currently water companies can, in some circumstances, compulsorily meter households with high discretionary use, as defined in the Prescribed Conditions Regulations. These households are unlikely to opt for a meter, yet it is not fair that they continue to consume a lot of water without bearing their fair share of the costs of water and sewerage services. Water companies have made limited use of these powers.

5.6.7 The review team has concluded that it is both fair and advantageous to compulsory meter properties with high discretionary use. It also believes that the current Regulations are too limited and, for example, only provide for compulsory metering of properties with a swimming pool when it is over a certain capacity and it is automatically refilled. While the review team recognises the need to define clearly when the Regulations apply, it believes the current Regulations need to be extended to cover other circumstances of high discretionary use.

5.6.8 In particular, we would like to explore further whether the powers to compulsory meter households should be extended to all properties with an outside tap. The presence of an outside tap enables households to have high external, discretionary use and we suspect that the tap is a good indicator of this behaviour. If this is the case, then there is a case for extending the Regulations to cover outside taps. We would welcome evidence on the use of outside taps and views on whether the powers in the Prescribed Conditions Regulations should be extended, including to cover properties with outside taps.

5.6.9 Optants, and also those who are metered compulsorily under Prescribed Conditions Regulations, are geographically dispersed and the dates of their switching to a meter are distributed over time. This means that the costs of surveying these properties and installing meters are higher than if they were bundled together in a planned programme.

Areas of high meter penetration

5.6.10 As we have seen, the case for compulsory metering is strongest where the benefits are highest. These are higher in areas where the true value of water is high. They also increase with high levels of meter penetration for two reasons. First, the average consumption of remaining unmetered households rises with meter penetration where this is driven by customers opting for a meter because it will save them money, and second, the value of improved leakage detection on the distribution network rises as the remaining number of unmetered households shrinks. There will also be a point at which running two charging systems (metered and rateable value) becomes costly and inefficient. At some point the benefits of a well-designed compulsory roll-out programme to cover the remaining properties may become overwhelming.
5.6.11 There is a trade-off to be made here. The earlier compulsory metering is triggered, the larger the cost savings in terms of overall costs. If the trigger point is set too high (for example, at 80 per cent) then the additional number of properties to be compulsory metered is low, and the savings of a roll-out programme are much lower as most properties in any area are already metered. There is also a number of properties (estimated at between 5 and 10 per cent) that would not be feasible to meter. However, the earlier compulsory metering is triggered; a larger number of households will be presented with changes in their bills, including increases for high users. This transition would need to be managed. In comparison, if the trigger for compulsory metering is set at a higher level, the bills for high users that remain unmetered would rise more gradually as metering increases through an optant scheme. Some of these issues can be mitigated through phasing in compulsory metering gradually, thereby realising cost savings from lower installation costs without sudden distributional consequences.

5.6.12 The review team believes the trigger for compulsory metering should be when 60 or 70 per cent of households are metered. The review team would welcome views on what the appropriate percentage to trigger a compulsory metering programme for the remaining unmetered properties should be.

Summary

5.7.1 We have recommended that the rateable value charging system should be discontinued and replaced by the much fairer system of measured charging. How best to achieve this is revealed by comparing the costs and benefits of measured charging and meters. The choice is between compulsory metering in specified areas, selective compulsory metering of certain types of household, and metering by customer choice (‘optant’ metering).

5.7.2 We have seen how metering costs vary by installation type, and how the benefits vary according to local circumstance and customer type. The benefits are at a maximum where the true value of water is or will soon be high, where there is high discretionary use, and where meters are already widespread. Under the following conditions the review team believes that compulsory metering will be justified and should be actively encouraged by the regulator:

• for high discretionary water users;
• where the true value of water is high; and
• where levels of metering are already high.

5.7.3 Although the optant system is an economically inefficient approach to installing meters, it is fair because it allows those who use very little water to reduce their bills, thereby increasing the bills of high users who remain on unmetered charges. Water companies must ensure that their low-income customers who are low users and would therefore benefit from being metered are both identified and encouraged to apply for a meter. Where optant metering is the driving force behind the increase in metering penetration, it may be appropriate for companies to be under an obligation to ensure that low-income customers are supplied on the lowest possible tariff, which would remove any financial risk these customers would face in opting for a meter. With this safeguard, and despite its economic inefficiency, the review team considers that the right to opt for a meter should continue to be offered to all customers.

59 As low users opt for a meter, the bills of those left unmetered rises because the average consumption of those left unmetered rises.
5.7.4 These recommendations would, over time, lead to universal metered charging and they entail a commitment to a programme of investment and operating expenditure that is of significant scale compared with other water industry investments. The approximate dimensions of the programme are set out below.

Scale of a metering programme

5.8.1 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. At that installation cost, it would cost around another £3 billion to fit meters to all remaining households.

5.8.2 Roughly 10 per cent of meters require replacement each year, involving additional expenditure of around £130 million per year if all properties are metered. The additional annual expenditure on meter reading, billing and customer enquiries would be around £200 million per year. There would also be additional expenditure on leakage control and water efficiency, which has not been estimated here but may have an impact on bills.

5.8.3 Hence the total commitment in continuing towards universal metering would be investment of around £3 billion and ongoing expenditure of around £330 million per year, plus other smaller components impacting on bills. The pace at which the installation costs would be incurred will depend on the pace at which metering takes place.

5.8.4 In return, fitting meters to all remaining households would avoid around 13 cubic meters a year of water use and perhaps 9 cubic meters a year of leakage, for each metered household. Across 14 million households, this amounts to just over 300 million cubic meters a year. At a long-run marginal cost of 50 pence per cubic meter, the avoided supply costs would be £150 million per year. At a long-run marginal cost of £1 per cubic meter, the avoided supply costs would be £300 million per year. To these figures should be added the value of carbon emissions avoided of around £40 million per year and the value of the environmental and social benefits arising from reduced wastage and hence reduced water abstraction. (These are the remaining elements of the true value of the water that are not captured currently in the costs facing the water companies.)

Smart meters

5.9.1 Dumb 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 dumb meters, although this must be balanced against the increased cost of the meter and any telecommunications network connection fee.

5.9.2 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.
5.9.3 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 proposes meters with two-way communication between the energy supplier and the customers, to maximise the benefits from smart metering, and also a consumer display unit and network for communicating with appliances. The roll-out of an electricity and gas smart metering programme means that there is an opportunity to piggyback water metering on the communications system for energy metering. This means that the incremental cost of integrating water meters into the energy metering system could be very low, if it is planned from the start.

5.9.4 The benefits from smart water meters include:

- reducing reading costs (this becomes more significant the more frequently the meter has to be read), which could reduce the cost of metering by up to 6%;
- reducing carbon costs through automatic meter reading, especially when the readings can be remotely transmitted to the supplier;
- 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;
- 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.

5.9.5 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 also not be as great 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.

5.9.6 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.

5.9.7 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 £2 per household per year reading and the £9 per household per year customer contact costs.

5.9.8 Further work is being carried out for the final report, particularly in the experience of the current use of AMR, but in any case Ofwat and the water companies now need to take action to assess these costs and benefits in the light of the government’s programme for energy metering. As part of Ofwat’s leadership on metering issues (see paragraph 5.11.4 below), we recommend that Ofwat sets up a smart meter group to determine the costs and benefits of smart meters in the water industry to inform any decisions...
on approach and potential roll-out of smart meters and to ensure any synergies with the energy sector are maximised. This group would include the Environment Agency and water companies among others.

5.9.9 This group should also direct the data strategy and analysis for the smart meter trials. Given the potential synergies with the roll-out of smart metering technology in the energy sector there is some urgency to this to ensure that the maximum long-term benefits can be achieved for water customers. **We would welcome views on whether this could evolve from the current Intelligent Metering Initiative.**

5.9.10 **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.** In particular, the location and type of meter installed should take into account the possibility and cost of a future conversion to smart meters. This includes considering how the water meter data could be connected to the energy meter data line or, if the meter installed is a dumb meter, whether it is possible to convert it later into a smart meter (for example, by enabling Automatic Meter Reading).

**Properties where metering is not feasible**

**Assessed charges**

5.10.1 Where properties are unusually expensive to meter it is possible that meter installation would not be worthwhile. The companies have told us that the proportion of households where meter installation is prohibitively expensive is around 10%. This number seems high when one considers that all households on electricity and gas supplies are metered. Wherever universal metering is or becomes the objective, companies should look very hard to find ways to install meters on individual properties at reasonable cost.

5.10.2 For those households where a meter is not feasible, an alternative charging base will have to be introduced. The companies already offer assessed tariffs for use in this circumstance. The assessed charges were discussed in Chapter 4, and while they do not offer a basis for a national alternative to rateable value charging, they are a suitable basis for those households where it is not feasible to install a meter.

5.10.3 The companies employ a variety of assessed charging bases including number of bedrooms and property type (detached, semi-detached and flat). The detailed design of these tariffs is a matter between Ofwat and the companies, and we recommend that they select charging bases that provide as good a proxy for use as possible without being open to deception by unscrupulous householders. Unless there are very good reasons why the tariff that best matches a proxy for use varies around the country, some degree of consistency between suppliers on the basis of the assessed charge would improve general customer understanding of how the industry calculates its charges.

**Multi-occupied buildings**

5.10.4 In the case of apartment buildings, individual meters should be the preferred option as with all other properties. The multi-occupied building is a type of property where meter installation costs are often relatively high. In this case 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. **We would like to hear views on this proposal.**
Effective leadership

5.11.1 If an efficient transition to a (near) universal metered system is to be achieved, uncertainty must be removed. Some of the benefits of metering arise from good co-ordination, both within the industry and possibly between the water and energy industries, but not all stakeholders share the same interests (including customers, whose interests differ among themselves).

5.11.2 Strong leadership in achieving the transition to metering will, therefore, be needed, (similar, for example, to the approach to the digital switchover in telecommunications). The UK Government and Assembly Ministers should set out clear statements on their approach to metering and make any necessary changes to the regulatory framework; requiring the regulatory agencies to work together to achieve the desired outcome efficiently.

5.11.3 It is, therefore, important that the UK Government and Assembly Ministers, as well as the Environment Agency and Ofwat, work together to provide a clear regulatory framework within which water companies can draw up their proposals. As part of this work, the regulators should agree on the value to be attributed to the benefit from reducing the consumption and leakage of water and from a wider evaluation of the value of water. That evaluation should take account of the Environment Agency’s latest work on water stress by catchment areas (see Chapter 1).

5.11.4 The transition from one charging system to another will need active leadership. We recommend that Ofwat is asked to lead the delivery of metering in a proactive way within the policies laid down by the UK Government and Assembly Ministers, publishing a report on progress every one or two years.

Emerging recommendations

5.12.1 Until the abstraction regime reflects the true value of water, this value should be built explicitly into investment and operational decisions.

5.12.2 The process of bringing the true value of water into decision making will need to be driven by the regulatory framework. Both Ofwat and the EA have a central role to play in identifying the right values for environmental and social benefits, and in making sure that these are incorporated into the water companies’ decision making processes. Both the EA and Ofwat should concentrate on establishing the true value of water in those areas already identified by the EA as being or coming under resource pressure. Establishing a true value for water should become a requirement on both regulators, so they accomplish this quickly.

5.12.3 Companies have quoted a wide range of meter installation costs, raising a question of whether installation costs deserve greater regulatory scrutiny.

5.12.4 Where optant metering is the driving force behind the increase in meter penetration, it may be appropriate for companies to be under an obligation to ensure that low-income customers are supplied on the lowest possible tariff.

5.12.5 The right to opt for a meter should continue to be offered to all customers.

5.12.6 Water companies must ensure that their low-income customers who are low users and would benefit from being metered are identified and encouraged to apply for a meter.
5.12.7 Compulsory metering should be introduced:

- for high discretionary water users;
- where the true value of water is high; and
- where levels of metering are already high and running two charging systems is inefficient. The review team invites views on what the level should be.

5.12.8 The review team concludes that it is both fair and advantageous to compulsory meter properties which have high discretionary use. It also believes that the current Regulations are too limited, and that the current regulations need to be extended to cover other circumstances of high discretionary use. In particular, we would like to explore further whether the powers to compulsory meter households should be extended to all properties with an outside tap.

5.12.9 Now that the government has committed to roll out smart energy metering to all households by 2020, the incremental cost of adding water meters to the smart energy communications system needs further examination. Ofwat and the water companies need to take action now to assess the costs and benefits.

5.12.10 In support of Ofwat’s leadership on metering issues, we recommend that Ofwat sets 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 for smart meter trials and exploit any potential synergies.

5.12.11 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.

5.12.12 The detailed design of assessed tariffs is for Ofwat and the companies, but we recommend that they select charging bases that provide as good a proxy for use as possible without being open to deception by unscrupulous householders.

5.12.13 Strong leadership in achieving the transition to metering will be needed. The UK Government and 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.

5.12.14 We recommend that Ofwat is asked to lead the delivery of metering in a pro-active way, publishing a report on progress every one or two years.
Introduction

6.0.1 Once meters have been installed there is the further question of the type of tariff to be used. Metering – particularly smart metering – opens the way to a much wider range of tariffs. The choice of tariff determines in detail how the costs of the service are recovered from customers.

6.0.2 It is ultimately for Ofwat and the companies to decide what tariffs to introduce, subject to competition law and to Ofwat’s overall duty to protect the interests of consumers. The review team is strongly of the view that within those parameters, good regulatory practice should allow maximum flexibility for companies to respond to their customers’ requirements. Over time, we would expect to see a range of innovative tariffs developed.

6.0.3 However, the review team’s work suggests that some tariffs will be seen as fairer, and more effective in promoting efficient water use, than others. Given these differences in outcomes for customers, there is a question as to what guidance the government should give the regulator on how metered tariffs should look, and what principles Ofwat should observe in considering the acceptability of different metered tariffs. We present the results of this analysis here and invite views on how the guidance to the regulator on metered tariffs should be cast.

6.0.4 The main variable in basic measured tariffs is the relationship between the volumetric charge and the standing charge. As Chapter 2 highlighted, water companies currently set a wide range of prices for the standing charge and for the variable element, which raises some concerns over the justification for different approaches in different areas. This chapter, therefore, looks first at the effect of the balance between volumetric and standing charges in a simple two-part tariff, and then considers whether more innovative tariffs such as seasonal or rising block tariffs would deliver fairer bills and encourage more efficient use of water.

6.0.5 Affordability and social tariffs are examined in Chapter 8.

Balancing the volumetric and standing charges

6.1.1 The effects of alternative balances between volumetric and standing charges are set out below.

(i) High volumetric charge with low standing charge:

- creates an incentive for the customer to use less water, fix leaks and purchase efficient fittings and appliances;
- produces bills that are 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.

(ii) High standing charge with low volumetric charge:

- Creates a smaller incentive for customers to use less water and avoid wasting water;
- produces bills that are less than proportionate to water use;
- reduces the range of bills received by customers so that household bills are more clustered around the average bill, irrespective of water use (and household size);
- produces differences in bills per person, so that the bills of two two-person households will not be similar to the bill of a four-person household, thus recovering the company’s costs on an approximate household basis;
- creates small differences in bills between customers with high and low discretionary water use (as it does for those with different levels of essential water use); and
- results in closer-to-average bills for homes not occupied all year (for example, second homes).

6.1.2 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 (those who water the garden a lot, for instance) but unless there is a special tariff (such as WaterSure – see Chapter 8), it will also tend to increase the bills of those with high essential use.

6.1.3 This effect on households is illustrated in Figure 23, 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 in this water company 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.
6.1.4 A high volumetric tariff has other consequences. 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. 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. Those who have cut back will still pay a lower total bill, but the unit price they pay will have risen. The total paid by all customers will also have fallen. 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.

Figure 23: The pattern of bills per person when a tariff comprises solely a volumetric charge or solely a standing charge

![Graph showing the pattern of bills per person](image)

Source: Review team

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.
6.1.5 If the volumetric price of water were to become significantly higher than the true value of water, and thereby trigger a significant reduction in use, this could be unfair and inefficient. However, it is fair and efficient to price water at least up to its true value: at this minimum price customers will consume water only if they value it at least as highly as its true value. Otherwise, they will leave the water to whoever values it more highly and so has a better claim on its use. As the true cost of water is generally rising as a result of climate change and population pressures, generally the inefficiencies involved in recovering most, if not all, the costs of supply from the volumetric charge are likely to be low.

6.1.6 However, there may be places where if most, or all, of the fixed costs of supply are to be recovered from the volumetric charge, the company may have to price water at a rate significantly higher than its true value. If demand for water falls significantly as a result, then there is a trade-off to be struck between an outcome where those who use twice as much pay twice as much (which can be seen as fair) and the economic inefficiency of this outcome. This trade-off is not straightforward, and depends on the intrinsic value customers put on distributing the fixed costs by reference to usage.

6.1.7 In some places, where the true 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 true value, has the advantage that it familiarises people with the prices they will face in the future, thereby encouraging them to waste less water and invest in efficient appliances. Reducing consumption in these cases can also lead to the postponement or avoidance of new investment in supply.

6.1.8 Some of the disadvantages of high volumetric tariffs, such as the low contribution extracted from second homes, can be overcome by using seasonal tariffs or by introducing a minimum bill that ensures that all users make a significant contribution to the fixed costs.

6.1.9 By contrast, employing a higher standing charge and lower volumetric rate increases the amount paid by small households and those with low discretionary use, and blunts the incentives to use water efficiently. A key fairness principle is that the size of the bill reflects usage.

6.1.10 Figure 24 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 (i.e. no standing charge).
6.1.11 The difference in the distribution of costs is significant. With a high volumetric tariff the bills of the small household are less than 50% of what they would be with a high standing charge. Similarly, the bills of the large household with high discretionary use 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 avoid wasting water, the high volumetric tariffs score better than the tariffs that are composed mainly of standing charge. A possible exception is where the true value of water is, and is likely to remain, very low.

6.1.12 The review team therefore recommends that with metered tariffs a high proportion of the company’s revenue should be collected through the volumetric charge, and that the unit price of water should be no less than the true value of water. The review team considers that Ofwat should review the division between volumetric and standing charges in metered tariffs and continue to evaluate the advantages (and disadvantages) to customers of varying the relationship between the standing charge and the volumetric charge. In particular, the impact on usage of varying the volumetric charge should be investigated to establish if there is a real danger of inefficient outcomes where the volumetric charge is set significantly higher than the true value.

More innovative tariffs

6.2.1 With frequent meter reading or smart meters, tariffs can be more sophisticated than a simple two-part tariff. More sophisticated tariffs can provide different incentives to customers and distribute the costs of supply across customers in different ways.
6.2.2 Various types of tariff structure are currently being trialled – see Annex F. The options that Ofwat has approved for trial in 2008/09 include a rising block tariff with usage blocks set with no reference to occupancy, a seasonal tariff with differential summer and winter rates and a fixed date on which the rates change, a seasonal rising demand tariff with the winter period determining the household’s essential use, and, for 2009/10, a rising block tariff with usage blocks which vary with occupancy. The general characteristics of these different tariffs are set out below.

6.2.3 A rising block tariff charges more per unit of volume for each subsequent block of water used. A rising block tariff has often been suggested as the best way to address the affordability of metered water bills for low-income families, as it provides a block of water at a reduced price. Another reason for using this structure is to present consumers with a high price for discretionary use so that they respond by reducing their use, without having to pay a high price for their essential water.

6.2.4 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. Where standing charges are higher, this may not be the case.

6.2.5 This is illustrated in Figure 25, which compares the effects of rising block tariffs and simple two-part tariffs on households of different size.

**Figure 25: The illustrative pattern of bills per household for a simple two-part tariff and a rising block tariff**

Source: Review team

Note: the illustrative tariffs are set so that at average occupancy (2.25 persons per household) the bills would be identical.
6.2.6 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 is not collected nationally. Therefore, the review team considers that rising block tariffs cannot, at present, provide the solution to affordability, as the lack of national data on occupancy means that it is not possible to robustly relate the size of the cheaper block of water to the number of occupants in the household. In addition, sizing the first block of water would require estimating how much water is deemed to be essential for each user. Furthermore, as a way of addressing the affordability issue directly, this cheaper block would be available to all households, thereby benefitting all households, and not just those that might need help to pay their bill.

6.2.7 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 meter 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 26, using the same tariffs as in Figure 25. 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.

6.2.8 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 true value of water. This outcome could be useful if setting the volumetric price of water at its true value resulted in the company over-recovering its total costs of operation.

Figure 26: The illustrative pattern of bills per person for a simple two-part tariff and a rising block tariff

Source: Review team

Note: the illustrative tariffs are set so that at average occupancy (2.25 persons per household) the bills would be identical.
6.2.9 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.

6.2.10 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 although rising block tariffs may merit further consideration in specific circumstances, without a robust way of establishing occupancy the general adoption of rising block tariffs is unlikely to maximise fairness within the charging structure, and cannot be used to target effectively those that need help in paying their bills.**

6.2.11 A **declining block tariff**, by contrast, sets lower unit prices for each subsequent block of water used. 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 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.**

6.2.12 A **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 may be practicable only for households equipped with smart meters.

6.2.13 Customers’ response to high prices in the summer can result in a greater reduction in use then, producing the added benefit that companies need to cater for a smaller peak in demand, thus reducing their total costs and probably producing additional benefits to the environment. However, the scale of this demand reduction is uncertain; current trials should uncover useful evidence of the behavioural response to seasonal tariffs.

6.2.14 A seasonal tariff would increase the amount paid by households who use water primarily in the high-cost season, such as second home owners. This would have fairness advantages.

6.2.15 Another alternative is to vary the **volumetric rate with the council tax band of the property**. In this tariff, households in lower council tax bands pay a lower volumetric charge than households in higher council tax bands. As the average income of household increases with their council tax band, this tariff could help with affordability of bills while retaining the incentive for customers to use water efficiently. However, as discussed in Chapter 4, the review team does not recommend the use of a tariff based on council tax bands, as they do not offer an effective means of distinguishing between lower-, middle- and higher-income households in England and Wales. A metered tariff based on council tax band would be of limited use as a progressive charging basis for water or as a means of targeting households with low incomes.
6.2.16 In addition to the distributional consequences of different tariff structures outlined above, different tariff designs may also affect customer behaviour. Indeed, it is one of the primary objectives of these tariffs that changes in consumer behaviour would result in lower overall cost, for example, by inducing more efficiency in use and reducing the need for more supply infrastructure. The behavioural responses to different tariff designs is, however, largely unknown. So in practice, further research is needed to establish the value of these tariffs. The current trials should help considerably here. The review team is of the view that prior to the completion of these trials, no definitive conclusions can be made on the final desirability of any of these tariff options. Ofwat has an ongoing responsibility here to fully understand the implications for customers and to ensure that, once the information is available, companies adopt appropriate approaches for their customers.

6.2.17 Ofwat should work with the companies to ensure that the tariff trials provide robust and detailed information on the behavioural response to innovative tariffs.

6.2.18 Seasonal tariffs appear to show potential for controlling summer-time peak demand. Meanwhile, rising block tariffs have complex effects in redistributing the burden of costs between households, but cannot be recommended as a general tool to address affordability, given the lack of robust data on household occupancy. Wherever distributional consequences from the introduction of changes to tariffs are likely, they should be assessed and considered against the review’s fairness principles.

**Emerging recommendations**

6.3.1 The review team recommends that with metered tariffs a high proportion of the company’s revenue should be collected through the volumetric charge, and that the unit price of water should be no less than the true value of water. It considers that Ofwat should review the division between volumetric and standing charges in metered tariffs and continue to evaluate the advantages (and disadvantages) to customers of varying the relationship between the standing charge and the volumetric charge.

6.3.2 In respect of more innovative tariffs, the review team’s view is that:

- rising block tariffs have complex effects in redistributing the burden of costs between households, which may merit further consideration in specific circumstances. However, rising block tariffs cannot be recommended as a general tool to address affordability, as there is no robust data on household occupancy;
- the declining block tariff is not appropriate for a general national household charging system as it weakens incentives to reduce discretionary use of water; and
- seasonal tariffs appear to show potential for controlling summer-time peak demand.

6.3.3 Ofwat should work with the companies to ensure that the tariff trials provide robust and detailed information on the behavioural response to innovative tariffs.

6.3.4 Wherever distributional consequences from the introduction of changes to tariffs are likely, they should be assessed and considered against the review’s fairness principles.
Chapter 7 – Future charging system: Sewerage services

Introduction

7.0.1 This chapter makes recommendations on the charging for three services provided by sewerage companies: foul sewerage, surface water drainage and highway drainage services. Table 5 gives a breakdown of the average combined water and sewerage bills and the bases currently used for charging households for these services, as outlined in Chapter 2.

7.0.2 On average, just over half of the combined bill relates to these three services, with the majority of customers paying a charge unrelated to their own use of the services. As explained in Chapter 2, the likely effect of climate change (bringing heavier rainfall concentrated in shorter periods of time) and environmental considerations influence the need for future investment. This might be alleviated by putting in place the right incentives to reduce rainwater run-off, leading to a reduction in future costs.

Table 5: Basis on which combined water and sewerage bills are calculated. (2007/08)\(^{60}\)

<table>
<thead>
<tr>
<th>Service</th>
<th>Linked to Rateable Value</th>
<th>Linked to metered volume</th>
<th>Fixed or Assessed</th>
<th>Percentage of average bill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>65%</td>
<td>33%</td>
<td>2%</td>
<td>47%</td>
</tr>
<tr>
<td>Foul Sewerage</td>
<td>65%</td>
<td>33%</td>
<td>2%</td>
<td>37%</td>
</tr>
<tr>
<td>SWD</td>
<td>28%</td>
<td>7%</td>
<td>65%</td>
<td>9%</td>
</tr>
<tr>
<td>HWD</td>
<td>35%</td>
<td>8%</td>
<td>57%</td>
<td>7%</td>
</tr>
<tr>
<td>Percentage of customers' bills</td>
<td>60%</td>
<td>29%</td>
<td>11%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Ofwat response to Call for Evidence

7.0.3 Chapter 2 also explores the differences in the composition of sewerage bills for different companies in England and Wales, with wide variation on the proportion of the sewerage bills related to the different services, as shown in Figure 27. It invites evidence on what might explain this variation and views on the basis on which the costs can be allocated fairly between the three sewerage services.

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\(^{60}\) Share of average bill does not necessarily reflect share of total revenue recovered from household customers.
Foul sewerage charges

7.1.1 Foul sewerage charges are usually calculated on the same basis as the water supply charge; that is, unmeasured households pay for foul sewerage services according to their rateable value while metered households pay according to the volume of water used. This element constitutes the bulk (70 per cent) of the total sewerage bill – 37 per cent of the average combined water and sewerage bill.

7.1.2 The similarities between the foul sewerage services and water supply services are shown in Table 6. Both have similar cost structures, with a high proportion of fixed costs and low volume- or load-related costs. In addition, both deliver services that have some characteristics of public goods. The charging basis available for foul sewerage and water supply is the same, as it is not practical to meter household waste water discharges. In any case, the volume of foul sewage discharged into the public sewer is broadly similar to the volume of water supplied to the household.

7.1.3 The main differences are the weaker rationale for setting efficient variable rate charges for sewerage services, as there is more scope for households to save water than there is for them to reduce the load they send to the sewer (as the total load depends on both the volume and the load by unit of volume); and the stronger public good character of foul sewerage services (in the form of the public health benefit).

7.1.4 Despite these differences, the review team considers that the similarities are great and the services related, so it is right to charge for foul sewerage services on a similar basis to water services. The analysis of how different charging bases meet the fairness principles is therefore similar to the analysis for water supply, summarised in Table 4 in Chapter 4.
Surface water drainage

7.2.1 Surface water drainage charges relate to the service provided by sewerage companies to collect, remove and treat rainwater run-off from roofs and hard surfaces such as drives. The surface water drainage charge is on average 9 per cent of the combined household water and sewerage bill (Ofwat, 2009), but varies significantly between companies. Surface water drainage will be an increasingly significant issue in the future, as the likely effect of climate change – bringing shorter and heavier periods of rainfall – has potential implications for the necessary size of sewers, which in turn has implications for future costs.

7.2.2 Existing statute creates a general right to connect surface water drainage to a public sewer on payment of a one-off fee for connection to the network. The basis for annual charges 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). Severn Trent Water charges metered customers a standard charge that varies according to the property type (flat/terrace, semi-detached or detached). All water companies waive the surface water drainage charge for properties with no surface water connection to the sewer.

7.2.3 Sir Michael Pitt’s review of the lessons learned from the floods of 2007 in England was published in June 2008. It included a number of recommendations aimed at reducing the likelihood of flooding and its impact. The Pitt Review identified as a significant feature of the summer 2007 floods the high proportion of flooding from surface water rather than from rivers. Surface water flooding is affected by many factors, as the Pitt Review recognised, including the capacity of the sewerage/drainage system, the extent of saturated ground and high river levels that prevent the sewerage/drainage system from discharging into rivers.

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Table 6: Similarities between water and foul sewerage services

<table>
<thead>
<tr>
<th>Item</th>
<th>Water</th>
<th>Foul Sewerage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high proportion of total costs are fixed (80% or more)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Efficient pricing (paying for use at true marginal cost) is important because there is a large expenditure programme driven by demand</td>
<td>in some places, yes</td>
<td>no, at least not for existing customers</td>
</tr>
<tr>
<td>Fairness means:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>allocate fixed costs per capita, or</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>allocate fixed costs by use, and</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>help those who are unable to pay and get them to make a contribution towards the recovery of fixed costs, and</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>subsidise measured bills for those with exceptionally high essential use if they are on low incomes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Water consumption is a proxy for occupancy</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Use is measured directly by a meter (water) or is a proxy for it (sewerage)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Efficient pricing of the service can be introduced through the water tariff</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

Source: Review team

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61 The Pitt Review: Lessons learned from the 2007 floods, Sir Michael Pitt, June 2008
7.2.4 The UK government published its response to Sir Michael Pitt’s Review\textsuperscript{62} in December 2008. The Assembly Ministers undertook an assessment of the appropriateness of the Pitt Review’s recommendations for Wales,\textsuperscript{63} which was published in December 2008.

7.2.5 A number of the recommendations from the Pitt Review are relevant to our considerations of the future system of charging. These include:

- **removing the right of households to lay impermeable surfaces.** The UK government has already partially acted on this recommendation. Householders now require planning permission if they choose impermeable surfaces to pave front gardens in England where the surface area exceeds five square meters, but not if they choose other surfaces such as gravel or permeable paving. In its response to Sir Michael Pitt’s Review, the UK government stated that it would consider whether similar action should be taken in respect of back gardens.

- **removing developers’ automatic right to connect surface water drainage from new developments to public sewers once planning permission has been granted,** as it places additional strain on existing sewerage and drainage networks and can exacerbate the problems of flooding. The UK Government and Assembly Ministers have accepted this recommendation and have set out proposals for amending the existing legislation in the draft Floods and Water Management Bill.

- **calling on the government to resolve which organisations should be responsible for the ownership and maintenance of sustainable drainage systems (SUDS).**\textsuperscript{64} Following consultation, the UK government has announced that this should be local authorities in England. Welsh ministers are consulting on the responsibility for SUDS in Wales as part of the consultation on the draft Floods and Water Bill.

