
***Updated Price
Limits Impact
Assessment***
Water Services
Regulation
Authority (Ofwat)

October 2013

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Executive Summary

Background

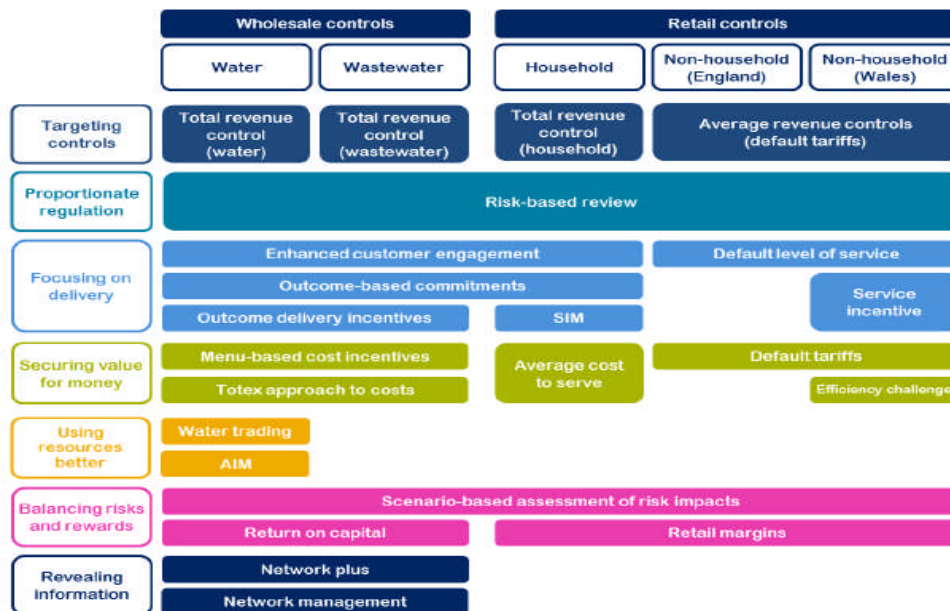
PricewaterhouseCoopers LLP (PwC) was commissioned by the Water Services Regulation Authority (Ofwat) to conduct an Impact Assessment of Ofwat’s methodology for setting price limits for the period from 2015 to 2020 (PR14). This executive summary and the associated main report have been prepared by PwC under the terms of a service order from Ofwat dated 6 February 2013, and summarises the key findings from our Impact Assessment (IA). It contains quantified impacts where possible, along with the qualitative narrative for impacts which cannot easily be quantified.

Over the past three years, Ofwat has developed a new approach to setting price controls, based on the principles set out in its discussion document on the framework for PR14 and beyond¹. It has engaged extensively with stakeholders on the approach, through a series of consultations, workshops and meetings that culminated in two consultations published earlier this year:

- ‘Setting price controls for 2015-20 – framework and approach’, which set out Ofwat’s proposed methodology for PR14 in January 2013; and
- ‘Setting price controls for 2015-20 – business planning expectations’, which set out Ofwat’s proposed risk-based approach to reviewing companies’ business plans, and expected data requirements for PR14 in April 2013.

This IA focusses on the final PR14 methodology which has been developed on the basis of these consultations. The elements of the final methodology are illustrated in Figure 1 below².

Figure 1: Ofwat’s final PR14 methodology



Source: Ofwat

Ofwat has stated that the reforms to its price setting approach are intended to help achieve its vision of sustainable water supply, to meet current needs for water and wastewater services and to enable future

¹ “Future Price Limits – Statement of principles”, Ofwat, May 2012.

http://ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplprincip.pdf

² “Setting price controls for 2015-20 – final methodology and expectations for companies’ business plans”, Ofwat, July 2013.

generations to meet their own needs³. The reforms to the price setting methodology are designed to give Ofwat the tools to encourage productive, allocative and dynamic efficiency to deliver socially, economically and environmentally efficient outcomes.

More specifically, Ofwat’s intentions are that these reforms will:

- Deliver a proportionate price setting process – focusing regulatory scrutiny and challenge where it is most needed;
- Target price control regulation – by setting separate controls for companies’ wholesale and retail activities;
- Encourage a greater focus on the outcomes that customers want, giving companies greater ownership of – and accountability for – how well they deliver to customers and their impact on the environment in the long term;
- Drive efficiencies to secure the best possible value for money for customers;
- Encourage better, more sustainable use of water resources;
- Balance risks and rewards fairly between customers, companies and their investors;
- Deliver a balanced overall price control package that is financeable for companies – safeguarding investment and stimulating growth – and that is affordable for customers now and in the future; and
- Reveal information to help improve the way Ofwat sets price controls in the future (beyond 2020).

Key findings

The impacts that we expect to be delivered by each element of the reforms to the PR14 process are summarised in Table 1 below. In addition, there are two overarching key findings:

- Ofwat has previously assessed the changes to the 30-year price setting framework in its Future Price Limits Impact Assessment (FPL IA)⁴. The findings of our IA, which assesses the reforms to the PR14 process, are consistent with the FPL IA, with significant benefits expected to be delivered; and
- The net benefits of some policies not covered in the final FPL IA are difficult to quantify, but qualitative analysis supports the view that the methodology will deliver sector-wide net benefits.

The impacts summarised in Table 1 are considered relative to a counterfactual (what is expected to have occurred in the absence of the PR14 reforms) to assess the incremental impact of Ofwat’s reforms. In the counterfactual we assume that Ofwat maintains the approach to price setting followed in the previous price control period (PR09) and that the Water Bill (WB) progresses through Parliament in its present form. For some reforms, we also consider a second counterfactual as a sensitivity test in which the WB does not progress.

Not all of the impacts can be quantified or monetised so the ‘size of expected impact’ column represents our views of the approximate materiality of the impact at the national level. The key below explains the scale used.

We note that a number of reforms are likely to have significant localised impacts which apply only to certain groups or geographies (examples of such reforms are the abstraction incentive mechanism (AIM) and non-household retail controls in Wales). These measures are, however, expected to have a limited impact at the national level.

³ “Beyond limits - How should prices for monopoly water and sewerage services be controlled?”, Ofwat, July 2010. http://www.ofwat.gov.uk/publications/focusreports/prs_inf_pricelimits.pdf

⁴ “Future Price Limits – Appendix 1: Impact Assessment”, Ofwat, May 2012. http://www.ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplimpact.pdf

Table 1: Summary of expected impacts

Element of methodology	Key expected impacts	Expected net impact	Size of expected impact
Business planning	<ul style="list-style-type: none"> • Higher quality of business plans and greater company ownership of business planning: Changes to the business planning process should deliver higher quality plans and associated price limits which help to target water companies’ resources towards what consumers value most (boosting the efficient allocation of resources). The reforms should also improve innovation (and so dynamic efficiency) over time as companies focus less on the regulator’s requirements and more on reallocating resources and re-shaping delivery processes to better meet consumers’ needs. • Neutral overall impact on administrative costs: Most companies interviewed believe PR14 will cost them more than PR09 to deliver, in particular because they are expected to engage further with their customers. But we expect that efficient water companies will see their administrative costs fall in PR14 and beyond as a result of the new processes now being introduced for the first time as part of the Risk Based Review (RBR), particularly for companies whose business plans are categorised as either Enhanced or Standard (once the current changes have been fully implemented). This should cancel out any short-term increase in cost for PR14 and lead to cost savings in the longer term. 	Positive	●
Outcomes approach (including outcome delivery incentives)	<ul style="list-style-type: none"> • Positive consumer surplus, environmental and efficiency impacts: The outcomes approach is expected to allow water companies the flexibility to deliver outcomes at lower cost and to manage the risks of doing so through delivery incentives, following customer engagement. This should focus their plans on areas their customers most value. Local environmental concerns can be directly addressed by this process, subject to meeting the environmental regulators’ statutory requirements. Because companies have been asked to develop their own outcomes proposals in their business plans (subject to a small number of consistent outcomes for all companies), quantification of specific benefits has not been undertaken at this stage. 	Positive	●
Wholesale form of control separation	<ul style="list-style-type: none"> • Greater efficiency through separate controls: We expect separate controls to encourage efficiency by improving transparency of costs and revenues across the separate parts of the business. It also makes performance consequences clear, with separate incentives for the delivery of separate services shaping company behaviour. • Supporting future wholesale service market development and regulation: Clearer and more transparent information on respective costs, revenues and services being provided in relation to water and wastewater within integrated water and sewerage companies should support the implementation of the new licensing framework envisaged in the Government’s WB, and help better comparative assessments of wholesale water and wastewater services. 	Positive	●
Totex cost assessment and recovery	<ul style="list-style-type: none"> • Efficiency benefit from removal of capital expenditure (capex) bias: The total expenditure (Totex) approach to cost assessment is expected to reduce ‘capex bias’ whereby water companies favour capital expenditure over operating expenditure solutions. This will support a one-off boost in productive efficiency. • Potential environmental benefits: Moving to a totex approach and removing the capex bias may encourage companies to deliver more environmentally sustainable opex solutions. 	Positive	●
Menu-based cost performance incentives	<ul style="list-style-type: none"> • Benefits to risk and financeability: Menus present an opportunity for companies to choose their level of risk and reward in their final determinations. This flexibility is a benefit since it puts them in a position to better manage the risks from Ofwat’s cost assessment. • Supporting efficient and accurate cost forecasts: Menus will incentivise companies to provide their best forecasts of the expenditure they need when they make their final menu choice. • Efficiency impacts from incentives to outperform: Menus provide incentives to outperform on costs during the control period, although it is 	Positive	●

Element of methodology	Key expected impacts	Expected net impact	Size of expected impact
	unclear the extent to which these will be incremental to the counterfactual of existing cost performance incentives (menus for capex and no menus for opex).		
Household retail controls	<ul style="list-style-type: none"> • Greater efficiency in the provision of household retail services: We expect the separate form of household retail control to incentivise efficiency improvements, especially amongst the least efficient companies. The final FPL IA estimated the benefits of the control at £1,190m (NPV over 30 years). These savings were estimated by Ofwat in 2012 based on an assessment of the additional efficiencies that a more targeted price control based on industry comparisons would secure, relative to continuing with the previous regulatory approach, where efficiencies secured would have been in decline. Our updated work confirms this estimate remains valid. 	£1,190m	●
Non-household retail controls in England	<ul style="list-style-type: none"> • Greater efficiency through separate controls: We expect separate non-household retail controls will support efficiency improvements in the segment by making companies' performance more transparent. In addition, we expect they will enhance the functioning of the competitive market consistent with the Government's proposals in the WB. The net benefit of enhancing competition is contingent on the WB progressing. • Protection of some consumers who may not benefit from the market: The default tariff and default level of service will protect customers in the competitive market with high switching costs or a high cost to serve. 	£170-£360m Positive	●
Non-household retail controls in Wales	<ul style="list-style-type: none"> • Greater efficiency through separate controls: A separate binding control will make clear the performance of the companies providing services to the Welsh non-household market, where most customers are unlikely to have a choice of supplier, encouraging accountability and transparency. Whilst the aggregate benefit is expected to be small, since the total non-household cost base in Wales is only £11m and similar efficiency pressures could arise in the counterfactual, it is significant for these customers in Wales that such controls are in place. 	Positive	●
Water trading incentive	<ul style="list-style-type: none"> • Reduced cost of water supply: The incentive is expected to realise benefits by encouraging water trading. We estimate the incremental benefits to be between £160m and £690m. • Improved resilience of the water supply: Additional interconnections arising to support new trades may also boost the resilience of supply in some local areas. 	£160m-£690m	●
Abstraction incentive mechanism (AIM)	<ul style="list-style-type: none"> • Reduced environmental harm: The AIM, as a national reputational incentive, is expected to have a positive impact on the environment which may be partially offset by increased costs if companies reduce their abstraction from resources included in the AIM but substitute these with higher cost resources that are not included. The scale of the impact will depend on the number of water resources included in the scheme, which remains to be determined. At a local level the positive impact of AIM may be substantial, depending on the number of water resources covered within a region. 	Positive	● / ●
Managing risk	<ul style="list-style-type: none"> • Neutral incremental impact on risk and financeability: Overall, PR14 is not expected to have a material aggregate impact on risk and financeability, but we expect that some of the risk management methodology will help to maintain remuneration for risk and allow the other elements of PR14 to deliver benefits without an overall increase in risk. 	Positive	●
Network plus	<ul style="list-style-type: none"> • Enabling the benefits of upstream market reforms: Network plus is necessary for Ofwat to support the timely implementation of the Government's market reform proposals in the WB, by securing and trialling the use of appropriate information in advance of the next Periodic Review. The data provided will also enable additional future regulatory options for Ofwat: for example, it could choose to deregulate the sludge market in the future. Network plus will however lead to a small increase in the administrative burden for water companies in the short term to help enable these longer term benefits. 	Positive	●

Element of methodology	Key expected impacts	Expected net impact	Size of expected impact
Network management	<ul style="list-style-type: none"> Efficiency benefits: Network management will allow Ofwat to set incentives for efficient network operation in the future. Evidence from the energy sector suggests that there may be significant cost savings delivered through incentives to support efficient network management. This will also lead to a small increase in the administrative burden for water companies to report data to Ofwat. 	Positive	●

Key – scale of expected impact⁵

Highly material

Immaterial



Source: PwC

Summary

Below, we summarise our assessment of the impact of each element of the PR14 final methodology.

Business planning (including CCGs)

PR14 will introduce a new approach to business planning which is less prescriptive and encourages water companies to develop high quality plans that better reflect customer interests, are more innovative and are fully owned by their boards.

Evidence from our discussions with water companies and from other regulated sectors (e.g. energy⁶) suggests a positive impact on the quality of business plans with consequent benefits to consumers. This impact is, however, not readily quantifiable.

Most water companies agree that the new approach will enable them to take ownership of their business plans which Ofwat expects will help them to focus on customers’ priorities (including through CCGs), to begin to change their culture and internal ways of doing things. Such change would support more effective price limits and associated allocative efficiency improvements, as plans deliver more of what consumers value within allowed revenues. In addition, it potentially results in dynamic efficiency gains over time, as companies focus less on the regulator’s prescriptions and more on innovating to deliver outcomes for the longer term, reallocating resources, and re-shaping delivery processes to better meet consumers’ needs.

Discussions with investors suggested a concern that Ofwat’s January 2013 consultation proposals could have caused a small increase in the cost of capital due to the possible categorisation of some companies’ business plans to Resubmission (as part of the RBR). This potential cost is estimated to be up to £20m (NPV). However, it is unclear whether such an impact would have been incremental to the counterfactual (under which Ofwat could also potentially provide adverse feedback on companies’ draft business plans). Moreover, since the consultation, Ofwat has confirmed and clarified how some companies would also benefit from being placed in the Enhanced category, offsetting such negative impacts. Overall, we consider that the net impact on companies of the categorisation is likely to be broadly neutral.

The FPL IA focussed on the administrative costs of changes to the business planning process and estimated a long term cost reduction of **£20m-£100m** over 30 years.

⁵ The materiality of the expected impact has been assessed from a national perspective, recognising that in certain cases the impacts may be significant at a local level but not nationally, for example Wales and AIM (which affects sites which are not uniformly distributed). Furthermore, in the absence of a comprehensive set of monetised assessments of the environmental impacts, our approach is to weight the impacts on customers and wider consumers qualitatively. Similarly, expected future impacts have been incorporated by estimating the present value of the impacts over a 30 year period using HM Treasury’s recommended discount rate (3½%). This is consistent with the approach used in earlier IAs.

⁶ “RIIO-GD1: Final Proposals – Overview”, Ofgem, December 2012.

http://www.ofgem.gov.uk/Networks/GasDistr/RIIO-GD1/ConRes/Documents1/1_RIIOD1_FP_overview_dec12.pdf

Most companies interviewed believe the first implementation of the FPL framework in PR14 will result in increased administrative costs compared with PR09, in particular because they are expected to undertake more engagement with their customers. However, in the longer term (once the current changes have been fully implemented), we expect efficient water companies to see their administrative costs fall. This should offset any short-term increase in cost for PR14.

Outcomes approach (including outcome delivery incentives)

PR14 will introduce an outcomes based approach to price regulation which encourages water companies to provide more of what their customers value and are willing to pay for – so improving allocative efficiency. The approach also allows them greater freedom to innovate and reduces dependence on the regulatory framework. As part of their business plans, water companies will be asked to develop and propose their own outcomes and delivery incentives.

The FPL IA contained a qualitative assessment of the policy impacts of the outcomes approach which focussed on the benefits for innovation and a potential reduction in administrative burden.

Water companies expect this approach, as it is implemented in PR14, to yield incremental policy benefits of this form relative to the outputs based approach employed in PR09. It will allow them the flexibility to deliver outcomes at lower cost and focus their plans on the areas consumers most value.

As yet, the proposed outcomes from individual companies are not known in detail as their engagement with customers is still on-going, so no reliable quantitative assessment of the expected benefits is currently possible. Our illustrative analysis, which draws on our discussions with companies on their work to date, suggests that the net benefits are potentially significant.

Wholesale form of control separation

PR14 will apply binding controls on water companies' wholesale activities separately for water and wastewater. For each, the control will apply to total revenues collected from wholesale charges as well as connection and infrastructure charges, and will be indexed to the Retail Prices Index (RPI).

Separating controls encourages enhanced efficiency by improving transparency of costs and revenues across separate parts of the business. It also makes the performance consequences clear, with separate incentives shaping company behaviour in delivering the different services concerned.

Although there is insufficient evidence from sector experience to produce a reliable quantitative assessment, supporting evidence comes from a qualitative assessment of these positive impacts in the electricity sector⁷, the Cave Review⁸ and from the water sector itself⁹.

Separate controls also support any future implementation of upstream market reforms by making costs and revenue clear in each business segment (a necessary step to make efficient entry and contestability possible where appropriate, in line with the Government's licensing reform proposals in the WB).

⁷ "Accounting Separation and Price Cap Regulation", Deloitte, 9 February 2011.

http://www.deloitte.com/assets/Dcom-UnitedKingdom/Local%20Assets/Documents/Industries/EIU/Water/UK_EIU_Accountingseparationandpricecapregulation.pdf

⁸ "Six Degrees of Separation", Martin Cave, December 2006.

http://mpira.ub.uni-muenchen.de/3572/1/MPRA_paper_3572.pdf

⁹ "The Cost Implications of Alternative Vertical Configurations of the English And Welsh Water and Sewerage Industry", Saal, 2011.

https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=JEI2011&paper_id=41

Totex cost assessment and recovery

The PR14 methodology moves away from Ofwat's traditional approach to cost assessment based on separate opex and capex assessments to a totex approach.

This is expected to reduce the 'capex bias' whereby water companies are thought to have historically favoured capex over opex.

Whilst some water companies have argued that there could instead now be an opex bias under totex as proposed by Ofwat, our scenario based analysis, which has been informed by discussions with water companies, suggests that removing the capex bias could lead to net sector benefits of between **£10m** and **£310m**.

Ofwat also notes that innovative solutions to improving sustainability have tended to involve opex rather than capex in the sector. Moving to a totex approach and removing the capex bias may, therefore, improve environmental sustainability by encouraging companies to deliver more environmentally sustainable opex solutions in this area.

Menu-based cost performance incentives

The PR14 methodology will give water companies a choice as to how to balance their cost performance risk and reward through menu options. This will provide water companies with greater control and responsibility over the risks and rewards associated with their final determinations. Moreover, menu incentives may help to encourage water companies to provide their best forecasts of the expenditure they need to deliver their outcomes, whilst providing incentives to outperform relative to the determination during the control period.

Ofwat did not assess the impact of the use of menus in the FPL IA, which focussed on the long term regulatory framework, but we expect that the use of menus in the PR14 methodology will help companies to manage better the risks to their financeability from the independent regulatory cost assessment in particular, as the basis of assessment moves to the totex approach as indicated above. This impact is likely to be positive but it is not possible to quantify and monetise this in advance of water companies' business plan proposals, Ofwat's baselines and companies' menu choices based on these baselines.

Evidence from other regulated sectors suggests that when menus are in place there is cost outperformance relative to allowed expenditure levels¹⁰. However, the extent to which these effects can be considered incremental to menus is unclear, as it can be difficult to isolate the impacts during appraisal.

Any net benefits could be large given that the entire totex cost base is affected. Based on evidence from Ofgem and calibrated for water there could be substantial potential efficiency gains in the order of **£0.5bn to £2bn**¹¹.

Household retail controls

PR14 will give water companies more responsibility and accountability for the household retail charges they set, through a separate, more flexible, household retail control that limits total household retail revenues based on the known industry average cost to serve those customers.

Efficiency incentives may be strengthened by the separation of controls, which will give greater transparency over companies' performance in household retail operations, and by the average cost to serve approach to apply limits to the retail services component of households' bills. The final FPL IA estimated the value of these benefits to be **£1,190m** (NPV).

Our updated and extended analysis suggests that this estimate remains broadly valid.

