

# Introducing competition into the water market

February 2011

## A conversation starter





## ACE suggests:

The governments water white paper should explore the case for fundamental reform of the water and sewerage sector. This should consider:

- Introducing competition into the consumer and supplier markets by allowing private companies to run and compete in these areas;
- Creating of an independent (ownership unbundled) network system operator(s);
- Requiring non-discriminatory third party access to the network from network system operators;
- Allowing price signals to guide investment;
- Breaking the current investment cycle, allowing network investment to occur over longer periods according to detailed investment plans, whilst companies that own private water producing/treatment facilities invest on a rolling basis given market price signals and consumer needs;
- Creating conditions that would allow new entrants to enter the market, and create competition between existing water suppliers. For example, companies outside of the water sector may wish to enter to provide bundled services (gas, electricity and water);
- Putting in place regulatory conditions that create an easy switching environment, to encourage switching rates; and
- Having the water regulator oversee the operation of the market and ensure competition and standards are met, rather than directly setting investment and consumer pricing signals.



## Introduction

This paper has been produced by ACE to explore the potential of regulatory and market reforms within the water sector.

In particular this paper looks to address the relatively low levels of consumer competition, supply competition, the inadequate levels of investment and the environment under which investment takes place.

For example the AMP cycle currently leave contractors with little work towards the extremities of the regulatory period, and the retention of skills and incentive to innovate is subsequently difficult. Regulated asset bases place downward pressures on costs and, whilst at times these can improve efficiency, they can artificially depress the economic return to companies that, maintain and construct our water infrastructure. This is counterproductive; it is only through rewarding those innovative and efficient companies at a rate that draws in skills and expertise (from water and other industries) that innovation and investment decisions become efficient.

The reforms suggested in this paper are concepts in development and draw from experience within other sectors, and as such should not be considered as the definitive 'solution' for the water sector.

Further analysis and market testing by, for example, the regulator Ofwat, would be required, before implementation was recommended or could take place.

Currently according to the Ofwat website, their goal is "to make sure that your water company provides you with a good quality service at a fair price."

Ofwat tries to achieve this by:

- "Keeping bills for consumers as low as possible"
- "Monitoring and comparing the services the companies provide"
- "Scrutinising the companies' costs and investment"
- "Encouraging competition where this benefits consumers"

Whilst the overall goals of Ofwat will remain similar to the above the reforms suggested in this paper would see them taking a more active role in the retail market. Ofwat would continue to maintain the quality of water, and would be encouraged to further incentivise the development of various types of investment. However, the mechanisms through which this is done would be far



more varied than that of the regulated asset base, and more emphasis would be placed upon competition within the industry rather than that of low prices. It is important to recognise that, if the infrastructure is inefficient, rising prices are a mechanism through which companies are incentivised to invest. The emphasis should therefore be on competition and the efficiency of pricing mechanisms, and not an arbitrary price level.

Within this, Ofwat would be given far stronger powers to clamp down on issues where companies were failing to provide the quality and level of services expected by that of consumers.



## The latest price review

Ofwat conducts a price review every five years. This takes into account the business plans of the water companies along with their commitments to investments, and aims to calculate if the investment plans and operating costs submitted by the water companies are reasonable. This aims to ensure that the charges represent the best value for consumers, whilst maintaining a suitable level of service quality and that any unnecessary charges are not feeding through to water bills.

Ofwat published its most recent determinations in November 2009<sup>1</sup>. All but one of the companies accepted Ofwat's determination, which was referred to the competition commission for review and final approval.

Overall, Ofwat concluded:

- “The price limits we have set increase by an average of 0.5% a year before inflation. They will lead to average household bills falling just below today's levels – by £3 in real terms over the period to 2015. This compares with an increase of £31 that the companies proposed in their business plans – an increase of 9%.”

It was noted that there was a large variance across the companies. However, these determinations, whilst accepted, were felt to be underestimated and did not fully account for the issues raised as part of the companies business plans.

Whilst there will always be some degree of disagreement as to the actual level of costs and investment, it is important to ensure that investment and innovation within the system improves.

### Issues raised in the price Ofwat review by companies with regards to operating expenditure:

Within these determinations it was found that “In general, companies argued that the operating expenditure assumptions were insufficient and this contributed to financing concerns summarised above.”

The main issues of concern were that:

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<sup>1</sup> Source Ofwat - Future water and sewerage charges 2010-15: final determinations, 2009  
[http://www.ofwat.gov.uk/pricereview/pr09phase3/prs\\_web\\_pr09fd](http://www.ofwat.gov.uk/pricereview/pr09phase3/prs_web_pr09fd)



- “The operating expenditure efficiency targets were too tough and not achievable (including the continuing efficiency target)”
- “We have not given specific uplifts for “known” operating cost increases”
- “There were insufficient notified items to address operating expenditure uncertainties.”