- **calling on Defra to work with Ofwat and the water industry to explore how appropriate risk-based standards for public sewerage systems** can be achieved. The UK government has announced that it intends to introduce mandatory standards for all new public sewers serving new developments in England. The Assembly government also supports this recommendation for Wales and work by both governments and Ofwat on this area is aligned. The new standards are currently being developed with the support of key stakeholders and, together with information from surface water management plans, will feed into sewerage companies’ risk-based approach to renew and improve the present sewerage system. The cost of upgrading existing sewerage systems will be met by the generality of sewerage company customers through their sewerage charges.

- **prioritising investment in the existing sewerage network to deal with increasing flood risk.** Both the UK Government and Assembly Ministers have accepted this recommendation, which they have addressed in their respective Social and Environmental Guidance to Ofwat. The draft business plans submitted by companies to Ofwat as part of the current price review included proposals for £1.6 billion of capital investment to reduce sewer flooding in addition to investment to maintain current performance in local areas with significant problems.

\textsuperscript{62} The Government’s response to Sir Michael Pitt’s review of the summer 2007 floods, Defra, December 2008

\textsuperscript{63} The Pitt Review – An assessment for Wales, Assembly Government, December 2008

\textsuperscript{64} 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.
• committing to a **strategic long-term approach to investment in flood-risk management**, planning up to 25 years ahead. The UK Government has accepted this recommendation and is developing a long-term investment strategy for England. The strategy will set out the Government’s short-, medium- and long-term strategic flood prevention aims, assess funding needs and ensure effective and prioritised allocation of resources and delivery over the medium and long term in line with future government spending rounds.

• and finally, placing a specific duty on economic regulators to **build resilience in the critical infrastructure**. The UK Government supports this recommendation and made clear in its Social and Environmental Guidance to Ofwat in September 2008 that water companies in their business plans are expected to consider the resilience of their assets.

7.2.6 Implementing these recommendations will have an impact on the future costs for sewerage companies of surface water and highway drainage. In particular, sustainable drainage systems will reduce the amount of water that runs off into the sewerage system. These recommendations highlight the importance of ensuring the capacity of the sewerage system achieves an acceptably low risk of surface flooding in the future. 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; it therefore reduces the need to make investment in the future and helps achieve lower future bills. This would also accord with the fairness principles of complying with the ‘polluter pays’ principle, reflecting in charges the costs that particular customers impose on the system.

7.2.7 We considered whether households with partial SUDS should be incentivised further through the charging system, thereby reinforcing the signals to house developers and redevelopers that new buildings should use SUDS where appropriate. A financial incentive already exists in the tariff structure for households that do not discharge surface water run-off into sewerage system at all, since properties with no surface water connection to the public sewer are exempt from the surface water drainage charge. However, there is no financial incentive for households that divert part of their rainwater run-off away from the sewerage system, while remaining connected to it to drain the rest.

7.2.8 Table 7 shows the similarities and differences between water supply and surface water drainage services. Again, both services have similar cost structures once the system is in place, with a high proportion of fixed costs and low volume-related costs. Additional investment is driven by the need to meet peak demand. When constructing new housing, rainwater from roofs can often be directed to soakaways rather than directed into sewers. However, the scope for existing households to reduce the volume of rainwater they send to the sewer from their roofs is limited, as it would require the installation of new soakaways or the installation of rainwater harvesting systems. The latter are expensive and the former may be a viable option only if the household has a garden.

7.2.9 There is more scope to influence future rainwater run-off through avoiding an increase in the amount of drained surface in an existing property, for example, through paving a garden or driveway with an impermeable surface.

7.2.10 Given the nature of the layout of drainage systems, it is impractical to meter the amount of rainwater run-off a property discharges into a sewer. In addition, peak flow determines costs in dealing with rainwater, which would be even harder to measure.

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65 Rainwater harvesting systems collect rainwater to use it within the property, typically for flushing toilets; therefore reducing the amount of rainwater run-off. For the purposes of this report, references to rainwater harvesting systems do not include water butts.
7.2.11 Both water supply and surface water drainage deliver services that have some characteristics of public goods. For existing households, it is difficult to exclude households from the benefits of rainwater drainage services; whether a property is flooded will depend largely on the drainage services supplied to all neighbouring properties, and not simply to their own property. On the other hand, the costs a particular property imposes on the system depend on its drained area.

Table 7: Water and surface water and highway drainage

<table>
<thead>
<tr>
<th>Item</th>
<th>Water</th>
<th>Surface Water and Highway Drainage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high proportion of total costs are fixed (80% or more)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Efficient pricing (paying for use at true marginal cost) is important because there is a large expenditure programme driven by demand</td>
<td>in some places, yes</td>
<td>no, at least not for existing customers</td>
</tr>
<tr>
<td>Fairness means:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>allocate fixed costs per capita, or</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>allocate fixed costs by use, and</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>help those who are unable to pay and get them to make a contribution towards the recovery of fixed costs, and</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>subsidise measured bills for those with exceptionally high essential use if they are on low incomes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Water consumption is a proxy for occupancy</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Use is measured directly by a meter (water) or is a proxy for it (sewerage)</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Efficient pricing of the service can be introduced through the water tariff</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

7.2.12 We have therefore considered whether surface water drainage charges should be more cost-reflective and based on the drained surface area of each household whose run-off is collected by the sewerage companies. This would be consistent with Ofwat’s preferred approach for charging non-households for surface water drainage. We note, however, how controversial the introduction of charging for surface water drainage has been for non-households in areas where charges have risen very sharply for some customers. Any extension of charging which takes account of the surface area to be drained would need to take account of experience in non-households. There would also be significant administrative complexities in measuring the surface drainage area for all households.

7.2.13 However, looking to the future, it has to be recognised that households will need to be incentivized to consider SUDS as a way of alleviating the likely effects of climate change in rainfall patterns. It is important to start looking now at what can be done to minimise future problems caused by an increase in peak rainwater run-off. To achieve this, there needs to be an incentive for existing homes to reduce the amount of water run-off from a property. The review team recommends that Defra, the Assembly government, the Environment Agency, Ofwat and sewerage companies should consider how the future charging system could incentivise householders to minimise the amount of rainwater run-off from existing and new households, including incentives to install small-scale sustainable drainage systems. We would welcome views on how this could be achieved.
7.2.14 There is also a question of whether it is fair for each of the occupiers of multiple-occupancy properties to pay the full surface water drainage charge, which they currently do in most cases, when the drained area typically attributable to them is much lower than average. If the surface water drainage charge is intended to be a charge for use of the system, then it would seem fair to offer a discount on the charge to occupiers of flats. However, if the charge is seen as a contribution towards the sunk and fixed costs of operating the sewerage system then it could be fair to continue charging them the full rate.

7.2.15 We also considered whether the charging basis for surface water drainage should be normalised for all sewerage companies. Given that most households pay a fixed charge for surface water drainage, and most of the assets used and service provided is shared jointly with the foul sewerage service, the size of this charge may not make much difference to the customer’s overall bill. Any change in the bill with respect to surface water drainage would be reflected in a change in the opposite direction in the foul sewerage charge.

7.2.16 However, changing the overall size of the amount recovered with respect to surface water drainage will have some impact on the distribution of charges between customers (both within household customers and between household and non-household customers); and it will affect the financial incentives to disconnect surface water drainage and to install an alternative means of dealing with rain water run-off. The review team therefore recommends that Ofwat looks at the variation in charging households for surface water drainage as part of its work on the future charging system for this service. The aim must be to ensure that the distribution of the surface water drainage costs between customer types is fair, and that the right financial incentive is in place to install alternatives to rainwater drainage.

Highway Drainage Charges

7.3.1 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 bill (Ofwat, 2009), around £25 per household. The total annual highway drainage charges recovered from all water customers amounts to approximately £700 million.

7.3.2 As with surface water drainage, 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.

7.3.3 Highway drainage is expected to assume more significance in the future as climate change leads to more flooding, even if it is localised in areas where the sewerage network is already close to capacity at times of peak volume. Sewerage networks might need resizing in some areas to deal with the amount of run-off. An example of this is the Thames Tideway project, as the Victorian sewerage network in London is already experiencing capacity problems in peak-volume times.

7.3.4 Not all companies list the highway drainage charge separately on customers’ bills; so many customers are unaware that they are paying for highway drainage. In the qualitative research into customers’ priorities undertaken collaboratively by water stakeholders for the Periodic Review 2009, only 12 per cent of customers considered road drainage an important service provided by water and sewerage companies.

66 Understanding Customer views – PR09 Quantitative Research Into Customers’ priorities’, February 2009
7.3.5 Unlike surface and roof drainage, sewerage customers cannot directly influence how highway drainage is handled, and therefore have no influence on the costs it imposes on the sewerage system. However, highway authorities can influence the costs of the sewerage system because there are alternative systems for draining roads, especially for new and significantly redeveloped roads. Evaluating the current arrangements against the fairness criteria set out in Chapter 3, they do not meet the ‘polluter pays’ principle, and highway authorities have no incentive to minimise the total costs of dealing with rainwater run-off from roads. Indeed, the current structure gives highway authorities an incentive to connect their road drainage to the sewers as the majority of the costs of this option are transferred to sewerage customers.

7.3.6 In addition, even if motorists who benefit from roads are also householders, households with similar water consumption characteristics will not necessarily share road use characteristics (where the highways drainage charge is part of the volumetric charge). Where the highways drainage forms part of the standing charge, each household pays the same, but this is still unlikely to match road use very well. So charging on the current basis is not likely to be very well matched to the benefits of road drainage either, nor is it transparent to customers in its present form. The current system is at least simple and administratively feasible, however. Any alternative charging basis would need to be assessed against these principles as well, but the lack of appropriate incentives and the poor relationship to benefits means that this element of the bill is not very fair, even if it is practicable.

7.3.7 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 to any public sewer owned by sewerage companies, except for a few historical exceptions, and the Highways Agency regularly installs sustainable drainage systems. Highway authorities are upper-tier or unitary authorities as applicable. Following the recommendations in the Pitt Review, local authorities (who are also the highway authorities) have become responsible for promoting sustainable drainage systems.

7.3.8 Although the Water Industry Act 1991 did not give highway authorities a right to connect to a public sewer (unlike the right to connect surface water drainage), it allows the connection of highway drains to sewers by agreement between the highway authority and the sewerage company. The Act also explicitly states that sewerage companies cannot require payment from highway authorities for ongoing highway drainage. In practice, highways authorities generally pay a nominal fee for the connection, leaving the ongoing charges for the service to be levied against all water customers. In effect, therefore, highway authorities can currently transfer most, if not all, of the costs of dealing with rainwater run-off from their roads onto water customers.

7.3.9 There are arguments for charging highways drainage costs to local authorities, as this would accord with the ‘polluter pays’ principle and would create incentives for highways authorities to adopt the least-cost (to society) solution to highway drainage, which could be SUDS, separate rainwater drains, or continuing the present approach.

7.3.10 The theoretical advantages of transferring costs to the local authorities are that:

- it would put the costs with the organisations responsible for SUDS as a method of tackling flooding; and
- local authorities would have to explain what the costs were for.
7.3.11 However, the approach to aligning costs would need working through in practical terms. Such a change would be subject to current government rules on ‘new burdens’, which would mean it being funded from general taxation. On the other hand, highways drainage is a local public good and it is therefore sensible to have the decisions taken by local highway authorities and to recover the costs through council tax. Legislation would be needed to achieve this change.

7.3.12 There could be some administrative costs from measuring the area of drained roads and raising bills to highways authorities, but it may not be necessary to map all drained roads. It would also be necessary to ensure that the charges for highway drainage broadly reflect the costs, and this requires understanding why current charges differ between companies, as discussed in Chapter 2. As long as the incentive structure is in place, the benefits of this change should arise, even if the pricing is not particularly accurate.

7.3.13 Another option would be to introduce the new system of highway drainage charges to highway authorities only on new or significantly redeveloped roads. The right incentives would be in place, but the transfer of liability for payment would be very much reduced, so there would be very little disruption to the current pattern of payments. Sewerage companies would need to set out clearly to highway authorities how future charges would be calculated, allowing the highway authorities to implement the most cost-beneficial option for highway drainage. Under this option, only changes in the road network would need to be measured. Water customers would continue to pay for draining existing roads, but it would influence future decisions on highway drainage taken by highway authorities for new and redeveloped roads.

7.3.14 The review team invites views on the possibility of transferring highway drainage costs to local authorities – both on the principle and the practicalities, including costs and benefits. It also invites views on alternative ways for highway authorities to be incentivised to reduce the volume of highway drainage run-off to sewerage systems.

Sewerage charges – rainwater and greywater recycling

7.4.1 As already explained, the cost of treating foul sewage is linked to the volume and the load of the sewage discharged to the system. 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.

7.4.2 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 is lower, but the effluent strength (load per unit) is slightly higher. Using this system the amount the household pays for sewerage services fall – 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, and not adjusting the sewerage bill upwards increases the incentives for water efficiency. As a consequence, the review team does not believe that the use of greywater recycling justifies adjusting the sewerage charges upwards.
7.4.3 Rainwater harvesting systems collect rainwater to be used as non-potable water within the home – usually to flush toilets. (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.) 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. The additional charge would reflect the amount of foul sewage that is discharged into the sewer using water other than that supplied by the water company.

7.4.4 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. The review team therefore believes that rainwater harvesting should continue to be charged as now. 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 are recognised by the reduced sewerage charge these properties pay when they are charged on the basis of volume supplied.

**Emerging recommendations**

7.5.1 Foul sewerage should continue to be charged for on the same basis as water supply.

7.5.2 Defra, the Assembly government, the Environment Agency, Ofwat and sewerage companies should consider how the future charging system for surface water drainage could better incentivise householders to install sustainable drainage systems.

7.5.3 Ofwat should look at the variation in charging for surface water drainage as part of its work on the future charging system for this service. The aim must be to ensure that the distribution of the surface water drainage costs between customer types is fair, and that the right financial incentive is in place to install alternatives to rainwater drainage.
Chapter 8 – Affordability

Introduction

What do we mean by affordability?

8.0.1 Affordability concerns a person’s ability to pay for the necessities of life – food, water, shelter, fuel. Water is essential to life and as such the UN has recognised the right to water and sanitation as a human right. That right extends to access to affordable water and sanitation. UN guidelines make clear that ‘Both the direct and indirect costs of securing water and sanitation should not reduce any person’s capacity to acquire other essential goods and services, including food, housing, health services and education.’

8.0.2 The essential nature of water means that having access to an affordable water supply and sewerage service is important to people’s health and quality of life. Everyone needs water for drinking, food preparation and cooking, washing themselves and their clothes, cleaning the house and disposing of sewage and other liquid wastes. Ready availability of water for essential uses such as these provides benefits not only to the individual in terms of health and hygiene but also wider social and financial benefits to society through improved public health and a reduction in communicable disease.

8.0.3 The review team concluded in Chapter 3 on the fairness principles that any charging system should be affordable to those on low incomes. By this we mean not only that the total bill should be affordable but also that the charging system has no incentives to encourage people to go without water for essential use. Affordability issues arise when the household water bill is particularly high in relation to income, either because of high essential use or high regional prices for water services, or both. Responses to the call for evidence suggest that affordability problems are particularly acute in the South West Water region, where average costs and therefore bills are the highest. This does not mean that some low-income households in low-bill areas do not also experience problems paying their water and sewerage bills, but this is a general issue of poverty and not solely a water issue.

8.0.4 Responses to the call for evidence also suggest that while high water bills arising from high essential water use should be addressed by the existing WaterSure scheme, there is scope for the regulations to be modified so that they are more effective in helping these low-income high-essential-use customers.

What definitions of water affordability are there?

8.1.1 There is no official government definition in either England or Wales of what constitutes water affordability. Those who spend more than 3 per cent of their disposable income (before housing costs) on water and sewerage bills are sometimes said to be in ‘water poverty’. This 3 per cent figure appears to derive from the 2002 Water Poverty in England and Wales paper published by the Chartered Institute of Environmental Health. It represents the average spend on water for people on low-incomes at that time, most of whom would have had unmeasured bills. The 3 per cent figure was subsequently used as an indicator in the Managing the Environment and Resources Quality of Life Counts paper, updated in 2004, and in the 2004 Cross-Government Review team of Water Affordability, but has since been dropped as an indicator. It is formally adopted in statute in Northern Ireland (NI) as a basis for an affordability tariff, following recommendations from an independent review in 2008. However, domestic water charges have not yet been introduced by the NI Executive and so it is not yet used as a basis for charging.

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67 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
68 General Comment No15, para 12(c) (ii); Sub-Commission Guidelines s1.3(d)
70 QoLC (2004) Managing the Environment and Resources
8.1.2 Some respondents to the call for evidence have asked for 3 per cent to be used as a measure – however arbitrary – enabling the relationship between those on low incomes and the size of their water bill to be monitored. Other responses suggested that 3 per cent of income is too low and merely reflects the relatively cheap nature of water; they propose that 5 or 10 per cent is used instead. However, others have expressed concern about the use of a percentage figure at all, arguing that it is arbitrary and might not be sufficiently flexible or responsive if put into statute.

8.1.3 We have had our attention drawn to the fuel poverty measure (= fuel costs (usage x price) ÷ income before housing costs) – but this is a very different measure. Very precisely calculated, it is currently used as an indicator for energy companies and the UK government to provide financial and practical assistance to households identified through the use of benefit proxies. A household is said to be in fuel poverty if it needs to spend more than 10 per cent of its income on fuel to maintain a satisfactory heating regime (usually 21 degrees for the main living area, and 18 degrees for other occupied rooms). There is no such agreement on the volume of water an individual needs for essential everyday use and, unlike energy costs, the cost of such a block of water would vary widely across the country. In addition, average energy bills are up to three times higher than average water bills and people can have their fuel supply disconnected for non-payment so there has been more pressure to address fuel affordability.

8.1.4 The review team’s view is that while water spend expressed as a percentage of income might be a useful indicator of the relationship between customer bills and incomes over time, it is not suitable to be used as a trigger for assistance. This is because any percentage figure would be set at an arbitrary level, unrelated to actual water consumption or need, and would not facilitate very targeted help.

General poverty and water affordability

8.2.1 Where customers are finding it difficult to pay their water bills they are also likely to be having difficulty in paying their other bills. In many cases, water affordability problems indicate a more general problem customers experience in affording the necessities of life. In these circumstances, it is neither possible nor desirable to try to solve the general poverty issue facing particular water customers through specific action on one small element of their essential expenditure – the water bill. Such an approach would require other water customers to fund very significant transfers to eliminate poverty, without the democratic control that should underpin such transfers.

8.2.2 The review has therefore concluded that it is not appropriate for the water industry to try to address general issues of poverty through water bills. However, this does not mean that the water industry and the generality of water customers have no role to play here. There are specific issues relating to water and sewerage supply and affordability that are appropriate for the industry to address, either directly or by ensuring that national policy deals adequately with specific problems arising from the prices charged for water and sewerage services.
8.2.3 The review has identified two specific issues around affordability that go beyond general poverty. These are:

- Low-income customers who have very high non-discretionary use as a result of medical conditions or household composition; and
- Low-income customers who live in areas where the cost of water is relatively high, and so have very high bills compared to the national average;

8.2.4 In addition, there are measures that water companies can and should take to help those on low incomes manage their finances and pay their water bills, in particular by helping them when they get into difficulties.

The remainder of this chapter explores these issues in more detail. Debt management issues are dealt with in chapter 9.

What evidence do we have on affordability issues in England and Wales?

8.3.1 Research carried out for CCWater in 2007 showed that 59 per cent of bill payers thought their water and sewerage charges were affordable. However, 19 per cent thought their bills were unaffordable. 25 per cent of customers in socio-economic groups D and E thought that their charges were not affordable compared with only 9 per cent of wealthier customers in socio-economic groups A and B. This suggests that while about a fifth of customers struggle to afford their bills, for most people, affordability is not an issue and so any interventions must be closely targeted.

8.3.2 Responses to the call for evidence suggest that affordability problems are particularly acute in the South West Water region, where average costs and therefore bills are the highest. The review team received 35 responses from individuals to the call for evidence, the majority of which were from customers in the South West Water region, showing considerable anger and frustration about the high levels of bills in this region. The review team has had a public meeting in Plymouth and several meetings with South West MPs, from all of which affordability has emerged as a significant issue in the region.

8.3.3 In order to look at the relationship between bills and incomes over time, the review team has updated the figures used in the 2004 Cross-Government Review team of Water Affordability, employing the most recent Family Resources Survey data. Table 10 in Annex G shows that in the South West Water region, 72 per cent of households in the lowest three income deciles are spending more than 3 per cent of their disposable income (before housing costs) on water. Overall in the South West Water region, 33.2 per cent are spending more than 3 per cent on water, compared to the forecast of 30 per cent for the South West Water region made in the 2004 review. In the lowest income deciles, around 8,000 households in the South West Water region are spending over 10 per cent of their income on water. However, in other areas, bills are relatively low, even for people on low incomes. For example, in the Thames region, just over 6 per cent of households are spending more than 3 per cent of their income on water. In the Southern region, this figure is 11.3 per cent of households, and in the Anglian region, 12.8 per cent of households.

71 ORC International Charging Research 2007
8.3.4 The South West Water region also has the highest levels of customers on the WaterSure tariff, which is for low income, high essential use households. 5,837 households or 1.46 per cent of its metered customers are on WaterSure, compared to the national average of 0.4 per cent take-up (2007/08 data). This suggests that in high bill regions, the incentive to go through the administrative process for application for WaterSure is greater. The next highest take-up rate as a proportion of the metered customer base is Wessex, with 837 customers, or 0.42 per cent of its metered customer base on WaterSure. Anglian, Thames and United Utilities all have around 0.3 per cent of metered customers on WaterSure, with 2000 – 3000 customers on the tariff in each region.

8.3.5 The above evidence, and responses received at workshops demonstrate that affordability is a real issue now for low-income households who live in high water bill areas or whose essential water use is high. As Chapter 1 has shown, the industry’s costs will continue to rise for the foreseeable future, placing continuing upward pressure on bills and resulting in greater numbers of low-income customers in more parts of the country facing difficulties in paying their water bills. As already identified, any protection to low-income households that may have been provided by the rateable value charging system has been eroded. Furthermore, no alternative general basis for charging for water would produce a progressive and efficient charging structure, and volumetric charging does not relate charges to household income. As a result, affordability issues must be addressed outside the main charging structure, by targeting help directly at those who need it. This chapter explores what help is currently available to low-income customers and what might be done in future. It raises the important question of who should pay for any help: the taxpayer or other water customers, either nationally or within each company area.

What do customers think?

8.4.1 The majority of customers perceive their water and sewerage bills to be affordable. Research into customers’ views for the Water Industry Stakeholder Steering Group in 200972 found that 64 per cent of customers thought that the current water and sewerage system was fairly or very good value for money. The main reasons were that the bill was affordable (42 per cent), they valued the service (30 per cent) and the service was worth the money (25 per cent). 11 per cent of customers stated that they usually pay their bill on time but it can be difficult. The main reason given by those who stated that the water and sewerage service is fairly or very poor value for money (17 per cent) was that it is too expensive already. The proportion of customers who found it difficult to pay their bill on time was highest in socio-economic groups D and E.

8.4.2 CCWater and Thames Water studies have both shown that there is limited willingness by customers to subsidise other customers. Research undertaken by CCWater in association with Ofwat in 200773 confirmed the conclusions of Ofwat’s previous research that most customers think it is reasonable to pay up to an extra £1 on their annual bills, but no more. While 69 per cent of respondents thought this amount was reasonable, 39 per cent would support it increasing to £2; 19 per cent would support it increasing to £5, but only 3 per cent would be content to pay over £10 to subsidise these customers. On the other hand, the Thames Water-Opinion Leader deliberative research on Affordability and Competition carried out in 200974 suggested that customers were willing to pay on average £14.68 per household per year for funding a proposed social tariff. The median amount in the Thames

72 Understanding Customers’ Views, PR09 Quantitative Research into Customers’ Priorities, 2009
73 ORC, CCWater Charging Research, 2007
Water research (the amount which 50 per cent of respondents are willing to pay) was in the range of £1.50 – £3.50 per household per year.

8.4.3 There is therefore, some, but limited, customer willingness to increase their own bills to provide lower bills for those who have significant issues of water affordability. However, it is not clear whether customers, in answering this question, understood that some protection to low-income families was already thought to be provided through the rateable value based charging system.

Who are the people needing help and what help is available?

8.5.1 There are two main groups of customers who are likely to have specific water affordability problems: those who have low incomes and high essential water use, and those who have low incomes and high bills because of high regional water prices. In addition to these two groups, there is a third group of customers – those on low incomes living in low-cost areas – who might also struggle to afford their bills, but this is more a general poverty issue. Even here, assistance with debt management, improving the water efficiency of their homes, and the use of social tariffs could help people in these circumstances. Help for all three groups of customers is currently provided through

- the tax and benefits system;
- WaterSure;
- charitable trusts and other company schemes; and
- social tariffs.

These are explored in further detail below.

Tax and benefits system

8.6.1 General assistance with water bills is currently provided by the Government through the tax and benefits system, which effectively provides a basic minimum income for all, and which, to some extent, recognises increased expenses resulting from certain medical conditions through specific benefits. Benefits are designed to cover normal day-to-day living costs, including food, water, fuel and clothing. Most benefits are increased annually in line with prices in general or prices minus housing costs. There is no distinct component of benefits for water – or indeed any other essential item. The Department for Work and Pensions (DWP) has told us that:

‘Benefits are paid for a variety of purposes – for example income replacement and compensation for disablement. For people on the lowest incomes the most important benefits are the income-related ones, which are intended to cover all normal household expenditure and are up-rated each year in line with prices. For disabled people the extra costs associated with disability are recognised by additional provision – disability premiums within the income-related benefits and separate, dedicated benefits such as Disability Living Allowance and Attendance Allowance.’

8.6.2 However, responses to the review team’s call for evidence have suggested that because government support through the tax and benefit system is determined on a national basis (except for housing), it may be set too low for high-cost water areas – and indeed may be too low in overall terms. Research undertaken by the review indicates that the benefit system does not recognise the significant differences in unavoidable water bills caused by either the large regional variation in average bills (both measured and unmeasured) or the necessary increase in bills where certain medical conditions or household composition are present and
water supplies are metered.

8.6.3 With this in mind, the review team has looked closely at the work of the Joseph Rowntree Foundation (JRF). Its report, ‘A minimum income standard for Britain’,\textsuperscript{75} uses focus group methodology to reach a socially agreed, empirical base for an income sufficient to attain a minimum acceptable standard of living. Some respondents to the call for evidence have asked for this to be used in place of a percentage definition of affordability. However, because of the wide regional variation in water prices, the JRF report and water input data used did not allow us to conclude what level of income would be sufficient to help customers.

**WaterSure**

8.7.1 The main intervention currently available to help customers with high essential use is WaterSure – a national tariff in England defined by statute and, in Wales, adopted on a voluntary basis. This help, which caps the bill of metered customers at the average bill for the local area, is funded by the water company’s other customers. The current WaterSure tariff and its operation are set out in more detail in Figure 34 in Annex G.

8.7.2 Although the WaterSure tariff addresses the specific issue of low income combined with high non-discretionary use, it does not address the significant regional variation in average bills, nor does any other systematic intervention at either government or company level.

**Charitable trusts, social tariffs and company schemes**

8.8.1 Low-income customers may also be eligible for assistance through charitable trusts (paid for by companies) and special water tariffs developed by companies, approved by Ofwat and paid for by other local customers. These are described in more detail later. Some limited assistance in reducing bills may also be available from water efficiency programmes or projects run by water companies and again funded by their customers.

8.8.2 The nature and size of charitable trusts varies widely across England and Wales. Company donations in 2007/8 ranged from £0 to £4.54 million\textsuperscript{76} (Table 11 Annex G). The total donated by companies in 2007/8 was nearly £10m. Trusts operate at arm’s length from the companies and charitable trusts can decide their own criteria for assistance. Provision varies between companies, which leads to regional differences in the help available. In some cases assistance is limited to customers who are already in arrears on their water bill.

**Social tariffs**

8.9.1 As discussed later in this chapter, the main social tariff, WaterSure, is designed to help metered customers with high essential use and low incomes. Ofwat made clear in its response to the call for evidence that its charging principles do not support the introduction of explicit new social cross-subsidies, and any cross subsidies should be set out in legislation or regulation. It interprets its duty to enforce the requirement not to be unduly discriminatory or unduly preferential to mean that charges should broadly reflect costs and that there should be no new transfers of funds between customer groups through the charging system to meet social objectives, unless explicitly mandated by government.

8.9.2 In practice, this interpretation of duties means that social and low-user tariffs are hard for companies to promote. Ofwat will allow social tariffs as long as they are closely targeted, are ‘win-win’ tariffs with a positive impact on debt recovery and do not impact adversely on other customers’ bills.

\textsuperscript{75} Joseph Rowntree Foundation (2008) A minimum income standard for Britain

\textsuperscript{76} June returns 2008, Ofwat
8.9.3 Ofwat has allowed trials of new tariffs that aim to be self-financing. These include Wessex Water’s ‘Assist’ tariff, which offers customers in extreme financial difficulty a lower bill based on their financial circumstances and ability to pay. Customers must be in receipt of at least one of the main means-tested benefits and a Citizens Advice Bureau or other debt advice agency must have applied for the tariff on their behalf. It is cost-neutral to companies, in that customers benefit from manageable payments and Wessex Water recovers more money than if its customers defaulted on their payments completely.

8.9.4 Anglian Water offers two social tariffs. These are ‘SoLow’ and ‘AquaCare Plus’. ‘SoLow’ has been running for several years and is based on a charge per cubic meter with no standing charge. It is aimed at measured household customers who use less than 75 cubic meters of water a year. ‘AquaCare Plus’ is available to households in receipt of key benefits. It has a higher standing charge than the usual metered tariff and a lower charge per cubic meter.

8.9.5 Dŵr Cymru Welsh Water offers ‘Water Direct’ – a £25 discount to customers agreeing to join the Third Party Deduction Scheme; and ‘Water Collect’, which offers a £10 discount to customers whose charges are collected by a participating local authority. In addition, Ofwat has just approved its ‘Water Assist’ tariff for a three-year trial. The tariff has the same eligibility criteria as WaterSure except that customers do not have to be metered. It caps the bill at £250, and is expected to be self-funding through better collection rates and avoided operational costs. Other customers’ bills and the dividend they receive will not be affected. Dŵr Cymru Welsh Water estimates that around 9,000 customers could be eligible for this tariff.

8.9.6 Existing schemes (and trials put forward in charges schemes and approved by Ofwat) indicate that companies are willing to provide some assistance to customers through a wider range of tariffs. Companies (and other customers) can benefit from improved debt levels and better engagement with their customers. Some companies have told the review team that they would like to be able to offer more flexibility and do more to help their customers who are struggling.