¹⁰ "Incentives and menus", CEPA, 31 July 2012.
http://www.cepa.co.uk/corelibs/download.class.php?source=PB&fileName=sysimgdocs/docs/CG426a-Ofwat-Jul12_pb10_1.pdf&file=CG426a%20Ofwat%20Jul12.pdf

¹¹ *Ibid.*

Non-household retail controls in England

The separation of the non-household retail control, including the remuneration of the associated costs and risks based on existing companies' costs in PR14 are designed to promote competition and protect customers. Customers will have back stop protection through default tariffs – leaving the average customer in each class no worse off in nominal terms throughout the control period – and a default level of service that companies must offer to all non-household customers.

Efficiency incentives may be strengthened by the separation of controls which will give greater transparency over companies' performance in non-household retail operations.

The final FPL IA estimated the benefits of the separation of the non-household controls at **£370m** which arose through enhancing the effectiveness of retail competition enabled by the Government's legislative proposals.

Our updated analysis estimates a very similar net benefit of the separation of controls, at **£360m**, over and above the benefits of introducing competition anticipated by Defra as a result of the measures in the WB¹². Of this overall net benefit, **£190m** is expected to arise from spillovers through the transfer of good practice to the much larger household retail service segment and **£120m** from spillovers to the wholesale services which dominate the value of the non-household services covered by default tariffs (via increased pressure by retailers on wholesalers). In the absence of these spillover effects, the expected benefit would be lower, at **£170m** if the household retail spillovers are excluded, or **£240m** if the wholesale spillovers are excluded.

The default tariff and level of service also protect high cost-to-serve customers and those with high switching costs: these benefits are not, however, readily quantifiable because we do not know how many customers will be on the default tariff or what they would otherwise have paid in the absence of the retail market and regulatory reforms underpinned by the WB.

Non-household retail controls in Wales

Since most non-household customers in Wales will continue not to have a choice of retailers, PR14 includes alternative direct regulatory incentives which will encourage water companies operating in Wales to improve their efficiency and quality of service for their non-household customers.

The separation of controls is expected to yield a small net benefit by providing an incentive to reduce costs through greater transparency and accountability. Whilst the aggregate benefit is expected to be small, since the total non-household cost base in Wales is only £11m and similar efficiency pressures could arise in the counterfactual, it is important for these customers in Wales that such controls remain in place.

The incentive for high quality service will replicate the existing Service incentive mechanism (SIM) and is not expected to have an incremental impact relative to the counterfactual of the existing regime (which already covers such customers).

Water trading incentive

PR14 will create an incentive for efficient water trading as a way of promoting better use of water resources: it complements and helps facilitate longer-term reforms set out by the Government in the WB.

Research has identified that there are water trades which are currently not in place which could potentially yield net economic benefits of **£960m**¹³.

¹² "Introducing Retail Competition in the Water Sector", Defra, 2 November 2011.

<http://archive.defra.gov.uk/environment/quality/water/documents/www-ia-retail-1346.pdf>

¹³ "A Study on Potential Benefits of Upstream Markets in the Water Sector in England and Wales", Ofwat, March 2010. http://www.ofwat.gov.uk/publications/prs_inf_upsup.pdf

The PR14 incentive is expected to help realise some of these benefits by encouraging water trading ahead of longer-term reforms. The incentive is not expected to make all of the efficient trades happen. In the final FPL IA, Ofwat assumed that the incremental benefit of its incentives, given the passage of the WB, would be **£290m**¹⁴.

Our more detailed analysis on a trade by trade basis, but again assuming that the WB is passed, indicates that the incremental benefits associated with Ofwat's trading incentives could be **£160m to £690m**¹⁵.

Abstraction incentive mechanism (AIM)

The final PR14 methodology will introduce the AIM as a national reputational incentive to encourage water companies to take account of both environmental and financial costs in their abstraction decisions with the objective of reducing abstraction from sources at the highest risk of environmental damage, as identified in conjunction with the Environment Agency.

Our interviews with water companies suggested that reputational incentives can be effective, and they are also used in other regulated sectors (e.g. the CRC Energy Efficiency scheme in the electricity sector¹⁶), but like the FPL IA, our assessment of AIM has been qualitative.

The AIM is expected to have a positive impact on the environment at a national level which may be partially offset by increased costs if companies reduce their abstraction from resources included in the AIM but substitute these with higher cost resources that are not included. The scale of the impact will depend on the number of water resources included in the scheme, which remains to be determined. At a local level, the positive impacts of the AIM may be substantial but will depend on the number of water resources covered within a region.

Managing risk

PR14 will see greater use of tools to assess and understand the overall balance of risks within business plans.

Our discussions with investors and water companies, as well as published research, support the view that PR14 will not have a material aggregate impact on risk and financeability in the sector¹⁷. Overall, we do not expect there to be any change in the level of total risk to be managed as a consequence of the regulatory framework, relative to the counterfactual.

However, we recognise that the package of risk management measures Ofwat is implementing will help to maintain appropriate remuneration for risk borne and managed by efficient companies and allow the other elements of PR14 to deliver benefits without an overall increase in risk for the sector.

Network plus

Ofwat will collect revenue data on different parts of the value chain and set indicative, non-binding sub-limits for water companies' network plus activities during the course of the next price control period, with the aim of delineating the charges and revenues associated with different parts of the value chain that potentially will be subject to different regulatory approaches in future.

¹⁴ "Future Price Limits –statement of principles –Appendix 1: Impact Assessment", Ofwat, May 2012.
http://www.ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplimpact.pdf

¹⁵ Since the original publication of the Executive Summary of this IA on 25 July 2013, the water trading model has been updated, producing a higher estimated benefit at the top of the range of £690m. This compares to £640 million in the previous version.

¹⁶ "CRC Energy Efficiency Scheme (Amendment Order) 2011, DECC, 19 October 2010.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42583/901-ia-crc-en-efficiency-scheme-amend.pdf

¹⁷ An example of the published research is Moody's note "Ofwat's Methodology for PR14 credit neutral for UK water companies" February 2013.

Network plus will have benefits: the better regulatory understanding it will deliver is necessary for the implementation of upstream market reforms in line with the WB and will help to unlock the estimated **£1.75bn** of benefits these reforms will bring (estimated by Defra¹⁸). There could be incremental benefits from this timely implementation: for example, the benefit of accelerating upstream reforms by one year is **£135m**.

Network plus will also provide additional future regulatory options for Ofwat: for example, it could choose to deregulate the sludge market in the future, or change the approach to the regulation of this market.

The Network plus change will impose a small administrative cost on companies to provide the required data but discussions with companies indicate this is unlikely to be material at a sector level.

Network management

PR14 will incentivise water companies to provide more information about their different approaches to network management in the next control period. The aim is to inform best practice in relation to network management and inform potential market entrants about the network management processes that they will encounter when gaining access to undertakers' networks in line with the framework set out in the WB.

It is also designed to inform Ofwat's decisions on whether it is appropriate to introduce incentives for efficient network management in PR19.

No immediate incremental impacts are expected from gathering early information, but benefits could accrue in subsequent periods in the form of an increased likelihood of companies developing interconnections, facilitating more water trading and reducing energy costs by learning and sharing best practice as network operators within the new market environment. In turn, this should result in the more sustainable and resilient networks that benefit both customers and the environment.

Evidence from the energy sector suggests that there may be significant cost savings delivered through incentives to support efficient network management in an industry structure where network access is important for efficient end to end delivery. For example, National Grid was able to reduce its system operator costs by £400m annually between 1994 and 2001, supported by industry and regulatory incentive frameworks¹⁹.

¹⁸ "Upstream competition", Defra, 24th November 2013 (updated 24th May 2013).
<http://www.parliament.uk/documents/impact-assessments/IA13-19C.pdf>

¹⁹ "Future Price Limits – a consultation on the framework – Appendix 1: Draft Impact Assessment", Ofwat, November 2011.
http://www.ofwat.gov.uk/consultations/pap_con201111fpl_app01.pdf

1. Introduction

PricewaterhouseCoopers LLP (PwC) was commissioned by the Water Services Regulation Authority (Ofwat) to conduct an Impact Assessment (IA) of Ofwat's methodology for setting price limits for the period from 2015 to 2020 (PR14). This report has been prepared by PwC under the terms of a service order from Ofwat dated 6 February 2013.

Background & context

Ofwat is the independent economic regulator of the water and wastewater sectors in England and Wales. Its duties are primarily laid out in the Water Industry Act 1991 and subsequent amendments.

Ofwat's primary duties are to:

- Protect the interests of consumers, wherever appropriate by promoting competition;
- Ensure that the water companies properly carry out their functions; and
- Ensure that the water companies can finance their functions.

Its secondary duties include promoting economy and efficiency in the water and wastewater sectors, and contributing to the achievement of sustainable development.

In England, Ofwat works with a wide range of other stakeholders including the Environment Agency (EA), the Drinking Water Inspectorate (DWI) and the Consumer Council for Water (CCWater). In Wales, it works with the Welsh Government and Natural Resources Wales.

One of the main ways in which Ofwat fulfils its duties is by setting limits on prices on water and wastewater services and specifying associated services that customers should receive. Ofwat currently sets price limits every five years. Ofwat will next set price limits in 2014 for the period between 2015 and 2020.

As part of its preparations for the final PR14 methodology, Ofwat has been through an extensive consultation process during which it has:

- Consulted on the proposed high-level principles it intends to guide the continued development of price setting over the longer term in 'Future Price Limits – a consultation on the framework'²⁰;
- Published 'Future Price Limits – statement of principles'²¹ building on the feedback received;
- Consulted separately on its approach to wholesale incentives²² and retail price controls in PR14 within this longer term framework²³; and
- Consulted on its draft price control methodology for the PR14 price control²⁴ and its proposed approach to business planning²⁵.

Ofwat's Future Price Limits (FPL) principles²⁶ set out measures to reform both the approach to price control (how controls are set) and the business planning approach (the process used to review companies' submitted business plans). Ofwat's intentions are that the reforms will:

- Deliver a proportionate price setting process – focusing scrutiny and challenge where it is most needed;

²⁰ "Future Price Limits – a consultation on the framework", Ofwat, November 2011 (see http://ofwat.gov.uk/consultations/pap_con201111fpl.pdf).

²¹ "Future Price Limits – statement of principles", Ofwat, May 2012 (see http://ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplprincip.pdf).

²² http://ofwat.gov.uk/pricereview/pr14/wholesale/prs_web120825wholesaleprice.

²³ http://ofwat.gov.uk/pricereview/pr14/retail/prs_web201207retailprice.

²⁴ http://ofwat.gov.uk/pricereview/pr14/pr14publications/prs_web201301framework.

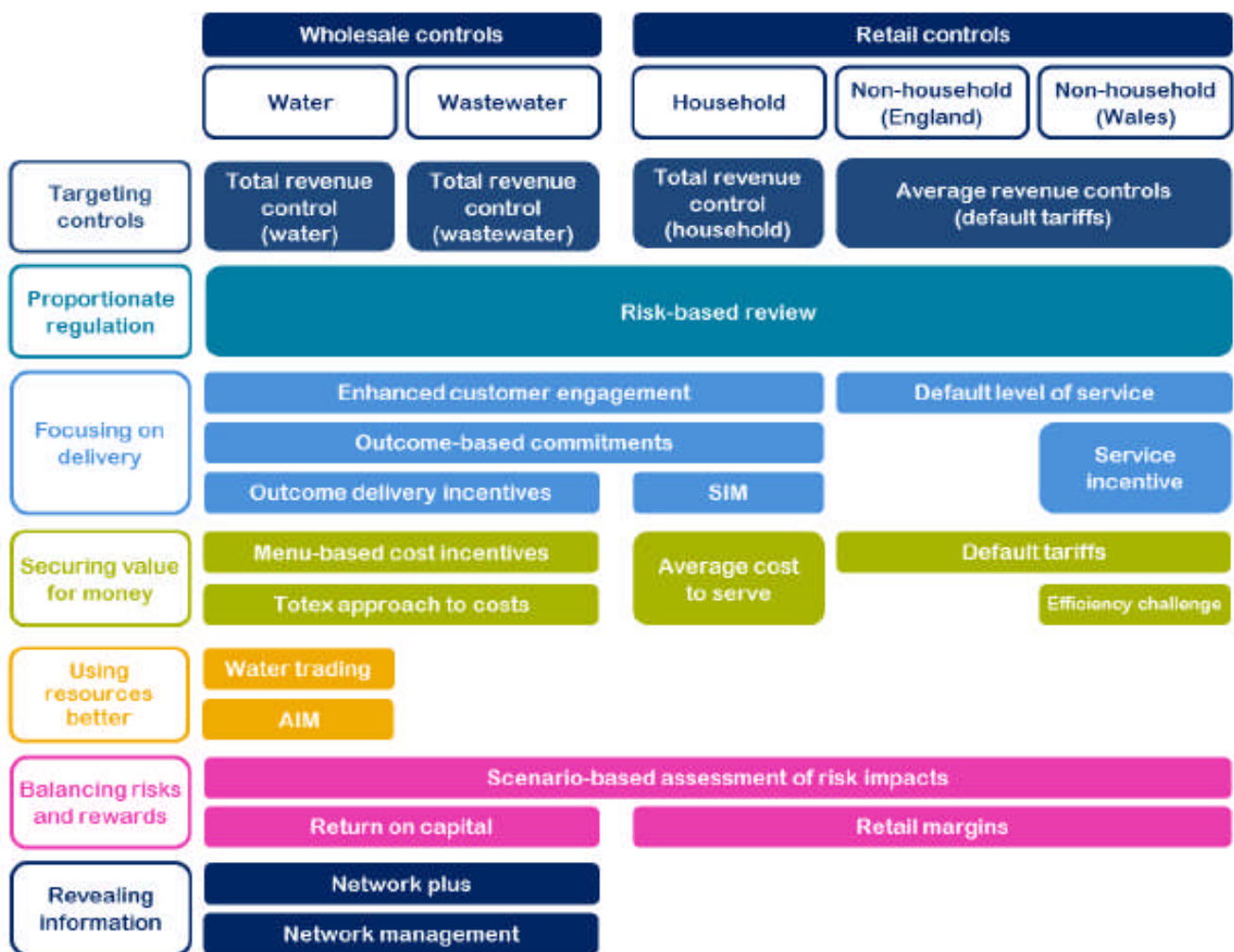
²⁵ http://ofwat.gov.uk/pricereview/pr14/prs_web201304busplanning.

²⁶ "Future Price Limits – Statement of principles", Ofwat, May 2012 http://ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplprincip.pdf

- Target price control regulation by setting separate controls for companies’ wholesale and retail activities;
- Encourage a greater focus on the outcomes customers want, giving companies greater ownership of – and accountability for – how well they deliver to customers and their impact on the environment in the long term;
- Drive efficiencies to secure the best possible value for money for customers;
- Encourage better, more sustainable use of water resources;
- Balance risks and rewards fairly between customers, companies and their investors;
- Deliver a balanced overall price control package that is financeable for companies – safeguarding investment and stimulating growth – and is affordable for customers now and in the future; and
- Reveal information to help improve the way it sets price controls in the future (beyond 2020).

In July 2013, Ofwat published its final methodology for setting price controls for 2015-20²⁷. The approach is designed to enable it to support the FPL principles set out above. The key elements of the final methodology are illustrated in Figure 2 below.

Figure 2: Structure of Ofwat’s new regulatory approach



Source: Ofwat

In developing its final methodology for PR14, Ofwat has taken account of independent reviews of the water and wastewater sectors and the Government’s plans for further market reform in recent years. The Gray Review

²⁷ “Setting price controls for 2015-20 – final methodology and expectations for companies’ business plans”, Ofwat, July 2013 (see http://www.ofwat.gov.uk/pricereview/pr14/pap_con201301framework.pdf?download=Download).

assessed Ofwat's performance as an economic regulator and made several recommendations to enhance consumer representation in the sector and promote engagement with wider stakeholders²⁸.

In March 2008, the Government commissioned an independent review of competition and innovation in water markets - the Cave Review²⁹. This recommended measures to facilitate upstream and retail market reforms, support sustainable abstraction and discharge and promote innovation. The current and future challenges faced by the water and wastewater sectors are reiterated in the Water White Paper (WWP)³⁰.

The WB, which was published in June 2013, sets out the Government's commitment to extending competition for retail water and wastewater services to non-household customers in England by allowing all businesses and public sector customers to choose their supplier from 2017³¹. In addition, the WB introduces measures to facilitate the development of upstream markets and help stimulate greater innovation. Together, these reforms aim to promote the efficient and sustainable use of water resources.

Ofwat's final methodology for PR14 and this IA have been developed to take account of the Government's proposed reforms and recommendations regarding its own future role as an economic regulator.

The purpose and structure of this Impact Assessment

Ofwat uses the process of IA to support the development of its regulatory policy. It has been an integral part of its finalisation of the methodology to set price limits for PR14.

This IA builds upon:

- Ofwat's Draft Impact Assessment and Final Impact Assessment delivered as part of its FPL consultation; and
- Defra's IAs which accompany its WWP (published in December 2011), updated for the WB dealing with retail competition³² and upstream market reform³³.

The scope and results of these IAs are summarised in This IA assesses the impact of Ofwat's final methodology for PR14. It builds upon the findings of existing IAs, updating or adjusting earlier analysis as appropriate. Where the final PR14 methodology differs from those consulted upon, we develop our own assessment.

Table 2: Summary of past relevant IAs. In the draft and final FPL IAs, the estimated total impact of the reforms only included those reforms where monetised estimates could be developed at the time (principally the retail form of control and water trading).

This IA assesses the impact of Ofwat's final methodology for PR14. It builds upon the findings of existing IAs, updating or adjusting earlier analysis as appropriate. Where the final PR14 methodology differs from those consulted upon, we develop our own assessment.

Table 2: Summary of past relevant IAs

²⁸ "Review of Ofwat and Consumer Representation in the Water Sector", David Gray, July 2011 (see https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69442/ofwat-review-2011.pdf).

²⁹ "Independent Review of Competition and Innovation in Water Markets: Final report", Professor Martin Cave, April 2009 (see <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>).

³⁰ "The Water White Paper", Defra, 5 July 2012 (see <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvfru/374/374.pdf>).

³¹ "Draft Water Bill", Defra, 1 February 2013 (see <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvfru/674/674.pdf>).

³² "Introducing Retail Competition in the Water Sector", Defra, 24th November 2011 (see <http://archive.defra.gov.uk/environment/quality/water/documents/water-ia-retailcomp-20120710.pdf>).

³³ "Upstream competition", Defra, 24th November 2013 (updated 24th May 2013) (see <http://www.parliament.uk/documents/impact-assessments/IA13-19C.pdf>).

IA	Scope	Net present value of impacts ³⁴
Ofwat FPL Draft IA	Measured impacts of changes to Ofwat's price control methodology and business planning; the process of the price control and the nature of Ofwat's challenge, changes to the incentive frameworks in place, and changes to the form of the control for both water and wastewater.	£1,810m – benefit from a separate retail and wholesale price control with a binding sub-limit on network plus within the wholesale control.
Ofwat FPL Final Impact Assessment	Measured impacts of changes to Ofwat's price control methodology and business planning; Incorporated evidence from consultation responses and the consequential effects of proposals set out in the Water White Paper for retail competition and upstream competition. Also included the impacts of introducing a margin on total non-household retail revenues such as to incentivise competitor entry.	£1,410m – the value was reduced from the Draft Impact Assessment because a different form of Network plus reform was assessed and the assumptions driving the estimated benefits of the reform to the household retail control were different.
Defra Upstream Competition IA	Measured impacts of legislation to promote upstream competition. Efficiency gains were measured by applying updated data to Cave's methodology.	£1,750m - benefit from upstream competition including upstream water and wastewater licences only.
Defra Retail Competition IA	Measured impacts of legislation to facilitate non-household retail competition.	£190m - benefit from competition assuming no additional separation of water companies.

Source: PwC analysis

Report structure

The remainder of our report is set out in eight Sections:

- Section 2 describes the approach, including the framework, which has been used in this IA.
- Sections 3-9 present the findings of the IA for seven parts of the final PR14 methodology:
 - Section 3: Business planning, which focusses on the reforms to the business planning process;
 - Section 4: Outcomes approach, including outcomes delivery incentives;
 - Section 5: Wholesale controls, including the form of control, totex and menus;
 - Section 6: Retail controls, including household and non-household forms of control;
 - Section 7: Using resources better, which includes water trading incentives and the abstraction incentive;
 - Section 8: Managing risk, which includes the financial structure monitoring regime; and
 - Section 9: Revealing information, which includes network plus and network management.
- Section 10 discusses the other potential specific impacts that the policy changes may have, such as those on small businesses, competition and the environment. The Government's guidance recommends that these tests should be considered in impact assessments³⁵.