#### Issues raised in the price review by companies with regards to capital expenditure:

As expected issues with regards to capital expenditure are generally specific to each individual company, however within this there were some generic themes which included:

- “Where companies agreed with the principles of CIS but frequently did not like the outcome for their particular company”
- “The use and application of our cost base tool, particularly for those companies where it led to high efficiency challenges”
- “The asset management assessment (AMA) challenge for capital maintenance where there was general concern about how companies’ proposals had been scored and a view that we had taken an “arbitrary” approach to challenge”
- “A concern that the new approach to capital maintenance increased the risk to services in the future.”

More specifically a number of key capital expenditure issues were also raised across more than one of the water company, these included:

- “Expenditure on sewer flooding”
- “Allocation of expenditure to meet DWI requirements to capital maintenance”
- “Assumptions on metering costs”
- “Investment to reduce leakage and our approach to accounting for this”
- “Our approach to expenditure proposals for investment to improve resilience.”



As can be seen from the above, the water companies question the assumptions and models used by Ofwat, and whilst this may appear to be concerning at first it is important to recognise that this occurs in almost all regulated industries.

For example, within the electricity sector when distribution network operators submit their cost/investment plans, these are reviewed by Ofgem in a similar manner and issues are also raised by the companies with regards to the assumptions and design of the models.

Ofwat commented on the process, and feedback that was undertaken as part of its price determination process:

- “Companies suggested that we had started the decision-making phase of the price review with a presumed outcome of decreasing price limits. This is clearly not the case – while the average price limits and bills remain close to zero, there is clear variation around this from company to company. Of course, we did have certain presumptions – that we would put customers at the heart of the price review (recognising the current economic circumstances), and that we would set price limits which allowed efficient companies to deliver the outputs relating to statutory programmes of improvement. The resulting price limits achieve these aims.”



## Recent reviews of water sector conditions

In recent years there have been several major studies of the water sector. Two of these were the Cave Review and the Walker Review. These looked at the levels of competition and innovation within the sector and the tariff and charging regime that is used. Below are some of the key findings from these papers:

### [Independent Review of Competition and Innovation in Water Markets<sup>2</sup>](#)

The Cave Review recognises the need for the water industry to adapt. The investment challenge ahead is significant, and the potential impacts of climate change, population growth and supply shortages mean that water companies are going to need to utilise ever more innovative methods of production, distribution and service provision.

- “Since 1989, household charges have risen in real terms by 42 per cent. There are also continuing challenges, such as the on-going backlog of infrastructure maintenance and rising customer expectations that need to be addressed.”
- “The present time is therefore an opportune moment to review the structure of the water sector and its legal and regulatory frameworks. 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.”

However, the Cave Review also states that currently the water industry is not appropriately positioned or experienced to deal with substantial reforms in a short period of time:

- “I believe it is right to take a step-by-step approach to reform, starting where the risk-reward ratio is most favourable.”

ACE agrees that any reforms must be measured against the risk involved and phased in under a well-publicised and understood regime. However, it is also important to remember that substantial reform cannot always occur over long periods or in phases. Several improvements to the way in which the current water system are regulated were proposed in the report:

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<sup>2</sup> Source: DEFRA - [Independent Review of Competition and Innovation in Water Markets](#), Professor Martin Cave, April 2009





### **Reviewing the abstraction licence and discharge consent regimes**

- “I recommend that the Environment Agency should be given new powers to tackle over-abstraction and to encourage the trading of licences. Licence conditions should also be reformed to take greater account of the impacts of abstractions and discharges on the environment.”
- “The Review therefore recommends that, where licence levels are sustainable, licences should be fully tradable subject only to modification for direct environmental impacts and the impact on other users from a change of use or location.”
- “The Review recommends that consent holders should be able to trade their discharge consents by pollutant subject only to modification for direct environmental impacts from a change of location”
- “Discharge consent conditions could also better reflect the impact of discharge on the environment, for example, through real-time control.”

### **Introducing competitiveness into resources, treatments and infrastructure**

- “In resources, treatment and infrastructure, I see benefits from the introduction of greater competitive pressure. Initially, incumbents should be given an economic purchasing obligation and the water supply licensing regime should be reformed.”
- “At a later stage a contracting entity for new capacity may prove to be more effective. For those elements of the value chain that will remain monopolistic.”

### **The expansion of competition to non-household users**

- “In light of further representations, I recognise there may be benefits in removing the non-household threshold for retail competition on the introduction of appropriate accompanying changes and legal separation. This will allow all non-household customers to choose supplier. I also propose that customers and their representatives take a greater role in determining the services provided by companies.”

### **The creation of a research and development body**

- “To bolster the innovative capacity of the industry, I propose the creation of a research and development body to agree a shared research and



development vision for the industry and to co-ordinate the work of stakeholders.”

Whilst some of the above measures should be relatively simple to implement, they show the importance of increasing competition and market mechanisms. The price signal is not present due to the regulated nature of the water industry. As such, the investment signals are not there. The Cave Review concluded:

- “The industry is currently dominated by 21 vertically integrated monopolies.”
- “The Water Supply Licensing regime introduced in 2005 established a common carriage model of competition, but it was flawed in conception and implementation. As a result, only one customer has recently been able to switch to a new supplier.”
- “There is also variable use of bulk-supplies, self-supply and pre-treatment capacity. A special merger regime, which requires all mergers to be referred to the Competition Commission, discourages further consolidation.”
- “Consequently, efficiency in the industry is almost totally driven by economic regulation by Ofwat.”
- “The rewards for outperformance are relatively modest and the risks from failure are high.”