Assistance in other sectors

8.10.1 The UK Government addresses the problems of low-income households in the energy sector by directly funding specific measures, in addition to help through the tax and benefits system. Energy companies also provide some assistance for their low-income customers, paid for by their other customers.

8.10.2 The current schemes and payments in the energy sector are:

- Warm Front, an energy efficiency scheme providing grants to qualifying households in receipt of certain benefits. Warm Front has a budget of £959m over the three years beginning April 2008;
- Winter Fuel Payments, for people over 60, with an estimated spend of £2.7 billion in 2008/9; and
- Cold Weather Payments, totalling £210 million this winter, for people receiving Pension Credit or income-related Employment and Support Allowance.

These schemes are paid for by taxpayers. While we recognise that water bills are generally lower than energy bills, there is no similar assistance for water customers.

8.10.3 There is also the Carbon Emissions Reduction Target (CERT) (2008 – 2011) which is the third three-year phase of the energy supplier obligation. The costs of CERT fall on energy suppliers, who may choose to pass them on in full or in part to their customers. If passed on in full, estimates suggest that the costs to consumers will be no more than £97 per customer
over the three-year period, with the average annual ongoing financial benefit to consumers benefiting from measures in the 2008-11 period being around £31 a year for the lifetime of the measures.

8.10.4 Suppliers must focus 40 per cent of their activity on a ‘Priority Group’ of vulnerable and low-income households, including those in receipt of certain income/disability benefits, and pensioners over 70. By increasing the energy efficiency of GB households, CERT will help prevent households falling into fuel poverty and is also expected to help alleviate fuel poverty.

8.10.5 In the energy sector there is no intervention to address regional variations in either the cost of energy or its use (as a result of different climatic conditions, for instance, or thermal performance of the housing stock). However, energy prices are subject to significantly less regional variation.

Social tariffs in the energy sector77

8.11.1 Ofgem and Ofwat have the same duties in relation to assisting vulnerable customers, but these result in a very different approaches to social tariffs. Average energy bills are up to three times higher than average water and sewerage bills, so there is more pressure to find solutions.

8.11.2 In contrast to water and sewerage companies, all of the six big energy companies offer some form of social tariff. Ofgem does not regulate social tariffs but provides guidance on defining social tariffs and reports on whether suppliers meet the guidance.

8.11.3 To ensure consistency among suppliers, last year Ofgem provided guidance that a social tariff must be at least as good as the cheapest tariff offered to a customer in the same area on an enduring basis. The latest data published by Ofgem, who monitors the suppliers’ social programmes on behalf of the government, estimated that the number of customer accounts benefiting from (discounted) social tariffs stood at 800,000. This has almost doubled since March 2008.78

8.11.4 Energy suppliers also offer a range of one-off rebates and discounts, in addition to social tariffs. In 2007/8 around 303,000 customers received some form of rebate. Examples include a Winter Warmer rebate by British Gas of £60 for gas and £30 for electricity for customers in receipt of certain benefits; a Spreading Warmth winter discount by npower for customers on their priority services register; and Scottish Power’s Carefree Winter Rebate of £9 to electricity customers and £21.99 to gas customers on their Priority Services Register.

8.11.5 Following an announcement in last year’s Budget, the suppliers agreed to increase their collective spend on social assistance. In 2008/9 they spent £100m on initiatives to help their poorest customers. In 2009/10 they will be spending £125m, which will rise to £150m in 2010/11.

8.11.6 Ofgem’s research in 200779 showed that the total cost to suppliers of social tariffs and other rebates (2006/07 figures) divided by the total number of customers served ranged between £1.20 per household (British Gas) to a few pence (Scottish Power) per year.

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77 British Gas Energy Trust & EDF Energy Trust (2008) Utility trusts and schemes to help vulnerable customers
79 Ofgem’s review team of suppliers’ voluntary initiatives to help vulnerable customers, August 2007
Telecommunications

8.12.1 Access to the telephone has also been considered essential (part of a universal service obligation.) Since privatisation, BT has provided a basic social tariff for low users covering line rental, incoming calls and outgoing emergency calls. BT currently absorbs the cost of this but consideration is being given to the costs being shared between all suppliers. Lord Carter’s ‘Digital Britain’ report proposes universal access to broadband by 2012, paid for by a general supplement on fixed lines of around £6 per year. This means the costs would be paid by telecommunications customers. Some low-income households would be exempt. This would raise £150m – £175m a year for the Next Generation Fund, which is intended to be a communications sector equivalent of the Renewables Obligation, delivering an objective which the market would otherwise not. The government intends to consult on the detailed design and implementation of this proposal80.

How should assistance be funded?

8.13.1 As described above, in both the energy and telecommunications sectors, there are therefore some costs for those needing help which are absorbed by customers and companies. We are particularly interested in Lord Carter’s proposal in ‘Digital Britain’ for a new 50p per month supplement on fixed lines, intended for a fund (collected by operators and passed to Ofcom) to deliver universal broadband. However, there are also costs which are so significant that government funding is needed to address affordability issues.

8.13.2 Likewise, in the water sector, the only options are funding by the taxpayer or by other customers. This could be all water customers in either England or Wales or all customers within a water company area. Call for evidence respondents showed strong support for help to be funded by the taxpayer. Problems of poverty and affordability were seen to be wider societal issues and not just related to water charges.

8.13.3 The following paragraphs explore the options for assisting the groups of customers identified by the review as requiring assistance with water affordability, and discuss the possibilities for the funding of this assistance.

Customers on low incomes in high-cost areas

8.14.1 The first group of customers identified by the review as having affordability issues are those on low incomes and living in high bills areas. There is no systematic help available for these customers and any available help varies from region to region.

8.14.2 Responses to our call for evidence suggest that this is a particular issue in the South West Water region. Table 10 in Annex G looks at household spend on water and sewerage by income decile in the South West Water region, showing that some households are spending more than 10 per cent of their income on these services, As discussed in Chapter 1, other parts of the country are also likely to become high water cost areas over time, increasing the general issue of affordability. However, as long as the tax and benefits system addresses the general problem through increases in benefits linked to the RPI, the specific problem of those living in high-cost areas should remain fairly similar (although the location of those in relatively high-cost areas may change). As discussed earlier, the current rateable value charging system was believed to provide some degree of help by keeping bills low for low-income customers. However, the erosion of the link between household income and rateable value now means that there is no effective protection in the current charging system for low-income customers. This will remain the case as metering increases.

80 Digital Britain Department for Business Innovation and Skills and Department for Culture, Media and Sport, June 2009
81 Office of National Statistics, dataset: Social Trends 34, Percentage of people whose income is below various fractions of median income
8.14.3 If help went to all low-income households, the number of people needing help could be very large indeed. The most commonly used threshold of low income is income below 60 per cent of the median equivalised household disposable income. This would result in about 11.25m people in England and 0.6m in Wales being eligible for help. In the current economic climate, the number of people on low incomes is likely to rise, continuing the trend shown in Figure 35 in Annex G. As water bills rise faster than earnings, more of these people will be faced with high bills in relation to their income.

8.14.4 This suggests that any help with water bills needs to be very closely targeted so that it is effective and remains within reasonable costs. Eligible households rather than individuals also need to be identified easily.

8.14.5 The review team’s analyses of the Family Resources Survey and water company data suggest that the greatest pressures from water bills are likely to be felt by:

- households with one or more people unemployed;
- families on benefits with one or more children; and
- families not on benefits with three or more children.

8.14.6 On the basis of the analyses we have undertaken, the review team considers that receipt of Council Tax Benefit (paid to people in receipt of Income Support, Pension Credit or Job Seeker’s Allowance) could be used to determine eligibility for support, as it captures information at household rather than individual level. The DWP Housing Benefit and Council Tax Benefit Quarterly Summary Statistics August 2007 show that 3m households in England and 0.2m households in Wales received Council Tax Benefit in 2007. Figure 36 in Annex G shows the numbers of Council Tax Benefit recipients by Government Office Region.

8.14.7 The review team would like further views on the value of using receipt of Council Tax Benefit to identify low income households for targeted support.

8.14.8 We accept DWP’s argument that the tax and benefits system offers some help with water affordability but more evidence of the water component element of benefits would have enabled us to ascertain how effective this is. We understand why DWP is reluctant to increase benefit levels beyond the standard uprating, to avoid people being caught in the ‘benefit trap’ whereby benefit levels are too high to encourage a move from benefits to work. Indeed, because of the regional nature of water bills, a national uprating would be an inefficient and possibly ineffective way of solving the affordability problem. However, regional housing cost variations (up to 100 per cent) are recognised and reflected separately in benefits, as shown in Table 12 in Annex G. The varying regional costs of water, which can vary by over 60 per cent, are not recognised in the same way.

8.14.9 The review team has identified that one possible option for tackling water affordability for customers on low incomes could be a regional ‘water benefit’, perhaps added as an element of housing benefit, which would allow the variation in water prices to be better reflected in benefit levels.

8.14.10 In order to model the potential impact of this the review team has assumed in the absence of further information from DWP, that benefits currently cover the national average water bill. In high-bill areas, people on means-tested benefits would therefore require additional benefit to cover the difference between the regional average (metered and unmetered) bill and the national average (metered and unmetered) bill. The difference in the South West Water region between the regional average bill and the national average bill was £171 in
2007/8. The total cost of such a scheme to rebalance this difference for high-bill areas (looking at water and sewerage companies only – see Table 14 Annex G) could be around £45m in the first year. If the scheme provided for existing metered customers only, the cost would be around £17m in the first year. The costs of such a scheme would fall to the national taxpayer, allowing the funding to be on a progressive basis. **We would like views on this suggestion.**

**What else can be done to help low-income customers in high cost areas?**

8.15.1 We have identified above that a possible option for tackling water affordability may be a regional water benefit funded by national taxpayers for low-income families in receipt of council tax benefits, and have invited views on this.

8.15.2 However, affordability issues need to be tackled now if they are not to get significantly worse. The review team has therefore looked at the option of a discounted bill scheme for low income customers, which could be paid for by other water customers and targeted at this limited group of low-income customers.

**Bill discounts for low-income customers in high cost areas**

8.16.1 With the exception of Housing Benefit, government benefits are calculated on a national basis. This suggests that for those in receipt of means-tested benefits who struggle to afford their water charges, water bills should also be capped at a national average bill. This would need to be a government scheme funded by national water customers and defined in legislation.

8.16.2 However, a national cap on bills does not provide any incentives for customers to be more water efficient. Percentage discounts on the bill would be a more effective way of combining affordability solutions with other mechanisms in the system. For metered customers, this could be achieved by reducing their volumetric charges by the percentage necessary to bring their regional average bill down to the national average bill. This approach retains the incentive to adopt water efficiency measures, and would also allow customers to maintain some control over the size of their bill.

8.16.3 If this scheme were to be funded by all water customers in England or Wales, a quite complex system and administrative structure would be needed, which would incur additional costs. On the other hand, if funded solely within company areas, those companies with high levels of deprivation would see their other customers facing much higher additions to bills.

8.16.4 Table 14 in Annex G shows that the cost of a percentage discount for metered customers receiving Council Tax Benefit (modelled here as being a cap at the national average bill, and using water and sewerage companies only) could be £7.4m in the first year in the South West Water region, and £1.6million in the United Utilities region if the national average bill of £312 were used as a cap. The total cost of assisting all metered customers receiving Council Tax Benefit would be around £17m. This is based on current metering levels, and as such is a minimum cost, which would rise as more households move to meters. If all customers (metered and unmetered) receiving Council Tax Benefit were assisted, the total cost of the scheme would be around £45m. The scheme would not apply in areas where average bills are below the national average because there would not be any cost or benefit in lower cost regions.
8.16.5 If this scheme were paid for by customers not receiving Council Tax Benefit, assisting metered customers receiving Council Tax Benefit would cost £11.86 per customer in the South West Water region for a discount towards the national average bill (see Table 14 Annex G). This is significantly above ‘willingness to pay’ levels and the review team considers this would not be acceptable to local water customers in those areas.

8.16.6 If the overall costs of assisting only metered customers receiving Council Tax Benefit (estimated at around £17m) were spread across the customer base on a national basis, this would cost each household not in receipt of Council Tax Benefit around £1.13, which is within customers’ willingness to pay amounts according to CCWater’s research. The costs of assisting all customers receiving Council Tax Benefit (estimated at around £45m) would cost each household not in receipt of Council Tax Benefit around £3.00. The review team recognises that further analysis of the costs and benefits of this option is needed and intends to carry out further work on this before the final report.

8.16.7 The review team would like views on the use of discounted bills as a means of assistance for low-income households in receipt of Council Tax Benefit. The review team would also like views on whether this should be funded by national water customers or national taxpayers.

8.16.8 We believe that in addition, as this measure is designed to address the affordability issues that arise because of the mismatch between the tax and benefits system and regional price variations, eligibility should also be restricted to those in high-cost areas (regions where the average water bill is above the national average). The review team would like views on this restriction and the administrative implications of such a scheme.

**Customers with low income and high essential water use**

8.17.1 The second group of customers identified by the review is those on low incomes and with a high essential use of water. There appears to be general agreement that these customers need additional help with their bills. A universal safety net is currently provided by the WaterSure tariff (Vulnerable Groups Regulations) and Water Assist in Wales. The WaterSure tariff was designed to protect compulsorily metered, low-income customers from high water charges arising from essential high use of water, removing the incentive to curtail high essential use in a manner that could endanger health. It was not designed to deal more generally with affordability issues. Those on the WaterSure tariff receive a bill that is either their metered bill or the average of bills in their company area, whichever is lower. Therefore, the WaterSure tariff addresses only the variation in usage arising from the customer’s particular circumstances, rather than regional differences in prices. To the extent that the benefits customers receive are based on UK average costs, this regional variation may also be causing specific water affordability issues even within this group of customers.

**Eligibility and take-up of WaterSure**

8.18.1 Customers are eligible for WaterSure if they are metered and in receipt of certain benefits or tax credits, and have a medical condition requiring high water use, or three or more children under 19 living at home. Customers have to apply annually. The regulations apply only to companies operating wholly or mainly in England but the two companies operating in Wales have introduced equivalent tariffs on a voluntary basis. See Figure 34 Annex G for details of the eligibility requirements for WaterSure.
8.18.2 In England and Wales 24,021 customers successfully applied for assistance in 2007/8. Fifty-eight per cent of these applications were for large families rather than medical reasons. The number of customers receiving the WaterSure tariff is particularly high in the South West Water region, at 1.46 per cent of their metered customer base, and the larger companies Anglian, United Utilities, Severn Trent and Thames all have around 2000-3000 people receiving the tariff. Table 13 in Annex G contains details of 2007/8 applications. The number of people eligible for the current scheme is difficult to estimate because of uncertainties about the numbers of people suffering from certain medical conditions. Responses to our call for evidence and previous estimates suggest the number of people who would be eligible could be around 100,000. However, some estimates, particularly those based on the incidence of qualifying medical conditions, are much higher. For the final report the review team intends to carry out further work on estimating the numbers of people eligible for the tariff under any revised scheme.

8.18.3 The current low take-up suggests that awareness of the WaterSure tariff remains low, despite work by CCWater and the industry to rebrand the scheme and introduce a standard simplified application form. This increased uptake by 49 per cent in 2007/8. However, the CCWater tracking survey in 2008 found that awareness of the WaterSure tariff had fallen from 12 per cent in 2007 to 7 per cent in 2008. The review team feels that these figures show that awareness is too low and recommends that CCWater and companies carry out further work to promote the scheme, including providing more information on bills as discussed in chapter 11.

8.18.4 The review team has explored possible reasons for the low take-up. These appear to be many and varied; they include the fact that customers must apply each year, and that they may have to reveal sensitive medical information to a water company. They must have a meter, which is an additional cost to the companies and therefore a potential disincentive to wider promotion of the scheme. The cap applied to WaterSure customers is not necessarily a reduction on their actual, metered bill and in many cases will not be below the level of the bill based on their property’s rateable value. The metering requirement is also a risk to customers who might opt for a meter simply to receive the tariff, but if they later become ineligible for the WaterSure tariff, they may be faced with a high measured bill compared to their previous bills based on rateable value.

8.18.5 Currently, the costs of the scheme are rebalanced across all other customers in the water company area, including non-domestic customers, through the tariff basket mechanism. Because of the low take-up, the national average additional cost on each bill is less than £0.40 per year.

Possible refinements to WaterSure

8.19.1 Respondents to the call for evidence have suggested that there is potential to amend WaterSure to make it more effective in protecting low-income metered customers with high essential use from high water bills.

8.19.2 We propose that:

- the bill is capped at a national (England or Wales) average bill, rather than a regional bill;

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82 Ofwat, June returns 2008, table 68
• the eligibility criteria relating to dependents in full-time education or training and living at home should be brought into line with those used for Council Tax;

• Government guidance should make clear that eligible medical conditions include mental health conditions, as well as any other medical condition that necessitates high essential use of water, and that doctors should have the flexibility to sign certificates for those they believe need water for medical conditions; and

• applicants should not have to pay for medical certificates.

These proposals are explored in more detail below.

Cap WaterSure at the national average bill

8.20.1 Although the WaterSure tariff addresses the issue of high non-discretionary usage, it ignores the problem of significant variation in the underlying unit cost for water in different areas. This variation is also not addressed through the tax and benefits system for those eligible for the WaterSure tariff. This is because the current WaterSure scheme caps the charge to a customer at the average household bill in their company area. As a result, identical households eligible for WaterSure in different areas will have their bill capped at different levels. For example, in the South West Water area this cap was £483 in 2007/884, while in the Thames Water region it was £271.

8.20.2 Although these differences in the level of the caps reflect differences in the underlying costs of water supply, and in general the review has concluded that this is the fairest approach, this particular case produces an anomaly in respect of affordability for WaterSure customers receiving benefits as a result of the mismatch between income and costs. In this case, the review believes that it is more important to address the affordability issue than it is to match up specific bills with specific costs.

8.20.3 The impact of this change can be seen by looking at what would happen in the South West Water region, where bills are highest. The difference between the average national household bill and the capped South West Water WaterSure bill in 2007/885 was £171 (national average £312, South West Water cap £483).

8.20.4 In the South West, 5,837 customers were registered for the WaterSure tariff in 2007/8. If the national average bill of £312 were used as a cap rather than £483, balancing the additional £171 per WaterSure customer would add an additional £1.50 to other customers’ bills in the South West on top of the current WaterSure cross-subsidy in that region. This is currently around £2.41 per customer if apportioned equally across the customer base. However, the costs are rebalanced through the tariff basket mechanism, so in practice a high-use industrial customer would pay more than a low-use pensioner. It should be noted that the review team’s modelling represents the upper limit of the potential additional cross-subsidy because we have looked at the costs if only household customers pay, whereas WaterSure is also paid for by non-domestic customers.

8.20.5 If the change to a national cap were made, customers who were eligible for the WaterSure tariff would get the same bill, irrespective of where they lived. This would be in line with the unvarying nature of the national tax and benefits system. In low-cost areas, the effect of capping WaterSure at the national average would be to reduce the help given to eligible

84 Ofwat, Water and Sewerage Charges Report 2007-8
85 Ibid
customers. Only if their water consumption were very high would the national average bill cap be lower than their current bill. As a result, fewer customers in low-cost areas would benefit from WaterSure, and those that did benefit would get less benefit than previously. In high-cost areas, more customers would benefit from WaterSure, and would receive more benefit. However, other customers in the water company area would have to contribute more through their bills (see Tables 15 and 16 in Annex G). Application numbers for the tariff would be likely to increase in high-cost areas as more people would benefit from the tariff, so this cross-subsidy could increase further.

8.20.6 As a result of this proposal the costs of the WaterSure scheme become much more concentrated in high-cost areas and the costs of the scheme in low-cost areas would be very small. This raises the issue of how the costs of the scheme should be funded. If funding remains as it is and is kept within each company area, bills in the high-cost areas would increase for those not on WaterSure. In the South West Water region, where this impact is likely to be the highest, the non-WaterSure bills would rise by around £1.50 per year, as indicated above.

8.20.7 Although this level of transfers within regions is more or less within the bounds of customers’ general willingness to pay for providing help, it is getting close to the limit. In addition, as the large variation in costs that individual non-WaterSure customers would face results from the absence of regional variations on the income (tax and benefits) side, the review team takes the view that it would be fairer to all customers if the costs of the WaterSure tariff were met by the generality of water customers, rather than balancing the costs and additions to bills within each region. Such an approach would mean that the additional costs added to non-WaterSure customers’ bills would be averaged across the country, and would be in the order of £0.05.

8.20.8 As a result, the review team recommends that the costs of the current WaterSure system and the cost of an extended WaterSure scheme (around £1m) should be paid for by the national water customer. The review team would like views on this, both in terms of the principle and the administrative practicalities of running such a scheme.

Extend the eligibility criteria for some older dependents living at home and in education or training

8.21.1 Customers can currently receive the WaterSure tariff if there are three children under 19 living in the household. The review team suggests that this provision should be brought into line with the definitions of people in education or training who are disregarded for Council Tax, which includes full-time students, student nurses, or apprentice Youth Training trainees. This would have the effect of helping families with dependent older children living at home while they complete their education or training. It has not been possible from available data to estimate how many households this could affect and therefore the likely cost.

Medical conditions requiring significant use of water

8.22.1 We received evidence in response to our call for evidence that there are potentially people with other medical conditions and, in particular, mental health conditions, who might require high water use and are not explicitly covered by the WaterSure Regulations list of medical conditions other than the general provision covering ‘any other conditions’. This may discourage people from applying to the scheme, and GPs and companies might face difficulties in taking decisions on applicants. The review team intends to take advice from the Royal College of General Practitioners (RCGP) on what advice might be necessary for GPs
and companies in future on the medical conditions that should qualify under ‘any other conditions’. Any system should make it clear that doctors have the appropriate flexibility to sign certificates for any person receiving benefits they believe requires extra water as a result of a medical condition. The review team would welcome views on this proposal.

**Free medical certificates**

8.23.1 Customers currently have to pay for the medical certificate themselves. The review team believes that ensuring people who have a low income and high essential use because of a medical condition are able to apply for this scheme is a health matter, both for the individual and society more widely. Such customers should not have to pay an access fee for the scheme. Removing the requirement to pay for medical certificates would save about £0.3m a year based on the current numbers of applicants. The review team intends to explore the possibility of providing medical certificates on the National Health Service, as a public good, with the RCGP.

**Customers with low incomes and affordability issues more generally**

8.24.1 As discussed earlier, the review team has identified a third group of low-income customers who do not necessarily live in high bill areas or have a high essential use of water, but might struggle to afford their bills. While we recognise that this is not solely the responsibility of the water sector, there is nonetheless further action that can be taken in this area.

**Ofwat’s role**

8.25.1 Given the lack of progress on affordability issues in comparison to other utilities, the review team believes there is a case for Ofwat to build on its duties within the current framework. The 2009 Consumer Focus ‘Rating Regulators’ report has noted that ‘there appears to be a lack of consensus – and clarity – about the proper role of Ofwat with respect to water affordability issues’. Incentives in the regulatory system are necessary to ensure that the concept of water being affordable to all customers is kept to the fore and embedded in the price-setting process.

8.25.2 Ofwat and Ofgem share similar duties on affordability and vulnerable customers and Ofgem produces an annual report on domestic suppliers’ social obligations. The review team notes Ofwat’s current duty to take account of low income customers, among others. It believes that Ofwat can build on its current duties to improve the water industry’s approach to tackling affordability issues. The review team would like views on whether the scope and detail of Ofwat’s existing duties are sufficient to tackle affordability issues, or if something further is necessary.

8.25.3 The review team feels that a requirement on Ofwat, working with CCWater, to publish an annual report on affordability and debt would stimulate innovation in companies and could set benchmarks for assistance schemes and levels. Where it is not clear that it is possible to solve the affordability problems within the current regulatory framework, Ofwat should provide advice to the Secretary of State for Environment, Food and Rural Affairs and Welsh Ministers on what action is necessary and why. This report would identify problems and assess whether the existing level of activity is sufficient to address them. It would also give Ofwat the opportunity to advise government on any further measures which could be necessary to tackle affordability, such as an extension of government endorsed affordability tariffs.

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86 Consumer Focus, Rating Regulators, 2009
Increase the range of tariffs

8.26.1 As discussed earlier, some companies already offer social tariffs aimed at low users and at those struggling to pay their bills. However, these are not widespread in the water industry. The Assembly Government supports giving customers a wider range of charging options, in particular ‘win-win’ tariffs. A greater choice of social tariffs could help with affordability issues. We recognise that these should not be at the cost of much higher bills to other customers.

8.26.2 The review team proposes that Ofwat takes a much more proactive role in addressing affordability issues, including through the use of social tariffs. We encourage companies to be innovative in proposing schemes that meet their local circumstances and Ofwat to be more ready in accepting schemes that are acceptable to the company’s customers as a whole. We suggest that, within a new consolidated set of guidance on charging, social and environmental issues, new guidance should be provided to Ofwat by UK Government and Welsh ministers on social tariffs, with the aim of companies being encouraged to develop local social tariffs acceptable to their bill payers.

Water efficiency and benefit entitlement check scheme

8.27.1 We were particularly interested in the South West Water evidence about its WaterCare scheme, which followed on from the South West Water/Defra Pilot Scheme. Their scheme involves:

- checking that a household is receiving all the benefits to which it is entitled;
- making sure the household is on the lowest possible water and sewerage tariff; and
- a home water audit and installation of simple, low-tech devices to make a home water efficient, for example, cistern devices to reduce water used for flushing, low-use shower heads, and flow restrictors for taps.

8.27.2 Households targeted were those known to have chronic debt problems. Additional benefits (worth £62.6k in total per week) were found for 45 per cent of the 3,332 WaterCare customers, who had an average weekly income increase of £42.13. Eight hundred and twenty-three customers opted to switch to a meter to get a lower bill.

8.27.3 The current South West scheme costs £130 per household. If it were extended to the 0.6 million metered households in the South West receiving Council Tax Benefit, this would cost £78 million. If it were applied to all 3.2 million households in England and Wales receiving Council Tax Benefit, this would cost around £416 million. The costs of a scheme of this size would either have to be met by the national taxpayer (as with, for example, Warm Front) or by companies, as an allowable cost against operational expenditure. A locally funded scheme would incentivise efficiency and could be run alongside energy efficiency schemes locally. This could provide a reduced cost for the water element and increase the number of households helped each year.

8.27.4 Reducing essential water use in the home could help with affordability for metered low-income households, particularly in areas where bills are high, the standing charge is low and volumetric charges represent a significant proportion of the bill.

8.27.5 We feel that there is room for each water company to have a water efficiency programme targeted at low-income metered customers in debt or receiving Council Tax Benefit. Identifying customers in debt as priority customers for this scheme would enable closer targeting of the programme and improve company engagement with their customers in arrears. Such a scheme would contribute to the company’s revised water efficiency target (see Chapter 10).
8.27.6 We are not convinced that a defined statutory national scheme is required – this would stifle company innovation and not take local circumstances fully into account. What is required, we suggest, is a statutory requirement on companies to have a water efficiency scheme targeted at defined low-income metered customers and for that scheme to be approved by Ofwat in line with new guidance from UK Government and Welsh ministers. The review team would like to invite views on the principle of such a scheme, where the costs of such a scheme should fall, and the powers necessary to put it into place.

Data sharing

8.28.1 At the moment, companies struggle to identify which of their customers might need help, relying on customers applying for assistance, or someone applying on their behalf. There is no automatic flag to trigger the consideration of assistance to an individual customer. Information from government (central or local) about low-income customers receiving Council Tax Benefit could make this process more efficient and reduce the risk of people not getting the help they need. However, data protection and human rights issues must be taken into consideration.

8.28.2 A similar debate is ongoing in relation to energy customers’ data. Because of the essential nature of water, we would urge the UK Government to widen the debate to water customers on low incomes.

What are the possible future ways of tackling affordability in the long term?

8.29.1 We have looked at a variety of financial and practical measures that could help tackle affordability issues and have concluded that a combination of measures is likely to produce the most viable approach. Our approach has been to build on the positive aspects of the current system and look for enhancements that can be delivered at reasonable cost without significantly increasing the burdens on other water bill payers.

8.29.2 Whatever else is done, it is vital that the right incentives are put in place within the regulatory system to tackle affordability more systematically and in a way that anticipates problems rather than tracks them.

Emerging recommendations

The review team proposes that the following actions are taken:

8.30.1 Recognising the lack of sensitivity of the benefit system to large regional differences in water cost, the UK government should consider introducing a regional water benefit. The review team would like views on this suggestion;

8.30.2 In the absence of a regional water benefit, there should be a percentage reduction to the bills of low income customers (in receipt of Council Tax Benefit) in high bill areas, down towards the national average bill, paid for either by the national water customer or by the national taxpayer. The review team would like views on this proposal;

8.30.3 Retain and refine the national safety net for low income high essential metered water users (WaterSure) and increase promotion of the scheme, including providing more information on bills. Recognising the current lack of interaction between the benefit system and the regional variation in water costs, cap WaterSure bills at the national average bill; refine the criteria for a family with older children in education or training, and seek advice on eligibility on medical grounds; make applicants medical certificates free. The costs of this and the costs of the current WaterSure system should be met by national water customers.
8.30.4 Companies should be statutorily required by UK Government and Welsh Ministers to develop their own water efficiency programmes which would contribute to their enforceable water efficiency target, with priority given to low income customers in debt or in receipt of Council Tax Benefit. The review team would like to invite views on the principle of such a scheme, where the costs of such a scheme should fall, and the powers necessary to put it into place.

8.30.5 Ofwat, building on its current duties, should be more pro-active in terms of helping companies tackle affordability problems. The review team would like views on whether the scope and detail of Ofwat’s current duties are sufficient to tackle affordability issues, or if something further is necessary;

8.30.6 Ofwat should produce an annual report on affordability and debt issues, and where it is not clear that it is possible to solve the affordability problems within the current regulatory framework, should provide advice to the Secretary of State for Environment, Food and Rural Affairs and Welsh Ministers on what action is necessary and why;

8.30.7 Within a new consolidated set of guidance on charging, social and environmental issues, new guidance should be provided to Ofwat by UK Government and Welsh ministers on social tariffs, with the aim of companies being encouraged to develop local social tariffs, acceptable to their bill payers, and for Ofwat to be more ready in accepting these schemes; and

8.30.8 Local government should consider sharing data on low income customers receiving Council Tax Benefit with water companies so companies can target assistance.
Why is debt an increasing problem?

9.0.1 Following privatisation, significant water bill increases have taken place (42 per cent increase in real terms), outstripping both general price inflation, and more recently, incomes. This means that water bills constitute an increasingly larger proportion of income. In 2007/08, Citizens Advice Bureaux dealt with 1.7m client cases concerned with debt, of which 57,000 were specifically about water debt. This constitutes a 28 per cent rise in cases since 2005. Figure 28 compares outstanding revenue for more than 12 months per company. However it is important to note that each company has significantly different socio-demographic circumstances, customer base and operating areas.

