

Title: Introducing Retail Competition in the Water Sector IA No: Defra 1346 Lead department or agency: Department for Environment Food & Rural Affairs Other departments or agencies: Ofwat (The Water Services Regulation Authority)	Impact Assessment (IA)
	Date: 24 / 02 / 15
	Stage: Final
	Source of intervention: Domestic
	Type of measure: Primary legislation
	Contact for enquiries: David Jones Maniv Pathak

Summary: Intervention and Options	RPC Opinion: GREEN
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Cost of Preferred (or more likely) Option			
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Two-Out? Measure qualifies as
£211m	£211	£-9m	No Zero Net Cost

What is the problem under consideration? Why is government intervention necessary?

The water and sewerage industry in England consists of vertically integrated regional monopolies. Although the current form of price cap (RPI-X) regulation has been successful, the sector is facing new challenges which demand reform. To meet these challenges the independent review of competition in the water sector led by Professor Cave recommended a series of reforms to facilitate effective retail competition for non-households. The Government has since committed to reforming the sector to ensure more efficient use of water and to protect poorer households. Intervention is necessary as there are a number of barriers to competition which are set out in legislation and need to be changed. Set against this is the need to ensure continued investment in water and sewerage infrastructure in the face of a range of challenges facing the water industry through to 2050 as set out in the Water White paper.

What are the policy objectives and the intended effects?

The policy objectives are to put a framework in place which enables all business customers in England to choose their water and sewerage retailer and to maintain investor confidence in the water sector so as to ensure secure and resilient supplies and infrastructure networks in the face of projected supply and demand challenges. The intended effect is that businesses will have the opportunity to switch suppliers, that the actual or threat of competition will incentivise companies to reduce costs and prices, improve efficiency and increase service levels and that investors will continue to see the water sector as an attractive area for investment. This is in contrast to the current arrangements whereby efficiency and customer service levels are driven by targets set by Ofwat with very limited scope for business customers to demand their own bespoke arrangements.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 1 - Base case - 'Do nothing'
 Option 2 - 'WSL + legal separation'- Reforming the Water Supply Licensing (WSL) regime and mandating the legal separation of companies retail and wholesale functions for all those companies serving more than 50k customers.
 Option 3 - 'WSL + functional separation'- Reforming the WSL regime and mandating the functional separation of companies retail and wholesale functions for all those companies serving more than 50k customers.
 Option 4 - 'WSL + optional separation '- Reforming the WSL regime and giving companies the option of separating their non-household retail business from the household retail and wholesale businesses.
 Option 5 - 'WSL only'- Introducing a package of reforms to the Water Supply Licensing (WSL) regime without any separation of the companies' retail and wholesale functions.
 Option 4 is the preferred option - see page 7 below:-

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 04/2020					
Does implementation go beyond minimum EU requirements?			N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro No	< 20 No	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)			Traded: 0.27	Non-traded:	

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs.

Signed by the responsible SELECT SIGNATORY: _____ **Rory Stewart** _____ Date: _____ 19 October 2015 _____

Summary: Analysis & Evidence

Policy Option 2

Description: WSL reforms and Legal Separation

FULL ECONOMIC ASSESSMENT

Price Base Year 2009	PV Base Year 2014	Time Period Years 30	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 295

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	454	47	1,374

Description and scale of key monetised costs by 'main affected groups'

The primary costs under this option relate to the legal separation of the incumbents retail and wholesale activities (NPV £669m). This requirement could also result in some companies incurring financing costs if they breach covenants and other financing arrangements (NPV £529m). Additionally Ofwat will incur costs to establish and administer the market arrangements (NPV £46m) and to design and manage the market settlement and switching infrastructure (NPV £79m).

Other key non-monetised costs by 'main affected groups'

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate		96	1,669

Description and scale of key monetised benefits by 'main affected groups'

The key benefits are the realisation of productive and dynamic efficiency savings in the non-household sector (NPV £229m) and household sector (NPV £893m). In addition the separation of retail and wholesale activities would help to reveal upstream inefficiencies, generating a one-off saving (NPV £402m). Competition is also expected to promote water efficiencies in the contestable sector (NPV £122m) and allow for economies of scope by bundling water billing with other utilities (NPV £23m).

Other key non-monetised benefits by 'main affected groups'

The reforms will have the effect of creating retail-only companies, which would not be covered by the Special Merger Regime. This would allow retail companies to merge, providing scope for consolidation and some savings through the realisation of economies of scale. Similarly, the reforms are expected to lead to a significant improvement in the quality of customer service faced by non-household customers in particular and greater scope for more bespoke arrangements.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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The key assumption that ultimately drives the majority of benefits is that retail competition is effective, thereby incentivising companies to realise productive and dynamic efficiency savings (which also spillover). To the extent that this assumption does not hold, then the likely benefits would fall significantly. Given that the majority of benefits are in the non-contestable sector the result is particularly sensitive to the spillover of efficiency savings into the household sector.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 63	Benefits: 75	Net: -12	Yes	Zero net cost

Summary: Analysis & Evidence

Policy Option 3

Description: WSL Reforms and Functional Separation

FULL ECONOMIC ASSESSMENT

Price Base Year 2009	PV Base Year 2014	Time Period Years 30	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 401

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	198	35	864

Description and scale of key monetised costs by 'main affected groups'

The primary costs under this option relate to the functional separation of the incumbents retail and wholesale activities (NPV £670m). Incumbent-retailers would also incur costs to acquire and retain non-household customers (NPV £52m). Ofwat will incur costs to establish and administer the market arrangements, including monitoring compliance with the functional separation requirements (NPV £63m) and to design and manage the market settlement and switching infrastructure (NPV £79)

Other key non-monetised costs by 'main affected groups'

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate		73	1,264

Description and scale of key monetised benefits by 'main affected groups'

The key benefits are the realisation of productive and dynamic efficiency savings in the non-household sector (NPV £178m) and household sector (NPV £676m). In addition the separation of retail and wholesale activities would help to reveal upstream inefficiencies, generating a one-off saving (NPV £301m). Competition is also expected to promote water efficiencies in the contestable sector (NPV £92m) and allow these customers to bundle other bills (NPV £18m)

Other key non-monetised benefits by 'main affected groups'

The reforms will have the effect of creating retail-only companies, which would not be covered by the special merger regime. This would allow retail companies to merge, providing scope for consolidation and some savings through the realisation of economies of scale. Similarly, the reforms are expected to lead to a significant improvement in the quality of customer service faced by non-household customers in particular and greater scope for more bespoke arrangements.

Key assumptions/sensitivities/risks

Discount

3.5

The key assumption is that functional separation reduces the scope for anti-competitive discrimination, although not completely, thereby generating 75% of the benefits that are derived when competition is effective. Another key assumption is that the costs of the reforms (separation, regulatory) and to a lesser degree the benefits can be estimated by reference to the Scottish experience. Other key sensitivities include the spillover of household benefits and generation of upstream efficiencies

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 40	Benefits: 57	Net: -17	Yes	Zero net cost

Summary: Analysis & Evidence

Policy Option 4

Description: WSL Reforms and Voluntary non-household separation

FULL ECONOMIC ASSESSMENT

Price Base Year 2009	PV Base Year 2014	Time Period Years 30	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 211

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	352	32	939

Description and scale of key monetised costs by 'main affected groups'

The primary costs under this option relate to the separation of retail and wholesale activities (NPV £521m). Some companies could also potentially incur financing costs associated with separation (NPV £253m). Ofwat will incur costs to establish and administer the market arrangements (NPV £86m) and to design and manage the market settlement and switching infrastructure (NPV £79m).

Other key non-monetised costs by 'main affected groups'

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate		69	1,150

Description and scale of key monetised benefits by 'main affected groups'

The key benefits are the realisation of productive and dynamic efficiency savings in the non-household sector (NPV £176m) and household sector (NPV £514m). In addition the separation of retail and wholesale would help to reveal upstream inefficiencies, generating saving (NPV £354m). Competition is also expected to promote water efficiencies in the contestable sector (NPV £84m) and allow these customers to bundle other bills (NPV £22m)

Other key non-monetised benefits by 'main affected groups'

The reforms will have the effect of creating retail-only companies, which would not be covered by the special merger regime. This would allow retail companies to merge, providing scope for consolidation and some savings through the realisation of economies of scale.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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The key assumption is that 50% of companies would separate at market opening and by year 30 all companies would have legally separated their non-household retail businesses. The benefits are driven by the proportion of companies that have separated, thus at market opening this option would generate 50% of the benefits that would be expected when competition is effective and by year 30 the option generates 100% of the benefits associated with effective competition.

BUSINESS ASSESSMENT (Option 4)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 43	Benefits: 52	Net: -9	Yes	Zero net cost

Summary: Analysis & Evidence

Policy Option 5

Description: WSL Reforms Only

FULL ECONOMIC ASSESSMENT

Price Base Year 2009	PV Base Year 2014	Time Period Years 30	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 190

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	12	12	240

Description and scale of key monetised costs by 'main affected groups'

The primary costs under this option relate to those incurred by Ofwat to setup the necessary market arrangements. This includes (i) setting up and operating the market settlement and switching infrastructure (NPV £79m) and designing and administering the new arrangements (NPV £75m). Additionally incumbent companies will incur some ongoing costs under the new arrangements (NPV £34m) and would also be expected to incur costs in order to retain and attract customers (NPV £52m)

Other key non-monetised costs by 'main affected groups'

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate		25	430

Description and scale of key monetised benefits by 'main affected groups'

The primary benefit associated with the reforms is that incumbents are incentivised to seek out productive and dynamic efficiency savings in relation to the provision of non-household retail services (NPV £64m). This would also be expected to generate efficiency savings in relation to the provision of non-household retail services (£230m). In addition greater upstream pressure from retailers would generate wholesale efficiencies (£100m). Some water efficiencies would also be realised (£31m)

Other key non-monetised benefits by 'main affected groups'

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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Due to the higher potential for anti-competitive discrimination, there is a risk that effective competition might not develop. Although the productive and dynamic efficiency savings are assumed to be 25% of the savings that would be expected when competition is effective, there is a risk that no competition develops and hence no savings would be realised. The outcome is also dependant on the spillover of benefits from the contestable sector (i.e. non-households) to the non-contestable sector (households).

BUSINESS ASSESSMENT (Option 5)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 11	Benefits: 19	Net: 8	Yes	Zero net cost

Results summary of Options

Summary of results (NPV £m)									
	Legal Separation & WSL Reforms					Legal Separation & WSL Reforms			
	Option 3 - Functional Separation & WSL	Option 4 - Voluntary Separation & WSL	Option 5 - WSL only	Option 2	Cave Review	Deloitte/ Water UK ¹	Grant Thornton ²	WICs ³	
Total Retail Cost Base (p.a.)	1,061	1,061	1,061	1,061	975	970			
Non-household: productive	73	67	24	97	125	297			
Non-household: dynamic	105	109	39	132	181	484			
Household: productive	255	176	85	339	442				
Household: dynamic	421	338	145	554	766	927			
Wholesale: productive	301	354	100	402	238	847			
Bundling	18	22	6	23	25				
Water efficiency	92	84	31	122					
<i>Total Benefits</i>	<i>1,265</i>	<i>1,150</i>	<i>430</i>	<i>1,669</i>	<i>1,777</i>	<i>2,555</i>			
Regulatory: setup	11	17	6	11	10	152			
Settlement & switching: setup	6	6	6	6	5				
Incumbent: setup	181	145		180	137				
Regulatory: on-going	52	69	69	35	29	1,052			
Settlement & switching: on-going	73	73	73	73	35				
Incumbent: on-going	489	339	34	489	884				
Acquisition & retention	52	37	52	52	59				
Finance costs		253		529	0				
<i>Total Costs</i>	<i>864</i>	<i>939</i>	<i>240</i>	<i>1,375</i>	<i>1,159</i>	<i>1,204</i>			
NPV	401	211	190	295	617	1,351	500 - 700	750 - 2,500	

¹ Deloitte, Lessons for the water and sewerage industry from retail competition in the utility sector. January 2011, p. 47. http://www.deloitte.com/view/en_GB/uk/industries/eiu/water/24dca3dd6f90e210VgnVCM2000001b56f00aRCRD.htm

² Grant Thornton, WICS: Cost Benefit Assessment, May 2010

HM Treasury, The Economic and Fiscal Strategy (Budget) Report 2009 [http://www.hm-treasury.gov.uk/bud_bud09_index.htm](http://webarchive.nationalarchives.gov.uk/20100407010852/http://www.hm-treasury.gov.uk/bud_bud09_index.htm)

³ WICs, <http://www.watercommission.co.uk/Blogs/post/Costs-and-savings-of-retail-competition.aspx>

The Preferred Option:

In reaching a decision on their preferred option Ministers considered the issue of extending retail competition within the broader context of the challenges facing the water sector through to 2050. The Water White Paper describes the longer-term challenges created by climate change and population growth which are likely to reduce the water available for households, businesses and the environment at a time of rising demand. Modelling of future water availability suggests we will face supply deficits without substantial investment in the development of new water resources and infrastructure, as well as action to manage demand. We will also need to increase the rate of investment in maintenance of the existing sewerage infrastructure.

Against that background, Ministers considered all the options and the evidence set out in this impact assessment (IA) and considered how the options for extending retail competition fitted with their broader policy priorities for the Water White Paper, which go beyond the immediate issues captured by this IA. These priorities include enabling the water sector and water users to start to plan for maintaining a resilient and sustainable water supply through to 2050 and beyond; keeping water affordable in the short and longer term; ensuring a stable regulatory sector for the water sector to ensure it remains attractive to investors; and removing barriers to competition to encourage innovation and efficiency and improve the services offered to customers.

Ministers decided that maintaining investor confidence in the water sector was critical in view of the challenge of ensuring secure and resilient supplies and infrastructure networks. The current industry model has been very effective in attracting competitively priced capital, with over £90 billion invested since privatisation. They carefully considered representations from the water industry and investor community following the publication of the Cave Review about the risks and possible impact of Government mandating fundamental change to the structure of the industry. Particular areas of concern included: a reduction in the attractiveness of the sector to investors; a potential downgrading of credit ratings for the sector; and perceptions that further structural change which undermined the integrity of the regulated capital asset base could follow.

In identifying the preferred option set out in this IA, Ministers were clear that a cautious approach to reform should be adopted, in line with Cave's preference for an iterative approach. They took the view that the benefits from the options with higher NPV were neither significant nor certain enough to outweigh the risks, particularly to investor confidence.

During the passage of the Water Bill through Parliament, there was wide cross-party support for retail exits which has led us to revise Option 4 so that incumbent water companies were given the option to legally separate their non-household businesses from the household retail and wholesale parts (i.e. the business would be transferred to a licensee). This IA has therefore been updated to reflect this small change to Option 4, which is now the preferred option.

In keeping with our proportionate approach (for the purposes of analysing a very small change for validation of the EANCB), we have not undertaken an exhaustive review of the input data and assumptions across all of the options which would be a resource intensive, large scale exercise.

The changes to option four have been kept to a minimum and only applied where new evidence indicates a material impact; and have been carefully applied so that

they are internally consistent with the other options in this IA. Hence only relevant sections of analysis for option four and related sensitivity analysis has been updated.

The updated 'best' estimate for option four of £211m NPV is almost identical to the previous value of £213m NPV. This is because the applied reduction in spillover benefits is largely offset by the higher proportion of companies that are assumed to exit, and emphasises that the change we are analysing is very small. ⁴

One in Two Out

Defra has classified this IA as a pro-competition measure with zero net costs for the purposes of One in Two Out (OITO). All the options in this IA will promote competition in the water sector by allowing new entrants to apply for a licence to compete against incumbent incumbents in England and Wales. Option 4 will also enable English incumbents to transfer their non-household retail businesses to licensed subsidiaries which will allow them to provide services throughout England and Wales rather than only the area of their associate incumbent. Removing certain regulatory barriers and increasing the size and scope of the competitive market to include all non-household water and sewerage customers will therefore directly and indirectly increase the number of suppliers and strengthen the ability of these new entrant licensees to effectively compete against incumbents.

⁴ For a more precise comparison between the original and revised option four, the abatement assumption would also need to be adjusted upwards for the original option four, which would give a larger NPV estimate.

Evidence Base for IA

- 1 This IA assesses the package of reforms that are required to facilitate an effective market for the provision of water and sewerage retail services to non-domestic customers.
- 2 This IA is structured as follows:
 - Section 1 provides an overview of the relevant background and context for this IA
 - Section 2 provides a Summary of the options and an overview of the expected effects and impacts;
 - Section 3 outlines the approach adopted to quantify the costs and benefits; and
 - Section 4 examines the costs and benefits of each option; and
 - Section 5 tests the sensitivity of key assumptions, describes key risks and provides a summary of the key results.
 - Annex A provides a bibliography of key sources of evidence.
 - Annex B discusses the issue of anti-competitive discrimination and considers the different remedies that could be adopted; and
 - Annex C examines the finance issues and potential costs associated with the proposed reforms.

1. Background and Context

The nature of the water and sewerage sectors and economic regulation

- 3 The water and sewerage industry in England and Wales was owned and operated by the state until privatisation in 1989⁵. Following the purchase of then state owned water boards private companies were licensed to own and operate the assets of these companies, providing water and sewerage services to customers and recovering the costs of providing those services to customers by billing them directly.
- 4 Water and sewerage services have both 'essential service' and 'natural monopoly' characteristics and it was for these reasons that the economic

⁵ A summary of the history of the water and sewerage industry can be found at:
http://www.ofwat.gov.uk/publications/commissioned/rpt_com_devwatindust270106.pdf

regulator, Ofwat⁶, was established to regulate the total revenue that companies are permitted to recover from their customers.

Water and sewerage services are 'essential' in that they are critical to sustaining life and indeed without them operating effectively for even short periods of time there can be major public health concerns. Once these services were passed into private ownership there was a risk that the private owner may become insolvent with the result that services may be disrupted. For these reasons Ofwat was given a primary duty to ensure that companies could finance their functions- i.e. Ofwat is required to ensure that companies are able to recover sufficient revenue from customers to operate their businesses. Additional protections also exist including the Special Administration regime which is set out in legislation and prevents companies from going through normal insolvency processes should they go bust. Instead this regime ensures that a 'special' administrator is appointed with primary responsibility for ensuring that service provision is not disrupted.

Water and sewerage services also have very high 'natural monopoly' characteristics. This means that unlike most other goods and services provided in the economy it is prohibitively expensive for another company to establish itself and compete with an incumbent water and sewerage company for the provision of end to end water and sewerage services. For example, it would be prohibitively expensive and inefficient for the vast network of drains and water pipes to be duplicated by a new entrant company. Furthermore, the legislation and the licence which is provided to the incumbent companies in fact gives them exclusive privilege to provide water and sewerage to virtually all of the customers in their area in an end-to-end or 'source to tap' way. This 'natural monopoly' structure provides certain risks which also need to be managed by economic regulation. In particular, without the competitive pressure that arise in markets, the monopoly has a range of negative incentives which must be managed, including incentives to overprice (or undersupply), operate inefficiently, fail to innovate and price-discriminate between different groups of customers (based on their ability to pay and their elasticity of demand for water). Ofwat also has additional duties to protect consumers from these risks including, in particular, a duty to ensure that consumers are protected, wherever possible by promoting competition. Economic regulation seeks to provide this protection by mimicking the effects of market competition through the RPI-X regime⁷ in a monopoly environment where competition cannot be introduced. The duty on Ofwat and indeed on other economic regulators working in other utility sectors includes an explicit reference to 'wherever possible by promoting effective competition' simply because regulation is assumed to be a second best alternative to effective competition⁸.

- 5 Balancing up the competing duties of ensuring that companies are sufficiently remunerated to avoid the disruption of water and sewerage services and similarly ensuring that customers are protected from unnecessary bill rises is the job of the independent economic regulator, Ofwat.

⁶ <http://www.ofwat.gov.uk/>

⁷ For a full description of the RPI-X regulatory regime and how Ofwat regulates prices see: <http://www.ofwat.gov.uk/pricereview/setting>

⁸ For a summary of economic regulation versus competition see: Stelzer, I, 2005, 'Regulation: An Imperfect Substitute for Imperfect Competition', http://www.rpieurope.org/2005%20Conference/Stelzer_Imperfect_competition.pdf

- 6 Critically, it is not the case that all of the ‘source to tap’ activities undertaken by these companies have the characteristics of a ‘natural monopoly’. In fact, in many other utility sectors, whilst the natural monopoly ‘network’ elements, or ‘pipes and wires’ have remained under the detailed scrutiny of economic regulation in the form of price or revenue ‘caps’, some other ‘contestable’ elements where competition could be introduced are no longer regulated in this way and have seen the introduction of market competition (see Table 1).
- 7 The reforms addressed in this IA consider the scope for introducing further competition in the water and sewerage sectors, focussing particularly on the ‘retail’ elements of the water and sewerage value chain which represent elements of the value chain which do not demonstrate natural monopoly characteristics.

Table 1: Summary of activities subject to price controls and market competition in UK regulated sectors		
Sector and jurisdictions	Activities subject to price controls	Activities subject to competition
Water (England & Wales)	All activities	Very large users ⁹
Water & sewerage (Scotland)	Scottish Water	Non-household retail services
Energy (GB)	Network Assets	Energy generation, downstream retail (supply), ancillary services
Rail	Network Assets	Freight/passenger services Rolling-stock companies
Telecoms	BT’s network	Most other services
Aviation	London airports and Manchester Airport, NATS	All other airports
Postal	Royal Mail USO ¹⁰ products and many non USO products	All products open to competition

The Cave Review

- 8 In February 2008, the UK and Welsh Governments commissioned Professor Martin Cave to lead the ‘Independent Review of Innovation in Water Markets’ (hereafter referred to as ‘the Cave Review’ or ‘the Review’). The principal

⁹ A large user is defined as consuming more than 50 Megalitre per annum. In England and Wales there are approximately 2,200 large users.

¹⁰ USO stands for Universal Service Obligation, some products are covered by this obligation (e.g. certain types of letter sizes and mail classes) and these products are subject to monopoly price control regulation. Universal service is an economic, legal and business term used mostly in regulated industries, referring to the practice of providing a baseline level of services to every resident of a country.

purpose of the Review was to examine the case for introducing competition to increase efficiency of water use and deliver tangible benefits to both businesses and households.¹¹

- 9 In April 2009 the final report of the Cave Review was published. This report acknowledged that in the past 20 years since privatisation, Ofwat's framework for regulating regional monopolies has delivered a range of benefits, including service and quality improvements and reduced bills. However the Cave Review concluded that alternative approaches and new ways of working, including a measured introduction of competition, were required to meet the future challenges facing the sector.¹²
- 10 These future challenges were identified as including:¹³

¹¹ Defra, Cave Review: Terms of Reference, 2008 <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/tor.htm>

¹² Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Final Report, 2009, p. 3. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

¹³ Ofwat, Delivering sustainable water – Ofwat's strategy, 2010. http://www.ofwat.gov.uk/aboutofwat/reports/forwardprogrammes/rpt_fwd_20100303ofwatstrategy.pdf

- **Climate change** – Which leads to increasing volatility in our weather patterns implying increased water scarcity and flooding, thereby affecting the safety and reliability of water and sewerage services.¹⁴ The Environment Agency projections for England and Wales indicate that overall river flows could fall by up to 15 per cent by 2050 with winters becoming wetter and summers drier, particularly in south-east England where 15% of water resource zones are already classified as water stressed.¹⁵ To manage supply and demand for water and sewerage services going forward, the Cave Review considered that the regulatory regime needs to promote sustainable investment and to make better use of the resources that we currently have. This could be achieved for example by using existing raw water supplies as efficiently as possible to limit the investment in new supplies (supply side) and encouraging more efficient use of water by the customer (demand side).
- **Population growth** – The population of the UK is estimated to grow by 15% to 62 million people by 2030. The growth in population will increase the demand for water and wastewater services and compound the pressure on supplies arising from climate change. This problem is compounded by the fact that most of that population growth is likely to occur in the south east and south of England in precisely those regions that are already water stressed.¹⁶ To meet these developments the Cave Review noted that significant investment and innovation will be required to ensure that water and sewerage services continue to be delivered efficiently and effectively.
- **Water consumption** – The UK government has set out a vision of reducing per capita consumption from 148 to 130 litres per person per day, and potentially to 120 litres a day depending on the available technology.¹⁷ Again this implies a desire to encourage more efficient use of water amongst customers (demand side).
- **Consumer expectations** – Affordability is a growing concern amongst customers, with 25% of customers complaining that their bills were not affordable.
- **Continued efficiency** – Since privatisation, bills have risen in real terms by 42 per cent. To minimise the impact on consumers, the industry will need to seek both operational and capital expenditure efficiencies.¹⁸
- **Environmental obligations** – The review noted that currently 15 per cent of catchments in England Wales are over-abstracted, mainly in the south east. To meet the statutory requirements of the European Union's Water Framework Directive and other environmental and quality enhancements significant challenges from the current levels of abstraction will need to be addressed.¹⁹ Similarly, to meet new environmental standards significant investment will also

¹⁴ For example the Environment Agency projections for England and Wales indicate that overall river flows could fall by up to 15 per cent by 2050 with winters becoming wetter and summers drier, particularly in south-east England where 15% of water resource zones are already classified as water stressed. Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Final Report, 2009, p. 5. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

¹⁵ *Ibid* p. 17.

¹⁶ *Ibid* p 19.

¹⁷ *Ibid* p 19.

¹⁸ *Ibid* p 19.

¹⁹ *Ibid* p 19.

be required. By way of example, meeting the Water Framework Directive using current technologies could cost between £30 and £100bn in England and Wales by 2027. It is therefore essential that the regulatory regime facilitates innovation and promotes the right types of investment to minimise the cost of meeting these standards.

- **Resource management** – Securing sufficient supply of a high enough quantity of water and managing increasing pressure on drainage systems will remain a challenge in the future. This is reflected in the water resource management plans (WRMP's) of many companies which have identified the need for significant investment to develop new sources of water and to upgrade existing facilities over the next 25 years. To promote more energy efficiency, innovation and sustainable solutions, greater integration and sharing of research and development outcomes within the industry and with other sectors and stakeholders is required.²⁰

- 11 The Cave Review noted in particular that, taken together, these challenges will place a premium on the industry to find new and more efficient ways of allocating, treating and using water. This is important not only to ensure that supply and demand are balanced, but also to protect the environment by firstly using less inputs (e.g. energy, chemicals) and also by reducing the need for new infrastructure (e.g. new supply investments). This will ultimately protect consumers by minimising the cost of addressing these challenges that is passed on to them.
- 12 For this reason the Cave Review expressed the view that it was an opportune moment to review the structure of the water sector and its legal and regulatory framework.

*'Introduced in the right way, competition and cooperation between companies, driven by market mechanisms, market-like instruments or regulation, can encourage innovation and the delivery of lower prices, a better service and improved environmental outcomes.'*²¹

- 13 The Cave Review identified that under the current arrangements efficiency in the industry is almost totally driven by Ofwat's economic regulation.²² Although this approach has delivered savings, the challenge today is that the rewards for outperformance are relatively modest and the risks from failure are high. Accordingly the Review has recommended reforms to both the regulatory and legislative frameworks of the water sector to encourage the industry to become more innovative so that it is better able to anticipate manage and respond to the challenges.
- 14 Despite the need for reform, the Review recognised that there is a lack of international experience in relation to some of the proposed changes. Therefore the Review recommended a step-by-step approach to reform, starting where the risk-reward ratio is most favourable.

²⁰ *Ibid* p 19.

²¹ *Ibid* p. 5.

²² Although there is some scope for choice, due to a number of barriers only one customer has switched suppliers in the sector. This is discussed in further detail below.

The current approach to retail competition under the Water Supply Licensing (WSL) regime

- 15 Retail competition in the water sector was introduced through the Water Supply Licensing (WSL) regime in December 2005. The WSL regime is a third party access regime that was designed to facilitate retail and upstream competition by creating two new licences that new entrants would be able to apply for to enter the sector and provide certain water services, including:²³
- a 'retail' licence; and
 - a 'combined supply' licence.
- 16 The existing licences held by incumbent companies, which are known as Instruments of Appointment (IoA) are not affected by these new WSL licences which exist separately, i.e. incumbents and entrants are subject to different licensing arrangements with different but similar obligations.
- 17 Both the WSL retail and combined supply licences permit the holder to provide retail water services (wastewater services are excluded from the WSL regime) to any non-household customer that uses, or is likely to use, at least 5 megalitres of water per year in England or 50 megalitres in Wales²⁴.
- 18 There is no formal definition of what these retail services might be since the services provided are not objectively defined by the legislation, the licences themselves or the other regulatory arrangements. However, the services are likely to include for example billing and customer facing contact services. The precise set of services covered by an entrant using either of these licences would ultimately be defined by negotiation between the entrant company and the incumbent company or, where appropriate, by determination from Ofwat under the existing framework. The methodology for calculating the 'access price' that an entrant must pay for the use of the incumbent company's network is known as the 'costs principle'.
- 19 A key difference between the two licences is that a WSL retail licensee would simply purchase wholesale water from the appointed water company, whereas a combined supply licensee would be permitted to introduce its own water into an incumbent company's network. Both licenses utilise the incumbent company's supply system, including the treatment facilities, to deliver the water to end customers.
- 20 In addition to requiring a licence, any party seeking to provide retail services must also obtain access to the relevant supply system (i.e. the pipes and treatment facilities) and where applicable, purchase a bulk supply of water. To access wholesale services, licensees must negotiate the terms with each appointed company whose water and supply system they wish to use. Accordingly if a licensee wishes to supply retail services to all regions within England, then it would need to negotiate access arrangements with every incumbent company in England.

²³ In its current form the WSL regime does not allow entry with respect to providing wastewater and sludge services (eg, treatment and recycling).

²⁴ 1 Mega-litre (Ml) is equivalent to one million litres

- 21 One of the key terms of access that must be agreed upon between a licensee and the incumbent company is the wholesale price of water. Under the current legislative arrangements, the wholesale price of water is calculated by reference to the incumbent's retail price less the costs the incumbent avoids (i.e. by not supplying the retail customer).²⁵ In effect the retail margin is equal to the short-term costs that the incumbent can avoid, reduce or recover in some other way (expressed as the acronym ARROW). Since the definition of ARROW costs will vary in different instances, the definition of services covered will also vary.
- 22 Associates of incumbent companies are not prevented from also applying for a WSL 'retail' or 'combined supply' licence. Although all associates can apply for a WSL license, under the current arrangements there is a restriction on 'in-area trading' i.e. associates of incumbents cannot chase customers within the incumbent's appointed area. This means that an incumbent company's associate can obtain a WSL licence but can only provide services outside its own area, thus preventing it from offering truly national contracts to multi-site customers as a WSL licensee.

Limitations of the WSL regime and the Cave Review recommendations

- 23 Since the WSL regime was implemented 8 companies have been granted retail licenses (although one license has since been revoked) but to date only one customer has successfully switched their retail supplier²⁶. The absence of significant switching by customers demonstrates that the WSL regime has been unsuccessful in facilitating retail competition. This failure of the WSL regime can largely be attributed to the significant barriers entrants face under the current legal and regulatory framework. These barriers were identified by the Cave Review as well as Ofwat's own review of the WSL regime²⁷. The key limitations include:
- **Negotiated access**- the need for entrant companies to negotiate terms of access with the appointed company whose water and supply system they wish to use;
 - **The 'costs principle'**- the use of the costs principle in determining the price licensees pay appointed companies; and
 - **The scope of the market**- the small size of the market due to the 5 and 50 megalitre thresholds, exclusion of wastewater retail services and the inability for customers to self-serve.
- 24 Additionally the Cave Review and Ofwat's review of the WSL regime identified a number of other reforms that were considered to be necessary for the development of an effective retail market, these included:

²⁵ This is set out in Section 66E of the Water Industry Act 1991 (WIA91). <http://www.legislation.gov.uk/ukpga/1991/56/section/66E>

²⁶ This is up to the period August 2011.

²⁷ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, pp 47-68. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>
Ofwat, Market competition in the water and sewerage industries in England and Wales – Part one: Water Supply Licensing, 2007. http://www.ofwat.gov.uk/competition/review/pap_con_mktcompwslpr1.pdf?download=Download#

- **Legal separation** of retail and wholesale activities;
- **In area trading-** a ban on in-area trading.

Negotiated access

- 25 The current process for obtaining access can act as a significant barrier to entry. The format, terms and conditions of each agreement that entrants need to seek are likely to vary between companies. New entrants must therefore negotiate each clause separately with every incumbent often involving significant legal advice. Furthermore the negotiations are confidential and therefore neither Ofwat nor the licensees can disclose information that might speed up other negotiations. For this reason agreeing to an access arrangement has significant time and financial implications.
- 26 Other problems with the negotiated access regime include the fact that Ofwat has no means to settle a dispute, and therefore licensees may have to accept provisions with excessive commercial risk compared to the value of supplying customers. In addition for each site, the licensee must make a site-specific application in order to obtain a wholesale price and then will have to turn different commercial terms and risks into a single offering that is acceptable to clients. These are likely to differ markedly across England and Wales.
- 27 To overcome this barrier the Cave Review recommended the establishment of national and market operational codes. This would require the Government to amend the legislation to introduce nationally agreed operational codes and systems which would be binding for all market participants with Ofwat acting as co-ordinator in conjunction with stakeholders. This would provide a process for market participants, Government and regulators to influence the content of these codes.

Recommendation (Interim Report): Replace the current negotiated access arrangements with a regulated system based on nationally agreed market and operational codes that would be binding on all market participants²⁸

The 'costs principle'

- 28 By applying the cost principle in its current form, the price only reflects the short-term avoided costs and requires the licensee to pay:
- all of the new transaction costs; and
 - the incumbent's unavoidable retail costs, even if they may be inefficient, as well as its own retail costs.
- 29 The problem with using this approach is that the resulting margin with which competitors must provide retail services is very low, ranging between 0.5 per cent and 1.5 per cent of the retail price (i.e. the remaining 98.5-99.5 per cent of the retail price is paid to the wholesaler). By comparison, in Scotland, where an effective retail market has existed since 2008, the Water Industry Commission

²⁸ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 53. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

for Scotland (WICS) determined that wholesale services should be provided at an average discount of 11 per cent on the retail price (i.e. the remaining 89 per cent of the retail price is paid to the wholesaler).²⁹ This margin was calculated by defining retail and wholesale activities explicitly (as opposed to an avoidable cost basis) and allocating the costs accordingly (i.e. it did not reflect the 'retail-minus' approach adopted by the existing 'costs principle').

- 30 Use of the costs principle makes it difficult for any licensee to compete effectively with the incumbent and deters entry because it would be unprofitable. Apart from making it difficult for anyone other than the incumbent to win customers, the Cave Review also noted that it may also prevent the development of inter-regional links.³⁰ This is because incumbent companies are discouraged from competing in neighbouring regions, even if they have surplus water.
- 31 Instead of providing licensees with a discount based on the costs principle, the Cave Review recommended that it should be replaced by an ex-ante access pricing framework based on full economic costs, with infrastructure assets discounted appropriately. The Review noted that this could be achieved by removing the costs principle from primary legislation and replacing it with access prices determined by Ofwat at a water resource zone level on a common methodology, with reference to guidance from Defra and Welsh ministers to ensure that end-users benefit and that incumbents are fairly remunerated for the services they provide.³¹

Recommendation (Interim Report): Replace the costs principle and with an access pricing regime whereby the wholesale price of water and wastewater is calculated based on full economic costs.³²

Scope of the market

- 32 Under the current arrangements, the contestable retail sector only encompasses water retail services and is restricted to those customers in England who consume (or are likely to consume) more than 5 megalitres of water per year. The effect of these arrangements is that the size of the market is quite small, with only 26,000 customers eligible to switch suppliers in England.
- 33 The Cave Review recommended that retail competition should be extended to wastewater retail (effectively doubling the size of the services covered by WSL) and that the threshold for eligible customers should be eliminated. The effect of these proposals would be to significantly increase the size of the competitive market and hence provide a stronger incentive for companies to enter the market and compete.

²⁹ *Ibid* p. 51.

³⁰ *Ibid* p. 50.

³¹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Final Report, 2009, p. 69. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

³² Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 51 <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

- 34 Similarly, the Cave Review also recommended extending the scope of the market by creating a new 'self-supply' licence within the existing WSL regime that would allow customers to provide their own retail services and buy directly from the incumbent wholesaler. This is similar to some of the licensing arrangements that exist in energy where those companies who consume large volumes of energy are able to apply for a licence and effectively provide their own retail services, deal directly with the Wholesale business and therefore get a reduced price for the wholesale provision of their services. A self-supply licence would allow for similar arrangements to exist in the water sector.

Recommendation eleven – Based on advice from Ofwat, the non-household threshold should be abolished to give all non-household customers the ability to choose their own retailer.³³

Recommendation (Interim Report) - To give customers greater choice and to encourage the development of the retail market, competition should be extended to wastewater retail services.³⁴

Recommendation (Interim Report) - Introduce a new self-supply license which would allow customers to buy direct from the wholesaler³⁵

- 35 The Cave Review did not recommend the immediate extension of retail competition to household customers. However, the Review considered that this should be revisited in the future by Government following advice from Ofwat and consultation with other stakeholders.

Recommendation thirteen - The decision on whether and when to extend retail competition to other customers should be taken by the UK and Welsh governments on the basis of advice from Ofwat and other parties after consultation with stakeholders.³⁶

Legal Separation

- 36 In developing an effective retail market the Cave Review was particularly concerned about the incentives and opportunities to discriminate in favour of their own retail operations to the detriment of entrant retailers (see section 2). This could inhibit market entry and therefore effective competition and any corresponding benefits that flow from that effective competition. In order to address this problem the Review considered that incumbent companies should be required by the Government to legally separate their retail operations except where, for smaller companies, such separation could lead to unavoidable costs that outweighed the benefits of such separations. Ofwat was asked to advise the Government on whether such a threshold was appropriate, and if so, at what level it should be set.

³³ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Final Report, 2009, p. 121. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

³⁴ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 47 <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

³⁵ *Ibid* p. 52

³⁶ *Ibid* p. 47

Recommendation twelve - Legal separation of retail activities should be made mandatory except where, for smaller companies, such separation could lead to unavoidable and unacceptably large bill increases to customers that outweighed the monetary and non-monetary benefits of such separation. Ofwat should advise Government on whether a threshold is appropriate, and if so, its level.³⁷

37 Following on from the Cave Review, in 2009 the Government requested Ofwat to establish whether it would be appropriate to introduce a threshold and if so, the level at which this should be set.³⁸

38 In response to this request, Ofwat published advice to the Government.³⁹ This advice considered that setting a threshold would be an additional regulatory intervention which could result in a range of intended and unintended consequences. In particular Ofwat noted that exempting some incumbent companies from the separation requirement runs a risk of unfairly discriminating between competing companies and disrupting the operation of the market.

39 Ofwat's analysis did suggest that the benefits of separation were greater for larger companies. Therefore if Government was minded to introduce a threshold, a threshold of 50,000 billed properties would be most appropriate on the grounds that it minimises the risk of unfair discrimination.

Ofwat Advice – There does not appear to be a strong case for the additionally regulatory intervention of introducing a threshold. However if the Government were minded to introduce a threshold, it should be set at 50,000 billed properties.⁴⁰

In-area trading

40 When the WSL regime was first introduced in 2003 (with the market opening in 2005) a prohibition was placed in the legislation which effectively stopped incumbents from competing for customers within their own geographic area of appointment (i.e. the area within which they are appointed to provide water and sewerage services). This effectively means that incumbents can establish subsidiary companies that can only compete in the areas of other incumbent companies. The rationale for this prohibition was to remove the risk of anti-competitive discrimination.

41 In fact, as the Cave Review found, the restriction on in-area trading reduces the incentive for incumbent companies to participate in the contestable retail market and, more significantly, limits the benefits of the market for large multi-site customers. This is because a licensee associated with an incumbent company cannot offer a national service. This makes it impossible for large national customers with sites located in each incumbent company's area to switch to a single national retailer where that retailer was setup by an

³⁷ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Final Report, 2009, p. 118. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

³⁸ HM Treasury, The Economic and Fiscal Strategy (Budget) Report 2009, p. 78. http://webarchive.nationalarchives.gov.uk/20100407010852/http://www.hm-treasury.gov.uk/bud_bud09_index.htm

³⁹ Ofwat, Advice from Ofwat to the UK Government on the question of a threshold for legal separation of appointed companies retail businesses in the water and sewerage sectors. http://www.ofwat.gov.uk/competition/review/pap_pos_090716threshold.pdf

⁴⁰ *Ibid* http://www.ofwat.gov.uk/competition/review/pap_pos_090716threshold.pdf

incumbent company. Therefore the removal of this restriction would be expected to help reduce the barriers to retail competition.