### **Water quality and standards**

- “The Environment Agency and the Drinking Water Inspectorate enforce environmental and quality standards. These are primarily determined at a European Union level.”

### **Innovation within the water sector**

- “While many companies see research and development as an important driver of their business, support for such activity, is very variable and ranges from 0.02 per cent to 0.66 per cent of turnover.”
- “Comparisons of international data suggests that the UK is responsible for fewer innovations per capita than other countries such as Australia, Germany, the Netherlands, Spain and the United States.”



The Cave Review presents two scenarios under which conditions could improve:

- “The introduction of market forces could drive companies to share water resources, limiting the need for new assets, keeping bills down and reducing any impacts on the environment.”
- “Alternatively, better regulation could lead to the development of new pipe maintenance technology, reducing the need to excavate roads, lowering the cost of repairs and reducing the need for abstraction.”

The step-by-step approach which the review recommends would require the following to take place:

- “An obligation for incumbents to procure the best value combination of water, wastewater and infrastructure supplies as part of the regulatory process.”
- “Companies’ decisions would be scrutinised by a procurement panel with independent members and would be subject to review by Ofwat in making its periodic review determination and the Environment Agency in determining the management of water resources.”
- “Unbundling the current combined supply licence and creating a new upstream licence for companies wishing to introduce raw or treated water into an incumbent’s network or remove and treat wastewater or treat and dispose of sludge from it. There should also be a network licence for those looking to provide infrastructure. The current structure of licences for incumbents would remain as now.”
- “Mandating the publication of water and wastewater supply costs at a water resource zone level and transport costs across incumbents.”
- For water resource supplies from an alternative provider to existing incumbents, replacing the costs principle, which determines the discount suppliers obtain from the incumbent for using their own resources, with an ex-ante access pricing framework based on the full economic costs
- “Introducing common operational codes and systems, binding on all market participants.”



- “Creating powers for Ofwat to undertake proactive investigations of non-compliance.”
- “Ensuring that the Drinking Water Inspectorate has appropriate powers and resources to maintain the quality of, and confidence in, the wholesomeness of the water supply.”

However, whilst the review recommends competition as a tool for improving the water sector, such as reducing the non-household threshold from 50 megalitres down to 5 megalitres to improve customer switching rate, it also states:

- “At this time, the case for extending competition to households remains weak. Ofwat, with support from stakeholders, should provide further assessments of the costs and benefits of these changes at the appropriate time.”

Whilst there needs to be greater exploration into opening up the consumer market to competition, it is only through such market driven mechanisms that companies are encouraged to provide the level, and quality of service the regulator wishes to achieve. As a default supplier, there is no cost above that set by the regulator of a company not meeting its obligations.

The report also recommends:

- “That the threshold for the special merger regime should be raised to £70 million and applied to the smaller of the merging companies, as with the wider merger regime. For mergers above this threshold, the Office of Fair Trading should be given power to undertake a stage one assessment of potential mergers.”

Whilst under competitive conditions large companies competing *per se* is not an issue given the highly regulated nature of the water sector, allowing such action before there is any competition within the upstream or downstream market may be counter-productive.

Companies already have little incentive to innovate and risk high costs of failure. Creating larger companies which can then be ‘squeezed’ for further efficiency gains with little competition and little incentive to invest is more likely to create a market that stands still than moves forward.



## The Independent Review of Charging for Household Water and Sewerage Services<sup>3</sup>

Another recent report, undertaken by Anna Walker, looks into the pricing and tariff structure of the water sector. Whilst in the context of this paper the tariff structure is not a key issue, it is an area which requires the water companies to innovate and improve consumer service.

Ofwat has a key role in ensuring that tariffs are reasonable, and if the water market model were to be more aligned with that of the energy sector Ofwat would play a far greater role in ensuring that pricing activities were taking place under competitive conditions, free from collusion and price fixing.

The report finds that:

- “There is a strong case for metering where water is scarce and the benefits therefore outweigh the costs; for high discretionary users (who may not be paying for what they use at the moment); and on change of occupancy. The case for metering is less compelling when water is not in short supply.”

The report expands on the role that Ofwat will need to play:

- “With metering becoming more widespread, there is a transition from one charging system to another already under way. This cannot be achieved successfully without leadership. The report recommends that Ofwat, working with others including the Environment Agency, should provide this leadership.”

The report also suggests that a group should be established to look at the possibilities and advantages of combining the different smart meter technologies across the utility industries. This would provide economies of scale and potentially cut the cost of installation to consumers for such technologies. If this were to be the case it would be preferable for both the commercial companies involved and consumers if the market structures within the utility sector were aligned to avoid any undue complication.