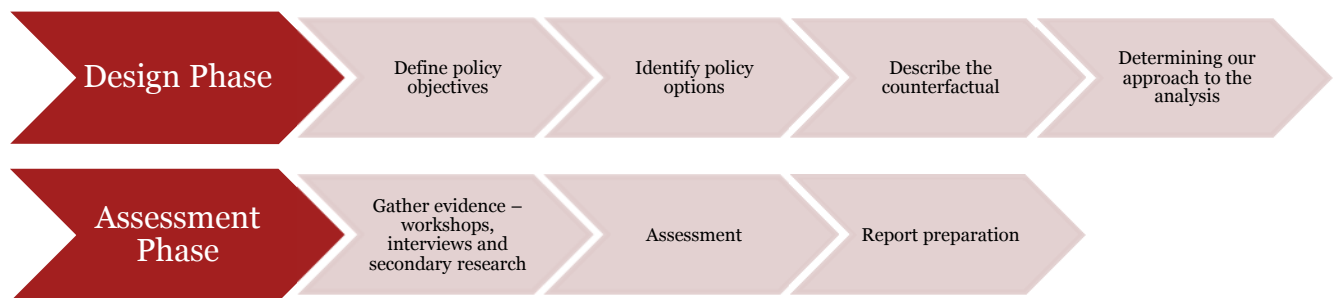
³⁴ Impacts of preferred option over 30 years.

³⁵ <http://webarchive.nationalarchives.gov.uk/+/http://www.bis.gov.uk/policies/better-regulation/policy/scrutinising-new-regulations/preparing-impact-assessments/specific-impact-tests>.

2. Approach

This Section summarises our approach to the IA. The framework we have used to underpin it is consistent with the guidance on impact assessment provided by HM Government³⁶ and involved two phases of work: a Design Phase and an Assessment Phase, illustrated in Figure 3 below. In the Design Phase, we defined the scope and planned the approach to the IA whilst in the Assessment Phase we gathered the evidence and performed the analysis in order to implement the plan.

Figure 3: Overview of approach



Source: PwC

Design Phase

The Design Phase focused firstly on identifying Ofwat’s PR14 methodology reforms which are relevant to the IA. It then considered the type of assessment that each policy would be subject to. This involved the following steps:

- Defining the objectives of each element of the final PR14 methodology;
- Identifying the policy options for achieving the objectives;
- Describing the counterfactual; and
- Determining our approach to the analysis.

Defining the policy objectives

Our first step was to define the purpose (or objective) of each element of the PR14 methodology and a clear rationale in order to identify the potential benefits and costs of each reform. We:

- Identified ‘the problem’ requiring the proposed policy change; and
- Described how and why the proposed policy change is expected to address this problem.

Identifying the policy options

Our second step was to identify the regulatory and non-regulatory options available for achieving desired policy objectives. Ofwat has already conducted the options identification and assessment process during the FPL

³⁶ “IA Toolkit: How to do an IA”, HM Government, August 2011 (see <http://www.bis.gov.uk/assets/BISCore/better-regulation/docs/I/11-1112-impact-assessment-toolkit.pdf>).

consultation and its conclusions are reflected in the draft and final FPL IAs. This IA does not repeat this previous work on option assessment: only the final policy reform is assessed.

Describing the counterfactual

To ensure our assessment of the impacts of Ofwat’s final methodology for PR14 focuses on the incremental impacts attributable to the methodology, we needed to make sure that we did not include any impacts that would have arisen even if Ofwat had not changed its methodology. In line with the Government’s advice on Impact Assessments, we have done this by constructing an alternative scenario called a counterfactual. For example, customers’ bills can also be affected by cost reductions in the sector that would occur even if Ofwat’s previous price control methodology was used – while important, these impacts are not the focus of this policy IA. In this context, the counterfactual describes what we expect would occur beyond 2015 in the absence of the reforms contained in Ofwat’s final PR14 methodology. We then estimate the incremental impact of Ofwat’s final methodology for PR14 by comparing it against the counterfactual.

The main counterfactual we have used assumes that Ofwat continues to use the PR09 methodology and that the WB progresses through Parliament and is enacted. The WB contains several measures that will affect the impact of Ofwat’s reforms including the extension of competition in the non-household retail segment in England and reforms that will facilitate upstream market reform.

When assessing the impact of Ofwat’s final methodology for PR14, we need to make specific assumptions about the efficiency gains that would have been achieved under the counterfactual. Defra’s IAs on the WB assumes that the counterfactual would deliver efficiency savings of 1.0% per annum for both capital expenditure (capex) and operating expenditure (opex). These values were derived by extrapolating the downward trend in efficiency gains achieved during previous price control periods (see Table 3).

Table 3: Average efficiency improvements per annum³⁷

	2000-2005	2005-10
Operating expenditure		
Water service	3.1%	1.6%
Wastewater service	3.1%	1.5%
Capital expenditure		
Water service	4.2%	2.4%
Wastewater service	6.2%	2.7%

Source: “Future Price Limits – statement of principles - Appendix 1: Draft Impact Assessment”, Ofwat, November 2011

Defra estimated that incremental efficiencies could be delivered over and above the 1.0% gains assumed in the counterfactual through the reforms introduced by the WB. The non-household retail market reforms are estimated to deliver one-off efficiency gains of 2.5% in the non-household retail segment, 0.6% in the household retail segment and 0.1% in the wholesale segment. Further dynamic efficiencies are expected in non-household retail and household retail of 0.4% and 0.1% per year respectively.

The reforms to the upstream market are assumed to deliver further efficiency gains equivalent to a one-off improvement in the wholesale segment of 1.2% for opex and 1.5% for capex. On-going dynamic efficiencies are also expected by Defra which are equal to 0.04% per annum for opex and 0.05% per annum for capex³⁸.

The assumed counterfactual in our IA includes both the 1.0% per year efficiency which may be achieved if the PR09 methodology remained in place plus the incremental gains from non-household retail and upstream

³⁷ Figures are estimated by Ofwat based on figures for catch-up, continuing and outperformance efficiency. AMP5 data is excluded because the control period is only part complete.

³⁸ In the Defra IA the upstream efficiencies are only applied to 62% of wholesale costs – we have adjusted the values to present an equivalised figure that can be applied to total costs.

market reforms and existing legislation. We have done this to enable greater consistency with the Defra analysis.

Our counterfactual builds upon the one used in Ofwat’s final FPL IA which assumed comparative regulatory efficiency gains of 0.5% per annum in opex and a 1.0% per annum in capex (based on the legislative proposals in the WWP being implemented)³⁹. The FPL IA assumption was based on analysis of the relative efficiency of companies since 2005 which showed that relative positions were little changed. This led Ofwat to conclude that the current efficiency incentives may be working less well for some companies than others. It also concluded that whilst comparative regulatory efficiency has delivered improvements in productive efficiency, it has been less effective at incentivising dynamic and allocative efficiency improvements. Since our counterfactual assumes greater efficiency gains than the FPL IA, this will reduce the estimated incremental benefits, all else being equal.

As a sensitivity test for some of Ofwat’s reforms in the final PR14 methodology, we also consider an alternative counterfactual in which the WB is not enacted (i.e. the proposed reforms to the retail and upstream markets are not implemented). This has implications for the scale of the incremental impact for some of Ofwat’s reforms.

Determining our approach to the analysis

The final step in the Design Phase was determining our approach to the analysis in the Assessment Phase. The Better Regulation Executive recommends that any assessment of policy should be proportionate to:

- The scale of the expected impacts; and
- The feasibility of performing detailed analysis.

Depending on these two factors, policy costs and benefits should be assessed at one of five levels (see Table 4 below). The less material the expected impact of a policy (and/or where quantitative analysis – including monetising the impacts - is not feasible), the more the focus should be on qualitative, descriptive analysis of the impact of the policy. The more material the impact and more feasible the analysis, the more it should focus on fully monetised assessment of costs and benefits.

Table 4: Levels of impact analysis expected

Level	Description of analysis required
5	Monetise fully all the costs and benefits
4	Monetise (some of) the costs but not the benefits; use qualitative, non-monetised costs and benefits to fill gaps
3	Quantify the costs and benefits
2	Fully describe the costs and benefits
1	Describe who will be affected by the proposals – business, public sector and consumers

Source: “IA Toolkit: How to do an IA”, HM Government, August 2011

In parallel, we determined the level of required impact analysis. We also considered the grouping of particular policies. This is because some policies are either complementary or overlap and their impacts cannot be separated in a meaningful way.

The resulting structure and assessment level are summarised in Table 5. The column headings relate to the Sections and Sub-sections in our report, the elements of Ofwat’s final methodology assessed (which follows the framework for the final methodology reproduced in Table 5) and the assessment level for each group of elements of the methodology.

³⁹ “Future Price Limits –statement of principles –Appendix 1: Impact Assessment”, Ofwat, May 2012 (see http://www.ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplimpact.pdf).

Table 5: Grouping and assessment levels of Ofwat’s final methodology

Section	Sub-section	Elements of Ofwat’s final methodology assessed	Assessment level
3. Business planning	n/a	Scenario-based assessment of risk impacts Risk based review Enhanced customer engagement	2-4
4. Outcomes approach	n/a	Outcome delivery incentives Outcome-based commitments	3/2
5. Wholesale controls	5a. Wholesale form of control separation	Total revenue control water Total revenue control wastewater Return on capital	2
	5b. Totex cost assessment and recovery	Totex approach to costs	4
	5c. Menu-based cost performance incentives	Menu-based cost incentives	4
6. Retail controls	6a. Household retail controls	Total revenue control Average cost to serve SIM Efficiency challenge Retail margins	4/5
	6b. Non-household retail controls in England	Default tariff Default level of service Retail margins	4/5
	6c. Non-household retail controls in Wales	Default tariff Service incentive Efficiency challenge Retail margins	2
7. Using resources better	7a. Water trading incentive	Water trading incentive	5
	7b. Abstraction incentive mechanism (AIM)	AIM	2
8. Managing risk	n/a	Scenario based assessment of risk impacts Return on capital Retail margins	2
9. Revealing information	9a. Network plus	Network Plus	3
	9b. Network management	Network Management	2

Source: PwC

Assessment Phase

In our Assessment Phase, we analysed the likely nature and scale of the impacts expected to arise from Ofwat’s final methodology for PR14. The steps we took were to:

- Gather evidence, review existing evidence through secondary research, discuss with key stakeholders and, where appropriate, develop economic models to assess the expected costs and benefits of the policy changes;
- Assess the impacts at the level determined in the Design Phase; and
- Prepare this report summarising the findings of this IA.

Evidence gathering

We gathered evidence to support the IA from a range of sources including:

- Previous research commissioned by Ofwat as part of its preparations for PR14;
- Previous IAs and evaluations which have assessed the actual and expected impacts of policies which are analogous to those envisaged by Ofwat;
- Discussions with nine water companies and other key stakeholders including Defra, the Drinking Water Inspectorate, the Environment Agency, the Welsh Government, National Resources Wales and the Consumer Council for Water; and
- Secondary evidence relevant to the policy changes, such as Impact Assessments from comparable policy reforms in other regulated sectors. References are included in footnotes throughout our report.

Where impacts are assessed at Level 3 or above, we also developed economic models to assess potential costs and benefits. The models either update and build upon existing models developed by Ofwat (e.g. for water trading) or are new models when none previously existed (e.g. menus, totex and network plus). Where modelling is used, we have discussed the conceptual underpinnings and results with Ofwat. However, Ofwat has not performed a detailed review of the workings of these models.

Assessment

Based on the evidence available to us, we then assessed the expected impacts of the PR14 methodology. As part of this assessment, we have addressed several key issues related to methodology and data:

- **Length of appraisal period:** Consistent with best practice, we used a 30-year assessment period for this IA to capture all relevant impacts over a reasonable longer term planning period. This is also consistent with the FPL IA. The duration and timing of impacts will depend on the policy being implemented.
 - Some changes will continue to have an impact even if the detailed approach changes at subsequent reviews, for example greater ownership by companies of their business plans, household retail form of controls and menu-based cost performance incentives;
 - The costs of some changes may be incurred before all the benefits are realised if the benefits extend for many years, for example, the principal benefits of network management may only be realised if and when further incentives are introduced); and
 - The impact of other changes may be limited to the period 2015 to 2020.

Where impacts occur over a number of years we combined them into a single net present value (NPV) using a social discount rate of 3.5% per annum, consistent with HM Treasury guidance. In doing this, we recognise that some impacts will be limited to the period from 2014 to 2020 (i.e. the PR14 process and price control period of 2015-20) and that Ofwat could change its policies at the next Periodic Review (PR19).

- **Incremental costs/benefits:** Our analysis has focussed on identifying those costs and benefits which are incremental to those that would arise in the counterfactual. We have also sought to avoid double counting of costs and benefits during the analysis where different elements of the PR14 methodology may contribute to the same impact.

The types of costs and benefits we have considered are the impacts on:

- **Allocative efficiency** which reflects the extent to which water companies are encouraged (and able) to provide those services which are most highly value by customers and where the value exceeds the cost of their provision.
- **Productive efficiency** which reflects how far water companies are encouraged (and able) to deliver their services at the lowest (lifetime) cost.
- **Dynamic efficiency** which reflects how far water companies are encouraged to improve their allocative and productive efficiency over time.

In doing this, we have also examined how the costs and benefits are distributed between water companies, their customers and wider society.

The materiality of the expected impact has been assessed from a national perspective, recognising that in certain cases the impacts may be significant at a local level but not nationally, for example Wales and AIM (which affects sites which are not uniformly distributed). Furthermore, in the absence of a comprehensive

set of monetised assessments of the environmental impacts, our approach is to weight the impacts on customers and wider consumers qualitatively. Similarly, expected future impacts have been incorporated by estimating the present value of the impacts over a 30 year period using HM Treasury's recommended discount rate (3½%). This is consistent with the approach used in earlier IAs.

- **Quality and comprehensiveness of evidence:** In some cases, where the expected impacts may be material (e.g. totex), we have not found the evidence needed to estimate the expected impacts with certainty. In these instances we have used 'what if' analysis (using assumptions) to illustrate the likely magnitude of the impacts. Where we have done this, we make it clear that our quantification is illustrative. This is consistent with the approach described above in 'Determining our approach to the analysis' where the assessment level is also determined by the feasibility of detailed analysis.

Reporting

This report summarises our views of the key impacts of Ofwat's reforms in its final methodology for PR14, along with the magnitude of these impacts in some instances. We have developed this report in conjunction with Ofwat as it developed its final methodology.

Ofwat is entering into commercially sensitive dialogue with water companies as part of PR14. In some areas of the Section on the retail form of control, we describe the quantified impacts in relation to the FPL findings, rather than giving our specific estimates of the costs and benefits. This is to avoid undermining the on-going business planning process by companies.

3. Business planning

This Section summarises the results of our assessment of the changes to the business planning process which Ofwat is implementing under its proportionate regulation element of the PR14 methodology. The assessment is reported using a common structure which is repeated throughout the rest of this document under the following headings:

- Summary of expected impacts;
- Policy proposal; and
- Expected impacts (including key risks and uncertainties surrounding the assessment).

Summary of expected impacts

Changes to the business planning process should deliver higher quality plans and associated price limits which help to target water companies’ resources towards what customers value most (boosting the efficient allocation of resources). The reforms should also improve innovation (and so dynamic efficiency) over time as companies focus less on the regulator’s requirements and more on reallocating resources and re-shaping delivery processes to better meet consumers’ needs.

Most companies interviewed believe that PR14 will cost them more than PR09 to deliver, in particular because they are expected to engage further with their customers. But we expect that efficient water companies will see their administrative costs fall in PR14 and beyond as a result of the new processes now being introduced for the first time as part of the Risk Based Review (RBR), particularly for companies whose business plans are categorised as either Enhanced or Standard (once the current changes have been fully implemented). This should cancel out any short-term increase in cost for PR14 and lead to cost savings in the longer term.

Table 6: Business planning impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality
Customers	Improved quality of plans which may boost consumer surplus and/or reduce bills	None expected	Positive	●
Companies	Benefits for Enhanced companies through fast tracking and incentives	Potential limited cost of capital impact for companies in Resubmission category No net impact on administrative costs		

Key – scale of expected impact⁴⁰



Source: PwC analysis

⁴⁰ The materiality of the expected impact has been assessed from a long-term national perspective taking account of any environmental considerations qualitatively and recognising that in certain cases the impacts may be significant at a local level but not nationally.

Policy proposal

The Gray review concluded that Ofwat's approach to business planning had grown more prescriptive over successive Periodic Reviews and its guidance for companies' business plans had become more extensive and detailed⁴¹. Consequently, water companies' business plans became increasingly constrained by Ofwat's requirements, reducing company ownership of, and accountability for, their proposals. Gray said that companies had become very Ofwat-focussed and very cautious and conservative in their approach. Ofwat believes that companies had weak incentives to innovate or to do more than the minimum required by their guidance.

Ofwat's final methodology for PR14 introduces a revised approach to business planning which is intended to encourage water companies to develop higher quality plans that better reflect consumers' interests, are more innovative and are fully owned by their Boards. The new approach includes changes to the process including:

- Making the guidance on business plans less prescriptive;
- Requiring more explicit ownership of the plans by companies' Boards;
- Embedding customer engagement, e.g. through engagement with the new Customer Challenge Group (CCG) for each company;
- Tailoring Ofwat's scrutiny of plans on a proportionate basis through the Risk Based Review (RBR); and
- Introducing reputational, procedural and financial incentives for companies to produce high quality business plans.

There are also several changes to water companies' reporting and data requirements including:

- A requirement for disaggregated data for household retail, non-household retail, water wholesale and wastewater wholesale in business plans to support other parts of the methodology;
- A requirement for companies to include information on scenarios for economic and other risks in their business plans; and
- Removal of the need to perform modern equivalent asset value (MEAV) re-valuations.

One element of the RBR is that Ofwat will judge the quality of business plans and categorise them to one of three categories – Enhanced, Standard or Resubmission⁴². Ofwat's assessment of business plan quality will affect water companies differently. The level of scrutiny and challenge of the plan, the timing of draft determinations and potentially the menus available to the company could be different. For example, companies in the 'Enhanced' category may have access to enhanced menu rewards which include greater proportions of retained profit from cost outperformance. There may also be a reputational impact as Ofwat will publish its RBR categorisation.

Ofwat's changes to the process are also designed to lead to greater levels of customer input into business plans. Each company and its Board will now have a CCG which will challenge the quality of their customer engagement and how well their proposed outcome, associated commitments and delivery incentives reflect their customer engagement. CCGs are required to submit their reports alongside companies' business plans.

The RBR is designed to deliver a more proportionate and targeted price setting process. Companies with very high-quality plans, which qualify for the Enhanced category, can expect a reduced data burden compared with previous Periodic Reviews and compared to those companies categorised as Standard or Resubmission. Ofwat will target its resources where they are most needed – including giving greater scrutiny to companies with poorer quality plans.

⁴¹ "Review of Ofwat and Consumer Representation in the Water Sector", David Gray, July 2011 (see https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69442/ofwat-review-2011.pdf).

⁴² The judgement will be based on four criteria: outcomes, costs, risk and reward and affordability and financeability.

Expected impacts

The changes to the business planning process have already been assessed by Ofwat in its draft and final FPL IAs which have provided quantitative estimates of the expected administrative impacts and qualitatively described the policy impacts. Below, we describe the expected policy impacts and then consider the administrative impacts of the reforms.

Policy impacts

We have considered two potential impacts identified in the Design Phase:

- **Efficiency impact from greater ownership of the business planning process and higher quality business plans:** Ofwat's changes may improve the quality of business planning processes and business plans that companies produce, which may lead to improvements in companies efficiency in both the short and longer term.
- **Impact on investor perceptions and cost of capital:** Ofwat's categorisation of the quality of companies' business plans may affect investor perceptions of management quality and, potentially, influence the cost of capital faced by companies.

Efficiency impact from greater ownership of the business planning process and higher quality business plans: A key part of the rationale for Ofwat's reforms to the business planning process is to improve the quality of business plans. The process is expected to support greater company ownership of plans and better engagement with customers and the less prescriptive approach is designed to complement moving to an outcomes-based approach and to total expenditure based cost assessment.

Greater company ownership will encourage more responsiveness and innovation to reflect the needs of customers rather than being constrained by Ofwat's prescribed requirements. Greater innovation will support improved efficiency if it enables water companies to do more with less. Greater customer focus and engagement will mean that, for a given level of cost, companies deliver more of what customers want. In addition, through better identification and mitigation of risks (via the scenarios approach), the probability of financeability and continuity of service problems is expected to be reduced. Ultimately, we expect customers to ultimately benefit from higher quality plans which better represent what they value delivered more efficiently.

In our discussions with them, water companies and consumer groups generally expected Ofwat's reforms to the business planning process to have a positive impact on their efficiency and, ultimately, consumers. This view was also supported in companies' formal responses to Ofwat's business planning consultation. Most companies agreed that Ofwat's proposed business planning reforms would give companies greater ownership of their plans.

Ofwat's reforms are also expected to result in dynamic efficiency gains as companies focus less on meeting Ofwat's requirements and more on innovating, reallocating resources and re-shaping delivery processes to better meet consumers' needs.