Figure 28: Revenue outstanding for more than 12 months per company (2006/07)

9.0.2 The water industry has disproportionately high levels of bad debt compared with other utilities. In 2007/08, the water industry had £930 million of household revenue outstanding for more than three months and 4.3m households in debt in England and Wales. In the same period, it wrote off £104m of household debt, equivalent to 1.6 per cent of revenue billed for that period, an increase in real terms of 38 per cent since 1999. Compared with the energy industry, the water industry has significantly higher household debt levels (Figure 29) and these are rising at a more rapid rate.

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87 Citizens Advice Bureau (2009) Evidence submitted to the Review in response to the Call for Evidence
9.0.3 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 relevant. In 1999 the UK Government banned the disconnection of water supply to household customers. While this has been a factor in the rapid rise in bad debt within the water industry, it is worth noting that general debt levels have also risen significantly in the same period.

9.0.4 Since the ban on disconnection for non-payment of water bills, the number of unpaid bills has increased by 17 per cent and total debt-related costs by 28 per cent. In 2007, one in five household customers was in arrears with their water company, considerably more than in the fuel industries (Figure 30). Water companies say a variety of reasons explain the increasing level of arrears, including the ban on disconnection, increases in other household bills, and an increasingly transient population.

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**Figure 29: Comparing total household debt levels between the electricity, gas and water industries (2007/08)**

Source: Water UK

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88 Including debt recovery activities, bad debt write-off and financial cost associated with unrecovered revenue.
Given the statutory ban on disconnection, water bills are not considered a priority bill. According to third-party advice agencies, they are listed below mortgage payments, council tax, credit cards and other utility bills for payment. The Office of Fair Trading also omitted water debt from its list of priority debts in 2008. Water debt is regarded as a non-priority debt because non-payment does not result in loss of supply, the average annual bill is lower than other household payments, and there is no formal contract between customer and service provider.

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. That is more than the 5.8 per cent increase in household water bills over the same period. In 1998, prior to the ban on disconnection, total household debt in the water industry was around £780 million.

Household revenue outstanding for more than 12 months increased by 12 per cent between 2006/07 and 2007/08, from £599 million to £674 million. Revenue outstanding for this length of time is regarded as being much more difficult to recover.

How does water debt compare with energy?

9.1.1 Debt levels are considerably higher in the water industry than in either of the energy utilities. At the end of 2007, approximately 5 per cent (1.13 million) electricity credit customers and 3.7 per cent (0.89 million) gas credit customers in England and Wales were repaying a combined debt totalling £402 million. This compares to 19 per cent of water-debt households (4.3 million) owing £1.07 billion. Water bills are considerably lower than energy bills (on average water bills are a third of energy bills), so compared to the cost of the services provided, water debt levels are very much higher than those in the energy industries. Despite the overall increase in personal debt in the UK, in 2007 the number of customers in debt in the energy industry remained stable. However, the average level of debt owed to energy utilities has steadily increased (Figure 31) albeit during a period of rising fuel prices.

Figure 31: Average household customer debt in the energy industries

The nature of debt in the water industry

9.2.1 For metered customers, a large percentage of the outstanding revenue is up to three months old. Just over half of the household revenue outstanding is more than 12 months old, although for some companies the figure is lower, at 27 per cent. Much of this is likely to be collected through companies’ debt recovery procedures; however, a steadily increasing proportion of this debt then becomes older than 12 months and is then increasingly more difficult to recover.
9.2.2 Long-term debt is much lower but much harder to collect, and is increasing annually by around 12 per cent (Figure 32). Revenue outstanding for up to 12 months accounted for 8.2 per cent of revenue billed in 2007/8. Revenue outstanding for between one and two years in 2007/8 was equivalent to 4 per cent of the revenue billed in that year. Figures fall each year as outstanding revenue is recovered. After four years, around 1.7 per cent of revenue billed was still outstanding (although it is acknowledged that some outstanding revenue will also have been written off).

Who are the bad debtors?

9.3.1 Most water debtors are also high risk in credit terms. Research by Equifax in 2006 showed 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. In addition, 23 per cent of debt is due to ‘leaver debt’ where companies cannot trace customers who have moved before settling their water bill. Debtors are most likely to be single tenants living in privately rented households (44 per cent), single parents with one or more children, and people aged between 25 and 49.

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91 Nb. Revenue written off each year has an impact on the amount of revenue that is reported as still outstanding.
9.3.2 A proportion of ‘leaver debt’ is due to short-term tenants assuming (or due to miscommunication with their landlord) that water bills are included in their rental payments. Some water companies have developed voluntary agreements with housing associations and Registered Social Landlords (RSLs) to include unmeasured water bills in rental payments.

9.3.3 A small proportion of debtors are of high worth. Around 4 per cent of debtors have credit scores in the top 25 per cent. Affluent single people and couples in exclusive urban neighbourhoods account for around 4 per cent of debt.

9.3.4 Unlike other utilities or credit companies, water companies do not distinguish between customers of differing credit risk on their terms of supply. Other utilities will assess the risk of a potential customer defaulting, and tailor the tariffs they will offer to suit the customer’s needs and the likelihood of their maintaining consistent payments. Generally, water companies 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’

9.4.1 Historically water debtors have been described as either ‘can’t pays’ or ‘won’t pays’. The ‘can’t pays’ are generally understood to be those 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 which prevent them from managing their finances successfully. It is estimated that one in six people are living with a mental health problem, which represents more than 7 million people at any one time between the ages of 17 to 74\(^{93}\). Evidence shows that customers with mental health problems are more likely to be in debt.\(^{94}\)

9.4.2 The ‘won’t pays’ are understood to be those customers withholding money on principle: ex-partners withholding payment, for instance, or customers who can afford to pay but chose not to, for a variety of reasons. There is also a large group of relatively transient debtors who may not have received a bill while in occupancy of the property or been aware of their liability. In responses to the call for evidence (see Annex B) Wessex Water and Thames Water stated that over 50 per cent of their debtors are ‘won’t pays’. Similarly, a 2006 report by the House of Lords Select Committee reported that over 60 per cent of water debtors in England were ‘won’t pays’, according to means-testing measures. However, United Utilities and Dŵr Cymru Welsh Water stated that the majority of their debtors were ‘can’t pays’ (up to 83 per cent in the Wales).

9.4.3 Many of the water companies responded to the review team’s call for evidence with the suggestion that when a customer is identified as a ‘won’t pay’, the water company should be able to reduce the supply to a trickle during periods of non-payment. Conversely, other respondents maintain that trickle-valves are tantamount to disconnection and therefore banned under the Water Industry Act 1991 (as amended by Water Industry Act 1999).

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\(^{93}\) Office of National Statistics (Accessed online Jan 2009)

\(^{94}\) Mind (2008) Response to the Call for Evidence
What are the costs of recovering debt?

9.5.1 It is estimated that bad debt recovery, write-off and financing adds approximately £11 per year to each customer’s bills. 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 33), at £3.26 per household. A considerably larger sum of around £8 is added to each customer’s bill for writing off bad debt and financing the costs associated with unrecovered revenue.

Figure 33: Outstanding revenue collection costs

9.5.2 It could be expected that the more income-deprived a company’s operating area is, the worse the debt situation will be. However, Ofwat’s analysis\(^{95}\) shows that on a company level there is no statistically significant relationship. Figure 28 also shows no apparent relationship between the size of the water bill and debt levels on a company level. On a more localised level, some companies have seen a strong relationship between deprivation and debt but not across their whole operating area. This research suggests that companies could do a lot 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 there is still significant variation across England and Wales.

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95 Ofwat (2009) Response to the Walker Review call for evidence
9.5.3 In 2007/8, the water industry was awarded over 145,000 court judgements for the non-payment of water bills. Of the various enforcement methods, the most popular continue to be warrants of execution\(^{96}\) and attachment of earnings. Some companies also considered charging orders\(^{97}\) to be effective, whereas orders to obtain information in court\(^{98}\) and third-party debt orders\(^{99}\) were felt to be the least effective. The number of pre-claims notices issued has increased by 23 per cent since 2006/7, whereas the number of county court claims made and judgments awarded for non-payment of water bills fell by 8 per cent and 3 per cent respectively. 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.

**Difficulties in collecting customer data**

9.6.1 It is difficult for water companies to develop a good understanding of their customer base due to the lack of a contract between a water company and its household customer. The Water Industry Act 1991 makes the occupier liable for the water bills, but water companies have to rely on information from customers themselves 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. As no contract exists, companies have little opportunity to collect customer data. Data protection currently prevents companies obtaining information from other utilities or government departments, and neither can companies legally require landlords to provide information on the occupier(s). The lack of personalised data on customers means that companies cannot accurately target vulnerable customers with assistance, or ‘won’t pay’ customers for payment.

9.6.2 Companies have made it very clear to the review team that it is extremely difficult for them to engage with customers properly, especially in relation to bad debt, without having a named individual who is statutorily responsible for paying for the bill. This is typically the case on short-term leases.

9.6.3 The water industry has requested help with identifying liability for payment of the water bill. 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’. As a result, companies can find it difficult to establish whether the landlord or a tenant should pay the bill. The industry has suggested that the Act should be amended to include a ranking of liable persons in the same way as for payment of council tax (Local Government Finance Act 1992). Liability would then fall in a descending hierarchy on the person who:

- lives in the property and owns it;
- lives in the property and has a lease (including ‘assured tenants’ under the Housing Act 1988);
- lives in the property and is a ‘statutory’ or ‘secure’ tenant;
- lives in the property, is not a tenant but has permission to live there;
- lives in the property (for example a squatter);
- has a lease of six months or more on the property, but does not live there;
- owns the property but does not live there.

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\(^{96}\) 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.

\(^{97}\) 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.

\(^{98}\) Where the debtor is ordered to attend court to provide details of their finances.

\(^{99}\) Where the court orders funds to be deducted directly from the debtor’s bank account to settle the debt.
The person liable for the bill would be the person who, on a particular day falls within the first category relevant to that property. The last residual category is that of non-resident owner; that category would not be reached if another person were living in the property, for example, as a lessee.

The second change that the industry would like to see is a statutory requirement for the name of the person responsible for paying the bill to be given to the water company. This would mean that a resident, owner or managing agent would have to provide the name of the bill payer to the water company. Again there is already a provision in council tax legislation for this to happen with regard to council tax.

The third change the industry would like to see is a statutory change making clear who is responsible for the bill in properties occupied by more than one family. They have suggested that the property owner should be made liable for water charges in:

- residential care homes (including nursing homes, mental nursing homes or hostels);
- religious communities;
- houses in multiple occupation;
- Resident staff;
- ministers of religion; and
- dwellings provided to asylum seekers.

9.6.4 Section 8 of the Local Government Finance Act 1992 makes such a provision for council tax. However, council tax is fixed in advance, and therefore easier for the property owner to include in the rent for the property, while only unmetered properties have a fixed water charge. In the case of metered properties it would be more difficult for the owner to estimate the water charge and include it in a property’s rent.

What is being done currently to tackle bad debt?

Government

9.7.1 DWP runs a wide-ranging third-party deduction scheme that covers water bills among nine different items. In respect of utilities (gas, electricity and water), the scheme provides for deductions to be made from benefits direct to the creditor. This scheme is commonly known in the water industry as ‘WaterDirect’. It protects a vulnerable minority of customers from action against them and provides a mechanism for repaying debts directly from benefits on a manageable weekly basis. This scheme is designed for customers in debt and once the debt is repaid, eligibility to remain on the scheme is assessed on a case-by-case basis. In practice, this usually happens where someone is likely to be on benefits for the long term and where a history of mismanagement predicts recurring debt if deductions stop. Approximately 11 per cent of Third Party Deductions for water costs are for current use only demonstrating that many customers do remain on the scheme.

9.7.2 DWP’s Joint Statement of Intent was amended in 2004 so that companies can proactively 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 without success. The number of customers clearing water arrears in this way currently stands at around 78,000. This compares with 17,000 for electricity and 22,000 for gas.\(^{100}\)

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\(^{100}\) Ofgem (2007) Domestic suppliers’ social obligations: 2007 annual report
9.7.3 Government has given water companies a statutory duty to provide a social tariff called WaterSure for people with low incomes and high essential water needs; this was examined in more depth in Chapter 8. By ensuring people in such circumstances have affordable bills; they are less likely to fall into debt.

9.7.4 The Government also provides funding to Citizens Advice Bureau (CAB) 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 bills.

Ofwat

9.7.5 Ofwat acted in the last price review to stop water companies from increasing their base costs to cover future debt costs but retained bad debt as a notified item.\textsuperscript{101} In their Periodic Review 2009, Ofwat will again challenge requests from companies for increased bad debt costs and is considering whether to remove this as a notified item.

9.7.6 In 1992 Ofwat published debt management guidelines to companies, \textit{Dealing with Customers in Debt}. There is no duty on companies to adopt the guidelines 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 and concluded that they were robust and comprehensive.

9.7.7 However, despite the comprehensive nature of Ofwat’s guidelines, there are no formal monitoring or reporting structures currently in place. Ofwat currently relies on CCWater to monitor how well companies comply with the guidelines and CCWater collects annual data on the levels and nature of outstanding revenue. The review team has looked at the requirements of other utility regulators and 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 or requirement for water suppliers, nor does it produce an annual report to identify progress in preventing and managing debt.

9.7.8 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 their 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

9.7.9 Approaches to debt vary from company to company. Some particularly effective companies have shown reductions in the amount of debt they write off annually through innovative payment methods, early intervention and special tariffs (particularly South West Water and Wessex Water). 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, and limit the amount of debt accruing and being written off annually. Essential measures for preventing bad debt include providing specialist contact

\textsuperscript{101} 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.
teams for new customers. These contact teams obtain the required data to highlight a customer’s personal information and financial status, preferred contact and payment method, and billing frequency.

9.7.10 Many companies have already implemented specialist contact teams to advise customers of all the options open to them including recourse to external advice agencies, WaterSure and other third-party schemes as appropriate.

9.7.11 Some water companies are working to develop voluntary agreements with local authorities and registered social landlords to include unmeasured water bills within rental payments to reduce the incidence of water debt. This is because a large proportion of bad debt is held by tenants with short-term rental agreements.

9.7.12 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 taken 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.

9.7.13 Customers have approached companies for additional help with budgeting, whether in the form of prepayment meters (PPM), more regular billing, or different payment options. Installing prepayment meters would present an additional cost to customers of around £150 per PPM. These PPMs would be an additional budgeting tool and could not lead to disconnection from supplies as this has been banned. It is unclear to the review team whether customers would still request PPMs in the light of the additional costs. Therefore it is important to explore other mechanisms for frequent payment that are convenient for the customer, but cheaper to operate. The review team would welcome views on the costs and value of prepayment meters compared to other mechanisms to help customers manage debt.

Citizens Advice Bureau (CAB)

9.7.14 Since 2005 the Citizens Advice Bureau has recorded a 28 per cent rise in water-debt-related cases, suggesting that water debt is becoming increasingly problematic for some customers. CAB has told the review team that they advise first paying other debts that result in disconnection or eviction. It has been suggested that this advice to de-prioritise the water bill below other arrears is one of the primary reasons for the steep rise in the water industry’s bad debt.

9.7.15 One example of good practice is that Wessex Water has been working actively with the CAB on their Assist Tariff. Once a customer has approached the CAB, they 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. Cost-benefit analyses have shown that this ultimately 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 to reduce the bad debt in this industry.

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102 Himsley (2009) Evidence submitted to the Review (personal email correspondence)
Discussion

9.8.1 There is a striking level of uncollected revenue in the water industry compared with the energy utilities. The ban on disconnection for non-payment of bills is clearly a factor as is the current lack of clear liability for named individuals to pay bills. The estimated additional £11 on paying customers’ bills to cover the debt issues essentially punishes the reliable bill payer; which is unfair and must be tackled.

9.8.2 Effective debt prevention and management is in the interests of both companies and their customers. Both companies and Ofwat have a role to play in reducing bad debt. Companies should offer a flexible range of payment options to customers and pro-actively pursue information to identify vulnerable customers and apply for WaterDirect on eligible customers’ behalf. Companies must also endeavour to develop closer links with local Citizens Advice Bureaux to help identify customers struggling to pay their water bills and devise payment options that are realistic to a customer’s financial status.

9.8.3 The issue of debt is such a significant one that Ofwat should produce an annual report dedicated to affordability and debt issues, independently monitored by CCWater, which ‘names and acclaims’ good practice. New guidance should be provided to Ofwat by English and Welsh Ministers on social tariffs as discussed in Chapter 8.

9.8.4 Although disconnection is outside the terms of reference for this review, the review team would welcome comments on the possibility of introducing trickle-valves to reduce supply to persistent ‘won’t pay’ customers. It would be feasible to set up a process whereby trickle-valves could be used in exceptional circumstances after rigorous independent safeguard conditions have been met, for example through agreement by the courts or CCWater. The review team would welcome observations on this.

Emerging recommendations

9.9.1 As a priority, the Water Industry Act 1991 should be amended to clarify and widen the definition of who is responsible for paying the water bill, through a definition of ‘liable person’ along the lines of that used in Council Tax legislation; and ensure that water companies have named customers. Three statutory changes are necessary in order to improve the situation:

- Clarify and widen who is liable for paying the bill;
- Ensuring that the name of the person responsible for paying the bill has to be supplied to the water company;
- Identifying the property owner as responsible for paying the bill when the property is in multiple occupation.

9.9.2 Companies should be encouraged by Ofwat to move towards debt prevention and best practice approaches rather than concentrating on debt management.

9.9.3 Ofwat, together with CCWater, should be asked by government to monitor company performance on debt prevention, management and recovery against Ofwat’s debt guidelines. Ofwat should produce a separate annual report on debt which makes clear which companies are performing well (‘name and acclaim’) and which should improve. It should also highlight good and poor practice. This annual report could be combined with the report proposed in Chapter 8 on affordability issues in the water industry.
9.9.4 Local government should work with water companies to identify low income customers receiving Council Tax Benefit so that companies can better target assistance.

9.9.5 Companies should consider, as a way of helping customers pay their bills, developing more voluntary agreements with Registered Social Landlords and local housing authorities so that water bills are paid with rent for unmeasured customers.

9.9.6 There should be clearer bills and better information to customers from companies, clearly indicating methods of payment, contact details for third party debt advice agencies and written in plain English. Greater transparency will provide more information concerning the breakdown of charges and the reasoning behind bill increases (see Chapter 11).

9.9.7 There should be more publicity on water debt advice and help from the companies and greater use and funding of third party advice organisations. This could be along the lines of current innovative schemes (such as Wessex Water’s scheme) or might be a part of a company’s water efficiency programme.

9.9.8 The option of current third party deductions scheme (WaterDirect) should be pursued more pro-actively by water companies, where this would be more helpful to customers in debt.

9.9.9 Companies need to have available and accessible schemes in place that help low income households who want to stay out of debt; this could include social tariffs (see chapter on Affordability).
Chapter 10 – Water Efficiency

Introduction

10.0.1 Chapter 1 sets out the growing pressures on water supply from continuing population changes and the likely effects of climate change. In this context, water efficiency has an increasingly important role to play in balancing water supply and demand, especially where it can delay the additional costs of new or improved supplies of water and where the value of water is high.

10.0.2 Despite that importance, public awareness of the need for water efficiency is far lower than public awareness of energy efficiency, even though the two are linked. Efficient use of hot water in the home can reduce fuel bills and measured water bills, as heating water uses roughly one-quarter of a household’s energy. In addition, moving and treating water also uses significant amounts of energy. More efficient use of water would therefore reduce carbon emissions from both the water industry and homes, and help to meet the UK Government’s target to cut greenhouse gas emissions by 80 per cent by 2050.

10.0.3 While tariff design can help reduce demand for discretionary uses, such as garden watering and car washing, from measured households, water efficiency measures can also help individuals make more efficient use of water for essential purposes. Improved water efficiency therefore has a key role to play in helping to address water affordability, principally for metered customers.

10.0.4 Despite recent changes in the regulatory regime, there are still barriers to improving water efficiency in households. This is because:

- the regulatory regime was designed before the effects of climate change were widely understood;
- importantly, most people do not pay for their water by volume;
- the price they pay for their water does not reflect its true value; and
- there is a bias towards capital investment by water companies.

Incentives in the regulatory system

10.1.1 The review team has looked at existing incentives for water companies, customers and the regulator to pursue water efficiency measures. While the regulatory framework for water efficiency has improved in recent years, more can still be done to ensure that the right incentives are in place to incentivise water efficiency activity by water companies and customers, and for Ofwat to ensure that efficiency takes its rightful place in the overall operation of the industry.

Water Companies

10.1.2 Under the current regulatory system, water companies have a duty to promote the efficient use of water to their customers. In the past, this has resulted in varying levels of activity. Expenditure on water efficiency is still a very small proportion of water companies’ total expenditure: less than 1 per cent and the effect has been equally small. In any one year, less than 1 per cent of the water treated and pumped has been saved.

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103 Water efficiency can be defined as the accomplishment of a task with the minimal amount of water possible. The emphasis is on reducing the waste of water, not on restricting use.
10.1.3 For water companies, promoting water efficiency to metered households leads to a loss of revenue through reduced consumption. Ofwat has announced the introduction of a new revenue correction mechanism that will remove the disincentive to water companies promoting water efficiency schemes to metered customers through a change in the way price limits are set. Ofwat will set prices in the 2014 Periodic Review to correct for revenue that a company over- or under-recovers for the years 2010 to 2015, against the expectations used in the 2009 Periodic Review. This mechanism will also be applied to excess revenue, eliminating any incentive for companies to sell more water to metered customers. The review team welcomes Ofwat’s introduction of this new mechanism.

10.1.4 However, some other perverse incentives still remain. Currently, water companies’ expenditure on water efficiency projects is included in Ofwat’s calculation of the overall operational efficiency of each water company. A company that undertakes additional water efficiency activity (thereby incurring additional operational expenditure) to reduce the amount of water consumed will appear less efficient than another water company with identical initial operational expenditure and the same efficiency in other areas that does not undertake the additional water efficiency activity. To avoid this acting as a barrier to greater water efficiency activity, the review team suggests that the operational efficiency of a company’s water efficiency activity is calculated separately, instead of being included in the overall operational efficiency calculation on which Ofwat, quite rightly, bears down.

10.1.5 The current regulatory system also appears to have an inherent bias towards capital expenditure by water companies. This is partly because capital investment is more certain in what it delivers than demand management activities, where the water actually saved depends on the behaviour of customers, as well as the measures taken by the company. But it is also because capital investment increases the regulatory asset value of water companies, with its corresponding rate of return in future years. By contrast, water efficiency expenditure is financed from the operational budget, and is therefore subject to the short term regulatory pressures to reduce water company operational expenditure.

10.1.6 As discussed in Chapter 1, the water price taken into account in investment decisions does not reflect the true value of water. This means that water efficiency measures are disadvantaged when compared with other options for balancing supply and demand, as using the true value of water would mean that the wider benefits of a reduced demand are recognised in the economic appraisal of alternatives. The review team has concluded that the balance can be corrected to some degree by using the true value of water in investment decisions and any evaluation of water efficiency measures.

10.1.7 Water companies have now been set water efficiency targets by Ofwat on a trial basis for the current financial year and on a mandatory basis for 2010/15. These targets have a two-tier structure, with a baseline service undertaken by all companies and a sustainable economic level of water efficiency (above the baseline level) undertaken by those companies where the economic case supports a higher level of activity.

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\[104\] Water supply and demand policy, Ofwat, November 2008
10.1.8 The baseline level of water efficiency activity to be achieved by all water companies, within their current operating budgets, has three elements:

- a minimum target for water saved through approved water efficiency activity of 1 litre per property per day. Water companies can work with all customers (household and non-household) to achieve this;
- a requirement to provide information to consumers on how to use water more wisely; and
- a requirement to monitor the real savings from the activities undertaken, so that a robust evidence base is available to inform the next periodic review.

10.1.9 Above the base level, water companies can pursue whatever water efficiency measures form part of a sustainable economic approach to balancing supply and demand, subject to Ofwat approval. An allowance will be made in price limits for activities above the baseline level.

10.1.10 The review team is concerned that that the water efficiency target covers both household and non-household customers. While Ofwat has said that it would not approve plans to meet the baseline targets exclusively from non-household activity, there is a risk that the main focus of the activity will be on non-households, as it is likely to be a more cost-effective way for water companies to meet their targets. The review team believes a minimum percentage of the assumed water savings should be met through household water efficiency programmes. Targeting those programmes on low-income metered customers will also help address affordability issues – see Chapter 8.

10.1.11 The review team recommends that Ofwat sets a minimum percentage of water efficiency targets to be achieved through water efficiency activity targeted at defined low-income metered household customers to help them reduce their water use (and, therefore, bills). This would in effect be a pilot for the statutory water efficiency scheme proposed in Chapter 8.

Customers

10.1.12 As most household customers are unmetered, they have no financial incentive to be water efficient (other than through the energy cost of hot water), as reducing the amount of water they use does not reduce their water bills.\(^{105}\) This also means that most people have no financial incentive to buy fittings or appliances that are more water efficient.

10.1.13 As the rate of metering increases, more households have a financial incentive to use water efficiently. The proposals in Chapters 5 and 6 on metering and tariffs are therefore relevant here and will address some of the current barriers to water efficiency, if implemented. It is also important to raise customers’ awareness of why water efficiency is important and provide advice on how to use water more efficiently through an educational campaign.

10.1.14 In addition, for as long as the volumetric tariff is set without taking into account the true value of water; the savings that customers make through increasing their efficiency will be less than the value to society of the water saved. So their own economic incentives to save water will be lower than ideal from a wider societal perspective. Section 5 below explores this more fully.

\(^{105}\) Strictly speaking, if all unmetered customers increase their efficiency of water use then bills would go down, but the link between an individual’s actions and that individual’s bill is very weak.
Ofwat

10.1.15 Ofwat has a duty to contribute to the achievement of sustainable development. It has made considerable progress of late in pursuing this duty with regard to climate change. For example, it has encouraged companies to use the shadow price of carbon (covering both operational and embedded emissions) in cost-benefit analysis in the current price review, issued a climate change policy statement,\(^{106}\) and set out its position on sustainability.\(^{107}\)

10.1.16 The Climate Change Act contains new powers for the Secretary of State to instruct ‘any person or body with functions of a public nature, and statutory undertakers’ to report on climate change adaptation. These powers could apply to many organisations, including Ofwat and the water and sewerage companies. The content of the reports covers how organisations are adapting to climate change and how they have assessed the impact of climate change on their functions.

10.1.17 The review team welcomes the work on sustainability and the new reporting powers. However, the review team believes that the potential impact of climate change on water users and their bills is of such a magnitude that Ofwat’s current sustainable development duty should be extended to put particular emphasis on improving significantly, and quickly, the water industry’s approach to climate change mitigation and adaptation. A step change is needed in terms of getting to grips with the likely impact from climate change on the water industry and customers.

10.1.18 These impacts are likely to be many and varied. Energy costs are currently a very significant proportion of the water industry operating costs; given the upward pressures on fuel prices, water customers have an obvious financial interest in companies tackling the industry’s future fuel bills and fuel security issues. Customers also have an interest in water efficiency programmes and measures that can help them reduce their own carbon footprint (and metered bills) by reducing hot water use.

10.1.19 As previous chapters have noted, the true value of water needs to be embedded in all future investment decisions and water efficiency measures brought forward so that household bills are more affordable in future. Both of these changes are important and pressing and will make the overall water system more resilient to future climate change.

10.1.20 The review team would therefore welcome views on whether Ofwat’s current sustainable development duty should be extended to make specific reference to consideration of climate change, in particular mitigation and adaptation measures.

Costs and benefits of water efficiency savings

10.2.1 There is a degree of uncertainty about the effect of water efficiency activity on water consumption in households. This is partly because water consumption depends on the fittings and appliances used and on the behaviour of individual customers. Most households in England and Wales are also unmetered, so it is difficult to measure changes in water use.

\(^{106}\) Preparing for the future – Ofwat’s climate change policy statement, Ofwat, 2008

\(^{107}\) Water today, water tomorrow – Ofwat and sustainability, Ofwat, 2009
10.2.2 Water company research has looked at the costs and benefits of water efficiency. More recently, Waterwise and water companies have developed an evidence base for water efficiency measures and interventions, where previously data were non-existent or incomplete. The project included a number of large-scale water efficiency projects.

10.2.3 Using information from these large-scale trials, Waterwise estimates that the average incremental cost of retrofitting households is about 197 pence per cubic meter saved (the actual range being from 47 to 720 pence per cubic meter). 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. Home visits account for most of the cost of water efficiency programmes, rather than the cost of the fittings or appliances that are installed.

10.2.4 Waterwise's report also 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 ranged from 36 to 135 pence per cubic meter of water saved, showing considerable savings over schemes just addressing water efficiency.

10.2.5 The cost of saving a cubic meter of water through retrofitting water-efficient fittings has to be compared with the cost of supplying an additional unit of water. The draft 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 meter, with one company quoting an upper figure of 200 pence per cubic meter. As already noted, these figures do not take the true 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.

10.2.6 The review team has concluded that the evidence available on the cost-effectiveness of water efficiency measures is limited but it indicates that retrofitting is likely to be most cost-effective in areas where water resources are under most pressure, and the true value of water is higher. We understand that Waterwise is undertaking further research with water companies and other stakeholders. This will attach carbon savings to water efficiency measures and explore cost savings through linking water and energy retrofits.

10.2.7 The costs of water efficiency projects may also be reduced by using possible synergies with other home 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.

10.2.8 In areas where the value of water is high, water efficiency measures are likely to be cost-effective, especially if they exploit synergies with other local programmes such as energy efficiency retrofitting schemes or Decent Homes refurbishment programmes. However, the review team recognises that if water efficiency activity is set at a level that is not cost-effective, average water bills would rise by more than they would in the absence of a water efficiency scheme. This has to be balanced against the value of helping low-income metered customers to save water and so lowering their bills.

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108 Waterwise is an independent not-for-profit UK Non Government Organisation which aim is to reduce water consumption in the UK by 2010.
10.2.9 Chapter 8 explored the role of water efficiency schemes in helping targeted metered low-income households reduce their bills. It is important to note that the value of water savings to the customer is different from the value of the water saving to the water company. As discussed in Chapter 8, the South West Water affordability pilot included a water efficiency audit and retrofit with an estimated one-off cost of about £115 to the company, resulting in an ongoing annual average saving to the customer of £41. The value of the water savings to the water company is lower, as the volumetric price recovers an element of fixed costs.

10.2.10 The review team recommends that the cost-benefit analysis of water efficiency takes into account the wider costs and benefits of water use reduction, including the true value of water. It also recommends that the UK Government and Assembly Ministers introduce a statutory requirement for all water companies to implement a water efficiency scheme targeted at defined low-income metered customers (see Chapter 8).

New Homes

10.3.1 Population growth and the change in the size of households mean that the need for new homes will continue in the medium and longer term, even if the current economic circumstances have slowed current construction. Estimates in 2007 were for 220,000 new homes per year up to 2026 with a significant proportion of single occupancy dwellings, which would have amounted to over 3 million new houses. Current construction rates are two fifths of the 2007 projection. Although it is difficult to predict the number of homes to be built by 2026, it is expected that it would be a significant number in the light of the expected population changes.