Another area highlighted by the report is that of the pricing and affordability of water:

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<sup>3</sup> Source: DEFRA The Independent Review of Charging for Household Water and Sewerage Services, Anna Walker, December 2009



- “Affordability is already a real issue for some groups of customers and in high cost areas such as the South West. It therefore recommends a package of help closely targeted on customers with low incomes. The package includes help with bills and proposes water efficiency schemes alongside similar energy schemes.”
- “The three regulators – Ofwat, the Environment Agency and the Drinking Water Inspectorate – exercise considerable influence on the size and nature of costs faced by the industry.”
- “As a result of this capital investment, prices to customers have risen significantly since privatisation and much faster than inflation: about 42 per cent in real terms. Prices also vary considerably by region.”
- “The costs of the water supply system are driven by peak rather than average demand. The industry’s infrastructure must be capable of meeting not only the base demand for water but also daily and seasonal peaks. In order to provide a long-term, sustainable system, companies have to plan now to deal with greater weather extremes in the future, coupled with substantial population growth.”

In this area lessons can be learnt from the energy sector with the fuel allowances and the work Ofgem undertakes to provide flexibility to consumers. However, it is important to note one significant difference: while a household’s electricity and gas can be cut off, a water utility is not allowed to withhold supply due to non-payment. This diminishes the incentive to pay, limit usage, and to accept help from government.

Given the current regulatory frameworks and tariff mechanisms the report concludes that:

- “Prices should continue to be regional reflecting water costs. It also concludes that it is appropriate for water customers to pay for improvements to the quality of water and the disposal of sewerage as they are benefiting from the improvements.”
- “However, water prices remain relatively cheap for most households. The average combined water and sewerage bill is £344 in 2009/10 for England and Wales. This means that providing and removing a litre of water costs about 1p. However, this figure masks significant regional



variations. Prices are particularly high in the South West, where the average combined bill is around £497 and unmetered customers pay on average over £700 per year.”

Although ACE agrees that pricing under the current structure should reflect the cost of delivery, a single entity that controlled the distribution system would potentially have greater buying and purchasing power for materials, increased ability to raise capital on the open markets and the possibility of spreading the costs of infrastructure improvements across all water users. It could also take a view of water infrastructure as a whole placing importance on areas of national significance. This may be more effective in dealing with the problems that climate change may present.

Further measures that were also recommended include:

- “Incentivise household customers to minimise their surface drainage.”
- “The highways authorities should become responsible for highways drainage as they are in the best position to influence this.”
- “That there is a disconnect between the current valuation of water and its likely future value. Water today is cheap. When companies abstract water they pay very little for doing so. At the other end of the pipe, a litre of tap water costs less than 1p to supply and take away. At about £1 a day, water bills for most customers are significantly less than energy bills.”



## Valuing water – how upstream markets could deliver for consumers and the environment

Following the Cave and Walker Reviews, Ofwat produced a paper entitled Valuing water – how upstream markets could deliver for consumers and the environment<sup>4</sup>, which outlined a number of ways in which the water sector could deliver for consumers and the environment. The paper starts by outlining some of the key facts about the water market, such as it being “a multi-billion pound industry with annual turnover of more than £10 billion.” Ofwat also attempts to summarise the scale of the challenges it faces, being responsible for the regulation of “water and sewerage services to 24.5 million properties and maintaining a total pipe network of 668,000 km.”

Privatisation can also be considered as having been good for the industry. The level of investment from private companies to date (from 1989) equates to “more than £85 billion (in today’s prices). That is double the rate of investment compared with that before privatisation.”

Ofwat discuss reforms with regards to deregulation and creating competition within the sector. Like the cave review it appears that these regulations would be phased in over time. Measures proposed include the following:

- “Creating new upstream-only licences, removing the requirement for upstream water suppliers to also retail water to customers.”
- “Opening access to water storage and water treatment assets to upstream entrants.”
- “Supporting the Environment Agency, Defra and Welsh Assembly Government in looking “at measures to remove the barriers to abstraction trading.”
- “Supporting the Environment Agency, Defra and Welsh Assembly Government in looking at market-based approaches to achieving sustainable abstraction”
- “Allowing the appointed companies to sell some of their water at unregulated or less tightly regulated prices.”

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<sup>4</sup> Ofwat - Valuing water – how upstream markets could deliver for consumers and the environment , 2010, [http://www.ofwat.gov.uk/publications/focusreports/prs\\_inf\\_value.pdf](http://www.ofwat.gov.uk/publications/focusreports/prs_inf_value.pdf)





What is reassuring is that within this process of deregulation, Ofwat recognises that in some areas it may have to improve regulation to ensure that competition water quality and standards remain effective. Ofwat identified the following two areas as some of those that may require further enforcement given the recommendations in their report:

- “Possibly requiring appointed companies to sell a proportion of their water to, or buy it from, a third party”
- “Requiring appointed companies to set up a business unit for system operation.”

Ofwat has also recognised the important role it will play in maintaining competition within such markets and that regulatory frameworks may need to be put in place to address issues such as allowing new entrants to enter the market.

Competitive markets could play a role in “the upstream processes of water and sewerage service delivery. These account for 90% of investment in the sectors and almost all of their environmental impact.” This shows that there is a great deal of potential within this area for innovation to take place and this is most likely to occur efficiently under competitive mechanisms that promote efficient pricing, investment and decision making.