Ofwat's categorisation of companies' business plans using the RBR process is expected to create reputational incentives for quality. It will also determine the range of procedural and other financial rewards and penalties available, such as fast tracking of enhanced plans. We discussed the implications of this with companies who felt that the categorisation will provide a strong incentive to improve the quality of their business plans. Most felt that the requirements to achieve an Enhanced category were too high and, in response, they would focus on avoiding the Resubmission category. This view was based on the understanding that for plans to be rated as Enhanced, all elements would have to be rated as such, whilst if a single element of the plan was classified as Resubmission, then the plan would receive this rating overall.

In response to this feedback, Ofwat has clarified both its RBR criteria and the rewards for achieving Enhanced status. It has made clear that a very high quality plan will secure Enhanced status and plans will not fail to be classified as Enhanced due to unimportant technicalities in the RBR tests. It has also confirmed its intention for

Enhanced companies to be financially better off overall than Standard companies. This will provide a stronger incentive package to target high quality plans. We understand that several water companies have already expressed an intention to deliver an Enhanced plan.

Evidence from the energy sector supports our view that the RBR could enhance the overall quality of business plans and help companies to improve their performance to the benefit of consumers. Ofgem adopted a similar “fast-track” methodology for the first time in 2012. High-quality business plans were subject to less regulatory scrutiny and received an accelerated determination (one year ahead of other plans)⁴³. In its most recent business planning consultation document for gas distribution, Ofgem noted that “plans were of a much higher quality relative to previous price control submissions, and the plans were informed by a much greater degree of stakeholder engagement”⁴⁴.

Impact on investor perceptions and cost of capital: The second potential policy impact is the potential impact of the RBR process, especially the categorisation of business plan quality, on the cost of capital. In our discussion with them, water companies expressed concerns that being placed in the Resubmission category would increase their cost of capital, without an equivalent offsetting effect on the cost of capital of Enhanced companies.

We also interviewed several investors with experience in the water and wastewater sector and asked them how they thought Ofwat’s proposed categorisation of business plans would affect how they perceived the quality of the company itself and whether any change could be material enough to alter a company’s cost of capital. Investors had mixed views but, on balance, thought that the categorisation of business plans as set out in Ofwat’s consultation could affect the cost of capital asymmetrically⁴⁵. The cost of capital would rise more for Resubmission companies than it would fall for Enhanced companies. This is partly because corporate bond yields are currently close to record lows and there is little potential for a reduction in yields.

Assuming any change in the cost of capital due to the RBR is not reflected by Ofwat in its determination, customers of Resubmission water companies would not be impacted provided that any impacts were not large enough to affect financeability. Instead, the impact would fall on water companies’ profits.

We can illustrate the potential scale of this impact using assumptions which build on our discussions with investors:

- The share of companies in the Resubmission and Enhanced categories is symmetric with 10% of industry regulatory capital value (RCV) in each category⁴⁶;
- The impact on the cost of capital is asymmetric (with a +100 basis point impact for Resubmission companies and a -50 basis point impact for Enhanced companies); and
- £10bn of new capital is raised in the period between 2015 and 2020⁴⁷.

Using these assumptions, we estimate that the net cost to companies would be £20m (NPV over 30 years). There may be a negative impact on investor perceptions for companies who submit lower quality business plans; however, it is unclear whether this impact is incremental to the counterfactual. Under the PRO9 methodology, the submission of business plans and subsequent changes to them during the determination process was relatively transparent. Investors could monitor the process and make judgements on business plan quality.

⁴³ “Strategy decision for the RIIO-ED1 electricity distribution price control – Business plans and proportionate treatment”, Ofgem, March 2013 (see <http://www.ofgem.gov.uk/Networks/ElecDist/PriceCtrls/riio-ed1/consultations/Documents1/RIIOED1DecBusinessPlans.pdf>).

⁴⁴ “RIIO-GD1: Final Proposals – Overview”, Ofgem, December 2012 (see http://www.ofgem.gov.uk/Networks/GasDistr/RIIO-GD1/ConRes/Documents1/1_RIIODG1_FP_overview_dec12.pdf).

⁴⁵ “Setting Price Controls for 2015-20 – Framework and Approach: A Consultation, Ofwat, January 2013 (see http://www.ofwat.gov.uk/pricereview/pr14/pap_con201301framework.pdf?download=Download).

⁴⁶ This implies the remaining 80% of industry RCV is allocated to companies in the “Standard” category.

⁴⁷ This value is an assumption based on approximate figures suggested by investors. It is only used to illustrate the potential impact of any cost of capital impact and should not be considered to be a forecast or projection of the actual amount of capital that is likely to be raised by water companies during AMP 6.

Moreover, investors' perception of an asymmetric impact was based on Ofwat's consultation proposals. Ofwat's clarifications in its final methodology suggest that the rewards for Enhanced status are expected to be significant. There will be an offsetting impact on company finances through benefits from more generous menu options and fast-tracking of business plans. Overall, we consider that the net impact on companies of the categorisation is likely to be neutral.

We note that the financial benefits of achieving Enhanced status would need to be funded by customers in the next Periodic Review period from 2020 to 2025. Given the potential consumer benefits arising from the improvement in business plan quality, however, we would expect the net impact on current and future consumers over the IA period to be positive.

Administrative impacts

Ofwat's substantial reforms of the business planning process are expected to affect the one-off costs of PR14. Ofwat estimated the one-off administrative burdens of its proposed PR14 methodology in the final FPL IA. It estimated that the total administrative cost for the PR09 business planning methodology across all companies was £100m and changes in its proposed changes were estimated to reduce this one-off cost by £5m to £25m (equivalent to an NPV of £20m to £100m). Some companies interviewed for this IA, however, considered that this estimated saving was overstated.

We have assessed the potential scale of this burden, drawing on our discussions with water companies to review the PR09 cost estimate and, then, to consider the incremental impact of the final PR14 methodology. The overall cost estimate of £100m for the business planning methodology in PR09 was broadly agreed, although no detailed breakdowns of the cost estimates was provided. A range of factors which led to incremental changes in costs were raised (see Table 7).

Table 7: Summary of incremental changes to the administrative burden of the business planning process (PR14 relative to PR09)

Cost increases	Cost decreases
<ul style="list-style-type: none"> Engagement with Customer Challenge Groups (CCGs) (before PR14, engagement levels were less prescribed and, according to water companies and consumer groups, less costly) Greater use of Willingness To Pay (WTP) surveys Development of new financial models for totex and in some cases choosing to reverse engineer the baseline models Increased time required to understand and respond to changes, given the greater pace of reform in PR14, relative to previous Periodic Reviews Development of separate plans for different parts of the value chain rather than a single plan 	<ul style="list-style-type: none"> Proportionate review reducing the burden on enhanced companies/ enhanced elements of business plans Stopping the use of some price limits tools used in the past (e.g. removal of need to perform MEAV re-valuations) Reduction in business planning data requirements Being less prescriptive about what should be in the business plan which provides greater flexibility Removal of need to submit draft business plans to Ofwat Removal of requirement to specify extensive list of outputs in business plan

Source: PwC

Water companies considered the time taken to engage with Customer Challenge Groups and the cost of commissioning consumer research (including WTP surveys) to be the most significant impacts, although these impacts need to be considered in the context of the policy benefits expected from better quality business plans due to enhanced customer engagement. The water companies we interviewed thought that the removal of the need to conduct MEAV valuations as part of the business planning process was a significant saving.

Water companies also felt that some of the potential savings would not be realised in PR14, as the lack of certainty about the changes (and their implications), together with limited notification periods, have meant that some activities have continued to be undertaken 'just in case' they were required. For example, many companies continued to collect data based on the PR09 methodology requirements even though Ofwat has now confirmed that the data requirements for the business plans have been changed substantially for PR14.

In our view, if a water company continues to collect data that is no longer required by Ofwat because they find it helpful for running their business, then the associated costs should not be attributable to regulation. If the data were no longer required by Ofwat, and an efficient company did not need these data for other purposes, this should result in a benefit from reduced administrative costs.

Water companies estimated that the one-off administrative costs of the business planning process under the PR14 methodology were higher than in PR09 although they recognised the estimate was subject to uncertainty. A detailed breakdown of the costs was not provided as PR14 is still in progress so these data are not available. This means it is difficult to validate the estimate. The administrative burden will also depend on the outcome of the RBR and the distribution of companies in the resubmission and enhanced categories.

Ofwat believes that its changes will reduce the overall administrative burden when assessed over the 30-year life of the IA. Our discussions with water companies did not provide any evidence on this longer term perspective but we expect that in the longer term once the reforms have been fully implemented, efficient water companies will see their administrative costs fall. We expect this to offset any short-term increase in cost for PR14.

Finally, the PR14 business planning process will also impose a small burden on the members of the public who participate in CCGs and participating consumer organisations such as the Consumer Council for Water. We have not sought to quantify these impacts as they are also unlikely to be material relative to the benefits.

4. Outcomes approach

This Section summarises the results of our assessment of the outcomes approach (including outcome delivery incentives) which Ofwat will implement as part of the ‘Focusing on delivery’ element of its final PR14 methodology.

Summary of expected impacts

The outcomes approach is expected to allow water companies the flexibility to deliver outcomes at a lower cost and to manage the risks of doing so through delivery incentives, following customer engagement. This should focus their plans on areas their customers most value. Local environmental concerns can be directly addressed by this process, subject to meeting the environmental regulators’ statutory requirements. Because water companies have been asked to develop their own outcomes proposals in their business plans (subject to a small number of consistent outcomes for all companies), quantification of specific benefits has not been undertaken at this stage.

Table 8: Outcomes approach impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁴⁸
Customers	Increase in consumer surplus through improved allocative efficiency	None expected	Positive	●
Companies	Reduction in administrative costs	None expected		
Society	Potential benefits to the environment from environmental outcome proposals	None expected		

Source: PwC analysis

Policy proposal

To date, Ofwat’s approach in successive Periodic Reviews has been to agree an extensive range of detailed outputs (for example, building a new sewage treatment works or replacing a certain length of water main) that water companies must deliver and to monitor water companies’ delivery of them.

In the final PR14 methodology, Ofwat will implement an outcomes-based approach which will require water companies to propose a series of outcomes in their business plans, along with ways of measuring the delivery of them and a set of associated incentive mechanisms to deliver each of them. The outcomes approach differs from the outputs-focused approach in the PR09 methodology as it is about what companies deliver (e.g. better service for consumers), not how they deliver it.

Companies will have flexibility to choose how they deliver their proposed outcomes. To formulate these outcomes, companies will be expected to have carried out willingness to pay (WTP) surveys and collected other forms of evidence of what consumer’s value to back up their proposals.

Some consistent incentives will be applied across all companies in PR14: the Service incentive mechanism (SIM) and incentives to improve leakage. The SIM is discussed in Section 6 (retail form of control). Since 1997, Ofwat has set annual binding leakage targets for water companies. For 2015-20, water companies will have

⁴⁸ For an explanation of the scale used please see the key in Table 6 of Section 3.

more scope to determine their approach to leakage, although all will be expected to put forward appropriate performance measures and incentives. Ofwat will continue to perform reputational benchmarking and will impose a default financial incentive for any company whose own proposals are considered inadequate.

The rationale for moving to an outcomes-based approach is that it will:

- Focus companies on what their customers want and reduce dependence on Ofwat’s framework;
- Encourage companies to focus on longer-term planning which will help deliver better solutions to customers at lower whole-life cost; and
- Allow companies greater freedom to innovate and find more sustainable solutions.

Expected impacts

The outcomes approach has previously been assessed qualitatively by Ofwat in the draft and final FPL IAs. Below, we develop the description of expected policy impacts and then consider the administrative impacts of the reforms.

Policy impacts

We have considered the potential impact of the outcomes approach on the level of consumer surplus and efficiency.

The outcomes approach is expected to help water companies to deliver services that consumer’s value and give them greater flexibility to meet consumer needs at a lower cost. However, the outcomes which water companies propose will not be clear until they submit their business plans in December 2013. This means that we cannot assess their likely impact in this IA. Instead, we have sought to illustrate the potential benefit to consumers of the outcomes approach by using a stylised example of an outcome a company may propose.

Our example outcome focuses on steps to improve the resilience of the water supply (which some companies we spoke to are considering as an outcome). Resilience can be measured in a number of ways, such as the number of minutes per year the average customer will experience a supply interruption. If a water company were to propose an outcome of this type, it would be expected to present evidence in its business plan covering:

- The expected baseline and target levels of performance in relation to delivery of the outcome;
- The incremental cost of achieving the proposed improvement in the outcome; and
- The benefit of achieving the improvement (i.e. how much customers would value the incremental change).

Illustrative values for the expected baseline and target performance and the cost of measures to achieve the target are presented in Table 9. We assume that the expected baseline supply interruption performance is 5 minutes per customer per year during 2015-20 which could be achieved at the costs included in the allowed expenditure level (in the absence of a specified outcome).

We then assume that supply interruption performance could be improved from 5 minutes to 4 minutes at a cost of £0.50 per customer per year. To justify such additional spending, a water company would need to demonstrate that its customers attach greater value to the improvement in the outcome.

Table 9: Stylised example of an outcome measure

	Expected baseline performance	Target performance
Supply interruption performance	5 minutes per customer per year	4 minutes per customer per year
Incremental cost of intervention	No additional cost to maintain current performance (relative to allowed expenditure based on historic performance)	£0.50 per customer per year (delivered via additional opex solution)

Source: PwC analysis

If, for example, the average customer values this improved outcome at £1, achieving the outcome would deliver a consumer benefit of £0.50 per customer per year (the additional value per customer less the additional cost). For a company with 1 million customers this would equate to an overall benefit of £500,000 per year.

These consumer benefits are not necessarily all incremental compared with the counterfactual as some of the outcomes may have been delivered under the outputs methodology in PRO9. In this case, outputs were agreed on a case by case basis.

We do not know what outcomes would have been proposed by water companies had the PRO9 methodology remained in place. This makes it difficult to estimate accurately the portion of the benefit that would be incremental.

The water companies we interviewed suggested that the enhanced consumer focus and greater flexibility from the new outcomes approach will have two principal impacts:

- Proposals will be more focussed on cases in which consumers' willingness to pay exceeds the costs of delivery of the outcome; and
- Costs will be reduced due to the flexibility afforded as companies do not need to pre-commit to precise individual schemes in their business plan (since only outcomes are defined in advance, not the outputs): this should also support companies in identifying innovative solutions and being able to respond to changing circumstances.

We can account for these factors in the analysis by assessing what benefits would have been delivered under the counterfactual. Our discussions with water companies suggested that they expected about half of the net consumer benefit delivered to be incremental. Given this uncertainty, we test a range of assumptions where either 25%, 50% or 75% of the benefit is assumed to be incremental. This would reduce the incremental net benefit in the stylised example from £500,000 per year to £125,000, £250,000 or £375,000 respectively. This benefit represents an improvement in allocative efficiency as water companies' resources are used to deliver more consumer benefits.

Whilst the example above focused on a supply resilience outcome, it is quite possible that companies may propose improvements to environmental outcomes which their customers value. If delivered successfully, such outcomes would lead to wider benefits for society as a whole, which could be especially significant at the local level.

Water companies will also be able to propose outcome delivery incentives. These will be financial or non-financial rewards and penalties depending on companies' proposals following customer engagement. We understand that the financial value of an outcome delivery incentive will be zero if a company achieves the outcome it expects at the cost it expects, but there will be rewards for over-performance and penalties for under-performance. This will have two impacts:

- It will provide an incentive for companies to deliver the agreed outcomes (and support the consumer benefit); and
- It will redistribute part of the benefit between water companies and their customers where financial incentives are applicable.

In terms of the distributional effects of the impact between water companies and their customers, we understand that the value of any financial incentive will be compared with the incremental value attached to the outcome by consumers. If a company under-delivers, it will need to compensate customers for part of the consumer benefit they forego. If the company over-delivers, it will receive a share of the incremental consumer benefit.

The outcome delivery incentives will distribute the change in consumer benefit resulting from the over- or under-performance between water companies and consumers. Importantly, the calibration of the incentive means that companies cannot receive a financial reward that exceeds the value of the consumer benefit.

Another potential impact we identified during the Design Phase is that outcome incentives may add to uncertainty over the revenues and profitability of water companies which may affect investors' appetites and the cost of capital. We consulted with a sample of investors who considered the incremental impact of this to be immaterial – so we do not assess it further.

Administrative impacts

The Draft FPL IA set out Ofwat's initial qualitative assessment of the administrative impacts of moving to an outcomes approach. It concluded that the greater flexibility and potential for innovation offered by the approach would be expected to deliver a saving in administrative costs, relative to the PR09 methodology where 11,000 individual project records were included in business plans⁴⁹.

We discussed the administrative impacts of Ofwat's outcomes approach with a number of water companies who felt that it would not lead to any material incremental changes in their administrative costs. They expect the principal activities involved, such as the need to monitor and report on key performance indicators, to be undertaken in the counterfactual. The previous approach required companies to evaluate and monitor the outputs agreed in their business plans (11,000 outputs in the sector as a whole). Under the final PR14 methodology, only a smaller number of outcome delivery measures will be monitored and reported. This is likely to reduce the administrative burden although we expect this impact to be small relative to the policy benefits. The one-off costs, such as carrying out WTP surveys, are included in the estimated costs of the business planning process.

⁴⁹ "Future Price Limits – a consultation on the framework - Appendix 1: Draft Impact Assessment", Ofwat, November 2011 (see http://www.ofwat.gov.uk/consultations/pap_con201111fpl_app01.pdf).

5. Wholesale controls

Ofwat’s final PR14 methodology will change its regulatory approach for the wholesale business to support the Government’s proposals in the WB for developing upstream markets. The wholesale control will be separated between water and wastewater, the cost assessment methodology will change and cost incentives will be set through a menu system. These changes are summarised below:

- **Wholesale form of control separation:** Ofwat will set separate binding controls for water and wastewater revenues (as opposed to a single vertically integrated control in the PR09 methodology);
- **Totex cost assessment and recovery:** Ofwat will assess water companies’ costs based on total expenditure (totex) rather than capital expenditure (capex) and operating expenditure (opex) separately; and
- **Menu-based cost performance incentives:** Ofwat will allow water companies to select from a menu of expenditure outturns relative to Ofwat’s baseline.

This Section summarises the results of our assessment of the impacts of these three elements of the final PR14 methodology. Each is considered separately using the same common structure in place throughout this report.

5a. Wholesale form of control separation

Summary of expected impacts

We expect separate controls to encourage efficiency by improving transparency of costs and revenues across the separate parts of the business. It also makes performance consequences clear, with separate incentives for the delivery of separate services shaping company behaviour.

Clearer and more transparent information on respective costs, revenues and services being provided in relation to water and wastewater within integrated water and wastewater companies should support the implementation of the new licensing framework envisaged in the Government’s WB, and help better comparative assessments of wholesale water and wastewater services.

Table 10: Wholesale form of control impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁵⁰
Customers	Efficiency impacts from separate controls Supporting upstream market reform	None expected	Positive	●
Companies	Efficiency impacts from separate controls	None expected		

Source: PwC analysis

Policy proposal

As part of its final methodology for PR14, Ofwat will apply separate binding controls on water companies’ water and wastewater wholesale activities. Each control will limit revenue from charges and relevant capital contributions, and will be indexed to the Retail Price Index (RPI).

⁵⁰ For an explanation of the scale used please see the key in Table 6 of Section 3.

Many parts of the wholesale control will not change significantly. There will continue to be a return allowed on the RCV which measures historic expenditure on long-lived assets although, under PR14, the RCV will be fully allocated to the wholesale business and formally split between water and wastewater. Similarly, indexation to RPI will continue to take account of the cost inflation that companies face.

Owat believes that wholesale water and wastewater activities are subject to different underlying economics that justify separate treatment of costs and associated delivery incentives. Its final methodology will, therefore, enable better alignment between risk and reward for water and wastewater activities and therefore will incentivise innovation and cost minimisation.

Separate controls are also expected to support any future implementation of upstream market reforms by making costs and revenue clear in each business segment (a necessary step to make efficient entry and contestability possible where appropriate, in line with the Government's licensing reform proposals in the WB).

Owat believes that allocating all the RCV up to 2015 to the wholesale business is justified since companies' existing assets are predominantly employed for the benefit of the wholesale business. To preserve investor confidence and financeability, companies will continue to earn a regulated return on their RCV (including in respect of relatively smaller retail assets)⁵¹.

Expected impacts

The impact of separating the wholesale control between water and wastewater has not previously been assessed by Owat but we would expect it to have an effect via the incentive impacts of separate binding controls and in supporting the reforms to the wholesale market included in the WB. These impacts are described below.

Policy impacts

We have considered two potential policy impacts identified in the Design Phase:

- **Efficiency gains from separate controls:** The methodology may improve water companies' efficiency as separate binding controls will incentivise them to reduce their costs.
- **Supporting future wholesale service market development and regulation:** Separate controls are also expected to support upstream market reform by improving transparency of costs and revenues.

Efficiency gains from separate controls: We expect that greater separation of the water and wastewater controls will encourage efficiency by improving transparency of costs and revenues across these segments of the business. Binding controls make performance consequences clear and completely separate incentives affect company behaviour.