10.3.2 It is important that new homes are built to good water efficiency standards, to help manage the growing pressures on water supply. There has been considerable progress in this in the past years. The Code for Sustainable Homes includes water consumption as one of the factors to be considered in its assessment, and all new homes built with public funding have to meet level 3 of the Code (a water efficiency standard of 105 litres per person per day (lppd), excluding garden use). Amending Regulations for Part G of the Building Regulations will come into force in October 2009. This will require all new homes to meet a performance standard of 125lppd, effectively making levels 1 and 2 of the Code for Sustainable Homes mandatory. 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.\textsuperscript{110}

10.3.3 The review team welcomes the developments on water efficiency for new homes. \textit{Given the expected pressures on water supply in the future, it is important that progress on making new housing stock more water efficient is continued.}

Making existing homes more water efficient

10.4.1 Since the bulk of the housing stock is of pre-World War II origin, improving the water efficiency of existing homes has a key role to play in reducing water demand and the related carbon emissions. There are around 22 million households in England and Wales, which gives considerable scope for saving water through improved efficiency. Although there has been improvement in water efficiency generally in the past few years, more activity is needed on this part of the housing stock.

\textsuperscript{110} Cost Analysis of the Code for Sustainable Homes, CLG, July 2008
10.4.2 The review team has looked at improving the water efficiency of the existing housing stock through:

- aligning with energy schemes, particularly exploiting synergies with existing refurbishment and retrofitting programmes; and
- encouraging the use of more water-efficient fittings and appliances.

Alignment with energy schemes

10.4.3 There are a number of government-funded or sponsored programmes to upgrade existing homes, ranging from the Decent Homes initiative in social housing through to schemes such as Warm Front improving energy efficiency. Given water efficiency's role in adapting to and mitigating climate change, and that the cost of the home visit is a very substantial part of any retrofitting scheme, it would be a missed opportunity not to include water efficiency in these retrofitting schemes.

10.4.4 In its Heat and Energy Saving Strategy (currently under consultation), the UK government has committed to retrofitting every home in the country for energy efficiency by 2030, and making all homes and buildings zero carbon by 2050. To meet these goals, hot water efficient fittings will need to be included in the energy efficiency retrofitting scheme. For the same reasons, water efficiency should also be included in the Community Energy Saving Programme, which will target low-income communities for even higher standards of energy efficiency retrofitting.

10.4.5 The review team believes that the UK Government and Assembly Ministers should ensure that synergies with existing refurbishment and retrofitting programmes of existing housing stock are fully exploited to ensure that the water efficiency of existing homes is achieved as economically as possible.

10.4.6 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 believes that more can, and should, be done to build on these initiatives, which would help customers reduce their energy and, where metered, water bills.

10.4.7 The review team believes that water and energy companies should be incentivised to work together to retrofit existing homes with energy and water efficiency measures, sharing the cost of the visit, to improve the cost-effectiveness of retrofitting programmes and to enhance the value to customers of the visit.

10.4.8 The review team recommends that Ofgem and Ofwat allow energy and water companies to allocate the respective CO₂ and water savings of joint retrofitting programmes to their respective energy and water efficiency targets, especially for hot water efficiency measures accredited in the CERT scheme. The review team also believes that water companies should be incentivised to work together with social landlords and housing associations to improve the water efficiency of existing homes.
10.4.9 Where water companies undertake retrofitting projects by themselves, the review team believes that the water companies should accrue any CO₂ savings for measures accredited in the CERT scheme, and then be able either 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.

More water efficient fittings and appliances
10.4.10 Most people replace their existing water fittings and appliances over a number of years. Low-income tenants may find that they have little option but to use the inefficient appliances and fittings supplied by their landlord. Paying for water on the basis of volume used will encourage many people to look for more efficient appliances and fittings. But they will need clear labelling on the water efficiency of such goods to make a properly informed choice. Even clear labelling would not help in a tenanted property where the landlord does not pay the water bill, so there may also be a case for government intervening and insisting that only water-efficient products are sold on the UK market. Fitting a dual-flush toilet can save up to seven litres of water on every flush, while an aerated shower head can save 75 per cent of the water used by a traditional shower.

10.4.11 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 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 Assembly Government are currently undertaking a review of the Regulations. The review team believes that the government should ensure that only water-efficient products can be sold on the UK market – intervention on phasing out incandescent light bulbs has shown that such moves can be implemented quite quickly once the political decisions are taken.

10.4.12 Labelling of water efficient products helps customers make informed choices. The Bathroom Manufacturers Association introduced an industry-led voluntary labelling scheme for bathroom products in 2007. Over 500 products now carry a label. The Energy Saving Trust is also looking at including minimum water efficiency requirements as one of the criteria to qualify for its Energy Recommended label for dishwashing and washing machines.

10.4.13 For dishwashers and washing machines, the European Commission published proposals in 2008 for a revised EU mandatory energy label that included prominent information on the amount of water per year that the appliance is estimated to use. For washing machines, the European Commission has suggested a new requirement setting maximum water consumption per cycle, which varies according to the capacity of the appliance.

10.4.14 The review team believes that the UK government should review the efficacy of the current and proposed labelling schemes and decide what information consumers need as a matter of priority to incentivise the purchase of water-efficient products. Government should work with Waterwise, water companies, manufacturers and retailers to ensure voluntary schemes are effective or to decide whether a mandatory scheme is needed.
Educational campaign: more informed customers

10.5.1 Unless water customers can understand why it is important not to waste water and how they can cut down on waste easily, progress on water saving will be slow. Customers’ behaviour has a direct impact on water used in the household. A water-efficient shower used for a long shower can use more water than a less water-efficient shower used for a short shower. Experiences in energy efficiency and waste recycling show that education can successfully change customers’ behaviour.

10.5.2 All water companies distribute information on water efficiency to their customers, usually with the bills. This is complemented with specific information campaigns in times of drought, as in the years 2004 to 2006. Customers responded to this campaign by reducing further the amount of water used.

10.5.3 However, customers may believe that water efficiency is important only at times of scarcity, a perception reinforced by public information campaigns at these times. More consistent and frequent information needs to be available to change behaviour.

10.5.4 Just providing limited information on water efficiency may not be particularly effective in persuading customers to improve the way they use water. Research undertaken by CCWater as part of the work of the Water Saving Group, most respondents indicated that they would do more to save water if:

- they thought their water company was doing more;
- water-efficient devices were cheaper;
- it was easy to get information on how to conserve water;
- someone came round to their house to install water-efficient devices; and
- it was easier to buy water-efficient devices from a local shop.

In the absence of all these factors, behaviour change is likely to be limited.

10.5.5 The importance of good information has been recognised but more needs to be done. Both the UK Government and Assembly Ministers recognise behavioural change as a key element in valuing water properly and ensuring the sustainable use of water resources. Water efficiency features in Defra’s pro-environmental behaviour strategy and in the initial Act on CO2 campaign. The Assembly government’s Strategic Policy Statement on Water reflects its intention that messages on water efficiency in Wales are consistent with its climate change communications campaign.

10.5.6 Ofwat has included in its water efficiency targets a requirement for water companies to undertake educational activities. Another welcome development has been the successful application by Waterwise and the Energy Saving Trust for EU funding to pilot a water advice service that will develop integrated energy- and water-saving advice for consumers. The pilots are taking place in London, Cardiff and Edinburgh over a three-year period from January 2009 to December 2011.

10.5.7 However, in order to effect lasting changes in behaviour the review team believes that information on how to be more water efficient needs to be clear, consistent and co-ordinated. The review team calls on the UK Government and Assembly Ministers to promote a national education strategy working with stakeholders to influence
public behaviour on water use. In addition, this sort of campaign will need national operational leadership; the review team invites views on who this should be. In terms of implementation, the review team believes that regional and local community-based campaigns on water efficiency should be developed, using the key national messages, but targeting local issues. Water companies should work with other local organisations and bodies to achieve higher levels of community awareness.

10.5.8 As the rate of metering increases, water companies should consider rolling out smarter bills for metered customers, giving information on how their own household water use compares with average water consumption and suggesting how to use water more efficiently (see Chapter 11).

10.5.9 Finally, there is a need to raise household customers’ awareness of the links between hot water and energy savings. This would demonstrate the existing financial incentive to unmetered customers to use water efficiently, reinforce the importance of water efficiency for metered customers, and help mitigate the effects of climate change. The review team suggests that:

- The Act on CO₂ calculator includes a section on emissions linked to hot water use and advice on how to use hot water more efficiently;
- The Act on CO₂ campaign includes dedicated messages on water efficiency; and
- Water companies include messages to customers on this link, providing information on potential energy savings linked to water efficiency.

Emerging recommendations

10.6.1 While the regulatory framework for water efficiency has improved in recent years, more can still be done to ensure that the right incentives are in place to encourage the use of water efficiency activity by water companies, customers and Ofwat. This includes:

- the operational efficiency of a company’s water efficiency activity to be calculated separately by Ofwat, instead of included in the overall operational efficiency calculation;
- the true value of water should be used in investment decisions and any evaluation of the costs and benefits of water efficiency measures; and
- Ofwat to set a minimum percentage of water efficiency targets to be achieved through water efficiency activity targeted at defined low-income metered household customers to help them reduce their water use and, therefore, their bills. In the longer term, the UK Government and Assembly Ministers should introduce a statutory requirement for all water companies to implement a water efficiency scheme targeted at defined low-income metered customers.

10.6.2 The UK Government and Assembly Ministers should maintain progress on the water efficiency of new homes and ensure that synergies with existing refurbishment and retrofitting programmes of existing housing stock are fully exploited to ensure that the water efficiency of existing homes is achieved as economically as possible.

10.6.3 Water and energy companies should be incentivised to work together to retrofit existing homes with energy and water efficiency measures and allocate the respective water and CO₂ savings to their respective water and energy efficiency targets, especially for hot water efficiency measures accredited in the CERT scheme.

113 The Act on CO₂ calculator is a computer-based tool that enables the public to calculate their carbon footprint and provides personalised advice on how to reduce it.
10.6.4 Water companies should be incentivised to work together with social landlords and housing associations to improve the water efficiency of existing homes.

10.6.5 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.

10.6.6 The UK government should encourage the use of more water-efficient fittings and appliances by:

- ensuring that only water-efficient products can be sold on the UK market;
- reviewing the efficacy of the current and proposed labelling schemes and deciding what information consumers need as a matter of priority. Government should work with Waterwise, water companies, manufacturers and retailers to ensure voluntary schemes are effective or to decide whether a mandatory scheme is needed.

10.6.7 The UK Government and Assembly Ministers should promote a national education strategy working with stakeholders to influence public behaviour on water use. Regional and local community-based campaigns on water efficiency should be developed, using the key national messages, but targeting local issues.

10.6.8 Household customers’ awareness of the links between hot water and energy savings should be raised by:

- ensuring that the Act on CO₂ calculator includes a section on emissions linked to hot water use and advice on how to use hot water more efficiently;
- the Act on CO₂ campaign including dedicated messages on water efficiency; and
- water companies including messages to customers on this link, providing information on potential energy savings linked to water efficiency.
11.0.1 One of the review team’s fairness principles is that charges should be simple and transparent; customers should know what they are paying for and why. This is particularly important in a monopoly regime where customers have little choice about their supplier. In competitive markets consumers can (and do) vote with their feet. If a supplier chooses to do things that customers do not like, their business can fail and, likewise, if they do what consumers want, their business flourishes. This creates an incentive for suppliers to seek to understand and meet their customers’ preferences.

11.0.2 This feedback process is absent where there are monopoly suppliers. For a monopolist it does not really matter if they understand what customers want – so there is little incentive to find out. And the penalty for ‘guessing wrong’ is minimal. To correct this imbalance, it is imperative that suppliers both find out what customers actually want, and act on this information.

11.0.3 It is therefore important for the regulatory framework to incentivise companies to engage fully with their customers. This framework needs to ensure consumers can influence outcomes, and that they understand what they are paying for and why.

11.0.4 The trend in public services supports greater transparency and accountability towards those paying for the service, reflecting increasing customer expectations. Government is also concerned that particularly when companies are monopoly providers of public services, customers should be given information on how they are performing.

11.0.5 The importance of transparency and customer engagement has already been identified and acted on in local authority services. The 2007 Lyons report highlighted the need to make a step change in the quality of local government engagement work, building on effective communications and engagement practices already used. It also made recommendations about greater clarity over roles, responsibilities and funding. Council tax bills now show the breakdown of costs and explain what services the local taxpayer is supporting. Their content is set out in legislation.

11.0.6 Local authorities are also expected to know what taxpayers think about their services, and the UK government has introduced ‘Best value and duty to involve’. ‘Best value’ is the statutory basis on which councils plan, review and manage their performance in order to meet the needs and expectations of the citizens who use their services. The aim is to deliver continuous improvement in all their services. From 1 April 2009, local authorities and other best value authorities are under a statutory duty to inform, consult and involve representatives of local people. This means engaging with local people over the delivery of public services as standard practice.

11.0.7 In the water industry, information and active involvement of the customer are key to managing future demand and supply successfully. The Welsh Strategic Policy Statement on Water emphasises that the Assembly Government’s approach to citizen-centred delivery puts customers at the heart of delivering water and sewage services. It favours consulting on options for consumer representation, and the potential role a broader national consumer body could pay.

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114 Lyons inquiry into Local Government (2007)
116 Communities and Local Government, Best Value Performance Indicators
Customer views of water and sewerage services in England and Wales

11.1.1 The 2007 CCWater Deliberative Research\(^{117}\) into customer views on fair charging found that customers valued the consistency and utility of their water service. It describes a triangular relationship between the customer, the service they receive, and the supplier of that service. Neither Ofwat nor CCWater were perceived to impact significantly on that triangle. Customers’ primary attitude to water and sewerage services is one of non-reflective trust and reliance – they expect to receive clean, safe water whenever they turn on the tap, but tend to take the consistency and reliability of the service for granted. However, their attitude towards water companies is more complex. The same research for CCWater revealed very little awareness of companies’ overall turnover, coupled with resentment at their perceived high levels of profit.

11.1.2 Research commissioned for PR09 by a group of key stakeholders\(^{118}\), ‘Understanding Customers’ Views (2009)\(^{119}\), sought to quantify customers’ perceptions and acceptance of their companies’ plans for future water and sewerage services, comparing the views of informed and uninformed customers on future services and bill levels. Carried out with the aim of informing companies’ final business plans, other stakeholders and ultimately Ofwat’s final determination of price limits, it found that the majority of both informed and uninformed customers regard the existing price of water and sewerage services as good value for money. In England, just over half of customers judged their company’s proposed Draft Business Plan to represent very or fairly good value for money. In Wales, where no bill increase was proposed, three-quarters of customers thought the plan offered value for money.

11.1.3 In response to its call for evidence, the review team received 35 letters and emails relating to customers’ views of water companies, in particular South West Water. The review team also collected comments in the regional workshops. These responses revealed that there is considerable anger and frustration around high levels of water bills in the South West Water region, but also that there are misconceptions about the reasons for this and the perceived levels of company profits. The South West responses showed that there is a desire for more competition and choice, as customers believe it will deliver cheaper services and exert greater control over spending on water.

CCWater

11.2.1 The consumer body CCWater wanted greater involvement of customers in the PR09 process and beyond, so that the outcomes of PR09 match customers’ priorities and deliver value for money. CCWater is also contributing to Ofwat’s work to refocus the Overall Performance Assessment (OPA) on what customers experience and think.

11.2.2 The OPA formerly included a comprehensive basket of hard measures, such as complaint response times. Ofwat now wants to refocus the incentive mechanism on the quality of the customer’s experience when dealing with their supplier. Ofwat is currently piloting quantitative measures and an experience survey to allow formal introduction of a revised service incentive mechanism for 2010/11.

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\(^{117}\) CCWater (2007) Deliberative research into consumer views on fair charging for the Consumer Council for Water

\(^{118}\) Ofwat, EA, Natural England, DWI, CCWater, Defra, WAG, Water UK

\(^{119}\) Ofwat (2009) Understanding customers’ views, PR09 Quantitative Research into Customers’ Priorities
11.2.3 The two new measures are:

- a quantitative indicator based on the volume of complaints and unwanted contacts; and
- an independent survey to evaluate the quality of service experienced by customers having direct contact with the company.\(^{120}\)

CCWater supports this general direction but would like to see broader satisfaction research carried out by companies and Ofwat to measure and track broader customer perceptions of the company. In CCWater’s view, the regulatory system should mimic as far as possible the workings of a competitive market.

11.2.4 There is currently a positive or negative financial incentive linked to the OPA (ranging from +0.5 per cent per annum to -1 per cent per annum of turnover). CCWater would like to see this percentage range increased. Ofwat will publish proposals for the new incentive mechanism alongside its draft determinations in July.

11.2.5 The review team’s view is that as companies are monopoly providers to household customers, the regulatory regime should include measures on customer experience in the Overall Performance Assessment which have a real and visible effect on companies and thus incentivise better handling of customers. It would welcome views on this recommendation and what the specific measure or measures should be to achieve this. The review team also recommends that Ofwat should publish an annual analysis of companies’ responsiveness to their customers.

Companies

11.3.1 Companies have varying approaches to working with their customers. Ofwat set out its expectations regarding understanding customers’ preferences for the Strategic Direction Statements, which companies were required to deliver in 2007.\(^{121}\) It expected companies to consult with their customers and with CCWater, and to show that their strategy was supported by stakeholders and grounded in customer priorities. Companies were also asked to carry out their own research with input from CCWater, and to consult customers on their draft Water Resources Management Plans and draft Business Plans. There were some responses from customers but these were relatively few. Customers are not represented on company boards, apart from board members with specific responsibility for customer services. However, the water company charitable trusts do have customer representatives, including CCWater committee members.

11.3.2 There is a risk that monopoly companies do not have enough appetite for greater customer engagement, since customers cannot go elsewhere for their water. The review team has nonetheless seen some examples of good practice, for example, Thames Water’s deliberative consultation on affordability, competition and its proposed social tariff. Companies should consider further how they can engage with customers in this way.

11.3.3 Responses to the call for evidence suggest that companies can find it difficult to target some of their customers, primarily those renting, because of a lack of knowledge about their customer base. Some companies have carried out segmentation of customers, particularly in relation to bad debt, in an attempt to manage debt better, but the review team is not aware of any water company using segmentation data available from commercial organisations to improve their operation in other areas such as consumer engagement.

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\(^{120}\) Ofwat RD 04/08

\(^{121}\) Ofwat (2007) Letter to managing directors of water companies, MD 223
11.3.4 As monopoly companies, it is necessary for water companies to make a conscious effort to engage their customers. The regulatory system needs to have incentives in place for companies to do this, which may include the UK Government or Assembly Ministers requiring companies to take specific measures.

**Ofwat**

11.4.1 The 2009 Consumer Focus ‘Rating Regulators’ report\(^ {122}\) found signs of improved customer engagement from Ofwat in the current price reviews. It noted that while Ofwat performed well against some of Consumer Focus’ assessment criteria, including its consumer-focused language, it could improve by implementing a strategy to embed a consumer focus throughout the organisation. The report also highlighted as best practice Ofcom’s auditing of the way that it takes customer interests into account in decision making, using the Communications Consumer Panel’s Consumer Interest Toolkit.

11.4.2 Consumer Focus underlined in its report that Ofwat falls outside the scope of the Regulatory Enforcement and Sanctions (RES) Act. This Act gives other regulators powers to require companies to provide refunds to customers for any financial detriment they have suffered as a result of non-compliance with statutory and regulatory requirements. Ofwat’s current regime, set out in its recently published approach to enforcement, has been successful in practice. It appears to be fit for purpose and allows more latitude than a parallel or replacement RES Act would provide. However, Ofwat is only able to penalise a company for activity that has occurred during the previous 12 months, even if non-compliance has been happening for a longer period. By contrast, the Office of Rail Regulation can penalise a company for activity during the previous two years. Consumer Focus suggests that a five-year period in the water sector would be appropriate, to accord with the price review process.

11.4.3 The review team recommends that the 12-month limitation, within which Ofwat must pursue breaches and penalise companies, is extended to 5 years.

**Improving information to customers**

11.5.1 The CCWater tracking survey 2008\(^ {123}\) found that customer awareness about certain aspects of water and sewerage service provision is often low. For example, only 40 per cent of respondents stated that they were aware they could be entitled to compensation if their water or sewerage company failed to meet certain standards. While 86 per cent agreed that their bills were clear and understandable, only 7 per cent were aware of the WaterSure tariff.

11.5.2 Recognising that it should improve its accessibility to non-experts, Ofwat has launched a new initiative to address this, known as ‘Project Explain’. It has also redesigned its website and produces factsheets, FAQs and the H2OOfwat newsletter. The Consumer Focus report on regulators found that Ofwat has become more transparent in recent years, although it noted that its approach to working in a devolved setting could be improved, in particular by providing Welsh language information on its website.

11.5.3 As well as Ofwat and CCWater, companies also have a significant role to play in communicating information about their services to customers, as they are the major point of contact with households.

\(^ {122}\) Consumer Focus (2009), Rating Regulators
\(^ {123}\) CCWater (2008) Annual tracking survey final report
11.5.4 Company draft business plans are publicly available and put out for consultation; these demonstrate what is driving the changes in bills. They show the financing costs of the company, the costs of environmental improvements, service level improvements, issues around drinking water quality and security of supply, and efficiency savings over the following 5 year period.

11.5.5 The primary contact between water companies and their customers is through the water bill. The costs of meter provision, sewage treatment, and billing, improvements in services, capital, highways drainage and bad debt are not made explicit in bills, but can be discovered through active research. However, only a minority of customers is likely to undertake such research or get involved in commenting on draft plans.

11.5.6 There is a need for more and much clearer information to customers so that they understand what they are being asked to pay for and why. The water industry should work to increase customer awareness of their own rights and responsibilities with the aim of helping to empower the customer. The partnership between the company and customer should be strengthened, so that companies work together with customers and customer representatives on issues and long term developments. Companies should demonstrate that they consult with customers and are responsive to customers’ views.

11.5.7 At a minimum companies and regulators should be under an obligation to:

- ensure that customers know what they are paying for, and why – so clear, meaningful descriptions of services are needed;
- ensure that customer queries and complaints are dealt with effectively and efficiently;
- ensure that consumer preferences inform, where possible, future plans (possibly by participatory budgeting); and
- ensure that information is presented to consumers in the way they want, not the way the companies want.

11.5.8 The review team recommends that companies should consider whether best practice in some other companies or other sectors, such as ‘meet the manager’ sessions or going out into the community with local councillors and community representatives, could help them engage better with their customers. Companies should strengthen their work to find out how their customers want to access the information they require, and use those channels in future.

### Information on bills

11.6.1 Certain statutory and licence requirements govern the information provided with bills, and CCWater and Ofwat also request that contact details and information about services for the elderly and disabled are included. Promoting the free meter option and the WaterSure tariff is not laid down in statute but government and regulators expect companies to promote these on the bill. The ‘revenue and debt collection’ and ‘information to customers’ elements of the OPA assess clarity and availability of information sent to customers on and with their bills, and that sent in other forms. Most water and sewerage customers receive annual or six-monthly bills, which can then be paid at a variety of frequencies, the most common being in 10 instalments, as with council tax. An example measured bill from Thames Water is included at Annex H Figure 37.
11.6.2 Companies often include bill inserts with water efficiency and metering information, and many have online guides to water supply and efficiency, environmental aspects, bills and charges. However, not all customers have functional literacy or have access to a computer, and evidence suggests that bill inserts are often disregarded and simply add to postage costs.

11.6.3 CCWater and its predecessor body WaterVoice produced good-practice guidelines on bill design and layout in 2005 and CCWater has published a bill information and design checklist. Companies should continue to follow good practice and consider other methods of communicating with their harder-to-reach customers.

Comparison with billing in other utilities and council tax

11.7.1 EDF Energy was one of the first energy companies to include energy consumption comparisons and energy efficiency advice on its customer bills. Other energy companies have now followed suit and there are certain statutory requirements on bill contents. Information given on bills includes user-specific information about average daily gas or electricity use compared to the previous quarter and to the same quarter the previous year. It also gives energy saving advice. See Annex H, Figures 38 and 39 for examples of the information included.

11.7.2 The contents of council tax demand notices are set out in legislation. A council tax demand notice must, among other matters, identify the dwelling to which it relates, specify the valuation band applicable to the dwelling and explain how the amount owing has been calculated. It must include information on the amount of council tax for the relevant year calculated by the billing authority for itself and by each major precepting authority (such as fire authority), and the total amount of council tax. Billing authorities must also include information about the annual percentage changes in council tax compared with the previous year; and explain the circumstances in which people might be entitled to Council Tax Benefit and other discounts.

11.7.3 A recent Communities and Local Government consultation looked at including efficiency information on council tax bills – now a requirement for billing in 2009/10. Annex B of their consultation response contains a mock bill layout and suggestions for an explanatory leaflet accompanying the bill.

Water and sewerage bills

11.8.1 In the interests of transparency, customers should be made aware what proportion of their annual bill is spent on their water company’s operating costs, including bad debt and financing costs. In their response to the call for evidence, CCWater suggested that transparency of bills would be improved if companies showed surface water and highways drainage costs separately on their bills. As discussed in Chapter 7, many customers are not aware that they are paying for highways drainage, or how much they are paying. This information could encourage customers to consider reducing their bill by introducing more sustainable forms of surface water drainage.
11.8.2 The following list shows the review’s suggestions for information to customers for inclusion on bills or communicating through other means. These are intended to improve customers’ awareness of the service they pay for and receive, including the cost of the separate elements of the bill, incentivise efficient use of water and explain options such as tariffs or other assistance which is available. They are as follows:

- information about actual water consumption for metered customers and comparisons with previous bills and other similar households, to incentivise efficient use;
- bill components broken down by category, such as: surface water, highways drainage, sewerage, cost of support to vulnerable customers, cost of CCWater, cost of bad debt;
- information about environmental costs and outcomes of environmental investment;
- choice of tariffs;
- availability of assistance and eligibility for WaterSure;
- water efficiency information – see Annex H Figure 40 for an example from the Folkestone and Dover smart billing trial;
- information about the company, and its performance compared to other companies;
- information about Ofwat and other bodies; and
- guidance on where to find further information

11.8.3 The review team considers that water customers should be given more information on their bills. Building on best practice in some water, energy and council tax bills, it recommends water bills include the information set out in the above paragraph. It would welcome views on this recommendation.

Websites

11.9.1 All water and sewerage companies have websites containing information about the water and/or sewerage services they provide, their bills, how to pay and how to contact the company. Some websites are particularly informative and easy to use, such as Yorkshire Water. However, respondents to the call for evidence and contributors to our workshops have expressed concern about essential information being potentially denied to vulnerable people if it is accessible only through a website. Lord Carter’s proposed universal access to broadband by 2012, as set out in the ‘Digital Britain’ report128, recognises the importance of internet access and highlights that not all households currently have easy access to it.

11.9.2 In addition to web-based information, some water companies provide information about the WaterSure tariff or Water Direct, for example, through other avenues, such as GPs’ surgeries and through Citizens Advice Bureau.

11.9.3 The review team supports this and recommends that companies assess and improve their communications with harder-to-reach customers to ensure that essential information is available to all, and that Ofwat reports on this activity.

Active public participation including participatory budgeting

11.10.1 PR09 is the first price review with independent customer representation from CCWater, although previously WaterVoice and the regional customer service committees represented consumers’ views. CCWater represents customers in quadripartite discussions with companies as they develop their plans and comments to Ofwat.

128 Digital Britain (Interim Report), BERR and DCMS, January 2009
11.10.2 The regulatory systems for water in the US and Canada differ from the UK, as discussed in *Constructive engagement and negotiated settlements – a prospect in the England and Wales water sector?*\textsuperscript{129}. In these systems, utilities and customer representatives negotiate settlements between themselves, which are then subject to approval by the regulatory commission. The Cave Review\textsuperscript{130} recommended that any changes to the non-domestic threshold and any extension of retail competition to domestic customers should be accompanied by negotiated settlements, initially to determine retail quality and service standards in a way that reflects local priorities. These would have a potential weight in price limits of plus or minus three per cent of turnover. Under the Cave Review recommendations, it would be for CCWater, together with other stakeholders, to negotiate the size of the settlement and the service and quality improvements to be delivered, and for Ofwat to be responsible for agreeing and incorporating the results of negotiations in price limits. The Cave Review recommends that such an approach should evolve over time. The All Party Parliamentary Water Group\textsuperscript{131} stated in its 2008 report, *The Future of the UK Water Sector*,\textsuperscript{132} that it would like to explore such approaches in the UK, including the possibility of a potential role for CCWater in representing customer interests in this way. CCWater have also indicated that they would like to see better involvement of customers along these lines.

11.10.3 Participatory budgeting (PB), giving people a direct say in how part of a public budget is spent, has been used in over 300 cities around the world. In England, PB is being used by a range of public agencies on various types of budgets, including area-based grant pots, local government budgets, and a set of pilots on community policing funded by the Home Office. The Participatory Budgeting Unit, a charitable organisation, is funded by the Department for Communities and Local Government (CLG) as the key delivery partner to help promote and deliver PB. CLG commissioned the first national, comparative evaluation of a number of PB projects in England into the costs and benefits of PB; the aim is to help promote good practice and provide guidance tools – to be completed by the end of 2009.\textsuperscript{133} This study should provide evidence on the potential scope and effectiveness of participatory budgeting.

11.10.4 The review team recommends that a participatory budgeting approach is explored further and welcomes views on the viability of such an approach for the England and Wales water sector.

**Emerging recommendations**

11.11.1 The review team recommends that as companies are monopoly providers to household customers, the regulatory regime should include measures on customer experience in the Overall Performance Assessment which have a real and visible effect on companies and thus incentivise better handling of customers. It would welcome views on this recommendation and what the specific measure or measures should be to achieve this.

11.11.2 The review team recommends that Ofwat should publish an annual analysis of companies’ responsiveness to their customers.

11.11.3 The review team recommends that the 12 month limit within which Ofwat must pursue breaches and penalise companies is extended to 5 years.

\textsuperscript{129} Littlechild (2008) Constructive engagements and negotiated settlements – a prospect in the England and Wales water sector?
\textsuperscript{130} Independent Review of Competition and Innovation in Water Markets, Professor Martin Cave, April 2009
\textsuperscript{133} Participatory Budgeting Unit (2009)
11.11.4 The review team considers that water customers should be given more information on their bills. Building on best practice in some water, energy and council tax bills, it recommends water bills include the information set out in paragraph 11.8.2. It would welcome views on this recommendation.

11.11.5 The review team recommends that companies should consider whether best practice in some other companies or other sectors could help them engage better with their customers, such as ‘meet the manager’ sessions or going out into the community with local councillors and community representatives. Companies should strengthen their work to find out how their customers want to access the information they require, and use those channels in future. Companies should assess the effectiveness of their communication methods, particularly with their harder to reach and vulnerable customers, on a regular basis, and Ofwat should report on this activity.