The market also has a role in the supply of water given the contribution it could make to directing investment:

- “Market mechanisms could reinforce these existing arrangements [as] an additional way in which the appointed companies can ensure secure supplies. This is because markets provide a mechanism by which signals about relative scarcity can be sent to buyers and sellers, who can then act on those signals. In this way, markets could provide a basis for dealing with security of supply concerns.”



Below is a summary of Ofwat’s proposals in its valuing water publication and the timeframes in which they could be achieved:

First step element	When proposed	What it could achieve
<b>Existing proposals</b>		
Create upstream water supply licences	Proposed for England in UK Government and Welsh Assembly Government consultation (September 2009)	<ul style="list-style-type: none"> <li>Makes entry easier for upstream competitors</li> </ul>
Create new access pricing rules that enable entry on a fair basis	Proposed for England in UK Government and Welsh Assembly Government consultation (September 2009)	<ul style="list-style-type: none"> <li>Makes entry more attractive for upstream competitors</li> <li>Makes efficient water trading easier</li> <li>Discourages network owner from discriminating against upstream entrants</li> </ul>
Make abstraction trading easier	Proposed by Ofwat and the Environment Agency in February 2009; supported by Cave review (April 2009) and Walker review (December 2009)	<ul style="list-style-type: none"> <li>Makes entry easier for upstream competitors</li> <li>Helps to reveal the value of water and encourages environmentally-sustainable abstraction</li> </ul>
<b>Ideas we have been exploring</b>		
Implement water trading arrangements that encourage or require appointed companies to buy and/or sell a small proportion of their water	New idea, but discussed in Severn Trent Water and Water UK reports	<ul style="list-style-type: none"> <li>Stimulates competition among appointed companies</li> <li>Makes entry easier for upstream competitors</li> <li>Helps to reveal the value of water and encourages efficient use of water</li> <li>Proportion of water traded can be small to allow the idea to be trialled</li> </ul>
Create functionally independent system operators	New idea	<ul style="list-style-type: none"> <li>Discourages network owner from discriminating against upstream entrants and blocking the benefits of upstream markets</li> </ul>

Source: Ofwat

### Ofwat valuing water publication reveals:

“Under the provisions of the Water Act 2003, since December 2005 it has been possible for non-household customers that are likely to use at least 50 million litres (Ml) of water a year at each eligible premises to choose their water supplier from a range of new companies known as water supply licensees (or ‘licensees’). These licensees can compete with the appointed companies to provide water supply services to such non-household customers.”

Under the current system this means that there are two types of licences available:

- “Retail licence. This allows the holder to buy water wholesale from an appointed company and sell it to its customers’ premises.”
- “Combined licence. As well as allowing the holder to buy water wholesale and sell it to eligible customers, the combined licence also



allows water to be introduced into an appointed water company's supply system."

Ofwat proposes accepting the Cave Review's recommendation to unbundle the current combined supply licence, stating that:

- "Unbundling combined supply licences would create upstream only licences, allowing new entrants that want to sell (or buy) water from the appointed companies to do so without having to have their own customers to retail the water to."

The advantage of unbundling these licences is that it would enable:

- "Selling water directly to an appointed water company under a regulated framework rather than as a private arrangement"
- "Selling water to new entrant retailers"
- "Buying water from an appointed water company and selling it on to another appointed company or retailer."

The rationale behind changes to the water licencing scheme is that only one customer in a five year period has switched, and the difficulty companies have getting regulatory access to supplies at competitive rates. This prevents them from competing, limiting their impact in the market stifling the potential level of competition. Other examples include the need for companies to negotiate on a case by case basis and the certainty surrounding the future prices at which water can be purchased.

Another area where reform was felt to be needed was that of the abstraction licences. These govern the way in which users can abstract water, and the period over which they are allowed to do so. This licence is not free but fees do not currently reflect the economic, supply, and environmental conditions that are created as a result of abstraction activity. Recommendations to improve the efficiency of these licences include:

- "Reviewing guidance on trading to give clarity on the conditions applied to licences as a result of trades."
- "Providing more public information on trading rules and historic traded prices."



- “Investigating options to ensure charges better reflect the value of water.”

Finally in its valuing water publication Ofwat commented that:

“In order to meet these challenges effectively, over time some of the functions that the appointed companies carry out (the ‘system operator functions’) would need to develop substantially. These functions include:”

- “Managing flows of water within the distribution network on a day-to-day basis to ensure demands are met, while operating the network cost-effectively.”
- “Scheduling maintenance to the network.”
- “Ensuring the efficient development of the water distribution network.”
- “Overseeing the application of the correct access pricing.”

This is important given that it re-enforces some of the ideals that the regulator wishes to achieve whereby parties are treated equally and competition can develop. For such systems to develop free from discriminatory practices:

- “To allow upstream markets to develop successfully and deliver the maximum benefits, our model would also involve requiring the appointed companies to separate their system.”

Such models have been implemented within the energy market, with parties competing both upstream and downstream.



## Water market reform – the energy market model

The following market reform is not proposed as a complete model, and the practicality of our suggestions would have to be explored in more detail by Ofwat. The model proposed draws on experience from other utility sectors and poses some interesting questions as to the degree of competition and market structure currently permitted within the water sector.