- 42 Although the Cave Review did not explicitly address this barrier, its abolishment was implicit in the Review's recommendation for the development of a national retail market.
- 43 This barrier to competition was explicitly identified in Ofwat's internal review of the WSL regime. In the proceeding consultation the majority of respondents agreed with Ofwat's proposal to ask the Government to change legislation to allow in-area trading.⁴¹

Recommendation: Legislation should be changed as soon as possible to permit in-area trading⁴²

Responses to the Government's consultation on the Cave Review recommendations

- 44 In September 2009 Defra and the Welsh Assembly Government undertook a public consultation on the final report of the Cave Review and its recommendations.⁴³ The consultation sought general views from stakeholders and the general public on competition in the water and sewerage sector as well as the specific recommendations of the Review. Amongst the 54 respondents 24 positively supported competition, 15 were accepting of greater competition but with some reservations, whilst 7 respondents explicitly rejected competition.⁴⁴
- 45 Those respondents who supported the introduction of competition considered that a greater use of market mechanisms would bring a range of benefits. This included empowering customers by giving them greater choice and control over their suppliers. This was expected to drive improvements in service quality including, for example, allowing multi-site customers to consolidate their suppliers. Others referred to the success of retail competition in Scotland and the competitive GB energy market in delivering benefits from customer choice.
- 46 Although the majority of respondents were accepting of greater competition, a number of reservations were expressed, particularly in relation to the implementation of the reforms and the design of the market arrangements. Some respondents emphasised the need to adopt a step-by-step approach, as recommended by the Cave Review, to minimise risks and to enable further work to be undertaken, particularly in relation to upstream services. Other concerns were raised in relation to the cost of reforms, particularly in relation to the legal separation of the companies' retail functions. It was suggested by some respondents that that this could reduce investor appetite for risk, thereby increasing the cost of the process.

⁴¹ Ofwat, Market competition in the water and sewerage industries in England and Wales: - Part One: Supply Licensing, 2007, p. 19.

http://www.ofwat.gov.uk/competition/review/pap_con_mktcompwslpr1.pdf?download=Download#

⁴² *Ibid* http://www.ofwat.gov.uk/competition/review/pap_con_mktcompwslpr1.pdf?download=Download#

⁴³ Defra, A summary of responses to the consultation on the Cave Review of competition and innovation in water markets, August 2011, <http://www.defra.gov.uk/environment/quality/water/industry/>

⁴⁴ *Ibid* p. 6.

- 47 Those respondents who rejected greater competition held the view that it would not deliver significant benefits to consumers. This view reflected problems identified in the competitive energy sector and also the fact that they perceived service levels in the sector to be already high, thereby leaving little scope for competition to provide additional benefits. Other respondents were also concerned about the risks of increased competition, particularly in relation to finance and investment in the sectors but also in relation to the security of water supply, the stranding of assets and the perceived risk of higher prices for some customers.
- 48 In addition to seeking general views on competition, the consultation also posed a number of questions relating to the specific recommendations put forward by the Cave Review. The key questions and responses in relation to retail competition are summarised below, further detail can be found in the summary response to the consultation⁴⁵.

• *Do you agree with the UK Government's approach to implementing a framework of regulated access through introducing standard market and operational codes?*

- 49 Of the 53 respondents, 26 agreed to the development of a framework of regulated access through the introduction of standard market and operational codes and three disagreed. The remaining 25 responses either did not provide an answer to the question or did not express a view either way. The breakdown of responses was as follows:
- 14 incumbent companies supported the development of a framework of access through the introduction of standard market and operational codes and two objected to their introduction;
 - all four new entrant companies supported a framework of regulated access; and
 - all of the regulators supported the introduction of standard market and operational codes.
- 50 Amongst those people who did not support the recommendation, the key concern was that developing one overarching national framework would ignore site specific factors. Accordingly these respondents supported a national framework with a site specific schedule.
- 51 On the whole, the majority of respondents supported the introduction of standard market and operational codes to address the failings of the current access regime.

• *Do you agree with the Government's proposal to replacing the cost principle with a power for Ofwat to develop an access pricing methodology and publish access prices ex ante in consultation with market participants and stakeholders?*

- 52 23 respondents agreed to the replacement of the cost principle and three disagreed. The breakdown of responses was as follows:

⁴⁵ *Ibid*

- 10 incumbent companies supported the replacement of the cost principle and three objected, with the remaining four not expressing a clear view;
- all four new entrant companies supported the replacement of the cost principle;
- six customers or customer representatives responded to this question with five supporting the replacement of the cost principle by Ofwat and the remaining response not providing any clear preference; and
- two of the regulators addressed this question with both supporting the replacement of the cost principle.

53 Amongst those people who did not support the recommendation, the key concerns were as follows:

- the current access pricing regime provides protection for ineligible customers;
- greater clarity is required about the objectives of the access pricing regime;
- greater clarity is required in relation to the mechanism that would replace the costs principle; and
- Ofwat should not be given substantial reform powers without more Government control.

54 Overall there was widespread support for replacing the access regime provided that it facilitates efficient entry and ensures that incumbent companies can recover their costs.

- *Do you agree with the UK Government's proposed approach to implementing the recommendation to extend the WSL regime to include sewerage services?*

55 23 respondents supported the UK Government's proposed approach to extending the WSL regime to include retail sewerage services with two respondents explicitly rejecting to the extension of WSL to include sewerage. The breakdown of responses was as follows:

- amongst the incumbent companies, 11 supported the approach to including retail sewerage services in the WSL regime and one objected the remaining five did not express a clear view;
- amongst new entrant companies all four supported the extension of retail sewerage in WSL;
- three customers specifically responded to this question, suggesting that the regime should be extended to include sewerage. CCWater also supports the inclusion of sewerage, emphasising the benefits to widening the scope of the WSL regime. No customers rejected the widening of WSL to include retail sewerage services; and
- Ofwat and the Environment Agency supported the inclusion of sewerage in the WSL regime.

56 Amongst those people who did not support the recommendation, the key concerns were as follows:

- the Cave Review reached the conclusion to extend the WSL regime to sewerage too quickly; and
- further research is required to investigate the differences between water and sewerage, particularly the absence of methods to measure sewerage use.

57 On the whole, there was considerable support from respondents for extending the WSL regime to sewerage services, albeit with some respondents seeking further information on how the regime might operate.

• *What benefits do you believe the introduction of a self-supply licence would bring?*

58 21 respondents supported the creation of a self-supply licence under the WSL regime and three disagreed. The remaining 29 responses either did not provide an answer to the question or did not express a view either way. The breakdown of responses was as follows:

- amongst the incumbent companies, 11 supported the creation of a self-supply licence and two objected. The remaining five did not express a view;
- amongst new entrants two supported the creation of a self-supply licence and two objected;
- only CCWater gave a specific view on self-supply licences amongst customers and they were broadly supportive; and
- Ofwat, the Environment Agency and the DWI all support the creation of a self-supply licence but the DWI would like to have powers of scrutiny over such licence applications analogous to insets and WSL and the Environment Agency would similarly like to ensure that such licences are not detrimental to the environment.

59 The benefits of a self-supply licence were suggested to be:

- ability to bypass retailers;
- provide customers with more control over the supplies to their premises; and
- would provide benefits for niche players and promote innovation.

60 Of those respondents who did not support the recommendation, the key concern was that there would be a low take up and that large customers can already request a license to introduce wholesale water into an incumbent's network to supply their own premises.

61 Overall most respondents supported the introduction of a self-supply license, with the only substantive criticism being that its take-up might be limited.

- *How can any legal separation be implemented in such a way as to minimise the transitional costs of legal separation? What are the benefits, and what costs may it impose? Are there alternative options?*

62 The retail separation proposals in the consultation drew the most significant response. Amongst all respondents, three water companies explicitly stated that they did not believe that the legal separation of water companies' retail functions was cost beneficial. These respondents considered that there would not be enough margin for new entrants to consider the retail market and that evidence from Scotland supporting this form of separation was not appropriate to England and Wales. Linked to this concern two water companies and two customer representatives suggested that further cost benefit analysis on these reforms was necessary with some suggesting that this cost benefit analysis should include the financing costs more explicitly. One incumbent company considered that legal separation could lead to substantial duplication of resources and corresponding incremental costs and two other respondents were concerned that vertical unbundling would blur the lines of responsibility and reduce the effectiveness of the sector.

63 To mitigate the transitional costs respondents suggested five alternative to legal separation. These options were as follows.

- **Legal separation of non-household customers only** – three water companies supported this proposal on the grounds that it removed concerns about the interaction between regulated and unregulated activities. However six water companies considered that legal separation should cover both household and non-household activities so as to minimise the cost of the process and to exploit economies of scale and scope between the two functions.
- **Accounting separation of customer facing retail functions with appropriate penalties for misreporting** – one respondent considered that effective accounting separation, supported by appropriate penalties for misreporting would be sufficient to support a contestable retail market.
- **Functional separation of customer facing retail functions for non-household customers only** – one respondent supported this option on

the grounds that it minimised the transitional costs, particularly because it allows highly geared companies to avoid financing costs associated with breaching covenants

- **Voluntary legal separation of customer facing retail functions for both households and non-households** – one respondent suggested that companies could be given the choice of switching from the existing license regime to an alternative modular regime in order to avoid financing risks associated with highly geared companies. Under this approach companies that choose to remain vertically integrated (ie, authorised under the IoA) would not be allowed to compete for customers – ie, they could only lose them. Conversely companies that choose to switch to the modular regime would be able to chase customers.

- 64 Undoubtedly the proposal to legally separate retail and wholesale activities drew the most criticism. Of those respondents who were opposed to the recommendation, the key concern was its potentially high cost. Conversely those who supported the separation remedy were concerned about the potential for incumbents to discriminate against new entrants and thereby restrict the development of a competitive retail market.

The rationale for intervention

- 65 Given the nature of the water and sewerage industry and the economic regulation of that sector by Ofwat this IA considers the scope for introducing further competition in the retail elements of the water and sewerage value chain. The objective of such reforms would be to improve the efficiency and effectiveness of water retailing services with demonstrable benefits being passed on to customers in the form of lower prices or improvements to services. Wider benefits to the environment and society may also be achieved.

Introduced in the right way, competition and cooperation between companies, driven by market mechanisms, market-like instruments or regulation can encourage innovation and the delivery of lower prices, a better service and improved environmental outcomes⁴⁶

- 66 Such changes would be in line with one of the primary statutory duties of Ofwat and it would correspondingly allow for regulation to be loosened and ultimately removed from a part of the water and sewerage value chain that does not demonstrate a large degree of natural monopoly characteristics.
- 67 The Cave Review has set out a vision for that reform based on a detailed assessment of the available evidence and following consultation with the sector stakeholders and other experts. In order to deliver effective retail competition as envisaged by the review a range of changes are required that in broad terms seek to address the problems that exist in the current competition regime in the water sector, the WSL regime, and encourage entry into retail markets

⁴⁶ Cave., M, Independent Review: of competition and innovation in Water Markets: Final Report, April 2009.
<http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>, pg.5

by new firms and therefore increase the levels of rivalry and competition in those markets and the resulting benefits from competition in terms of productive and dynamic efficiency (or innovation).

- 68 Government intervention is required to amend the legislation covering the WSL regime in order to address the various barriers within the existing regime.

2. Summary of Options

- 69 The package of reforms put forward by the Cave Review had support amongst respondents to the public consultation. The notable exception however was the proposed remedy to addressing anti-competitive discrimination, namely the legal separation of retail and wholesale activities.
- 70 In light of these concerns this IA considers a number of different reform options. The stated objective of these reforms is to remove the barriers to competition and in doing so, facilitate an effective market for the provision of water and wastewater retail services to non-household customers.
- 71 In totality, across all of the options, the reforms that are being considered are set out below:⁴⁷ They can be considered in two groups:
- a package of reforms to the WSL regime which are consistent across all of the options considered here except the base case or 'do nothing' option; and
 - different separation remedies to address the anti-competitive discrimination risks.

A package of reforms to the WSL regime

- 72 This encompasses various reforms to the WSL regime, including implementing all of the following changes, which are assumed under all of the options assessed except the base case or 'do nothing' option.
1. Abolishing the consumption threshold within the WSL regime that governs the eligibility of non-household customers and therefore extending choice to all non-household customers.
 2. Extending the WSL regime to include wastewater or sewerage retailing services, allowing licensed WSL retailers to provide these services on both the water and wastewater elements.⁴⁸
 3. Removing the 'costs principle' from legislation and replacing it with revised access pricing arrangements that are specified by Ofwat.
 4. Updating the necessary enforcement powers for the relevant regulators so that, for example, Ofwat can enforce a code on mis-selling or approve new licensees in conjunction with other regulators, etc.
 5. Replacing the existing system of 'negotiated access' with a system of 'regulated access' by requiring companies to operate with standard wholesale contracts and follow market and operational codes as a condition in their retail licence.
 6. Introducing a 'self-supply' licence in the WSL regime, either as a separate licence or as a module within a revised WSL retail licence.
 7. Abolishing the restriction on in-area trading.

⁴⁷ These reforms are being considered on the basis that the threshold for retail competition has been reduced to 5Megalitre for non-households via a separate SI; and the prohibition on 'in area trading' has been removed through an alternative Bill.

⁴⁸ The supply duties in relation to sewerage services would most likely need to be changed.

Different separation remedies to address the anti-competitive discrimination risks

- 73 The different options considered are largely driven by the different separation remedies that could be introduced to address the discrimination risk. The following forms of separation are considered.
1. Companies are required to '**legally separate**' their retailing operations, including separating the existing licence, creating a new subsidiary company (which can remain under the existing group ownership) and transferring all relevant staff and assets to that entity (option 2).
 2. Companies are required to '**functionally separate**' their retailing operation, including separating the existing licence into retail and wholesale elements, creating separate wholesale and retail divisions and introducing a range of additional controls to protect against the various price and non-price discrimination risks (see Table 26 Annex B).
 3. Companies are given the option of '**voluntarily adopting functional separation**' and either competing for new customers or remaining vertically integrated where they can only lose contestable retail customers (see Annex B).
 4. **No separation** is required of companies retailing operations (option 5).

Overview of options

- 74 This IA will therefore consider the five options defined below.
1. **Do nothing**- base case
 2. **WSL + legal separation**- Introducing a package of reforms to the Water Supply Licensing (WSL) regime and also mandating the legal separation of companies retail functions for all those companies serving more than 50 thousand customers.
 3. **WSL + functional separation** - Introducing the same package of reforms to the WSL regime as under option 2 but mandating the functional separation of companies retail functions for all those companies serving more than 50 thousand customers.
 4. **WSL + optional separation** - Introducing the same package of reforms to the WSL regime as under option 2 and giving companies the option of separating their non-household retail functions to enter the competitive market.
 5. **WSL only**- Only introducing a package of reforms to the WSL regime without any separation of the companies' retail functions.
- 75 For each option we have described below what reforms are considered and the changes to both *legislation* and *licences* that would be required. We have also described the *effects* of the option and the key issues that are likely to arise in the options appraisal.

1. Do nothing/base case:

76 This option is based on the status quo, no changes to **legislation** or to **licences** have taken place including either the instruments of appointment or the WSL retail licences.

77 The **effect** of this option is nil over and above the status quo.

2. WSL + legal separation:

78 This option assumes that a large package of changes are made to the WSL legislation reflecting the Cave Review recommendations. In addition the 'legal separation of companies' retail functions is mandated via a statutory transfer scheme under legislation

79 The following **legislation** changes are assumed to **reform the WSL regime**:

- the 'costs principle' is removed and revised access pricing arrangements are specified by Ofwat;
- the threshold for retail competition has been reduced to 0Megalitre or abolished for non-households allowing all non-household customers to exercise choice in a retail market;
- the WSL legislation is extended to include sewerage retailing;
- the restriction on in-area trading in the WSL legislation is removed;
- the supply duties in relation to sewerage services are changed to reflect the splitting of retail from wholesale; and
- any necessary enforcement powers are updated for the relevant regulators (e.g. in relation to enforcing a code on mis-selling or approving new licensees).

80 The following changes to the **licences** are assumed to **reform the WSL regime**:

- negotiated access is replaced by regulated access by requiring incumbent companies to operate with standard wholesale contracts and follow market and operational codes either through a legislative obligation or as conditions in the wholesale and retail licences;
- a self-supply licence is included in the WSL regime, either as a separate licence or as a module within a revised WSL retail licence;
- the WSL retail licence is modified to include retail sewerage module; and
- the WSL retail licence is amended to include a requirement to follow a code on mis-selling.

81 The following **legislation** changes are assumed in association with the mandated legal separation of retail and wholesale activities:

- statutory transfer schemes are used as part of primary legislation to undertake the legal separation of companies retail functions;
- supply duties may need to be revisited in the context of entirely separate retail licensees;
- a variety of other retail/customer facing references in the Act would need to be revisited to ensure these applied to the 'new' WSL retail licence, not the existing loA (e.g. customer facing Guaranteed Service Standards, etc); and
- in order to ensure on-going provision of retail services if retailers go bust in a competitive market a Supplier of Last Resort (SoLR) arrangement is put in place to reallocate customers to other licensees in the market were such a situation to occur⁴⁹.

82 The following changes to the **licences** are assumed in association with the mandated legal separation of retail and wholesale activities:

- the loA would need to be changed to reflect the removal of retailing activities from that licence; and
- some changes to 'new' WSL retail licences are likely to be necessary in the context of fully separate retailers throughout the sectors for example in relation to Water Resource Management Planning, drought orders, social tariffs and sewerage planning, etc. However, some elements of this (e.g. Water Resource Management Planning and drought orders) are already covered in existing WSL retail licences.

83 The **effect** of this option is to remove all the barriers to effective retail competition under WSL and to address the potential for anti-competitive discrimination by incumbents in a way that the Cave Review considered was necessary. Of all the options considered, this option has the greatest potential to promote effective retail competition and therefore the benefits are in line with the Cave Review assumptions and the new evidence (see section 4 of this IA). However, the mandated legal separation of retailing functions may create financing costs and carries some financing risks, reflecting the findings of the Market Reform and Financing Forum and other evidence (see section 4 of this IA). To err on the side of caution the costs associated with this option reflect the most extreme financing assumptions and therefore the total costs exceed all other options.

The quantified estimated net benefits of this option are £295m (NPV over 30 years)

84 A full description of the costs and benefits of this option can be found in section 4 of this IA.

3. WSL + functional separation:

⁴⁹ Note that under the current arrangements customers would simply transfer back to the regional incumbent retailer who no longer exists under option 2 in the same way.

- 85 This option assumes that all the changes to the WSL regime under option 2 (including changes to both legislation and licences) have occurred and that the 'functional' separation of companies' retail activities is also mandated via legislation and licences.
- 86 The following **legislation** changes are assumed in association with functional separation:
- legislation is changed to mandate functional separation and define the minimum level of separation required whilst giving Ofwat necessary powers to deliver that separation through licences;
 - supply duties are changes in the context of entirely separate retail licenses to ensure a level playing field between entrants and incumbents under functional separation;
 - a variety of other retail/customer facing references in the Act may need to be revisited to ensure these applied to the 'new' WSL retail licence, not the existing IoA (e.g. Guaranteed Service Standards, etc); and
 - in order to ensure on-going provision of retail services if retailers go bust in a competitive market a Supplier of Last Resort (SoLR) arrangement could be put in place to reallocate customers to other retailers in the market were such a situation to occur.
- 87 The following changes to the **licences** are assumed in association with functional separation:
- the IoA would need to be changed to reflect the removal of retailing activities from the licence and the functionally separate retailing activities would need to be placed in a new separate WSL retail licence;
 - some changes to 'new' WSL retail licences are likely to be necessary in the context of fully separate retailers throughout the sectors for example in relation to Water Resource Management Planning, drought orders, social tariffs and sewerage planning, etc; and
 - it will be necessary to create two different compliance arrangements, one for 'functionally' separate incumbents and one for 'legally' separate entrants, this might be possible through regulation but it is likely that this will at a minimum involve some additional licence conditions.
- 88 The **effect** of this option is to remove most of the barriers to effective retail competition under WSL and to introduce a structural remedy to address the anti-competitive discrimination of entrant retailers. However, the mandated 'functional' separation of retailing activities and the splitting of the licence may not be sufficient to address the discrimination issues and may therefore result in substantially lower benefits than under option 2.
- 89 The central issues with this option are the extent to which this form of separation addresses the discrimination issue, what proportion of the benefits of option 2 would accrue under this option and the extent to which this option would incur lower financing costs/risks than option 2. There is also a subsidiary question

about the extent to which 'functional' separation is cheaper to implement than 'legal' separation both in transitional cost terms and recurring cost terms.

- 90 Under this option incumbents would have functionally separated retail and wholesale activities and would have a separate retail licence in the WSL regime. This would enable them to compete with other incumbents and entrants for retail customers under the reformed WSL regime on a national basis.
- 91 In addition, companies will have incentives to go further than functional separation.
- Since 'functionally' separate retailers would need to be subject to more onerous compliance arrangements than 'legally' separate ones (by virtue of the discrimination problem and the form of separation) companies who choose to legally separate would be able to avoid the more onerous compliance arrangements in the licence/regulation and the associated regulatory burden.
 - The existence of a separate retail licence defined in the WSL regime would automatically remove retailers from of the Special Merger Regime that controls the water sector⁵⁰ and encourages consolidation of retail and in any merger management would need to consider whether they should remain vertically integrated.

The quantified estimated net benefits of this option are £401m (NPV over 30 years)

- 92 A full description of the costs and benefits of this option can be found in section 4 of this IA.

4. WSL + optional separation:

- 93 This option assumes that all the WSL reforms under option 2 (including changes to both legislation and licences) have occurred but that there is no separation mandated. Instead of mandated separation companies are given the option of legally separating the non-household retail business (i.e. transferring their non-household customers and relevant assets, etc to a licensee) and therefore enabling themselves to participate in the retail market or choosing not to separate and therefore simply losing customers to new WSL retailers.
- 94 The following **legislation** changes are assumed:
- supply duties may need to be reformed in relation to non-household customers;
 - a variety of other retail/customer facing references in the Act may need to be revisited to ensure these applied to the 'new' WSL retail licence, not the existing IoA;

⁵⁰ Under the Special Merger's Regime, water mergers are assessed by considering whether the merger would prejudice Ofwat's ability to make comparisons between different water companies. The objective of this assessment is to ensure that Ofwat can continue to apply yardstick regulation to the water companies.
Section 32 Water Industry Act (1991). <http://www.legislation.gov.uk/ukpga/1991/56/section/32>

- in order to ensure on-going provision of retail services if retailers go bust in a competitive market a Supplier of Last Resort (SoLR) arrangement could be put in place to reallocate customers to other retailers in the market were such a situation to occur; and
- transfer scheme provisions would be allowed to help incumbents in voluntary legal separation.

95 The following changes to the **licences** are assumed:

- the existing loA may need to include provisions around customers being approached by WSL retailers/rules governing how incumbents respond to offers from entrants;
- a new 'wholesale' loA would need to be created, or a wholesale module in the existing loA which removed retailing activities from the licence for those companies who chose to separate;
- in case all companies chose to split licensing would need to be adopted, including some changes to the WSL retail licences in the context of non-household retailer licences throughout the sectors for example in relation to Water Resource Management Planning, drought orders, social tariffs, etc; and
- it will be necessary to create two different sets of market arrangements, one for 'legally' separate incumbents and one for 'integrated' incumbents, this might be possible through regulation but it is likely that this will at a minimum involve some additional licence conditions on the loA/WSL retail licence.

96 The **effect** of this option is to remove all of the barriers to effective retail competition under WSL and to address the discrimination problem using a structural remedy only in those areas where incumbents choose to legally separate their non-household businesses. However, in those areas where incumbents chose not to separate discrimination problems would persist and most likely be exacerbated by the inability of incumbents to compete with entrants on price terms. Some benefits are likely, particularly if a large proportion of companies separate, however at the same time it could also result in financing costs.

97 The main issues with this option are:

- it is likely to result in substantial regional market distortions as competition could be expected to take off more significantly in areas where incumbents had chosen to separate than where they had not;
 - there are significant design issues associated with making the choice arrangements work effectively which will require the duplication of licences/legislation, including at a minimum modularising the existing IoA or creating a separate wholesale IoA; and
 - the extent to which it delivers the benefits of retail competition depends on the extent to which incumbents choose to separate.
- 98 Under this option incumbents would be able to choose to legally separate or not. This would enable them to choose to separate and compete with other incumbents and entrants for retail customers under the reformed WSL regime at a national level.
- 99 Retail only mergers are facilitated automatically for those companies who choose to legally separate without the need for additional legislation as per options 3 and 4. However, for those companies who chose not to separate there would be no means to allow 'retail only' mergers as envisaged by the Cave Review without amending the Special Merger Regime (SMR) arrangements.
- 100 Companies will have other incentives to legally separate.
- Since integrated incumbents would need to be subject to more onerous market arrangements than 'legally' separate ones (by virtue of the discrimination problem and the form of separation) companies who choose to legally separate would be able to avoid the more onerous compliance arrangements in the licence/regulation and the associated regulatory burden.
 - If retail mergers were available only for companies who chose to separate their retail businesses, this would incentivise that choice.
- 101 The estimated net benefits of this option are:
- The quantified estimated net benefits of this option are £211m (NPV over 30 years)
- 102 A full description of the costs and benefits of this option can be found in section 4 of this IA.

5. WSL only:

- 103 This option assumes that the package of changes are made to the WSL legislation reflecting the Cave Review recommendations but there is no mandated separation of companies' retail functions.
- 104 The same **legislation** changes from option 2 that are required to reform the WSL regime are assumed under this option.
- 105 The same changes to **licenses** from option 2 that are required to reform the WSL regime are assumed under this option.

- 106 The **effect** of this option is to remove all of the barriers to effective retail competition under WSL identified by the Cave Review or Ofwat's own review of the WSL regime, with the exception of the anti-competitive discrimination problem. Some reasonable benefits are likely as the scope of the market would increase substantially and more entry and switching can be assumed as many of the other barriers to competition have been removed. However, the absence of any separation of retailing functions significantly increases the risk of discrimination between incumbents and licensees and the proliferation of vertically integrated incumbents suggests a much more marginal competitive regime. The critical judgement for this option is the extent to which it generates the same benefits from competition as the other options which have more significant forms of separation. The costs of implementing this option are also likely to be significantly lower than other options as it avoids any costs associated with the separation of retail from wholesale.

The quantified estimated net benefits of this option are £190m (NPV over 30 years)

- 107 A full description of the costs and benefits of this option can be found in section 4 of this IA.

3. Approach to quantifying the costs and benefits

108 To analyse the costs and benefits associated with each option we have considered a range of materials and evidence. In this section we briefly provide an overview of the approach adopted by the Cave Review and set out the additional sources of information that we have considered. We conclude by explaining our approach to quantifying the costs and benefits of each option.

Cave Review

109 The majority of the reforms that form the basis of this IA were first considered by the Cave Review and modelled in an accompanying cost-benefit analysis.⁵¹ The Review analysed the impact of reforming the water sector to facilitate retail competition by applying the following four steps to each of the policy options that were considered:

Step 1: Identify the scope of the market.

For each policy option, the scope for competition was defined in terms of the number of customers and total consumption for different customer size-bands.

Step 2: Identify the cost base and margin associated with retail activities.

For each customer size-band category the associated costs and margins were then assessed. This process revealed the size of the contestable and non-contestable retail segments and the wholesale segment.

Step 3: Identify the transitional and/or recurring efficiencies under each of the scenarios that occur above and beyond comparative regulation.⁵²

The Cave Review estimated separate productive and dynamic efficiencies for the contestable household segment and the non-household segment.⁵³ In addition upstream efficiencies and bundling efficiencies were estimated.

Step 4: Identify the transitional and/or recurring costs under each of the scenarios resulting from separation and retail competition.

The fourth step involved estimating the transitional and recurring costs that result from the introduction of the reforms. These were drawn from three different areas of cost, regulatory costs borne by Ofwat and other regulators in administering the market, incumbents' costs or costs to the network business and to the retail business, and costs associated with setting up the Central Market Authority and switching arrangements.

110 By applying the above steps the Cave Review estimated that reforming the WSL regime and mandating legal separation would generate an NPV of £617m over 30

⁵¹ The Cave Review did not consider softer forms of separation such as functional or voluntary separation.

⁵² Comparative regulation refers to the approach used by Ofwat to regulate the sector and in doing so, incentivise each company to realise efficiency savings. <http://www.ofwat.gov.uk/regulating/reporting/>

⁵³ For each area of efficiency, sensitivity analysis was undertaken using a low, medium and high assumption and the resulting efficiency gain was derived by applying the assumed efficiency gain against the starting cost base.

years. The Cave Review also applied a number of sensitivities and these generated an NPV in the range of £354m to £1,144m.

Post-Cave

111 Since the Cave Review was published, a number of developments have taken place that could potentially affect the analysis of the reform measures, including the resulting CBA. These developments can be summarised as follows:

- accounting separation data⁵⁴ became available for England and Wales in 2010;
- in Scotland the competitive retail market became more established, and actual cost information has been published⁵⁵;
- in conjunction with the Market Reform and Finance Forum (MRFF), the financing issues associated with the proposed reforms have been investigated in greater detail⁵⁶; and
- a number of pieces of work have been published by different groups that examine various issues associated with retail reform. These reports are listed in the Bibliography provided at Annex A.

Approach

112 The Cave Review was published in 2009 and since then there have been a number of developments to the evidence which provide an opportunity to build upon its analysis.

113 In 2011 Ofwat published a review of the evidence base for retail competition and separation, which was peer reviewed by Professor Catherine Waddams.⁵⁷ This report considered the range of materials published since the Cave Review and for each of the cost and benefit assumptions assessed the quality of the information and evidence.

114 We have also taken into account the concerns of some incumbent companies and members of the investor community regarding the financing implications of legal separation. This assessment has largely been conducted based on the finding of the MRFF.

115 Finally it should be recognised that that this IA considers a number of options that were not assessed by the Cave Review. New judgements and assumptions were necessary in order to consider the costs and benefits of these alternative options

⁵⁴ Prior to 2010 the costs and revenues associated with each activity undertaken by the appointed water incumbents was accounted and regulated together. The effect of this arrangement was that it was difficult to get accurate information about the costs involved for each activity in the delivery of water and wastewater services. Accounting separation means that the accounts (costs, revenues, assets and liabilities) for the different activities are reported separately.

This data is reflected in the following reports: (i) Grant Thornton, WICS: Cost Benefit Assessment, May 2010 <http://www.watercommission.co.uk/UserFiles/Documents/Grant%20Thornton%20CBA%20report%20December%202010.pdf>
(ii) WICS, Retail competition in Scotland: An audit trail of the costs incurred and the savings achieved, 2011. [http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail\(B\)%20\(2\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail(B)%20(2).pdf).

⁵⁶ As part of its examination of the financing issues associated with market reform, Ofwat has considered the following evidence: (i) the Cave Review; (ii) a report by Richard Nourse that examined how a series of stylised models of competition might impact the financing arrangements in the sector, (iii) a report by NERA that studied the financial implications of different approaches to separation and competition; (iv) information provided by the MRFF. For further details see Annex C.

⁵⁷ Ofwat, Review of the evidence base for retail competition and separation, 2011.

and these have been developed in conjunction with Professor Catherine Waddams and Professor Martin Cave.

116 In assessing the costs and benefits associated with each option we have adopted an appraisal period of 30 years. This is consistent with the approach adopted by the Cave Review. This time period was chosen principally because some of the benefits in this IA relate to the long run marginal cost (LRMC) of avoided CAPEX (i.e. water efficiency). It is appropriate in this context to select a relatively long time horizon because LRMC is a measure that assesses the cost of supplying a good or service on the basis that capital stocks are not fixed. Given that water assets are characterised by extremely long asset lives, it is appropriate that the benefits associated with avoided LRMC be calculated over a long time horizon. In practice the benefits of these reforms could have been calculated over a much longer time frame, in line with average asset lives.

4. Cost and Benefits of the options

117 In this section we identify and where possible quantify the costs and benefits associated with each option. Our starting point for this exercise has been to consider the assumptions made by the Cave Review. We then considered the new evidence to identify if there is scope for improving the Review’s analysis.

118 Below we set out the quantification of the costs and benefits for each option.

Option 1 – Baseline

119 Under the baseline scenario no reforms are being proposed. It is therefore assumed that non-household retail competition for eligible customers would not develop due to the barriers identified in paragraphs 23 to 24.⁵⁸

120 In the absence of competition, efficiency savings will be driven by Ofwat’s existing comparative regulatory regime. In the table below we have illustrated the average OPEX efficiency savings that have been achieved in the sector over the past two price review periods.

Period	Efficiency Savings
2000 – 2004	3.1%
2005 – 2009	1.5%

121 It’s evident from the above table that the gains from regulation are diminishing, with the opex efficiency savings falling by 50% over the most recent price

⁵⁸ At present customers consuming more than 50Megalitre per year are eligible to switch suppliers, however the Government has recently committed to reducing the threshold to 5 Megalitre

⁵⁹ Source: Ofwat.

reviews. In part this trend reflects the fact that the incumbent companies are bunching (i.e. they are becoming equally as efficient or equally as inefficient as one another) which makes it harder for Ofwat to identify appropriate efficiency targets.

- 122 For the purpose of this IA we have assumed an on-going efficiency saving of 1% p.a. Although the 1% rate is lower than the level achieved over the past two price reviews (PR04 and PR09), it's in excess of the decreasing trend illustrated in the above table (which implies an efficiency saving well below 1% p.a. over 30 years). It should also be noted that since the introduction of accounting separation, retail costs have grown by 7% after adjustments are made for inflation. Given that this growth includes the gains from regulation, an assumption of zero growth in retail costs and 1% gains from regulation represents an extremely cautious approach based largely on the fact that accounting separation data has only been available for two years.
- 123 This on-going 1% saving implies that under the base case regulation alone would deliver net benefits of approximately £2bn (NPV over 30 years).
- 124 The costs and benefits associated with each of the subsequent reform options are calculated on the basis of assumed **incremental** gains from competition over and above those that would have been achieved by regulation alone. This is similar to the approach taken by the Cave Review and is consistent with much of the key evidence cited from which the assumptions for efficiency gains from competition are drawn. This evidence generally provides an indication of the relative efficiency gain from competition over and above what would have been achieved anyway under regulation. Hence under competition it is assumed that efficiencies can be realised that are equivalent to those that would be achievable under regulation, and the benefits of competition as described in Options 3-5 are additional to this.
- 125 To calculate the costs and benefits of each of the options we have therefore adjusted the retail cost base to reflect the gains from regulation that would have been achieved in the absence of these reforms. This adjusted retail cost base is therefore equal to the retail cost base less the on-going efficiency savings of 1% from regulation. The efficiency savings from competition are then calculated by applying the relevant efficiency saving assumption of the incremental benefits from competition, over and above those which would have been achieved under regulation, against the adjusted retail cost base. The effect of this calculation is that the efficiencies from competition are applied to a cost base that is decreasing over time.
- 126 In presenting our results against each option however we have in effect removed those savings which would have been achieved anyway under the base case. For example the total benefits from option 2 would be equal to the £2bn plus the NPV from option 2. However, given that we are measuring each option against the base case, we have only reported the incremental benefit, as opposed to the total benefit.

Option 2 – WSL & Legal Separation

- 127 The second option, which is consistent with the final recommendations of the Cave Review, entails reforming the WSL regime and mandating that incumbent companies legally separate retail activities from wholesale activities.
- 128 Given that this option reflects the final recommendations of the Cave Review, most of the post-Cave reports raise issues that are relevant to this option. We have considered the new evidence and the review of this evidence undertaken by Ofwat⁶⁰ when assessing the likely costs and benefits.

Step 1 - Scope of the Market

- 129 The scope of the market is defined by first disaggregating the non-household customer base by reference to the annual average consumption of different groups of customers (see Table 3 below). For each group we identify the number of customers, total consumption and the scope for competition.⁶¹
- 130 We have then estimated the scope for competition within each threshold (i.e. ranging from 0 to 100%). It is reasonable to assume different levels of participation in the retail market for different customers on the grounds that the extent of price savings will to a large degree reflect consumption levels (and hence the size of bills). For example, we would expect that there is more scope for price savings and other benefits for customers with higher consumption and hence higher bills.⁶² Conversely there would appear to be less scope for such benefits to accrue to customers with lower levels of consumption.
- 131 On this point the Cave Review assumed that the scope for competition for customers consuming less than 1 megalitre was 10%. Since anecdotal evidence from Scotland suggests that SMEs are increasingly active in the retail market, with a number switching to no-frills web based payment services. This would suggest that assuming only 10% scope for competition for customers consuming less than 1 megalitre might underestimate the likely participation rate. Nevertheless in the absence of data indicating the proportion of SMEs participating in the Scottish market, we have adopted the Cave Review's assumptions regarding the scope for competition for each customer size-band.

Annual consumption sizeband (MI p.a.) threshold	Number of Customers – England & Wales	Total Consumption - England & Wales	Scope for Competition	No. active customers	Number of Active Customers - England
>50	2,180	530,000	100%	2,200	2,180
20 to 50	3,220	75,000	100%	3,500	3,220

⁶⁰ Ofwat, review of the evidence base for retail competition and separation, 2011.

⁶¹ Data on customer numbers and total consumption for each group has been sourced from the Cave Review. Whilst more recent data is available, it is not disaggregated to the same level of detail that is required.

⁶² It would be expected that such customers would be in a better position than SMEs to put their utility services out to tender.

10 to 20	5,700	64,000	100%	6,200	5,700
5 to 10	14,900	80,000	100%	15,700	14,900
1 to 5	125,100	202,000	100%	134,600	125,100
0 to 1	995,100	154,000	10%	108,330	99,510
Total	1,146,200	1,105,000	(22%)	270,530	250,610

Step 2 - Cost Base and Margin

132 Since the final report of the Cave Review was published, Ofwat has introduced its accounting separation project.⁶³ This project imposed a requirement on the incumbent companies to allocate costs to, amongst others, a retail services business unit. This provides much more robust figures for the costs associated retail services than were available to the Cave Review and there is therefore an opportunity to update the analysis with these figures. The retail costs provided through this accounting separation work were then further disaggregated between household and non-household customers. These costs have been published for two consecutive years – 2010 and 2011 (JR10 and JR11 respectively).

133 The results of this exercise suggest that:⁶⁴

- the total size of the retail cost base in England and Wales using JR11 data is £1,061m, this is similar to that proposed by the Cave Review (£975m); however
- the split of costs between households and non-households is significantly different with JR11 data indicating a non-household cost base of £170m whilst the Cave Review estimated a non-household cost base of £103m.

134 Given that the June Returns represent empirical data provided by the incumbent companies, it appears to be the best available information on the different cost bases. We also recognise Ofwat's concern that it should be treated with some caution because there is only two years' worth of data.⁶⁵ Nevertheless this represents a significant improvement on the Cave Review's estimates and for the purpose of modelling the costs and benefits of the reforms we have used this data to calculate the relevant cost bases and retail margin.

135 We have also adjusted the JR11 data to exclude Wales on the grounds that we are only considering the reforms for England. This adjustment is as follows:

Contestable Retail	= £170m - £14m
	= £156m (or £147m in 2009 prices) ⁶⁶
Non Contestable Retail	= £890m - £54m
	= £837m (or £789m in 2009 prices)

⁶³ 2010 June Return data is available from Ofwat's website; <http://www.ofwat.gov.uk/regulating/junereturn/irlatestdata/>

⁶⁴ This analysis was also highlighted by Deloitte in their work for Water UK, which noted the existence of the JR10 data and calculated similar retail market segments. Deloitte, Lessons from retail competition in the Utility Sector, 2011, p. 38.

⁶⁵ Ofwat, Review of the evidence base for retail competition and separation, 2011, p. 14.

⁶⁶ We have deflated these numbers into 2009 prices using the GDP deflator series.

136 In order to allocate the above costs to each customer-size band we have relied upon the assumptions adopted by the Cave Review. This is because accounting separation data does not provide sufficient detail to allow the costs to be allocated. Therefore we have adopted the Cave Review assumption that 75% of retail costs are predominantly driven by fixed per-customer costs and 25% are driven by variable consumption costs.

Annual consumption sizeband (MI p.a.)	Total Fixed and Variable Costs (£m) per consumption sizeband (2009 prices)	Scope for competition	Contestable Cost Base (£m) 2009 prices
>50	18	100%	17.88
20 to 50	3	100%	2.81
10 to 20	3	100%	2.69
5 to 10	4	100%	4.06
1 to 5	19	100%	18.69
0 to 1	101	10%	10.13
Total	147	38%	56.27

137 Overall, this suggests that any efficiency assumptions from competition will only be applied to 38% of the non-household retail cost base.

Step 3 - Benefits

138 Consistent with the approach adopted by the Cave Review, we have categorised the benefits as follows:

1. Contestable retail efficiencies
2. Spillover - Non-contestable retail efficiencies
3. Spillover - Wholesale efficiencies
4. Bundling efficiencies
5. Water efficiencies

139 We discuss these benefits and the underlying assumptions below.

1. Contestable retail efficiencies

140 The central feature of the Cave Review's recommendations was the extension of retail competition to all non-household customers. This reform was expected to generate a number of benefits because it provides incumbent companies with a much stronger incentive to seek out productive and dynamic efficiencies in relation to retailing activities. By way of example, if companies fail to realise these efficiencies then they could lose market share to competitors.⁶⁷

⁶⁷ In the absence of non-household retail competition, the incentive for incumbents to pursue retail efficiency savings is established through the price control process. Under this process each company can retain for 5 years any savings that they achieve above and

141 In estimating the likely productive and dynamic efficiencies the Cave Review considered a range of sources including the experience in Scotland and a number of academic studies.⁶⁸ Based on this consideration the Review assumed the following efficiency savings in relation to non-household retail costs:

- productive efficiency (10% one off); and
- dynamic efficiency (1.5% p.a.)

142 In developing these assumptions the Cave Review drew primarily on evidence from Scotland which suggested that Business Stream had been able to reduce its cost base by 35% following separation from Scottish Water and the introduction of competition⁶⁹. Similarly, in considering the scope for ongoing gains from competition versus regulation, the review drew on a range of academic sources. These academic studies explicitly looked at the level of efficiency gain delivered by competition over and above that which would have been achieved by regulation anyway. The results of these studies are illustrated in the table below.