11.11.6 The review team welcomes further comments on the development of a UK model for a participatory budget approach by Ofwat and CCWater. This would have the aim of achieving better and earlier involvement of customers by companies in the formulation of company plans and proposals.
Annex A – Terms of Reference

The terms of reference for the Review are:

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 B – Water Company Operating Areas

Water and Sewerage Companies
- 15 - Anglian Water
- 16 - Dŵr 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
- 7 - Folkestone and Dover Water
- 8 - Hartlepool Water (Anglian Water)
- 9 - South East Water (Mid Kent)
- 10 - Three Valleys Water
- 11 - Portsmouth Water
- 12 - South Staffordshire Water
- 13 - Sutton and East Surrey Water
- 14 - Tendring Hundred Water

Source: Water UK
**Annex C – Water Company Customer Data**

**Table 8: Number of household customers per company operating area 2007/08**

<table>
<thead>
<tr>
<th>Water company</th>
<th>Total number of customers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WASC</strong></td>
<td></td>
</tr>
<tr>
<td>Anglian</td>
<td>1,842,778</td>
</tr>
<tr>
<td>Dŵr Cymru</td>
<td>1,201,724</td>
</tr>
<tr>
<td>Northumbrian</td>
<td>1,755,460</td>
</tr>
<tr>
<td>Severn Trent</td>
<td>3,075,509</td>
</tr>
<tr>
<td>South West</td>
<td>674,364</td>
</tr>
<tr>
<td>Southern</td>
<td>945,038</td>
</tr>
<tr>
<td>Thames</td>
<td>3,231,720</td>
</tr>
<tr>
<td>United Utilities</td>
<td>2,783,399</td>
</tr>
<tr>
<td>Wessex</td>
<td>498,983</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>1,920,975</td>
</tr>
<tr>
<td><strong>WOC</strong></td>
<td></td>
</tr>
<tr>
<td>Bournemouth &amp; West Hampshire</td>
<td>175,230</td>
</tr>
<tr>
<td>Bristol</td>
<td>448,384</td>
</tr>
<tr>
<td>Cambridge</td>
<td>113,919</td>
</tr>
<tr>
<td>Dee Valley</td>
<td>107,620</td>
</tr>
<tr>
<td>Folkestone</td>
<td>66,979</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>274,312</td>
</tr>
<tr>
<td>South East Water</td>
<td>773,624</td>
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<tr>
<td>South Staffs</td>
<td>503,811</td>
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<tr>
<td>Sutton &amp; East Surrey</td>
<td>250,615</td>
</tr>
<tr>
<td>Tendring Hundred</td>
<td>66,422</td>
</tr>
<tr>
<td>Three Valleys/North Surrey</td>
<td>1,179,226</td>
</tr>
<tr>
<td><strong>Industry total:</strong></td>
<td>~ 22 million</td>
</tr>
</tbody>
</table>

Source: Ofwat
Annex D – Summary of Call for Evidence Responses

Respondents:

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

There were also 37 gratefully received responses from individuals and 3 MPs; all from the South West.
Fairness

Respondents were asked what they would expect in a “fair” charging system and to justify their comments. Almost all respondents agreed on two points: firstly, that a fair system entails customers paying for the water they consume with vulnerable customer protections in place, secondly, that costs should reflect the cost to companies of providing the service to customers and these costs should be communicated transparently and take into account ability and willingness to pay. The water companies and their industry representative voiced concerns that if costs were truly reflective then they would be extremely complex and confusing for customers to understand which ultimately would disengage many of their customer bases. CCWater highlighted some research they had carried out in 2007 (Severn Trent and South East Water also referred to this) concerning customer attitudes. The results in terms of fairness showed that 48 per cent of those surveyed thought that the rural-urban cross-subsidy was reasonable, although 32 per cent thought it unreasonable, 42 per cent thought that the current RV system was reasonable and that 69 per cent thought it reasonable to increase bills by £1 to help vulnerable customers but this figure dropped rapidly to 39 per cent for a rise of £2, 9 per cent for a rise of £5 and only 3 per cent for a £10 rise. Ofwat noted that from their research customers have no desire to see further cross-subsidies and certainly no cross-subsidies between customer areas. CCWater went on to say that new water resources should not burden existing customers and that developers should pay for these through the Community Infrastructure Levy. The EA suggested that some geographical averaging across company boundaries could inject more fairness into the system. Northumbrian Water still thinks that a pure RV system is the fairest charging form; it includes cross-subsidies for affordability naturally within the mechanism, but did concede that it doesn’t include any incentives to reduce demand and wastage.

The review team went on to ask what characteristics of the consumer were important for consideration when designing a fair system. Many of the respondents stated that affordability was an issue and needs to be dealt with by government through the tax and benefits system using income as a proxy. Water UK thinks that customers’ usage patterns and payment reliability were the most important characteristics, whereas Waterwise thinks that a fair system would reflect the true value of water, include geographical de-averaging and be charged either at the point of abstraction or point of retail. Water UK however thinks that the issue of geographical de-averaging requires more debate on an industry wide scale. Southern Water wanted to add that the ability to disconnect for persistent non-payment would be useful.

Respondents were then asked what alternatives to volumetric charging are the fairest in places where metering is not possible. CAB, ICE and Northumbrian Water think that charges could be based on similar households that are metered in the immediate vicinity. Many other respondents stated that the charges should be based upon occupancy levels in households, either using bedrooms or bathrooms as a proxy. The EA and the Energy Savings Trust thought the fairest way was to have a bulk meter and then individual assessed charges for households.

Affordability

The review team asked respondents what the definition of affordability should be and to explain their thinking. The CAB and Water UK thought that a standardised definition, such as the 3 per cent of weekly household income indicator, would be useful for a baseline. Many of the respondents agreed, albeit tenuously, that the established 3 per cent indicator is useful and fair especially as the indicator for fuel poverty was 10 per cent at roughly 3 times higher which reflects the bills. South West Water and Southern Water disagreed with this saying that the threshold should be higher than 3 per cent due to the fact that it doesn’t take into account that two services are provided, namely water provision and sewerage services. Southern Water went further in saying that they thought the indicator should be more like 10 per cent to reflect 5 per cent for each service. WRc and
Northumbrian Water think that there should be more research carried out in this area to determine essential use costs and then use this as a baseline for future monitoring. CCWater added that they thought Ofwat’s definition of affordability was inadequate and only mentions ease of payments and that any indicator of costs should remove housing costs firsts to account for geographical variations. Respondents were then asked to provide evidence on who were the customers who struggle to afford their bills and to provide any evidence they have. Most respondents mentioned the Equifax research for UKWIR in 2006 which stated that the debtors were likely to be short-term tenants and single females aged between 35 to 45 years old. CAB and CCWater took a different approach by using the 3 per cent baseline as an indicator of affordability. They submitted evidence that 12 per cent of all customers in England and Wales pay more than 3 per cent of their weekly income, however more that 40 per cent of low income earners spend more than 3 per cent of the weekly income on water. In Wales, this figure is more like 22 per cent pay more than 3 per cent showing that in England and Wales it is the poorest who are paying proportionally more for their water and likely to be struggling. United Utilities submitted evidence from their operating area stating that from their research 25 per cent of their customers are defined as ‘hard-pressed’ under the ACORN classification system. This 25 per cent of customers make up 56 per cent of their debtors and hold 63 per cent of all the debt demonstrating that in the United Utilities area there is a strong correlation between deprivation and debt. Some respondents, including Water UK, highlighted to the review team the Government’s definition of potential vulnerable groups:

- Older people;
- Younger people;
- Unemployed;
- Those with a limiting, longstanding illness;
- Low income households;
- Ethnic minorities; and
- Those with no formal education.

The CAB went on to say that customers on benefits are already paying more than 3 per cent of their weekly income. If a customer is claiming only jobseekers allowance, they could be paying as much as 16 per cent of their weekly income and those on low incomes in the South West are likely to be paying as much as over 5 per cent of their income. CCWater, Northumbrian Water and South West Water all submitted evidence of customers’ attitudes and highlighted that unsurprisingly the customers that were surveyed who thought water bills were unaffordable were most likely to be on low incomes or benefits. CCWater went on to say that many of these customers could potentially benefit from requesting a measured charge and cutting down on water wastage. Northumbrian Water and Southern Water pointed out that it is difficult for companies to identify these vulnerable customers due to the difficulties of collecting data on their customers.

Current charging system

Respondents were asked whether the current charging system was fair and effective and to supply any evidence they have. Almost all respondents noted that as metering increases in penetration the charging system is becoming more and more unfair as cross-subsidies that were included in the RV system are starting to unravel and those left on a measured charge are starting to pay disproportionately more. Northumbrian Water however pointed out that the charging system may not be fair, but it is effective. United Utilities stated that the infrastructure costs and surface area drainage charges are fair and don’t need changing. Yorkshire Water thinks that the RV charge should be replaced with an assessed charge as soon as possible to rebalance the system. South West Water said that they would like to be able to install a meter where they think a customer would benefit.
The Energy Savings Trust highlighted a paper from the Joseph Rowntree Foundation that states that charging in the UK is more regressive and burdensome on the poor than any other country surveyed. Ofwat and some companies stated that the current system does nothing to encourage water efficiency.

Respondents were then asked what alternatives there are to the current charging system and what are the costs and benefits of these alternatives. Most of the respondents to this question answered that customers paying for the water that they use is the fairest charging system, however Severn Trent noted that moving towards universal metering too quickly would impose an unnecessary burden upon customers, potentially adding £30 to bills. Many respondents, including CCWater and Water UK, noted that if assessed charges were based on occupancy, property types or council tax bands, each system would create winners and losers. Severn Trent and WRc stated that council tax bands and local government taxation mechanisms should be avoided as neither encourages water efficiency. Waterwise thinks that the Water Service Factor should be used which bases charges upon floor space, parking areas or garden size. The Energy Savings Trust and WRc added that smart metering may be able to introduce more fairness back into the system by developing a more reactive and intelligent charging system.

Respondents were then asked if there were fairer and more effective charging systems in other countries in the EU. CCWater noted that in Scotland customers pay through council tax collections and customers who are on assessed automatically get a 25 per cent discount. South West Water and Waterwise stated that most of Europe is run on a metered basis with innovative tariffs, Severn Trent submitted that Barcelona has a rising block tariff but said that this could penalise large families with high essential use. They added that Flanders, Brussels, Greece, Spain and Portugal all have some form of rising block tariff.

**Metering**

Respondents were first asked what the costs of installing a meter are and how these could be reduced. The majority of respondents agreed that if metering was rolled out universally the costs would be significantly reduced due to the economies of scale. However specific company area costs differed greatly:

<table>
<thead>
<tr>
<th>Water company/organisation</th>
<th>Internal meter installation</th>
<th>External meter installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severn Trent</td>
<td>£120</td>
<td>£240</td>
</tr>
<tr>
<td>South West Water</td>
<td>£130 (excluding fixtures)</td>
<td>Averaged - £170</td>
</tr>
<tr>
<td>Southern Water</td>
<td>Averaged – £170</td>
<td></td>
</tr>
<tr>
<td>Sutton &amp; East Surrey</td>
<td>£400</td>
<td>Soft dig – £250, hard dig – £350</td>
</tr>
<tr>
<td>Yorkshire Water</td>
<td>£172.86</td>
<td></td>
</tr>
</tbody>
</table>

Companies did agree that these costs could be reduced by about 10 per cent if meter installation was compulsory. Respondents were then asked to submit evidence on the costs of meter reading and maintenance. Again the majority of respondents including water companies, the Environment Agency and the Energy Savings Trust stated that Automatic Meter Reading (AMR) would significantly reduce costs in the long run. Northumbrian Water and South West Water estimated reading costs at £1 per year and maintenance at approximately £28 per hour for their technicians, whereas Southern Water estimated £2.40 per meter per year as opposed to Sutton and East Surrey Water who estimated costs at £4 per meter per year. Severn Trent estimated that in total metered customers currently cost them and extra £10 per year; however this would reduce significantly if there was...
universal metering in their area. When asked what the benefits of metering were in a water stressed area respondents were in unanimous agreement that if demand could be reduced and therefore offset the necessity for developing new supply resources then customers bills could be greatly reduced. The Environment Agency, Ofwat and some of the water companies stated that the only effective way to manage a resource is to measure its consumption. Other noted benefits included that metering would unearth the true extent of leakage and aid in better targeting of leakage reduction work. Reducing demand would also mean a reduction in energy expenditure and chemical usage on treating water. Information that metering would provide could be successfully deployed to better target efficiency measures and campaigns at customers that could do more to reduce their consumption patterns. CCWater wanted to clearly state that there is little evidence at present, the results of the Folkestone & Dover trial would inform the debate as at present much evidence is based upon optants which had more than likely intended to reduce their consumption anyway. In non-water stressed areas however, some respondents stated that there may still be a strong case for metering but that cost benefit analyses must be robust. Ofwat believes that metering in any area would widen the scope for competition.

When respondents were asked what the appropriate pace for rolling out metering was many of the respondents (including Ofwat and CCWater) primarily stated that demand reduction would actually lead to bills rising as companies would still need to recoup their costs somehow. Both CCWater and Waterwise agreed that the Environment Agency’s desire to see roll-out of metering in water stressed areas would not be realised by 2015-2020 as the present pace would not deliver that. Southern Water noted that in surveys 75 per cent of their customers were in favour of universal metering, whereas CCWater thinks that a Metering Implementation Strategy Group, headed up by a water minister, should be created to manage the transition to universal metering rather than rely on individual Water Resource Management Plans. The Environment Agency is clear that they think the company who is most cost efficient and effective at meter penetration should be acclaimed as the target for all other companies regardless of geography. Northumbrian Water noted that although they are not required to move to universal metering, they think that in terms of fairness and the wider benefits in the long term of metering outweigh any financial uncertainties. When asked whether there was a need for a national policy on metering, Waterwise was very clear that some form of nationally coordinated metering policy was essential to comply with sections of the EU Water Framework Directive. Not unsurprisingly, almost all the water companies were clear that demographic and geographic differences meant that a blanket policy would not work. The Environment Agency and Ofwat agreed that the uncoordinated metering policies at present were ultimately driving up avoidable costs for customers and meant that without universal metering companies were less flexible to react to potential mitigations for climate change scenarios.

Respondents were asked to submit any evidence they have that metering actually reduces household demand, almost all respondents cited the WWF/Herrington paper (2007) and the House of Lords paper (2005) which estimates that metered customer reduce their consumption on average by 10-15 per cent. Although some respondents pointed out the potential for ‘bounce-back’, the Environment Agency cited international examples and long-term studies from the Isle of Wight to demonstrate that metered customers maintain a reduced consumption pattern. However Northumbrian Water pointed out that to use per capita consumption figures assumes that you have an accurate idea of consumption prior to measuring. They went on to say that it could be that the data is now more accurate and was being overstated previously.
The review team asked respondents to provide any parallels or lessons to be learnt from other utilities that were transferable to water. The Citizens Advice Bureau, Environment Agency and various water companies stated that we should move over to smart meters as soon as possible, combine with installation programmes that energy companies are running to install smart meters by 2020 and ensure that water and energy meters are compatible to reduce customer costs. The Energy Savings Trust submitted that the roll-out programme in energy had cost approximately £5 billion and as the majority of the costs are for installation that this would be the likely cost for the water industry as well. Southern Water is in favour of prepayment meters for water and believes that these have enabled energy companies to better identify vulnerable customers. Northumbrian Water, however, stated that the clearest lesson was to define who owned the meter and who is responsible for its maintenance for when competition was introduced and that meter readings should not be allowed to be contested. CCWater pointed out that the fact that there is also an extensive energy saving programme in motion suggests that metering and tariffs alone cannot incentivise customers to reduce demand.

When asked what the practical difficulties would be with metering certain properties and how these could be overcome, some of the water companies submitted that they had estimated between 7 – 10 per cent of households in their area would present a problem when installing a meter; whether this was due to mixed usage blocks of flats (household and commercial), shared communication pipes or that those pipes have been built over since the time they were originally installed. South West Water also thinks that some properties will be impossible to meter no matter what, whereas most other water companies agreed that given the funds all properties could be metered. Northumbrian Water noted that many properties have their communication pipes close to the original wall which have then had extensions built over them, or the pipes run down the back of shared gardens presenting access problems. They suggested that new communication mains pipes could be constructed down the centre of roads which would futureproof ongoing activities and effectively reduce leakage, although would be relatively expensive in the short-term. Yorkshire Water and Severn Trent Water agreed that some headway needed to be made on pipe separation. The review team then wanted to extend this thinking by asking how the principles of fairness were affected if certain properties remained unmetered due to those difficulties stated above. Most of the respondents to this question were in favour of charging blocks of flats communally, citing the benefits as a shared ownership of the resource would reduce overall demand and allow residents to identify and mitigate leaks more rapidly and share the risks, but all respondents were concerned about how vulnerable customers would be protected in these cases. South West Water was clear that it was more in favour of assessed charges for flats rather than block charging as they’ve had problems in the past with collecting revenue and that in their experience residents thought the system unfair.

Respondents were then asked to illustrate the benefits and costs of smart meters over dumb meters, whether if there was a case for smart meters when we should roll them out and how coordinated the approach should be with other utilities. Almost all of the respondents agreed that if there is a momentum to move towards smart meters that the energy and water utilities should coordinate their activities to reduce disruption for customers, combine display screens and meter units to conserve space and ease of understanding and would highlight the links between energy use and water consumption (especially hot water). The water companies agreed that smart meters would produce more accurate billing information, as a proportion of bad debt stems from billing errors and disputes, this would reduce bad debt and therefore, ultimately, all customers’ bills. They also agreed that any type of AMR would reduce billing costs and could be passed onto customers in reduced bills. The Environment Agency and Severn Trent Water pointed out that smart meters would allow for additional and innovative tariff solutions that could incentivise demand reduction, more detailed consumption data, leakage identification and social tariffs. However, CCWater and the Energy
Savings Trust stated that until there are robust results from the Intelligent Metering Initiative (IMI) there still isn’t a strong enough case for smart meters. The review team went on to ask what evidence there was on the costs and benefits of different types of smart meters. Both the Environment Agency and Southern Water agreed that the benefits of smart metering outweighed the costs and that if rolled out in bulk there would be significant economies of scale. They went on to say that the benefits of smart metering included the potential to reduce household and company energy consumption, reduce water demand, reduce emissions and other social and environmental benefits. South East Water expanded on the types of smart meters and their relative benefits, there are those that can be read by walking past them, drive by reads and fixed network reads that automatically send information via the internet. Essentially, the most technological meters have the highest initial costs, but the reductions in reading costs may over their lifetime prove more economical, but the results of the Intelligent Metering Initiative would give clearer signals on this.

Finally, respondents were asked if there was a need to make primary or secondary changes to legislation to facilitate the needs for metering. A broad spectrum of respondents agreed that companies outside of the water stressed areas should be allowed to compulsorily meter as well and that all discretionary use should be immediately compulsorily metered with no restrictions. South West Water believes that once a certain level of meter penetration has been achieved, then compulsory metering of the final percentage should be permitted and that the company should have discretionary powers to meter people in chronic debt that they believe they could save money by metering them. Southern Water wants the powers to install prepayment meters as a budgeting tool for optants and to be allowed to install trickle-flow meters for persistent ‘won’t pays’. Severn Trent pointed out that at present there are conflicting objectives from the Environment Agency and Ofwat in terms of metering and that the outcome may result in an unreliability of supply to customers, which is unacceptable. South East Water noted that companies should be decreed to be the owners of all supply pipes up to the wall of properties to reduce uncertainty in leakage disputes and allow companies to be more effective in dealing with leakage. The Environment Agency wanted all barriers to smart metering removed immediately to allow for their propagation in the future.

**Tariffs**

Respondents were asked whether metering was essential for tariffs, if not what are those tariffs. Most respondents stated that they think it difficult to design innovative and intelligent tariffs without knowing what the consumption patterns of their customers are. Some respondents thought that without metering you limit the options available to you. The Environment Agency submitted that passport and social tariffs don’t require meters, they went on to note the 3 types of social tariff, but that if you do use these tariffs in conjunction with volumetric usage you can satisfy both affordability and demand reduction targets:

- Anglian and South East Water run a large user tariff, high standing charge and low volumetric use;
- The Vulnerable Groups regulations which cap the bill for entitled customers; and
- Wessex Water’s Assist Tariff which has a low fixed annual payment.

However CCWater pointed out that surveyed customers have no desire to see more social tariffs introduced. The EA also noted that there is a Time Variable Tariff which requires a smart meter to record seasonal or daily patterns, which can be very effective at reducing demand during peak times. The EA and EAGA also said that rising block tariffs were very effective at reducing demand and can be used in conjunction with passport tariffs but do require a meter.
The review team then asked if there were additional ways to reduce demand using tariffs. Almost all respondents noted that much will depend on the results of current tariff trials going on in Folkestone and Dover Water, Wessex Water and South East Water operating areas before conclusions can be made. Many respondents went on to point out Herrington’s paper in 2007 that showed potential reduction in demand by 10 – 14 per cent from incremental block tariffs, Wessex Water however stated that this would most likely level out at around 9 per cent, but possibly with an additional 5 per cent from seasonal or peak tariffs.

The review team then asked which tariff was the most effective at reducing demand. Most respondents stated that on balance, incremental block tariffs (IBTs) (commonly called rising block tariffs) were the most effective, but did point out that the company must know their customers very well to be effective. Northumbrian Water disagreed, stating that you based tariffs on the potential response of customers and were not necessarily effective at influencing behaviour. To influence behaviour they went on to say, that is done through regulation, education and affordability measures. Most respondents agreed that it is very difficult to satisfy all objectives through tariffs; the water companies went on to say that this is the reason that there should not be blanket tariffs and that each company should decide what is most effective for their customers. Many respondents, including the EA, agreed that seasonal and peak demand tariffs are very effective at reducing demand when combined with the correct price signals.

Respondents were then asked about alternative tariffs, who were the winners and losers and what evidence they had to support their responses. The EA noted that from their own cost benefit analysis results have shown that tariffs are the most effective way of reducing demand even if only reducing by less than 5 per cent. Severn Trent submitted the following tariffs table:

<table>
<thead>
<tr>
<th>Tariff Description</th>
<th>Effect of Tariff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal tariff</td>
<td>Increases cost reflectivity, by reflecting the cost of providing sufficient capacity to meet summer demand. May assist affordability, by offering a lower average rate for essential use, which does not vary with the season.</td>
</tr>
<tr>
<td>Rising block tariff</td>
<td>May increase cost reflectivity by charging more for high use customers, who use more at peak times. Likely to worsen affordability problems by increasing charges for large families.</td>
</tr>
<tr>
<td>Winter block tariff (Peak rate for summer use above winter use)</td>
<td>Increases cost reflectivity, by reflecting the cost of providing sufficient capacity to meet summer demand. May assist affordability, by offering a lower average rate for essential use, which does not vary with the season.</td>
</tr>
<tr>
<td>Charge cap (cap on charges above a certain level of income)</td>
<td>Addresses affordability issues. Requires information on customer incomes. May not be acceptable to customers if cross-subsidies are significantly increased.</td>
</tr>
</tbody>
</table>

The review team then went on to ask what evidence there was of how high the volumetric charge for water needs to be before demand reductions are seen. Almost all respondents stated that there is very little macro-data on this and that the price limit will change depending on which social group you are aiming at. The EA submitted evidence that the price elasticity needs to be between -0.7 – 0, but pointed out that raising the price too high would result in underinvestment in an industry potentially opening up to competition so needed caution. Results from the EU have suggested that this price elasticity is between -0.1 – -0.2. Northumbrian Water highlighted recent UKWIR research which found that there is no evidence to suggest that price thresholds influence household demand at all. The Energy Savings Group and CCWater went on to say that only the
wealthier customers can self-retrofit new water efficient products and that sourcing these devices with clear labelling is very difficult.

The review team then asked what evidence there was from other sectors such as energy to suggest the most effective ways to reduce demand and altering regulations on efficient products. CCWater stated that as most costs in the water sector are fixed charges it is very difficult to compare with other sectors. The EA pointed out that ‘economy 7’ has been an effective peak demand reducing tariff. The Energy Savings Group stated that efficiency measures are more readily taken up when the cost of energy is high. CCWater and Northumbrian Water agreed that the present labelling system for water devices is inadequate and customers currently still select on aesthetics and price rather than efficiency ratings. Northumbrian Water went on to say that the biggest gain in this area could be a retrofit programme for toilets, as flushing is approximately a quarter or daily usage. They then went on to say that tap inserts and washing machines should follow closely behind.

Water efficiency

Respondents were asked what they thought the most effective future incentives are, excluding the marginal price of water, for incentivising water efficiency. The majority of respondents believe that consumers react positively to education campaigns about the value of water and why it should be saved; as seen during the 2005/06 droughts. Education campaigns on water efficiency need to clarify what the problem is, what action individuals can take and some indication of what others are doing. CCWater added that there needs to be stronger financial incentives to back up the education campaign to reflect the true value of water. CCWater and the Environment Agency went on to say that education campaigns need to focus on water wastage and its links to climate change to make it as socially unacceptable as littering. South East Water said that they were constantly frustrated by Ofwat’s insistence on hard engineering solutions to water efficiency when customers have proven their willingness to reduce demand when water efficiency is promoted as a significant issue. CCWater and Northumbrian Water believe that the current incentives send out perverse signals in terms of water efficiency. EAGA and Southern Water expressed that water efficiency measures should be encouraged by financial reward rather than penalisation. EAGA and the Environment Agency agreed that better communication through clearer information on bills regarding customers’ water consumption, comparing previous quarter usage and against neighbours, and ways of reducing demand gives customers an incentive to self-regulate water consumption. Almost all respondents, including Ofwat and CCWater agreed that regulations surrounding water devices and fittings needs to be revised. Water products and particularly those that use hot water needed better labelling and either restrictions on inefficient products or financial subsidies or VAT reductions on ultra efficient products to incentivise customers to choose them. It must be stated that no respondent thought that demand would be reduced through one single measure, but rather that a coordinated, multifaceted approach would be needed that was underpinned by metering.

The review team then asked how to make low income earners more water efficient except through metering. Most respondents, but particularly water companies wanted to reiterate that metering was the most effective way of reducing water wastage. Again almost all respondents, and in detail from the Environment Agency and Waterwise, stated that there should be a mechanism to make the most water efficient products, particularly hot water devices and fittings, more affordable to customers. Water efficient hot water devices and products would have the added bonus of reducing household energy bills as well which addresses household utility affordability. South East Water went further saying that savings from more efficient hot water use should be widely publicised as many customers are not aware of the link between water efficiency, energy consumption and their utility bills. EAGA and The Energy Savings Trust responded that it might be possible to attract cross-subsidies from energy utilities through their Carbon Emissions Reduction Target (CERT) scheme or that the water industry should have their own efficiency commitment to mimic the Energy
Efficiency Commitment (EEC) duty of the energy companies. EAGA submitted the following estimations of potential household savings:

<table>
<thead>
<tr>
<th>Water</th>
<th>Total (Litres)</th>
<th>21095</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hot Water (Litres)</td>
<td>12656</td>
</tr>
<tr>
<td>Energy</td>
<td>Gas (kWh)</td>
<td>755</td>
</tr>
<tr>
<td></td>
<td>Carbon Dioxide (CO₂) (kg)</td>
<td>145.6</td>
</tr>
<tr>
<td>Financial</td>
<td>Gas Bill</td>
<td>£28.77</td>
</tr>
<tr>
<td></td>
<td>Water Bill</td>
<td>£33.55</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>£62.31</td>
</tr>
</tbody>
</table>

Sutton and East Surrey Water noted that housing associations and local councils should immediately embark on a retrofitting programme on all public housing to reduce bills for low income earners and reduce demand and ultimately emissions. Yorkshire Water calculated that retrofitting the average household could save between seven to ten per cent on bills (approximately £50). Various respondents believe that targeted water audits were effective at reducing demand and improving affordability for low income earners (CCWater and Thames Water) and South West Water set out in detail the success of their WaterCare pilot scheme and suggested that a minimal rise in national bills to fund a nationwide scheme would deliver significant results, calculating that only £1 on each bill nationally could fund WaterCare (approximately 0.3 per cent of total water and sewerage bill). This fund could help 231,100 households per annum, and if combined with WarmFront then additional savings could be made.

The review team went on to ask how high the marginal price of water needed to be before demand was significantly reduced. Northumbrian Water stated that it is difficult to use the marginal price of water to incentivise efficiency as it only affects low income customers at present, whereas South East Water stated that price is the most effective demand control tool. Waterwise believe from international examples that tariffs would need to at least double before water was truly valued by customers.

**Targeting assistance to vulnerable groups**

The review team asked who were the vulnerable customers, how are they defined and how many are there? The CAB pointed out the eligibility criteria for WaterSure states that a vulnerable customer must be on a means tested benefit with either a specified medical condition that requires high water usage or more than 3 children dependent upon them. CAB went on to suggest that if this was to be widened it should include single persons on low incomes in an area with bills that are higher than the national average. Most respondents, including CAB, stated that it is difficult to label customers as vulnerable because their circumstances are changeable, but the best definition is anyone who has difficulty budgeting, isn’t empowered to make decisions to help themselves or those who simply cannot afford their bills. United Utilities added that it should include anyone who intends to pay their bill but can’t. Severn Trent submitted that if the 3 per cent of weekly income indicator was being used, from their research that would mean that 9 per cent of their customer base could be considered vulnerable.

Respondents were then asked to comment on how these groups can be helped with their bills and what the limits were to this extended help. The CAB stated that the current system is on a parallel with 19th Century practices where access to help for struggling customers is seriously restrictive and
help is often in the form of charitable handouts which are essentially administered by companies themselves. The EA stated that any future charging system will need to have cross-subsidies built into it to deal with affordability issues. The CAB and South West Water noted that if the issue of increasing bad debt and the burden of cost on paying customers was solved then potentially £11 could be knocked off bills and help with affordability. The majority of the water companies responded with services they already provide which are effective including: Debt helplines, flexible payment plans, charitable trusts, free water meters, advice on the WaterSure scheme and the third party deduction scheme (WaterDirect). The CAB, EA and EAGA amongst others stated that ensuring that all customers are claiming all the benefits they are entitled to is essential to easing affordability issues for many customers. Many respondents, including CCWater, referred to recent research carried out by CCWater which states that there is little will to fund additional social tariffs (most customers surveyed were in favour of adding £1 to help vulnerable customers, but no more than that) and 48 per cent of surveyed customers thought that all affordability issues should be dealt with by Government. Severn Trent stated that if the 3 per cent of weekly income indicator was used as a threshold for affordability, as has been suggested, then that capping of bills would add more to other customers’ bills than they are willing to pay (more than the £1 that was stated as acceptable). CCWater also stated that they think that Government needs to consider whether it is right to make water customers pay for all future environmental improvements. MIND submitted extensive evidence on the need for companies to keep detailed and up to date records of customers who claim to have mental health issues and that these problems should be taken into account when devising payment plans and contact.