### **The problem**

Firstly, it is important to recognise that the water sector is not working effectively. There are increased flood defence requirements, meeting water quality standards, sewerage demands, falling supply, and poor leakage rates. This situation has to be addressed; investment needs to continue to increase, and consumers are going to have to face the reality that bill charges are too low.

As with any resource scarcity raises prices. Although water prices have risen the regulatory system has mitigated the effect of such rises to the extent that the current price of water does not equate to the price of supply, environmental impact, investment, credit availability, material and labour costs.

The model suggested below will help to introduce pricing mechanisms to direct and drive investment. Unlike the energy sector, price signals in the water market are currently weak owing to the existing regulatory regime.

### **The current water sector model**

The water industry in the UK is one of regional monopolies with little consumer choice and a short regulatory investment cycle. As with all network industries it can be argued that efficiency gains occur when companies operate on a large scale, given the scale of the investment requirements and the inefficiency of having multiple networks from competing companies. This has been demonstrated by the need for the Thames Tideway project to be taken out of the investment cycle, and exceptions made for the increases that will ultimately be passed onto consumers bills. Such a project may have been financed more effectively if the UK's water network was under the remit of a single network system operator (NSO) that could negotiate better terms with regards to both credit and construction costs.



### **Ensuring pricing mechanisms are efficient**

Ofwat currently does this by thorough investigation of the water companies' investment plans, and then deciding if the costs and investments are reasonable given the requirements of the network. This role would not change under an energy market model, but more emphasis would be placed on market players obtaining funding from the market, and investments would be driven by pricing mechanisms.

In this respect, Ofwat would still be required to ensure that investment requirements are met at a price that is acceptable to consumers. However, the mechanism through which pricing is decided would relate more to that of the cost of investment, the cost of ascertaining the resource, access to the network, and the competitive market.

The current market structure of the water sector, whilst moving in a direction towards that of competition and ownership unbundling, has not created a competitive environment and is still one characterised by monopolies. So, using the energy market as a proxy could the regulatory environment be changed to encourage investment while also providing a competitive environment in which consumers benefit?

### **Ownership unbundling, a non-discriminatory open distribution system**

In energy, the European Commission aimed to achieve ownership unbundling (OU) within the energy sector, breaking the vertical integration to introduce competition. The idea is that the owner of the grid/network has to be under separate ownership, thus being completely independently of the production and consumptions ends of the market. This company would then provide non-discriminatory third party access to its network to a number of private companies within the production and consumption sectors of the market. These companies would then compete to provide and supply consumers, while the single owner of the network can benefit from economies of scale and raise funds from the market based upon its asset base.

This NSO would provide a low stable return, giving investors a safe asset in which they could invest. In theory, this would be very attractive to investors given the current level of market uncertainty. This may drive a much needed rise in the number of companies willing to invest within the water sector.



The private companies that enter the market to 'produce' or 'sell' water to consumers all operate on an equal footing given non-discriminatory third party access to the network, but can then compete on price, service and products to increase their customer base. This promotes competition, improving switching rates and lowering the cost to the consumer.

Ownership unbundling was not popular with all European countries and, in the Third Energy Package, an alternative option to full ownership unbundling was offered. In this a company can still own businesses up and downstream providing that the operations and accounts of the network provider remain separate. The creation of this alternative option to a degree compromises the rationale behind full OU because there is still a vested interest from the parent company despite accounts and operations being legally separated. It is for this reason that this type of option would not be suggested if such radical reforms were proposed in the water sector.

### **Unbundling in the water sector**

Ofwat is taking the experience of the energy sector and is exploring implementing such actions in the water sector. The "Valuing water – how upstream markets could deliver for consumers and the environment" paper suggests that the water market should go down a route of functional separation. Under such a scheme the operator functions would be located within a single business unit. Whilst this would help the party to act independently of its parent organisation it does not address the issues of financial obligations, insider knowledge etc. It is for this reason the energy sector pushed for the full ownership unbundled option. Even within the independent system operator (ISO) alternative that was produced there is a large extent of legal and accounting separation. It is only through such requirements that the system operator will act as an independent party treating all companies that wish to access the system equally. If Ofwat wishes for competition to take place it would be advisable that they aim to achieve the highest degree of separation plausible.

### **System operation – network comparisons**

To draw comparisons between the water and energy sectors, water can be easily stored unlike electricity. In that respect, water has a greater degree of crossover with the gas sector. The use of long-term contracts in the gas industry has slowed the unbundling process, so this would need to be analysed in more detail within the water sector to identify whether such barriers exist before such



reforms took place. Water cannot be easily transported from one area to another due to ecological reasons. However, such actions can take place if the water travels 'slow enough', for example through the use of canals, allowing time for a shift in ecology to take place. Investment would need to be maintained in a way that takes this into consideration.

There is no reason why the unbundled NSOs could not take this into account within their investment plans. This, in effect, squeezes the EU situation of national transmission system operators (TSO) down to a smaller UK level (with the regions effectively representing the national TSOs).