Study	Sector, timescale and approach	Incremental gains from competition over regulation
Zhang, Parker and Kirkpatrick	Electricity Generation 1985 – 2003 (18 years) Impact competition on labour productivity	1.1% to 3%
Owat	Water n/a TFP growth	0.55% to 2%
Nickell	147 UK companies 1972 – 1986 (14 years) Impact on TFP growth when firms face 5 or more competitors	2.6% to 7.1%
Nickell	700 UK companies 1972-1986 (14 years) TFP growth in more competitive environments	3.8% to 4.6%
Disney	UK Manufacturing 1980 to 1992 (12 years) Impact of restructuring on productivity growth	External restructuring accounts for: (i) 50% labour productivity growth; and (ii) 80-90% TFP growth

143 The Cave Review then applied the productive and dynamic efficiencies to the active contestable cost base to calculate the overall benefit. In effect this meant

beyond the efficiency target set by Ofwat. The power of this incentive is therefore defined by the targets set by Ofwat and the period over which the companies can retain the savings

⁶⁸ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, pp. 120-121. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

⁶⁹ WICS, Retail competition in Scotland: An audit trail of the costs incurred and the savings achieved, 2011, p. 9.. [http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail\(B\)%20\(2\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail(B)%20(2).pdf)

that both efficiencies were applied to 100% of the costs for non-household customers using more than 1 megalitre of water per annum and 10% of the costs for non-household customers using less than 1 megalitre per annum.

- 144 The key driver of the above benefits is the facilitation of *effective* non-household retail competition. Incumbent companies will only be incentivised to seek out additional retail efficiencies (i.e. beyond the price control process) if there is a realistic threat that customers might switch suppliers. In the absence of this threat incumbents are not at risk of losing market share and therefore have a lower powered incentive to minimise costs through the pursuit of productive and dynamic efficiency savings.
- 145 For this reason the Cave Review recommended a number of reforms to address the barriers to competition identified in Section 1.
- 146 Since the Cave Review was published several reports have been published that either provide new evidence on the benefits of retail competition in Scotland or comment and challenge the assumptions of the Cave Review⁷⁰. We discuss these below.

Retail Mergers

- 147 The Cave Review's assumptions regarding dynamic efficiency savings were informed by a number of academic studies that considered the impact of competition on productivity.⁷¹ One of these studies explicitly considered the impact of restructuring on productivity growth (Disney et al). It is unclear whether the Review's on-going dynamic efficiency assumptions include or exclude the benefits from retail mergers.⁷²
- 148 Under this option retail mergers would not require reforms to the special mergers regime. By mandating the legal separation of retail activities, the legal barriers to retail only mergers would be removed. This is because retailers would operate under an expanded version of the WSL licensing regime, as opposed to the existing IoA.⁷³ Given that the special mergers regime only applies to companies appointed under Section 6 of the WIA, incumbent companies holding a retail license would be free to merge (provided that they satisfy the OFT's general merger regime).
- 149 The ability for retailers to merge has the potential to deliver efficiencies in two ways:

⁷⁰ For a summary of these reports see Ofwat, Review of the evidence base for retail competition and separation, 2011.

⁷¹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, pp. 121-122. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

⁷² Under the existing legislative framework the water sector is subject to a special mergers regime. This regime requires the OFT to automatically refer any merger between water enterprises with an individual turnover of £10m to the Competition Commission (CC). The CC then assesses the merger by considering whether it would prejudice Ofwat's ability to make comparisons between different water companies. 1 The effect of the special mergers regime is that mergers are essentially discouraged. Because Ofwat regulates the sector by comparing the relative performance of the companies, the loss of a comparator (ie, two companies merging to become one) will reduce the robustness of the statistical analysis. Therefore it's likely that any merger would be deemed to prejudice Ofwat's ability to apply comparative regulation.

⁷³ Currently all vertically integrated incumbents are authorised to provide water and wastewater services under an instrument of appointment.

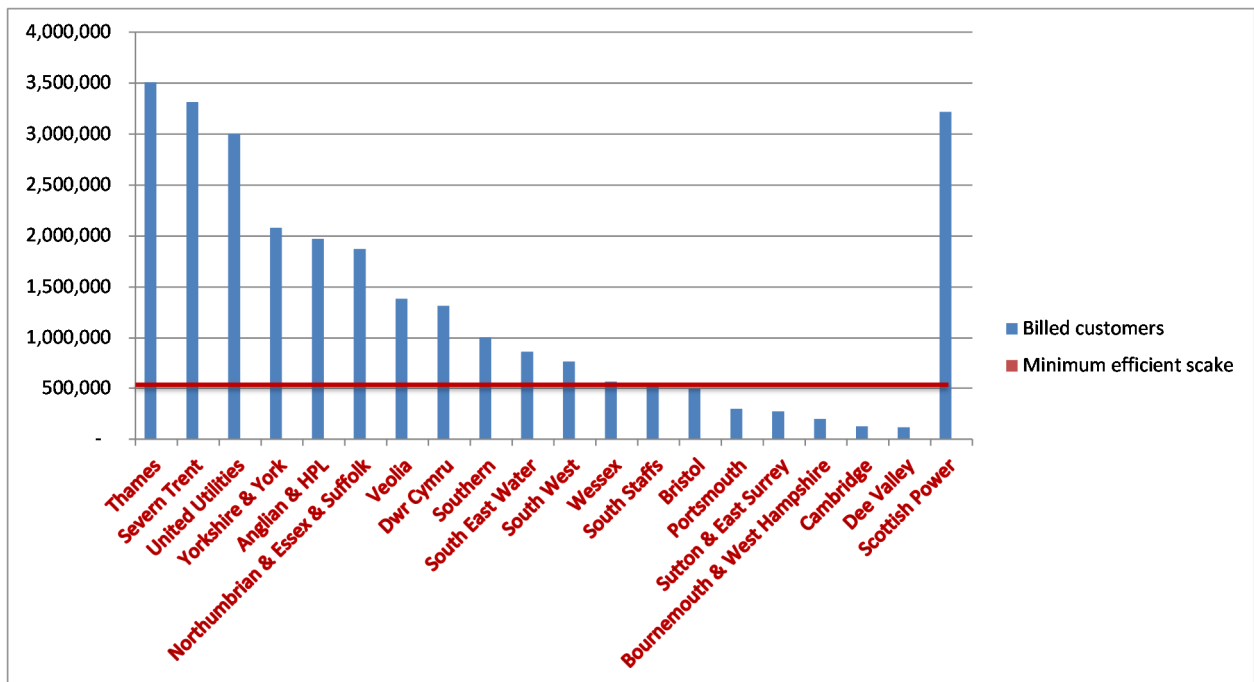
- reduce the on-going costs of retailing activities by enabling merged retailers to exploit economies of scale; and
 - reduce the cost of adjustment to the reforms (we discuss this in section 3 below).
- 150 There appears to be reasonable evidence suggesting that there are significant economies of scale in retailing. By way of example, in the energy sector studies suggest that the minimum efficient scale of suppliers is at least 100,000 to 1,000,000 customers.⁷⁴ This reflects the fact that significant cost drivers such as billing systems and call centres are characterised by large fixed costs and that there are substantial economies of scale to be gained in these areas by serving larger groups of customers.
- 151 This feature was recognised by Deloitte which noted that there are significant economies of scale in retailing.⁷⁵ In support of this argument Deloitte drew a comparison with the energy sector in which there are only six supply businesses (retailers) 'the big six'.⁷⁶ In the event that retail mergers took place, Deloitte ascribed the following efficiencies:
- Water-only incumbents could merge retail operations with water/sewerage incumbents;
 - incumbents could unbundle and sell their non-household customers or sell their entire retail businesses (subject to satisfactory remuneration for bad debt risks); and
 - non water utilities may enter the sector to exploit economies of scope with their existing utility customers both by acquisition and by direct marketing.

Figure 1: Relative size of water retailers with energy retailers and suggested minimum efficient scale in energy retailing (source: Ofwat, Scottish Power, Littlechild)

⁷⁴ Littlechild, *Smaller Suppliers in the UK Domestic Electricity Market: Experience, Concerns and Policy Recommendations*, Electricity Policy Research Group 2005, page 19 <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/littlechildsuppliers.pdf>

⁷⁵ Deloitte, *Lessons for the water and sewerage industry from retail competition in the utility sector*, 2011, p. 40. http://www.deloitte.com/view/en_GB/uk/industries/eiu/water/24dca3dd6f90e210VqnVCM2000001b56f00aRCRD.htm,

⁷⁶ It should be recognised that like the Cave Review, Deloitte was of the opinion that the existing merger regime may act as a barrier to retail consolidation. *Ibid*



- 152 Evidence of economies of scale in relation to retailing has also been observed by Ofwat in its relative efficiency assessments. In modelling the cost of business activities (which is similar to retail activities), the regression gave a constant value and a coefficient for the number of billed properties equal to 0.879.⁷⁷ This indicates that for every additional customer, the cost of business activities increases by less than one.
- 153 Intuitively it seems likely that, given the nature of retailing activities in water or indeed other utility sectors, there are likely to be some significant economies of scale. This situation could give rise to some consolidation of retail activities once competition and legal separation are introduced. This outcome is supported by evidence from other liberalised utility sectors. Importantly any efficiencies generated by mergers would be gained by both the contestable non-household customer base and also to varying degrees the non-contestable household customer base.
- 154 Although the Cave Review noted the potential benefits of retail only mergers, they were not quantified explicitly in the resulting cost-benefit analysis and it is unclear whether the benefits of mergers was considered in the Reviews's one-off or ongoing efficiency assumptions.
- 155 For the purpose of this IA we have not explicitly quantified the potential efficiencies that could be generated from retail mergers as it is difficult to quantify these benefits in the absence of disaggregated cost information.

Scotland

- 156 As noted, the Cave Review's productive efficiency assumptions were made on the basis of evidence from Scotland, along with academic evidence indicating the

⁷⁷ http://www.ofwat.gov.uk/publications/pricereviewletters/ltr_pr0939_appendix2.pdf

level of inefficiency in the sector.⁷⁸ Given the potential for competition to drive productivity, it seems reasonable that the gains could be achieved in England if the identified level of inefficiency exists.

157 Recent evidence from Scotland suggests that even larger productive efficiency gains were achieved following the reforms. By way of example in its audit of the costs and benefits of retail competition, WICS identified that Business Stream was able to reduce its initial baseline costs by 35%.⁷⁹ These savings reflect efficiencies in the following areas:⁸⁰

- Bad debts and cost of collection – Business Stream has reduced its bad debts significantly by incentivising businesses to pay more quickly (through discounts for advanced payment) and penalising businesses for late payment. At the same time by moving customers onto a contract, Business Stream has been able to build a much stronger relationship than was previously the case when customers were served under a statutory obligation. An important consequence of these changes is that the cost of collecting bad debts has also fallen (bad debts can make up as much as 30% of the retail cost base). Ultimately the key driver of these efficiencies is the combination of legal separation and competition which has forced Business Stream to become much more conscious of its working capital. This is contrast to an integrated company which has greater cash flows (i.e. due to capital works) and therefore has more flexibility in managing its cash flow.
- Metering, IT and Telecoms – due to the separation from Scottish Water and the need to minimise costs in light of competition from other entrants, Business Stream has become much more conscious of its overheads and has significantly reduced its metering, IT and telecoms costs. The key driver of these efficiency savings is that these costs represent a much larger proportion of Business Stream’s expenditure in comparison to the integrated company. Therefore Business Stream has dedicated more effort to drilling down on the expenditure to identify efficiency savings.

158 We note from the Cave Review that some companies expressed doubt that similar gains would be possible in England because many of the service improvements have already been realised.⁸¹ This argument reflects the fact that in England incumbent companies have been subject to economic regulation since privatisation in 1989 whereas economic regulation in Scotland in its current form was only introduced in the 2002-2006 Price Determination.⁸² Given this difference it would be expected that English incumbent companies would be more efficient than Scottish Water and therefore have less scope for efficiency gains

⁷⁸ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, pp. 120-121. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

⁷⁹ WICS, Retail competition in Scotland: An audit trail of the costs incurred and the savings achieved, 2011, p. 9.. [http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail\(B\)%20\(2\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail(B)%20(2).pdf)

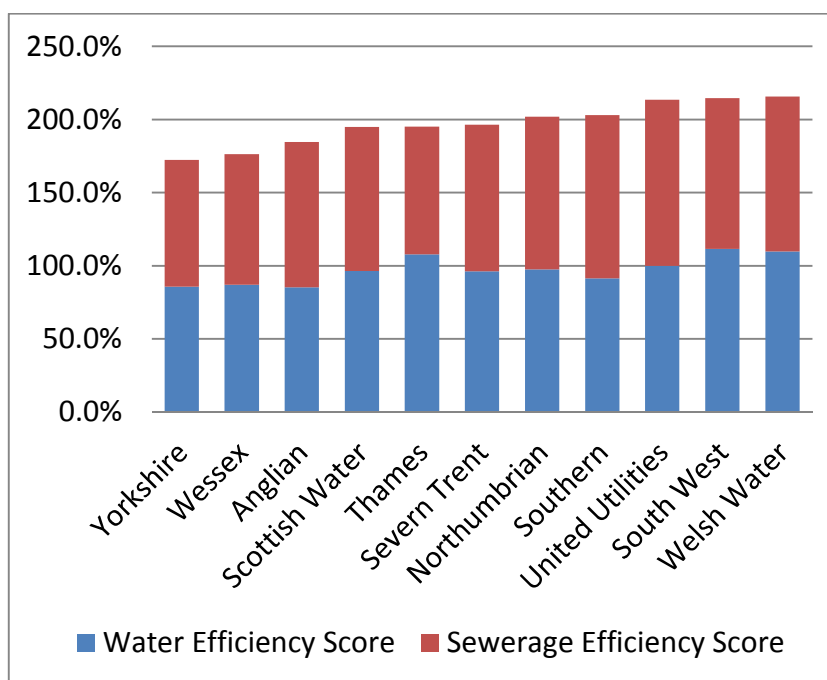
⁸⁰ Source: Business Stream.

⁸¹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 121. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

⁸² Economic regulation in its current form was introduced by the Water Industry Act (1999). WICS, Price Setting 2002-2006. http://www.watercommission.co.uk/view_Price_Setting_2002-06_Pubs.aspx

159 However, as Ofwat noted, there may be just as much scope for efficiency gains in England as there was in Scotland following the introduction of competition.⁸³ For example by 2007/08⁸⁴ Scottish Water ranked fourth against English incumbents in terms of operating efficiency.⁸⁵ In making this comparison Ofwat has assumed that the efficiency gap between Scottish Water and the frontier company for retail operating costs is equal to the efficiency gap for total operating costs.⁸⁶ Retail operating costs make up 23% of total operating costs.

Figure 2: OPEX Efficiency Scores 2007/08 (Source: Ofwat)



160 The one-off productive efficiency gains occur as a result of both separation and competition and therefore for those incumbents that have chosen to already outsource or separate their retail functions we would expect these benefits to be reduced to some degree because they may already have been incurred. However, the 10% one-off productive efficiency gain has not been adjusted to reflect those incumbent companies who have already separated or outsourced their functions because we consider that this is already a conservative assumption compared to the 35% gains achieved in Scotland. We have therefore assumed that the 10% figure already reflects the varied positions of the companies retailing arrangements.

⁸³ Ofwat, review of the evidence base for retail competition and separation, 2011, p. 28.

⁸⁴ WICS did not publish an assessment of operating costs prior to 2007/08. However the performance in 2006-07 can be reasonably informed by the 2007-08 assessment on the grounds that (i) Scottish Water's operating costs in 2007-08 were very similar to the level in 2006-07; and (ii) Yorkshire Water's costs declined slightly between 2006-07 and 2007-08.

⁸⁵ This relative assessment is based on a comparison of Scottish Water's efficiency scores for water and wastewater services against Yorkshire Water's efficiency scores. The resulting efficiency gap in 2007/08 was equal to 12.6% in water services and 13.7% in wastewater services. This gap would put Scottish Water in Band B for both water and sewerage (see WICS, Staff paper 17 – econometric models: Price Setting 2010 – 2015).

<http://www.watercommission.co.uk/UserFiles/Documents/Staff%20paper%2017.pdf>

Ofwat, RD02/09, Relative efficiency assessment 2007-08. http://www.ofwat.gov.uk/regulating/reporting/ltr_rd0209_releffassess07-08

⁸⁶ This assumption was made due to the absence of disaggregated cost information.

- 161 Assuming that the efficiency gap for total operating costs is reflective of the level of inefficiency for retail costs, then the Cave Review's one-off efficiency saving of 10% and on-going savings of 1.5% appears quite modest when compared to the savings of 35% that were actually achieved in Scotland.

Retail competition in Scotland

On 1 April 2008 retail competition in the Scottish water sector was introduced for all 130,000 business customers. To promote a level playing field, Business Stream, the non-household retail arm of Scottish Water, was legally separated.⁸⁷ In total there are now five suppliers competing for customers in Scotland - Business Stream, Satec, Osprey,⁸⁸ Aimeria and Wessex Water.

Since competition was introduced more than 45,000 customers have renegotiated the terms of their supplies and are enjoying a range of benefits due to the competitive market.⁸⁹ Although the precise number of customers that have switched suppliers is not available. It's also instructive to note that the rate of switching has increased since market opening, with 40% more customers switching suppliers in 2009-10.⁹⁰

- The benefits derived by customers in Scotland reflect lower prices, improved services and greater water efficiency. Unfortunately data reflecting the impact on the wider market is not available, largely because this information is commercially confidential. However Business Stream has identified a number of benefits that its customers have received, which include: Lower water and sewerage prices – over 42% of Business Stream's customers are paying less than they would have under the default tariff but the scale of those savings is not yet known;⁹¹
- improved services;
- greater water efficiency – Business Stream has saved customers approximately £10m of water through efficiency measures, which has also reduced CO₂ emissions by 5,000 tonnes;⁹² and
- increasing levels of innovation.

Further insight about the impact of retail competition in Scotland is discussed in the independent assessment undertaken by Grant Thornton. In its report⁹³ Grant Thornton estimated that customers would save £110m over the next decade, reflecting savings from lower unit prices (£60-70m) and savings from lower water use (£50m-£55m).

⁸⁷ Scottish Water no longer provide any retail services and instead is solely responsible for providing wholesale services.

⁸⁸ Osprey is a subsidiary of Anglian Water.

⁸⁹ WICs, Competition in the Scottish water industry: Achieving best value for water and sewerage customers: 2009-2010, p. 7. <http://www.watercommission.co.uk/UserFiles/Documents/Competition%20report%20-%20final.pdf>

⁹⁰ WICs, Competition in the Scottish water industry: Achieving best value for water and sewerage customers: 2009-2010, p. 16. <http://www.watercommission.co.uk/UserFiles/Documents/Competition%20report%20-%20final.pdf>

⁹¹ Scottish Water, Annual Report 2010/11, p. 20.

⁹² WICs, Competition in the Scottish water industry: Achieving best value for water and sewerage customers: 2009-2010, p. 15. <http://www.watercommission.co.uk/UserFiles/Documents/Competition%20report%20-%20final.pdf>

⁹³ Grant Thornton, Cost Benefit Assessment, May 2010.

<http://www.watercommission.co.uk/UserFiles/Documents/Grant%20Thornton%20CBA%20report%20December%202010.pdf>

Conclusions

162 We believe that the productive and dynamic efficiency assumptions from the Cave Review represent the best estimates of the likely benefits from competition and legal separation for contestable customers.

163 The Cave Review's assumptions are identified as being **incremental** to regulation,⁹⁴ we have therefore explicitly applied these assumptions against a cost base (calculated by reference to JR11 data) that has been adjusted for the gains from regulation (see paragraphs 119). These calculations are as follows

Non-household efficiency savings⁹⁵

Productive efficiency	= 10%
Contestable cost base	= £56m in year 1
Discount rate	= 3.5%
Appraisal Period	= 30 years
NPV of productive benefit	= £97m

Dynamic efficiency	= 1.5%
Contestable cost base	= £56m in year 1
Discount rate	= 3.5%
Appraisal Period	= 30 years
NPV of dynamic benefit	= £132m

2. Spillover - Non-contestable retail efficiencies

164 Although the Cave Review only recommended that retail competition should be extended to non-household customers, the review considered that the reforms also have the potential to benefit household customers. Specifically the Review noted:

...as competition helps drive the efficiency frontier for retail services, Ofwat will be able to collect more information with which to regulate the rest of the retail functions.⁹⁶

165 Provided that incumbent companies can realise some efficiency savings in relation to serving non-household customers, it follows that some of the benefits could spillover into the household sector. The spillover of benefits⁹⁷ could occur through the following mechanisms:

⁹⁴ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, pp. 120-121. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

⁹⁵ These numbers are reported in 2009 prices.

⁹⁶ *Ibid* p. 122

⁹⁷ The types of benefits that could spillover include a reduction in call centre costs and also lower billing costs. These benefits could occur through improved and more accurate billing systems which would generate savings in the form of less reissuing of bills and fewer customer complaints.

- the transfer of best practice within a company;
 - through the generation of better information which Ofwat can use to regulate household services⁹⁸; and
 - through the merger of retailers (including household and non-household retail).
- 166 The logic of spillover benefits was acknowledged in the reports published since the Cave Review. For example Oxera, Deloitte and Ofwat all acknowledged that the arguments put forward by the Cave Review were reasonable.⁹⁹
- 167 The primary issue of concern however has been the scale of the spillover benefits.¹⁰⁰ Although only 25% of efficiencies are deemed to spillover, the relatively high cost base of the *active* non-contestable sector versus the contestable sector (£56m versus £789m)¹⁰¹ causes the resulting calculation to be very significant. By way of example the Cave Review cost-benefit analysis assumed that between 60-70% of the overall benefits are derived from these household spillover effects.¹⁰² For this reason both Oxera and Deloitte queried the extent to which these spillover benefits would occur and the transmission mechanism that delivers these benefits.¹⁰³
- 168 Whilst it seems reasonable to question these benefits given the magnitude, a 25% spillover rate only implies a one-off 2.5% cost reduction and a 0.375% on-going efficiency gain in the medium scenario.¹⁰⁴ These assumptions seem relatively conservative if:
- Household retail is subject to the same level of inefficiency as non-household retail then there should be scope for further efficiency savings. For example, recent evidence from Scotland suggests that efficiency savings of 35% were achieved (paragraph 157) and the academic evidence quoted by the Cave Review suggested inefficiencies of 5% to 13% across the whole vertically integrated business.¹⁰⁵
 - There is substantial scope under the revised model to transfer benefits through merger and acquisition of the whole retail business (including households) and regulatory tools in the uncompetitive household sector can be significantly sharpened by using information in the competitive non-household sector (i.e. inefficiencies identified in the non-household

⁹⁸ For example Ofwat could observe the extent to which efficiency savings have been realised in relation to serving non-household customers by comparing market tariffs against the default tariff. This information could then be used to set efficiency targets in relation to household activities.

⁹⁹ Ofwat, Review of the evidence base for retail competition and separation, 2011, p. 40.

¹⁰⁰ *Ibid* pp. 40-41.

¹⁰¹ These costs reflect those for England from JR11.

¹⁰² Ofwat, Advice from Ofwat to the UK Government on the question of a threshold for legal separation of appointed companies' retail businesses in the water and sewerage sectors, 2009, p. 19.
http://www.ofwat.gov.uk/competition/review/pap_pos_090716threshold.pdf

¹⁰³ Oxera, Competition in the Water Sector: A review of the cost-benefit analysis knowledge base, 2011, p. 21.
<http://www.oxera.com/main.aspx?id=9560>

¹⁰⁴ Ofwat, Review of the evidence base for retail competition and separation, 2011, p. 42.

¹⁰⁵ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 121.
<http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

retail element can be used to drive efficiency in the household retail element through ongoing price cap regulation)¹⁰⁶.

- Furthermore as Ofwat noted its review of the evidence base, similar reforms in Scotland have promoted cultural change in the separated entity Business Stream, thereby lending support to the transmission mechanism identified by the Cave Review.¹⁰⁷

169 In its review of the evidence base, Ofwat also noted that the Cave Review did not take into account another potential transmission mechanism, namely capital market pressures.¹⁰⁸ Under the proposed reforms retail mergers would not be covered by the Special Merger Regime. Therefore incumbent companies would be incentivised to realise efficiencies in the household sector (i.e. exploiting gains from the non-household sector) because to do otherwise would increase the risk of takeover by another company that could realise such savings.

170 Based on the above consideration, the mechanism through which spillover benefits could be derived appears quite sound. The resulting efficiencies also appear quite moderate when viewed against the scope of inefficiencies in the industry and the evidence from Scotland. In the absence of any evidence indicating why these assumptions are inappropriate, we have assumed the following benefits:

Household efficiency savings¹⁰⁹

Productive efficiency	= 10% *0.25
	= 2.5% (one-off)
Non-contestable cost base	= £789m in year 1
NPV of productive benefit	= £339m

Dynamic efficiency ¹¹⁰	= 1.5% *0.25
	= 0.375% p.a.
Non-contestable cost base	= £789m in year 1
NPV of dynamic benefit	= £554m

3. Spillover – Wholesale efficiencies

171 In addition to generating efficiencies in the contestable segment, the Review also noted that the proposed reforms had the potential to promote the generation of wholesale efficiency savings. In particular the Cave Review noted that wholesale efficiencies could be generated through two mechanisms:

¹⁰⁶ See Frontier Economics, Future Price Limits – Form of control and regulated/unregulated business, 2010. http://www.ofwat.gov.uk/publications/commissioned/rpt_com_1010fplform.pdf

¹⁰⁷ *Ibid* p. 41.

¹⁰⁸ *Ibid* p. 42

¹⁰⁹ These numbers are reported in 2009 prices.

¹¹⁰ These benefits are incremental to the benefits assumed under the base case.

- unnecessary costs being revealed through the separation of the wholesale and retail segments; and
 - retailers championing the needs of consumers by pressuring wholesale providers to drive out inefficiencies.
- 172 For this reason the Review assumed that the reforms would generate a one-off reduction in the total upstream operating expenditure (OPEX) of 0.5%.¹¹¹ This reflected evidence from the reduction of Scottish Water's expenditure of one million pounds (or 0.5% of OPEX).
- 173 At the time of the Cave Review, it was not entirely clear the extent to which these savings were the result of separation and the introduction of competition or indeed other efficiency activity within Scottish Water. However, these savings have subsequently been acknowledged by Scottish Water which noted that, against its initial expectations, it had begun to save money from the separation of Business Stream from its core activities.¹¹² These savings were made against a backdrop of an allowance for costs to rise by approximately £1m in 2007-08. This implies that the actual savings were in excess of the £1m assumed by the Cave Review.¹¹³
- 174 Of the two mechanisms identified by the Cave Review, it appears that only the first was quantified. This is because the 0.5% efficiency gain assumed by the Review reflects the proportion of OPEX that Scottish Water was able to reduce following its separation from Business Stream. If this benefit was attributable to greater pressure from Business Stream then it would not be expected to occur immediately after separation, as this benefit did. Instead benefits from greater pressure would be expected to develop over time once the market and the separated entity become more established (i.e., the separated entity would have more pressing priorities at market opening).
- 175 Since the Cave Review was published, both Oxera and Deloitte have published reports that considered the Review's assumptions regarding wholesale efficiencies. Although neither party questioned the rationale for spillover benefits,¹¹⁴ they argued that further work was warranted to investigate the extent of the benefits.¹¹⁵
- 176 In its review of the retail evidence base, Ofwat considered both the Oxera and Deloitte papers. Although both consultancies raised some useful points, as Ofwat noted, the Cave Review's assumptions are based on empirical evidence, specifically market reform in Scotland that did not include upstream competition.

¹¹¹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 122.

<http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

¹¹² WICs, Both customers and the environment will benefit from competition in water services: the initial evidence from Scotland, 2008, p. 4. <http://www.watercommission.co.uk/UserFiles/Documents/WICS%20%20benefits.pdf>

¹¹³ Although it could be argued that these savings would or should have been realised through regulations, as WICS notes this would be to flatter regulation and its potential. In particular it implies "*regulations can understand the detailed costs and activities of regulations businesses. This is, of course, wholly unrealistic, and, if true, could lead to unwelcome micromanagement. What is undeniable is that the separation has acted as a catalyst to allow the efficiencies to be identified now, rather than at some undefined future date. Ibid.*

¹¹⁴ For example Deloitte considered that wholesale efficiencies could occur through delayed incremental capital expenditure (due to reduced consumption) and buyer pressure on upstream costs. Deloitte, Lessons for the water and sewerage industry from retail competition in the utility sector, January 2011, p. 36.

http://www.deloitte.com/view/en_GB/uk/industries/eiu/water/24dca3dd6f90e210VqnVCM2000001b56f00aRCRD.htm

¹¹⁵ *Ibid*, p. 36

Oxera, Competition in the Water Sector: A review of the cost-benefit analysis knowledge base, 2011, p. 36.

<http://www.oxera.com/main.aspx?id=9560>

This evidence appears to run counter to the more hypothetical ideas put forward by Oxera that strong forms of separation would discourage efficiency spillovers.

- 177 In fact given that the Cave Review appears to have only quantified one mechanism, it seems likely the wholesale efficiencies could be even higher. This is because legally separate retailers would be incentivised to apply upstream pressure on wholesalers to reduce costs. This pressure could be applied to wholesale operating costs, which consists of both wholesale operating expenditure and wholesale capital maintenance. By way of example capital maintenance savings could be realised if retailers pressure the wholesales to adopt smaller/ more cost effective improvement programs, pressuring companies to get better at targeting maintenance and pressuring companies to target risky assets as opposed to old assets. This incentive arises because if a retailer can pressure the wholesaler to reduce costs then the retailer can either increase its profit margin by retaining the savings, or grow its customer base by passing the savings onto customers.¹¹⁶
- 178 Whilst it might be difficult for retailers to apply pressure on wholesalers to reduce the network access price (although evidence from Scotland suggests otherwise), the introduction of upstream competition would be expected to enhance the ability of retailers to apply pressure. This is because upstream competition increases the bargaining power of retailers in relation to the procurement of bulk water supplies (including treatment) and in relation to sewerage treatment and disposal.
- 179 The incentive for retailers to pressure wholesalers to reduce costs and improve service has already been observed in Scotland. In October 2010 WICS noted that:¹¹⁷

Separation between SW's wholesale function (operation of treatment works and the pipeline network) and its retail function (dealing with the end customer, including billing and other customer service activities) has been crucial. Evidence shows that the new retailers are putting additional pressure on the wholesaler to improve its performance.

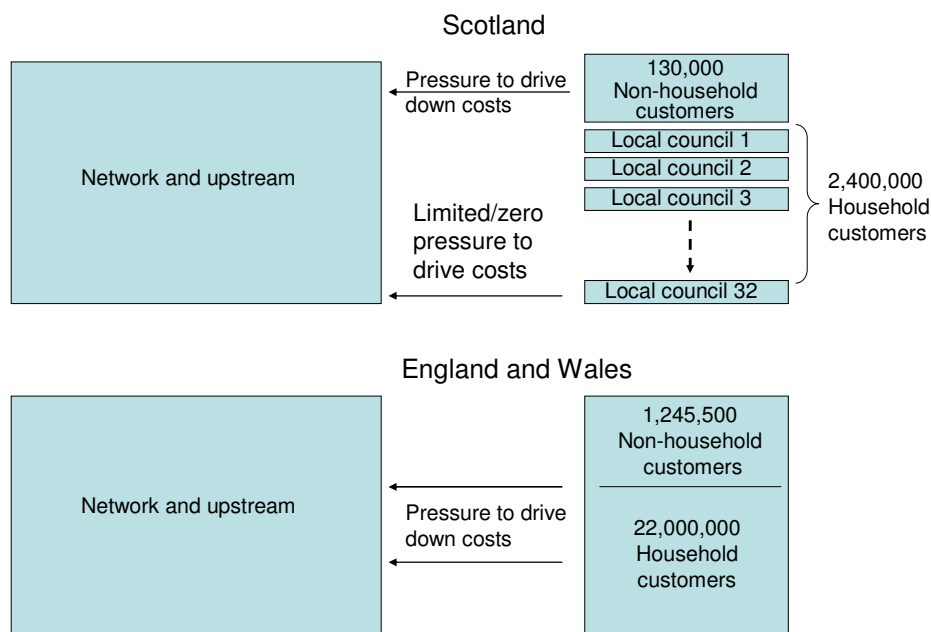
- 180 In light of the comments by WICs it's possible that retailers in England could apply even greater pressure on wholesalers to reduce costs. This point was recognised by Ofwat which argued that due to the greater size of English retailers (by reference to customer numbers), it seems likely that they would be able to apply relatively more pressure on the network-upstream businesses than non-household retailers have been able to exert on Scottish Water. This is illustrated in the diagram below.

Figure 3: Illustration of separation in Scotland versus separation England (and Wales) under the recommendations of the Cave Review¹¹⁸

¹¹⁶ Provided that there is sufficient competition it would be expected that overtime these savings would be passed onto customers rather than being retained by retailers. Examples of the savings in Scotland include improved performance in relation to meter exchanges, replacements, responses to operational queries and streamlined systems. Source Business Stream.

¹¹⁷ WICS (2010), 'Future Flood and Water Management Legislation: Memorandum Submitted by the WICS (FFW 08)', October. <http://www.publications.parliament.uk/pa/cm201011/cmselect/cmenvfru/writev/522/08.htm>

¹¹⁸ Ofwat, Review of the evidence base for retail competition and separation, 2011, p. 45.



181 Having considered the various arguments, it seems likely that the proposed reforms would most likely generate wholesale efficiency savings by (i) revealing unnecessary costs and (ii) incentivising retailers to apply greater pressure on wholesalers. In terms of the estimating the likely value of these benefits, we have followed the assumptions adopted by the Cave Review and applied a 0.5% one-off efficiency saving. However, we have applied this to both upstream water and wastewater operating costs (£5,665m cost base). This is a significant change to the approach adopted by the Review which simply used the water operating costs (£2,600m) which is based on consideration of the mechanisms and opportunities for upstream pressure to generate efficiencies given that the proposed reforms would facilitate both water and wastewater retail competition (and involve the legal separation of water and wastewater retail). We still consider that this is likely to understate the actual benefits that could be derived in England because the Cave Review assumptions appear to be based on the Scottish model which excludes separation and upstream pressure from household retail customers. We also note that it is still significantly lower than some other commentators have argued such as Deloitte in their analysis for Water UK¹¹⁹. We have also included some additional sensitivity analysis of this saving in section 5 where we consider both wholesale operating costs (£5,665m cost base) and wholesale operating expenditure (£2,832m cost base and excludes capital maintenance).

182 In addition, to reflect the fact that a proportion of the cost base has already legally separated or outsourced retail activities we have only applied the efficiency assumptions against the proportion of the cost base that provides retail services in-house. The expected wholesale efficiency savings are as follows:

Wholesale efficiencies¹²⁰

¹¹⁹ For example Deloitte considered that wholesale efficiencies could occur through delayed incremental capital expenditure (due to reduced consumption) and buyer pressure on upstream costs. Deloitte, Lessons for the water and sewerage industry from retail competition in the utility sector, January 2011, p. 36.

http://www.deloitte.com/view/en_GB/uk/industries/eiu/water/24dca3dd6f90e210VgnVCM2000001b56f00aRCRD.htm

¹²⁰ These numbers are reported in 2009 prices.

Productive efficiency = 0.5% (one-off)
Wholesale operating costs = £5,283m¹²¹
Proportion of in-house cost base = 78%¹²²
NPV of productive benefit = £402m

4. Bundling efficiencies

- 183 In the energy sector one visible benefit of retail competition has been the provision of combined utility discounts (i.e. dual fuel). Retailers are able to offer these discounts because combining two utilities enables them to reduce some customer interfacing costs such as billing costs (through a single combined bill) and call centre costs (through the exploitation of economies of scale).
- 184 Besides combining bills for different utilities, for some customers there will be scope to move to joint water and sewerage bills. At present some customers receive their water bill from a water-only company and their sewerage bill from a water/sewerage company. By extending WSL to sewerage retailing and eliminating the threshold, customers will be able to select a single retailer for water and sewerage bills.
- 185 The Cave Review calculated the bundling benefit based on the assumption that 10% of non-household customers consuming less than 1Megalitre per annum would bundle their bills, that and it would take 7 years for the 10% to be reached and that bundling would result in a saving of £15 per customer¹²³. This saving of £15 per customer is based on the 'dual fuel' discount offers provided in the energy sector. This assessment delivers a modest bundling saving of £25m (NPV over 30 years).
- 186 In its paper for Water UK, Deloitte also identified that the entry of multi-utility retailers could generate a number of efficiencies. Deloitte noted that these efficiencies could be generated by enabling multi-utility retailers to exploit economies of scope, thereby leading to lower costs and greater competitive pressures. In total Deloitte assumed that multi-utility retailers could generate an additional productive efficiency gain of 10% over three years on the non-household retail base. This efficiency gain would deliver a total bundling saving of around £290m (NPV over 30 years).
- 187 The Deloitte assumptions suggest a much more significant efficiency gain from multi-utility entry in comparison to the Cave Review. In part this is because Deloitte have assumed a broader set of gains than just multi-utility billing and in fact imply wider gains from market selection and entry from more efficient retailers.
- 188 Although it seems reasonable that multi-utility retail entry could generate efficiency gains above and beyond those identified by the Cave Review, calculating these benefits is beyond this IA. This is because such a calculation would require distinguishing the gains from new-entry versus multi-utility entry in

¹²¹ In our sensitivity analysis we examine the impact of only applying the efficiency assumptions against operating expenditure (as opposed to operating costs).

¹²² 78% of retail costs fall on companies that currently have 'in-house' retail operations

¹²³ Professor Cave based this saving on data from the SSE website.

liberalised retail sectors. Therefore for the purpose of this IA we have calculated the bundling efficiencies based on the approach adopted by the Cave Review.

Bundling Savings¹²⁴

Bundling saving = £15 per applicable customer	
Total customers < 1 megalitre	= 995,100
Market penetration (bundle rate)	= 10%
Total bundle savings	= £1.5m
Time to achieve bundle rate	= 7 years
NPV of benefits	= £23m

5. Water efficiencies

- 189 One of the headline benefits of the reforms introduced in Scotland has been the generation of water efficiencies. These efficiencies can arise because the development of a competitive retail sector increases the incentive for incumbent companies to offer water efficiency advice.
- 190 To illustrate the potential gains it's useful to consider the current situation in England. Under the current legal and regulatory framework most customers cannot switch suppliers. Therefore incumbents have minimal incentive (i.e. financial benefit) to offer additional services that would help customers reduce consumption. This is because there is limited financial benefit from encouraging customers to reduce consumption.
- 191 However in a competitive retail market, the incentives change. When customers have choice between retailers, it forces incumbents and entrants to offer improved and/or value added services in order to attract and retain customers. For example suppliers may offer extensive water efficiency advice in the form of audits and assessments against relevant comparators.
- 192 Since the introduction of retail competition in Scotland, there has been a demonstrable change in the way services are offered to non-household customers. This change is best reflected by the performance of Business Stream¹²⁵ which has evolved into the water services company model envisaged in the Cave Review¹²⁶ and more recently it was named the green business of the year.¹²⁷ In presenting evidence to the EFRA committee in August 2009, WICS commented that:¹²⁸

The introduction of competition ensures that even the separated arm of the previous incumbent monopolist provides water efficiency advice or risks losing a customer to a new entrant to the market.

¹²⁴ These numbers are reported in 2009 prices.

¹²⁵ Business Stream was legally separated from Scottish Water and supplies non-household customers with retail services.

¹²⁶ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 123. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

¹²⁷ Business Stream, Business Stream scoops green accolade at UK CBI awards, 2010. <http://www.business-stream.co.uk/about-us/press-releases/business-stream-scoops-green-accolade-uk-cbi-awards>

¹²⁸ WICS, 'Competition in the Scottish water industry and the environment: submission to the EFRA Committee', 2009. [http://www.watercommission.co.uk/UserFiles/Documents/WICS%20-%20Competition%20\(3\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICS%20-%20Competition%20(3).pdf)

- 193 In total Business Stream and other retailers were able to reduce consumption by an average of 2 per cent for all customers. This is reflected by the fact that the Scottish Water retail market at opening had a value of £350m and Business Stream have taken £7m out of that market through water efficiency or 2%.¹²⁹
- 194 One argument that has been raised by a number of incumbent companies in England and Wales is that many of these water efficiency benefits have been driven out already, for example through finding and reducing on-site leakage. In 2007/08 average leakage in England and Wales was 23% of total distribution input whereas in Scotland the broadly equivalent level was 41%¹³⁰, lending some support to the argument that leakage in England and Wales is significantly ahead of Scotland. However as Ofwat noted,¹³¹ this difference has largely been driven by distribution losses in the network element of the value chain which are significantly higher in Scotland (i.e. 36% versus 17%). In fact Scotland slightly outperformed the companies in England with respect to supply pipe leakage (5% versus 6%).¹³² This is an important distinction because it would be expected that retail-only companies would have much more scope to reduce supply pipe leakage as opposed to distribution losses.¹³³
- 195 In Scotland Grant Thornton estimated the water efficiency benefits associated with competition to be in the range of £50-55m (NPV over 50 years). Despite similar scope for water efficiency gains in England, we have not applied the same approach to quantify the benefits. In part this reflects concerns raised by Ofwat about the uncertainty over some of the assumptions.
- 196 Instead we have calculated the water efficiencies by reference to the water savings that arose in Scotland following the introduction of retail competition for all non-household customers. We have applied this saving (2%) against the contestable volumes in England¹³⁴ and we have assumed that these gains will take five years to materialise. We have not assumed any further water efficiency gains although they seem likely.
- 197 The benefits associated with the water savings accrue because for every megalitre of water saved, incumbents can avoid operating expenditure¹³⁵ and potentially avoid or defer capital expenditure – this is referred to as a long-run marginal cost saving (LRMC). The LRMC adopted in this IA is based on the midpoint of the range identified by the Independent Review of Charging and Metering for Water and Sewerage Services.¹³⁶

Water efficiencies¹³⁷

¹²⁹ *Ibid*

¹³⁰ The measure is only broadly equivalent because leakage in the two sectors is accounted for in a slightly different manner.