Respondents were then asked to provide evidence on different cost benefit analyses they may have on different approaches to vulnerable customers and especially those that are effective in delivering benefits. The CAB and South West Water both provided evidence to show that WaterCare has proven that if a customer is encouraged to claim all the benefits that they are entitled to it can produce up to £85 for every £1 spent by the water company. Both Northumbrian Water and South East Water made it clear that they think that any system which requires a company to collect data that it is not used to collecting (social data) is going to be extremely expensive, whereas Government systems are already established to collect this and therefore is another contributing factor to why social tariffs and affordability should be dealt with through the benefits system. EAGA provided evidence of the ratios for their cost benefit analyses which produced – Benefits entitlement checks (20:8), tariff checks and audits for unmeasured customers (5:3) and the same for measured customers (1:3). CCWater also noted that in Northern Ireland there is a system whereby water charges are directly linked to income; however this needs co-operation between Government and water companies.

The review team then asked respondents which tariffs are effective at helping vulnerable customers. Many respondents highlighted WaterSure, noting that although it has not been well taken up at present (only 10 per cent take up) it has added around £1-2 per customer, if all eligible customers engaged with WaterSure then it could add anywhere between £10 – 20 per bill. Northumbrian Water submitted that in their area, on average WaterSure has been able to reduce bills by £82. South West Water stated that they think that WaterSure needs to be expanded to include unmeasured customers (bills capped at national average, same as benefits) and those living on disability living allowance should also be eligible. The EA submitted evidence on Anglian Water’s SoLow tariff which is for customers who have very low usage (<75m³ per year) and low income (e.g. pensioners). They have a £0 standing charge and then are charged a volumetric rate of 164.64p/m³ as opposed to a standing charge of £27 and 128.64p/m³ for water. There is a potential saving (if using 70m³ of water per year) of £6.80 per year for water and sewerage.
Respondents were then asked to comment on what options there are available for helping those on low incomes with a high unmeasured charge and what are the costs. The majority of respondents stated that customers should consider whether a meter would be beneficial and to inquire as to whether they would qualify for WaterSure. South West Water went on to say that WaterSure should be widened to include more customers and Yorkshire Water thinks that flexible payment options can help low income customers manage their finances better. CCWater believes that intervention needs to come from Government for affordability concerns and the EA agreed that there should be more use of passport benefits style tariffs. Severn Trent stated that you could cap the bill at a percentage of income, however it would increase bills for other customers who when surveyed have not shown any desire to increase bills for helping vulnerable customers to that extent.

Respondents were then asked to comment on what can be learnt from other utilities in terms of resource efficiency and helping vulnerable customers. There were very few responses to this question, but those that did generally agreed that there should be a form of CERT scheme which would only add around £2 to bills. CCWater went on to say that by highlighting the link between efficiency and hot water, which it can be a double saving on both water and energy bills. EAGA provided evidence concerning the WarmFront scheme clarifying that it was purely for eliminating fuel poverty, not for encouraging efficiency. The scheme has so far cost £1.5 billion and helped 1.36 million households.

The review team then asked what evidence there was of water-related health issues and whether there are any inequalities. CCWater, Severn Trent and United Utilities noted that some measured customers may reduce their water usage to unhealthy levels in order to reduce their bills. However Northumbrian Water thought this unlikely due to the ban on disconnection for non-payment. WRc made the point that reducing the flow through sewerage can cause blockages in the system due to reduced flushing and could become a public health issue.

**Bad debt**

The review team asked respondents to comment firstly on what evidence there was on why bad debt occurred. CCWater pointed out that debt trends within the water industry were not reflected in other utilities and that debt write-off was considerably higher. United Utilities highlighted UKWIR research in 2003 that showed debt in the water industry to be increasing at twice the rate of the energy sector. Most respondents, including CCWater, agreed that the driver for the large rise in bad debt since 1992 has been due to the de-prioritisation of the water bill since the ban on disconnection as a mechanism for the recovery of arrears. UKWIR noted that water debtors are very likely to have other household debts and that personal debt is an ongoing national concern. Northumbrian Water believe that in tandem with the de-prioritisation of the water bill, the fact that there is no contract between the customer and supplier makes debt recovery more difficult and Southern Water added that as a result of this, debt recovery is too resource intensive and expensive. Thames Water and Northumbrian Water believe that there is a significant correlation between areas of high rental properties and debt.

The review team then asked who are these debtors and how do you distinguish between those that can pay and those in need of help. CCWater stated that benefit entitlement checks, coupled with a national WaterCare or WaterSure, could be used to identify vulnerable customers and low income earners in need of help. South West Water believes that the concept of “can’t pay” and “won’t pay” is an outdated way of looking at debtors, that there are too many ‘shades of grey’ to make those kind of distinctions. They went on to say that the problem is that customers in debt don’t engage with their supplier. Three Valleys Water think that a definition of affordability was needed before these sorts of distinctions could be made.
The review team asked how debt practices of the water companies compared with other utilities. CCWater responded noting that Ofwat’s good practice guidance on debt management is as comprehensive as Ofgem’s. United Utilities and Dŵr Cymru provided evidence showing that debt in the water sector was more than double that of both gas and electricity combined, citing that the reasoning was clearly surrounding the ban on disconnection and the ability to use prepayment meters as a tool for debt recovery.

The review team concluded by asking what are the most effective ways of reducing bad debt and how do you incentivise payment cost-effectively. Responses to this question were extensive and varied; generally, everyone agreed that third party deduction schemes need to be widened to include those customers wishing to avoid getting into debt, that vulnerable customers need to be protected through the benefits system not cross-subsidies and that the liability on bills needs changing in statute from ‘the occupier’ to a named person on the bill and that companies needed help in collecting this data. Dŵr Cymru stated that the simplest way to prevent bad debt was to ensure that customers were not charged more than they could reasonably afford. The water companies agreed that the most effective way to incentivise payment is to contact customers early who fall into debt to work out repayment schemes and engage them with the relevant advice and help available to them. There was agreement from the water companies and Ofwat that to reduce bad debt, the ban on disconnection for non-payment of bills needs to be revoked and that companies should have the ability to instalment pre-payment meters that reduce to the flow to a trickle for non-payment of bills. South West Water and United Utilities however thought that prepayment meters should only be used as a budgeting tool for customers and that the most effective way in the current climate was through a range of measures including offering tailored payment methods, preferred forms of customer contact, flexibility in payment place and frequency while offering advice and help. Severn Trent added that specialist contact teams to deal with customers in debt and initial customer contact was effective at collecting valuable customer data and that properties not tenants should be billed. Other respondents noted that rather than billing the property, companies should be given assistance by landlords, property managers and housing associations as a duty when there is a change of occupancy. Northumbrian Water stated that ensuring customers are claiming all of the benefits they are entitled to would help to reduce the number of customers struggling with their bills. Every respondent agreed that at present the only really effective method for debt recovery was litigation.

**Sewerage, surface water and highways drainage**

The review team asked respondents whether the current system incentivised the management of surface water and highways drainage in an efficient and sustainable way. All respondents to this question agreed that charging for highways drainage should move over to the Highways Authority, funded by council tax, as a fairer approach rather than being charged to those customers discharging to the sewer. They stated that although council tax would rise, this would be done on a progressive rateable value approach where vulnerable people already have protections in place. This would also mean that customers who do not discharge to the sewer would then pay a levy towards a resource that they also use. Respondents also agreed that this change in charging for highways drainage would encourage local councils, who have the final say in planning, to consider Sustainable Urban Drainage Systems (SUDS) for new developments. The Environment Agency and the Institution of Civil Engineers noted that the current discount (approximately 5 per cent on sewerage bill) is not enough of an incentive to encourage many customers to find innovative ways of not discharging surface water to the sewer; however Severn Trent Water thought this reduction to be suitable. Northumbrian Water expanded further that there should be a legislative change to
building regulations that encourages developers to consider SUDS within projects, that all planning permission applications for covering outdoor space should have a charge levied onto it if permeable surfaces are not used. However they did point out that in terms of SUDS there needs to be clarification as to where the liability sits for maintenance and if it fails.
Cost of measured charging and meters

One company states that dumb meters add around £30 to the cost to serve the household (installation plus operating costs). The differential between measured and unmetered bills is £50 per household per year, which includes meter under-registration and leak allowances.

A number of companies shared with us their estimates of the costs of installing meters. For example, one company stated that the costs of meter installation in 2008/09 prices were: internal £106, external with existing boundary box £57, external with new boundary box £293. Another company cited figures of: internal £385, external in existing boundary box £196, and external with new boundary box £324–471. It suggested that these costs would be 25 per cent lower under a compulsory metering programme. A third company wrote: internal £140, external in existing boundary box £40–50, and external with new boundary box £330. The figures vary significantly from company to company.

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 £220.134

Some companies also provided information on the costs of replacing, reading the meters and billing. One company told us that customer-related costs are higher by £10/household/year, and meter replacement costs £50/meter once every 15 years.

WRc plc, in its work for the Environment Agency, concluded that replacement costs are around £100/meter every 15 years and additional customer service costs are around £13 every year.135

Some companies furnished us with further details, for example explaining that meters are read manually twice a year at a cost of £1.50/meter read giving total operating costs per meter of £7.65/year.

The Environment Agency agrees that customer enquiries are higher for metered customers. The rate of enquiries from unmetered 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 unmetered customer was £2.17 but rose to £2.60–2.80 for a measured customer.136

In summary, installation costs per meter vary typically from around £50 for replacement of an existing external meter to around £230 or more for a new external installation.137 The meters have to be replaced every 10 to 15 years.

After installation, the meters have to be read, and measured customer queries are between four and six-times more frequent and each enquiry is slightly more expensive to resolve.138 The additional customer service costs, excluding meter replacement, average around £13 per year, with some companies reporting lower costs.

135 WRc (2007), ‘Cost–benefit analysis of metering policies’, P7381, Appendix A
136 EA (2008) ibid
137 WRc plc (2007) ibid
138 EA (2008) ibid
Lower consumption

The evidence suggests 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.\textsuperscript{139} The Environment Agency states that a switch to measured charging reduces consumption by a sustained 10–15 per cent,\textsuperscript{140} but that customers who switch voluntarily may reduce their consumption by less, around 2–14 per cent, depending on the price of water.\textsuperscript{141}

The evidence on the size of the demand reduction is contained within a handful of studies. 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 the trials were undertaken more than 20 years ago. The evidence is laid out in reviews and commentaries by Herrington and others.\textsuperscript{142}

No controlled metering trials have been conducted recently. The Environment Agency has assessed the recent evidence and it concludes:

‘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. Recent information on the effect of compulsory metering is limited.’\textsuperscript{143}

The companies draw upon this body of evidence, and particularly upon the Environment Agency’s literature, when they make assumptions about the effects of metering in their Water Resources Management Plans. They assume reductions spanning a three-fold range, 5 per cent to 15 per cent, in their plans.

There is also further evidence that measured charging has a greater impact on peak summer demand than winter base demand.\textsuperscript{144} In the peak day, demand might be reduced by as much as 20 per cent to 30 per cent.\textsuperscript{145} Unfortunately, little is known about the way the size of this demand reduction varies across households or according to the price of water.

A water company suggested that innovative tariffs can add to the volume of water saved through encouraging the efficient use of water. Studies in United States and Barcelona achieved reductions of 10 to 14 per cent in average demand through a shift from two-part volumetric tariffs to rising block tariffs. The effect is likely to vary with the extent of use of water for discretionary summer use such as watering the garden.

We conclude that the evidence points to a demand reduction of around 10 per cent from the introduction of measured charging and note that there is uncertainty around these estimates.
**Cost per unit of demand reduction**

WRc plc estimates that a 10 per cent reduction in use from optant metering translates into a cost of water saved of 150 to 380 pence per cubic meter.\textsuperscript{146} It estimates that the costs for compulsory metering are half as large, 80 to 170 pence per cubic meter. One company’s estimates are much lower, at 40 to 60 pence per cubic meter. In its work, the Environment Agency observed a cost of water saved of 146 pence per cubic meter.\textsuperscript{147} 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.

Ofwat is cautious about the extent of knowledge of metering costs and benefits. It states that there is ‘not a significant amount of information available on the costs and benefits of metering’.\textsuperscript{148} The review team agrees that there are gaps in the available information.

We have made available on Defra’s website a spreadsheet with the assumptions and calculations on benefits and costs of metering used in Chapter 5. \textit{We welcome comments on this.}

\textsuperscript{146} WRc plc (2007) ibid
\textsuperscript{147} Environment Agency, personal communication, 2009
\textsuperscript{148} Ofwat (2009), Ofwat’s response to the Walker Review call for evidence, February
**Tariff trials**

Most water companies in England have either conducted or are planning tariff trials in the next few years. Six out of twenty-one companies are planning to implement new tariffs in the next five years. All the above options have been discussed and they are all being trialled, as shown in Table 9.

**Table 9: Examples of tariff trials approved by Ofwat over the last couple of years**

<table>
<thead>
<tr>
<th>Company</th>
<th>Tariff on trial</th>
<th>Other comments on design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folkestone &amp; Dover Water</td>
<td>rising block</td>
<td>offers larger blocks of water at a cheap rate for households with more than three children</td>
</tr>
<tr>
<td>South East Water</td>
<td>seasonal</td>
<td>ratio of summer to winter prices is approximately 4:1</td>
</tr>
<tr>
<td>South West Water</td>
<td>rising block</td>
<td>block sizes are linked to household occupancy</td>
</tr>
<tr>
<td>Wessex Water</td>
<td>rising block</td>
<td>ratio of prices in high-priced and low-priced blocks is 3:2</td>
</tr>
<tr>
<td>Wessex Water</td>
<td>seasonal</td>
<td>ratio of summer to winter prices is 3:2</td>
</tr>
<tr>
<td>Wessex Water</td>
<td>seasonal peak</td>
<td>5% discount on base demand calculated in winter period, and 90% premium charged on consumption above baseline in the summer</td>
</tr>
</tbody>
</table>

Source: based on Ofwat (2009)

Anglian Water is the only company with a tariff for customers with low use. Its SoLow tariff is offered to customers consuming less than 75 cubic meters per year. The customers pay a lower standing charge and a higher price for water.

**Rising block tariffs**

The Environment Agency has examined the resultant change in consumption when rising block tariffs have been used in other countries and concludes that demand falls by 10 to 14 per cent. However, it notes that these figures are uncertain and that the estimates are not directly transferable to England and Wales. Ofwat agrees that the effect is uncertain and has approved several tariff trials to elicit further evidence. They will start to deliver results in two to three years’ time.

The price of water currently charged (the sum of the water and sewerage volumetric rates) is between 150 and 400 pence per cubic meter. This may be higher than the true value of water. In contrast, the companies have estimated that their own long term costs of supply vary from 14 to 66 pence per cubic meter and, in one exceptional case, 200 pence per cubic meter. They are almost always lower than the price of water set by companies. Until there is better evidence of the value of water, there seems little justification for introducing a rising block in order to raise the price of water for discretionary use.

Herrington (2007) discusses a rising block tariff with the size of the cheap block related to household size, as described above and argues that it is likely to lead to superior water efficient behaviour and demand reduction. The review team agrees that this tariff may have these properties, but would caution that it is not practical for water companies to identify the number of occupants in a household. This obstacle is noted in Chapter 4.

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In some other countries which use rising block tariffs, information on occupancy is available. For example, in Brussels they use a series of blocks with rising prices, and these blocks take into account occupancy, which in this instance is straightforward because there is a national identity register.

In Australia, occupancy is not available but rising block tariffs are in use. Here the same problems of unfairness have been identified. The National Water Commission’s position statement is:

‘Inclining block tariffs are inequitable as they disadvantage households with larger numbers. They are also not very effective in influencing consumption as the cost impact of reaching higher tiers is often not evident until well after the event; particularly where billing is infrequent. Inclining block tariffs often result in a departure from marginal cost pricing. The Commission therefore considers a two part tariff, with the variable component set as a flat rate per kilolitre consumed, to be a more efficient and equitable tariff structure. This tariff structure is also simpler for customers to understand and respond to.’ 150

**Seasonal tariffs**

There are two types of seasonal tariff, one type which surcharges all summer use, and the other type which surcharges use in the summer exceeding the level of use in the winter. The latter is the ‘winter block tariff’.

Both tariffs are of interest because higher summer prices could reflect the higher costs of supplying water in the summer and raise bills for second homes. They are also of interest because a higher proportion of use is discretionary in the summer and demand for discretionary use is expected to be more responsive to prices than demand for essential use. Consequently these tariffs may have a greater effect on demand than a tariff which raises prices all year round.

There are two other considerations. Seasonal tariffs require the reading of meters at the beginning and end of the summer charging season. The meters do not all have to be read on the same day, but practical considerations suggest that meter reading would have to be carried out remotely or the readings stored electronically on the meter. Simple dumb meters in common use do not possess this functionality.

More than one company suggested that a rising block, with the first block defined by winter use is likely to give the greatest reduction in demand and offers a small improvement in affordability. The affordability improvement comes about because lower income groups have a lower peak use relative to their off-peak use and because holiday homes have high peak use relative to off-peak use. The company terms this a ‘winter block tariff’.

Another company suggested a seasonal tariff with a summer season rate that is at least three times the off-peak rate. It stated that the price differential would have to be this great in order to be effective in restraining demand.

Both types of seasonal tariff appear promising but their performance needs to be evaluated before they are put into general use. Ofwat has provided the companies with a checklist of aspects of the trial design to ensure that the trials are useful. If they perform well, companies should consider their introduction, especially in areas of high water stress.

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# Annex G – Affordability

Table 10: Household spend on water and sewerage in the South West Water region by income decile, 2009/10  
Unit: thousands of households

<table>
<thead>
<tr>
<th>Total Households</th>
<th>65.691</th>
<th>209.549</th>
<th>175.237</th>
<th>106.914</th>
<th>50.382</th>
<th>28.465</th>
<th>17.877</th>
<th>9.324</th>
<th>0.451</th>
<th>2.436</th>
<th>8.039</th>
<th>674.4</th>
<th>33.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Decile</td>
<td>31.769</td>
<td>8.239</td>
<td>0.629</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40.6</td>
<td>0.0%</td>
</tr>
<tr>
<td>9th Decile</td>
<td>20.570</td>
<td>21.221</td>
<td>2.483</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>44.3</td>
<td>0.0%</td>
</tr>
<tr>
<td>8th Decile</td>
<td>8.200</td>
<td>40.416</td>
<td>13.974</td>
<td>0.738</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63.3</td>
<td>1.2%</td>
</tr>
<tr>
<td>7th Decile</td>
<td>3.641</td>
<td>42.445</td>
<td>15.798</td>
<td>6.067</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68.0</td>
<td>8.9%</td>
</tr>
<tr>
<td>6th Decile</td>
<td>43.512</td>
<td>22.588</td>
<td>7.762</td>
<td>2.763</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>76.6</td>
<td>13.7%</td>
</tr>
<tr>
<td>5th Decile</td>
<td>18.747</td>
<td>28.207</td>
<td>14.952</td>
<td>5.821</td>
<td>0.738</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68.5</td>
<td>31.4%</td>
</tr>
<tr>
<td>4th Decile</td>
<td>32.135</td>
<td>35.440</td>
<td>23.840</td>
<td>5.604</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>97.0</td>
<td>30.3%</td>
</tr>
<tr>
<td>3rd Decile</td>
<td>2.835</td>
<td>41.385</td>
<td>13.582</td>
<td>10.455</td>
<td>6.172</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>74.4</td>
<td>40.6%</td>
</tr>
<tr>
<td>2nd Decile</td>
<td>11.954</td>
<td>25.126</td>
<td>13.068</td>
<td>10.622</td>
<td>6.394</td>
<td>2.572</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69.7</td>
<td>82.9%</td>
</tr>
<tr>
<td>Bottom Decile</td>
<td>1.511</td>
<td>2.777</td>
<td>14.848</td>
<td>12.670</td>
<td>10.933</td>
<td>11.483</td>
<td>6.752</td>
<td>0.451</td>
<td>2.436</td>
<td>8.039</td>
<td>71.9</td>
<td>94.0%</td>
<td></td>
</tr>
</tbody>
</table>

Percentage of household income spent on water and sewerage: < 1% < 2% < 3% < 4% < 5% < 6% < 7% < 8% < 9% < 10% > 10% All Households

Source: Review team work on FRS data
To be eligible for the WaterSure tariff (the capped average bill for the water company area), customers:

Must have a meter

Must be in receipt of one of the following means tested benefits:

• council tax benefit;
• housing benefit;
• Income Support;
• income-based Job seeker’s Allowance;
• Working Tax Credit; Child Tax Credit (except families in receipt of the family element only);
• Income-related Employment and Support Allowance; or
• Pension Credit.

Must either be responsible for three or more children under the age of 19 in full time education living in the property

or have, (or have someone living in the property who has) one of the following medical conditions:

• desquamation, (flaky skin loss);
• weeping skin disease, (eczema, psoriasis, varicose ulceration);
• incontinence;
• abdominal stoma;
• Crohn’s disease;
• ulcerative colitis;
• renal failure requiring dialysis at home (where there is no contribution by the local health authority for the cost of the water used); or
• any other medical condition requiring the significant additional use of water.

And as a result of that condition the person affected is obliged to use a significant additional volume of water.

Customers must provide a medical certificate or a copy of a prescription with their application form if they have one of the above conditions, and a medical certificate if they have another condition not listed and which requires additional water use. They must also provide the name of the doctor or hospital consultant who knows about the condition.
Table 11: Company donations to charitable trusts assisting customers in debt 2007/8

<table>
<thead>
<tr>
<th>Company</th>
<th>Actual £m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian &amp; HPL</td>
<td>1</td>
</tr>
<tr>
<td>Dŵr Cymru</td>
<td>0</td>
</tr>
<tr>
<td>United Utilities</td>
<td>3</td>
</tr>
<tr>
<td>Northumbrian &amp; Essex &amp; Suffolk</td>
<td>0.008</td>
</tr>
<tr>
<td>Severn Trent</td>
<td>4.54</td>
</tr>
<tr>
<td>South West</td>
<td>0.08</td>
</tr>
<tr>
<td>Southern</td>
<td>0.794</td>
</tr>
<tr>
<td>Thames</td>
<td>0</td>
</tr>
<tr>
<td>Wessex</td>
<td>0</td>
</tr>
<tr>
<td>Yorkshire &amp; York</td>
<td>0</td>
</tr>
<tr>
<td>Bournemouth &amp; West Hampshire</td>
<td>0.022</td>
</tr>
<tr>
<td>Bristol</td>
<td>0.004</td>
</tr>
<tr>
<td>Cambridge</td>
<td>0.012</td>
</tr>
<tr>
<td>Dee Valley</td>
<td>0</td>
</tr>
<tr>
<td>Folkestone</td>
<td>0.013</td>
</tr>
<tr>
<td>Mid Kent</td>
<td>0.025</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>0</td>
</tr>
<tr>
<td>South East Water (excl MKT)</td>
<td>0.133</td>
</tr>
<tr>
<td>South Staffs</td>
<td>0</td>
</tr>
<tr>
<td>Sutton &amp; East Surrey</td>
<td>0</td>
</tr>
<tr>
<td>Tendring Hundred</td>
<td>0.012</td>
</tr>
<tr>
<td>Three Valleys</td>
<td>0.045</td>
</tr>
<tr>
<td><strong>Water &amp; Sewerage Companies</strong></td>
<td><strong>9.422</strong></td>
</tr>
<tr>
<td><strong>Water Only Companies</strong></td>
<td><strong>0.266</strong></td>
</tr>
<tr>
<td><strong>Total industry donations to charitable trusts assisting customers in debt (households)</strong></td>
<td><strong>9.688</strong></td>
</tr>
</tbody>
</table>

Source: Ofwat, June returns 2008, Table 6A

These figures do not show the full picture because some companies, for example, Yorkshire and South Staffordshire, make donations from the group company which is not shown as operating expenditure of the regulated business. Others operate other forms of scheme not recognised as formal independent charitable trusts, for example, Restart schemes.
Table 12: Average weekly amount received in Housing Benefit by Government Office Region

<table>
<thead>
<tr>
<th>Region</th>
<th>£/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>55.76</td>
</tr>
<tr>
<td>North West</td>
<td>61.48</td>
</tr>
<tr>
<td>Yorks and the Humber</td>
<td>56.4</td>
</tr>
<tr>
<td>East Midlands</td>
<td>58.35</td>
</tr>
<tr>
<td>West Midlands</td>
<td>63.12</td>
</tr>
<tr>
<td>East</td>
<td>70.98</td>
</tr>
<tr>
<td>London</td>
<td>109.15</td>
</tr>
<tr>
<td>South East</td>
<td>79.93</td>
</tr>
<tr>
<td>South West</td>
<td>69.3</td>
</tr>
<tr>
<td>England</td>
<td>74.03</td>
</tr>
<tr>
<td>Wales</td>
<td>59.9</td>
</tr>
<tr>
<td>England and Wales</td>
<td>68.4</td>
</tr>
</tbody>
</table>

Source: DWP, Housing Benefit and Council Tax Benefit Quarterly Summary Statistics, February 2006, Table HB 1.8
### Table 13: Applications for WaterSure across all water companies

<table>
<thead>
<tr>
<th>Source: Ofwat, June returns 2008, table 6B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Successful applications for vulnerable customer status by company 2000 - 2008</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Anglian &amp; HPL</td>
</tr>
<tr>
<td>DWr Cymru</td>
</tr>
<tr>
<td>United Utilities</td>
</tr>
<tr>
<td>Northumbrian &amp; Essex &amp; Suffolk</td>
</tr>
<tr>
<td>Severn Trent</td>
</tr>
<tr>
<td>South West</td>
</tr>
<tr>
<td>Southern</td>
</tr>
<tr>
<td>Thames</td>
</tr>
<tr>
<td>Wessex</td>
</tr>
<tr>
<td>Yorkshire &amp; York</td>
</tr>
<tr>
<td>Bournemouth &amp; West Hampshire</td>
</tr>
<tr>
<td>Bristol</td>
</tr>
<tr>
<td>Cambridge</td>
</tr>
<tr>
<td>Dee Valley</td>
</tr>
<tr>
<td>Folkestone</td>
</tr>
<tr>
<td>Mid Kent</td>
</tr>
<tr>
<td>Portsmouth</td>
</tr>
<tr>
<td>South East Water (excl MKT)</td>
</tr>
<tr>
<td>South Staffs</td>
</tr>
<tr>
<td>Sutton &amp; East Surrey</td>
</tr>
<tr>
<td>Tendring Hundred</td>
</tr>
<tr>
<td>Three Valleys</td>
</tr>
<tr>
<td><strong>Industry</strong></td>
</tr>
<tr>
<td><strong>Applications – large families</strong></td>
</tr>
<tr>
<td><strong>Successful applications – large families</strong></td>
</tr>
<tr>
<td><strong>Applications – medical conditions</strong></td>
</tr>
<tr>
<td><strong>Successful applications – medical conditions</strong></td>
</tr>
<tr>
<td><strong>Total number of applications</strong></td>
</tr>
<tr>
<td><strong>Total number of successful applications</strong></td>
</tr>
</tbody>
</table>

Source: Ofwat, June returns 2008, table 6B
Figure 35: Number of people on low incomes

The number of people of low incomes rose in 2006/07 for the second year in a row. This rise occurred at all thresholds of low income.

Source: Households Below Average Income, DWP, updated September 2008 (The Poverty Site)

Figure 36: Council tax benefit recipients (as in receipt of Income Support, Pension Credit or Job Seeker’s Allowance, by Government Office Region

Source: DWP, Housing Benefit and Council Tax Benefit Quarterly Summary Statistics, table HB 2.2, February 2006

151 The Poverty Site, www.poverty.org.uk/01/index.shtml
Table 14: Impact of applying a percentage discount towards the national average for customers receiving Council Tax Benefit

<table>
<thead>
<tr>
<th>Company</th>
<th>Metered customers who receive council tax benefit (CTB)</th>
<th>All customers receiving CTB</th>
<th>Company average bills</th>
<th>Amount by which company average bill differs from the national average of £312</th>
<th>Total cost of subsidising bills to bring metered customers receiving CTB in line with the national average</th>
<th>Additional cost to other customers if they were to subsidise metered customers receiving CTB to bring in line with the national average</th>
<th>Total cost of subsidising bills to bring all customers receiving CTB to bring in line with the national average</th>
<th>Additional cost to other customers if they were to subsidise all customers receiving CTB to bring in line with the national average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian</td>
<td>117,738</td>
<td>208,336</td>
<td>£345</td>
<td>£33</td>
<td>£388,5354</td>
<td>£2.28</td>
<td>£687,5088</td>
<td>£4.6</td>
</tr>
<tr>
<td>Dŵr Cymru</td>
<td>47,796</td>
<td>173,921</td>
<td>£363</td>
<td>£51</td>
<td>£243,7596</td>
<td>£2.11</td>
<td>£886,9971</td>
<td>9.05</td>
</tr>
<tr>
<td>Northumbrian</td>
<td>23,909</td>
<td>186,679</td>
<td>£285</td>
<td>-£27</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Severn Trent</td>
<td>93,111</td>
<td>419,362</td>
<td>£279</td>
<td>-£33</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>South West</td>
<td>43,396</td>
<td>818,888</td>
<td>£483</td>
<td>£171</td>
<td>£742,0716</td>
<td>11.86</td>
<td>£1,400,2848</td>
<td>25.74</td>
</tr>
<tr>
<td>Southern</td>
<td>35,486</td>
<td>996,029</td>
<td>£329</td>
<td>£17</td>
<td>£603,262</td>
<td>0.66</td>
<td>£1,693,234</td>
<td>2.06</td>
</tr>
<tr>
<td>Thames</td>
<td>52,462</td>
<td>351,354</td>
<td>£275</td>
<td>-£37</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>United Utilities</td>
<td>67,757</td>
<td>447,029</td>
<td>£335</td>
<td>£23</td>
<td>£155,8411</td>
<td>0.58</td>
<td>£1,028,1667</td>
<td>4.55</td>
</tr>
<tr>
<td>Wessex</td>
<td>12,407</td>
<td>469,422</td>
<td>£367</td>
<td>£55</td>
<td>£682,385</td>
<td>1.41</td>
<td>£2,581,810</td>
<td>5.9</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>66,510</td>
<td>271,117</td>
<td>£300</td>
<td>-£12</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>560,572</strong></td>
<td><strong>2,286,430</strong></td>
<td></td>
<td></td>
<td><strong>16,587,724</strong></td>
<td></td>
<td><strong>44,304,618</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Review team analysis, DWP, Housing Benefit and Council Tax Benefit, Quarterly Summary Statistics & Ofwat Water and Sewerage Charges 2007/8 report

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152 For technical reasons this, and following analyses, look at water and sewerage companies only
153 Northumbrian is North East only, excludes Essex and Suffolk
The table below shows the change to WaterSure customers’ bills and all other metered household customers’ bills if WaterSure customers are charged the national average bill (£312 including water-only companies) instead of the regional average metered bill. It should be noted that this impact is in addition to the current cost of WaterSure to the customer base.