Separation comes in different forms: weaker forms are typically cheaper to implement but deliver less in terms of incentives whilst stronger forms cost more but also deliver more. Professor Cave identifies "six degrees" of separation in water businesses ranging from accounting separation (the weakest form) to complete separation of ownership (the strongest form)⁵². Separation via binding controls can be characterised as a slightly stronger form of separation than accounting separation, but still relatively weak on the overall scale. In principle, we expect that this increase in separation will support a more targeted cost assessment and incentives for wholesale water and wastewater which will enhance efficiency.

Evidence from the electricity sector supports the view that the separation of controls and more targeted cost assessment and incentives around different parts of the value chain will enhance efficiency. A study of Ofgem's regime in the electricity sector looked at the impact of applying separate price controls to different parts of the business with different underlying economics⁵³. It concluded that separate controls have supported better

⁵¹ Return on capital will be based on WACC (as at PR09) and potentially cross checked with other methods.

⁵² "Six Degrees of Separation", Martin Cave, December 2006 (see http://mpira.ub.uni-muenchen.de/3572/1/MPRA_paper_3572.pdf).

⁵³ "Accounting Separation and Price Cap Regulation", Deloitte, 9 February 2011 (see <http://www.deloitte.com/assets/Dcom->

targeted incentives and more efficient outcomes for different parts of network businesses but it does not quantify these impacts.

Recent academic research also makes the case for stronger separation. Analysis of the efficiency of the UK water sector between 1993 and 2009 found diseconomies of horizontal integration between water and wastewater activities in the UK. It estimated that full operational separation (a far stronger form of separation than the use of binding controls) of the water and wastewater businesses would reduce costs by 13.3%⁵⁴.

Furthermore, research for The Economic Regulation Authority, the independent economic regulator in Western Australia, suggests few (if any) economies of scope in combining the water and wastewater functions⁵⁵, although it notes that “the increasing emphasis being given to wastewater as a potential source for fresh supply – through recycling schemes – may mean that stronger economies of scope are starting to emerge, but are unlikely to be evident in studies undertaken using historical data”.

But there are some conflicting views on this issue. Northumbrian Water Limited suggested a number of potential costs of increased separation including a reduced ability to defray cost shocks, loss of economies of scope, higher transactional costs between different parts of the value chain, more complex operations and weaker integrated planning (e.g. in areas where common assets or costs exist)⁵⁶. In our discussions with water companies, we frequently heard that the water and wastewater businesses operated in an integrated way, but views were mixed as to how far separation of controls would inhibit this integration.

On balance, our view is that more separation of regulatory controls will have a positive impact on efficiency although there is insufficient evidence to quantify the scale of this impact.

Supporting future wholesale service market development and regulation: If the Government introduces upstream market reform in the water market, Ofwat will need to adapt its regulatory approach to ensure transparency of costs and revenues in different segments of the business to encourage entry and discourage cross-subsidisation by incumbents. The conceptual basis for this is discussed in the Section on non-household controls in England (Sub-section 6b) drawing on an example provided from the telecommunications sector.

To the extent that separate water and wastewater controls provide clearer and more transparent information on costs and revenues (and profits), we expect it to support the implementation of upstream market reform. This links to the development of Ofwat’s new information requirements (discussed in Sub-section 9a on network plus)

Administrative impacts

Our discussions with water companies suggested no material incremental administrative impacts from the separation of binding controls. This is because a significant level of accounting separation is in place already.

[UnitedKingdom/Local%20Assets/Documents/Industries/EIU/Water/UK_EIU_Accountingseparationandpricecapregulation.pdf](#)

⁵⁴ “The Cost Implications of Alternative Vertical Configurations of the English And Welsh Water and Sewerage Industry”, Saal, 2011 (see https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=JEL2011&paper_id=41).

⁵⁵ “Size and Scope Economies in Water and Wastewater Services”, ACIL Tasman, 24 October 2007 (see <http://www.erawa.com.au/cproot/6227/2/ACIL%20Tasman%20-%20Size%20and%20Scope%20Economies%20in%20Water%20and%20Wastewater%20Services.pdf>).

⁵⁶ “A Northumbrian Water Limited response to Ofwat discussion papers”, Northumbrian Water, February 2011 (see http://www.nwl.co.uk/assets/documents/Ofwat_response_FPLdiscussionpapers_final.pdf).

5b. Totex cost assessment and recovery

Summary of expected impacts

The total expenditure (Totex) approach to cost assessment is expected to reduce ‘capex bias’ whereby water companies favour capital expenditure over operating expenditure solutions. This will support a one off boost in productive efficiency.

Moving to a totex approach and removing the capex bias may encourage companies to deliver more environmentally sustainable opex solutions.

Table 11: Totex impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁵⁷
Customers	Reduced bills as a result of lower whole-life cost solutions being selected	None expected	Expected to be positive	●
Companies	Increased profits as a result of lower whole-life cost solutions being selected	None expected		
Society	Potential benefits to the environment and sustainability from more innovative opex solutions being adopted	None expected		

Source: PwC analysis

Policy proposal

As part of its final methodology for PR14, Ofwat will no longer consider cost recovery separately for opex and capex, but it will consider all expenditure together as total expenditure (totex). This will mean that cost performance incentives will be integrated rather than being differentiated between different types of costs. Water companies will also be asked to propose how to split their totex for cost recovery purposes between ‘pay as you go’ (PAYG) expenditure which will be remunerated during 2015-20 and expenditure which they add to the RCV. This split, which can vary between water companies and between water and wastewater, is subject to challenge through Ofwat’s RBR of business plans.

Ofwat believes that separate treatment of capex and opex in the PR09 methodology and preceding Periodic Reviews may have contributed to a capex bias. A capex bias would be manifested in two ways:

- Capex is chosen in place of less costly opex solutions or more sustainable solutions (some of which are opex based); and
- Companies may inappropriately categorise opex as capex.

The move to a totex based cost assessment is designed to:

- Incentivise companies to choose the balance between opex and capex which is most economically efficient leading to investment decisions that reflect the whole life costs (and benefits) of the solution;
- Ensure there are no barriers to companies considering innovative approaches to delivering better service to customers at the same or lower cost; and
- Encourage broader cultural changes in the water industry.

⁵⁷ For an explanation of the scale used please see the key in Table 6 of Section 3.

Expected impacts

The move to a totex approach has previously been assessed qualitatively by Ofwat in the Draft and Final FPL IAs. Below, we develop the description of expected policy impacts and then consider the administrative impacts of the reforms.

Policy impacts

We have considered two potential policy impacts of the totex approach identified in the Design Phase:

- **Efficiency improvements:** The principal intended impact of the move to a totex based approach to cost assessment is to drive productive efficiency gains by removing the capex bias. In the absence of a bias, water companies will develop their spending plans on the basis of a whole-life cost-benefit assessment. In turn, these expenditures may be more efficient, which will ultimately reduce bills for customers.
- **Environmental impacts:** Moving to a totex approach and removing the capex bias may encourage water companies to deliver more environmentally sustainable opex solutions.

Efficiency impacts: Ofwat's move to a totex based cost assessment and recovery approach is expected to generate efficiency benefits if there is a capex bias at the moment and the move to totex solves it.

In May 2011, Ofwat published a discussion paper which investigates the capex bias⁵⁸. It listed a range of factors which may contribute to it including the current regulatory incentives, company approaches to risk management and control, engineering culture and investor interests. The paper did not, however, conclude on the existence of a bias nor did it quantify its potential scale⁵⁹. Ofwat did not quantify the impact of its totex proposal in either its Draft FPL IA or its Final FPL IA. It noted that, although totex cost assessment could be expected to reduce capex and increase opex in PR14, the net effect on customers was unclear.

Our discussions with water companies generated mixed views about the capex bias but, on balance, suggested that it existed for a mixture of financial, historic and cultural reasons.

The use of totex-based cost assessment to solve the capex bias is supported by evidence from the energy sector. In its Distribution Price Control Review 5 (DPCR5) Final Proposals for the period from 2010 to 2015⁶⁰, Ofgem acknowledged that different costs under DPCR4 were subject to different incentives and that these differences may have distorted decision making.

In its consultation for RIIO (Revenue = Incentives + Innovation + Outputs) for electricity distribution, Ofgem noted that "this [differentiation between direct costs and non-operational capex] was an unnecessary complexity and that including all costs within the scope of a single efficiency incentive would be simpler to operate"⁶¹. Consequently, for all three RIIO electricity and gas distribution and transmission revenue controls (2013-2021), Ofgem has adopted a totex approach.

However, there are conflicting views on the effectiveness of a move to totex. Several water companies have expressed concerns that the totex approach could lead to an 'opex bias' if the approach to building totex models and menus advocated in CEPA's paper is based on totex cash expenditure over a five year horizon⁶². They argue that it may generate incentives to minimise total expenditure over the five years rather than over the life of the

⁵⁸ "Capex Bias in the Water and Sewerage Sectors in England and Wales – substance, perception or myth? A Discussion Paper", Ofwat, May 2011 (see https://www.ofwat.gov.uk/future/monopolies/fpl/pap_tec1105capex.pdf).

⁵⁹ *Ibid.*

⁶⁰ "Electricity Distribution Price Control Review, Final Proposals - Incentives and Obligations", Ofgem, 7 December 2009 (see http://www.ofgem.gov.uk/Networks/ElecDist/PriceCtrls/DPCR5/Documents1/FP_2_Incentives%20and%20Obligations%20FINAL.pdf).

⁶¹ "Strategy Consultation for RIIO-ED1 – Outputs, Incentives and Innovation", Ofgem, 28 Sept 2012 (see <http://www.ofgem.gov.uk/Networks/ElecDist/PriceCtrls/riio-ed1/consultations/Documents1/RIIOED1SConOutputsIncentives.pdf>).

⁶² "Incentives and Menus", CEPA, 31 July 2012 (see http://www.cepa.co.uk/corelibs/download.class.php?source=PB&fileName=sysimgdocs/docs/CG426a-Ofwat-Jul12_pb10_1.pdf&file=CG426a%20Ofwat%20Jul12.pdf).

assets, and that this may disadvantage some alternative opex interventions, which are typically much longer lived.

On balance, our view is that the introduction of totex based cost assessment in PR14 will remove any financial bias towards capex. Cost assessments being based on totex mean that associated cost performance incentives no longer treat opex and capex differently. Since the ratio between opex and expenditure added to the RCV must be fixed in advance, companies' revenues will be insensitive to the actual split chosen between opex and capex during the control period. This will support a focus on more sustainable long-term investment choices based on whole-life cost-benefit analysis.

To assess the possible impact of removing (or reducing) the capex bias, we need to consider how much of companies' current capex could be replaced by opex and what impact this change would have on whole-life costs. Water companies estimate that between 2% and 10% of their capex could potentially be replaced by opex. This implies that approximately £80m to £400m of annual capex could be replaced by opex. In the absence of any evidence on future trends, we assume that these percentages will remain unchanged over time. We also assume that the average increase in whole-life costs due to the bias is between 1% and 5%. It is difficult to obtain specific empirical evidence for this assumption, but intuitively we expect the percentage impact on whole life costs to be small. If this was not the case, and the difference in the whole-life cost was large, it would be more likely that companies would choose the opex solutions over capex regardless of the bias. We have reflected this view in our selection of this range.

The results of our analysis are shown in Table 12. The figures estimate a productive efficiency improvement as companies could deliver the same outcomes over the longer term at lower cost.

Table 12: Illustration of potential benefits of totex cost assessment and recovery (NPV, 2012 prices)

	Share of capex exposed to bias		
		2%	10%
Increase in whole life cost	1%	£10m	£60m
	5%	£60m	£310m

Source: PwC analysis

There is also potential for totex based cost assessment to support allocative and dynamic efficiency improvements if the capex bias acts as a barrier to opex solutions which offer greater consumer benefit or encourage the consideration of innovative opex solutions over time. While these benefits may be significant, we do not seek to assess them as their specific effect is difficult to separate from the impacts of other elements of the final PR14 methodology (e.g. the outcomes approach).

Environmental impacts: In its FPL Draft Impact Assessment, Ofwat noted that many innovative solutions to improving sustainability involve opex rather than capex⁶³. These include sustainable urban drainage systems (SUDS) and some approaches to sustainable management of water catchments, for example contracting with a polluter to reduce their pollution, rather than building a water treatment plant to remove the pollutants after the event. In this example, the opex solution would deliver an improved environmental outcome relative to the capex solution: pollution would be reduced and the environmental impacts of building and operating the treatment plant would be avoided (e.g. land use, energy use and carbon emissions).

We have not found any direct evidence of the potential impact of totex on sustainability and the environment. It seems reasonable, however, to assume that if it reduces this bias towards historic capex-led solutions and encourages more innovative solutions, then it will lead to more sustainable solutions being adopted.

⁶³ "Future Price Limits – statement of principles - Appendix 1: Draft Impact Assessment", Ofwat (see http://www.ofwat.gov.uk/consultations/pap_con201111fpl_app01.pdf).

Administrative impacts

In our discussions, water companies said that they did not expect the totex approach to impose any significant incremental administrative costs since the underlying data required by Ofwat and others will be unchanged from the PRO9 methodology.

5c. Menu-based cost performance incentives

Summary of expected impacts

Menu based cost-performance incentives present an opportunity for companies to choose their level of risk and reward in their final determinations. This flexibility is a benefit since it puts them in a position to better manage the risks from Ofwat’s cost assessment.

Menus will incentivise companies to provide their best forecasts of the expenditure they need when they make their final menu choice.

Menus provide incentives to outperform on costs during the control period, although the extent to which these will be incremental to the counterfactual of existing cost performance incentives (menus for capex and no menus for opex) is unclear.

The menu approach has the potential to deliver significant benefits, which in our illustrative example we value at £0.5bn to £2bn.

Table 13: Menus impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁶⁴
Customers	Share of efficiency outperformance Reduced bills as a result of more efficient and accurate business plan projections	None expected	Positive	●
Companies	Greater flexibility to manage risk and reward Share of efficiency outperformance	None expected		

Source: PwC analysis

Policy proposal

As part of the final methodology for PR14, water companies will select from a ‘menu’ of cost performance options which offer different balances of risk and reward. The menu will be calibrated based on how the company’s projected cost compares to Ofwat’s baseline (i.e. Ofwat’s view of the efficient total expenditure the company will incur during the 2015-20). The menu will be designed separately for water and wastewater based on totex⁶⁵.

Menus present an opportunity for water companies to take more control and accept greater responsibility for the risks and rewards associated with their final determinations. This is intended to help them manage risks overall and so improve companies’ financeability. Depending on how they are implemented, menus also have

⁶⁴ For an explanation of the scale used please see the key in Table 6 of Section 3.

⁶⁵ Here, we consider the impacts of menus above and beyond the impact of the move to totex.

the potential to incentivise companies to submit efficient and accurate cost forecasts and provide incentives for cost efficiency within the period from 2015 to 2020.

Table 14 illustrates a menu adapted from a report for Ofwat⁶⁶. The “spending choice” is the ratio of a company’s projected spending in its business plan to Ofwat’s baseline. If a company chooses Ofwat’s baseline, the “spending choice” equals 100. If companies select a spending choice that is less than Ofwat’s baseline, the score is below 100 and vice versa for a spending choice above Ofwat’s baseline. The spending choice determines the incentives a company will receive and the “allowed water totex”.

Table 14: Illustrative water totex menu

		Spending choice		
		95	100	105
Actual spending	95	2.31	2.25	2.06
	100	-0.06	0	-0.06
	105	-2.44	-2.25	-2.19
Efficiency sharing factor (company share of outperformance)		47.5%	45%	42.5%
Allowed water totex		98.75	100	101.25

Source: CEPA (2012)

The incentives are shown by the “efficiency sharing factor”, which is the proportion of cost outperformance (“spending choice” less “actual spend”) that a company will receive. Companies below the baseline benefit from a higher “efficiency sharing factor” (i.e. they keep a higher portion of any outperformance) than those above the baseline. Customers receive the balance in the form of lower bills.

The implication of this is that a company will have some choice over its allowed totex and efficiency sharing factor based on their decisions about the spending choice at determination. The final value of the incentive will depend on how a company’s “actual spending” compares with the “spending choice”.

Expected impacts

The impact of menus has not previously been assessed by Ofwat. Below, we set out the expected policy impacts and then consider the administrative impacts of the reforms.

Policy impacts

We have considered three potential impacts identified in the Design Phase:

- **Risk and financeability:** Menus present an opportunity for water companies to choose their level of risk and reward in their final determinations, allowing them to better manage the risks to their financeability and delivery commitments.
- **Efficiency impacts from incentives to outperform:** Menus incentivise water companies to spend less than the amount agreed at the determination which may help to drive efficiency gains although incentives for cost efficiency also exist in the counterfactual.
- **Efficient and accurate cost forecasts:** Menus provide incentives for water companies to forecast costs accurately and to reveal the scope for efficiencies. This impact may, however, be limited for PR14 because Ofwat will not publish its menus prior to business plan submission.

Risk and financeability: Ofwat will implement significant changes in its final PR14 methodology, including the introduction of totex-based cost assessment and new baseline models. This change increases the risk of regulatory failure, in particular if Ofwat were not to provide an accurate estimate of a company’s baseline.

⁶⁶ “Incentives and Menus”, CEPA, 31 July 2012 (see http://www.cepa.co.uk/corelibs/download.class.php?source=PB&fileName=sysimgdocs/docs/CG426a-Ofwat-Jul12_pb10_1.pdf&file=CG426a%20Ofwat%20Jul12.pdf).

Menus allow water companies more flexibility to select their own level of risk and opportunity for reward through the spending choices they make and the associated incentives for outperformance and allowed expenditure levels. This flexibility is expected to help companies manage the risks to their financeability better. Our discussions with investors and companies confirmed that menus provided helpful flexibility and would support financeability of the sector. It is not possible, however, to estimate the scale of this benefit in advance of seeing companies' menu choices.

Efficiency impacts from incentives to outperform: Once the allowed expenditure is agreed at final determination, a water company will receive a share of any outperformance it actually achieves during the control period (i.e. if its costs are lower than agreed). The benefits of any outperformance will be shared between companies and customers: companies will gain through higher profits and customers through lower bills. The distribution of the benefit of outperformance will be determined in advance by the company's choice of "efficiency sharing factor". Similarly, the costs of underperformance will also be shared. Higher than expected costs will reduce companies' profits and increase customers' bills.

Evidence from other regulated sectors suggests that, under a menus approach, companies tend to outperform relative to allowed expenditure and the level of outperformance can be significant⁶⁷. For example, in the energy sector, DPCR4 saw cumulative 5 year outperformance (relative to allowed expenditure) of 6.7% for opex and 9.1% for capex in the electricity distribution segment⁶⁸. For totex menus in DPCR5, only data for one year are available, but they show capex outperformance of 27% and opex outperformance of 5%⁶⁹. In these two cases the scope for outperformance is greater than in the counterfactual where the efficiency sharing factors are set by the regulator with no company choice. Moreover, the volatile nature of spending, in particular capex spending, means that the results, which are based on this single year of data, should be treated with caution.

Whilst the evidence suggests that companies are likely to outperform the allowed expenditure levels, it is unclear how much (if any) of their outperformance is the result of the adoption of a menu approach. This is because observed outperformance may:

- Be the result of inaccurate business plans (i.e. if the incentives for efficient and accurate plans are not effective); or
- Have been achieved under the counterfactual as companies were allowed to retain a share of outperformance in previous price control periods (via the CIS menu and opex efficiency challenge).

Despite having operated menus for the last two control periods, Ofgem has not quantified their impact. Nonetheless, it believes that "the efficiency incentive rate should create strong incentives for [networks] to expose efficiency savings given the positive impact that this could have on their revenues. Customers could gain given that a portion of the resulting savings should be passed through to them"⁷⁰.

From a practical perspective, we do not yet have details of Ofwat's proposed totex menus for the final PR14 methodology nor do we have the calibration of the incentive rate so meaningful comparisons with outperformance incentives in the counterfactual is difficult. Research on the 2009-14 outperformance incentive rate estimated that water companies will retain between about 35% and 57% of cost outperformance as additional profit⁷¹.

⁶⁷ "Incentives and menus", CEPA, 31 July 2012 (see http://www.cepa.co.uk/corelibs/download.class.php?source=PB&fileName=sysimgdocs/docs/CG426a-Ofwat-Jul12_pb10_1.pdf&file=CG426a%20Ofwat%20Jul12.pdf).

⁶⁸ *Ibid*; Menus applied to capex only in this case.

⁶⁹ *Ibid*.

⁷⁰ "Strategy Consultation forth RIIO-ED1 Electricity Distribution Price Control – IA", 28 Sept 2012 (see <http://www.ofgem.gov.uk/Networks/ElecDist/PriceCtrls/riio-ed1/consultations/Documents1/RIIOED1SConImpactAssessment.pdf>).