¹³¹ Ofwat, Review of the evidence base for retail competition and separation, 2011 p. 28.

¹³² In simple terms, a supply pipe can be thought of as the pipe that runs from the edge of a customer's property to the point at which it exits the ground and connects to the internal plumbing of a building

¹³³ This is because some meters record the level of water flowing from the start of the supply pipe. Therefore a retailer could compare the consumption of customers with similar characteristics to identify any leakages.

¹³⁴ This is calculated by multiplying the average consumption per customer in England and Wales against the number of active customers in the English contestable retail market.

¹³⁵ The types of operating expenditure that can be avoided include abstraction costs, pumping costs, water treatment costs, sewage treatment costs etc.

¹³⁶ Walker, A, The Independent Review of Charging for Household Water and Sewerage Services: Final Report, 2009, p. 202.

<http://archive.defra.gov.uk/environment/quality/water/industry/walkerreview/documents/final-report.pdf>

¹³⁷ These numbers are reported in 2009 prices.

Water efficiency	= 2%
LRMC	= £400 / MI
Contestable volumes ¹³⁸	= 930,833 MI
Profile of water savings	= 5 years
NPV of benefits	= £122m

Step 4 - Costs

198 Consistent with the approach adopted by the Cave Review, we have categorised the costs associated with this option as follows:

1. Regulatory Costs
2. Market Settlement and Switching Costs
3. Incumbent Costs
4. Acquisition Costs
5. Finance Costs

199 We discuss these costs and the underlying assumptions below.

1. Regulatory Costs

200 To facilitate retail competition Ofwat would be expected to incur both one-off setup costs and on-going costs. The Cave Review noted that these costs would be associated with the following:

- developing market codes – the rules, processes and arrangements that market participants would need to adhere to; and
- on-going monitoring of the market arrangements and taking action where issues are identified.

201 The Cave Review calculated the above regulatory costs by reference to the costs incurred by WICS when non-household retail competition was introduced. In making this assumption the Cave Review noted:

'The costs for introducing competition in Scotland can be split into the cost of devising market codes (£1.5m) and for market development (£3.5m). On the one hand, since market codes and the incumbent's wholesale master agreements have been drafted, this could help reduce the costs of implementation in England and Wales. On the other hand, costs could be higher given the different circumstances and larger number of companies in England and Wales. Market development could be more complex in England and Wales than in Scotland. However since the Water Supply

¹³⁸ Contestable volumes represent the average level of consumption per customer in England and Wales multiplied by the number of active customers in the English contestable retail market.

*Licensing regime is already in place, some of the costs have been incurred.*¹³⁹

- 202 In its review of the retail evidence base, Ofwat noted that no objections have been raised in relation to the approach adopted by the Cave Review.¹⁴⁰ However we note that Ofwat has already incurred some market design costs. For example in the expectation that the WSL threshold was to be reduced Ofwat incurred costs relating to the establishment of a set of common code and contracting arrangements.¹⁴¹
- 203 Nevertheless given that the Cave Review estimated the regulatory costs based on the same reforms as this option (i.e. WSL and legal separation), it seems reasonable to apply the same methodology to the most recent information from WICS.¹⁴² We have therefore calculated the following regulatory cost in England:

Regulatory Costs¹⁴³

Setup costs	= £5.7m * 2
NPV Setup costs	= £11m
On-going costs	= £1.2m *2
	= £ 2.4m p.a.
NPV of on-going costs	= £35m

2. Market Settlement and Switching Costs

- 204 The removal of some significant barriers to competition and the extension of the retail market would be expected to lead to a significant increase in the number of customers switching suppliers. To manage the switching process and the associated settlements payments between customers, licensees and wholesalers, a number of new processes would need to be introduced.
- 205 The Cave Review assessed the costs of these processes by reference to the costs incurred in establishing and running Scotland's Central Market Authority (CMA).¹⁴⁴ Although the Review noted that the majority of costs are likely to be incurred irrespective of market size, they assumed that the costs in England and Wales would be double those in Scotland.
- 206 Since the Cave Review was published no evidence or arguments have been put forward indicating why the approach adopted by the Cave Review is inappropriate. We have therefore calculated the market settlement and switching

¹³⁹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 124. <http://archive.defra.gov.uk/environment/quality/water/industry/caverreview/documents/caverreview-report.pdf>

¹⁴⁰ Ofwat, review of the evidence base for retail competition and separation, 2011, p. 18.

¹⁴¹ Threshold Impact Assessment, Defra 1071, 2011.

¹⁴² WICS identified that it had incurred setup costs of £5.7m over the period 2006 to 2010 and ongoing costs of £1.2m since 2008-09. WICS, Retail competition in Scotland: An audit trail of the costs incurred and the savings achieved, 2011. [http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail\(B\)%20\(2\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail(B)%20(2).pdf).

¹⁴³ These numbers are reported in 2009 prices.

¹⁴⁴ In Scotland the CMA is responsible for managing switching and settlements.

costs by applying the Review methodology against the actual costs incurred in setting up and running the CMA.¹⁴⁵ These costs are as follows:

Market Settlement and Switching Costs¹⁴⁶

NPV Setup costs = £3.2 * 2
= £6m (one-off)

On-going costs = £2.5 * 2
= £5m p.a.

NPV of on-going costs = £73m

3. Incumbent Costs

207 One of the principal costs associated with the reforms being considered under this option is the requirement that companies must legally separate retail activities. Although the removal of legal and regulatory barriers to retail competition would impose some costs on incumbents, as previously discussed, they are likely to be limited.

208 We consider below the different approaches to calculating the costs associated with legal separation and the arguments put forward since the Cave Review was published.

3.1 Modelling approaches

209 The costs associated with legal separation can be estimated by applying a range of methods. These include:

- Top-down assessment by reference to the costs incurred in Scotland: This would involve calculating the cost of separation by reference to the costs that were incurred when Business Stream was separated from Scottish Water. This approach was adopted by the Cave Review.¹⁴⁷
- Top-down assessment by reference to the costs incurred in the energy sector: This would involve calculating the cost of separation by reference to the costs that were incurred when the energy retailers were separated in the UK. Oxera adopted a hybrid of this approach by combining it with data from Scotland.¹⁴⁸
- Bottom-up approach: This would involve identifying and costing each activity associated with legal separation and aggregating them to calculate

¹⁴⁵ WICS, Retail competition in Scotland: An audit trail of the costs incurred and the savings achieved, 2011.
[http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail\(B\)%20\(2\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail(B)%20(2).pdf)

¹⁴⁶ These numbers are reported in 2009 prices.

¹⁴⁷ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009.
<http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

¹⁴⁸ Annex to Thames Business Plan: The costs of competition, a note prepared by Oxera for Thames Water, February 2009

the total cost. This approach was adopted by Ernst & Young in work commissioned by Ofwat.¹⁴⁹

210 We consider the application of the above approaches below.

Top-down assessment – Scotland

- 211 The Cave Review calculated the cost of retail competition and legal separation to the companies by reference to the costs incurred in the legal separation of Business Stream from Scottish Water, making adjustments for the size of the companies. The key assumptions were that the cost of separation for eleven Water-only companies (WoCs) would be a third of the costs incurred in Scotland whilst the costs associated with legally separating the ten water and sewerage companies (WaSCs) were assumed to be equal to the Scottish costs.
- 212 Using a cost assessment of £10m for Scotland (split between the network/wholesaler incurring £8.2m and the retailer incurring £1.8m of this) the Cave Review cost-benefit analysis therefore assumed an overall one-off cost of separation of £137m across the sector. The Review recognised that these costs would be different for different companies and recommended that Ofwat should undertake further work to investigate the likely cost that small companies would incur. The Cave Review also identified that the on-going costs incurred by Scottish Water-Business Stream due to legal separation were equal to £4.6m pda (or £4.8m in 2009 prices).
- 213 Since the Cave Review was published WICS has conducted its own audit of the costs incurred and savings achieved due to retail competition and legal separation. This audit identified that Scottish Water incurred setup of £13.6m over the period 2006 to 2009 (in comparison to the Cave Review's assumption of £10m).¹⁵⁰

Top-down assessment – Energy

- 214 In the lead-up to the publication of Cave's Final Report, Oxera estimated the cost of various reform measures for Thames Water, including the costs associated with retail competition and separation.¹⁵¹ In its note Oxera argued that 'a key problem in relying on the estimates from the interim Cave Review in isolation is that the model of separation envisaged by the Review appears to be different to that implemented in Scotland.'¹⁵² In particular where legal separation in Scotland related only to non-household customers, the model envisaged by the Cave Review relates to both household and non-household customers. Accordingly the proposed process in England involves separating retailers with more customers than was the case in Scotland. Therefore this difference could be expected to increase the cost of separation.

¹⁴⁹ Ernst and Young, *Advice of the costs of legal separation of retail water businesses*, August 2009 [unpublished]

¹⁵⁰ This includes the setup costs incurred by Business Stream. The audit trail does not identify the additional on-going costs of separation to Scottish Water-Business Stream. WICS, *Retail Competition in Scotland: An audit trail of the costs incurred and the savings achieved*, 2011, p. 4. [http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail\(B\)%20\(2\).pdf](http://www.watercommission.co.uk/UserFiles/Documents/WICSAuditTrail(B)%20(2).pdf) .

¹⁵¹ *Annex to Thames Business Plan: The costs of competition*, a note prepared by Oxera for Thames Water, February 2009

¹⁵² *Ibid* page 6

- 215 Accordingly Oxera calculated the cost of retail separation and competition to Thames Water by using a top down approach. The resulting estimate was equal to £78.9m, which is six times larger than the cost assumed by the Cave Review.¹⁵³ This figure was calculated by taking the average of the costs from the separation of public electricity supply (PES) companies and the cost of separation in Scotland. In considering these studies Oxera made the following adjustments:
- they adjusted the PES separation costs downwards because in England household retail will remain non-contestable rather than being contestable as it is in the electricity sector; and
 - they adjusted the costs from Scotland upwards on the basis that household retailing activities would also be separated.
- 216 Underpinning these adjustments were further assumptions that 50% of costs relate to separation and 50% relate to retail market competition and that 90 % of the retail markets costs are variable and 10% of the costs are fixed.

Bottom-up Approach – E&Y

- 217 In 2009 Ofwat took advice from Ernst & Young to estimate the cost of legal separation over and above the cost of other forms of separation. This work was undertaken in response to a request by the Government to investigate whether it would be appropriate to introduce a threshold below which the Government would not mandate small companies to separate and, if so, the level at which this should be set.¹⁵⁴
- 218 Ernst & Young calculated the cost of separation by identifying and costing each activity that companies would be required to undertake in order to meet the requirements associated with legal separation.¹⁵⁵
- 219 The results were presented in three stylised models for different (small) sized companies.
- Big 'small' company – about 1 million customers and 1,000 staff (FTEs).
 - Medium 'small' company – about 100,000 customers and 100 staff.
 - Small 'small' company – 1,000 customers or fewer customers.
- 220 Table 6 sets out both the estimated transitional and annually recurring costs (with ranges) for legal separation (over and above accounting and price control separation) for each of these stylised company models.¹⁵⁶

¹⁵³ This is based on £34.7m in the first year and £11.1m in the next 4 years (in 2007/08 prices).

¹⁵⁴ The Government requested Ofwat to establish whether it would be appropriate to introduce a threshold below which the Government would not mandate small companies to separate and, if so, the level at which this should be set. This was detailed in the 2009 budget. HM Treasury, The Economic and Fiscal Strategy (Budget) Report 2009, page 78 http://webarchive.nationalarchives.gov.uk/20100407010852/http://www.hm-treasury.gov.uk/bud_bud09_index.htm

¹⁵⁵ These activities included (i) governance and compliance; (ii) legal and insurance; (iii) IT; (iv) property; (v) finance; (vi) identity; and (vii) project management and transition.

¹⁵⁶ *Ibid* page 16

Table 6: Cost ranges for three stylised small companies				
Stylised small company	Transitional cost (£000s) for legal separation		Annual recurring cost (£000s) for legal separation	
	Low estimate	High estimate	Low estimate	High estimate
1,000 customers	50	190	35	150
100,000 customers	535	1,080	265	635
1m customers	1,205	2,440	495	1,105

3.2 How should the costs be calculated?

- 221 In light of the different methods available to estimate the cost of separation, a critical issue is selecting the most appropriate method. On one hand we could adopt the assumptions from the Cave Review. However, a number of new reports have emerged that argue that the cost assumptions used in the Cave Review's analysis are likely to understate certain costs and similarly overstate certain costs.¹⁵⁷ This judgement essentially emerges from the following considerations.
- 222 The Scottish costs may need to be adjusted upwards because in England separation will include both household and non-household customers rather than just non-households.
- 223 Separation in other utilities such as energy incurred more substantial costs¹⁵⁸ than those incurred in Scotland from the separation of Scottish Water and Business Stream but this often due to other factors such as the substantial system balancing issues and the existence of a bilateral market for trading.
- 224 A number of incumbent companies have already outsourced or separated parts of their retail activities, suggesting that the cost of separation for some companies would actually be significantly less than those incurred by Scottish Water.
- 225 Some companies might choose to sell their retailing activities rather than legally separate, thereby avoiding the full cost of separation.
- 226 We therefore consider the most appropriate approach to calculating the cost of separation for WaSCs and WoCs.

3.2.1 - WaSCs

- 227 Of the many reports that examine the cost of legal separation, not one has assessed the cost to a WaSC through a bottom-up assessment (i.e. costing each activity). In the absence of such modelling the relevant issues are as follows:

¹⁵⁷ Ofwat, Review of the evidence base for retail competition and separation, 2011, pp. 19-25

¹⁵⁸ For example in the energy market the NAO estimated the cost of introducing full supply competition and legal separation to be £850m. NAO, Giving Domestic Customers a Choice of Electricity Supplier. 2001, p. 1. <http://www.nao.org.uk/docid=18278aad-bdf2-4338-9e0a-13a592913b25&version=-1>

- identifying the appropriate comparator for a top-down assessment; and
- identifying if any adjustments should be made to the comparator.

Comparators

- 228 In choosing a comparator for a top-down assessment, we have sought to identify the example that best reflects the reforms proposed under this option – i.e. legal separation of water retailing activities.
- 229 For this reason the legal separation of Business Stream from Scottish Water represents the best example with which to calculate the cost of separation in England. This is because Scottish Water and the WaSCs provide very similar services, have similar configurations in terms of their vertical integration and would be likely to face similar cost drivers associated with any separation.
- 230 We do however acknowledge that there are some differences between the two sectors. These differences include:
- In Scotland water and sewerage infrastructure is still in public ownership, whereas in England they have been privatised.
 - In Scotland household water retail services are delivered via local authorities, whereas in England companies are directly responsible for providing retail services to both household and non-household customers.
- 231 Despite these differences, as Ofwat noted the Scottish experience seems much more relevant than the alternatives (e.g. separation of companies in the energy and telecommunications sectors).¹⁵⁹ We therefore consider that for the purposes of assessing the costs of separation, the Scottish experience is the most relevant comparator.

Adjustments

- 232 We previously noted that a number of reports have emerged that argue that the cost of separation in England cannot be calculated by directly transposing the costs incurred in separating Business Stream. Instead they note that adjustments are required to take into account the following issues:
- separation in England will include both household and non-household customers;
 - a number of companies in England have already outsourced or separated parts of their retail activities; and
 - companies in England could sell their retailing activities rather than legally separate them.

Inclusion of households

- 233 Separation in England is perhaps a more significant proposition than in Scotland due to the inclusion of household customers. In its review of the evidence base Ofwat noted that a large proportion of the costs of separation are fixed.¹⁶⁰ This

¹⁵⁹ Ofwat, Review of the evidence base for retail competition and separation, 2011, p. 27.

¹⁶⁰ *Ibid* p. 29.

point was also acknowledged by the Cave Review and Ernst & Young's bottom up cost assessment.¹⁶¹

- 234 Although it's unlikely that the inclusion of household customers would proportionally increase the cost of separation, we consider that it would have some incremental effect. Therefore for larger companies it seems that the cost of separation would probably be higher in England in comparison to the costs incurred by Scottish Water.

Existing configuration of companies

- 235 In its review of the retail evidence base, Ofwat noted that the application of the Cave Review's methodology could overstate the cost of separation for some companies.¹⁶² This is because the Cave Review's assumptions reflect the cost of separating retail activities that are provided 'in-house'. However, in England some companies already have similar legally separated retail entities and others outsource them to other providers. The different configurations are illustrated in the table below.

Configuration of retail services	WaSCs	WoCs
In-house	6	5
Outsourced	1	1
Legally separate	2	2

- 236 Due to the different configurations, we would expect the costs of legal separation would vary between companies. Those companies with an in-house operation would be expected to incur the most significant costs, in line with the experience in Scotland (and in fact greater than Scotland given the inclusion of households) and those companies with either outsourcing arrangements or an existing legally separate retail entity would be expected to incur significantly lower costs from separation.
- 237 In addition Ofwat also noted that a portion of the costs incurred by Scottish Water related to preparing for the new competitive environment.¹⁶⁴ For example, some of the costs incurred by Scottish Water related to the introduction of accounting separation, which has already been incurred by all companies in England. Again, this suggests that the costs incurred in England could be lower than Scotland.
- 238 In light of these factors it appears that the costs of separation could be significantly higher or lower depending on the circumstances of the company.

Retail Consolidation

¹⁶¹ *Ibid.*

¹⁶² *Ibid* pp. 31-32.

¹⁶³ This number excludes Cholderton Water (which due to its size would not be required to separate) and counts the three Veolia licenses as a single company.

¹⁶⁴ *Ibid*, p. 31

- 239 Another potential factor that could affect the cost of separation in England is the scope for retail consolidation. As we have previously noted, under this option retailers will not be covered by the Special Merger Regime. Therefore companies faced with a legal obligation to separate their retail activities would be free to choose to either separate or sell their retailing activities and customer base to another market participant.
- 240 In the event that some companies choose to sell their retailing activities, it follows that they would not incur the full extent of separation costs assumed in the Cave Review.
- 241 To illustrate the scope for consolidation Ofwat drew a comparison with the energy retailing sector which is dominated by six firms, with several smaller firms providing services to niche customer segments.¹⁶⁵ In ascribing this feature some commentators have noted that the minimum efficient scale of an energy supplier is in the range of 100,000 to 1,000,000 customers,¹⁶⁶ although it could be even higher given that each retailer in the energy sector has approximately 5m customers each.¹⁶⁷
- 242 Although we've noted that there are differences between energy and water retailing, there are a number of similarities (e.g. billing and call centre functions). It therefore seems unlikely that the existing retail arrangements, particularly the small WoCs, will have reached minimum efficient scale. Instead as Ofwat noted it seems probable that there are significant scale economies in retailing and separation may well trigger some significant consolidation in the sector, thereby reducing the cost of complying with the reforms.¹⁶⁸

Conclusion

- 243 For the purposes of assessing the costs of separation of a WaSC, the Scottish experience appears to be the most relevant. However as we've noted the comparison between England and Scotland is far from perfect.
- 244 We have therefore made adjustments to reflect the inclusion of households and the existing configuration of the companies in England. These adjustments are as follows:

¹⁶⁵ *Ibid*, p. 32

¹⁶⁶ Littlechild, *Smaller Suppliers in the UK Domestic Electricity Market: Experience, Concerns and Policy Recommendations*, Electricity Policy Research Group 2005, p. 19 <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/littlechildsuppliers.pdf>

¹⁶⁷ Ofwat, *Review of the evidence base for retail competition and separation*, 2011, pp. 32-33.

¹⁶⁸ *Ibid*.

- To reflect the inclusion of households, the setup costs for a WaSC that provides retail services in-house is equal to 200% of the costs incurred by Scottish Water;
- The setup and on-going costs of separation for companies that have already outsourced retail activities is assumed to be 25% of the cost incurred by companies that provide retail services in-house; and
- The setup and on-going costs of separation for companies that have already legally separated retail activities would be 50% of the cost incurred by companies that have outsourced retail services.

245 We considered that further adjustments could be made to reflect the potential for consolidation of WaSCs. However, given the size of these companies relative to WoCs, it would seem likely that any consolidation would first occur amongst the smaller companies. For this reason we did not adjust the cost of separation to reflect the potential for consolidation of WaSCs.

3.2.2 – WoCs

246 In contrast to the cost of separating a WaSC, work has been undertaken to assess the cost associated with separating a WoC through a bottom-up approach (see above). For this reason, and given the imprecise nature with which the Cave Review calculated the costs for WoCs (which the Review identified) we have calculated the cost of separation for WoCs by reference to the Ernst & Young work.

247 However we have specific adjustments to reflect the following:

The exiting configuration of WoCs¹⁶⁹

- The cost of separation for companies that have already outsourced retail activities is assumed to be 50% of the cost incurred by companies that provide retail services in-house; and
- The cost of separation for companies that have already legally separated retail activities would be 50% of the cost incurred by companies that have outsourced retail services.

Consolidation of WoCs

- Two WoCs with less than 100,000 customers would sell their retail operations and two WoCs with more than 100,000 would sell their retail operations.

¹⁶⁹ Two WoCs have legally separate retailing activities, whilst one company has outsourced its retail operations.

Incumbent Costs¹⁷⁰

	Setup Costs (£m)			On-going Costs (£m pda)		
	WaSC	Large WoCs ¹⁷¹	Small WoCs ¹⁷²	WaSC	Large WoCs	Small WoCs
In-house	27	1.8	0.8	4.8	0.8	0.5
Outsourced	6.7	0.9	0.4	1.2	0.4	0.2
Legally separate	3.4	0.5	0.2	0.6	0.2	0.1
Total	180			33		

NPV Setup costs = £180m

NPV On-going costs = £489m

4. Acquisition Costs

248 By facilitating a competitive retail market, it would also be expected that incumbents would incur costs associated with acquiring and retaining customers.

249 The Cave Review assumed that acquisition and retention costs would be equal to 5% of the retail margin. This assumption was made on the basis that firms wouldn't invest any more in acquiring or retaining customers than the contribution they make to the firm's profit.¹⁷³ The Review also noted the results of Ofgem's market probe which identified acquisition and retention costs of approximately £30 per household customer.

250 Given that we are estimating the likely acquisition and retention costs associated with non-household customers, applying the cost identified by Ofgem is inappropriate. This is because the cost of serving household customers is likely to be substantially different than serving non-household customers. In addition larger customers are likely to be more attractive to serve due to the higher potential margins and therefore the actual cost could be higher.

251 Therefore for the purpose of the IA we have adopted the approach put forward by the Cave Review and assumed that acquisition and retention costs will be equal to 5% of the cost base.

Acquisition and Retention Costs¹⁷⁴

Contestable cost base = £56m

Acquisition and retention costs = 5% p.a.

NPV of on-going costs = £52m

5. Financing Costs

¹⁷⁰ These numbers are reported in 2009 prices.

¹⁷¹ Large WoCs are defined as having approximately 1m customers.

¹⁷² Small WoCs are defined as having approximately 100k customers.

¹⁷³ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 126.

<http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

¹⁷⁴ These numbers are reported in 2009 prices.

- 252 Some incumbent water and sewerage companies and members of the investor community have expressed concerns that mandated legal separation, as proposed by the Cave Review, could have adverse impacts on financing in the water and sewerage sectors in England. Specifically legal separation could result in some companies breaching their financial covenants.
- 253 The examination of the impact of market reform proposals on finance in the sector has been conducted through the MRFF. The outcome of this analysis is detailed in Annex C. In this section we explain the approach that we have adopted to estimating the potential financing costs that could be incurred on account of legal separation.
- 254 Below we set out our approach to calculating the financing costs arising from the reforms proposed, including:
- costs arising from renegotiating existing bond finance, including consent fees and costs associated with retail separation; and
 - costs arising from renegotiating swaps and finance leases which are at positive fair value.

Costs arising from renegotiating existing bond finance, including consent fees and costs associated with retail separation¹⁷⁵

- 255 The mandated 'legal' separation of companies retailing activities is likely to create some situations in which companies need to renegotiate some of their finance with their creditors. The most obvious and significant situation in which this is likely to happen is where companies who have adopted the 'geared' financing model are required to approach their creditors to seek consents for legal separation changes before they breach their existing creditor protection arrangements or 'covenants'.
- 256 To provide an indicative estimate of these costs for the IA we have adopted the following methodology:

1. Calculate the level of finance at risk:

- We have assumed that all the bond and bank debt is relevant here but only for the securitised companies (i.e. those adopting the 'geared' financing model).
- It is clear from the evidence that the issue of consent fees is a particular problem for the securitised 'geared' companies as opposed to the 'equity' model companies, some of whom have already undertaken similar forms of retail separation without these being seen as a 'material adverse change'. In fact, given that some of the 'geared' companies have suggested that it may be possible to undertake separation without

¹⁷⁵ In designing a methodology for calculating the financing costs we have relied heavily upon data and evidence provided by the Market Reform Finance Forum (MRFF). http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

breaching their covenants, or that investors may actually agree to the changes where they can see the benefits, if anything we consider that this is likely to overstate the cost.

- We have also assumed that within all this debt, the proportion of debt renegotiated is within the range 20% - 70% with a central assessment of 40%. The upper and lower bounds of this range are drawn directly from the range of the precedent examples presented to the MRFF.¹⁷⁶
- The central assessment of 40% represents a simple average of the finance renegotiated. This data shows that where such consents have been sought, it is generally true that only a proportion of the finance is renegotiated.

= Bonds and bank loans of securitised companies (only)

** proportion of the debt that is renegotiated (based on the precedents provided by the MRFF)*

*= £16.8bn¹⁷⁷ * proportion negotiated*

= £3.4bn (low)

= £6.7bn (medium)

= £11.8bn (high)¹⁷⁸

2. Calculate the applicable consent fee:

- Since the consent fee paid will depend on the outcome of negotiations between the companies and their creditors as well as the market conditions at the time of that negotiation, it is extremely difficult to predict what this might be and some sensitivity analysis seems appropriate. The only available evidence of (similar) consents are the precedents provided to the MRFF by the companies. These are reflected in the scenarios below:
 - *Low scenario – a one-off payment of 120bps is paid*
 - *Medium scenario – a one-off payment of 25bps is paid and an on-going payment of 25bps on the annual coupon is paid*
 - *High scenario – an on-going payment of 30bps on the annual coupon is paid*
- Where the scenarios imply an on-going annual cost we have assumed that this cost continues for 20 years (based on the average life of finance identified at the 2009 Price Review).

3. Add costs

¹⁷⁶ Ofwat, The impacts of market reform on investors in the water and sewerage sectors in England and Wales, p. 21,

¹⁷⁷ This is based on the total bond and bank debt of the securitised or 'geared' model companies.

¹⁷⁸ This represents the level of finance at risk for England and Wales. If Wales were excluded the level of finance at risk is equal to £16.84bn * proportion negotiated% = £3.37 bn (low), £6.74 bn (medium) and £11.79 bn (high).

- Costs incurred by the companies associated with obtaining the necessary consents may include fees associated with obtaining consent from creditors, the legal fees associated with any change to the terms of the credit documentation and credit rating agency fees. One company suggested these costs amounted to around 0.15% in the case of amendments made to a securitised structure; the costs are expected to be lower in the case of retail separation.

$$= 0.15\% * \text{total finance at risk}$$

$$= 0.15\% * 16.8$$

$$= \text{£25m}$$

4. This analysis therefore suggests that the total consent fees are likely to be¹⁷⁹:

- Under the 'low' scenario = £66m (NPV over 30 years).
- Medium scenario = £281m (NPV over 30 years).
- High scenario = £528m (NPV over 30 years).

257 Ofwat has always been clear that where these structures were entered into, it is at the risk of the investors.

If investors choose to adopt highly geared structures, it is right for customers that both those investors and the companies bear the risks associated with their choice of financial structure.¹⁸⁰

Costs arising from renegotiating swaps and finance leases which are at positive fair value

258 The proposed reforms are unlikely to trigger widespread refinancing in the sectors amongst 'equity' companies. However, as we have noted, there may be some instances where existing finance needs to be renegotiated and there are also likely to be some instances where the existing finance is at 'positive fair value' in relation to the current market conditions.

259 Where this finance needs to be renegotiated, lenders may choose to walk away from these arrangements forcing some refinancing. At the extreme this could require the refinancing of significant proportions of debt instruments for the 'geared' companies. It is only likely to apply to 'geared' companies and has only been raised in relation to swaps and finance leases where banks may take the opportunity to renegotiate the terms of financial instruments that were put in place in a benign economic environment.

260 To provide an indicative estimate of these costs for the IA we have adopted the following simple methodology:

¹⁷⁹ All calculations are based on Net Present Value calculation over 30 years using a discount rate of 3.5% (consistent with HMT Green Book appraisal guidance) with 2009 Price Base year.

¹⁸⁰ Ofwat, Cost of capital and risk mitigants – a discussion paper, p. 42.
http://www.ofwat.gov.uk/future/monopolies/fpl/pap_tec1106cocrisk.pdf

1. Calculate the amount of finance at risk:

- We have taken the total finance lease and swap values in the sector as at basis point adjustments under the three scenarios for the 'geared' companies.
- Total value of finance leases for 'geared' companies = £0.67 bn.
- Mark to market of swaps for 'geared' companies = £0.30 bn.

2. Calculate the cost increases arising from renegotiation:

- Renegotiation of finance leases and swaps could take a number of forms. For the purposes of this calculation, we assume a coupon increment based on current market evidence.
- An indication from one bank is that medium term finance leases are currently priced around 100bp above LIBOR, whereas a number of finance leases held in company balance sheets are at small premiums to LIBOR. We assume this represents a 20bp, 40bp and 60bp increase to finance lease costs for the low, medium and high scenarios. We apply these assumptions to 100% of the value of finance leases of the 'geared' companies.
- Information submitted by Water UK to the MRFF suggests the mark to market value of swaps assessed to be at risk was around £400m for the securitised companies as at 31 March 2010 (see Annex C). For the purposes of this assessment we assume 50%, 75% and 100% of this mark to market value is at risk.¹⁸¹

= Finance leases for 'geared' companies
= £0.67bn*scenarios low= 20bps, medium= 40bps (recurring),
high= 60bps (recurring)
= £25m (low)
= £50m (medium)
= £74m (high)

= Swaps for 'geared' companies mark to market * scenarios
= £0.4bn * low = 50%, medium = 75%, high = 100%
= £153m (low)
= £230m (medium)
= £306m (high)

3. This analysis therefore suggests that the total costs arising from any renegotiations are likely to be:

- Under the 'low' scenario = £178m (NPV over 30 years)
- Under the 'medium' scenario = £279m (NPV over 30 years)

¹⁸¹ However it should be recognised that mark to market valuations are volatile and subject to market conditions and assumptions made at the time the mark to market valuation is undertaken.

- Under the 'high' scenario = £380m (NPV over 30 years)

Summary

261 For the purpose of this IA we have assumed that financing costs under the medium scenario would be incurred (NPV £529m). Including costs associated with renegotiating covenants and consent fees (£281m) and costs associated with renegotiating swaps and finance leases which are at positive fair value (£279m).

NPV Option

262 Having considered the range of likely costs and benefits, the resulting NPV of this option, which is incremental to the gains from regulation assumed under the base case, is equal to the following:¹⁸²

NPV Benefits

Non-household: productive	= £97m
Non-household: dynamic	= £132m
Household: productive	= £339m
Household: dynamic	= £554m
Wholesale: productive	= £402m
Bundling	= £23m
Water efficiency	= £122m

NPV Costs

Regulatory: setup	= £11m
Regulatory: on-going	= £35m
Settlement & switching: setup	= £6m
Settlement & switching: on-going	= £73m
Incumbent: setup	= £180m
Incumbent: on-going	= £489m
Acquisition & retention	= £52m
Finance costs	= £529m

NPV Option two = £295m¹⁸³

Option 3 – WSL & Functional Separation

263 The third option that we have assessed incorporates the reform of the WSL regime and includes the requirement that incumbent companies must, at a minimum, functionally separate retail activities.

¹⁸² These numbers are reported in 2009 prices.

¹⁸³ Note, the numbers may not add up to zero due to rounding.

Steps 1 – Scope of the Market and Step 2 – Cost Base and Margin

264 These steps and the associated assumptions are consistent with those detailed in the previous option. Accordingly the cost base and margin associated with this option are identical to the previous option.

Step 3 – Benefits

265 In the previous option we noted that reforming the WSL regime and addressing the potential for discriminatory behaviour through the use of a structural remedy (ie, legal separation) would help facilitate effective retail competition. This would be expected to generate the following benefits:

1. Contestable retail efficiencies.
2. Spillover - Non-contestable retail efficiencies.
3. Spillover - Wholesale efficiencies.
4. Bundling efficiencies.
5. Water efficiencies.

266 Under this option we are proposing to address the potential for discriminatory behaviour by mandating the functional separation of retail and wholesale activities. To assess the likely benefits it is instructive to first consider the extent to which functional separation would address the discrimination problem. Having made this assessment we then consider the extent to which the benefits identified in the previous option would be generated under this option.

Discrimination

267 The discrimination problem can be examined by reference to four components, each of which affects the potential for anti-competitive discrimination. These components are as follows:

- incentive to discriminate;
- ability to discriminate;
- ability of Ofwat to observe and prevent discrimination; and
- perception of the discrimination problem.

268 We have assessed the extent to which the functional separation remedy would affect the above factors by reference to a stylised version of functional separation set out in Annex B.

269 Functional separation can reduce the incentive to discriminate because it attempts to sever the link between the remuneration of each division and the performance of the wider firm. This is achieved by requiring any remuneration arrangements to be linked to retail or wholesale objectives only (as opposed to the performance of the wider firm). However functional separation would not eliminate the incentive to discriminate entirely. Provided that there is a common ownership of retail and wholesale activities there will be an incentive to maximise joint profits by crowding out entrants.

270 The ability of incumbents to discriminate against new entrants is also reduced on account of the functional separation remedy. This is partly achieved by requiring

the wholesale division to treat all retailers alike (i.e. new entrants and the incumbent's own retail arm). In addition, by limiting the sharing of information between the retail and wholesale divisions, the ability of incumbents to identify and implement discriminatory strategies is diminished.

- 271 Another strength of the functional separation remedy is that it increases the ability of Ofwat to observe discriminatory behaviour. This is achieved because functional separation is designed to enhance the transparency of the interactions between the retail and wholesale divisions. For example the 'functional' option being considered includes clear and consistent controls that are intended to address the mechanisms through which anti-competitive discrimination can occur (refer Table 26). This makes it much easier for Ofwat to observe anti-competitive discriminatory behaviour and similarly, it makes it harder for the incumbent to coordinate such action.
- 272 Finally it seems likely that new entrants would perceive, in comparison to the base case, that there is less scope for discrimination under this option. This is because the functional separation remedy, including the terms and conditions, would be made public. This would be expected to encourage entry and hence increase the potential for effective retail competition.
- 273 In summary it seems likely that functional separation would help reduce the scope for anti-competitive discrimination and in doing so increase the potential for effective competition. However it should also be recognised that the remedy could be less effective than legal separation.
- 274 In other regulated sectors that have introduced market reforms, stronger forms of separation (e.g. legal or ownership separation) have usually been introduced to support the competitive regimes. This is largely because legal separation, which involves creating an independent board and having separate statutory accounts, is more effective at severing the link between parts of a vertically integrated business.
- 275 In light of the above factors it seems likely that although the risk of anti-competitive discrimination is reduced under this option, there is still a greater risk of such behaviour in comparison to the previous option. We therefore consider it necessary to adjust the benefits identified in the previous option by an abatement factor. The abatement factor is intended to reflect the greater risk of anti-competitive discrimination under this option and hence the potential for fewer benefits.¹⁸⁴
- 276 The difficulty in estimating the abatement factor is that there doesn't appear to be any relevant evidence or comparable precedents. With this in mind we have considered the range of option and, in consultation with Professor Martin Cave and Professor Catherine Waddams, estimated an abatement factor of 0.75. In making this estimation we considered that the functional separation remedy would be less effective than legal separation, however it would be more effective than the alternative options. We test the sensitivity of this factor in Section 5.

¹⁸⁴ This is because discrimination (or the perception of discrimination) would be expected to deter entry, thereby reducing the extent of the competitive rivalry (ie, increases the likelihood of collusion – tacit or otherwise). In addition discrimination, particularly non-price, would reduce the ability of entrants to compete with incumbents (ie, reduce the quality of the service provided by new entrants), thereby leading to a reduction in switching and dampening the incentive for incumbents to respond by seeking out efficiency savings and improving customer service

277 Based on an abatement factor of 0.75, we calculate the associated benefits below.

1. Contestable retail efficiencies

278 We have calculated the non-household efficiency savings by adjusting the assumptions of the previous option by the abatement factor of 0.75. We test the sensitivity of this assumption in Section 5.

1a. Retail Mergers

279 In addition we have not quantified the value of the benefits associated with retail mergers however the underlying arguments identified in the previous option are consistent with this option.

Non-household efficiency savings¹⁸⁵

Productive efficiency	= 10% * 0.75 = 7.5%
Contestable cost base	= £56m in year 1
NPV of productive benefit	= £73m
Dynamic efficiency ¹⁸⁶	= 1.5% * 0.75 = 1.88%
Contestable cost base	= £56m in year 1
NPV of dynamic benefit	= £105m

2. Spillover - Non-contestable retail efficiencies

280 Similar to the above approach, we have calculated the spillover benefits by adjusting the productive and dynamic efficiency using the abatement factor. However, we have not adjusted the 25% spillover assumption, given that the drivers of these benefits are unaffected by the proposed reforms.¹⁸⁷

Household efficiency savings¹⁸⁸

Productive efficiency	= (10% * 0.75) * 0.25 = 1.9% (one-off)
Non-contestable cost base	= £789m in year 1
NPV of productive benefit	= £255m
Dynamic efficiency	= 1.5% * 0.25 = 0.28% p.a.

¹⁸⁵ These numbers are reported in 2009 prices.

¹⁸⁶ These benefits are incremental to the gains assumed under regulation.

¹⁸⁷ The drivers of the spillover benefits include (i) the generation of better information with which to regulate the non-contestable sector; and (ii) the transfer of best practice within companies.

¹⁸⁸ These numbers are reported in 2009 prices.

Non-contestable cost base	= £789m in year 1
NPV of dynamic benefit	= £421m

3. Spillover – Wholesale efficiencies

- 281 The wholesale efficiencies identified in the previous option were driven by separation revealing unnecessary costs and retailers championing the needs of consumers by pressuring wholesale providers to drive out inefficiencies.
- 282 Although we are not proposing to legally separating retail and wholesale activities under this option, it still seems likely that some of the benefits would be generated. This is because functional separation would be expected to reveal some unnecessary costs and retailers would have an incentive to pressure wholesale providers to reduce costs. We have therefore applied the abatement factor against the efficiency savings to determine the relevant benefits.
- 283 We have also excluded from the analysis the proportion of the cost base in which the retail activities are not provided in-house, on the grounds that some of the inefficiencies are likely to have already been driven out.

Wholesale efficiency savings¹⁸⁹

Productive efficiency	= 0.5% (one-off) * 0.75
	= 0.38%
Wholesale cost base	= £5,283m
Proportion of in-house cost base	= 78%
NPV of productive benefit	= £301m

4. Bundling efficiencies

- 284 The primary driver of the bundling benefits identified in the previous option was the entry of retailers from other utilities. This form of entry is likely to be supported under this option, although it could be lower than the level assumed by the Cave Review on account of the higher risk of discrimination. We have therefore adjusted the bundling efficiencies identified in the previous option by the abatement factor.

Bundling efficiencies¹⁹⁰

Bundling saving	= £15 * 0.75
	= £11.25
Total customers < 1Ml	= 995,100
Market penetration (bundle rate)	= 10%
NPV of benefits	= £18m

5. Water efficiencies

¹⁸⁹ These numbers are reported in 2009 prices.

¹⁹⁰ These numbers are reported in 2009 prices.

285 The primary driver of the water efficiency benefits in the previous option was the facilitation of effective retail competition and the legal separation of retail and wholesale activities.

286 To reflect the greater risk that effective competition wouldn't develop (i.e. due to the potential for discrimination) and the fact that retail and wholesale activities would only be functionally separated (albeit, the remedies are quite similar), we have adjusted the benefits by the abatement factor.