Over time one would expect these regional water NSOs to undergo mergers and acquisitions, until such a time where there was one or two UK wide network companies. Such action effectively provides the incremental approach to regulatory reform, with the companies deciding where the greatest economies of scale lie and the most efficient size for their operations.

The advantage to having larger network operators is that harmonisation of the network occurs and wider regional investment is made easier. For example, flood defences may currently need to be installed across differing water operators, with differing priorities and funding requirements. Attracting investment for such a large project would be easier if there were a large NSO in place.

The European Union is adopting a similar policy to this in energy with the formation of the Agency for the Cooperation of Energy Regulators (ACER), which will help to implement the Third Energy Package and encourage cross border investment to encourage regional grids, and eventually an efficient single European energy grid.

The idea is not to duplicate network systems, and investment potential is greater given economies of scale whilst still providing a market system that promotes competition to consumers.

### **Looking at the 'energy' water market concept in further detail**

The companies that currently operate the water networks would be required to split up their operations, with the consumer and producer aspects of the organisation separated in their entirety from the NSO.

Legislation would need to be put in place to guarantee that the newly formed NSO companies provide non-discriminatory third party access, with the





networks effectively guaranteed a certain fee for use of the water network for both clean and waste water and the provision of flood defences. The regulator could initially set an attractive tariff for access to the network to encourage significant investment. Whilst this may initially inflate consumer prices, competition within the sector should ultimately lead to efficiencies and so reductions in consumers' bills.

For items such as abstraction licences, it is proposed that Ofwat continues its investigations into reforms of the licence and puts in place the required standards and guidelines and pricing provisions. However, once complete the administration and monitoring of the licences would take place under the role of the NSO.

Within each of the regions the newly formed consumer/producer companies could sign consumers up to their service, providing a price for water supply above that of the cost of third party access. The companies would compete on the margin they were prepared to earn, service provision, and the type of contract they provide (fixed term pricing, annual pricing, pay as you use etc). The profits made from such activities are likely to be used by companies to invest in further widening their customer base, and improving their service. Competition in this area should improve switching rates and lowering the cost to consumers, which could equate to or surpass the initial 'generous' rate of return provided to the NSO (via third party access), to encourage private network investment.

On the supply side, companies would compete upon the assets they own within the region. Economies of scale provide further possibilities for enhancing profit, as would service quality and environmental credentials. There is also the potential for companies, such as those that own reservoirs for energy production, to also utilise the water resource selling it to consumers directly or consumer facing companies.

By introducing competition within the production end of the market, and given the requirement for customer facing organisations to be in balance (they have to buy the equivalent amount of water required to supply their customers) price signals should feed through and drive efficient investment.

For example, suppose that a region had five suppliers of water and the customer facing companies had a choice of the source from which they



purchase their water (hence suppliers are competing on price). If there is a shortage of supply (as is the case in the south east) eventually all the suppliers would need to increase their prices (which may or may not be passed onto the consumer given competition at the consumer end of the market). This would create a more attractive environment for external investors. These investors could direct funds into expanding the assets that are already in place with the current competitors or could enter the market to compete directly.

The market signals and private willingness to provide efficient investment would also remove the current five year cycle that takes place, given that investment in assets that 'produce' water would occur as the market requires them (on a rolling basis). Network investment would occur over a long term plan such as that which is in place by National Grid in the energy sector.

However, as with the energy sector there will be a degree of investment that is driven by market regulation. In the energy sector these areas include the renewables markets, energy efficient technology, smart meters etc. Comparable aspects in the water sector would be water treatment technologies, habitat requirements, flood protection, smart meters, infrastructure standards etc. This role would be undertaken by Ofwat in accordance with wider EU legislation.

To promote the competition within the market initially it may be the case that the previous incumbents are required to sell a percentage (eg 50%) of their assets within a region to promote competition and allow for new entrants.

In theory, even if no new private companies were to enter the industry, the existing water companies would now be in a position whereby they could compete in the various regional networks. This would increase consumers' choice of water suppliers from its current level of one. However, as we have seen in the energy markets it is likely that companies will enter the market to 'bundle' deals and provide bespoke services. All of these should increase competitive behaviour.

The proposed structure above should leave the advantages of the natural monopoly in the network owner's hands whilst all other parts of the sector compete.

As with the energy sector there would still be a requirement for an effective regulator within the market to ensure that universal provision, social and environmental standards are being maintained. Within this, the regulator would



need to be given the tools/powers to implement these standards and also have the ability to utilise competition legislation if required. Tools such as competition legislation provide an effective deterrent to stop anti-competitive practices.

### **Issues that may occur when applying the energy sector model**

Implementing such a model would require Ofwat to take a much more active role in the regulation of competition and market environments. For example issues such legal liability could arise because of multiple parties being involved in supply and the distribution of water. A regulatory system to account for such inferences would need to be put in place.

For example, if liability for an incident could not be determined, the regulator may choose to hold every party involved jointly liable for such failings. Such a system would also encourage companies to defend and prosecute failings much more rapidly when they occur to avoid joint liability.

Another area of concern is that of under investment. The energy market is currently seen as potentially having a problem with this issue, with the possibility of an energy gap occurring and the potential for blackouts.