⁷¹ "Incentives and menus", CEPA, 31 July 2012, p20 (see http://www.cepa.co.uk/corelibs/download.class.php?source=PB&fileName=sysimgdocs/docs/CG426a-Ofwat-Jul12_pb10_1.pdf&file=CG426a%20Ofwat%20Jul12.pdf).

Since menu incentives will be applied to the whole totex spending base, their potential impact is large. Whilst it is difficult to judge the extent to which outperformance is attributable to menus, we have illustrated the potential magnitude by performing “what if” analysis using evidence from the energy sector. We have tested the impact of outperformance calibrated on the evidence from Ofgem (5.0% for opex, based on DPCR5 and 9.1% for capex based on DPCR4)⁷². If this outperformance is transposed to the water and wastewater sector and if 5%, 10% or 20% of the outperformance is attributable to menu incentives (and is incremental to the counterfactual), the potential efficiency benefit is between £0.5bn and £2bn. Any incremental benefit would be shared by water companies and their customers, depending on the incentive level on the menu⁷³.

Efficient and accurate cost forecasts: Ofwat believes that under the PR09 methodology water companies had weak incentives to submit efficient and accurate costs in their business plans. This may have increased Ofwat’s baseline and resulted in higher allowed expenditure in the final determination with the result that customer bills were higher than justified.

Laffont and Tirole⁷⁴ present the theoretical underpinning for the use of menus in regulatory price controls. Their model demonstrates that regulators can achieve the optimal regulatory determination by offering companies a menu of contracts with different cost sharing provisions. If the menu is appropriately calibrated, companies with more scope for cost reduction will choose a menu position with higher rewards for outperformance than companies with less scope even if these differences are not observable by the regulator. Ofgem has applied menus to energy company price controls since 2004. Ofgem’s RIIO gas distribution IA does not quantify the impact of menus but it concludes that the menu (the ‘Information Quality Incentive’ (IQI)) applied to totex is “designed to incentivise [networks] to reveal their efficient costs by rewarding [networks] that submit cost forecasts that align with our assessment of efficient costs”⁷⁵.

From the evidence we have seen, a clear theoretical precedent exists for the use of menus to support the submission of efficient and accurate business plans. However, Ofwat will implement menus by allowing companies to choose their own menu option after it has prepared its independent cost assessments (rather than basing the menu on initial business plan cost forecasts which is the broad approach used by Ofgem for its Information Quality Incentive, and Ofwat for the CIS). We expect implementing menus at the end of the PR14 process to limit the incentive for revealing efficient and accurate cost forecasts from menus.

Nonetheless, the potential benefits of menus are significant. Any reduction in the costs agreed at final determination as a result of the menu incentives would have a direct positive impact on customers bills.

Administrative impacts

Based on our discussions with water companies, menus are not expected to lead to any material incremental administrative costs.

⁷² The reason for the use of different benchmarks here is that the DPCR4 evidence is preferred since it covers an entire control period, rather than the DPCR5 evidence which is based on a single year. However, opex was only subject to menu incentives from DPCR5 so this evidence is used.

⁷³ The precise value will depend on whether the expenditure is capex or opex, and whether the outperformance is one-off or recurring.

⁷⁴ “A Theory of Incentives in Procurement and Regulation”, Laffont, J-J. and Tirole, J., 1993.

⁷⁵ “RIIO-GD1: Final Proposals - Overview”, Ofgem, 17 Dec 2012 (see http://www.ofgem.gov.uk/Networks/GasDistr/RIIO-GD1/ConRes/Documents/1_RIIOD1_FP_overview_dec12.pdf).

6. Retail controls

Ofwat’s final methodology for PR14 will introduce separate retail controls. Rather than a single vertically integrated price control, with retail costs included with the larger wholesale segment of the value chain, separate controls will apply to:

- The non-contestable household segment in England and Wales;
- The contestable non-household retail segment in England; and
- The non-household segment in Wales where it is expected that contestability will not be extended through the WB.

This Section summarises the results of our assessment of these three elements of the final PR14 methodology. Each element is considered separately following the common structure used throughout the report.

6a. Household retail controls

Summary of expected impacts

We expect the separate form of household retail control to incentivise efficiency improvements, especially amongst the least efficient companies. The final FPL IA estimated the benefits of the control at £1,190m (NPV over 30 years). These savings were estimated by Ofwat in 2012 based on an assessment of the additional efficiencies that a more targeted price control based on industry comparisons would secure, relative to continuing with the previous regulatory approach, where efficiencies secured would have been in decline. Our updated work confirms that this estimate remains valid.

Table 15: Household retail controls impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁷⁶
Customers	Reduced bills as a result of improved efficiency – estimated to be around £1,190m	None expected	Positive	●
Companies	None expected	None expected		

Source: Ofwat final FPL IA, PwC analysis

Policy proposal

Ofwat will set revenue controls for household customers based on the average cost to serve (ACTS) of these customers and maintain an adapted version of the SIM which will apply to both England and Wales.

Each company will calculate its cost to serve based on its own retail costs (excluding metering costs) and customer numbers (adjusted between water only companies and water and wastewater companies). The ACTS will be calculated as the simple average of companies’ cost to serve values but adjustments to the calculation will be made to account for efficient metering costs. The control will not be indexed to RPI.

Companies which already have below-average retail household costs will have a revenue control based on their current costs, rather than the ACTS level. Companies with costs above the ACTS level will have a revenue control based on the ACTS, although Ofwat will apply this following a three-year transition period from current

⁷⁶ For an explanation of the scale used please see the key in Table 6 of Section 3.

cost levels. A further change to the form of control will be the application of a net margin on the costs of retail service provision which will be applied to all companies.

Ofwat is still consulting on detailed changes to the operation of the SIM so at this stage the impacts of such changes (if any) cannot be assessed.

The ACTS works by assessing relative efficiency so it is designed to clarify which companies are providing efficient retail services. It also provides a direct financial incentive to encourage efficiency gains, in particular for companies with costs above the ACTS level, which will lose money on their household retail services if they fail to improve.

Ofwat believes this financial incentive will be strengthened by the separation of the retail and wholesale controls which will give greater transparency to companies' performance in this segment. In previous Periodic Reviews, retail costs have been bundled with the far larger wholesale costs, resulting in a lack of transparency about the performance of retail operations. A separate control and determination for the household retail segment is also intended to bring greater consumer focus which will support the aims of the reforms to business planning and the outcomes approach in delivering more of what consumers want.

The purpose of the net margin for household retail segment is to fund working capital and new retail assets purchased during the control period and remunerate the associated risk of providing retail services. It will not represent new remuneration or cost incurred by companies as these costs and risks would also be incurred and remunerated in the counterfactual (via the RCV).

Expected impacts

The changes arising from the household retail control have previously been assessed by Ofwat in the draft and final FPL IAs. Our approach has been first to test the key assumptions used in these assessments and then to update the work using the latest available industry data and details on the policy design. Below, we describe the expected policy impacts of Ofwat's reforms.

Policy impacts

We have considered the following potential impact identified in the Design Phase:

Efficiency in the provision of household retail services: Ofwat's reforms will establish financial and reputational incentives to drive efficiencies in the household retail segment of the value chain. These will encourage inefficient companies to reduce their costs. Customers will benefit from lower bills. Efficiency gains, however, would need to be offset against any additional risks and costs arising, remunerated through a net margin.

With a separate revenue control for the household retail segment based on the ACTS, water companies with inefficient retail operations will have a strong financial incentive to reduce their costs. The fact that the measure is relative will make comparative levels of efficiency transparent, thereby aiding accountability and, potentially, providing additional reputational incentives through league tables. The reforms are also expected to support the cross-cutting principle of encouraging greater consumer focus, as a separate part of the business plan will cover the household retail segment which will encourage companies to ascertain and deliver what consumers want from it. We have not sought to quantify this impact as it is difficult to separate from those of the business planning reforms and the outcomes approach.

Companies whose costs are below the ACTS level will receive a revenue control settlement in line with their existing costs. Efficiency incentives for these companies are likely to be weaker than for those with costs above the ACTS level. To the extent that companies are allowed to retain temporarily the benefits of outperformance relative to the control, financial incentives will remain in place. The industry ACTS level should reduce over time because other companies are expected to respond to their own position relative to the average which will

also incentivise companies to manage costs. There may also be reputational incentives for relatively efficient companies to maintain or improve their position.

In the FPL IA, it was estimated that the net benefit of the reforms to the household retail control would be £1,190m (central scenario, NPV over 30 years) assuming that:

- All water companies will gradually eliminate 75% of any difference between their cost and that of the most efficient company within 20 years;
- The most efficient water company's costs (i.e. those on the efficient frontier) will remain unchanged in real terms: this implies that efficiencies will offset any changes in the real costs of inputs; and
- Costs in the household retail segment will decline in line with the revenue control⁷⁷.

The water companies with whom we discussed the new household retail control agreed that the measures in the final methodology for PR14 provided strong incentives for cost reduction and would deliver efficiencies for consumers. They expressed concern about the inclusion of costs for bad debt in the ACTS calculation as some believe this cost is not entirely within their control since it will be affected by the economic cycle and the relative prosperity of different areas. Ofwat will allow companies to suggest alternative treatments for material costs in their business plans if they can be shown to be outside of management control and affect different companies in a materially different way.

We have updated the final FPL IA analysis of the efficiency impacts of ACTS to include the latest available data and the final PR14 methodology. In the counterfactual, a stronger comparative regulation efficiency gain assumption is applied, along with the efficiency gains from market reforms in the non-household and upstream segments (as set out in Section 2). These assumptions also apply to companies on the efficient frontier which ensures that it is consistent both within this IA and with those used by Defra in their IAs of the WB.

We have also applied a cost glide path for companies to meet the revenue control which is based on the final methodology, so companies above the industry ACTS will have a three-year glide path to move from their current ACTS to the level of the industry ACTS. We also included a number of sensitivities for the speed of the cost glide path to the industry ACTS level and for the treatment of bad debt. The results from this analysis gave estimates of net benefits which are consistent with the £1,190 central estimate from the FPL IA. We do not present the numbers in this Section, however, because of the uncertainty over company business proposals in line with the final PR14 methodology, particularly in relation to the treatment of bad debt.

Administrative impacts

Our discussions with water companies suggested that no incremental administrative costs are expected to arise from the household retail controls. Tariffs will need to be set as before, and the accounting separation process, which has already occurred, means that the required cost data for setting separate controls are now already readily available.

6b. Non-household retail controls in England

Summary of expected impacts

We expect that separate non-household retail controls will support efficiency improvements in the segment by making companies' performance more transparent. In addition, we expect that they will enhance the functioning of the competitive market consistent with the Government's proposals in the WB. The net benefit of enhancing competition is contingent on the WB progressing.

⁷⁷ Fuller details of the approach taken can be found in Ofwat's draft and final FPL IA: see "Future Price Limits – a consultation on the framework - Appendix 1: Draft Impact Assessment", Ofwat, November 2011 (see http://www.ofwat.gov.uk/consultations/pap_con20111fpl_app01.pdf) and "Future Price Limits –statement of principles – Appendix 1: Impact Assessment", Ofwat, May 2012 (see http://www.ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplimpact.pdf).

The default tariff and default level of service will protect customers in the competitive market with high switching costs or a high cost to serve.

Table 16: Non-household retail controls in England impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁷⁸
Customers	Reduction in bills/increase in quality from improved efficiency due to separation of controls	None expected	Positive	●
	Reduction in bills/increase in quality from improved efficiency from enhancement of competition (contingent on WB being passed) – estimated benefit of £170m-£360m			
Companies	Protect high cost to serve customers, and those with high switching costs (contingent on WB being passed)	None expected		

Source: PwC analysis

Policy proposal

Until December 2011, the non-household retail market in England was contestable only for customers using more than 50Ml of water per year. This was subsequently extended by Government to all those using more than 5Ml of water per year in England. The WB contains proposals to introduce contestability for all non-household customers in England from 2017 by reducing the contestability threshold to 0Ml. Ofwat has proposed changes to the non-household retail controls to facilitate and enhance the objectives of the WB.

The final methodology for PR14 introduces a separate control for the customer facing non-household retail segment of the market. For non-household retail price controls, Ofwat will set a ceiling to the price through a ‘default tariff’ and an associated minimum service level through the ‘default level of service’ which will be based on the current Guaranteed Standards Scheme (GSS). Competitive forces are expected to provide incentives for water companies to drive efficiencies and deliver a good quality of service. As a result, the SIM will no longer be applied to this segment of the market. Ofwat will also allow companies to propose gross margins for default tariffs in the non-household retail segment.

The separation of the non-household retail control is designed to support the functioning of a more competitive market. It is expected to reduce potential price discrimination and cross-subsidisation, as separate controls will clarify which costs and associated tariffs are related to serving non-household customers.

Taken together, the default tariff and the default level of service are intended to protect those customers which have a high cost to serve or high switching costs. They will provide a maximum price and minimum level of service to prevent the market from delivering any unacceptable results for these customers. The rationale for the gross margin is to encourage entry into the non-household retail market and to allow companies to fund their future investments.

⁷⁸ For an explanation of the scale used please see the key in Table 6 of Section 3.

Expected impacts

The reforms to the non-household retail control have previously been monetised by Ofwat in the final FPL IA. Below, we update and build upon the previous assessment of expected policy impacts and then consider the administrative impacts of the reform.

Policy impacts

We have considered the following potential impacts identified in the Design Phase:

- **Efficiency impacts of separate controls:** Implementing a separate non-household retail control is intended to support efficiency improvements in the segment in addition to enhancing the functioning of the competitive market.
- **Protection of some customers who may not benefit from the market:** Limits on the free market through price ceilings and quality floors may protect some customers from being worse off than before competition in particular for customers with high switching costs or a high cost to serve.

Efficiency impacts of separate controls: We expect there to be two mechanisms through which a separate, binding non-household retail control may impact efficiency:

- It may strengthen the financial incentives for water companies to be efficient; and
- It may promote more effective competition and enhance the benefits of the WB.

With respect to the first mechanism, we expect that the introduction of a separate control will generate efficiency gains in the same way as the household retail control (Sub-section 6a). Separation of controls should strengthen the financial incentives for water companies by providing greater transparency over their performance in this segment. In previous Periodic Reviews, retail costs have been bundled with the far larger wholesale costs. This has resulted in a lack of transparency about the performance of retail operations. Our view is supported by our discussions with both water companies and consumer groups.

Moreover, under an integrated control, the non-household retail segment was often overlooked when companies sought to identify and deliver efficiency improvements as it only represents 1-2% of the cost base. Under a binding control, performance will be clear and we expect this to strengthen the incentive to drive efficiencies. We are not, however, able to quantify the scale of this impact in the absence of quantitative evidence from companies or benchmarks from other regulated sectors.

With respect to the second mechanism, economic theory suggests that separation of the different market segments will prevent cross-subsidisation between the contestable and non-contestable parts of an integrated business. Cross-subsidisation may deter entry by other providers and weaken the incentives provided by a competitive market.

A precedent for this argument comes from the telecommunications sector in which Ofcom required BT to implement functional separation of its wholesale and retail business in lieu of referral to the Competition Commission⁷⁹. It set out several forms of competitive advantage enjoyed by BT and its unfair treatment of its external wholesale customers, including cost allocation between contestable and non-contestable parts of the business. Ofcom concluded that BT's competitors had experienced twenty years of slow product development, inferior quality wholesale products, poor transactional processes and a general lack of transparency. Ofcom concluded that BT's behaviour had put alternative operators at a competitive disadvantage and there was, therefore, it needed to impose "real equality of access"⁸⁰.

⁷⁹ See <http://stakeholders.ofcom.org.uk/telecoms/policy/bt-undertakings/>.

⁸⁰ "Strategic Review of Telecoms Phase 2 Consultation", Ofcom, 18 November 2004 (see http://stakeholders.ofcom.org.uk/binaries/consultations/telecoms_p2/summary/maincondoc.pdf).

Defra's IA for the Water Bill recognised this argument and assumed that different strengths of separation would deliver different proportions of the possible benefits of competition⁸¹. It argued that legal separation of retail and wholesale activities would be required to realise the full benefits of competition. Weaker forms of separation, such as functional separation and voluntary separation, were expected to yield only a proportion of the benefits of competition (see Table 17).

Table 17: Effect of form of separation on the benefits of non-household competition

Form of separation	Expected share of benefits of competition realised (%)
Legal separation	100
Functional separation	75
Voluntary separation	50
No separation	25

Source: Defra

Ofwat's final FPL IA built on this analysis – and assumed that reforms to non-household retail forms of control would improve the proportion of benefits delivered from 25% (equivalent to no separation assumed in the Defra IA) to 50% (equivalent to voluntary separation). There was no specific evidence to demonstrate how well price control separation will deliver the benefits of competition but in our view the assumption of 50% of total benefits delivered appears a reasonable central estimate.

Updating the FPL IA assumptions for the benefits of competition on this basis gives us an estimated benefit of £360m over 30 years. Much of these benefits accrue from competitive spillovers which are assumed to drive efficiencies in the household and wholesale segments. While there is evidence to suggest spillovers should occur, we cannot be certain they will – so we have performed sensitivity analysis to exclude spillover benefits.

The assumption that spillover benefits will occur follows the basic approach of the Cave Review but our discussions with water companies and other stakeholders identified some concern about whether these assumptions were realistic.

The Cave Review benchmarked the scale of spillover benefits in the wholesale sector using evidence from Scotland where Scottish Water's costs have declined since the introduction of non-household retail competition. The rationale for household retail spillovers is that competition should reinforce the transfer of best practice and, potentially, encourage rationalisation in the retail segment. The scale of these benefits is, however, assumed since no quantitative evidence was available⁸².

Ofwat has reviewed the evidence for efficiency spillovers from non-household to household retail businesses⁸³. It noted that Oxera's review of the cost-benefit analysis knowledge base for competition in water⁸⁴ did not question the rationale for spillover benefits as proposed by the Cave Review. Furthermore, other research notes that spillover benefits are likely from non-household to household if the two market segments remain under the same management⁸⁵. This research assumed that legal separation and retail competition would generate efficiency gains in the household sector equal to 0.5% of costs per year, yielding a discounted benefit of £927m.

⁸¹ "Introducing Retail Competition in the Water Sector", Defra, 2 November 2011 (see <http://archive.defra.gov.uk/environment/quality/water/documents/www-ia-retail-1346.pdf>).

⁸² "Independent Review: of Competition and Innovation in Water Markets", Martin Cave, November 2008, p121-122 (see <http://archive.defra.gov.uk/environment/quality/water/industry/caverreview/documents/caverreview-report.pdf>).

⁸³ "Ofwat's Review of the Evidence Base for Retail Competition and Separation", Ofwat, December 2011. http://www.ofwat.gov.uk/competition/review/pap_pos20111207retalevid.pdf

⁸⁴ "Competition in the Water Sector: A Review of the Cost-Benefit Analysis Knowledge Base (Draft and Final reports for UKWIR)", Oxera, 2011 (see <http://ukwir.forefront-library.com/reports/11-rg-03-2/93944/90055/90062.90055/90062>).

⁸⁵ "Lessons for the Water and Sewerage Industry from Retail Competition in the Utility Sector", Deloitte, 2001, p36 (see http://www.deloitte.com/assets/Dcom-UnitedKingdom/Local%20Assets/Documents/Industries/EIU/Water/UK_EIU_Lessonsfromretailcompetitionintheutilitysector.pdf).

Another reason to perform these sensitivities is that we also recognise that scope exists for the spillover benefits to be double counted with those arising from other elements of the methodology. For example, some of the efficiency improvements in the household retail segment that are attributed to the changes to the household retail control could be driven by competitive spillovers.

In our assessment, we replicate the analysis in the final FPL IA to estimate the impact of separation of controls on non-household retail costs, as well as the spillover benefits from non-household retail competition into other parts of the business. Our results are presented in Table 18. At £360m, the scale estimated benefits of the reforms, including spillovers, are very similar to those estimated in Ofwat’s final FPL IA. This benefit is modelled as an acceleration of efficiency improvements over and above those expected in the counterfactual so the use a different assumed counterfactual in this IA does not lead to a significant change in the estimated benefits. The benefits of the reforms are expected to accrue to customers through a mixture of lower costs and higher quality of service. Our analysis confirms that while spillovers are important, there are also likely to be material benefits for non-household users of retail services in England without them.

Table 18: Non-household retail controls summary

Category	Net impact (£m, NPV over 30 years)
Separation of retail controls	£360m
Sensitivity 1: Excluding the impact of household spillovers	£170m
Sensitivity 2: Excluding the impact of wholesale spillovers	£240m

Source: PwC analysis; all values are given in 2012 prices

The estimates in Table 18 are based on a counterfactual which assumes that the WB is passed and there is full competition in the non-household retail segment in England from 2017. There is uncertainty over the progress of the WB so as an additional sensitivity we can consider an alternative counterfactual in which there is no change to the current level of non-household competition. This implies that the benefits estimated above would not materialise. We understand that if the Bill does not pass, Ofwat will change its regulatory approach. We have not seen details of the alternative regulatory approach but it is expected that the approach in England would be aligned to the new approach for Wales⁸⁶.