Bundling efficiencies¹⁹¹

Water efficiency	= 2% * 0.75
LRMC	= £400 / MI
Contestable volumes ¹⁹²	= 930,833 MI
Profile of water savings	= 5 years
NPV of benefits	= £92m

Costs

287 Consistent with the approach adopted by the Cave Review, we have categorised the costs as follows:

1. Regulatory Costs
2. Market Settlement and Switching Costs
3. Incumbent Costs
4. Acquisition Costs
5. Finance Costs

288 We discuss these costs and the underlying assumptions below.

1. Regulatory Costs

289 The regulatory setup costs under this option would be very similar to those identified in the previous option. This is because Ofwat would incur costs associated with market design and designing the separation remedy. We have therefore assumed the same setup costs as option two.

290 However, it seems likely that the on-going regulatory costs would be higher under this option. This is because the higher risk of anti-competitive discrimination would require Ofwat to dedicate more resources to market monitoring and potentially use its competition powers more frequently.

291 For the purpose of this IA we have calculated the on-going costs by uplifting the costs incurred in Scotland by 300%.

Regulatory Costs¹⁹³

Setup costs	= £5.7m * 2
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¹⁹¹ These numbers are reported in 2009 prices.

¹⁹² Contestable volumes represent the average level of consumption per customer in England and Wales multiplied by the number of active customers in the English contestable retail market.

¹⁹³ These numbers are reported in 2009 prices.

NPV Setup costs	= £11m
On-going costs	= £1.2m *3
	= £ 3.6m p.a.
NPV of on-going costs	= £52m

2. Market Settlement and Switching Costs

292 Although fewer customers might switch under this option, the market settlement and switching costs are largely fixed. This point was recognised by the Cave Review which noted that the majority of costs are likely to be incurred irrespective of the threshold.¹⁹⁴ We have therefore calculated the market settlement and switching costs by applying same principles from the previous option to calculate the relevant costs.

Market Settlement and Switching Costs¹⁹⁵

NPV Setup costs	= £6m (one-off)
NPV of on-going costs	= £73m

3. Incumbent Costs

293 The challenge in estimating the costs associated with functional separation is that we do not know with 100% certainty what remedies would accompany functional separation. One potential option would be to calculate the cost of functional separation by reference to the BT-Openreach example. This process was estimated to have cost £100m.¹⁹⁶ However given the substantial differences between the telecommunications and water sector, and the size of the associated companies, it's not apparent that this is an appropriate comparator.

294 In the reports that have been published that examine retail competition in the water sector (including the Cave Review) only one paper has examined the cost of functional separation – the E&Y paper commissioned by Ofwat. This report considered the cost of different forms of separation (accounting, functional and legal) for WoCs.

295 Although the E&Y report is informative, it appears to reflect the costs associated with implementing a lighter form of functional separation and was commissioned entirely in relation to smaller companies (WoCs). This is reflected by the fact that the costs associated with functional separation are approximately 50% of the costs associated with legal separation. Given that we are considering a functional separation remedy that would generate a similar outcome to the legal separation remedy, we would expect broadly similar implementation costs.

296 We have therefore assumed that the cost of functional separation under this option be equal to the cost of legal separation in the previous option.

¹⁹⁴ Cave Review, Interim Report, p. 124.

¹⁹⁵ These numbers are reported in 2009 prices.

¹⁹⁶ Ernst & Young, Advice on costs of legal separation of retail water businesses, 2009, p. 12.

Incumbent Costs¹⁹⁷

	Setup Costs (£m)			On-going Costs (£m)		
	W a S C	Lar ge Wo Cs ¹⁹⁸	Sm all Wo Cs ¹⁹⁹	W a S C	L ar g e W o C s	S m all W o C s
In-house	27	1.8	0.8	4. 8	0. 8	0. 5
Outsourced	6. 7	0.9	0.4	1. 2	0. 4	0. 2
Legal y separ ate	3. 4	0.5	0.2	0. 6	0. 2	0. 1
Total	181			33		

NPV Setup costs = £181m

NPV On-going costs = £489m

4. Acquisition and Retention Costs

297 The key driver of acquisition and retention costs is the extension of retail competition to all non-domestic customers. This requires incumbent companies to dedicate resources to retaining customers (i.e. to prevent the loss of market share) and to acquiring customers (to grow market share). We have therefore calculated the acquisition and retention costs by applying the same assumptions from the previous options.

Acquisition and Retention Costs²⁰⁰

NPV of on-going costs = £52m

5. Finance Costs

298 The finance costs identified in the previous option were driven by legal separation. Although the functional and legal separation remedies that we are considering are intended to generate a similar outcome with respect to the discrimination problem, they would not be expected to have the same impact on financing costs. This is because functional separation, unlike legal separation, would not result in breaches to covenants and the like (i.e. it is a softer form of separation).

¹⁹⁷ These numbers are reported in 2009 prices.

¹⁹⁸ Large WoCs are defined as having approximately 1m customers.

¹⁹⁹ Small WoCs are defined as having approximately 100k customers.

²⁰⁰ These numbers are reported in 2009 prices.

299 Therefore we assumed that there would not be any financing costs above and beyond those that would be incurred under the base case (see Annex B for further details).

NPV Option 3

300 Having considered the range of likely costs and benefits, the resulting NPV, which is incremental to the gains from regulation assumed under the base case, is equal to the following:²⁰¹

NPV Benefits

Non-household: productive	= £73m
Non-household: dynamic	= £105m
Household: productive	= £255m
Household: dynamic	= £421m
Upstream: productive	= £301m
Bundling	= £18m
Water efficiency	= £92m

NPV Costs

Regulatory: setup	= £11m
Regulatory: on-going	= £52m
Settlement & switching: setup	= £6m
Settlement & switching: on-going	= £73m
Incumbent: setup	= £181m
Incumbent: on-going	= £489m
Acquisition & retention	= £52m

NPV Option three = £401m²⁰²

Option 4 – WSL & Optional Legal Separation

301 The fourth option in this IA incorporates the same package of reforms to the WSL regime identified in the previous options and also gives incumbent companies the option of legally separating their non-household retail functions. This option has been updated in parts to ensure consistency with changes set out on page 7 (the preferred option section), and to reflect new evidence where the impacts are likely to be material. Companies which chose to remain vertically integrated would not be allowed to compete for other customers and would have limited ability to respond to an entrant's offer to their customers. Companies which partially separate in this way would be allowed to freely participate in a competitive retail market and potentially grow their customer base.

²⁰¹ These numbers are reported in 2009 prices.

²⁰² Note, the numbers may not add up to zero due to rounding.

Steps 1 – Scope of the Market and Step 2 – Cost Base and Margin

302 These steps and the associated assumptions are consistent with those detailed in the previous options. Accordingly the cost base and margin associated with this option are identical to the previous options.

Step 2 – Benefits

303 The benefits associated with this option would be expected to be driven by the proportion of incumbent companies that choose to participate in the competitive retail market and hence legally separate retail and wholesale activities.

304 In those areas in which incumbent companies don't choose to separate, it appears unlikely that the reforms would generate significant benefits because effective competition, as envisaged by the Cave Review, is likely to be stifled. For example vertically integrated incumbents would appear to have a stronger incentive to discriminate as it's the only means available to prevent the loss of market share. Similarly if a high number of companies are vertically integrated then there are fewer companies in the market competing for non-household customers.

305 In those areas in which incumbent companies choose to vertically separate it seems likely that some competition would develop. This is because the reforms would address, to a large degree, the known barriers to competition, including the discrimination problem. In addition separation would help reveal unnecessary costs, thereby resulting in the generation of upstream efficiency savings. However the smaller number of competitors could have a detrimental impact on the development of competition.

306 The difficulty is that it's not possible to reliably predict how companies would respond to the separation option. This is because there appears to be a number of arguments that would both support and deter legal separation.²⁰³ To reflect these uncertainties we have estimated, in consultation with Professor Catherine Waddams and Professor Martin Cave, that 25% of companies would choose to separate.

307 Since this IA was drafted, new evidence has emerged which indicates that a far greater proportion of companies may choose to separate at market opening. For example, analysis by Oxera²⁰⁴ suggests that 75% of incumbent water companies would lose market share at market opening. The subsequent 40% loss in revenue is estimated to significantly outweigh any savings in operational /bad debt costs²⁰⁵. These losses are assumed to persist for 15 years, hence would be commercially unsustainable for 75% of incumbent companies assumed to be affected. For this reason, 75% of incumbent water companies are highly likely to choose to separate at market opening in order to avoid incurring these losses.

²⁰³ For example companies would appear to be incentivised to separate because it would allow them to compete for non-household customers and allow for retail-only mergers or divestment. On the other hand the companies might choose to remain integrated due to restrictive debt covenants and the view amongst some companies that vertical integration is the best configuration.

²⁰⁴ See: Non-household retail competition : illustrating the possible impact of exit from the non-household market : <http://www.watercommission.co.uk/UserFiles/Documents/Report%20on%20retail%20exit%2007032014.pdf>

²⁰⁵ Oxera estimate that the loss in revenue is driven by loss of public sector and multi-site customers. This loss is estimated at £40m in the first year, see pages 9-10 of the above report. The savings in operational costs are assumed to be 20% of overall retail costs.

Also, anecdotal evidence based on extensive Defra engagement with water companies indicates a large number are keen on separation at market opening. The upper bound of the original medium case abatement assumption of 25% - developed in consultation with Professor Catherine Waddams and Professor Martin Cave - was 50%. Given that the abatement factor has a material impact, we have a strong basis to revise the proportion assumed to exit at market opening to at least the previously assumed 'high' abatement scenario of 50%. The proportion that exit is likely to be higher given the evidence cited above - however, we adopt this approach to maintain consistency with the original approach taken in this IA. We have revised upwards the lower/upper bounds (from 0% to 25%; and 50% to 75%) for the abatement factor in Section 5, Table 15 to reflect this evidence.

308 The following assumptions hence apply:

- 50% of companies would separate at market opening;
- 100% of companies would be separated by year 30; and
- the rate at which companies separate between market opening and year 30 is assumed to be constant.

309 We have used the *separation proportion* as a proxy for the abatement factor discussed in the previous option. This seems a reasonable approach because when the separation proportion is low, the risk of discrimination is high and the number of potential competitors is low, resulting in a limited competition outcome with few expected benefits. As the rate of separation increases, the potential for discrimination decreases and similarly the number of potential competitors' increases. This would be expected to increase the potential for the competitive outcome envisaged by the Cave Review, to the point that as the separation proportion approaches 100% the potential for discrimination would reflect the level assumed under option 2.

310 Based on an abatement factor that increases from 0.50 to 1, we have calculated the following benefits.

1. Contestable retail efficiencies

311 We have calculated the non-household efficiency savings by adjusting the assumptions of the option two by an abatement factor that increases from 0.50 to 1. This means that over time the productive efficiency savings increases from 5% to 10% and similarly the rate of dynamic efficiency savings increases from 0.75% to 1.5%. Therefore by year 30 the savings under this option would be equal to the year 30 savings under option 2.

1a. Retail Mergers

312 In addition we have not quantified the value of the benefits associated with retail mergers however the underlying arguments identified in the previous option are generally consistent with this option.

Total Non-household Efficiency Savings²⁰⁶

²⁰⁶ These numbers are reported in 2009 prices.

Productive efficiency	= 10% * (0.50 to 1)
NPV of productive benefit	= £67m
Dynamic efficiency ²⁰⁷	= 1.5% * (0.50 to 1)
NPV of dynamic benefit	= £109m

2. Spillover - Non-contestable retail efficiencies

313 In contrast to the approach in the previous options we have calculated the spillover benefits by carrying over 18.75% of the non-household productive and dynamic efficiencies, adjusted for the abatement factor. This represents a 25% reduction in the spillover rate to reflect that under the revised option, the transmission mechanism will be slightly constrained. This will have a material impact on the results given the large household customer base. The rationale for the 25% reduction is driven by the extent to which duties to serve household customers constrain benefits corresponding to the transfer of best practice²⁰⁸ (see paragraph 164 onwards which sets out the spillover transmission mechanism). The 25% reduction reflects that benefits from transfer of best practice and outsourcing of the household function remain possible²⁰⁹. Higher levels of business performance transparency in the non-household sector are also likely to emerge under a new market structure. Spillover benefits arising from improved information for Ofwat to regulate the household sector would fully apply to this revised option. Hence the 25% assumption is likely to overshoot any actual reduction in spillover benefits, which is consistent with our conservative approach.

²¹⁰

Household efficiencies²¹¹

Productive efficiency	= (10% * (0.50 to 1)) * 0.19
Non-contestable cost base	= £789m in year 1
NPV of productive benefit	= £176m

Dynamic efficiency ²¹²	= (1.5% * (0.50 to 1)) * 0.19
Non-contestable cost base	= £789m in year 1
NPV of dynamic benefit	= £338m

3. Spillover – Wholesale efficiencies

²⁰⁷ These benefits are incremental to the gains assumed under regulation.

²⁰⁸ For example, incumbents would have to maintain billing/meter reading infrastructure to serve households customers. And in scenarios where only the non-household function is outsourced, there will be reduced transparency in terms of transfer of best practice from the non-household sector.

²⁰⁹ As is the case with Wessex Water and Bristol Water outsourcing retail businesses to a joint venture and Yorkshire Water outsourcing its retail business to a third party.

²¹⁰ For example, the spillover rate/abatement factor for Option 5, 'WSL only' has been reduced by 25% to reflect that the transmission mechanism is weaker without separation. Under voluntary non-household separation, the transmission mechanism must be at least as strong and is very likely to be higher; applying a similar 25% reduction - rather than a lower reduction - ensures we have taken a conservative approach.

²¹¹ These numbers are reported in 2009 prices.

²¹² These benefits are incremental to the gains assumed under regulation.

- 314 The wholesale efficiencies identified in the previous option were driven by separation revealing unnecessary costs; and retailers championing the needs of consumers by pressuring wholesale providers to drive out inefficiencies.
- 315 Given that we have assumed an evolving level of separation, we have calculated the wholesale efficiencies by applying the abatement rate against the assumptions identified under option 2.
- 316 We have also excluded from the analysis the proportion of the cost base in which the retail activities are not provided in-house, on the grounds that some of the inefficiencies are likely to have already been driven out.

Wholesale efficiencies²¹³

Productive efficiency	= 0.5% * (0.50 to 1)
Wholesale cost base	= £5,283m
Proportion of in-house cost base	= 78%
NPV of productive benefit	= £354m

4. Bundling efficiencies

- 317 The primary driver of the bundling benefits identified in the previous option was the entry of retailers from other utilities. This form of entry is likely to be supported under this option, although it could be lower than the level assumed by the Cave Review on account of the higher risk of discrimination. We have therefore adjusted the bundling efficiencies identified in the previous option by the abatement factor.

Bundling efficiencies²¹⁴

Bundling saving	= £15 * (0.50 to 1)
NPV of benefits	= £22m ²¹⁵

5. Water efficiencies

- 318 The primary driver of the water efficiency benefits in the previous options was the facilitation of effective retail competition; and the legal separation of retail and wholesale activities.
- 319 To reflect the greater risk that effective competition wouldn't develop (i.e. due to the potential for discrimination) and the fact that not all companies would initially be legally separated, we have adjusted the benefits by the abatement factor.

Bundling efficiencies²¹⁶

Water efficiency	= 2% * (0.50 to 1)
LRMC	= £400 / MI
Contestable volumes ²¹⁷	= 930,833 MI
NPV of benefits	= £84m

²¹³ These numbers are reported in 2009 prices. Note that the NPV increases under the revised option due to the adjusted abatement assumption (50% exit at market opening vs. 25% exit).

²¹⁴ These numbers are reported in 2009 prices.

²¹⁵ See footnote 211.

²¹⁶ These numbers are reported in 2009 prices.

²¹⁷ Contestable volumes represent the average level of consumption per customer in England and Wales multiplied by the number of active customers in the English contestable retail market.

Step 3 - Costs

320 Consistent with the approach adopted by the Cave Review, we have categorised the costs as follows:

1. Regulatory Costs
2. Market Settlement and Switching Costs
3. Incumbent Costs
4. Acquisition Costs
5. Finance Costs

321 We discuss these costs and the underlying assumptions below.

1. Regulatory Costs

322 The regulatory setup costs under this option would be expected to exceed those identified under the previous option. This is because Ofwat would incur costs associated with market design, designing the separation remedy and defining rules the rules that govern how integrated companies would interact with other market participants and customers. We have therefore calculated the setup costs by uplifting the costs incurred by WICs by 300%.

323 It also seems likely that the on-going regulatory costs would be higher under this option in comparison to options two and three. This is because there is a higher risk of anti-competitive discrimination, which would require Ofwat to dedicate more resources to market monitoring and potentially use its competition powers more frequently. For the purpose of this IA we have calculated the on-going costs by uplifting the costs incurred in Scotland by 400%.

Regulatory Costs²¹⁸

Setup costs = £5.7m * 3

NPV Setup costs = £17m

On-going costs = £1.2m * 4

= £ 4.7m p.a.

NPV of on-going costs = £69m

2. Market Settlement and Switching Costs

324 Although fewer customers might switch under this option, the market settlement and switching costs are largely fixed. We have therefore calculated the market settlement and switching costs by applying same principles from the previous option to calculate the relevant costs.

Market Settlement and Switching²¹⁹

NPV Setup costs = £6m (one-off)

NPV of on-going costs = £73m

²¹⁸ These numbers are reported in 2009 prices.

²¹⁹ These numbers are reported in 2009 prices.

3. Incumbent Costs

- 325 The primary driver of incumbent costs will be the extent to which companies legally separate retail and wholesale activities. Depending on the choice of each company, the incumbent costs could be quite small or large.
- 326 Given that this option ultimately assumes 100% of companies would legally separate retail and wholesale activities, the associated setup costs would be similar to those identified under option two. The critical difference however is that the costs would be spread out of the 30 year period instead of being incurred in year 0.
- 327 We have therefore calculated the setup costs by assuming that 50% of the incumbent costs from legal separation (not discounted) would be incurred in year zero and the remaining costs would be spread out evenly over 30 years.
- 328 To calculate the on-going costs we have used the same costs estimated under option 2, but adjusted these by the abatement rate which has been revised from 25% to 50%. Accordingly in year 1 the on-going incumbent costs are equal to 50% of the costs incurred under option 2. This change in the profile of costs leads to greater costs incurred under the revised option. By year 30 the on-going costs under this option are equal to those under option 2 (ie, both reflect a separation rate of 100%)

Incumbent Costs²²⁰

Setup costs	= £180m spread over 30 years
NPV setup costs	= £145m
On-going costs	= £33m p.a. * (0.50 to 1)
NPV on-going costs	= £339m

4. Acquisition and Retention Costs

- 329 Given that not all incumbents would initially be competing in the contestable market under this option, the associated acquisition and retention costs should be lower. We have therefore calculated the costs by adjusting the annual cost from options 2 and 3 (£3m) by the proportion of companies that would be separated (0.50 to 1).

Acquisition and Retention Costs²²¹

Annual cost	= £3m * (0.50 to 1)
NPV	= £37m

5. Finance Costs

- 330 In option two we noted that the legal separation of retail and wholesale activities could have adverse impacts on financing in the water and sewerage sectors in England. This is because legal separation could result in some companies

²²⁰ These numbers are reported in 2009 prices.

²²¹ These numbers are reported in 2009 prices.

breaching their financial covenants and also require that they renegotiate leases and swaps.

331 Given that we are assuming that 50% of companies would **legally separate their non-household** retail and wholesale activities in year 0 and that 100% of companies would be separated by year 30, it seems likely that some finance costs would be incurred.²²² The revised abatement assumption leads to a change in the profile costs (a greater proportion of costs are incurred earlier), and leads to higher financing costs.

332 To calculate the finance costs we have assumed the following:

- Bond financing costs are only incurred when the proportion of separation exceeds 50% (year 11)²²³ and are not incurred beyond 20 years, reflecting the assumed life of bonds in the sector (refer to Annex C);
- The bond financing costs are calculated by multiplying the coupon payments identified under option two (£33.35m) by the proportion of securitised companies that are legally separated (i.e. = abatement rate less 0.5);
- Financing costs associated with leases and swaps are incurred for all companies that legally separate retail and wholesale activities (this is consistent with the approach adopted in option 2);
- The lease finance costs are calculated by multiplying the annual coupon payment (£3.81m) by the proportion of companies that are legally separated each year. Therefore by year 30 the on-going lease costs under this option would be equal to the on-going lease costs under option 2;
- The one-off swap fees are calculated by assuming that 50% of the non-discounted costs would be incurred in year zero and the remaining costs would be spread out evenly over 30 years.

Financing Costs (medium scenario)²²⁴

NPV Bonds and fees	= £45m
NPV swaps	= £175m
NPV leases	= £33.5m
Total	= £253m

NPV Option 4

333 Having considered the range of likely costs and benefits, the resulting NPV, which is incremental to the gains from regulation assumed under the base case, is equal to the following:²²⁵

²²² Under the revised option, it is likely that most WoCs will sell their non-household business which means they won't incur the same financing costs. However, this is unlikely to have a material impact hence we have not adjusted the costs.

²²³ We have made this assumption on the grounds that bond financing costs primarily relate to securitised companies, which account for approximately 50% of the cost base and we would expect these companies to consider separation last.

²²⁴ These numbers are reported in 2009 prices.

²²⁵ These numbers are reported in 2009 prices.

NPV Benefits		
Non-household: productive		= £67m
Non-household: dynamic		= £109m
Household: productive		= £176m
Household: dynamic		= £338m
Upstream: productive		= £354m
Bundling		= £22m
Water efficiency		= £84m
NPV Costs		
Regulatory: setup		= £17m
Regulatory: on-going		= £69m
Settlement & switching: setup		= £6m
Settlement & switching: on-going		= £73m
Incumbent: setup		= £145m
Incumbent: on-going		= £339m
Acquisition & retention		= £37m
Finance costs		= £253m
NPV Option four		= £211m ²²⁶

Option 5 – WSL only

334 The final option incorporates reforms to the WSL regime but does not include any structural remedy to address the discrimination problem.

Steps 1 – Scope of the Market and Step 2 – Cost Base and Margin

335 These steps and the associated assumptions are consistent with those detailed in the previous options. Accordingly the cost base and margin associated with this option are identical to the previous options.

Step 3 – Benefits

336 Consistent with the approach adopted in the previous options, we have calculated the benefits by first estimating the abatement factor and applying this against the assumption identified under option 2.

337 To calculate the abatement factor we considered the extent to which non-structural remedies (paragraph 442) could be used to combat anti-competitive discrimination.²²⁷ Based on this assessment our primary conclusion is that non-structural remedies would only have a limited impact on the discrimination problem. This is because such measures:

²²⁶ Note, the numbers may not add up to zero due to rounding.

²²⁷ This reflects the fact that under this option no structural remedies are proposed to address the discrimination problem beyond those currently in place (i.e. accounting separation).

- do not change the financial incentive to discriminate because retail and wholesale activities remain under the same ownership and remuneration is linked to the wider performance of the group;
- allow incumbents to treat entrants differently than their own retail arm (ie, incumbents could use a different system to process orders from entrants); and
- do not enhance the transparency of the interactions between the retail and wholesale activities.

338 It also seems likely that prospective entrants would identify the above problems and perceive that they could be discriminated against. This would deter new entry and hence reduce the likelihood that competition would be effective.

339 It therefore seems likely that firms competing against vertically integrated incumbents would be at a serious competitive disadvantage. This conclusion is largely supported by the experience of other sectors where market reforms have been implemented (see Annex B).

340 In light of the above factors and in consultation with Professor Martin Cave and Professor Catherine Waddams we have estimated an abatement factor of 0.25 for this option. We test the sensitivity of this assumption in Section 5.

1. Contestable retail efficiencies

341 We have calculated the non-household efficiency savings by adjusting the assumptions of option two by the abatement factor of 0.25.

Retail Mergers

342 In addition it's important to note that retail mergers would not be allowed as companies would continue to operate under the IoA (as opposed to a retail license). Therefore retail mergers would be subject to the special mergers regime.

Non-household efficiency savings²²⁸

Productive efficiency	= 10% * 0.25
	= 2.5%
Contestable cost base	= £56m in year 1
NPV of productive benefit	= £24m
Dynamic efficiency ²²⁹	= 1.5% * 0.25
	= 0.38% p.a.
Contestable cost base	= £56m in year 1
NPV of dynamic benefit	= £39m

2. Spillover - Non-contestable retail efficiencies

²²⁸ These numbers are reported in 2009 prices.

²²⁹ These benefits are incremental to the gains assumed under regulation.

- 343 Similar to the approach adopted in the previous options we have calculated the spillover benefits by carrying over 25% of the non-household productive and dynamic efficiencies, adjusted for the abatement factor.

Household efficiencies²³⁰

Productive efficiency = $(10\% * 0.25) * 0.25$
= 0.63%

Non-contestable cost base = £789m in year 1

NPV of productive benefit = £85m

Dynamic efficiency²³¹ = $(1.5\% * 0.25) * 0.25$
= 0.094%

Non-contestable cost base = £789m in year 1

NPV of dynamic benefit = £145m

3. Spillover – Wholesale efficiencies

- 344 In the previous options we noted that retail competition and separation would promote wholesale efficiency savings. The key drivers of these savings was separation, which helps to reveal unnecessary costs **and** competition which provides retailers with the incentive to champion the needs of consumers by pressuring wholesale providers to drive out inefficiencies.

- 345 Given that we are not proposing the separation of retail and wholesale activities we have not assumed the full range of benefits identified in previous options. However, we would still expect some efficiency savings because retailers and new entrants would still have an incentive to pressure wholesale providers to drive out inefficiencies. We have therefore calculated the wholesale efficiencies by applying the abatement rate against the assumptions identified under option 2. The effect of this arrangement is that we are only assuming a 0.13% efficiency wholesale saving.

- 346 We have also excluded from the analysis the proportion of the cost base in which the retail activities are not provided in-house on the grounds that some of the inefficiencies are likely to have already been driven out.

Wholesale efficiencies²³²

Productive efficiency = $0.5\% * (0.25)$
= 0.13%

Wholesale cost base = £5,283m

Proportion of in-house cost base = 78%

NPV of productive benefit = £100m

4. Bundling efficiencies

- 347 The primary driver of the bundling benefits identified in option two was the entry of retailers from other utilities. This form of entry is likely to be supported under

²³⁰ These numbers are reported in 2009 prices.

²³¹ These benefits are incremental to the gains assumed under regulation.

²³² These numbers are reported in 2009 prices.

this option, although it could be lower than the level assumed by the Cave Review on account of the higher risk of discrimination. We have therefore adjusted the bundling efficiencies identified in option two by the abatement factor.

Bundling efficiencies²³³

Bundling saving per customer	= £15 * (0.25)
NPV of benefits	= £6m

5. Water efficiencies

348 The primary driver of the water efficiency benefits in option two was the facilitation of effective retail competition and the legal separation of retail and wholesale activities.

349 To reflect the greater risk that effective competition wouldn't develop (ie, due to the potential for discrimination) and the fact that we are not separating retail and wholesale activities, we have adjusted the benefits by the abatement factor.

Water efficiencies²³⁴

Water efficiency	= 2% * (0.25)
LRMC	= £400 / MI
Contestable volumes ²³⁵	= 930,833 MI
NPV of benefits	= £31m

Step 4 - Costs

350 Consistent with the approach adopted by the Cave Review, we have categorised these costs as follows:

1. Regulatory Costs
2. Market Settlement and Switching Costs
3. Incumbent Costs
4. Acquisition Costs
5. Finance Costs

351 We discuss these costs and the underlying assumptions below.

1. Regulatory Costs

352 The regulatory setup costs under this option would most likely be lower than those identified under the previous options. This is because Ofwat would only incur costs associated with market design (i.e. there would be no costs associated with designing the separation remedy). We have therefore calculated the setup costs based on the costs incurred by WICs (i.e. 50% of option 2).

²³³ These numbers are reported in 2009 prices.

²³⁴ These numbers are reported in 2009 prices.

²³⁵ Contestable volumes represent the average level of consumption per customer in England and Wales multiplied by the number of active customers in the English contestable retail market.

353 To facilitate retail competition Ofwat would be expected to incur both one-off setup costs and on-going costs. The Cave Review noted that these costs would be associated with the following:

- developing market codes – the rules, processes and arrangements that market participants would need to adhere to; and
- on-going monitoring of the market arrangements and taking action where issues are identified.

354 However, it seems likely that the on-going regulatory costs would be higher under this option in comparison to options two and three. This is because there is a higher risk of anti-competitive discrimination, which would require Ofwat to dedicate more resources to market monitoring and potentially use its competition powers more frequently.

355 For the purpose of this IA we have calculated the on-going costs by uplifting the costs incurred in Scotland by 400%.

Regulatory Costs²³⁶

NPV Setup costs	= £5.7m
On-going costs	= £1.2m *4 = £ 4.87 p.a.
NPV of on-going costs	= £69m

2. Market Settlement and Switching Costs

356 Although fewer customers might switch under this option, the market settlement and switching costs are largely fixed. We have therefore calculated the market settlement and switching costs by applying same principles from the previous options.

Market Settlement and Switching Costs²³⁷

NPV Setup costs	= £6m (one-off)
NPV of on-going costs	= £73m

3. Incumbent Costs

357 The reforms that form the basis of this option are primarily related to reducing legal and regulatory barriers to competition. For this reason it's unlikely that significant additional costs will be imposed on incumbent water companies (i.e. because separation is not mandated).²³⁸ However, there could be some costs associated with managing switches and customer contacts (eg updating billing systems).

²³⁶ These numbers are reported in 2009 prices.

²³⁷ These numbers are reported in 2009 prices.

²³⁸ Although companies could incur some costs, it's not apparent why these would differ to the costs that are already incurred under WSL. For example, under the proposed arrangements companies will be required to develop access prices that conform to Ofwat's methodology. However given that the companies already develop access prices, it's not apparent why additional resources would need to be dedicated to this process.

358 To calculate this cost we have estimated the expected number of resources that would be required by each company to manage switches and additional customer contact costs. These assumptions are as follows.

Table 10 :- FTE	
	Resources
WaSC	5 FTE's
WoC – 1m customers	2 FTE's
WoC – 100k customers	1 FTE's

359 We have estimated the cost of additional employees by reference to the wage rate for administration staff, as detailed in the UK National Statistics Annual Survey of Hours and Earnings. We then uplifted the costs by 100% to account for additional overheads that the companies would be expected to incur.

Incumbent Costs²³⁹

Wage rate	= £19,597
Overheads	= 100%
NPV of on-going costs	= £34m

4. Acquisition Costs

360 The key driver of acquisition and retention costs is the extension of retail competition to all non-domestic customers. This requires companies to dedicate resources to retaining customers (ie, to prevent the loss of market share) and to acquiring customers (to grow market share). We have therefore calculated the acquisition and retention costs by applying the same assumptions from the previous options.

Acquisition and Retention Costs²⁴⁰

NPV of on-going costs	= £52m
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Finance Costs

361 The finance costs identified in the previous options were driven by legal separation. We have therefore assumed that there would not be any financing costs above and beyond those that would be incurred under the base case (see Annex B for further details).

NPV Option 5

²³⁹ These numbers are reported in 2009 prices.

²⁴⁰ These numbers are reported in 2009 prices.

362 Having considered the range of likely costs and benefits, the resulting NPV which is incremental to the gains from regulation assumed under the base case, is equal to the following:²⁴¹

NPV Benefits

Non-household: productive	= £24m
Non-household: dynamic	= £39m
Household: productive	= £85m
Household: dynamic	= £145m
Wholesale efficiencies	= £100m
Bundling	= £6m
Water efficiencies	= £31m

NPV Costs

Regulatory: setup	= £6m
Regulatory: on-going	= £69m
Settlement & switching: setup	= £6m
Settlement & switching: on-going	= £73m
Incumbent: on-going	= £34m
Acquisition & retention	= £52m

NPV Option 2 = £190m²⁴²

Section 5 – Sensitivity and Risk Assessment

Sensitivity Analysis

363 In this section we test the sensitivity of the model's behaviour against variations in parameters which are judged to have a material effect and also those that are uncertain in their estimation. These parameters include:

- abatement factors,²⁴³ reflecting low, medium and high scenarios, these are adjustments to the set of benefit assumptions which were proposed in the Cave Review, the base case is a factor of 1, and the sensitivities are proportions of this based on a judgement of what the range of variation might be;
- household spillover assumptions, reflecting low (5%), medium (25%)²⁴⁴ and high (45%) scenarios, 25% is the central Cave assumption; and
- finance costs (for option 2 - legal separation only).

364 These sensitivities are illustrated for each option in the tables below. .

²⁴¹ These numbers are reported in 2009 prices.

²⁴² Note, the numbers may not add up to zero due to rounding.

²⁴³ As previously noted the abatement factors are adjustments to the set of benefit assumptions which formed the basis of the Cave Review's central case (ie, abatement = 1).

²⁴⁴ The assumption of 25% reflects the Cave Review's central case.

- Option 1 has been estimated to have no costs or benefits. Therefore no sensitivities are tested.
- Option 2 is illustrated in the tables below for the low, medium and high finance scenarios. Household spillover is varied against abatement factors. These represent 25% lower and higher benefits of the Cave central case. The outcome is particularly sensitive to assumptions about the spillover of benefits into the household sector, with the majority of low scenarios having a negative NPV.

Table 11: NPV (£m): Option 2 WSL & Legal Separation: Low Finance costs assumed				
		Abatement Factor ²⁴⁵		
		Low - 0.75	Medium ²⁴⁶ - 1	High - 1.25
Spillover r	Low (5%)	-349	-115	114
	Medium (25%)	189	594	991
	High (45)	703	1,261	1,804
Abatement factor: Benefits are 25% higher and lower than a central case of 1, due to the benefits being higher or lower than anticipated.				

- It's apparent, based on Table 12 and Table 13 that the finance costs are largely driving the negative outcomes under option 2. If low finance costs are assumed the vast majority of options generate a positive NPV.

Table 12: NPV (£m): Option 2 WSL & Legal Separation: Central Finance costs assumed				
		Abatement Factor		
		Low - 0.75	Medium - 1	High - 1.25
Spillover r	Low (5%)	-648	-414	-185
	Medium (25%)	-110	295	692
	High (45%)	404	962	1,505
Abatement factor: Benefits are 25% higher and lower than a central case of 1, due to the benefits being higher or lower than anticipated.				

Table 13: NPV (£m): Option 2 WSL & Legal Separation: High Finance costs assumed				
		Abatement Factor		

²⁴⁵ By varying the abatement factor the benefits are 25% higher and lower than a central case of 1.

²⁴⁶ An abatement factor of 1 represents the Cave Review's central case. The high scenario reflected larger productive and dynamic efficiency savings.

		Low - 0.75	Medium - 1	High - 1.25
Spillover	Low (5%)	-976	-742	-513
	Medium (25%)	-438	-33	364
	High (45%)	76	634	1,177
Abatement factor: Benefits are 25% higher and lower than a central case of 1, due to the benefits being higher or lower than anticipated.				

- Option 3 is illustrated in the table below. Under most scenarios the outcome is positive. The outcome appears to be particularly sensitive to the abatement factor, with a low assumption generating the smallest NPVs.

		Abatement Factor		
		Low - 0.5	Medium -0.75	High - 1
Spillover	Low (5%)	-375	-137	96
	Medium (25%)	-12	401	805
	High (45%)	340	914	1,473
Abatement factor: Benefits are lower than a central case of 1, due to differing impacts of price discrimination.				

- Option 4 is illustrated in the table below. For the vast majority of scenarios the outcome is positive. However when a low spillover rate is assumed the outcome is quite low to negative, particularly when applied against a lower starting point. It should be noted that a revised medium case spillover assumption, reduced from 25% to 19% has been applied in the updated analysis for this option. The abatement factors have been revised from 0% to 25% for the low case; 25% to 50% for the medium case and 50% to 75% for the high case to reflect recent evidence. Refer to pages 78-80 for more information.

		Abatement Factor / Starting Point		
		Low - 0.25	Medium -0.50	High - 0.75
Spillover	Low (5%)	-242	-164	-125
	Medium (19%)	143	211	260

	High (45%)	643	888	1,041
Abatement factor: represents different scenarios of the proportion of firms voluntarily separating and entering the market over 30 years till full participation, starting at 0.25/0.5/0.75, arriving at 1.				

- Option 5 is illustrated in the table below. With the exception of one scenario, all the results are positive when tested under different assumptions. The outcome is particularly sensitive to the assumptions about the abatement factor, with the low scenario producing very low outcomes even with a high spillover rate.

		Abatement Factor		
		Low - 0.15	Medium - 0.25	High - 0.5
Spillove r	Low (5%)	-91	7	249
	Medium (25%)	19	190	612
	High (45%)	129	371	963
Abatement factor: Benefits are lower than a central case of 1, due to differing impacts of price discrimination, 0.25 considered the most likely outcome.				

Payback Period

365 In the table below we have illustrated the payback period for each option under the central assumptions. It's apparent that the finance costs under options 2 and 3 are largely driving the high payback period. In contrast under option 5 there are minimal setup costs and hence the payback period is much shorter.

Option	Payback Period (NPV >0)
Option 2 – WSL & Legal Separation	Year 22
Option 3 – WSL & Functional Separation	Year 14
Option 4 – WSL & Voluntary Separation	Year 21
Option 5 – WSL	Year 5

Isolation of key variable

- 366 In paragraphs 363 to 364 we tested the sensitivity of the outcome for each option by modifying the abatement factor and rate of household spillover. In this section we test the sensitivity of the outcome for each option to variations in individual benefits. This analysis has been updated to reflect the revised option 4 assumptions.
- 367 Along the x-axis we have defined the options and along the y-axis we have defined the benefits that we are testing, namely:
- (i) productive efficiency- i.e. the extent of one-off efficiency gains from separation and the introduction of competition against the retail cost base;
 - (ii) dynamic efficiency- i.e. the extent of on-going efficiency gain in the retail cost base resulting from competition over and above that which would have been achieved by regulation;
 - wholesale spillover- which is analysed based on applying the wholesale spillover efficiency gain against (iii) wholesale operating costs which comprises a cost base of £5,665m and (iv) wholesale operating expenditure which comprises a cost base of £2,832m, very similar to that used by the Cave Review (which excludes capital maintenance)²⁴⁷.
- 368 For each benefit we have defined three scenarios: low, medium; and high. The relevant assumption for each scenario is defined under the *variable* column. For example, in relation to the productive efficiency benefit the low scenario is defined as a one-off 5% saving, the medium scenario as a one-off 10% saving and the high scenario as a one-off 15% saving.
- 369 Having defined the relevant scenarios for each benefit we then calculated the NPV for each option. This involved applying the abatement factor associated with each option against the scenario assumption and updating the cost-benefit model (whilst holding all other variables constant – i.e. the central case). For example in relation to the low productive efficiency assumption we calculated the NPV for the WSL option by applying the abatement factor of 25% against the efficiency assumption of 5%, which gives an efficiency saving of 1.25% - we then update the model using 1.25%, which generated an NPV of £137m.
- 370 In addition to testing the different variables in isolation we also identified the minimum level for each benefit that would generate a positive NPV – this is referred to as the switching rate. For example in relation to the productive efficiency benefit, under the legal separation option a minimum saving of 2.8% is required in order to generate a positive NPV.
- 371 These results are displayed in the tables below.

Table 18: Sensitivity of key variables (NPV £m)

	Variable	Option 2 Legal	Option 3 Functional	Option 4 Voluntary	Option 5 WSL
Abatement		10%	75%	100%	25%

²⁴⁷ It should be noted that we further adjusted the cost base by excluding the proportion (22%) that related to separated companies.

Productive Efficiency	Low	5%	91	245	97	137
	Medium	10%	295	401	211	190
	High	15%	498	556	439	244
	Switching rate		2.80%	N/A	0.30%	N/A
Dynamic Efficiency	Low	1%	74	230	67	129
	Medium	1.50%	295	401	211	190
	High	2%	507	567	351	251
	Switching rate		0.80%	0.30%	0.80%	0%
Wholesale Spillover (Operating Costs)	Low	0.25%	94	250	95	141
	Medium	0.50%	295	401	211	190
	High	0.75%	495	552	442	241
	Switching rate		0.13%	N/A	0.02%	N/A
Wholesale Spillover (Operating Expenditure)	Low	0.25%	-7	175	40	115
	Medium	0.50%	93	249	95	140
	High	0.75%	193	325	151	165
	Switching rate		0.27%	N/A	0.05%	N/A

372 Under option 2 (legal separation & WSL reforms) the outcome for every scenario is positive with one exception, when the wholesale spillover is calculated based on operating expenditure and a low scenario is applied. The switching analysis also demonstrates that the outcome is not particularly sensitive to changes in a single variable, although the outcome would be negative if none of the benefits were realised.

373 Under option 3 the outcome for all scenarios is positive, with the lowest NPV being £175m, which occurs when the wholesale spillover is calculated based on operating expenditure and a low scenario is applied. The switching analysis is particularly insightful as it shows that a positive NPV is only dependant on one variable, namely the dynamic efficiency assumption. What this means is that in the absence of one of the other benefits that we tested, for example productive efficiency, the option would still be expected to generate a positive NPV. It should however be recognised that we are testing the benefits in isolation, therefore whilst the option would generate a positive NPV in the absence of wholesale spillover benefits, this assumes that the central case for the other benefits would be realised.

- 374 Under option 4 the outcome for all scenarios is positive, although the NPV approaches zero based on a low assumption for dynamic efficiency. The switching analysis indicates that all benefits are required to generate a positive NPV, although the contribution of the wholesale spillover benefits is much more marginal than the dynamic and productive assumptions.
- 375 Under the WSL option the outcome is positive for all scenarios. Furthermore the switching analysis indicates that even in the absence of one of the benefits, the option would still generate a positive NPV.