### Table 15: Impact of capping the WaterSure bill at the national average

<table>
<thead>
<tr>
<th></th>
<th>Total number of customers</th>
<th>Number of metered Watersure customers from total</th>
<th>Proportion of metered customer base on Watersure</th>
<th>Vulnerable groups tariff</th>
<th>Change in Watersure customers bill at company level of charging average national bill (£312) instead of vulnerable groups tariff</th>
<th>Change in other customers’ bills at water company level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian</td>
<td>1,819,400</td>
<td>3,385</td>
<td>0.31</td>
<td>346</td>
<td>0.06</td>
<td>34</td>
</tr>
<tr>
<td>Dwâr Cymru</td>
<td>1,202,000</td>
<td>899</td>
<td>0.27</td>
<td>363</td>
<td>0.04</td>
<td>51</td>
</tr>
<tr>
<td>Northumbrian</td>
<td>1,054,000</td>
<td>383</td>
<td>0.2</td>
<td>284</td>
<td>-0.01</td>
<td>-28</td>
</tr>
<tr>
<td>Severn Trent</td>
<td>3,109,500</td>
<td>2,385</td>
<td>0.26</td>
<td>284</td>
<td>-0.02</td>
<td>-28</td>
</tr>
<tr>
<td>South West</td>
<td>669,300</td>
<td>5,837</td>
<td>1.46</td>
<td>483</td>
<td>1.50</td>
<td>171</td>
</tr>
<tr>
<td>Southern</td>
<td>955,800</td>
<td>197</td>
<td>0.06</td>
<td>331</td>
<td>0.00</td>
<td>19</td>
</tr>
<tr>
<td>Thames</td>
<td>3,277,700</td>
<td>2,333</td>
<td>0.29</td>
<td>271</td>
<td>-0.03</td>
<td>-41</td>
</tr>
<tr>
<td>United Utilities</td>
<td>2,773,400</td>
<td>2,286</td>
<td>0.36</td>
<td>337</td>
<td>0.02</td>
<td>25</td>
</tr>
<tr>
<td>Wessex</td>
<td>497,100</td>
<td>837</td>
<td>0.42</td>
<td>365</td>
<td>0.09</td>
<td>53</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>1,925,000</td>
<td>2,090</td>
<td>0.33</td>
<td>302</td>
<td>-0.01</td>
<td>-10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17,283,200</strong></td>
<td><strong>20,632</strong></td>
<td></td>
<td></td>
<td><strong>Total cost = £1,070,263</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Review team analysis, Water and Sewerage Charges 2007/8 report, June returns company documents, Ofwat

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153 Northumbrian is North East only, excludes Essex and Suffolk
Table 16: Impact on other customers’ bills if the take-up of WaterSure was increased to South West levels of 1.46% (meaning take-up nationally would be 81214 customers) and WaterSure customers are charged the national average bill (£312) rather than the regional average

<table>
<thead>
<tr>
<th>Water Company</th>
<th>Total number of customers</th>
<th>Number of Watersure customers if take-up was increased to SW level of 1.46%</th>
<th>Change in other customers bills at water company level by charging national average bill (£312) instead of vulnerable groups tariff AND with 1.46% take-up</th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian</td>
<td>1,819,400</td>
<td>16,048</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Dŵr Cymru</td>
<td>1,202,000</td>
<td>4,917</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td>Northumbrian</td>
<td>1,054,000</td>
<td>2,738</td>
<td>-0.07</td>
<td></td>
</tr>
<tr>
<td>Severn Trent</td>
<td>3,109,500</td>
<td>13,395</td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td>South West</td>
<td>669,300</td>
<td>5,837</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Southern</td>
<td>955,800</td>
<td>5,077</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Thames</td>
<td>3,277,700</td>
<td>11,904</td>
<td>-0.15</td>
<td></td>
</tr>
<tr>
<td>United Utilities</td>
<td>2,773,400</td>
<td>9,290</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Wessex</td>
<td>497,100</td>
<td>2,919</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>Yorkshire</td>
<td>1,925,000</td>
<td>9,089</td>
<td>-0.05</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17,283,200</strong></td>
<td><strong>81,214</strong></td>
<td><strong>Total cost = £1,247,268</strong></td>
<td></td>
</tr>
</tbody>
</table>

This annex contains example bill content from water, gas and electricity suppliers. The Thames metered bill example shows a current bill format for that region, the Folkestone and Dover Water Services example shows a ‘smart bill’ from their recent trial, and the two diagrams are extracts from energy bills showing cost breakdowns and efficiency information.

**Figure 37 – Example measured water and sewerage bill (Thames Water)**

<table>
<thead>
<tr>
<th>Bill date</th>
<th>31 January 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Number</td>
<td>29049-</td>
</tr>
<tr>
<td>Your water services bill for 31 July 2006 to 29 January 2007</td>
<td></td>
</tr>
<tr>
<td>Total payable</td>
<td>£82.49</td>
</tr>
<tr>
<td>The total shown is now due</td>
<td></td>
</tr>
<tr>
<td>Service charges 31 July 2006 – 29 January 2007 (183 days)</td>
<td></td>
</tr>
<tr>
<td>Volume charge £:</td>
<td>Fixed charge £:</td>
</tr>
<tr>
<td>Water 35 m³ @ 95.10p</td>
<td>33.29</td>
</tr>
<tr>
<td>35 m³ @ 47.49p</td>
<td>16.62</td>
</tr>
<tr>
<td>Wastewater 35 m³ @ 47.49p</td>
<td>21.05</td>
</tr>
<tr>
<td>£82.49</td>
<td></td>
</tr>
<tr>
<td>Adjustments</td>
<td>Refund of overpaid charges</td>
</tr>
<tr>
<td>Meter Readings</td>
<td>Meter number</td>
</tr>
<tr>
<td>30 January 2007</td>
<td>06M050445</td>
</tr>
<tr>
<td>£82.49</td>
<td></td>
</tr>
</tbody>
</table>

Source: Thames Water

www.thameswater.co.uk/cps/rde/xbcr/corp/metered-bill-explanation.pdf
Figure 38 – The cost breakdown on a household bill, British Gas

The cost of gas isn’t just the price of fuel**

- 44% Wholesale Gas
- 20% Corporation Tax on Gas
- 19% Delivery to your home
- 8% Costs to service your account
- 5% VAT
- 2% Government obligation to help the environment
- 2% Profit

**Above example based on industry average consumption of 20,500 KWh per year, based on average regional prices. Costs are indicative as at February 2009.

Source: British Gas

Figure 39 – EDF Energy example information included on bill

- **your average daily gas usage**
  - this bill: 3.65 units per day
  - Last bill: 8.8 units per day
  - Last year: 12.83 units per day

- **did you know...**
  that by switching off a television, computer and other electronic equipment instead of leaving it on standby, you’ll save electricity and reduce your bills?

Source: EDF Energy
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.

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Property type</th>
<th>Typical total water use (litres/day)</th>
<th>Water efficient water use (litres/day)</th>
<th>Value of potential saving per year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>House with garden</td>
<td>198</td>
<td>166</td>
<td>£15.11</td>
</tr>
<tr>
<td></td>
<td>Flat</td>
<td>158</td>
<td>133</td>
<td>£12.08</td>
</tr>
<tr>
<td></td>
<td>House with garden</td>
<td>337</td>
<td>283</td>
<td>£25.68</td>
</tr>
<tr>
<td></td>
<td>Flat</td>
<td>269</td>
<td>226</td>
<td>£20.54</td>
</tr>
<tr>
<td></td>
<td>House with garden</td>
<td>429</td>
<td>360</td>
<td>£32.74</td>
</tr>
<tr>
<td></td>
<td>Flat</td>
<td>343</td>
<td>288</td>
<td>£26.19</td>
</tr>
<tr>
<td></td>
<td>House with garden</td>
<td>544</td>
<td>457</td>
<td>£41.47</td>
</tr>
<tr>
<td></td>
<td>Flat</td>
<td>435</td>
<td>365</td>
<td>£33.18</td>
</tr>
<tr>
<td></td>
<td>House with garden</td>
<td>646</td>
<td>542</td>
<td>£49.25</td>
</tr>
<tr>
<td></td>
<td>Flat</td>
<td>516</td>
<td>434</td>
<td>£39.40</td>
</tr>
<tr>
<td></td>
<td>House with garden</td>
<td>736</td>
<td>618</td>
<td>£56.15</td>
</tr>
<tr>
<td></td>
<td>Flat</td>
<td>589</td>
<td>495</td>
<td>£44.92</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Litres per use</th>
<th>Water</th>
<th>Wastewater</th>
<th>Energy</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boil kettle</td>
<td>2</td>
<td>0.2</td>
<td>0.2</td>
<td>1.7</td>
<td>2 pence</td>
</tr>
<tr>
<td>Normal shower for 5 minutes</td>
<td>30</td>
<td>3.7</td>
<td>3.6</td>
<td>7.7</td>
<td>15 pence</td>
</tr>
<tr>
<td>Power shower for 5 minutes</td>
<td>75</td>
<td>9.2</td>
<td>9.0</td>
<td>22.8</td>
<td>41 pence</td>
</tr>
<tr>
<td>Bath</td>
<td>80</td>
<td>9.8</td>
<td>9.6</td>
<td>22.6</td>
<td>42 pence</td>
</tr>
<tr>
<td>Toilet flush</td>
<td>6</td>
<td>0.7</td>
<td>0.7</td>
<td>n/a</td>
<td>1.5 pence</td>
</tr>
<tr>
<td>Sink washing up</td>
<td>8</td>
<td>1.0</td>
<td>1.0</td>
<td>3.1</td>
<td>5 pence</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>14</td>
<td>1.7</td>
<td>1.7</td>
<td>5.6</td>
<td>9 pence</td>
</tr>
<tr>
<td>Washing machine</td>
<td>50</td>
<td>6.1</td>
<td>6.0</td>
<td>9.9</td>
<td>22 pence</td>
</tr>
<tr>
<td>Hosepipe for 10 minutes</td>
<td>99</td>
<td>12.2</td>
<td>11.8</td>
<td>n/a</td>
<td>24 pence</td>
</tr>
<tr>
<td>Sprinkler for 1 hour</td>
<td>990</td>
<td>121.6</td>
<td>118.4</td>
<td>n/a</td>
<td>240 pence</td>
</tr>
</tbody>
</table>

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 int 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

Figure 40 – Example smart bill from Folkestone and Dover Water Services

Source: Folkestone and Dover Water
The review team welcomes your views and further evidence on the emerging recommendations and questions raised in this interim report. The review team would also like to know if there are any issues that we have missed.

**Chapter 1 The Big Issues**

**Emerging recommendations:**

- the true value of water should be used for decision making in the regulatory system. The Environment Agency and Ofwat should continue to work on a methodology for valuing water so that this can be taken into account in future investment and operational decisions as quickly as possible;

- the Environment Agency should be asked to revise its water stress map for England and Wales on the basis of catchment areas or water resource zones, to fully reflect water resource pressures (both water availability and ecological) and the latest (2009) climate change projections. These revised maps should be used to identify where compulsory metering may be justified (see Chapter 5).

**Chapter 2 Current System of Charging**

**Emerging recommendations:**

- Ofwat should explore the variation in the composition of the sewerage bills between companies in England and Wales to see if it justified.

**Further questions:**

- the review team would like to understand better the rationale for these differences in the composition of sewerage bills across England and Wales. We would welcome evidence on what might explain the differences (for example, household water consumption, population density, and amount of rainfall). We believe that Ofwat should explore this variation to see if it is justified;

- in addition, as the infrastructure used by the three sewerage services is largely shared, the review team would welcome views on the basis on which costs can be allocated fairly between the three services;

- the review team would welcome further information on what type of customer remains unmetered and why.

**Chapter 3 Fairness Principles**

**Emerging recommendations:**

- the review team recommends that while the first four principles involve trade-offs that may have to be balanced against each other, 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;

- the review team recommends that a fair charging system should:
  - charge according to the costs imposed upon the system;
  - incentivise the efficient use of water by charging by volume;
  - embrace the ‘polluter pays’ principle wherever possible; and
  - be affordable where affordability is a problem.
• costs should reflect regional differences and that water prices should continue to be regionally based and geographically averaged within regions;

• the review team is minded to recommend that, in the long term, the net benefits are likely to be limited of moving to national or taxpayer charging for some environmental benefits. However, the review recognises the complexity of the interactions between different fairness principles here and would welcome views on which environmental improvements, if any, should fall to either water customers nationally or the national taxpayer;

• the review team would welcome views on a potential recommendation that in future the UK Government and Assembly Ministers should make clear in all impact assessments associated with new legislation the effect of changes on water customers’ bills. All impact assessments should quantify the additional cost on the national average bill and those of each water company area. Formal and informal consultations must make specific efforts to engage water customers in the debate on proposed improvements and take the views of customers who will pay. Additions to bills must be taken into account in final decisions.

Further question:
• The review team would welcome views on a potential recommendation that in future the UK Government and Assembly Ministers should make clear in all impact assessments associated with new legislation the effect of changes on water customers’ bills. All impact assessments should quantify the additional cost on the national average water bill and those of each water company area. Formal and informal consultations must make specific efforts to engage water customers in the debate on proposed improvements.

Chapter 4 Future Charging System
Emerging recommendations:
• an alternative basis for charging must be found in the near future, as the system is so outdated;
• Neither council tax nor rateable value identifies those who need help with bills sufficiently accurately; nor does it incentivise the efficient use of water. Therefore, neither should form the long-term basis for charging for water;
• There is a close relationship between occupancy and water use, but occupancy rates are not collected nationally and could be open to deception. Therefore, the review team does not recommend it as the basis for a national charging system. Number of bedrooms would be a poor proxy for water use and is also not recommended for a national charging system. We have also considered property type and a possible flat rate per household as basis for charging. However, neither incentivise the efficient use of water nor do they reflect income;
• 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 the issues of affordability. Measures outside the main charging system will be needed to address the difficulties low-income households may face in paying their bills.

Chapter 5 Metering
Emerging recommendations:
• until the abstraction regime reflects the true value of water, this value should be built explicitly into investment and operational decisions.
the process of bringing the true value of water into decision making will need to be driven by the regulatory framework. Both Ofwat and the EA have a central role to play in identifying the right values for environmental and social benefits, and in making sure that these are incorporated into the water companies’ decision-making processes. Both the EA and Ofwat should concentrate on establishing the true value of water in those areas already identified by the EA as being or coming under resource pressure. Establishing a true value for water should become a requirement on both regulators, so they accomplish this quickly.

companies have quoted a wide range of meter installation costs, raising a question of whether installation costs deserve greater regulatory scrutiny.

where optant metering is the driving force behind the increase in metering penetration, it may be appropriate for companies to be under an obligation to ensure that low-income customers are supplied on the lowest possible tariff.

The right to opt for a meter should continue to be offered to all customers.

water companies must ensure that their low-income customers who are low users and would benefit from being metered are identified and encouraged to apply for a meter.

compulsory metering should be introduced:
– for high discretionary water users;
– where the true value of water is high; and
– where levels of metering are already high and running two charging systems is inefficient.

The review team invites views on what the level should be.

the review team concludes that it is both fair and advantageous to compulsory meter properties which have high discretionary use. It also believes that the current Regulations are too limited, and that the current Regulations need to be extended to cover other circumstances of high discretionary use. In particular, we would like to explore further whether the powers to compulsory meter households should be extended to all properties with an outside tap.

now that the government has committed to roll out smart energy metering to all households by 2020, the incremental cost of adding water meters to the smart energy communications system needs further examination. Ofwat and the water companies need to take action now to assess the costs and benefits.

in support of Ofwat’s leadership on metering issues, we recommend that Ofwat sets 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 for smart meter trials and exploit any potential synergies.

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.

the detailed design of assessed tariffs is for Ofwat and the companies, but we recommend that they select charging bases that provide as good a proxy for use as possible without being open to deception by unscrupulous householders.

strong leadership in achieving the transition to metering will be needed. The UK Government and 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.

We recommend that Ofwat is asked to lead the delivery of metering in a proactive way, publishing a report on progress every one or two years.
Further questions:

- at the moment meters can be installed in 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, but we do not know what proportion has been fitted at the boundary. We would welcome information on the proportion of meters that are located at the boundary;

- we would welcome information on the cost of leak repair in a form that allows us to include it in the cost–benefit analysis;

- we would welcome comments on the cost–benefit analysis, on our assumptions, the evidence we have used and on the merits of our recommendations. Further details are set out in Annex E;

- the presence of an outside tap enables households to have high external, discretionary use and we suspect that the tap is a good indicator of this behaviour. If this is the case, then there is a case for extending the Regulations to cover outside taps. We would welcome evidence on the use of outside taps and views on whether the powers in the Prescribed Conditions Regulations should be extended, including to cover properties with outside taps;

- the review team believes the trigger for compulsory metering should be when 60 or 70 per cent of households are metered. The review team would welcome views on what the appropriate percentage to trigger a compulsory metering programme for the remaining unmetered properties should be;

- given the potential synergies with the roll-out of smart metering technology in the energy sector there is some urgency to this to ensure that the maximum long-term benefits can be achieved for water customers. We would welcome views on whether this could evolve from the current Intelligent Metering Initiative;

- in the case of apartment buildings, individual meters should be the preferred option as with all other properties. The multi-occupied building is a type of property where meter installation costs are often relatively high. In this case 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. We would like to hear views on this proposal.

Chapter 6 Tariffs

Emerging recommendations:

- with metered tariffs a high proportion of the company’s revenue should be collected through the volumetric charge, and that the unit price of water should be no less than the true value of water. Ofwat should review the division between volumetric and standing charges in metered tariffs and continue to evaluate the advantages (and disadvantages) to customers of varying the relationship between the standing charge and the volumetric charge.

- in respect of more innovative tariffs, the review team’s view is that:
  - rising block tariffs have complex effects in redistributing the burden of costs between households, which may merit further consideration in specific circumstances. However, rising block tariffs cannot be recommended as a general tool to address affordability, as there is no robust data on household occupancy.
  - the declining block tariff is not appropriate for a general national household charging system as it weakens incentives to reduce discretionary use of water.
  - seasonal tariffs appear to show potential for controlling summer-time peak demand.
• Ofwat should work with the companies to ensure that the tariff trials provide robust and detailed information on the behavioural response to innovative tariffs.

• wherever distributional consequences from the introduction of changes to tariffs are likely, they should be assessed and considered against the review’s fairness principles.

Further question:
• the review team’s work suggests that some tariffs will be seen as fairer, and more effective in promoting efficient water use, than others. Given these differences in outcomes for customers, there is a question as to what guidance the government should give the regulator on how metered tariffs should look, and what principles Ofwat should observe in considering the acceptability of different metered tariffs. We present the results of this analysis here and invite views on how the guidance to the regulator on metered tariffs should be cast.

Chapter 7 Sewerage
Emerging recommendations:
• Defra, the Assembly government, the Environment Agency, Ofwat and sewerage companies should consider how the future charging system could better incentivise householders to minimise the amount of rainwater run-off from existing and new households, including incentives to install small-scale sustainable drainage systems. We would welcome views on how this could be achieved;

• Ofwat should look at the variation in charging households for surface water drainage as part of its work on the future charging system for this service. The aim must be to ensure that the distribution of the surface water drainage costs between customer types is fair, and that the right financial incentive is in place to install alternatives to rainwater drainage;

• the use of greywater recycling does not justify adjusting the sewerage charges upwards;

• rainwater harvesting should continue to be charged as now;

• foul sewerage should continue to be charged for on the same basis as water supply;

Further question:
• the review team invites views on the possibility of transferring highway drainage costs to local authorities – both on the principle and the practicalities, including costs and benefits. It also invites views on alternative ways for highway authorities to be incentivised to reduce the volume of highway drainage run-off to sewerage systems.

Chapter 8 Affordability
Emerging recommendations:
• recognising the lack of sensitivity of the benefit system to large regional differences in water cost, the UK government should consider introducing a regional water benefit. The review team would like views on this suggestion;

• in the absence of a regional water benefit, there should be a percentage reduction to the bills of low income customers (in receipt of Council Tax Benefit) in high bill areas, down towards the national average bill, paid for either by the national water customer or by the national taxpayer. The review team would like views on this proposal;

• retain and refine the national safety net for low income high essential water users (WaterSure) and increase promotion of the scheme, including providing more information on bills. Recognising the current lack of interaction between the benefit system and the regional variation
in water costs, cap WaterSure bills at the national average bill; refine the criteria for a family with older children in education or training, and seek advice on eligibility on medical grounds; make applicants medical certificates free. The costs of this and the costs of the current WaterSure system should be met by national water customers.

- companies should be statutorily required by English and Ministers to develop their own water efficiency programmes which would contribute to their enforceable water efficiency target, with priority given to low income customers in debt or in receipt of Council Tax Benefit. The review team would like to invite views on the principle of such a scheme, where the costs of such a scheme should fall, and the powers necessary to put it into place.

- Ofwat, building on its current duties, should be more pro-active in terms of helping companies tackle affordability problems. The review team would like views on whether the scope and detail of Ofwat’s current duties are sufficient to tackle affordability issues, or if something further is necessary;

- Ofwat should produce an annual report on affordability and debt issues, and where it is not clear that it is possible to solve the affordability problems within the current regulatory framework, should provide advice to the Secretary of State and Ministers on what action is necessary and why;

- within a new consolidated set of guidance on charging, social and environmental issues, new guidance should be provided to Ofwat by English and Welsh Ministers on social tariffs, with the aim of companies being encouraged to develop local social tariffs, acceptable to their bill payers, and for Ofwat to be more ready in accepting these schemes; and

- Local government should consider sharing data on low income customers receiving Council Tax Benefit with water companies so companies can target assistance.

Further questions:

- the review team would like further views on the value of using receipt of Council Tax Benefit to identify low income households for targeted support;

- in order to model the potential impact of a regional benefit the review team has assumed in the absence of further information from DWP, that benefits currently cover the national average water bill. In high-bill areas, people on means-tested benefits would therefore require additional benefit to cover the difference between the regional average (metered and unmetered) bill and the national average (metered and unmetered) bill. The difference in the South West Water region between the regional average bill and the national average bill was £171 in 2007/8. The total cost of such a scheme to rebalance this difference for high-bill areas (looking at water and sewerage companies only – see Table 7 Annex G) could be around £45m in the first year. If the scheme provided for existing metered customers only, the cost would be around £17m in the first year. The costs of such a scheme would fall to the national taxpayer, allowing the funding to be on a progressive basis. We would like views on this suggestion;

- the review team would like views on the proposal to apply a percentage discount on bills as a means of assistance for low-income households in high cost areas in receipt of Council Tax Benefit or in debt. The review team would also like views on whether this should be funded by national water customers or national taxpayers;

- we believe that as this measure is designed to address the affordability issues that arise because of the mismatch between the tax and benefits system and regional price variations, eligibility should also be restricted to those in high-cost areas (regions where the average water bill is above the national average). The review team would like views on this restriction and the administrative implications of such a scheme;
• we received evidence in response to our call for evidence that there are potentially people with other medical conditions and, in particular, mental health conditions, who might require high water use and are not explicitly covered by the WaterSure Regulations list of medical conditions other than the general provision covering ‘any other conditions’. This may discourage people from applying to the scheme, and GPs and companies might face difficulties in taking decisions on applicants. The review team intends to take advice from the Royal College of General Practitioners (RCGP) on what advice might be necessary for GPs and companies in future on the medical conditions that should qualify under ‘any other conditions’. Any system should make it clear that doctors have the appropriate flexibility to sign certificates for any person receiving benefits they believe requires extra water as a result of a medical condition and that these certificates should be free. The review team would welcome views on this proposal;

• the review team would like views on whether the scope and detail of Ofwat’s existing duties are sufficient to tackle affordability issues, or if something further is necessary.

Chapter 9 Bad Debt

Emerging recommendations:

• as a priority, the Water Industry Act 1991 should be amended to clarify and widen the definition of who is responsible for paying the water bill, through a definition of ‘liable person’ along the lines of that used in Council Tax legislation; and ensure that water companies have named customers. Three statutory changes are necessary in order to improve the situation:
  – clarify and widen who is liable for paying the bill;
  – ensuring that the name of the person responsible for paying the bill has to be supplied to the water company; and
  – identifying the property owner as responsible for paying the bill when the property is in multiple occupation;

• companies should be encouraged by Ofwat to move towards debt prevention and best practice approaches rather than concentrating on debt management;

• Ofwat, together with CCWater, should be asked by government to monitor company performance on debt prevention, management and recovery against Ofwat’s debt guidelines. Ofwat should produce a separate annual report on debt which makes clear which companies are performing well (‘name and acclaim’) and which should improve. It should also highlight good and poor practice. This annual report could be combined with the report proposed in Chapter 8 on affordability issues in the water industry;

• local government should work with water companies to identify low income customers receiving Council Tax Benefit so that companies can better target assistance;

• companies should consider, as a way of helping customers pay their bills, developing more voluntary agreements with Registered Social Landlords and local housing authorities so that water bills are paid with rent for unmeasured customers;

• there should be clearer bills and better information to customers from companies, clearly indicating methods of payment, contact details for third party debt advice agencies and written in plain English. Greater transparency will provide more information concerning the breakdown of charges and the reasoning behind bill increases (see Chapter 11);

• there should be more publicity on water debt advice and help from the companies and greater use and funding of third party advice organisations. This could be along the lines of current innovative schemes (such as Wessex Water’s scheme) or might be a part of a company’s water efficiency programme;
• the option of current third party deductions scheme (WaterDirect) should be pursued more pro-actively by water companies, where this would be more helpful to customers in debt; and
• companies need to have available and accessible schemes in place that help low income earners who want to stay out of debt; this could include social tariffs (see chapter 8 on Affordability).

Further questions:
• the review team would welcome views on the costs and value of prepayment meters compared to other mechanisms to help customers manage debt;
• the review team would welcome comments on the possibility of introducing trickle-valves to reduce supply to persistent ‘won’t pay’ customers. It would be feasible to set up a process whereby trickle-valves could be used in exceptional circumstances after rigorous independent safeguard conditions have been met, for example through agreement by the courts or CCWater. The review team would welcome observations on this.

Chapter 10 Water Efficiency

Emerging recommendations:
• while the regulatory framework for water efficiency has improved in recent years, more can still be done to ensure that the right incentives are in place to encourage the use of water efficiency activity by water companies, customers and Ofwat. This includes:
  – the operational efficiency of a company's water efficiency activity to be calculated separately by Ofwat, instead of included in the overall operational efficiency calculation;
  – the true value of water should be used in investment decisions and any evaluation of the costs and benefits of water efficiency measures; and
  – Ofwat to set a minimum percentage of water efficiency targets to be achieved through water efficiency activity targeted at defined low-income metered household customers to help them reduce their water use and, therefore, their bills. In the longer term, the UK Government and Assembly Ministers should introduce a statutory requirement for all water companies to implement a water efficiency scheme targeted at defined low-income metered customers;
• the UK Government and Assembly Ministers should maintain progress on the water efficiency of new homes and ensure that synergies with existing refurbishment and retrofitting programmes of existing housing stock are fully exploited to ensure that the water efficiency of existing homes is achieved as economically as possible;
• water and energy companies should be incentivised to work together to retrofit existing homes with energy and water efficiency measures and allocate the respective water and CO₂ savings to their respective water and energy efficiency targets, especially for hot water efficiency measures accredited in the CERT scheme;
• water companies should be incentivised to work together with social landlords and housing associations to improve the water efficiency of existing homes;
• 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;
• the UK government should encourage the use of more water-efficient fittings and appliances by:
  – ensuring that only water-efficient products can be sold on the UK market; and
  – reviewing the efficacy of the current and proposed labelling schemes and deciding what
    information consumers need as a matter of priority. Government should work with
    Waterwise, water companies, manufacturers and retailers to ensure voluntary schemes are
    effective or to decide whether a mandatory scheme is needed;

• the UK Government and Assembly Ministers should promote a national education strategy
  working with stakeholders to influence public behaviour on water use. Regional and local
  community-based campaigns on water efficiency should be developed, using the key national
  messages, but targeting local issues;

• household customers’ awareness of the links between hot water and energy savings should be
  raised by:
  – ensuring that the Act on CO\textsubscript{2} calculator\textsuperscript{154} includes a section on emissions linked to hot
    water use and advice on how to use hot water more efficiently;
  – the Act on CO\textsubscript{2} campaign including dedicated messages on water efficiency; and
  – water companies including messages to customers on this link, providing information on
    potential energy savings linked to water efficiency.

Further questions:
• the review team would therefore welcome views on whether Ofwat’s current sustainable
  development duty should be extended to make specific reference to consideration of climate
  change, in particular mitigation and adaptation measures; and

• the review team calls on the UK Government and Assembly Ministers to promote a national
  education strategy working with stakeholders to influence public behaviour on water use. In
  addition, this sort of campaign will need national operational leadership; the review team invites
  views on who this should be.

Chapter 11 Customer Involvement and Understanding
Emerging recommendations:
• the review team recommends that as companies are monopoly providers to household
  customers, the regulatory regime should include measures on customer experience in the Overall
  Performance Assessment which have a real and visible effect on companies and thus incentivise
  better handling of customers. It would welcome views on this recommendation and what the
  specific measure or measures should be to achieve this;

• the review team recommends that Ofwat should publish an annual analysis of companies’
  responsiveness to their customers;

• the review team recommends that the 12 month limit within which Ofwat must pursue breaches
  and penalise companies is extended to 5 years;

• the review team considers that water customers should be given more information on their bills.
  Building on best practice in some water, energy and council tax bills, it recommends water bills
  include the information set out in paragraph 11.8.2. It would welcome views on this
  recommendation;

\textsuperscript{154} The Act on CO\textsubscript{2} calculator is a computer-based tool that enables the public to calculate their carbon footprint and provides personalised advice
on how to reduce it.
the review team recommends that companies should consider whether best practice in some other companies or other sectors could help them engage better with their customers, such as ‘meet the manager’ sessions or going out into the community with local councillors and community representatives. Companies should strengthen their work to find out how their customers want to access the information they require, and use those channels in future. Companies should assess the effectiveness of their communication methods, particularly with their harder to reach and vulnerable customers, on a regular basis, and Ofwat should report on this activity; and

• the review team welcomes further comments on the development of a UK model for a participatory budget approach by Ofwat and CCWater. This would have the aim of achieving better and earlier involvement of customers by companies in the formulation of company plans and proposals.

Further questions:

• the review team’s view is that as companies are monopoly providers to household customers, the regulatory regime should include measures on customer experience in the Overall Performance Assessment which have a real and visible effect on companies and thus incentivise better handling of customers. It would welcome views on this recommendation and what the specific measure or measures should be to achieve this; and

• the review team welcomes views on the viability of such a participatory budgeting approach for the England and Wales water sector.
The review team welcomes your views and further evidence on the emerging recommendations and questions raised in this interim report. The review team would also like to know if there are any issues that we have missed.

The review team would be grateful if your response could reach us by **Friday 28th August 2009**.

Please feel free to limit your answers to the most significant or relevant questions for you.

You can send your response by e-mail to:
charging.review@defra.gsi.gov.uk

or by post to:
Review of Water Charging
Second Floor
Ergon House
Horseferry Road
London
SW1P 2AL

If you would like to discuss any aspect of this interim report with a member of the review team, please contact Nieves Bottomley on 0207 238 5860 in the first instance.

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