Protection of some customers who may not benefit from the market: The Cave Review recommended that Ofwat should implement a default tariff and default level of service to protect customers from the risk of higher prices or a decline in service. It also recommended that the tariff should initially be set at the current level of the retail price cap to ensure that customers were not worse off than under the PRO9 methodology and that all customers have the ability to take advantage of the prices and services offered by each market participant.

Ofwat’s methodology for default tariffs and the default level of service were not assessed in detail in either of the FPL IAs.

We expect that without these controls, customers with high switching costs or a high cost to serve could experience increases in bills/decreases in service quality. Either effect would detract from their consumer surplus although there would likely be a corresponding increase in water companies’ profits. Whilst this is a distributional rather than an efficiency issue, it is not consistent with Ofwat’s objective to protect the interests of consumers. Hence, default tariffs and the default level of service play an important consumer safeguarding function while enabling companies to participate in the competitive market.

We have not attempted to quantify the expected impact of either the specific default tariff or the default level of service reforms given that they are only expected to result in distributional impacts. We support the view that these measures will assist the functioning of non-household competition by preventing adverse outcomes for certain customers. In this way, they will support the overall benefits of introducing non-household retail competition, which Defra estimates to be £190m. If the WB does not progress, the impact of these measures

⁸⁶ The Welsh reforms are discussed in the subsequent Section of this chapter.

will be limited as the competitive market will not be opened up to all non-household customers. They may still be expected to provide some protection for the large non-household water users currently within the contestable market, but these benefits will be more limited under this alternative counterfactual.

Administrative impacts

As with the other elements of the retail control in the PR14 methodology, the water companies we interviewed did not expect to incur any incremental administrative burdens as a result of the changes.

6c. Non-household retail controls in Wales

Summary of expected impacts

A separate binding control will make clear the performance of the companies providing services to the Welsh non-household market, where most customers are unlikely to have a choice of supplier, encouraging accountability and transparency. Whilst the aggregate benefit is expected to be small, since the total non-household cost base in Wales is only £11m and similar efficiency pressures may arise in the counterfactual, it is significant for these customers in Wales that such controls are in place. The expected impacts are summarised in Table 19.

Table 19: Non-household retail controls in Wales impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁸⁷
Customers	Reduced bills from improved efficiency	None expected	Positive	
Companies	None expected	None expected		

Source: PwC analysis

Policy proposal

In Wales, the final PR14 methodology will bring a tailored approach to setting non-household controls. Competition will not be extended to all non-household customers in Wales so Ofwat's approach will use regulatory incentives instead. Water companies will have separate price controls for the non-household segment of their business and there will be default tariffs. The default tariff will not be indexed to RPI, but a gross margin will be allowed in the control to remunerate relevant financing costs and risks. An efficiency challenge will also be applied to the Welsh companies' default tariffs to provide an incentive to drive down costs and, hence, prices to customers. This efficiency challenge will be based on a comparison with equivalent tariffs available to customers in England which Ofwat expects to provide the best available indication of efficient non-household costs, but will then in addition be subject to an ex post comparison with emerging English market prices at the end of the period.

Ofwat will also set a regulatory service incentive for non-household customers to protect the level of service they receive. The proposed service incentive for Wales will be based on the design of the SIM and reflect it, both in process of operation and magnitude of financial impact. The SIM is currently applied to the non-household sector in Wales alongside households, so the proposed regulatory change is not expected to impose any material incremental costs or benefits albeit the regime will need to be customised to the smaller customer group. Ofwat is currently consulting on these details.

⁸⁷ For an explanation of the scale used please see the key in Table 6 of Section 3.

Separate controls and the efficiency challenge are designed to enhance incentives for Welsh water companies to drive efficiencies in the non-household segment. The default tariff and service incentive are an evolution from those currently in place across all of England and Wales under the PR09 methodology, but a separate approach for Wales is required because it is not expected to be included in the move to full competition in the non-household retail segment in 2017.

Expected impacts

The specific impact of the non-household retail control reforms in Wales have not previously been assessed by Ofwat. Below, we develop the description of expected policy impacts and then consider the administrative impacts of the reforms.

Policy impacts

We have considered the following potential impact identified in the Design Phase:

Efficiency impact: There may be an impact on efficiency in the Welsh non-household segment due to the separation and targeting of the form of control and the application of the efficiency challenge.

The efficiency challenge will encourage water companies operating in Wales to reduce their non-household costs so that these remain within the default tariff control. The non-household retail sector in Wales is currently already subject to an efficiency challenge (which is part of the counterfactual). Our discussions with water companies suggested that this efficiency challenge has been ineffective in driving cost reductions in the non-household retail segment historically. It was applied to all costs, of which non-household retail is only around 3%, so the segment was often overlooked when companies sought to identify and deliver efficiency improvements.

We expect a separate non-household retail price control for this segment to support the incentive to improve efficiency. A separate binding control will make the performance of the Welsh non-household market clear, encouraging accountability and transparency within the companies. This should help to mitigate the feedback we received from water companies that the non-household retail segment is such a small part of the business such that it is overlooked by companies when targeting efficiency improvements. Whilst the aggregate benefit is expected to be small, since the total non-household cost base in Wales is only £11m and similar efficiency pressures could arise in the counterfactual, it is significant for customers in Wales that such controls are in place.

Administrative impacts

The changes described above are not expected to lead to any incremental administrative burdens. Our discussions with companies suggested that the activities required, such as setting tariffs and applying a bespoke version of the SIM, will not be materially different to those undertaken in the counterfactual.

7. Using resources better

Going forward, the water and wastewater sector will need to manage external challenges arising from climate change and population growth which are likely to put water resources under increased pressure⁸⁸. Ofwat will implement incentives in the final PR14 methodology which are intended to support water companies to increase water trading (where economically efficient) and reduce levels of abstraction from vulnerable sources. Ofwat expects these to be transitional incentives while the Government develops and implements proposals for wider abstraction reform and upstream market reform. It will review water trading incentives in PR19 in the light of intervening developments with a view to developing an appropriate longer-term regulatory incentive framework.

This Section summarises the results of our assessment of the two elements of the final PR14 methodology which aim to promote better use of resources:

- **Water trading incentive:** Ofwat will set a financial incentive to encourage more water trading; and
- **Abstraction incentive mechanism (AIM):** Ofwat will apply a reputational incentive to encourage reduced abstraction from vulnerable water sources.

Each element is considered separately within the same structure used throughout this report.

7a. Water trading incentive

Summary of expected impacts

The water trading incentive is expected to realise benefits by encouraging more water trading. We estimate that the incremental benefits will be between £160m and £690m⁸⁹.

Additional interconnections arising to support new trades may also boost the resilience of supply in some local areas. The expected impacts are summarised in Table 20 below.

Table 20: Water trading incentive impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ⁹⁰
Customers	Reduced water bills through a share of the efficiency gains of £160m and £690m	None expected	Positive	●
Companies	Increased resilience of supply Higher share of profits from trade due to incentive based on a share of the efficiency gains of £160m and £690m	Transaction cost of delivering trade		

Source: PwC analysis

⁸⁸ “The Water White Paper”, Defra, 5 July 2012 (see <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvfru/374/374.pdf>).

⁸⁹ Since the original publication of the Executive Summary of this IA on 25 July 2013, the water trading model has been updated, producing a higher estimated benefit at the top of the range of £690m. This compares to £640 million in the previous version. It also increases the benefit identified in the sensitivity test where some trades are assumed to have occurred in the absence of the incentive from £370m to £420m (see Table 21).

⁹⁰ For an explanation of the scale used please see the key in Table 6 of Section 3.

Policy proposal

As part of its final methodology for PR14, Ofwat will provide additional financial incentives to encourage water trading between companies. These incentives will make the purchase and sale of bulk supplies of water between companies more attractive than they currently are.

Ofwat will provide an incentive for exporters which will allow them to retain the cost savings from trades for longer. The current returns are limited by the five yearly Periodic Review framework. Cost savings from new trades will be incorporated into baselines at future Periodic Reviews, and the benefits will be fully passed onto customers. The new incentive will alter the financial returns by allowing exporters to receive around half the lifetime economic profits from trading.

Importers will receive an incentive equal to 5% of total import costs based on a simple cost over-recovery approach. Ofwat will set a cap on the total incentive rewards for imports to ensure that customers do not pay more under the incentive than is needed to encourage efficient trading.

Ofwat has identified several barriers to water trading, a number of which have been cited by water companies. These barriers imply that fewer trades occur than would be economically efficient⁹¹. The incentives are intended to overcome these barriers and so realise the benefits of trading for customers, the environment and wider society.

Another important rationale for supporting water trading is that it tends to move water from areas where it is more plentiful to those where it is scarcer. It could, therefore, support the resilience of the water supply, by building more interconnections between networks.

Expected impacts

The impact of the water trading incentive has previously been monetised by Ofwat in the final FPL IA. Below, we build upon and update the policy impact analysis and then consider the administrative impacts of the reforms.

Policy impacts

We have considered the following potential impacts identified in the Design Phase:

- **Cost of water supply:** If the incentive causes economic incremental trades to occur during the period from 2015 to 20, it will reduce the cost of water supply in the longer term.
- **Resilience of water supply:** Improved longer term resilience of water supply may come about if water is moved from where it is available to where it is scarce.

Cost of water supply: Several studies have looked at the potential for cost savings through increased water trading:

- The Water Resources South East (WRSE) Group⁹², working with Ofwat and the EA, modelled the optimal trading arrangements in the South East of England in May 2010. It estimated that water trading could reduce demand for new assets by 20% and would generate cost savings of approximately £500m over 25 years.
- In its 2010 study on the potential benefits of an upstream market in England and Wales⁹³, Ofwat examined each company's WRMP and identified the scope for surplus water to be exported to areas with deficits. It

⁹¹“Future Price Limits – a Consultation on the Framework, Appendix 6: Water Trading Incentives”, Ofwat, November 2011 (see http://www.ofwat.gov.uk/consultations/pap_con201111fpl_app06.pdf) and “Water Trading Working Group”, Ofwat, 27 January 2012 (see http://www.ofwat.gov.uk/competition/review/prs_pre20120127watertrading.pdf).

⁹²“Water Resources in the South East Group – Progress Towards a Shared Resource Strategy in the South East of England”, Environment Agency, May 2010 (see http://wrse.org.uk/sites/default/files/pdfs/WRSE_Phase_2B_Final_report_24Apr2013.pdf).

⁹³“A Study on Potential Benefits of Upstream Markets in the Water Sector in England and Wales”, Ofwat, March 2010 (see http://www.ofwat.gov.uk/publications/prs_inf_upsup.pdf).

estimated that the potential benefit from 31 additional interconnections was £960m over the lifetime of companies' assets. This estimate was used as the basis of Ofwat's estimate of the impact of the water trading incentive in the final FPL IA⁹⁴.

The impact of the water trading incentive specifically proposed in PR14 will depend on how far it encourages water companies to implement additional economically efficient trades. Water trading may be encouraged by:

- A financial incentive: importers and exporters will keep more of the gains of trading (exporters will receive around 50% of the profits earned over the lifetime of a water trading project, compared with around 25% under the PR09 methodology⁹⁵, and importers will receive an additional incentive equal to 5% of total import costs); and
- A regulatory signalling incentive which raises the profile of water trading and gives a clear signal that Ofwat wishes to encourage more water trading.

Several organisations have identified the barriers which are currently preventing economically efficient trades from occurring. For example, Defra commissioned a report on the barriers to interconnection⁹⁶, Ofwat has identified several barriers to water trading⁹⁷, and so have Severn Trent Water⁹⁸ and Water UK⁹⁹.

Our discussions with water companies identified barriers including:

- The administrative burden imposed by the Environment Agency as part of its approach to meeting environmental goals, including the Water Framework Directive;
- The concern that bulk supplies may be withheld by the water exporter in times of drought;
- The long lead time and upfront capital investment typically required for trades which increase both the administrative costs and the uncertainty around the return on investment; and
- The capex bias, as bulk supplies tend to have a high opex component.

The key question is how far the water trading incentive will overcome the barriers to water trading and encourage additional trades to happen. Our discussions with water companies revealed mixed views on the likely effectiveness of the incentive. Some were already considering new trades, encouraged by the proposed financial incentive and the regulatory signalling. The majority, however, either felt they had no realistic trading options or that the barriers to trading were so high that new trades were unlikely during 2015-20 even though Ofwat had not confirmed its incentives at this point.

In the final FPL IA¹⁰⁰, Ofwat assumed that the water trading incentive would realise between 15% and 45% of the total potential benefits of water trading. By applying the midpoint of this range to its estimate of the total potential benefits of water trading of £960m, Ofwat estimated that the incremental benefit would be £290m.

Ofwat has since developed a new model which allows the incremental impacts to be estimated on a trade-by-trade basis by making an assumption about the fixed transaction cost of implementing the trade.

We have not updated the published overall estimate of potential trading benefits (£960m – see above). Our view is that this value is still broadly representative of the magnitude of the potential benefit. Ofwat has proposed incentives aimed at ensuring that some of the most economically efficient trades are more likely to occur via contracts effective in the next control period, which include allowing companies to retain more of the

⁹⁴ This figure is calculated based on draft data from the 2009 Water Resource Management Plans.

⁹⁵ "Consultation on Wholesale Incentives for the 2014 Price Review, Appendix 3: Water Trading Incentives", Ofwat, August 2012 (see http://www.ofwat.gov.uk/pricereview/pr14/pap_con120824wholesalepriceapp3.pdf).

⁹⁶ "Assessment of Regulatory Barriers and Constraints to Effective Interconnectivity of Water Supplies", Defra, September 2010 (see <http://archive.defra.gov.uk/environment/quality/water/resources/documents/wt0921-technical-report.pdf>).

⁹⁷ "Valuing Water: How Upstream Markets Could Deliver for Consumers and the Environment", Ofwat, July 2010 (see http://www.ofwat.gov.uk/publications/focusreports/prs_inf_value.pdf).

⁹⁸ "Changing Course Through Water Trading", Severn Trent and Deloitte, June 2011 (see http://www.stwater.co.uk/upload/pdf/STW_Water_Trading_FINAL_9_June_2011.pdf).

⁹⁹ "Meeting Future Challenges", Water UK, June 2010 (see <http://www.water.org.uk/home/news/press-releases/mfc9jun/mfc-final-revised3.pdf>).

¹⁰⁰ "Future Price Limits – statement of principles - Appendix 1: IA", Ofwat, May 2012 (see http://www.ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplimpact.pdf).

cost savings from trades. We have assumed that the incremental impact of these incentives would be confined to some of the total £960m economic benefit from trading that Ofwat estimated in 2010. We have estimated the incremental impact of the incentive using the Ofwat trade-by-trade model. We have assumed fixed costs of £1m and £2m per trade following our discussions with Ofwat and the water companies. The £1m assumption was initially included in the model by Ofwat, based on its experience of the sector. Our discussions with water companies suggested it was a plausible assumption but that the £2m cost should also be tested as sensitivity.

Very few new bulk supplies have been implemented since 1997¹⁰¹, so we assume in our central estimate that no new trades would occur during the period between 2015 and 2020 in the absence of a water trading incentive. As a further sensitivity test, we have calculated the potential impacts assuming that the three most economically efficient trades would have occurred in 2015-20 without the incentive (i.e. they are not incremental to it). The resulting estimates are presented in Table 21.

Table 21: Potential net cost reduction from water trading incentive (NPV, 2012 prices)

Transaction cost of trade	No trades occur in 2015-20 without the incentive	Sensitivity: top three trades occur anyway
£1m	£690m	£420m
£2m	£360m	£160m

Source: PwC analysis

Resilience of the water supply: The second potential impact of the water trading incentive is on the resilience of the water supply. An increase in the number of interconnections between water companies could be expected to improve the resilience of the overall network. Moreover, the increased number of interconnections may reduce abstraction from vulnerable water sources. This would bring environmental benefits.

Evidence from willingness to pay studies performed by water companies suggest that improvements in resilience would be valued by customers¹⁰². It is, however, difficult to quantify the impact on resilience without a detailed assessment of the network implications of each potential trade. The incentive may deliver a substantial increase in the quantity of water trading. However, we expect that the impact on the overall resilience of the water supply will be relatively small at a national level given the number of potential trades (31 trades). The local benefits to specific consumers may be more significant.

Increased water trading as a result of the incentive may also affect energy consumption if it entails more energy use than a comparatively more expensive, yet closer proximity, capital-intensive solution. We have identified no evidence that trading would involve more energy use than a company's alternative solution (e.g. pumping across its own area or desalination). This impact is, therefore, not assessed in detail as little material incremental impact is expected.

Administrative impacts

The one-off administrative costs of establishing a water trading arrangement are assumed to be £1-£2m per trade. They are incorporated in our assessment of the policy impacts. These costs arise from investigating the feasibility of a trade, developing engineering solutions and the legal costs associated with contracting. If the trade replaces an alternative solution planned by a water company within its own boundaries (e.g. building a reservoir), then it is unclear if there would be any incremental administrative cost (companies need to investigate the feasibility of alternative solutions, seek planning permission etc.). If the trade is intended purely to reduce cost then it may have an incremental effect on administrative costs but, given the potential number of trades indicated, we expect that any incremental administrative cost would be less than the estimated efficiency benefit.

¹⁰¹ "Future Price Limits – statement of principles - Appendix 1: Draft Impact Assessment", Ofwat, p43 (see http://www.ofwat.gov.uk/consultations/pap_con201111fpl_app01.pdf).

¹⁰² See, for example, "Your water. Your choices", Severn Trent, 2013 (see <http://www.severntrent.com/content/ConMediaFile/1342>).

No on-going incremental administrative costs were identified during our discussions with water companies. The activities required to maintain and administer water resources in the longer term are not thought to be affected by the water trading incentive.

7b. Abstraction incentive mechanism (AIM)

Summary of expected impacts

The AIM, as a national reputational incentive, is expected to have a positive impact on the environment which may be partially offset by increased costs if companies reduce their abstraction from resources included in the AIM but substitute these with higher cost resources that are not included. The scale of the impact will depend on the number of water resources included in the scheme, which remains to be determined. At a local level, the positive impact of AIM may be substantial, depending on the number of water resources covered within a region.

Table 22: Abstraction incentive mechanism impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ¹⁰³
Customers	None expected	Increase in bills from any change in abstraction patterns	Positive	☉ / ☾
Companies	None expected	Increased cost from any change in abstraction patterns		
		Potential increase in administrative costs (depending on the coverage of the incentive)		
Wider society	Reduced environmental harm from abstraction	None expected		

Source: PwC analysis

Policy proposal

The abstraction incentive mechanism (AIM) is designed to reduce abstraction from the most environmentally sensitive water sources. It is expected to be a transitional incentive while the Government develops wider proposals for abstraction reform. In its methodology consultation, Ofwat explained that its preferred approach regarding the AIM would be to implement a financial incentive: however, issues with data quality mean that the AIM will now be a reputational incentive.

Where robust local data exists, water companies may also put forward their own outcomes and outcome delivery incentives designed to reduce environmental damage due to over-abstraction. This is assessed in Section 4, in the Section dealing with the outcomes approach.

The AIM will be applied as a reputational incentive by comparing water companies' abstraction levels to historic averages at vulnerable sites. The definition of 'vulnerable sites' remains to be finalised, but may include Band 3 sites as specified under the Water Framework Directive. These are sites where the Environment Agency has 'high confidence' that flows do not support 'good ecological statuses'. Ofwat is examining whether to include Band 1 and Band 2 sites in the AIM.

The AIM is intended to encourage water companies to consider the potential environmental costs when deciding how and where to source water. The reputational incentive is intended to encourage companies to consider alternative water resources to the vulnerable sites covered by the AIM.

¹⁰³ For an explanation of the scale used please see the key in Table 6 of Section 3.

Expected impacts

The impact of the AIM has previously been assessed qualitatively by Ofwat in the FPL IAs. Below, we build upon policy impact analysis of the reforms and then consider their administrative impacts.

Policy impacts

We have considered the following potential impacts identified in the Design Phase:

- **Environmental benefits:** There is a potential environmental benefit in reducing abstraction from vulnerable water sources.
- **Cost of water supply:** If water companies adjust their pattern of abstraction, the cost of water supply may rise and this will result in reduced company profits and/or higher bills for customers.

Environmental benefits: The AIM will lead to environmental benefits if it reduces abstraction from vulnerable water sources. The principal beneficiaries will be those in broader society who value environmental amenity.

The scale of the environmental benefits depends on how much and where abstraction is reduced. Currently, the scope of the AIM has not been defined by Ofwat which means it is not possible to quantify the environmental benefit. We asked water companies how much their abstraction behaviour would be affected by the incentive but no company was able to provide a quantifiable answer, given the complexity of the network optimisation question this entails. The majority expressed the general view that whilst reputational incentives can be effective they expected the impact of the incentive to be small.

Overall, the scale of the impact will depend on the number of water resources included in the scheme, which remains to be determined. At a local level, the positive impact may be more substantial but will depend on the sites covered within a region.