Abatement factors

- 376 One of the principal challenges associated with this IA has been quantifying the benefits of retail competition when it is not accompanied by the legal separation remedy to address anti-competitive discrimination.
- 377 The Cave Review only considered the introduction of retail competition and the legal separation of retail activities in its cost benefit analysis. Given that the most significant area of concern amongst stakeholders in their responses to the Government's consultation on the implementation of the Cave Review queried the need for or cost of separation, the Government has also considered other options that do not mandate legal separation.
- 378 We have therefore been required to consider the benefits of retail competition when accompanied by alternate separation remedies, including no separation. The challenge this presents is that there is no robust empirical way of modelling the extent to which rivalry and competition would be effective in the absence of stronger forms of separation and the extent to which benefits would arise over and above those that would be achieved through regulation. To address this problem we could have adopted one of two solutions:
- only quantify the costs and not the benefits associated with options 3, 4 and 5; or
 - consider the scale of the benefits associated with options 3, 4 and 5 in comparison to the legal separation option (option 2).
- 379 We considered that quantifying the costs and not the benefits would not usefully inform policy decisions. Instead we have considered the scale of the benefits in comparison to the legal separation option. Given that such an assessment will ultimately entail a subjective judgement we sought independent expert advice from Professor Catherine Waddams and Professor Martin Cave. Based on this advice we estimated an abatement factor for each option. The abatement factor for option 4 has been revised to reflect recent evidence.²⁴⁸ The abatement factor is intended to reflect the risk of anti-competitive discrimination under each option, including both price and non-price discrimination. Such behaviour would be expected to have a detrimental impact on the development of effective

²⁴⁸ Refer to pages 78-80 for more information.

competition²⁴⁹ and therefore undermine the likely benefits from the reforms (this is discussed in further detail in Annex B).

Risk assessment

380 In Section 4 we identified a number of assumptions that could materially affect the resulting outcome of each option. In this section we identify the risks associated with the key assumptions and consider the likelihood of the risk arising and its impact.

- **Competition** – a key risk that we have identified in relation to a number of options is that effective competition does not develop. The principal driver of this risk is the extent to which incumbents discriminate against new entrants and the perception of new entrants of this problem. Other drivers of this risk include the size of the market.
- **Benefits** – there is a risk that the benefits could be under or over estimated. Like the Cave Review, monetised benefits have been subject to sensitivity analysis to cover the range of benefits that could be realised.
- **Costs** – costs have been cautiously estimated and where possible reflect evidence from other jurisdictions. The greatest risk as noted by the Cave Review is that as the market size and complexity increases, extrapolation of the Scottish data becomes more tenuous.

	Option 2 WSL & Legal	Option 3 WSL & Functional	Option 4 WSL & Optional	Option 5 WSL only
Competition	Low	Low- Medium	Medium	High
Benefits	Medium	Medium	Medium	High
Costs	Medium- High	Medium	Medium	Low

Proportionality and Development of the Evidence Base

381 The proposed reforms represent a significant change to the way retail water and sewerage services are delivered in England. However, these changes represent an evolutionary step by reforming the current WSL arrangements that already exist but are currently not effective.

382 A key element of the evidence base for this assessment has been the Cave Review and its accompanying cost-benefit analysis. The Review was undertaken by an independent expert who issued his final report after considering a range of evidence from different parties and after numerous discussions and consultations with key water stakeholders. As such we consider that it represents a very robust assessment of the proposed reforms.

²⁴⁹ In this instance the term 'effective competition' is assumed to represent the central case of the Cave Review's cost benefit analysis- i.e. a moderate position where a retail market is working effectively and delivering the benefits assumed by the Cave Review's central case rather than a position where the benefits of competition are maximised.

- 383 However, the Cave Review is not the only source of evidence. In addition to the Review's assessments we have therefore also considered a range of other sources, many of which were not available to the Review when it was being undertaken. These sources include updating the cost base based on Ofwat's accounting separation information, improved evidence from the water and sewerage retail market in Scotland which has continued to grow and develop during that period, research by the MRFF and other financial experts, other work published by Water UK and UKWIR as well as a range of other published academic papers.
- 384 Despite the significant evidence base that has been utilised for this assessment, introducing competition into a regulated market will always carry a number of uncertainties and risks. In conducting our analysis we have sought a proportionate approach to the research and evidence necessary on which to base these decisions. We have also managed these risks by using conservative assumptions that generally seek to overstate the likely costs and understate the likely benefits.
- 385 The resulting analysis is sensitive to a range of critical assumptions, in particular:
- the cost base to which competition is applied;
 - the scope for effective competition within the relevant cost base;
 - the extent to which competition can deliver benefits above and beyond regulation; and
 - the cost of introducing these changes, of which the costs of separation and the finance costs form the most material elements and apply differently to the various options.
- 386 In relation to the cost base, we have built upon the Cave Review's approach by utilising the most recent and up-to-date information from Ofwat based on the new accounting separation information that the companies have provided over the last two years, this provides significantly improved information on the size of the retail cost base and the split between household and non-household retail costs. Given that this information represents the most accurate and timely data on this cost base, it's not apparent how we could improve upon this position, or indeed what further work would add value in this regard.
- 387 To address the inherent uncertainties associated with the scope for effective competition, we have examined a range of evidence. These issues were also considered in detail by the Cave Review but we have, for example, supplemented the Cave Review's analysis with greater consideration of other sectors in relation to discrimination and also considered the scope for benefits from reform by considering, for example, the emerging real experiences in Scotland as well as the numerous reports and studies that have been published during the course of this work. Further work in this area could add value but it is likely to be prohibitively expensive and would most likely understate the potential opportunities for efficient entry and competition because of the information asymmetry problem associated with asking incumbent monopolies for information on the scope for entry. Estimating the scope for effective competition will ultimately require some form of judgment. We have therefore supplemented the

Cave Review's analysis with further sensitivity testing to ensure that this risk is being considered in the necessary detail.

- 388 To estimate the likely benefits that competition can deliver we considered the Cave Review's analysis and also evidence from a wide range of other sources, including academics, other sectors and Ofwat. This evidence suggests that in the first instance the gains from competition are likely to be greater than those from regulation, which has similarly exhibited decreased returns over successive price reviews- a trend which has continued beyond the publication of the Cave Review's final report. Although the scale of the benefits from competition are uncertain the Cave Review bases its assumptions in this area on published academic evidence as well as practical examples from other sectors and jurisdictions. Practical work looking specifically at the sectors in this area could add value but such work would be expensive and would essentially duplicate the process of efficiency discovery that Ofwat has undertaken over the past twenty years (which is now delivering diminishing returns). Furthermore, this work would most likely struggle to scale and quantify the wider benefits in terms of improvements in service, etc that we would expect to see happen and indeed which is being experienced in Scotland. It would most likely still not provide a final, definitive view on the potential efficiency gains from upstream competition versus the status quo model. Again it is difficult to see how additional research would substantially support the judgements and analysis taken forward in this report.
- 389 Finally, we have considered the financing costs based on evidence drawn from the Cave Review, which also considered: Richard Nourse's analysis of the different competition proposals and the associated financing issues,²⁵⁰ and NERA's research on the financing implications of different competition models.²⁵¹
- 390 We have supplemented this evidence with further work undertaken by the Market Reform and Finance Forum²⁵² which included a range of presentations from financing experts.
- 391 In light of the above, we consider that the evidence and analysis detailed in this IA is proportionate to the risks and uncertainties associated with facilitating greater retail competition in the water sector. Although further work could be undertaken in relation to the benefits of retail competition, it's not apparent whether this would materially improve the existing analysis and it would certainly be a very costly exercise. This point was acknowledged by Oxera in its review of the CBA knowledge base on behalf of the incumbent water companies, whereby it noted that²⁵³

..in light of the complexities involved in assessing the costs and benefits of the competition reform—in particular, the potentially large portion of benefits that are unquantifiable—it is important to recognise that it might still be difficult for policy-makers to achieve a definitive CBA figure, even if the current analysis were further developed.

²⁵⁰ , Nourse. R, Competition proposals and financing issues: A report for Ofwat, January 2009
http://www.ofwat.gov.uk/competition/review/rpt_com_nourse260209.pdf

²⁵¹ NERA, 2008, Financial Implications of Competition Models, http://www.nera.com/extImage/PUB_Water_UK_Dec2008.pdf

²⁵² http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf.

²⁵³ Oxera, Competition in the water sector: a review of the cost/benefit analysis knowledge base, 2011, p. 5.

Results summary

392 Table 20 summarises the key costs and benefits under each of the options and how the values compare to the analysis undertaken by the Cave Review and other parties in their various reports. The results show the conservative nature of this IA in comparison to those other studies.

Table 20 - Summary of results (NPV £m)

				Legal Separation & WSL Reforms				
	Option 3 - Functional Separation & WSL	Option 4 - Voluntary Separation & WSL	Option 5 - WSL only	Option 2	Caveat Review	Deloitte/ Water UK ²⁵⁴	Grant Thornton ²⁵⁵	WICS ²⁵⁶
Total Retail Cost Base (p.a.)	1,061	1,061	1,061	1,061	975	970		
Non-household: productive	73	67	24	97	125	297		
Non-household: dynamic	105	109	39	132	181	484		
Household: productive	255	176	85	339	442	927		
Household: dynamic	421	338	145	554	766			
Wholesale: productive	301	354	100	402	238	847		
Bundling	18	22	6	23	25			
Water efficiency	92	84	31	122				
<i>Total Benefits</i>	<i>1,265</i>	<i>1,150</i>	<i>430</i>	<i>1,669</i>	<i>1,777</i>	<i>2,555</i>		
Regulatory: setup & Settlement switching: setup	11	17	6	11	10	152		
Incumbent: setup	6	6	6	6	5			
Regulatory: on-going	181	145		180	137			
Settlement &	52	69	69	35	29	1,052		
	73	73	73	73	35			

²⁵⁴ Deloitte, Lessons for the water and sewerage industry from retail competition in the utility sector, January 2011, p. 47. http://www.deloitte.com/view/en_GB/uk/industries/eiu/water/24dca3dd6f90e210VgnVCM2000001b56f00aRCRD.htm

²⁵⁵ Grant Thornton, WICS: Cost Benefit Assessment, May 2010

HM Treasury, The Economic and Fiscal Strategy (Budget) Report 2009 http://webarchive.nationalarchives.gov.uk/20100407010852/http://www.hm-treasury.gov.uk/bud_bud09_index.htm

²⁵⁶ WICS, <http://www.watercommission.co.uk/Blogs/post/Costs-and-savings-of-retail-competition.aspx>

switching: on-going													
Incumbent: on-going	489	339	34	489	884								
Acquisition & retention	52	37	52	52	59								
Finance costs		253		529	0								
<i>Total Costs</i>	<i>864</i>	<i>939</i>	<i>240</i>	<i>1,375</i>	<i>1,159</i>					<i>1,204</i>			
NPV	401	211	190	295	617					1,351		500 - 700	750 - 2,500

Summary of assumptions

393 Table 21 below provides a summary of the key assumptions in the analysis.

Table 21 - Assumptions				Price Year
Cost Base - England	Assumption	Source		
Total retail cost base (£m)	£937	JR11		2009
Total Household retail cost base (£m)	£789	JR11		2009
Total Non-household retail cost base (£m)	£147	JR11		2009
Total Wholesale operating expenditure (£m)	2,631	JR11		2009
Total Wholesale operating costs (£m)	£5,283	JR11		2009
Proportion household cost base	84%	JR11		n/a
Proportion non-household cost base	16%	JR11		n/a
Proportion active non-household cost base	6%	JR11 & Cave Review		n/a
Proportion wholesale cost base of "in house" companies	78%	JR11		n/a
Cost Assumptions				
WICS: setup costs (£m)	5.7	WICS Audit Trail		2009/10
WICS: on-going costs (£m)	1.2	WICS Audit Trail		2009/10

Regulatory setup costs: uplift of WICS - Legal separation	200%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory setup costs: uplift of WICS - Functional separation	200%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory setup costs: uplift of WICS - Voluntary separation	300%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory setup costs: uplift of WICS - WSL separation	100%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory on-going costs: uplift of WICS - Legal separation	200%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory on-going costs: uplift of WICS - Functional separation	300%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory on-going costs: uplift of WICS - Voluntary separation	400%	Defra, Ofwat, Cave, Waddams	n/a
Regulatory on-going costs: uplift of WICS - WSL separation	400%	Defra, Ofwat, Cave, Waddams	n/a
CMA on-going costs (£m)	2.5	WICS Audit Trail	2009/10
CMA setup costs (£m)	3.2	WICS Audit Trail	2009/10
CMA on-going costs - uplift factor	200%	Cave Review	n/a
CMA setup costs - uplift factor	200%	Cave Review	n/a
Acquisition costs (% of non-household retail)	5%	Cave Review	n/a
Water Companies Costs (Separation & costs of competition)			
<i>Setup Unit Costs</i>			
WaSCs (£m)	13.6	WICS Audit Trail	2009/10
Uplift factor for England	200%	Ofwat	n/a
WoCs- 1m customers (£m)	1.8225	E&Y Report	2009
WoCs- 100k customers (£m)	0.8075	E&Y Report	2009
<i>On-going Unit Costs</i>			
WaSCs (£m)	4.6	Cave Review / WICS	2007/08
WoCs- 1m customers (£m)	0.8	E&Y Report	2009
WoCs- 100k customers (£m)	0.5	E&Y Report	2009
Wage Rate - administration (£)	19,597	UK National Statistics	2009
Uplift for insurance and other overheads	100%	Defra assumption	n/a
<i>Additional Employees - WaSCs</i>			
Additional Employees - WoCs - 1m customers	5.00	Defra assumption	n/a
Additional Employees - WoCs - 100k customers	2.00	Defra assumption	n/a
Additional Employees - WoCs - 100k customers	1.00	Defra assumption	n/a

Financing costs					
Bonds - One-off fees	16	MRFF, Ofwat, UK Water assumptions			2009
Bonds - Recurring coupon change costs	16	MRFF, Ofwat, UK Water assumptions			2009
Assumed average bond lives (PR09)	20	Ofwat PR09			n/a
Leases - One-off fees	-	MRFF, Ofwat, UK Water assumptions			2009
Leases - Recurring coupon change costs	3	MRFF, Ofwat, UK Water assumptions			2009
Assumed average lease lives (PR09)	30	MRFF, Ofwat, UK Water assumptions			n/a
Swaps - One-off fees	217	MRFF, Ofwat, UK Water assumptions			2009
Swaps - Recurring coupon change costs	-	MRFF, Ofwat, UK Water assumptions			2009
Assumed average swap lives (PR09)	30	MRFF, Ofwat, UK Water assumptions			n/a
Fees - finance	24	MRFF, Ofwat, UK Water assumptions			2009
Benefit Assumptions					
Gains from regulation	1%	Ofwat			n/a
Abatement factor - Legal Separation	100%	Defra, Ofwat, Cave, Waddams			n/a
Abatement factor - Functional Separation	75%	Defra, Ofwat, Cave, Waddams			n/a
Abatement factor - WSL only	25%	Defra, Ofwat, Cave, Waddams			n/a
Voluntary - incremental abatement	3.3%	Defra, Ofwat, Cave, Waddams			n/a
Voluntary - separation starting point	50%	Defra, Ofwat, Cave, Waddams, Oxera			n/a
Voluntary - separation end point	100.0%	Defra, Ofwat, Cave, Waddams			n/a
Bundling efficiencies					
Cave Review central case - bundling (£)	15	Cave Review			2009
% of customers receiving	10%	Cave Review			n/a
Total customer base	995,100	JR11			n/a
Years to achieve bundling savings	7	Cave Review			n/a

Efficiencies				
Contestable - Productive efficiencies (one-off)	10%	Cave Review		n/a
Contestable - Dynamic efficiencies (ongoing)	1.50%	Cave Review		n/a
Household spillover	25%	Cave Review		n/a
Wholesale opex savings	0.50%	Cave Review		n/a
Water Savings				
Water savings (ML) - contestable	2%	WICS / Efra Committee		n/a
Profile of water saving	5 years	Ofwat		n/a
LRMC - Midpoint (£/MI)	400	Walker Review		2009
Other				
Discount Rate	3.50%	HM Treasury Green Book		n/a
Water CO2 intensity factor (TCO2/ML)	0.34	Ofwat		n/a
Sewerage CO2 intensity factor (TCO2/ML)	0.35	Ofwat		n/a

Post Implementation Review

- 394 As primary legislation the Water Bill will be subject to Post Legislative Review four years after the relevant Act receives royal assent. This IA envisages that a Post Implementation Review of these changes will be carried out beginning in April 2017 with the following objectives.
- To consider whether the policy has achieved its objectives in terms of facilitating retail market entry in the water sector and meaningful competition with benefits being passed on to customers- If the policy has failed to achieve its objectives then the PIR evaluation should seek to identify why this has been the case and to suggest potential remedies to ensure that the objectives are met going forward.
 - To consider the rationale for intervention and the extent to which it is still valid at that point- If there have been substantial changes by the time of the PIR then it may be that Government or regulatory intervention is no longer needed or needed in some other form.
 - To identify the extent to which the costs and benefits assumed in this IA materialised as envisaged and to consider any other unintended consequences of the changes that have arisen. In particular, to focus on key issues such as verifying the abatement assumptions, the 2% water savings assumption and the 25% household spill over assumption.
 - To identify any other learning that could help either the operation of the market or other policy decisions of this nature in the future.
- 395 The PIR evaluation will be carried out by Ofwat, the independent economic regulator of the water and sewerage sectors in England and Wales. Ofwat have already indicated that they intend to carry out such an exercise, should these reforms be taken forward in the future.

“33. Should Ofwat be mandated to periodically evaluate innovation or competition in the water sector, or both?”

*There is no need to mandate us to conduct a post implementation review of these reforms. We will report on this anyway as part of our ongoing monitoring of the water and sewerage sectors and relevant market developments. We have already completed and published different reviews on the scope for greater competition in the sectors. **Ofwat, 2010, Response to the UK and Welsh Government’s consultation on the implementation of the Cave Review**^[1]*

- 396 To facilitate the PIR The Government will ask Ofwat through revised Social and Environmental Guidance to develop an evaluation plan which will identify the intervention logic, the monitoring needs (above those already collected from current sources) and indicators which can be used to measure the extent of change. This evaluation plan will be developed by the end of 2012 and is expected to cover a range of evidence including:

[1] http://www.ofwat.gov.uk/competition/review/res_ofw_091216_reviewcave.pdf

- Interviews or market research with market participants including upstream entrants and incumbents, retailers, any switching or settlement arrangements, end customers and other relevant stakeholders such as the Environment Agency, the Drinking Water Inspectorate, NGO's, etc who have been involved in or impacted upon by the market arrangements. The purpose of the reform is to benefit end customers rather than entrants per se, but the views of all these stakeholders are relevant to assessing how the market is functioning, how it is likely to develop and the benefits both in terms of end customers and also in terms of the process for entry and any deregulatory or admin burden reduction savings resulting from a streamlined application process.
- The amount of market entry and competition both in terms of the number of entrants and the volume of upstream water and sewerage services provided by them as a proportion of the whole based on any publicly available information or data that could be sourced from the market operator.
- Cost and price impacts based on Ofwat price determinations or other publicly available information that is not deemed to be commercially sensitive.

397 These sources would be used to consider a range of questions to meet the objectives of the Post Implementation Review (see above).

398 The date of April 2017 has been chosen based on the assumptions that:

- The UK Government's Water White Paper is followed up by legislation in the second session of Parliament.
- The implementation of that legislation is phased to coincide with the beginning of the next Price Control period (currently planned for 2015-2020), allowing for these upstream licences to be available from April 2015.

399 This would allow for the review to be undertaken once the market has been in operation for two years. Although it can take time for new markets to develop, we should be able to discern after two years how the market is functioning and how it is likely to develop. Ofwat would not wait for the PIR if there were obvious problems in the market that needed to be remedied before April 2017.

Specific impact tests

Competition test

400 This proposal does not limit the number or range of suppliers, nor does it reduce ability or incentives to compete. Instead, the option encourages and provides greater potential for retail competition.

Small medium businesses assessment

401 A single micro business - Cholderton and District Water Company Ltd - is affected by the proposals in this IA. Cholderton has four employees and serves 762 customers of which 22 (or 3%) are non-household customers. The total number of non-household customers in England is 1,146,200 hence Cholderton's share of this market is extremely small - significantly lower than 1% (at around 0.002%).

402 In terms of industry turnover, the 18 incumbent companies generate a total turnover of £11,331 million in 2013/14 (ranging from the next largest company above Cholderton with a turnover of £37 million and the largest with £1,943 million). Cholderton has a significantly lower turnover of only £192,389 representing around 1.7% of total turnover.

403 Given the extremely small size of Cholderton, it is evident that it would incur significantly lower costs relative to other water companies. Furthermore, these lower costs can be mitigated or avoided by Cholderton because the decision to separate its non-household retail business is voluntary. Hence this flexibility of choice allows Cholderton to make a decision which best reflects their commercial position (i.e. a choice that is net beneficial for them).

404 Alternative, more targeted approaches to regulating the retail market (such as a threshold at which incumbents would not be required to participate in the competitive market) would undermine our objective of providing all non-household customers the choice of switching supplier. This would create an uneven playing field with the likelihood of market distortions increasing over time and Cholderton's non-household customers would find themselves in the position of being able to switch their sewerage service provider but not their water supplier (Wessex Water is the incumbent sewerage company for the Cholderton area). Micro businesses would also have weaker incentives to minimise costs through the pursuit of productive and dynamic efficiency savings, thereby forgoing important benefits from competition.

405 The evidence base for this IA is largely based on impacts at the industry level, drawing on the performance information of main 18 incumbent companies. Undertaking an assessment of impacts for an atypical, individual company such as Cholderton with significantly lower market share/number of customers would be disproportionate, particularly since Ofwat regulates it in a different way to all other water companies due its exceptionally small size²⁵⁷. As a result, there is limited information available to undertake a specific assessment of impacts. These factors taken together make it challenging to reliably apportion the industry

²⁵⁷ Ofwat does not currently require Cholderton to have separate retail and wholesale price limits on the same basis as all the other regulated water companies. See http://www.ofwat.gov.uk/industrystructure/licences/prs_web20150313chl_lic.pdf.

level costs (and benefits) to Cholderton. We have, however, undertaken a qualitative assessment of relevant costs that might be incurred by Cholderton, as follows:

- **Incumbent set up/ongoing costs:** The costs of separation vary by company size with adjustments applied to reflect the likelihood of consolidation, as indicated in Table 8, page 64. A 'small' company is represented in this table as having 100,000 customers (see footnote 172) with a reduction of around 50% applied to assumed setup/ongoing costs relative to larger companies. It is evident that Cholderton's extremely low number of customers implies that significantly lower costs (in proportion to the size of its very small customer base of 762) would be incurred, relative to other incumbent companies. These costs would be even lower if Cholderton decides to sell its non-household business (i.e. transfer its non-household retail customers to a licensee) or remain in the market under current, default arrangements.²⁵⁸
- **Finance costs:** these costs will be incurred by geared companies with financial covenants, should they choose to legally separate. Cholderton would not incur these costs as it is a small, equity funded business (see Table 27).
- **Acquisition and retention costs.** These costs are small compared to setup and financing costs. Cholderton would incur these small costs in direct proportion to their 22 existing non-household customers and any newly acquired customers, should they choose to remain in the market. These would be significantly lower than the costs incurred by other incumbent companies which have a far greater number of customers.

Wider environmental issues

406 By allowing firms to focus on their core areas of competence this option may result in better delivery of water efficiency advice by dedicated retailers who choose to be retailers rather than become retailers unwillingly. Further upstream, better environmental outcomes may result from more efficient provision of a range of upstream services as retailers challenge on behalf of their customers.

Greenhouse gas assessment

407 The use of electricity in water pumping and treatment is a source of carbon emissions. These reforms may result in greenhouse gas reductions if these proposals encourage greater upstream pressure on incumbents to be more efficient.

Health impact and well being

408 The policy proposal does not have any impact on health except insofar as water quality issues are concerned. These are addressed by DWI oversight and provision is already included in the existing WSL regime.

Human rights

409 Reforming the current WSL regime to allow new entrants to use water incumbents' supply networks would be consistent with the existing level of

²⁵⁸ In this scenario, Cholderton would not be able to compete for non-household customers.

interference of water incumbents' possessions under the terms of Article 1, Protocol 1 of the European Convention on Human Rights (ECHR) as the original introduction of the WSL regime was intended to be.

410 This interference would constitute a control on the use of the incumbents' property, rather than a deprivation.

411 The Government believes, however, that the WSL regime with these modifications would continue to be compatible with incumbents' property rights. The aim of these modifications to the WSL regime is to enhance competition in the supply of water to non-household customers.

412 It would be proportionate and strike a fair balance between the interests of water incumbents and the general interest. The Government therefore believes that the extension of the WSL regime to sewerage would be compatible with sewerage incumbents' property rights.

Justice system

413 The policy proposal does not have any impacts.

Rural proofing

414 There is unlikely to be an inherent bias for or against rural areas in this proposal as any regional impacts are driven by factors that are not specific to rural conditions. Therefore a given rural area may experience a positive impact, a negative impact or a neutral impact from this proposal, but any negative impacts would be unlikely to be significant, as none of the identified costs is high.

Sustainable development

415 This option should support sustainable development by favouring more efficient provision of water and sewerage services. If developed soundly, only entrants capable of providing services economically should participate in the market, and should realise productivity gains not currently realised, leading to improved financial incomes, including lower bills for consumers. Environmental concerns can be managed through quality regulation (as happens now) and social concerns can be managed by ensuring appropriate tariff arrangements are in place (which also happens now). This option is likely to generate positive environmental outcomes through more efficient use of water and correspondingly less/delayed need for carbon intensive upstream investment solutions.

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Annex B: Anti-Competitive Discrimination and Separation

416 The overarching theme of the Cave Review's retail recommendations is that competition, as opposed to regulation, would best deliver improved outcomes for consumers. As the Review noted:

..head-to-head competition among suppliers is generally regarded as the most effective way to deliver lower prices, more choice and better service to customers. Under such conditions, the process of rivalry between suppliers for customers forces companies to increase efficiency and produce at a lower cost, to find and use more appropriate combination of inputs, to charge for services in a way which customers find more acceptable and to innovate.²⁵⁹

417 Given that the water sector is dominated by vertically integrated incumbents, facilitating effective retail competition will be dependent on ensuring that all retailers (i.e. entrants and incumbents alike) can compete on a level playing field.

418 For this reason a key area of concern for both the Cave Review and this IA is the scope for anti-competitive discrimination in the retail market and the remedies that may be required to address that discrimination problem. In the Government's consultation on the implementation of the Cave Review's proposals the key area of concern for stakeholders, and in particular existing water companies, was the Review's remedy to address discrimination - 'legal' separation of incumbent companies' retail operations.

419 In light of the importance attached to this issue, we have set out in this chapter a full description of this problem below, including:

- What is anti-competitive discrimination?
- Is anti-competitive discrimination a likely problem in the water sector?
- What tools exist currently to police the discrimination problem and are they sufficient?
- What can we learn about the discrimination problem from other sectors?
- What, if any, additional remedies are likely to be required as a proportionate response to the problem?
- What should a 'functional' or 'legal' separation model require?
- What should an 'optional' separation model require?
- How should separation be implemented?

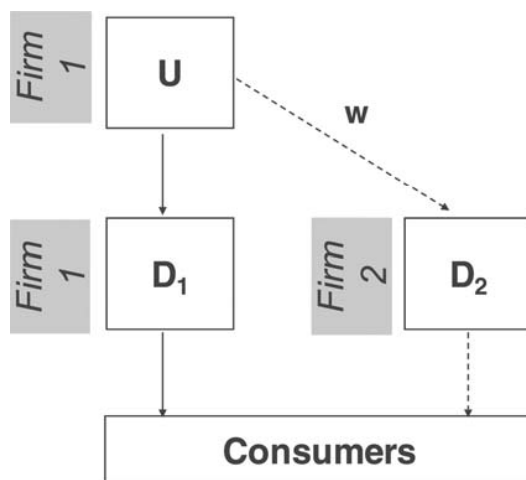
What is anti-competitive discrimination?

420 In a number of markets, vertically integrated firms will often sell their upstream output to downstream competitors. However, when there is no alternative upstream supplier (i.e. the integrated firm dominates or monopolises the market), downstream competitors are required to buy inputs from their vertically integrated

²⁵⁹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Interim Report, 2009, p. 6. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>

competitor. This is represented graphically below, whereby Firm 2 is required to purchase the upstream output U from its competitor, the vertically integrated firm (Firm 1).

Figure 4: Vertical integration with supply of wholesale input (w) to competitor.²⁶⁰



421 The problem with the scenario illustrated above is that the vertically integrated firm could use its market power to increase the costs incurred by its downstream competitors, thereby preventing effective competition. This could be achieved by:

- charging downstream competitors a comparatively higher wholesale price, ie margin squeeze – this is referred to as price discrimination; or
- imposing discriminatory costs on competitors through the sub-optimal delivery of the wholesale service – referred to as non-price discrimination.

422 The above scenario arises when a vertically integrated firm has market power in one market segment that is required to deliver a good/service. If this condition holds, it seems likely that a firm would use its market power to try and dampen competition for its downstream business by increasing the costs of its rivals.

423 In a paper on the incentive for non-price discrimination, Nicholas Economides found that that a monopolist in the essential input market has an incentive to practice non-price discrimination against its downstream rivals.²⁶¹ Specifically the monopolist would be incentivised to increase its rival's costs until they are driven out of business. This would lead to a loss of welfare in the short term and potentially larger welfare losses in the medium and long term.²⁶²

424 There are likely to be a number of sectors that exhibit the characteristics that give rise to this discrimination problem. The most common would appear to be regulated networks like energy, telecommunications and water.

425 In these sectors, the commodity or service being supplied is delivered through a network that is characterised as a natural monopoly.²⁶³ The result is that there is

²⁶⁰ Boaz Moselle and David Black, *Vertical Separation as an Appropriate Remedy*, Journal of European Competition Law & Practice, Vol 2 (1), pp. 84-90. <http://jeclap.oxfordjournals.org/content/2/1/84.abstract>

²⁶¹ N, Economides, The incentive for non-price discrimination by an input monopolist, International Journal of Industrial Organisation, 16 (1998), p. 273. http://www.stern.nyu.edu/networks/Economides_The_Incentive_for_Non-Price_Discrimination.pdf

²⁶² *Ibid* p. 278.

²⁶³ This means that a single firm can generally serve the market more efficiently than multiple firms due to the presence of large economies of scale.

generally no competition for the provision of the network element. However, given that the upstream and downstream markets are not characterised by natural monopoly elements, competition is often introduced. The discriminatory problem can therefore arise if the owner of the network element is also competing in the upstream or downstream market.

- 426 For this reason entrants seeking to compete in these markets will require access to those network services on comparable terms to the incumbents own business. If firms are unable to achieve access on comparable terms, then effective competition would not develop.
- 427 It is also important to note that discrimination is a problem to the extent that it inhibits entry into the market by **potential** competitors. In that respect the perception of discrimination can have the same effect on competition as actual discrimination. If a potential entrant perceives there to be a high risk of discrimination then they may choose not to enter the market, thereby leading to less entry and competition in the market and correspondingly less benefit.
- 428 This places a high premium on dealing with discrimination issues at the point of market opening and dealing with them expediently, as if the perception of discrimination is allowed to flourish or if the issue is seen as creating cost and delay in entry this can have a lasting effect on the level of entry and competition in a market.

Is anti-competitive discrimination a likely problem in the water sector?

The likelihood of the discrimination problem being manifest in water retailing arises from firstly an incentive to discriminate and then from an opportunity to do so. With the latter point encompassing both the incumbents means to undertake anti-competitive discrimination and the economic regulators ability to identify and stop that discrimination expediently.

If the 'retail' and 'wholesale' elements of the incumbent water company remain vertically integrated then there are some strong financial incentives for the incumbent company to undertake anti-competitive discrimination.

- ***The incumbent will most likely seek to limit any loss of market share or revenue as a result of other retailers taking their customers.*** Incumbents will lose any revenues that they currently gain from providing retail services to non-household customers in their own appointed areas where those customers choose to switch to an alternative provider. If incumbent companies can inhibit or frustrate entry to the point where those customers do not choose to switch to an alternative retailer then they will be able to maintain their revenue and market share.
- ***The incumbent will most likely have remuneration policies based on the performance of the vertically integrated business.*** Under the current 'vertically integrated' structure, it is reasonable to assume that the remuneration policies of the businesses will be based on the financial performance of the overall business, rather than the 'wholesale' and 'retail' elements separately. This is likely to encourage staff to focus on the

financial performance of the vertically integrated business rather than the wholesale and retail elements of it. This was, for example, the rationale behind undertakings in the functional separation of BT to ensure that remuneration policies did not reflect this structure.

There are similarly a number of characteristics about the sector that imply a strong opportunity for discrimination to occur.

- ***The low level of transparency around the costs and margins associated with 'wholesale' and 'retail' activities and services in the sectors implies both an increased opportunity to discriminate and limited transparency through which to identify discrimination.*** The current and historic regulation of water and sewerage services in England has taken the form of a single, vertically integrated price control. Existing regulatory accounts therefore follow a similar approach with limited information available on the retail/wholesale charging boundary. From 2010, companies have begun reporting disaggregated costs, including the costs associated with retail activities, as part of their June return submissions²⁶⁴. However, this information does not necessarily reflect the final boundary that may be drawn around what represents 'retail' services for a competitive market, it may change. Furthermore, these are reported costs against activities rather than revenues against services, including margins. The latter point is particularly important since to ensure that prices paid between the wholesale incumbent and the retail entrant are comparable to the prices paid between the integrated incumbent's wholesale and retail operations a clear charging boundary is needed. This should include what services are being purchased, what the costs and margins are for providing those services and other terms, including the credit terms. Without this transparency not only is it significantly easier for incumbents to price discriminate, it is also much more difficult for Ofwat to spot and police that discrimination.
- ***The 'vertically integrated' nature of the legislation and licensing regime covering the water and sewerage sectors in England make it more likely that systems and processes will be vertically integrated, increasing the opportunity for discrimination.*** The legislation and licensing regime in the water sector effectively prohibits any licensed company from not providing a 'source to tap' service²⁶⁵. This is in contrast to some other sectors, where for example licensing and legislation are modularised and separate licences include 'network' and 'retailing' activities. For example, in the energy sector legislation and licensing take this more modular form and it is therefore less likely (although) possible that business processes will be vertically integrated.

Figure 5: Modular licensing and its impact on separation- the merger of Midlands electricity and National Power

²⁶⁴ Ofwat, Accounting Separation. <http://www.ofwat.gov.uk/future/monopolies/separation/>

²⁶⁵ The legislation and licensing regime for water (IoA) applies to vertically integrated incumbents. Whilst this does not prohibit companies from outsourcing or subcontracting these services to other organisations they have obligations in the licence to ensure that those services are undertaken and these obligations cannot be passed on to other providers.

In 1999 Midlands Electricity, a Public Electricity Supply (PES) or 'retail' business, sought to sell its entire retail function to National Power. At that time it was possible to transfer the second-tier (services out of area) and contract customers (large users) businesses which were non regulated businesses but it was not possible for Midlands to surrender or delegate its statutory functions with respect to the first-tier supply business (regulated customers within the company's appointed area).²⁶⁶

In an attempt to work around this Offer (Office of the Director General for Electricity Services, now Ofgem) restructured Midlands' PES licence into clear retail and distribution sections with the intention of better facilitating the company in indemnifying itself in respect of particular obligations. By making the 'retail obligations' clear, the electricity company could more easily contract against them although, to be clear, it was not able to transfer the obligations, only, in essence, the liabilities. Nor would it have been possible for the regulator to enforce those obligations against Npower any more that it could have intervened against any subcontractor.

In this case the regulatory model prevented the business from moving away from an integrated structure even though management had made an active decision to do so.

429 The implication from vertically integrated legislation and licenses is therefore that similarly integrated business processes are more likely and that the opportunity for discrimination (particularly on non-price terms) is therefore more likely. In fact some recent reports imply that such integration in the sectors is the most efficient form of production²⁶⁷ under the current regulatory model, excluding any additional efficiency savings that might arise from competition over and above the existing regulation of retail.

430 However, we should also note that in the case of retail competition in the water and sewerage sectors, there are some examples where companies have sought to adopt more disaggregated structures for the delivery of water and sewerage retail services (albeit still within the vertically integrated licence and legislation). A number of companies have either outsourced or separated parts of their retail activities, with the aim of gaining efficiencies.

- In 2002, Bristol Water and Wessex Water established a legally separate joint venture to provide billing services.
- Yorkshire Water has legally separated its customer services division to form the company 'Loop', which provides the majority of Yorkshire's retail services.
- South East Water outsources parts of its retail activities to Orchestra Bristol.
- South West Water outsources parts of its retail activities to Accenture.
- In Wales, Dŵr Cymru outsources its customer services functions to Veolia Water.

431 In these instances, where different forms and degrees of separation of business processes have occurred, we would expect the risks from discrimination to

²⁶⁶ In the event National Power agreed to act as sub-contractor to Midlands and in support of this Offer restructured the licence of Midlands into separate wholesale and retail sections so that it was clear who would be responsible for what and thus minimise disputes. See Offer consultation:

<http://www.ofgem.gov.uk/About%20us/enforcement/mergers/off/Documents1/mergersandaquisitions%2078.pdf>

²⁶⁷ ICS consulting, *In Whose Hands*, 2011. <http://www.unitedutilities.com/Documents/InWhoseHandsReport.pdf>

therefore be different and perhaps lower to those instances where retailing operations are still undertaken 'in-house'. This also implies that any remedies to the discrimination problem are best introduced flexibly if possible, reflecting the different levels of risk across the sector.

- 432 Finally, the vertically integrated licence structure in comparison to the WSL retail licensing regime also creates an additional barrier to ensuring a level playing field for competition as it places different obligations on entrants from incumbents (and indeed different obligations between incumbents given how the licences have developed²⁶⁸).

What tools exist currently to police the discrimination problem and are they sufficient?

- 433 There are 'ex post' tools through which Ofwat can use to police discrimination problems, these tools include:

- **Licence modifications to police discrimination-** Ofwat can amend licences and introduce new conditions on the companies only with their agreement. Without this, Ofwat would be required to refer the matter to the Competition Commission in order to impose new obligations on those companies found to be discriminating. However, in practise the speed at which such obligations could be introduced would most likely be very slow, taking a number of years and the ability to enforce these obligations would also require time-consuming ex post investigations.
- **Powers under the Competition Act 1998 (CA98)-** Ofwat also has concurrent powers under the CA98 through which it can take action specifically against such anti-competitive discrimination. However, again, this action is slow and challenging in the absence of a clear charging boundary.

- 434 The discrimination problem described above is a systemic problem arising throughout the industry whereas these tools could be described as symptomatic responses to the *effects* of discrimination. Using ex post tools to intervene is complex both because it directly affects only a particular company and situation and because even mild forms of discrimination (such as slow response to enquiries) which may be difficult to prove could materially and irreparably damage the market. Overall this suggests that the powers to police anti-competitive discrimination in the absence of separation or some alternative remedy are more limited.

What can we learn about the discrimination problem from other sectors?

- 435 There are several other sectors in which similar (although not identical) concerns have arisen in relation to anti-competitive discrimination. From these other sectors certain lessons emerge which are relevant to understanding the scale of the likely discrimination problem arising from retail competition in water and sewerage services in England.

²⁶⁸ Defra, Review of Ofwat and consumer representation in the water sector, 2011. <http://www.defra.gov.uk/publications/2011/07/06/pb13587-ofwat-review-2011/>

436 In particular, the extent of natural monopoly is higher and the rate of technological change lower in water compared to other sectors. We can expect the water and sewerage network to be more expensive to duplicate relative to the price of the service than most if not all other regulated utility sectors. We also know, for example from the Cave Review, that the rate of technological change and innovation in water is lower²⁶⁹. In sectors such as telecoms it may be cost effective to duplicate the network in some instances and the rate of technological change and innovation is higher, both of these facts imply a greater opportunity to work around the network if discrimination occurs.

What, if any, additional remedies are likely to be required as a proportionate response to the problem?

437 We have established that vertically integrated companies have both the opportunity and the incentive to discriminate, that the discrimination risk may be greater in water than some other sectors and that the existing tools to both identify and police discrimination are likely to be inadequate. Now we must establish what represents a proportionate response to the discrimination risk, following the principles of better regulation.²⁷⁰

438 This involves considering:

- the mechanisms through which companies can undertake anti-competitive discrimination;
- the possible remedies or controls to address those mechanisms including remedies that do not involve separation and the various different forms of separation; and
- the other sectors where these separation remedies have been introduced.

How can companies discriminate?

439 As previously stated, discrimination can take place through price and non-price terms. The former, in simple terms, relates to the transparency of the charging boundary between wholesale and retail, whilst the latter covers a very long list of potential ways through which incumbents can disrupt or inhibit the service provided between the wholesaler and a retail entrant compared to the service offered by the wholesaler to its own integrated retail business.