However, there has always been concerns about an energy gap, and this is likely to continue. The key is that, to date, such a gap has not materialised. That is not to say there is not the possibility of such an event happening but it could be argued that this is a product of efficient investment. The rationale behind such a notion is that there should not be a significant amount of over capacity as this would be inefficient. Investment should only take place as demand increases to the point of requiring further investment or when generation capacity needs renewing.

This is in contrast to the water sector, which enforces hosepipe bans due to supply shortages on almost an annual basis. Interestingly, under the market model prices would rise to reflect the cost of using/producing water. Activities such as using hosepipes would decrease to match the marginal costs of water. This may reduce the need for investment due to a fall in general water usage over the summer rather than having to enforce blanket bans in reaction to weather conditions.

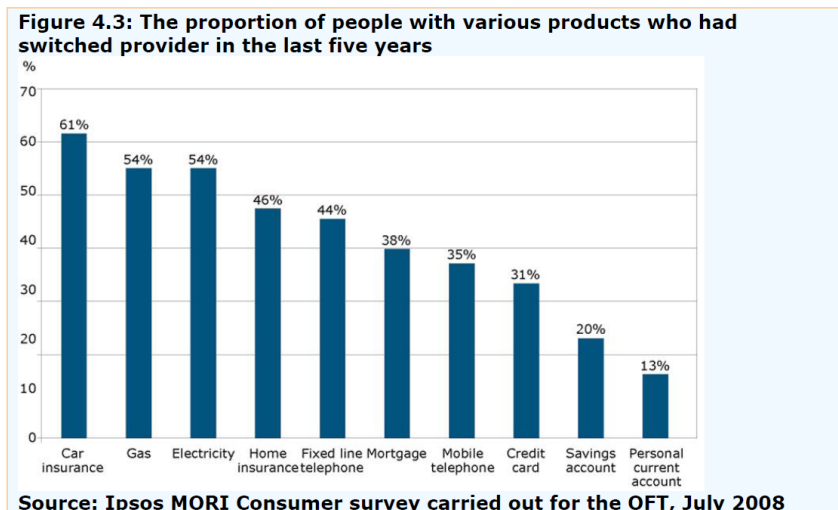


## Consumer competition example - switching rates in the energy sector:

“The probe found that 58 per cent of non-switchers worry that things will go wrong if they switch suppliers, yet 77 percent of those who have switched are either very or fairly satisfied with the experience. A further 7 per cent said they were neither satisfied nor dissatisfied (which suggests they did not have any problems). Only 9 per cent of switchers were dissatisfied in some way. There is no evidence as to the precise nature or cause of the dissatisfaction.”<sup>5</sup>

An econometric analysis of the factors with influence switching rates by Ofgem, in their “Energy Supply Probe - Initial Findings Report”<sup>6</sup> revealed that:

- “Energy suppliers observe increased churn when their prices are above the market average.”
- “The degree of churn on the basis of relative prices is low.”
- “Greater expenditure on marketing is associated with lower consumer churn away from suppliers.”
- “There is some evidence of lower price sensitivity for PPM consumers.”



<sup>5</sup> Source: Ofgem – Energy Supply Probe – proposed retail market remedies, (April 2009)

<sup>6</sup> Source: Ofgem – Energy Supply Probe - Initial Findings Report, (October 2008)



## Conclusion

This paper has explored the possibility of applying some of the competitive and market forces that currently occur in the energy sector to that of the water industry. These measures have the potential to improve the investment decision making process, smooth the current investment cycle and, increase the availability and accuracy of price signals.

Price signals should allow both the water companies and regulator to more accurately gauge the size and cost of investment, thus reducing the number of investment issues raised as part of the current price review cycles.

The separation of supply and consumer facing aspects of the water sector will also allow a wider number of private companies to invest in assets based on a need and/or rolling basis. This variety will help to remove the volatility of the AMP cycle. Ultimately, the goal for the regulator and private companies should be to provide long term security of supply whilst maintaining efficiency.

Where there are benefits to the current system these should be maintained. The entry of new players into the market whilst encouraging competition should not be at the expense of economics of scale, overall network efficiency and standards.

In this respect the model follows the example of the energy sector in creating independent network operators. This separates the functions of the network from that of consumer and supplier activities, limiting potential anti-competitive issues by removing the possibility of preferential resource and service provision, whilst attempting to maintain the advantages of economies of scale within the network functions.

However, unlike the energy sector, there is likely to be particular importance placed upon issues such as liability, quality and universal service provision. To maintain such aspects a strong regulator would be required with the ability to impose restriction and fines where they deemed appropriate if minimum standards were not being met.

As with most new market models implementation would need to be explored in more detail. Such an investigation would require consultation with the potential system operators, current stakeholder and the views of potential market entrants. For example energy suppliers may wish to offer a full home provision



package (water, gas and electricity). Unlocking the full potential of the model proposed above will require an appetite amongst investors and companies to enter the water sector.

The process behind such a consultation should be transparent, with the results made public. This should help to encourage further transparency within the industry as to the potential solutions for an efficient water sector.



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