Cost of water supply: If water companies reduce their abstractions from sources covered by the AIM and substitute them with more expensive sources, the cost of supplying water will increase. This will impact water companies' profits and, potentially, customer bills if the increase in costs is reflected in future price determinations.

As the AIM will be a reputational incentive, water companies will have the option of whether or not to adjust their abstraction decisions. We expect them to limit the changes to those which result in relatively small incremental costs that are offset by the reputational benefits from a better position on an 'AIM league table'. The AIM could also encourage companies to identify zero-cost solutions, through economically efficient water trading, for instance. In these cases, however, the benefits would be attributable to the water trading incentive.

Administrative impacts

Our discussions with water companies suggested that there would be no material incremental impacts on administrative costs. The data required for the incentive, such as flow rates from water resources, are already monitored and reported by companies in most cases. However, specific future reporting requirements will depend on the coverage of the national reputational incentive which could potentially increase administrative costs for companies.

8. Managing risk

As part of the final PR14 methodology, Ofwat is putting in place several measures to monitor and manage the risks faced by water companies. The principal measures include:

- Analysing risks as part of the Risk Based Review;
- Remunerating risk through margins in retail and wholesale; and
- Monitoring capital structures via the new financial structure monitoring regime.

The impact of these managing risk reforms are considered together within the same structure used throughout this report.

Summary of expected impacts

Overall, we do not expect Ofwat's PR14 methodology to have a material aggregate impact on risk and financeability. We expect that some of the risk management methodology will help to maintain remuneration for risk and allow the other elements of PR14 to deliver benefits without an overall increase in risk. It will also provide wider sector benefits by allowing Ofwat to better understand and compare the risks that companies are assuming within their controls. There will also be greater transparency for stakeholders through the new monitoring regime.

Table 23: Managing risk impact summary

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ¹⁰⁴
Customers	Avoids costs of potentially higher risk	No incremental impact expected	Positive	●
Companies	Contributes to reduced risk	No incremental impact expected		
Wider society	No incremental impact expected	No incremental impact expected		

Source: PwC analysis

Policy proposal

Ofwat's reforms to help manage risk in PR14 include the following four elements:

- 1. Analysing, assessing and dealing with risks:** Ofwat will carry out quantitative analysis of water companies' financial risks as part of the RBR, including assessments of financeability. Ofwat will also use scenario modelling to explore potential financial and other impacts of the proposed incentive packages and, in particular, the overall balance of risks to companies' returns on regulatory equity. Ofwat will also enable water companies to propose adjustments to future price limits to deal with unanticipated changes during the control period, and maintain the Interim Determination mechanism, which enables the PR14 determination itself to be re-opened if unanticipated risks threaten financeability during 2015-20.
- 2. Remunerating risk in wholesale:** For wholesale, Ofwat will continue to use a Weighted Average Cost of Capital (WACC) approach to remunerate capital and risks and a notional capital structure for setting the WACC. Ofwat will continue to use a fixed cost of debt approach for 2015-20 and to use tools including the capital asset pricing model (CAPM) to estimate the cost of equity, with cross checks to other approaches and informed by scenario analysis. The wholesale control will be indexed to RPI.
- 3. Remunerating risk in retail:** For retail controls, Ofwat will use margins. Water companies will submit proposed margins as part of their business plans – which should reflect the difference in risk volatility

¹⁰⁴ For an explanation of the scale used please see the key in Table 6 of Section 3.

created by non-household competition in England. Ofwat will review and challenge companies' proposals as part of the RBR. The retail controls will not be indexed to RPI.

- 4. Monitoring capital structures:** Ofwat will introduce a financial structure monitoring regime for the next control period to review and assess the risks to customers posed by companies' financial structures. This will be developed following further consultation to enable the regime to begin operation in 2015-16.

Expected impacts

Policy impacts

Several of the key elements of the final PR14 methodology above have not changed from the PR09 methodology and, hence, are expected to have no incremental impact. These include:

- How risk is remunerated in wholesale controls using the RCV and WACC and indexation to RPI; and
- The mechanism for undertaking interim determinations.

For other elements of managing risk, where the policy has changed, the impact cannot easily be separately identified. These elements include:

- Modelling risk scenarios;
- Moving to an outcomes-focussed approach to delivery;
- Allowing more flexibility to adjust wholesale and retail revenues, and charges within the control period;
- Removing the indexation of retail controls to RPI and using a margin to remunerate risk in the retail segment;
- Moving from separate efficiency targets for capital and operating expenditure to totex-based cost performance;
- Allowing all companies more flexibility to determine appropriate cost recovery rates;
- Allowing companies the opportunity to earn greater rewards from trading; and
- Introducing a financial structure monitoring regime that will review and assess the risks to customers posed by companies' financial structures.

Our discussions with investors and water companies, together with published research, support the view that these changes will not have a material aggregate impact on risk and financeability in the water and wastewater sector. So, overall, we do not expect the final PR14 methodology, including the risk management measures, to have an impact relative to the counterfactual. We recognise, however, that the package of managing risk measures that Ofwat will implement will help to maintain appropriate levels of remuneration for risk. It will also allow the other elements of the final PR14 methodology to deliver benefits without the regulatory framework itself generating an overall increase in risk.

Administrative impacts

For the majority of the elements listed above, the administrative impacts are included in other Sections of the report (e.g. risk scenarios and outcomes approach are incorporated in the Sections on 'business planning' and 'outcomes approach'; retail margins and indexation in 'retail controls' etc.). The exception to this is the financial structure monitoring regime which may require companies to report additional information on gearing, debt commitments, exposure to changes in interest rates and dividend levels depending on the outcome of Ofwat's consultation. We expect any incremental burden to be small since the principal activity required will be to report information that companies should have readily available to secure efficient finance.

9. Revealing information

Proposals in the WB for further market development mean that Ofwat needs to prepare for changes in the way it regulates water companies' monopoly network activities. Ofwat is proposing two measures which affect network activities which are assessed in this Section:

- **Network plus:** Ofwat will set non-binding price controls for companies' core network and treatment activities. This will build upon accounting separation as it will introduce both separated revenue accounting and nonbinding sub-limits by no later than 2017-18; and
- **Network management:** Ofwat will require companies to reveal information about their network management policies, practices and cost drivers. It may use these data to develop incentives to disseminate best practice network management activities in the future.

Each element is considered separately as in other Sections of the report.

9a. Network plus

Summary of expected impacts

Network plus is necessary for Ofwat to support the timely implementation of the Government's market reform proposals in the WB, by securing and trialling the use of appropriate information in advance of the next Periodic Review. The data provided will also enable additional future regulatory options for Ofwat: for example, it could choose to deregulate the sludge market in the future. Network plus will however lead to a small increase in the administrative burden for water companies in the short term to help enable these longer term benefits.

Our summary of the estimated costs and benefits of network plus is shown in Table 24 below.

Table 24: Network plus impact summary

Stakeholders affected	Benefits	Costs	Expected net impact	Materiality ¹⁰⁵
Customers	Enabling and potentially accelerating upstream market reform (dependent on WB)	None expected	Positive	●
	Improved efficiency from alternative regulatory approaches			
Companies	Efficiency impacts from alternative regulatory approaches	Increase in administrative costs		

Source: PwC analysis

Policy proposal

Under the final PR14 methodology, Ofwat will introduce separate revenue accounting requirements and non-binding network plus sub-limits by 2017/18. A non-binding water sub-limit will apply to raw water distribution, water treatment and treated water distribution, but not water resources. A non-binding wastewater sub-limit

¹⁰⁵ For an explanation of the scale used please see the key in Table 6 of Section 3.

will apply to sewage collection and sewage treatment but not sludge. These sub-limits map to five of the nine business units currently used for the purposes of accounting separation¹⁰⁶.

Ofwat will not introduce a specific cost allowance for network plus during its review of business plans, but will consider whether it can develop financial incentives for the provision of high quality information, including in relation to network plus.

The rationale for network plus is to provide robust revenue allocation data between areas of natural monopoly and potentially contestable activities where different regulatory approaches may be needed to implement upstream market reform in the future.

Although the benefits of upstream market reform will only be realised once market development has been further advanced (i.e. with most benefits not expected until after the PR14 control period), implementing network plus in PR14 will help Ofwat adapt its regulatory framework in PR19 on a timely and informed basis. Starting to collect the necessary data now will also encourage companies to think about the changes that will be required in their accounting systems and processes, and implement the lowest cost solution to produce the required information.

The generation of the more detailed data on revenues and profits that network plus provides may also support future efficiency improvements. For example, with these data, Ofwat will be able to vary its regulatory approach across the value chain (e.g. amending the form and scope and regulation of the sludge segment). It could also set separate controls across the different network plus activities. This may highlight the relative efficiency of different companies and incentivise improvements in the same way that the separation of wholesale and retail and water and wastewater controls is expected to do.

Expected impacts

The Final FPL IA contained an assessment of the impacts of a number of network plus options. This assessment was qualitative for the approach selected in the final methodology for PR14 which we build upon below.

Policy impacts

We have considered one potential policy impacts identified in the Design Phase:

Enabling the benefits of upstream market reforms: Accurate data on the revenues associated with different parts of the value chain will be necessary if Ofwat is to set appropriate sub-limits and more generally adapt its regulatory framework to promote the development of market reforms. Efficiency gains could also arise from the increased range of regulatory options available to Ofwat once it has access to the network plus data although these impacts (if any) depend on future policy decisions.

Defra estimated the potential benefits of upstream market reform to be £1.75bn¹⁰⁷. To enable competition to operate, the costs and revenues across the value chain would need to be clear and sub-limits would need to be set for the segments of the value chain that would remain non-contestable. This would prevent cross-subsidisation by integrated companies and it would enable potential entrants to assess more robustly the business case for entry. This argument is analogous to the rationale for a separate control in the non-household retail segment. We believe that the measure will help to deliver upstream market reform, although the estimated £1.75bn benefit of the reform cannot be attributed to the network plus reforms (since this would double count the estimated benefits of the WB).

Moreover, by collecting data earlier in the control period and testing non-binding sub-limits, Ofwat may be able to accelerate the benefits of upstream market reform when undertaking its next Periodic Review (PR19).

¹⁰⁶ Water network plus includes raw water distribution, water treatment, and treated water distribution, but not water resources and retail. Wastewater network plus includes sewage collection and sewage treatment, but not sludge treatment and sludge disposal.

¹⁰⁷ "Upstream Competition", Defra, 24 November 2011 (updated 24 May 2013) (see <http://www.parliament.uk/documents/impact-assessments/IA13-19C.pdf>).

Upstream market reform is a significant reform which will require major changes in the regulatory approach. This means that if Ofwat is able to put some of the required mechanisms in place now it will make it easier to implement the subsequent reforms earlier. We estimate that every year of delay of the implementation of upstream market reform would cost £135m (the benefits accrue later which reduces their NPV). Since these potential benefits depend on the introduction of upstream market reform following the reforms enabled by the WB, they would not be realised if the WB does not progress.

Efficiency gains: We do not expect any immediate impacts on efficiency from network plus as they depend on Ofwat’s future policy decisions. We recognise, however, that the data provided by network plus will provide Ofwat with options for improving its regulation in the future.

In the longer term, with cost and revenue data split across the different network plus activities, Ofwat will have the option to use a separate regulatory approach for each one or for combinations of them. For example, it could deregulate sludge entirely which would reduce the regulatory burden on companies and, potentially, introduce the benefits of competition.

Furthermore, Ofwat would be able to set separate forms of control and delivery incentives for each activity in the way it has already done for two separate sets of retail services and the two wholesale services in PR14. The improved transparency of costs and revenues would make comparative levels of efficiency clearer and incentives could be targeted at companies and activities where unexplained differences in efficiency exist.

Any improvements in efficiency in the sector would ultimately reduce customer bills. Given the dependency of these future benefits on Ofwat’s future policy decisions, we have not sought to estimate their magnitude.

Administrative impacts

Accounting separation has already been implemented so water companies are already required to report cost information for the affected business unit activities in the counterfactual. The incremental administrative costs from network plus arise from the additional revenue information companies will need to provide to Ofwat. In some cases, these data may require changes to accounting systems as well as additional resources to collate and report the data to Ofwat. No quantitative evidence of the scale of these impacts was provided in our discussions with water companies; however, we anticipate the burden will be relatively small.

9b. Network management

Summary of expected impacts

Network management will allow Ofwat to set incentives for efficient network operation in the future. Evidence from the energy sector suggests that there may be significant cost savings delivered through incentives to support efficient network management. This will also lead to a small increase in the administrative burden for water companies to report data to Ofwat. The expected costs and benefits of network management are summarised in Table 25.

Table 25: Summary of expected costs and benefits of network management

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ¹⁰⁸
Customers	Reduced bills from efficiency improvements	None expected	Positive	
Companies	Efficiency	Small increase in		

¹⁰⁸ For an explanation of the scale used please see the key in Table 6 of Section 3.

Stakeholders affected	Benefits	Costs	Net expected impact	Materiality ¹⁰⁸
	improvements which lead to increased profits	administrative costs		
Wider society	Reduction in CO ₂ emissions	None expected		

Source: PwC analysis

Policy proposal

As part of its final methodology, Ofwat will ask water companies a set of open-ended questions about how they manage their networks. The timing of this has been de-coupled from the final PR14 methodology and business planning process and it will be implemented via a process and to a timetable that Ofwat has not yet communicated.

Ofwat intends to evaluate the initial information provided by water companies before finalising how and whether it will use it. Reporting is likely to evolve from open questions about network management practices to specific, consistent reporting (including cost drivers) over the course of 2015-2020. Ofwat may choose to design incentives that encourage efficient network management over the same period which could be implemented following PR19.

Ofwat will consider its approach to remunerating the costs incurred in providing network management information following its review of business plans. This policy is intended to support widespread adoption of best practice in network management.

Expected impacts

This Section discusses the expected policy and administrative impacts of the network management reforms.

Policy impacts

The only potential impact identified in the Design Phase is on **Efficiency** where the policy is expected to support greater efficiency in the upstream water market by enabling the sharing of best practice in relation to network management.

Both the Draft and Final FPL IAs considered the potential long term impact of better network management¹⁰⁹. They pointed to strong evidence that better network management activities can reduce costs and boost efficiency in regulated network industries.

Ofwat references Yorkshire Water's rtWRAP function¹¹⁰ as an effective example of sophisticated network management¹¹¹. It believes there would be significant efficiency benefits if such systems were applied more widely. Since its introduction, the Yorkshire Water scheme has been highly effective in reducing power and chemical costs: the company has realised annual savings of approximately £1m a year (5% of water power costs). By reducing its energy consumption, Yorkshire Water has also been able to reduce its carbon emissions: for example, 2,685 tonnes of CO₂ were saved between 2005 and 2009.

¹⁰⁹ It was previously referred to as the system operator incentive.

¹¹⁰ This is a computerised system that balances supply and demand by determining the volume of water that should be abstracted from specific sources.

¹¹¹ "Future Price Limits – a consultation on the framework - Appendix 1: Draft Impact Assessment", Ofwat, November 2011 (see http://www.ofwat.gov.uk/consultations/pap_con201111fpl_app01.pdf) and "Future Price Limits – statement of principles", Ofwat, May 2012 (see http://ofwat.gov.uk/future/monopolies/fpl/pap_pos201205fplprincip.pdf).

In the Final FPL IA, Ofwat noted that efficiency savings could be achieved with respect to direct systems operator costs (e.g. employment costs, IT and other overheads related to network infrastructure) and indirect costs (e.g. energy) but these impacts are not quantified.

Further evidence of the potential benefits comes from the energy sector. In both gas and electricity, Ofgem introduced incentives to promote efficient system operation and other objectives such as improved environmental outcomes. The scheme has supported cost-efficiency gains and strong environmental performance at National Grid (the electricity and gas system operator)¹¹². Between 1994 and 2001, National Grid reduced its annual system operator costs by more than £400m. Since 2001, National Grid has outperformed against its external cost target six times and underperformed against it three times. In the gas sector, between 2007-08 and 2010-11, National Grid was rewarded 17 times for outperformance relative to the system operator incentive and only penalised three times. For most metrics, the incentive target has become increasingly challenging which suggests that the scheme has incentivised the desired outcomes.

Research for Ofwat on the use of network incentives suggests that water companies generally already have some form of short-term network optimisation process in place. However, the models vary in sophistication and are sensitive to the particular historical and topographical constraints of each water company¹¹³. Moreover, the incentives for efficient network management already exist through the opex efficiency targets. A number of water companies agreed that the current regulatory treatment does not address longer term issues such as improving connections / interconnections and the resilience of their networks.

Based on the evidence, we consider there is likely to be scope for efficiency gains in the water and wastewater sector through more sophisticated management of networks. Moreover, an incentive which leads to the adoption of best practice across more of the industry can be expected to deliver some of these benefits. We do not know, however, what information Ofwat will receive on network management practices, nor how it will use it to develop a network management incentive. At this stage, therefore, we are not able to estimate the scale of these efficiency impacts.

Administrative impacts

Initially, we expect the incremental administrative burden of network management to be small. Water companies will need to record how they currently run their network and report this to Ofwat. We cannot comment on any potential administrative impacts of the incentive at this stage. We currently assume that the incremental administrative burden will fall on companies, although we do not yet know the remuneration mechanism for network management: Ofwat has proposed further consideration of this, following its review of business plans in PR14.

¹¹²*Ibid.*

¹¹³ “Network Optimisation – Options in Setting Future Price Limits in the England and Wales Water Industry”, Oxera, 22 Aug 2012 (see http://www.ofwat.gov.uk/pricereview/pr14/rpt_com120828wholesaleoxeranetwork.pdf).

10. Other specific impacts

The Better Regulation Executive recommends that IAs should consider a number of potential specific impacts of policy where relevant¹¹⁴. A list of these impacts is shown in Table 26. It also summarises our assessment of which tests are relevant and indicates where they are considered in this report. Further explanation of our assessment of selected indicators (highlighted in the table) is included below.

Table 26: Other specific impact tests

Area	Specific impact test	Considerations	Relevance to policy changes
Economic	Competition assessment	Will the proposal have a significant impact on competition?	Significant effects captured as part of the main assessment
	Small firms impact test	Will the proposal impact small businesses?	Some impact expected from the non-household retail reforms in England – see below.
	Legal Aid impact test	Will the proposal introduce new criminal sanctions or civil penalties?	No impact expected
	Other economic issues	Will the proposal give rise to other economic impacts, including impacts on the Government and the third sector; the costs, quality or availability of goods and services; technology and investment?	Some positive impact expected on the quality and availability of goods and services through measures that enhance competition
Environmental	Carbon and greenhouse gas assessment	Will the proposal lead to change in the emission of greenhouse gases?	No evidence of net carbon impact but network management may reduce emissions as discussed in the part of main assessment
	Other environmental Issues	Will the proposal lead to other changes in the environment including waste management, air quality, appearance of the landscape or townscape, water pollution, flood risk, wildlife and noise?	Some impact expected from water trading incentive, AIM and totex which are captured as part of the main assessment
Social	Health	Will the proposal have an impact on health, wellbeing or health inequalities?	No impact expected
	Race equality	Will there be an impact of on race equality?	No impact expected
	Disability equality	Will there be an impact on disability equality?	No impact expected
	Human rights	Will the policy have an impact on human rights?	No impact expected
	Rural proofing	Will the policy have a different impact in rural areas?	The AIM may have significant local impacts by reducing harmful abstraction from certain water resources
	Other	Could the proposal have a different impact on children and young people, and older people? Could the proposal have a different impact on income groups, devolved countries and particular regions of the UK?	Limited impact expected

¹¹⁴ <http://webarchive.nationalarchives.gov.uk/+/http://www.bis.gov.uk/policies/better-regulation/policy/scrutinising-new-regulations/preparing-impact-assessments/specific-impact-tests>.

Area	Specific impact test	Considerations	Relevance to policy changes
Sustainable development	Sustainable development principles	Does the proposal comply with sustainable development principles?	Limited impact expected

Source: PwC analysis

Competition

We assess the expected competition effects in the Sub-sections on wholesale form of control separation (5a), non-household retail controls in England (6b) and network plus (9a). The proposed reforms are expected to enhance and promote competition in the water and wastewater sector. They are not expected to limit the range of suppliers nor are they expected to reduce the ability and incentive for the companies to compete.

Other economic issues

We expect Ofwat's final methodology to affect the quality or availability of goods and services through supporting and/or enhancing competition. The impacts are considered in the relevant Sub-sections on wholesale form of control separation (5a), non-household retail controls in England (6b) and network plus (9a).

Small firms

Ofwat's reforms to the non-household retail control in England are expected to protect small firms with high switching costs or a high cost to serve, whilst supporting the functioning of the competitive market. This is discussed in Sub-section (6b).

Carbon and environment

Carbon and environment effects are considered in the Sub-sections on the water trading incentive (7a), the AIM (7b), and network management (9b).

Rural proofing

Some of the measures are likely to have significant local impacts. In particular, the AIM (7b) could deliver localised benefits around specific sites where there are water sources. These benefits may affect rural communities.

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