440 There are substantial opportunities in both price and non-price terms to discriminate as set out in the table below.

Table 22: Overview of mechanisms for price and non-price discrimination	
Form of anti-competitive discrimination	Mechanism for description
Price discrimination	Price discrimination in this context would mean that incumbents offered wholesale services to

²⁶⁹ Professor Martin Cave, Independent Review of Competition and Innovation in Water Markets: Final Report, 2009, p. 6. <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

²⁷⁰ The Better Regulation Executive defines the five principles of good regulation as: (i) transparent; (ii) accountable; (iii) proportionate; (iv) consistent; and (v) targeted. <http://www.bis.gov.uk/bre>

	entrant retailers at a materially higher price than the equivalent price it, in effect, provides services to its retail arm. The later 'price' is currently not transparent so identifying this form of discrimination would depend upon some form of quantitative analysis of the incumbent's costs, in for example a margin squeeze context.
Non-price discrimination	Non-price discrimination in this context could include a range of features from obvious differences, such as offering lower water pressure to entrants, to less obvious differences, such as responding more slowly to requests from entrants than would be the case for requests from the integrated retail division. Identification of this type of discrimination is more complex because it would depend upon a qualitative comparison of internal and sometimes informal processes with the contractual terms agreed with entrants.

441 Table 22 suggests that, whilst there are a number of mechanisms for 'price' discrimination, it is 'non-price' discrimination which generally provides the greatest requirement for the separation of business processes.

What additional remedies can be introduced to address the discrimination risk?

Non-separation remedies

442 Separation is not the only remedy which could be introduced to address an anti-competitive discrimination problem and indeed as a response the various forms of separation represent the more interventionist end of the spectrum. There are alternative responses to separation which are largely reflected in the 'ex-post' tools that Ofwat has to police discrimination, including the introduction of licence obligations and or enhancing Ofwat's existing powers under the Competition Act. Even if such remedies were introduced, on their own they could not be expected to address the discrimination problem, they would not increase the transparency of information to address price discrimination concerns and they would still need to be enforced using slow ex-post enforcement processes.

Separation remedies

443 There is a continuum of vertical separation options, these include more 'light touch' forms that can be introduced by the economic regulator alone, including more substantial forms of accounting separation than we have in the sector currently and separate price controls. Beyond these forms of separation there are a range of significantly more intrusive forms of separation that can only be given reasonable effect through legislation from Government.

One description of the different forms of separation is provided by Martin Cave's 'six degrees of separation'²⁷¹.

Figure 6: 'Six degrees of separation'

Degree	Separation option	Description
6	Ownership separation	As 5 but with different ownership.
5	Legal separation (separate legal entities with the same ownership)	As 4 but with a separate non-executive board.
4	Functional separation with localised incentives and/or separate governance arrangements	As 3 plus different managers' incentives and different governance.
3	Functional separation	Physical separation of businesses and new business practices, e.g. new office location, new brand, separate OSS, separate management info systems. Use of identical processes with both internal and external customers in way that can be verified transparently
2	Virtual separation	First form of equivalence of access as internal and external customers are treated equally. No physical separation of the businesses.
1	Creation of a wholesale division	The incumbent has a separate wholesale division which supplies upstream inputs to competitors. The retail arm still has a preferential way to access

444 This general, incremental description is for illustrative purposes only because in practice the particular solution in the case of retail competition for water and sewerage services will depend on the incentives and opportunities for anti-competitive discrimination, the mechanisms through which discrimination can occur and the particular circumstances of each of the regionally appointed water companies' retail operations. Nevertheless at its heart, the key differences in a water and sewerage 'retail' context between the main types of separation are as follows:

- **Accounting separation** - which Martin Cave marked as '0' in his continuum - allows vertically integrated companies to remain, but demands that the costs and potentially revenues attributable to wholesale and retail services are made transparent through the introduction of separate regulatory accounts. Importantly, the introduction of separate revenues to wholesale and retail activities would make a significant impact on price discrimination issues and would represent a step beyond the existing accounting separation work. The separation of the existing price control into retail and wholesale controls, which is currently being considered by Ofwat through its Future Price Limits work, would also require the separation of regulatory accounts and would similarly help to address issues of price discrimination. Critically, these softer forms of separation will therefore not address the non-price issues associated with the physical supply of wholesale services to retail entrants.
- **Licence separation** does not appear on the simple diagram of Martin Cave's continuum but nevertheless involves a more light touch form of separation. Splitting the licence into retail and wholesale elements does not prohibit the

²⁷¹ Martin E. Cave, *Six Degrees of Separation Operational Separation as a Remedy in European Telecommunications Regulation*, Communications & Strategies, No. 64, p. 89, 4th Quarter 2006. <http://www.med.govt.nz/upload/45612/cave-six-degrees-of-separation.pdf>

same vertically integrated company from providing both sets of services, nor does it make any stipulations about the accounts or business processes attached to those services. Splitting the licence therefore does not prevent any price or non-price discrimination but it does help to introduce a level playing field by ensuring the incumbent retailers and entrant retailers hold similar licences with similar obligations. Similarly, as previously described, it would allow companies to divest themselves of their retail or wholesale operations if they wished to cease from undertaking those services in the future.

- Creating a **separate wholesale division** which supplies inputs to competitors or **virtual separation** which supplements this with additional licence obligations do not constitute functional separation and instead both represent a slightly stronger form of separation than simply splitting accounts or price controls. They therefore don't necessarily provide any significantly stronger protection from non-price discrimination than accounting separation. Instead the company may continue to supply its retail division through different systems or process than it supplies entrant retailers and its retail arm may have access to preferential information and advanced notification of new wholesale products- all of which implies little advantage of this option over and above softer forms of separation.
- **Functional separation** in this context would include a complete separation of the wholesale and retail operations and ensuring that both entrant retailers and the incumbent (now functionally separated) retailers received wholesale services through the same processes and systems. When combined with the stronger forms or accounting or price control separation previously described, this option appears to begin to address both the price and non-price discrimination risks in water retailing. Importantly, Martin Cave splits functional separation into two options with the more significant option also including the separation of management and staff remuneration policies, therefore addressing not only the opportunity to discriminate but also the incentive.
- **Legal separation** in this context would require that wholesale and retail activities are separated into different companies, but common ownership is allowed. Importantly, this includes all the elements under the stronger functional separation option and does not simply allow for the setting up of a separate legal 'shell' entity, whilst allowing retail activities to remain entirely vertically integrated. The key difference between this and functional separation therefore is that this also requires the transfer of the ownership of assets to a separate legal entity. Importantly this separation also helps to provide more 'natural' controls against both the incentive and opportunity for discrimination because the new retail legal entity would be subject to generally applicable company law. This legal form of separation is the closest form to the separation that was adopted in Scotland. Even under this form of separation there may still be some incentive to discriminate by virtue of the shared ownership of wholesale and retail activities.
- **Ownership separation** in this context would represent separating wholesale and retail activities into two or more entirely separate companies with different owners. This is the eventual form of separation that has been adopted for energy networks and must represent the most effective remedy for the anti-competitive

discrimination problem. However, it is also the most intrusive, forcing the sale or divestment of certain activities and services.

What can we learn from other sectors in relation to the separation remedies?

445 There are a range of precedents from other sectors from which some general observations can be made in the context of the form and nature of retail separation as a remedy in the water sector. There are differences between these sectors and the water sector and the parts of the value chain that have been separated are also not consistent.

446 Across the regulated sectors in the UK and in the European energy markets,²⁷² regulators and Governments have adopted stronger forms of separation to support the competitive regimes. This is reflected by the fact that ownership separation has already been introduced in the GB electricity and gas markets, whilst in Europe the Commission is tending towards ownership separation (see below). The exception to this trend is the telecommunications sector, whereby functional separation has been implemented to support the competitive regime. In addition no form of vertical separation is currently applied in the postal sector, although Postcomm is seeking to introduce accounting separation.²⁷³

Table 23: Separation precedents from other sectors²⁷⁴

	Model of separation adopted			
	Accounting Separation	Functional Separation	Legal Separation	Ownership Separation
Electricity GB ²⁷⁵				
Gas GB				
Water Scotland				
EU Gas ²⁷⁶				
EU Electricity				
UK Telecoms				
UK Post ²⁷⁷				

²⁷² Energy sectors appear to have the most in common with the water sector on account of the similar network characteristics.

²⁷³ Postcomm is currently developing a new regulatory framework for the postal sector that will be based on the principles of cost transparency and accounting separation. This is consistent with the recommendations of the Independent Review of the UK Postal Sector (Hooper Review). http://www.psc.gov.uk/consultations/may_2010_consultation

²⁷⁴ Note that this table does not include water in Europe or the UK as (with the exception of Scotland) there is no effective competition and therefore no form separation, hence the vertically integrated structure persists.

²⁷⁵ Different parts of the electricity sector are subject to different constraints; the transmission network is separated in ownership terms from other participants whilst the distribution networks are, as a minimum, separate in at least legal terms.

²⁷⁶ Similar to the UK different rules apply to transmission and distribution networks. The latter is subject to legal separation whilst the former is required to establish the separately owned "Independent System Operator" described earlier in this note.

Figure 7: The increasing trend towards stronger forms of separation as a remedy to anti-competitive discrimination: European electricity and gas

The first European electricity and gas directives introduced a third party access regime designed to introduce competition into the energy sector (and explicitly to encourage trading across national boundaries). The electricity directive effectively mandated the 'functional separation' of the transmission network from other integrated activities while the gas directive stopped at an 'accounting separation' remedy. These examples focussed on the separation of the transmission network from the rest, as opposed to the separation of retail activities which is relevant in a water context. The third party access regime that was introduced underperformed due to the existence of anti-competitive discrimination at both ends of the network, including discrimination favouring the incumbent's own generation and retail businesses over entrants in both parts of the value chain.

The European Commission then responded to this problem with two new directives, the most significant element of which was the introduction of 'legal separation' of the transmission and distribution networks for both gas and electricity. One effect of this was to separate the retail market from the network and allow greater and fairer access to the network from new entrants.

More recently the 'Third package' has been introduced by the Commission which goes even further, in some cases requiring the complete divestment of networks from generation and supply (retail) activities. This effectively amounts to 'ownership separation'.

- 447 The above examples would tend to suggest that, when faced with the anti-discrimination problem, Government and regulators have tended to choose 'legal' separation. There is also evidence of softer forms of separation being adopted only for Government to later return to legislation to adopt stronger forms of separation because the problem has not been addressed. The exception to this trend is the telecommunications and postal sector.
- 448 The postal sector does not appear to be a relevant comparator for the water sector on the grounds that the sector faces different issues. For example the Independent Review led by Richard Hooper did not find any evidence of discrimination to support strong forms of separation.²⁷⁸ Instead the Review identified that the primary challenge facing the sector was a lack of cost transparency, prompting the recommendation that accounting separation should be introduced. These findings appear consistent with the fact that Royal Mail is a state-owned organisation and therefore does not appear to have the same profit incentives to discriminate. The Review also noted that it appears that Royal Mail is effectively subsidising competitors at a loss of £48m (in 2006-07), indicating that inefficient entry, as opposed to discrimination, is the problem.²⁷⁹
- 449 The BT Openreach example forms the basis of both Oxera's argument that a large proportion of the benefits associated with legal separation could be

²⁷⁷ As previously noted, Postcomm is currently developing a new regulatory framework for the postal sector that will be based on the principles of cost transparency and accounting.

²⁷⁸ Hooper, R., Hutton D, & Smith, I., *Modernise of Decline: Policies to maintain the universal postal service in the United Kingdom*, p. 99 <http://www.bis.gov.uk/files/file49389.pdf>

²⁷⁹ *Ibid* p. 98.

achieved through lighter forms of separation in the water sector²⁸⁰ and Deloitte's statement that 'the minimum form of separation required to deliver effective competition is functional'²⁸¹. However the form of separation adopted was highly prescriptive in light of the potential for discrimination and consisted of 236 undertakings.²⁸²

450 The lessons from the remedies adopted in other sectors are relevant to the consideration of what should be undertaken in water retailing, but in particular we consider that the experience of the following remedies are important.

- BT Openreach in UK telecoms- Ofcom accepted from BT a set of binding undertakings in lieu of a market investigation reference to the Competition Commission that made provision for the functional separation of BT's monopoly network provider business. This example is important as it represents the only example in the UK of an effective functional separation arrangement.
- Business Stream from Scottish Water- in 2007 the public water supplier for Scotland was legally separated into a retail business and a wholesale/network business. This is the closest comparison to the legal separation proposed by Cave, indeed to some extent the recommendation was informed by this experience.
- British Gas and the demerger of its retail business- in 1997 British Gas, in the context of a regime introducing weaker forms of separation, elected to demerge fully its retail and network businesses. This is an important example because it represents a move from a similar form of vertical integration in a sector with comparable circumstances in terms of the strong natural monopoly nature of that sector.

451 Having described the risk of anti-competitive discrimination in relation to water retailing, it seems reasonable to assume that softer remedies than separation are unlikely to entirely address the discrimination problem. Functional separation at a minimum seems to be necessary to have a reasonable chance of addressing the discrimination problem and only ownership separation is likely to entirely address the discrimination problem in itself.

452 However even functional separation might not go far enough. In a paper on the role of regulation, Irwin Stelzer noted that::

..the multifaceted aspect of access is so complex that regulation of access is so complex that regulation of access to the monopoly facility

²⁸⁰ Oxera, Competition in the Water Sector: A review of the cost-benefit analysis knowledge base, 2011, p. 53.

<http://www.oxera.com/main.aspx?id=9560>

²⁸¹ Deloitte, Lessons for the water and sewerage industry from retail competition in the utility sector, January 2011.

http://www.deloitte.com/view/en_GB/uk/industries/eiu/water/24dca3dd6f90e210VgnVCM2000001b56f00aRCRD.htm

²⁸² Ofcom, Ofcom accepts undertakings from Board of BT Group plc on operational separation, 2005.

<http://media.ofcom.org.uk/2005/09/22/ofcom-accepts-undertakings-from-board-of-bt-group-plc-on-operational-separation/>

*of a vertically integrated company, in the hope of producing equality of access, is virtually impossible.*²⁸³

- 453 The table below presents the different mechanisms for discrimination and the various remedies adopted in each of the three key examples from other precedent sectors to allow for sensible comparison. Based on these precedents Table 25 presents, at a reasonably high level, the various controls that are likely to be necessary in order to address the discrimination problem.

²⁸³ | Stelzer, Regulation: An Imperfect Substitute for Imperfect Competition, 2005, p. 14.
[http://www.rpieurope.org/2005%20Conference/Stelzer Imperfect competition.pdf](http://www.rpieurope.org/2005%20Conference/Stelzer%20Imperfect%20competition.pdf)

Table 24: Anti-competitive discrimination remedies adopted in other sectors

Forms of discrimination	Mechanisms for discrimination	Scottish Water ²⁸⁴	BT Openreach ²⁸⁵	UK Gas ²⁸⁶
Price	Misallocation of costs/revenues	Separation of accounts and banking arrangements.	(5.30/5.31) Separation of accounts including some detail of where particular costs should be allocated.	Required to publish separate accounts to include as a minimum profit and loss accounts, balance sheets and cash flow statements and have any contracts or agreements with the other parts of the business on fully arm's length basis with any cross-charging to be kept to a minimum.
	Transparency of charging boundary	Ex ante wholesale price control fully independent of retail pricing arrangements. (5.46) All products offered by separated business must be offered to all parties on equivalent terms	(5.30) Common charging methodology and common means for sharing information.	The network business to publish information on costs and how those costs translate into prices. Also established of network charging regime applicable to all.

²⁸⁴ Business Stream, Robust and Demonstrable Separation, 2011. <http://www.business-stream.co.uk/files/upload/May%202010%20separation%20paper.pdf>

²⁸⁵ Ofcom, Evidence taken from undertakings given to Ofcom by BT in lieu of a market investigation reference to the Competition Commission. <http://stakeholders.ofcom.gov.uk/binaries/telecoms/policy/bt/consolidated.pdf>

²⁸⁶ The demerger of British Gas was undertaken voluntarily however it followed a report from the Monopolies and Mergers Commission (now the Competition Commission) that recommended the separation of ownership. This evidence is taken from the MMC report published in response to a reference under the Fair Trading Act 1973 which gave some guidance as to aspects of separation that MMC would have expected to be considered. Thus whilst this package of remedies was not necessarily introduced in full it does represent the view of a major competition authority. http://www.competition-commission.org.uk/rep_pub/reports/1993/fulltext/334c2.pdf

Forms of discrimination	Mechanisms for discrimination	Scottish Water	BT Openreach	UK Gas
Non-price	Property	Physically segregated accommodation up to March 2010, thereafter separately located to new offices.	(5.33) Management team of separated business to move to access controlled accommodation with 6 months and separately located accommodation within 18	physically separate to the maximum extent possible all common services
	Governance	Separate board with no cross-directorships (save for a common chair) and the establishment of a holding company to take decisions in relation to the wholesaler interest in the retailer	(5.25)CEO of separated business to report solely and directly to the BT group CEO, to attend BT operating committee meeting only where appropriate and with notification to Equality of Access office	Separate management structures
	Identity	Retailer introduced separate identity and brand	(5.48) Restrictions on the use of BT's brand by the separated business	
	IT and data	All data and IT systems physically or logically separated. Data store and telephony systems separated in March 2010 with residual systems separated by 2012.	(5.44) Requirement for a phased separation of Operational Support Systems with milestones	Appropriate arrangements at board level to safeguard confidentiality of information
	Finance	Separate holding company set up to manage wholesalers interest in retailer and includes	(5.29) CEO of separated business to have delegated authority to for capex of up to £75m per annum	

		financial backing as sole shareholder, rather than financial support from the wholesale business		
Forms of discrimination	Mechanisms for discrimination	Scottish Water	BT Openreach	UK Gas
Non-price	HR	Staff permanently transferred to retail business from former integrated business	(5.35) Restrictions on working for both parts of the business and rules requiring remuneration of separated staff to be linked to objectives of that business alone.	Separate terms of employment and allocated employees on a non-transferable basis to the network or supply business
	Compliance	Establishment of a governance code that is supported by a compliance executive responsible for monitoring	(10) Equality of Access Board set up to monitor, amongst other things, compliance with the undertakings and report back to Ofcom	
	Other			

Table 25: Potential anti-competitive discrimination remedies for a water retail market

Forms of discrimination	Mechanisms for discrimination	Suggested remedies for water retailing in England
Price	Misallocation of costs/revenues	Transparent accounts where misallocation can be identified
	Transparency of charging boundary	Clear charging arrangement for comparable services ensuring in-house and entrant prices can be compared
Non-price	Property	Arrangements to prevent staff having access to commercial information held by separated business
	Governance	Arrangements governance arrangements that will support independence of decision making within retail and wholesale businesses
	Identity	Not clear that use of wholesale identity will give rise to competitive advantage
	IT and data	Controls over shared systems and data stores to ensuring commercial information is not shared
	Finance	Financial autonomy for the separated business otherwise they cannot operate independently
	HR	Controls on staff movement to protect commercial information and alignment of incentives to discourage staff from working against separation
	Compliance	Compliance arrangements put in place to monitor separation and report on progress or issues
Other		

What should a functional or legal separation model require?

Defining functional and legal separation options.

- 454 Based on the analysis of the discrimination problem in water retailing, the potential remedies and the experience of other sectors in introducing similar remedies, we have set out in broad terms what we consider to be the key necessary elements of both functional and legal separation in Table 26 overleaf.
- 455 Both of the 'functional' and 'legal' separation options include clear and consistent controls to address the mechanisms through which anti-competitive discrimination can occur. However, 'functional' separation provides less protection over the discrimination problem than 'legal' separation and under the functional model there is therefore greater risk that anti-competitive discrimination occurs and competition is stifled with correspondingly negative effects on the benefits of a competitive market.
- 456 In addition to these 'functional' and 'legal' separation options an 'optional' separation approach has also been suggested through the Government's consultation. The key difference of this approach is that it would not mandate separation but would encourage it through the use of both positive and negative incentives.

Table 26: Potential requirements for 'functional' or 'legal' separation options			
Forms of discrimination	Mechanisms for discrimination	Functional separation requirements	Legal separation requirements
Price	Misallocation of costs/revenues	Separation of accounts (regulatory) – separate cost collection, P&L and balance sheet	Separation of accounts (regulatory and statutory) – separate cost collection, P&L and balance sheet
	Transparency of charging boundary	Common wholesale pricing methodology applicable to associated business and entrants alike and communicated in a common way. Internal transactions treated in same way to transactions with entrants.	Common wholesale pricing methodology applicable to associated business and entrants alike and communicated in a common way
Non-price	Property	Access controlled accommodation, in the first instance, potentially moving to separately located accommodation in time	Access controlled accommodation, in the first instance, potentially moving to separately located accommodation in time
	Governance	Reporting of separated business CEO to Group CEO and Board and limited and transparent interactions with management team	Separate retail Board reporting to Group board, no interactions with management team or board of wholesale business
	Identity	No strong preference	No strong preference
	IT and data	Phased separation from logical separation (within a single system) towards physically separated systems. Common means of sharing wholesale data with all retail businesses.	Phased separation from logical separation (within a single system) towards physically separated systems. Common means of sharing wholesale data with all retail businesses.
	Finance	Financial autonomy for the retail business guaranteed by delegated authority and transparent business planning processes	Financial autonomy for the retail business guaranteed by delegated authority and transparent business planning processes
	HR	Controls on staff working for wholesale and retail at the same time and requirements to ensure remuneration arrangements are linked to, where relevant, retail or wholesale objectives only	Permanent transfer of staff to retail business and requirements to ensure remuneration arrangements are linked to, where relevant, retail or wholesale objectives only
	Compliance	Compliance board set up alongside the main board to monitor and report to Ofwat on aspects of separation	Compliance board set up alongside the main board to monitor and report to Ofwat on aspects of separation

Defining 'optional' separation

- 457 'Optional' separation would involve of the legal separation of the non-household retail business from the wholesale and household retail sides (which would remain within a single legal entity) The key differences with an optional separation approach would be to encourage separation of the complete part of the retail business without requiring it.
- 458 Effectively, companies would be given a choice of remaining vertically integrated, but still with some controls such as a split licence with household retail and wholesale modules and a formal charging boundary between wholesale and household retail and legal separation of the non-household business by transfer to a licensee. Companies who chose to remain vertically integrated would not be allowed to compete for other customers and would have limited ability to respond to an entrant's offer to their existing contestable customers. Companies who did separate would have separated non-household retail entities that were able to freely participate in a competitive retail market and potentially grow their customer base.
- 459 The purpose here is to create an incentive for companies to choose to separate as if they do not then their commercial position in a retail market can only erode at the hands of other market participants.
- 460 However, whilst this has advantages, when the objective is to ensure that there is an effective market that maximises the benefits from retail competition this approach would carry with it additional risks to either a mandated legal or functional approach.
- ***If companies don't choose to separate then competition is stifled-*** the approach relies on incumbent companies choosing to separate their non-household retail operations, without separation the risk of anti-competitive discrimination is high and correspondingly the likely benefits from effective competition are low.
 - ***A postcode lottery on competition-*** common functional or legal separation options have the advantage of affecting all companies, ensuring a national market in which customers could switch. Under optional separation the most likely outcome is that some companies would choose to separate and some would not. In those areas where companies chose not to separate the retail market can be expected to work less effectively.
 - ***Fewer spillover benefits*** – There is a risk that household customers that remain with the incumbent may not receive the full level of retail spillover benefits as under the functional and legal separation options. However, they would still derive the same level of wholesale spillover benefits and benefits from the spread of best practice in the competitive market; and Ofwat will still be able to use information from the competitive market to drive efficiency in the household retail market.
 - ***'Choice' versus 'forced' separation-*** the premise behind optional separation is that it gives companies choice but provides a strong incentive, clearly the

stronger the incentive the less it can be described as a 'choice' and the more it is effectively mandated.

- **High risk of litigation-** In an environment where competition is effective in some regions but not others, Ofwat is likely to be pushed into making greater use of its ex-post enforcement powers for example under CA98. This will result in costs associated with this litigation and also delays which can give the perception of discrimination problem with a corresponding impact on market entry.

Other incentives to legally separate

461 In fact, regardless of what form of separation is proposed there are likely to be some inherent incentives for companies to adopt more far reaching forms of separation including 'legal' or indeed 'ownership' separation without them being required to do so.

- A reduced regulatory burden under more significant forms of separation means a saving for companies in terms of regulatory cost and scrutiny if they choose to adopt such a form of separation. A key incentive on companies to move beyond basic forms of separation must be the recognition that this move lowers the risk of anti-competitive discrimination activity by companies. Stronger forms of separation carry with them reduced risk for Ofwat and can therefore be associated with a correspondingly lower regulatory burden. For example softer forms of separation could be allowed for but with much more onerous licence conditions and monitoring requirements. These would be proportionate to the risk- if companies chose to adopt more significant forms of separation then they would save themselves the on-going cost and hassle involved in regulatory compliance monitoring.
- Encouraging mergers and consolidation- Separation of the licence (which is assumed under any of the options proposed) will also result in a change to the nature and status of the retail business. Where it is no longer part of the 'incumbent' and it's 'instrument of appointment' the retailer will not (in the absence of any change to the regime) be bound by the limitations of the special mergers regime and, hence, could acquire or merge with other retail businesses. Where retailers did merge management would be faced with a decision either to remain vertically integrated or to set up a separate legal retail entity encompassing both of the merged retail operations.

How is separation implemented?

Functional separation

462 Separation should not be thought of as a single definitive arrangement. There are a large number of different companies in the sector, each with different arrangements in place and companies will have entered into those arrangements with the aim of efficient and effective operation. The enforcement of separation should seek to work with the grain of those different arrangements as imposing a single model across all companies is likely to be more costly than applying a set of principles flexibly.

Figure 8: An example of the flexible application of separation: Buildings.

It may be desirable under separation to ensure that the retail business operated from a separate building or location to the wholesale business. This would help to avoid discrimination via information exchange including for example wholesale and retail staff discussions taking place in common areas (e.g. the canteen, etc).

Consider two companies, one where the building is owned and retail operations make up part of that building and another where the building is leased, retail operations and wholesale operations are both within that building and the lease expires in 12 months' time. Asking both companies to have retail operations in a separate building within a very short timeframe to comply with functional separation will necessarily create substantial additional cost as in the case of the first company this would not provide sufficient time for the company to lease or indeed sell the vacant space. Similarly in the case of the second company, they would have insufficient time to either get out of their existing lease or indeed sub-let their space and would most likely be forced to pay two leases at the same time.

An alternative approach would be to require separation of the first company over a reasonable timeframe that allowed them to either sell or let out their retail space. Similarly, the second company could be given flexibility over a different timeframe and told to separate in 12 months' time, when the lease would be up anyway and the company would have been incurring costs already either to extend the lease or seek alternative arrangements.

- 463 In general there are two ways in which structural reforms such as functional separation might be introduced – competition law or the intervention of legislative or regulatory rules to compel it.
- 464 Competition law, specifically the markets regime under the Enterprise Act 2002, was used in the functional separation of BT following a strategic review of the sector by Ofcom. At that stage Ofcom was minded to refer the sector to the Competition Commission for a market investigation under the Act. With such an investigation the Competition Commission has the power to mandate structural remedies, such as divestment, where it identifies adverse features of a market.
- 465 In lieu of a market investigation reference Ofcom accepted binding undertakings offered by BT that would deliver many of the objectives Ofcom sought from a market investigation reference, including the functional separation of the 'access division.' In principle such a scenario is possible within the water and sewerage sectors however the number of players suggest that it is unlikely all would agree to a common set of undertakings. Even if they did agree the strength of these undertakings lies partly in that fact that any material breach of the undertakings could result in a reference, and so BT has a very strong incentive to comply, however a multi-party set of undertakings may not however generate such a proximate incentive as any one failing company would trigger the reference for everyone.
- 466 Another example of the effect competition law can have on producing a structural outcome such as separation can be seen in the European energy context. Following the second set of directives that implemented legal separation the Commission remained unconvinced that this resolved the discrimination problem it identified throughout vertically integrated Europe and

so took a vigorous approach to enforcing competition law in these situations. To avoid this exposure two major German electricity companies choose to divest the relevant parts of their business.²⁸⁷

- 467 Functional separation could be introduced by way of an obligation on companies to functionally separate that could be included in legislation or in changes to the companies' licences. Where companies failed to deliver this obligation Ofwat would pursue enforcement action in the normal way. This approach would in this context appear to be the more sensible option as it is likely to permit a more flexible approach for both Ofwat and Government and, as a more systematic approach, be less time consuming and costly than would be a substantial investigation by the competition commission.

Legal separation

- 468 As with functional separation, legal separation should not be thought of as a common definitive structure (e.g. common governance arrangements, etc) to be imposed on the industry, rather in this case it is about enforcing a general model in a flexible way that works with the grain of the different structural retail arrangements in the industry to minimise costs. However, under legal separation, in contrast to functional separation, there is also a need to consider the transfer of assets and liabilities from the integrated company to the new legal entity, (e.g. the transfer of the billing system to the retailer).
- 469 The use of statutory transfer schemes is a common approach which has for example taken place in the Water sector in Scotland, the UK energy sector following the Utilities Act and in many other instances. As such there is a reasonable body of experience built up in implementing this separation approach.
- 470 Statutory transfer schemes are tools that can be included in primary legislation to transfer property, rights and liabilities between parties. In this context they could be used to transfer the property, rights and liabilities included within, for example, a service contract held by the vertically integrated company to a legally separated subsidiary, and the property rights in relation to retail assets, such as billing systems. By transferring the contractual right a statutory transfer scheme can pre-empt the need for companies to re-negotiate all relevant service contracts to reflect a new structure. This avoids the possibility of increased costs extracted by opportunistic counterparties.

Figure 6: An example of the use of a statutory transfer scheme to transfer contractual rights: IT service providers

Incumbents have a range of contractual relationships with suppliers and service providers. Many of these will not be relevant for retail, such as subcontractors for

²⁸⁷ See commitments from E.ON and RWE following the opening of Article 102 (ex 82) investigations into their conduct on the integrated German electricity market. E.ON <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/132&format=html&aged=1&language=en&language=en> RWE; <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/355&format=html&aged=0&language=en&language=en>

infrastructure maintenance, however a number may provide services that cut across both the wholesale and retail functions.

One example might be IT services providers that are used to support billing systems. Currently the counterparty to this contract will be the integrated business and so legal separation will mean that the contract with the integrated business will need to be replaced by a contract with the retail business. Where the business is left to deal with this with normal commercial arrangements it could be possible that the service provider may attempt to extract some value from the situation. In any event there would be costs associated with renegotiating new contracts for every retailer.

A statutory transfer scheme would result in the retail business replacing, automatically the integrated business as the counter parties for such contracts. This means all rights and obligations would switch to the retail business with no costs.

Optional separation

471 The arrangements to implement 'optional separation' are likely to be very similar to those required for the introduction of functional or legal separation except it will only apply only one part of the retail business. Changes to legislation and licences to facilitate the separation of those companies who 'choose' to separate would be made in exactly the same way. The important difference would be that companies would not be obliged to take advantage of these arrangements and instead would, at most, be incentivised to do so

Annex C: Impacts on financing

Background and purpose

- 472 This IA considers the recommendations of the independent review that was under taken by Professor Martin Cave in 2009²⁸⁸. Some incumbent water and sewerage companies and members of the investor community have expressed concerns that some of the changes proposed could have adverse impacts on financing in the water and sewerage sectors in England and Wales. As with any policy it is important that any costs which can reasonably be expected to arise from the implementation of the proposal are properly considered and, wherever possible, quantified and scaled with appropriate sensitivity analysis.
- 473 This purpose of this annex is to describe the Cave Review recommendations in relation to retail reform that are being considered by the UK Government and identify the issues associated with those reforms in England (and Wales²⁸⁹) from a finance/investment perspective. The note goes on to explain the approach for assessing the potential finance impacts that could be incurred.
- 474 It should be recognised that in some instances the financing costs which may be incurred will be the outcome of a negotiation between each of the companies and their particular creditors. It is essential that those negotiations are not influenced by any publication that seeks to quantify what the likely costs arising from those negotiations will be as this could inflate the actual costs incurred. The contents of this note should therefore be treated as market sensitive.

²⁸⁸ Cave, M, 2009, 'Independent Review of Competition and Innovation in Water Markets: Final report', <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/>

²⁸⁹ We note that in it's most recent Strategic Policy Position Statement on Water the Welsh Assembly Government has stated that they 'remain to be convinced that retail competition will deliver any noticeable benefit for customers in Wales', <http://wales.gov.uk/docs/desh/publications/110208waterstatement2011en.pdf>, page 9

Sources of information

- 475 This annex has been prepared based on evidence provided by four main sources which are outlined below.
- 476 **The Cave Review:** In 2008, the Government commissioned Professor Martin Cave to lead the 'Independent Review of Competition and Innovation in Water Markets'. The objective of this review was to recommend changes to the frameworks of the industry to deliver benefits to consumers, through lower prices and improved service, and also to the environment.
- 477 The Review concluded that "introduced in the right way, competition and cooperation between companies, driven by market mechanisms, market-like instruments or regulation, can encourage innovation and the delivery of lower prices, a better service and improved environmental outcomes." Cave, M, 2009, 'Independent Review of Competition and Innovation in Water Markets: Final report', p.5.
- 478 In the interim and final reports published in November 2008 and April 2009²⁹⁰ respectively Professor Cave made a number of recommendations that essentially set out the reforms that should be considered in assessing any impact on the sector's financing arrangements.
- 479 **The Nourse report:** In 2008, during the work of the Cave Review, Ofwat commissioned Richard Nourse²⁹¹ to undertake work:
- To explore whether uncertainty over the eventual path of competition reform (direction and timing) is affecting the conditions for and pricing of new finance and, if so, how this might impact on our approach to the cost of capital at the 2009 price review (PR09).
 - To understand what implementation costs and effects might arise from the vertical (including legal) separation of contestable elements of the value chain given the water companies' existing and (possible future) debt protection and funding structures. To identify the extent to which these implementation costs and effects may differ for different degrees of separation.
 - To develop a framework to understand the eventual cost of finance to the separated business units, given their relative risk profiles.
- 480 In particular, the report²⁹² examined the existing financing structures of companies operating in the sectors and the creditor protection arrangements. It then made some comments on how a series of stylised models of competition might impact on those financing arrangements.

²⁹⁰ Interim report, <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-report.pdf>;
Final report, <http://archive.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

²⁹¹ Richard has spent over 20 years in the City, holding senior positions in mergers and acquisitions and in energy and power, latterly at Merrill Lynch where he led the EMEA Energy and Power team.

²⁹² Nourse, R, 2009, 'Competition proposals and financing issues: A report for Ofwat', http://www.ofwat.gov.uk/competition/review/rpt_com_nourse260209.pdf

- 481 **The NERA report:** Also in 2008, during the work of the Cave Review, NERA was commissioned by 15 water and sewerage companies in England and Wales to study the financial implications of approaches to separating, and introducing competition into, elements of the water and sewerage value chains. “Financial implications” included changes to existing financing arrangements, changes in the eventual cost of capital, and changes in the eventual feasible debt levels. The study was also motivated by the work of the Cave Review.
- 482 The report²⁹³ also considered the existing finance arrangements and creditor protections in place in the sectors and examined a different range of stylised models of competition and the impacts of those models on financing arrangements. The report also undertook a simple assessment of the costs of renegotiating/refinancing the existing bonds in the sector.
- 483 **The Market Reform and Finance Forum (MRFF):** In 2009, following the completion of the Cave Review, a forum was established 'to exchange information and views to ensure the sector as a whole retains the necessary confidence and support of debt providers and capital markets, while legislative and regulatory change to introduce greater competition is being considered and introduced'²⁹⁴.
- 484 The forum was set up with the objectives of:
- Identifying areas, including proposed legislative or regulatory changes, which may prompt debt providers' and rating agencies' interest or concern in relation to the sector as a whole.
 - Exchanging views about actions or mechanisms that could be used to mitigate any risks and associated financing costs for the sector as a whole, consistent with the UK Government's and Ofwat's objectives to promote greater competition, protect the interests of customers and ensure financing of the sector.
 - Identifying, and co-ordinating as appropriate, a communication strategy to engage debt providers and capital markets effectively.
- 485 Between November 2009 and February 2011 the Forum met five times²⁹⁵, focussing almost entirely on financing issues associated with the legal separation of companies' retail functions.

²⁹³ NERA, 2008, Financial Implications of Competition Models, http://www.nera.com/extImage/PUB_Water_UK_Dec2008.pdf

²⁹⁴ The terms of reference for the group can be found at:
http://www.ofwat.gov.uk/competition/review/gud_pro_tor20100111mrf.pdf

²⁹⁵ The minutes for each of the meetings can be found at:
http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

The current arrangements and future options

486 In seeking to identify and scale the potential impacts of 'market reform' on financing arrangements in the water and sewerage sectors we first need to consider the current structure of the financing and creditor protection arrangements in the sectors, how they are regulated and what reform options are being considered.

What is the current structure of the water and sewerage sectors and how are they regulated?

487 The water and sewerage sectors (or "the sectors") are characterised by vertically integrated, privately owned, regional monopolies that provide all services associated with water and sewerage in a particular area. There are 10 water and sewerage companies and 11 water-only companies all of whom are subject to full ex ante price regulation by Ofwat. There are also 8 entrants with Water Supply Licences regulated by Ofwat.

488 Since privatisation the regulation of water and sewerage has taken the form of a single, vertically integrated price control whereby the economic regulator, Ofwat, imposes a cap on the revenue that each of the companies can recover from their customers during each five year price review or Asset Management Period ("AMP"). To date, this revenue cap has been calculated following a building block approach which allows each company sufficient revenue to finance its day to day activities, its capital investment programme, past capital investment through capital charges and a return on the asset base and to meet tax liabilities. As with other utilities, the remuneration investors receive is driven in large part by the return on the asset base, referred to as the Regulatory Capital Value (RCV)²⁹⁶. Whilst the arrangements and incentives associated with the price control have developed and changed over the last twenty years, this change has been very incremental and there has remained a single price control rather than more disaggregated controls or indeed the introduction of market competition, which has been seen in all the other regulated utility sectors.

489 Similarly, the regulatory regime has been established in a way that provides a range of protections to investors, including, for example:

- licences (or 'instruments of appointment' as they are known) which are held by companies in perpetuity (not for periods of 25 years or so as in other utilities) and which give companies a near monopoly on all water (and sewerage) activities in their area of appointment from 'source to tap';
- the RCV which provides a degree of commitment to remunerate investors for delivery of substantial investment programmes for long-life assets;

²⁹⁶ A more detailed description is provided at: http://www.ofwat.gov.uk/future/monopolies/fpl/pap_tec1106cocrisk.pdf

- the RPI-X regime (or RPI+/- K in the case of water) which provides a hedge from inflation risks;
- a regulatory regime that is independent of government;
- the use of transparent and consistent regulatory approaches that are well understood by investors; and
- certain regulatory mechanisms which provide protection to companies against the risk of changes to assumptions made at price setting²⁹⁷.

490 Together these arrangements limit the overall risk exposure to investors.

491 If companies were to become insolvent for some reason they would not be subject to normal administration procedures and instead are subject to a 'Special Administration Regime'. This regime means that the Government would effectively step in were such a situation to arise in order to ensure the on-going delivery of water and sewerage services. This provides protection to customers in terms of continuity of an essential service, but investors' capital remains at risk in the event of trigger of the special administration regime.

492 Ofwat has a primary statutory duty, under the Water Industry Act 1991, to secure that the appointed water companies can finance the proper carrying out of their functions. So that Ofwat can meet this duty, it created the regulatory capital value (RCV). This is a regulatory price setting tool used in price setting that ensures investors earn a return that is sufficient to meet the cost of capital.

493 The consistency of the regime over the past twenty years and the protections that exist for investors are widely acknowledged amongst the investment community. For example, the credit rating agency, Moody's, assign the regulatory regime for water and sewerage in England and Wales a triple A rating.

*We assign the highest score of Aaa to the regulatory regime applied to the UK water sector (i.e. the water companies in England and Wales), which has a history of around 20 years and relies on clearly defined risk allocation principles, which have been consistently applied and transparently disclosed to the public.*²⁹⁸

494 Notwithstanding the low risk and stability afforded to the sector by the regulatory regime there is clear evidence that investors understand that the regime may not evolve over time. In particular most bond prospectuses clearly identify political and regulatory risk as a real consideration.²⁹⁹

²⁹⁷ For a more detailed list of these mechanisms see 'Cost of capital and risk mitigants – a discussion paper', Ofwat, 2011, P.11-21, http://www.ofwat.gov.uk/future/monopolies/fpl/pap_tec1106cocrisk.pdf

²⁹⁸ Moody's, *Rating Methodology – Global Regulated Water Utilities*, December 2009, <http://v2.moodys.com/cust/content/content.ashx?source=StaticContent/Free+Pages/Products+and+Services/Downloadable+Files/Global+Regulated+Water+Utilities.pdf>, page 9

²⁹⁹ Nourse, page 16

What are the current financing arrangements and what creditor protections are in place?

- 495 There is a range of financing structures across the industry and in each of these there are creditor protection arrangements that, at various levels, seek to further mitigate the risks to investors.
- 496 Broadly speaking some companies have a 'traditional' or 'equity' financing structure, where creditors do not benefit from enhanced protections. Conversely, some companies have put 'securitised' or 'geared' structures in place, which enhance the protections to creditors and allow them to obtain higher levels of debt for the same credit profile than the 'traditional' structures. The high levels of gearing (measured as net debt: RCV) are effectively facilitated by the creditor protection arrangements attached to that debt and without these protections such levels of gearing could not be achieved without a material decline in credit quality and a commensurate increase in the cost of debt. These protections seek to address events that might affect the ability of the business to pay back the debt either by limiting the actions available to the management of the business, or by providing lenders with step in rights if certain situations arise.³⁰⁰
- 497 A list of the companies that have adopted different structures is provided in Table 27 below.

Table 27: Companies adopting different financial structures	
'Equity' model companies	'Geared' model companies
<ul style="list-style-type: none"> • Severn Trent Water Ltd • Wessex Water Services Ltd • Northumbrian Water Ltd • South West Water Ltd • United Utilities Water plc 	<ul style="list-style-type: none"> • Thames Water Utilities Ltd • Anglian Water Services Ltd • Dwr Cymru (Welsh Water) • Southern Water Services Ltd • Yorkshire Water Services Ltd
<ul style="list-style-type: none"> • Veolia Water Central Ltd • Veolia Water East Ltd • Veolia Water Southeast Ltd • Cambridge Water Company plc • Cholderton & District Water Company Ltd • Sutton & East Surrey Water plc 	<ul style="list-style-type: none"> • Bristol Water plc • Dee Valley Water plc • Sembcorp Bournemouth Water • Portsmouth Water plc • South Staffordshire Water plc • South East Water Ltd

- 498 In fact creditors under both financing models benefit from a range of protections built into the financing arrangements. In general terms these protections are more significant under the 'geared' model than the 'equity' model but it is important to note that there are differences between companies, even under the same model.
- 499 In the 'equity' financing model a **Put Event** can arise which gives the bondholders the right to oblige the company to redeem bonds at their

³⁰⁰Nourse, page 21

principal amount (if certain specified events arise). Nourse explains that put events typically require two elements; firstly that a restructuring event has occurred and that, secondly, an independent financial advisor has certified that this will be materially prejudicial to the interests of the bondholders.³⁰¹

500 If bondholders choose to exercise this right the company will be forced to purchase the bonds, to do otherwise would place the company in an **event of default** which would render the bonds due and repayable.

501 In the 'geared' financing model a similar two-tier approach typically applies however it is more embedded in specific covenants. These covenants govern the obligations of the debt issuing company and are designed to protect the bondholders from certain "outcomes that might increase the risks of the company beyond certain levels agreed at the time of issue."³⁰² Generally covenants fall into two categories.

- *'Financial' or 'substantive' covenants* which are objective or quantitative tests that monitor particular aspects of the business and provide early warning of deteriorating financial conditions (for example which place restrictions on the level of gearing); or
- *'Non-financial' or 'technical' covenants* which are more qualitative restrictions that seek to limit the activities of the business and prevent prejudicial or high risk decisions (one example might be around restrictions on the disposal of assets).

502 Generally breaches of covenants would give rise to, in the first instance, a **trigger event**, which initiates specific consequences that the company is obliged to follow, with the objective that the company remains solvent. Where breaches endure, or where the breach is more severe in nature, an **event of default** may occur. In the latter case, a standstill period may arise. This period is designed to reduce the likelihood of the company entering special administration and allow time for action to be taken to allow the company to recover³⁰³. A summary of the various creditor protection 'events' is provided in Figure 9.

503 During an event of default and at the expiration of any standstill arrangement the bondholders will be entitled to enforce their security package and seek the repayment of all debts, generally at face value. Nourse explains that the "consequences of this are so serious for the equity that long before this point is reached, the equity would seek to obtain bondholder consent for the particular circumstances arising."³⁰⁴

³⁰¹Nourse, page 20

³⁰²Nourse page 21

³⁰³Nourse page 23

³⁰⁴Nourse, page 23 ; Nourse also notes that 'given the restrictions on and issues with creating and enforcing security over regulated assets, [enforcement of security] will amount to enforcement of a share change – namely, forcing a sale of the business and using any proceeds to repay the bondholders.'

Figure 9: Summary of creditor protection 'events' for securitised companies³⁰⁵

Normal Business	Trigger event Step in period	Standstill period	Special Administration
Operating within covenant package	One or more financial or operational 'trigger' covenants breached	One or more events of default occur and continue	
No creditor involvement	No customer rebates or distributions Option to commission independent review	Majority of secured claims frozen Security over shares of WaterCo and its parent can be enforced 18 month opportunity to remedy situation or find a buyer from WaterCo Liquidity facilities keep senior debt whole	Regulator applies to court to appoint a Special Administrative Receiver (SAR) to run business SAR acts in interest of creditors and customers

Source: Linklaters

- 504 It is possible that companies could seek to voluntarily repay the debt early at a penalty value and avoid enforcement of security by bondholders that would trigger special administration. This could take place via a 'spens' clause, which provides protection for the investor, by ensuring that on an early termination of a bond the investor receives sufficient compensation that allows it to obtain the same cash flows by re-investing in risk free gilts. However, in discussions with Richard Nourse in relation to his report, two large WaSCs noted that using a 'Spens' clause to do this would wipe out any equity value in the business and is therefore not a real option.³⁰⁶
- 505 Any trigger event, put event or event of default could therefore only practically be resolved through bondholders consent. Were such an event likely, we can therefore expect that companies would actively approach their bondholders in order to seek their consent for such an event.

What reforms are being considered?

- 506 In both its interim and final reports, the Cave Review identified a range of recommendations for the reform of the sector to introduce greater competition³⁰⁷. The UK Government is currently considering the impact of introducing these reforms in England as part of the forthcoming Water White Paper³⁰⁸.

³⁰⁵ Presented to the MRFF by Linklaters

³⁰⁶ Nourse page 23

³⁰⁷ Final report of the Independent Review of Competition and Innovation in Water Markets led by Professor Cave, April 2009; <http://www.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>

³⁰⁸ See Defra's Structural Business Plan (May 2011), <http://www.number10.gov.uk/wp-content/uploads/DEFRA-Business-Plan1.pdf>

507 A number of other potential stylised models of competition were also considered in the work undertaken by Richard Nourse and NERA Economic Consulting. These models are set out below.

Table 28: Market reform models considered by NERA and Nourse work	
Models considered by NERA	Models considered by Nourse
Retail-wholesale competition	Accounting separation of retail
Single-buyer model	Accounting separation of retail with change of regulation for retail business (change to the costs principle)
Wholesale market model	Legal separation of retail within the existing appointed business
	Legal separation of retail within the existing appointed business and change of regulation for retail business
	Legal separation of retail to outside of the existing appointed business
	Legal separation of retail to outside of the existing appointed business and change of regulation for retail business
	As above but for a material part of the RCV – e.g. all of the water treatment RCV – at an estimated amount of 20% of RCV
	Market in abstraction rights
	New treatment works built outside of RCV

508 The NERA and Nourse reports, which included discussion of these models and their potential impacts on financing in the sectors, were published ahead of the Cave Review's final report, which considered the introduction of upstream reforms. Importantly, since the Cave Review dismissed many of the upstream competition models in its final report³⁰⁹, many of the stylised models listed above are not relevant to this discussion. In particular those 'upstream' reforms that are no longer relevant include:

- 'The Single-buyer model'³¹⁰;
- 'The wholesale market model'³¹¹;
- '[Legal separation of] a material part of the RCV – e.g. all of the water treatment RCV – at an estimated amount of 20% of the RCV'³¹²; and
- 'New treatment works are built outside of RCV'³¹³.

³⁰⁹ Cave Review final report, page 68 et seq., Professor Cave recommended reform of the water supply licensing and supplementing it with a market-like framework. Due to a more uncertain cost-benefit ration and the risk of significantly higher costs, Cave did not recommend the introduction of broader upstream competition.

³¹⁰ Cave Review final report, page 55 et seq., Professor Cave considering the possibility of a for-the-market model supported by an independent procurement entity (a single buyer) but did not include this in his recommendations.

³¹¹ Cave Review final report, page 57 et seq., Professor Cave considering the possibility of an in-the-market model supported by bilateral trading between wholesalers and retailers but did not include this in his recommendations.

³¹² The Cave Review did explicitly consider this option but his comments on broader upstream competition exclude this possibility.

³¹³ The Nourse report, page 27, describes this model as one in which there is a 'competitive process to decide who builds, owns and operates any new treatment facilities.' In effect this model equates to Professor Cave's independent procurement

509 Beyond the Cave Review and the Nourse and NERA work, Ofwat is also conducting a wide ranging review of its approach to regulation as part of its 'Future Regulation' programme³¹⁴. It is important to note that as part of this programme of work, Ofwat has already introduced accounting separation into the sectors (in 2009) and has published a 'Preliminary model' consultation which considers the opportunity to introduce disaggregated price controls for 2014³¹⁵. Both of these options were highlighted by Nourse and the MRFF as being insignificant issues in the context of financing impacts because they do not involve structural separation of assets³¹⁶. Similarly, the MRFF has also considered that 'functional separation' would not breach covenant protections.

What reforms could have impacts on existing financing arrangements?

510 The majority of the reforms recommended by the Cave Review will not create negative impacts on the existing financing arrangements. Most of the reforms recommended by the Cave Review involve amendments to the existing Water Supply Licensing (WSL) regime to make it more effective and as such there is already a regime in place. However, ***the proposal to 'legally' separate companies retail functions*** to bring about an effective retail market by addressing the incentive and opportunity to discriminate in favour of its own retail entity is likely to effect the financing arrangements.

511 These proposals do not encompass any reforms which might be undertaken by the Government or Ofwat in the future (for example ten or twenty years from now). This is relevant to the financing arrangements in the sectors because the weighted average length of debt instruments in the sectors in 2009 was around 20 years³¹⁷. We recognise that investors will be concerned not just about these short to medium term reforms but also about the eventual path and timing of any future reforms.

Conclusions

512 There is a range of financing structures across the industry and in each of these there are creditor protection arrangements that, at various levels, seek to mitigate the risks to investors.

513 Broadly speaking some companies have a lower level of creditor protections and these can be regarded as the 'equity' model. Conversely, some companies have high levels creditor protections and this can be regarded as the 'geared' model. Under this second model companies have taken on substantial amounts of 'securitised debt' where the higher levels of gearing are effectively facilitated by the creditor protection

entity (although, in this instance, in relation to new assets) which although discussed in detail did not make up part of his final recommendations.

³¹⁴<http://www.ofwat.gov.uk/future/>

³¹⁵ Most recently Ofwat has published an informal consultation on a preliminary model of how it could approach price controls in 2014. The preliminary model uses a separate retail and wholesale price control supported by sub-caps for water resources. http://www.ofwat.gov.uk/future/monopolies/fpl/pap_con110405fpl_prelimmodel.pdf

³¹⁶ Nourse, page 24; minutes of the MRFF, 23 November 2009, item 3; and minutes of the MRFF, 5 February 2010, item 5. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³¹⁷ Based on a financial analysis of these instruments undertaken by Ofwat as part of the 2009 Price Review

arrangements attached to that debt and without these protections such levels of gearing could not be achieved without a material deterioration in credit quality and a commensurate increase in the cost of debt.

- 514 These protections seek to address events that might affect the ability of the business to pay back the debt either by limiting the actions available to the management of the business, or by providing lenders with step in rights if certain situations arise. The relatively stronger creditor protections for companies operating under the 'geared' model suggest that the financing implications of reform may be more significant for this group of companies than those operating under the 'equity' model.
- 515 In both its interim and final reports, the Cave Review identified a range of recommendations for the reform of the sector to introduce greater competition.
- 516 The UK Government is currently considering the impact of introducing these reforms in England as part of the forthcoming Water White Paper.
- 517 There is only one reform which, if implemented, we consider could affect existing or future financing in the water and sewerage sectors in England. This is the proposal to 'legally' separate companies' retail functions.

What are the impacts of the proposed market reform changes on the different financial structures and creditor protections in the sectors?

518 Generally, based on the evidence, we consider that the reform options that are being considered may create two forms of financing cost.

- **Costs arising from renegotiating existing bond finance, including consent fees and costs associated with retail separation**- the legal separation of retail may breach certain creditor protections and therefore require creditor consent. At this point creditors may take the opportunity to renegotiate terms and consent fees may therefore be required either in the form of one-off payments or adjustments to annual coupons. If the proposed reforms require companies to reopen negotiations with their creditors, any costs incurred will depend on the economic circumstances at the time of the renegotiation and the extent to which the creditors perceive there to be a change in risk to their investment.
- **Costs arising from renegotiating swaps and finance leases which are at 'positive fair value'**- in some instances if the proposed reforms do require companies to reopen negotiations with their creditors then, depending on the current market conditions, there may be some existing financing arrangements which are currently at 'positive fair market value' to the company, i.e. lenders could achieve a better interest rate now than it might have achieved in the past when the existing financing arrangements were entered into. This will depend on the economic circumstances at the time of any renegotiation. At the extreme, some lenders may be inclined to use the opportunity to walk away from the arrangements and companies may be required to refinance at poorer terms than they might have in place currently.

519 We discuss each of these in turn below.

Costs arising from renegotiating existing bond finance, including consent fees associated with retail separation

520 Both the NERA and Nourse reports considered situations in which structural changes are implemented to effect market reform that involve splitting the Regulatory Capital Value (RCV)³¹⁸.

'From a credit perspective, any material allocation of the current RCV to contestable activities would, depending on the risk of stranding and approach to regulation of these activities, likely be problematic because of the effect that would have on many of the company's existing borrowing; any focusing of RCV into those areas would be worse. It would increase operational

³¹⁸The RCV is primarily a regulatory tool for setting price limits. It has become the key measure against which investors assess enterprise value of each company, and against which leverage is measured by the markets. It has also become enshrined in bond covenants and is used by the markets as the base by which to measure a company's indebtedness (that is, gearing as measured by net debt as a percentage of the RCV). The RCV is therefore a key metric for investors and analysts and has an important function in the parameters built into the creditor protection arrangements within the financing structures.

leverage of the residual network business (increasing business risk) and materially affect financeability'.³¹⁹

- 521 The vast majority of the changes proposed by Professor Martin Cave's review do not involve imply any separation of, or direct impact on the Regulatory Capital Value. Only the proposal to legally separate companies 'retail' activities represents such a separation of the RCV³²⁰. However, even under this proposal Ofwat may choose not to split the RCV because retail contains very little by way of capital assets and therefore there may be no need to regulate retail using a return on capital approach based on the RCV (see paragraph 75). Indeed, if legacy meters are not allocated to retail, the total allocation of assets is likely to be limited to customer relationship management systems and billing systems.
- 522 Furthermore, since 2005 there has been a common carriage competition regime in the sectors in the form of the Water Supply Licensing regime and most of the recommendations of the Cave Review relate to amending this regime to make it work more effectively. The reforms proposed generally work within the existing legislative arrangements and opportunities for market entry and competition envisaged by those arrangements.
- 523 Retail 'separation' could also take many forms and 'separation' can be thought of as a spectrum of possibilities ranging from 'accounting' separation to 'ownership' separation or divestment. In the MRFF, it was suggested by two independent experts that accounting and price control separation need not adversely impact on investment in the sectors.³²¹ In addition, in their representations to the MRFF, one of those experts also suggested that 'functional' separation could be undertaken in a way which did not trigger covenants or the need to seek consent from existing bondholders, with accompanying consent fees.
- 524 The impact of 'legal' separation of retailing activities on the financing arrangements in the sector has been the focus of almost all the discussions at the MRFF. The group highlighted that separation could affect the creditor protection arrangements on any debt like instruments, including bond and bank debt, finance leases or swaps³²².
- 525 The group has also highlighted that the nature of the impact will depend on the specific creditor protection arrangements in place for each company³²³. It is worth noting that there is variation in these creditor protection arrangements and/or covenants across different companies and even where companies either fall into one or other of the 'equity' or 'geared' financing models there may still be differences in the particular creditor arrangements in place. It will be for individual companies to analyse their particular circumstances.
- 526 Although the impact of separation will be different on different financing structures, the extent to which legal separation has an impact or not on financing arrangements is related to how restrictive the creditor protections may be. For the 'equity'

³¹⁹Nourse, page 1

³²⁰ Final report of the Cave Review, page 85

³²¹ See minutes of the MRFF, 23 November 2009, item 3; and minutes of the MRFF, 5 February 2010, item 5. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³²² See minutes of MRFF, 5th February 2010, item 4. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³²³ See minutes of MRFF, 14th September 2010, item 3. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

companies, the Nourse report concluded that legal separation of retail would not result in a material adverse amendment and so was unlikely to have any effect. However, highly covenanted 'structured' financing arrangements under the 'geared' model that aim to prevent changes within the business are therefore much more likely to inhibit the structural change of 'legal separation' as a result of their more restrictive creditor protection arrangements. Indeed, the evidence presented to the MRFF suggested that this was a key concern for all the 'geared' companies³²⁴. In fact there was only one of the 'geared' companies that considered that it may be possible to introduce legal separation without incurring consent fee costs³²⁵.

- 527 Some analysis was undertaken on the creditor protection arrangements or 'covenants' in place for securitised companies, i.e. those adopting the 'geared' financing model through the MRFF³²⁶. Some similar analysis was also undertaken as part of the Nourse and NERA work. In analysis conducted for the MRFF eight key covenants were highlighted but in subsequent discussions, MRFF members suggested a number of additional covenants which would be relevant. A number of the covenants identified were more objective and it was clear that some of these would most likely be triggered through legal separation. The MRFF analysis also identified some more subjective covenants (including protections relating to 'material adverse effects' or similar which are explained later in paragraph 74) where it is unclear whether the covenant would be triggered or not but again some of them could be.
- 528 Many of the covenants that could be triggered are fairly 'technical' in nature rather than 'substantive', for example one of the covenants protects against the creation of any subsidiary companies within the group and this could be seen as a more technical. Similar analysis undertaken as part of the work undertaken by Richard Nourse reached similar conclusions.
- 529 The 'technical' nature of many of these covenants does not stop them from being triggered under the legal separation of retail and there is therefore likely to be some impact on the securitised or 'geared' companies. However, it does suggest that the changes are likely to be viewed by lenders as 'technical' in nature rather than 'substantive'³²⁷.
- 530 Where these covenants are likely to be triggered, companies will naturally seek to avoid breaching them and are therefore obliged to seek the consent of creditors to the reform proposals. This process would typically involve putting together a proposal to make a change that would trigger these protections under the 'Security Trust and Intercreditor Deed' 'STID Proposal'³²⁸ for the change and presenting it to the

³²⁴ See minutes of all MRFF meetings: http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³²⁵ At the MRFF meeting on the 7th of December, 2010, Anglian water presented a legal review of their covenants which suggested that if separation was undertaken as a disposal to a subsidiary outside the regulatory ring-fence then it may not trigger covenants- subject to an assessment of whether this constituted a 'Material Adverse Effect' (MAE). See minutes of 7th December 2010, item 4. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³²⁶ See minutes of MRFF meeting on 14th September 2010, item 3. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³²⁷ Nourse report, p.5

³²⁸ The STID is a legal document which confirms the interests, rights and actions between the company, the security trustee and the bond trustees. Amongst other things it regulates for the secured creditors their claims, the exercise, acceleration and enforcement of their rights and the procedures by which they can instruct the security trustee to take certain procedures in respect of the financing documents.

bondholders for their agreement. This process would take time and will certainly cost money both in terms of the advisory and legal fees paid as part of the process and much more significantly in terms of any one-off payment or adjustment to the coupon on the instruments that are renegotiated.

531 In addition, the extent to which creditors may seek compensation may depend on the prevailing market conditions at the time as this will affect whether creditors perceive there to be an increase in risk associated with their investment and whether they see an opportunity to extract greater value from the companies. If for example, creditors consider there to be opportunities to achieve greater returns elsewhere for commensurate levels of risk they may demand greater returns through the negotiation process, or at the extreme, demand the return of the fair value of their investment.

532 In situations where consent fees are sought, the eventual fee paid will depend on a number of different factors as set out below.

1. The nature and materiality of the change- as Nourse explains, “[f]or “technical” breaches, where there is no change in fundamental credit and where bond holders are minded not to be unhelpful, one off payments could be a small number of basis points of the nominal value of the bond (nonetheless significant in cash terms given the amount of debt outstanding) but could be significantly higher in more contentious circumstances”³²⁹.

2. The total finance at risk- Table 29 sets out the total bond and bank debt, finance leases and swaps in the sectors that may be considered to be at risk as at 31st March 2010. This was compiled by Water UK for the MRFF. It represents the very upper bound of the extent of finance at risk and in fact, as we have noted, consent fee costs are likely to be wholly or mainly incurred by companies operating under the 'geared' model rather than the 'equity' model companies whose financing arrangements, which make up 42% of the total sector debt, are not covered by the same creditor protection arrangements.

3. The proportion of that finance that is renegotiated and the increased payment demanded- Through the MRFF, companies presented a series of five precedents where 'geared' companies had taken proposals to creditors for their approval (see Table 30). In these instances, not all of the finance was renegotiated and on average across these precedents just under half of the finance (39%) was affected. Similarly, the payments made were different, with some representing a single one-off payment and others representing an adjustment to the coupon. Clearly the extent of the payments from the five precedents presented to the MRFF is also a function of the particular changes being sought, including whether the changes sought are perceived to change the security over the creditor's investment and the market conditions at that time and these points were also made by MRFF³³⁰ members. Often the changes sought involved not only complex negotiations to transfer debt instruments but the protections offered on those instruments was also changed, including changes to the covenant package of protections, wrapping of the debt, etc. Some members considered that the precedents represented a more significant change than was being proposed through retail separation and therefore costs associated with

³²⁹Nourse, page 5

³³⁰ See Minutes of the MRFF, 23 February 2011, item 4. http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

retail separation consents would be lower, whilst others considered that they appeared to represent a less significant change so separation consent fees would be higher. Nevertheless, the precedents represent some of the limited examples of consents sought and do therefore provide a helpful indication of the likely scale of any consent fees from which some simple sensitivity analysis could be undertaken. In no instances did the evidence provided to the MRFF provide examples of cases where creditors demanded the return of their investment.

- 4. The remaining life of the finance instrument-** If the consent fee involves an ongoing adjustment to the coupon, then that ongoing annual fee can be expected over the full life of the finance instrument. So, for example, if the finance instrument has ten years left of its term then the ongoing fee can be expected to recur every year for ten years at which point refinancing will be necessary in any case. There are many different finance instruments in place across the companies with different terms remaining but during the last price review Ofwat's internal calculations implied that the weighted average tenor of debt (including finance leases and swaps as well as bond and bank debt) in the industry was around 20 years³³¹.

Table 29: Total bond and bank debt in the sector is shown below as at 31.03.10 (£bn)³³²			
Companies	Bonds and bank loans	Finance Leases	Swaps - mark to market
	£bn	£bn	£bn
Anglian	4.81	0.07	✂
Welsh	1.99	0.88	✂
Northumbrian	1.81	0.11	✂
Severn Trent	3.4	0.3	✂
South West Water	0.61	1.19	✂
Southern Water	3.34	0	✂
Thames	5.73	0.2	✂
United Utilities	4.45	0	✂
Wessex	1.47	0.08	✂
Yorkshire Water	2.65	0.38	✂
Totals for all WaSCs	<u>30.26</u>	<u>3.21</u>	<u>-0.1</u>
Totals for all WoCs	<u>1.95</u>	<u>0.03</u>	<u>-0.04</u>
Totals for all companies	<u>32.21</u>	<u>3.24</u>	<u>-0.14</u>
Totals for 'Equity' companies	<u>13.42</u>	<u>1.68</u>	<u>0.26</u>
Totals for 'Geared' companies	<u>18.79</u>	<u>1.56</u>	<u>-0.40</u>

³³¹ Ofwat analysis as part of PR09

³³² This information was originally presented to MRFF on 23 February 2011. It was subsequently updated and submitted by WaterUK following a process where each company was asked to consider the accuracy of finance considered to be at risk. For the purposes of this assessment we have not sought to further validate this information.

Table 30: Precedents of renegotiations of “geared companies” financing³³³

Precedent	Year	Total Debt Migrated £m's	Debt Negotiated £m's (% of total)	Average tenor remaining on the debt (yrs) ³³⁴	One-off fees (bps)	Coupon (bps)	Notes
✂	✂	✂	✂	✂	✂	✂	✂
✂	✂	✂	✂	✂	✂	✂	✂
✂	✂	✂	✂	✂	✂	✂	✂
✂	✂	✂	✂	✂	✂	✂	✂
✂	✂	✂	✂	✂	✂	✂	✂

³³³ Based on evidence presented to the MRFF

³³⁴ Weighted average based on the value of debt negotiated and it's remaining tenor rounded to nearest full year

- 533 In addition, costs incurred by the companies associated with consents may include fees associated with obtaining consent from creditors, the legal fees associated with any change to the terms of the credit documentation and credit rating agency fees. The information provided by one company suggested these costs amounted to around 0.15% in the case of a securitised structure.
- 534 Whilst these impacts can be expected to be greater for 'geared' companies the MRFF noted that there are still possible impacts on 'equity' companies³³⁵. However, the evidence presented to the MRFF was more mixed in this respect. Some 'equity' financed companies suggested that legal separation would have no impact on their existing financing arrangements³³⁶, whilst others suggested that it could, for example to finance leases³³⁷. The extent to which finance leases may be considered to be at risk depends on the extent to which they are linked to underlying assets which may be allocated to retail activities. In a number of cases, finance leases may be allocated to assets that are not considered to be retail assets, and if it is assumed that legacy meters are not allocated to retail activities, the potential scope of finance leases that could be impacted is likely to be very limited for the 'equity' companies.
- 535 Some companies have suggested that there is a risk of contagion from these changes whereby financing impacts on one 'geared' company could affect finance for the whole sector. Where financing impacts affect a number of companies and occur at these companies at the same time, this could affect investor sentiment in the sector, so it is important that government is sensitive to the way in which its decisions around the potential separation of retail are made so that existing lenders understand the importance of separation and the benefits of reform when its proposals are made.
- 536 Amongst companies, regardless of their particular financing arrangements it is likely that all will have creditor protection arrangements that defend against any 'material' change or 'material adverse effect' resulting from a change. These creditor protection arrangements are common but what constitutes 'material' is not defined objectively. Legal advice on whether separation would constitute a 'material' change also differs between companies. However, it is worth noting that currently amongst the companies there are a variety of retailing arrangements in place. For example, Yorkshire Water has a retail entity trading as 'Loop' which was set up before it entered into a securitised structure. Wessex and Bristol Water set up a joint venture company to undertake retail activities and companies including South Staffordshire Water and South West Water have separate retail companies. In each of these instances, at the time of separation, investors could have raised concerns that such a split was 'material' or a 'material adverse change' and they did not³³⁸. In these instances separation took place in the context of ongoing price cap regulation of the vertically integrated business and there was no change in revenue risk resulting from separation of the customer service function. In an environment where separation is accompanied by competition and a change in revenue risk, the investors may take a different view.

³³⁵ See minutes of MRFF meeting on 23rd February, 2011, item 3 and minutes of MRFF meeting on and minutes of MRFF meeting on 7th December, 2010, item 4, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³³⁶ See minutes of MRFF meeting on 23rd November, 2009, item 3, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³³⁷ See minutes of MRFF meeting on 23rd February, 2011, item 3, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³³⁸ See minutes of MRFF meeting on 7th December, 2010, item 4, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

- 537 What represents a 'material' change would be considered as part of the bondholders assessment and is likely to relate significantly but not entirely to the amount of RCV which is split through separation. Materiality of any particular situation is therefore closely related to what is separated, or the scale of retail which can be expected to be different depending on the particular definitions of 'retail' assets. Information from the companies separated accounts, which was presented to the MRFF³³⁹, indicate that retail is relatively small in RCV terms under any definition and particularly so where existing metering assets are not included in retail. For example, one of the covenants present in many of the securitised or 'geared' companies financing model protects against disposals of over 2.5% of RCV in any given year. Allocating RCV on the basis of total value of retail assets under on a Net Book Value basis would allocate 2.4% of RCV or 1.2% of RCV where metering assets are not included. Allocating retail RCV on the basis of the assets proportion of total value of industry assets would allocate 0.4% of RCV or 0.2% of RCV where metering assets are not included. This suggests that separation of retail would be under this threshold of 2.5% and immaterial under any scenario on this test.
- 538 Furthermore, given that after separation the retail business it unlikely to contain a substantial amount of capital, it is unlikely that continued regulation of it on a return on capital basis will be appropriate. There may therefore be no need to allocate any of the RCV into retail³⁴⁰, as it may be more appropriate to determine retail revenues by alternative means, which may include a margin on sales approach, which does not require a RCV. It would therefore be possible to undertake the legal separation of retail in a way which does not affect the RCV at all³⁴¹.
- 539 However, what represents 'material' is not solely related to the amount of RCV at risk. Separation and retail competition will change the nature and allocation of risk in the sectors. In particular:
- retail businesses in a competitive market could fail, exposing the wholesale businesses to the revenue risk associated with that failure;
 - the terms of trade and payment arrangements between the wholesale and retail businesses will also need to be defined and these terms may be defined in such a way as to minimise the risk to the wholesale business, for example by requiring retail businesses to pay in advance as they do in the Scottish water retail market; and
 - there may also be opportunities to reduce the risk on the wholesale business, for example by placing the risk of bad debt (which is a significant risk in the sector currently) with the retail entity or indeed by changing the regulatory approach, for example through the increased use of risk mitigants or the lengthening of the price control which may reduce the frequency event risk of regulatory price determinations. However, in some of these instances it must be recognised that where the risk is transferred to the retailer it may increase the likelihood of retailer failure.
- 540 Ofwat undertook some illustrative financial modelling of the wholesale and retail business which considered these issues initially and presented this analysis to the MRFF³⁴². This analysis suggested that whilst these issues are significant, there are approaches to organising the market arrangements to address them and ensure that viable retail and

³³⁹ See Minutes of the MRFF, 7th December, item 2, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³⁴⁰ This possibility was discussed in the informal consultation on a preliminary model for future price limits, page 22; it is also the approach that was used in Scotland to implement the separation of Scottish Water.

³⁴¹ See Minutes of the MRFF, 7th December, item 3, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³⁴² See Minutes of the MRFF, 23rd February, item 2, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

wholesale businesses exist. As this modelling work was illustrative, it did not include a full, bottom up risk analysis in the way that would be undertaken at a price review to determine the cost of capital and the margin to retailers. Further work is now being undertaken by a new modelling group³⁴³.

541 Beyond the RCV and market arrangements questions, there are also many other creditor protection arrangements which include different materiality tests “such that, for example, a disposal or separation that does not result in the RAR (the ratio of indebtedness to RCV) breaching a prescribed level or is in accordance with the WaSC’s instrument of appointment and where the disposal does not exceed certain RCV levels, will be permitted.”³⁴⁴ Some of these particular creditor protections have been examined through the MRFF and found not to be a key concern, in particular the impact of separation on gearing levels and the associated covenants were considered³⁴⁵. However, it would not be possible or practical to examine all of them because the creditor protections are different for each company. It is simply important to note that whilst the RCV and market arrangement questions are likely to be the more critical determinants of what might represent a 'material' change they are not the only ones.

542 In considering these issues the Cave Review concluded that the financing impacts arising from this separation would be negligible given the size of retail and the limited impact on the existing RCV and correspondingly they assumed that no financing costs would arise from retail separation.

*'Following discussions with stakeholders, I have concluded that, introduced appropriately, retail separation is unlikely to incur such costs. The share of the regulatory capital value discount in retail is very small.'*³⁴⁶

543 However, whilst NERA and Nourse also note the scale of retail in terms of the RCV associated with it³⁴⁷, they and members of the MRFF suggest that there may be impacts where reforms could force 'geared' companies to breach creditor protection arrangements. To avoid this, companies would need to obtain the debt holder consent to the proposed changes before they are introduced. This normally requires the payment of a fee against the proportion of finance at risk of breach.

Figure 10: Costs arising from renegotiating existing bond finance, including consent fees and costs associated with retail separation

To provide an indicative estimate of these costs the following simple methodology has been adopted.

5. Calculate the level of finance at risk:

- We have assumed that all the bond and bank debt is relevant here but only for the securitised companies (i.e. those adopting the 'geared' financing model- see Table 29). It is clear from the evidence that the issue of consent fees is a particular problem for the securitised 'geared' companies as opposed to the 'equity' model companies, some of whom have already undertaken similar forms of retail separation without these being seen as a 'material adverse change'. In fact, given that some of the 'geared' companies have

³⁴³ http://www.ofwat.gov.uk/competition/review/prs_web_markets_mrfmq

³⁴⁴ Nourse, page 21

³⁴⁵ See Minutes of the MRFF, 14th September, item 2, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

³⁴⁶ Final report of the Cave Review, page 80

³⁴⁷ NERA, page 14; Nourse, page 25

suggested that it may be possible to undertake separation without breaching their covenants, or that investors may actually agree to the changes where they can see the benefits, if anything we consider that this is likely to overstate the cost.

- We have also assumed that within all this debt, the proportion of debt renegotiated is within the range 20% - 70% with a central assessment of 40%. The upper and lower bounds of this range are drawn directly from the range of the precedent examples presented to the MRFF (see Table 30). The central assessment of 40% represents a simple average of the finance renegotiated. This data shows that where such consents have been sought, it is generally true that only a proportion of the finance is renegotiated.

= Bonds and bank loans of securitised companies (only)
* proportion of the debt that is renegotiated (based on the MRFF precedents)
= £16.8bn³⁴⁸ * proportion negotiated
= £3.37bn (low)
= £6.74bn (medium)
= £11.79bn (high)³⁴⁹

6. Calculate the applicable consent fee:

- Since the consent fee paid will depend on the outcome of negotiations between the companies and their creditors as well as the market conditions at the time of that negotiation, it is extremely difficult to predict what this might be and some sensitivity analysis seems appropriate. The only available evidence of (similar) consents are the precedents provided to the MRFF by the companies (see Table 30) and based on these precedents we have constructed the following 'low', 'medium' and 'high' scenarios.
 - Low – a one-off payment of 120bps
 - Medium – one-off payment of 25bps and ongoing 25bps on the coupon
 - High – an ongoing payment of 30bps on the annual coupon is paid
- Where the scenarios imply an ongoing annual cost we have assumed that this cost continues for 20 years (based on the average life of finance identified at the 2009 Price Review). Again, given the timescales indicated in the precedents, this is a conservative assumption.

7. Add advisory costs

- Costs incurred by the companies associated with obtaining the necessary consents may include fees associated with obtaining consent from creditors, the legal fees associated with any change to the terms of the credit documentation and credit rating agency fees. Information provided by one company in relation to the precedents cited suggested these costs amounted to around 0.15% in the case of amendments made to a securitised structure; the costs are expected to be lower in the case of retail separation.
- 0.15% is applied to the total finance at risk, £16.8 bn = £25m

This analysis therefore suggests that the total consent fees are likely to be³⁵⁰

- *Under the 'low' scenario = £66m (NPV over 30 years)*
- *Medium scenario = £281m (NPV over 30 years)*
- *High scenario = £528m (NPV over 30 years)*
- Importantly, Ofwat has always been clear that where these structures were entered into, it is at the risk of the investors and so this is not a 'cost' to customers – it is an investor cost, which is part of the risk they took on.

³⁴⁸Based on the total bond and bank debt of the securitised or 'geared' model companies, excluding Welsh companies (England only)

³⁴⁹This represents the level of finance at risk for England and Wales. If Wales were excluded the level of finance at risk is equal to £16.84bn * proportion negotiated = £3.37 bn (low), £6.74 bn (medium) and £11.79 bn (high).

³⁵⁰All calculations are based on Net Present Value calculation over 30 years using a discount rate of 3.5% (consistent with HMT Green Book appraisal guidance) with 2009 Price Base year.

“If investors choose to adopt highly geared structures, it is right for customers that both those investors and the companies bear the risks associated with their choice of financial structure.” Ofwat, Cost of capital and risk mitigants – a discussion paper, para 120, http://www.ofwat.gov.uk/future/monopolies/fpl/pap_tec1106cocrisk.pdf

Costs arising from renegotiating swaps and finance leases which are at positive fair value

- 544 The risk of incurring consent fees highlights that under some of the more structural reform options being considered, in particular the 'legal' separation of companies retail functions a situation may be created where existing finance instruments may need to be renegotiated in some way. In this context some companies have highlighted a risk that if such renegotiations were created then some creditors may treat this as an opportunity to walk away from existing finance arrangements. This is likely for finance instruments which are at 'positive fair value'³⁵¹ to the company, i.e. finance instruments which were set up some time ago, under different market conditions, which involve much better terms for the company than could be replicated under the current market conditions. In essence the creation of such situations could force the company to undergo some refinancing related to the affected instruments which could be costly both in terms of advisory and legal fees and higher interest rates or tenor adjustments relative to the historic debt that depend on the market conditions at the time.
- 545 Importantly, such costs would only be triggered through situations where these renegotiation opportunities arose. These situations are only likely to arise under 'legal' separation of retailing activities.
- 546 Through the MRFF this issue was highlighted by two companies in particular in the context of existing finance leases and swaps³⁵². No companies suggested that similar problems were likely to arise in relation to bond or bank debt where the creditor protection arrangements, the number of and type of parties involved and the market conditions mean that this problem is far less likely to arise. This is therefore more likely to be the case with historic low cost finance leases and not necessarily a critical issue for the c.90% of debt held in bonds.
- 547 For these purposes it is reasonable to assume that the counterparties to the renegotiations for finance leases and swaps are banks. It is important to note that banks may have different motivations in any renegotiation than investors in bonds, in particular because of other market influences, which may include, for example, the requirement to meet the capital adequacy and liquidity requirements of BASEL III.

Figure 11: Costs arising from renegotiating swaps and finance leases which are at positive fair value

To provide an indicative estimate of these costs we have adopted the following simple methodology.

4. Calculate the amount of finance at risk:

³⁵¹ See Minutes of the MRFF, 23 February 2011, item 3

³⁵² See minutes of MRFF meeting on 23rd February, 2011, item 3, http://www.ofwat.gov.uk/competition/review/prs_web_competition_mrf

- We have assumed the total finance lease and swap values in the sector are at risk but only for geared companies (see Table 29).

= Total value of finance leases for 'geared' companies = £0.67 bn³⁵³

= Mark to market of swaps for 'geared' companies = £0.40 bn³⁵⁴

5. Calculate the cost increases arising from renegotiation:

- Renegotiation of finance leases and swaps could take a number of forms. For the purposes of this calculation, we assume a coupon increment based on current market evidence.
- An indication from one bank is that medium term finance leases are currently priced around 100bp above LIBOR, whereas a number of finance leases held in company balance sheets are at small premiums to LIBOR. We assume this represents a 20bp, 40bp and 60bp increase to finance lease costs for the low, medium and high scenarios. We apply these assumptions to 100% of the value of finance leases of the 'geared' companies.
- Information submitted by WaterUK suggests the mark to market value of swaps assessed to be at risk was around £400m for the securitised companies as at 31 March 2010. For the purposes of this assessment we assume 50%, 75% and 100% of this mark to market value is at risk. However, mark to market valuations are volatile and subject to market conditions and the assumptions made at the time the mark to market valuation is undertaken.

= Finance leases for 'geared' companies = £0.67bn

*scenarios (low= 20bps, medium= 40bps recurring, high= 60bps recurring)

= £25m (low)

= £50m (medium)

= £74m (high)

= Swaps for 'geared' companies mark to market * scenarios

= £0.4bn * low = 50%, medium = 75%, high = 100%

= £153m (low)

= £230m (medium)

= £306m (high)

This analysis therefore suggests that the total costs arising from any renegotiations are likely to be:

- Under the 'low' scenario = £255m (NPV over 30 years)
- Under the 'medium' scenario = £412m (NPV over 30 years)
- Under the 'high' scenario = £568m (NPV over 30 years)
- As with the previous assessments of renegotiation costs associated with covenant breaches, Ofwat has always been clear that where these structures were entered into, it is at the risk of the investors and so this is not a 'cost' to customers – it is an investor cost, which is part of the risk they took on.

Conclusions

³⁵³ This represents the level of finance at risk for England only, excluding Wales.

³⁵⁴ This represents the level of finance at risk for England and Wales.

548 The evidence suggests that there are likely to be three areas of financing cost created by these reforms as set out below.

- **Costs arising from renegotiating existing bond finance, including consent fees and costs associated with retail separation**- the legal separation of retail activities may breach certain creditor protections or 'covenants', particularly if not exclusively for companies adopting the 'geared' financing model. In these instances companies will need to develop a 'STID proposal' to gain consent for the changes from their debt investors and in these instances consent fees may therefore be required either in the form of one-off payments or adjustments to coupons. The extent of the fee paid will depend on a number of factors, including the scale of the nature and materiality of the change, the proportion of finance that is at risk and needs to be renegotiated, the market conditions at the time of the renegotiation and the remaining life of any financial instruments on which higher fees are paid where these involve and adjustment to the coupon.
- **Costs arising from renegotiating swaps and finance leases which are at positive fair value**- if the proposed reforms do require companies to reopen negotiations on swaps and finance leases there may be some existing financing arrangements which are currently at 'positive fair market value', i.e. lenders would be unlikely to lend on such good terms as they have achieved already. In these instances, depending on market conditions, lenders may be inclined to use the opportunity to walk away from the arrangements and companies may be required to refinance at poorer terms than they might have in place currently.

549 Table 31 below shows how we have accounted for the three types of financing cost/impact in the IA options.

Table 31: Financing impacts (£m's NPV over 30 years)			
Market reform proposal	Financing impacts (costs)		
	<i>Renegotiation of bonds</i>	<i>Renegotiating swaps and finance leases</i>	Total costs (£m's)
<i>The legal separation of companies retail functions</i>	£66-£528m	£178m-£380m	£244m-£908m