

## The de-averaging of charges within a company area

As we outlined in Briefing Note 4<sup>1</sup>, the draft Water Bill would facilitate 'common carriage'. With common carriage, retailers can buy raw water from a third party source, transport this using the networks of the vertically integrated appointed businesses, then sell it on to end customers. The expectation is that stimulating competition in this way should lead to more efficient use of water resources.

However, these provisions could have unforeseen incidence effects for both business and household customers, including the de-averaging of charges. This issue has become an area of focus for the EFRA Select Committee's scrutiny of the draft Water Bill.

### Key messages

#### The big issue

There is a fundamental mismatch between:

- the long-term nature of the investment decisions that the water companies make and the range of costs that have to be incurred as a function of the geography; and
- the shorter term nature of 'in the market' competition.

These differences become obvious when we look at costs across a water company; each area and asset within a water company's region has a different cost. Traditionally, these differences have been smoothed across all customers to ensure, for example, that customers in rural areas do not end up paying more than those in urban areas. If it is possible to contract to opt in or out of different parts of the wholesale value chain, without considering the remuneration of investment over the life of the assets, this mismatch could lead to de-averaging of charges.

De-averaging may benefit some customers but could ultimately result in substantial increases for others. Household customers would also see increases in their bills, unless specific measures are taken to exclude these customers from the incidence effects in some way. Insulating households fully would be a considerable challenge – not least because of the extent of shared costs that characterise the water and sewerage industry.

These negative incidence effects are likely to be exacerbated because de-averaged charges would make it more attractive for non-household customers – located in an area that is lower cost to serve than the average for the monopoly service provider – to enter into contracts with a new retailer for upstream services (in other words, a retailer that is not the customer's incumbent supplier). This is because, faced with a material increase in their charges, it becomes more attractive for the customer (and their retailer) to pursue a supply solution that involves de-averaged costs. Such a step is likely to have a negative impact on the legitimacy of charges in the short term and could, ultimately, lead to increases in the costs that must be borne by households.

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<sup>1</sup> Briefing Note 4: The draft Water Bill – Ensuring upside from upstream reform, November 2012.

## **A choice?**

There is a choice between seeking out the maximum possible level of economic efficiency and maximising the legitimacy of charges in the eyes of customers. This is not simply a question of economics but one of social and regional policy, with significant political implications.

It also concerns the effective and efficient operation of water businesses. If a water business is to maintain legitimacy in the eyes of its customers, it must not only be efficient, but must also be seen to be so.

Improved resource allocation – resulting from de-averaging and improved price signals – may deliver net benefits to society. There may, for example be more winners than losers or the benefits to the winners may outweigh the losses incurred by the losers. However, the industry's costs will remain broadly fixed in the medium to longer run (arguably, they could be higher in the short to medium run).

As such, the customers who benefit will have done so, at least in part, by making some classes of customer much worse off. Given the economies of scale (and scope) that exist in the water industry, these classes of customer are likely to be the smaller or more rural businesses (this assumes that we have somehow been able to insulate households from the effects of the de-averaging).

## **A false choice?**

It has been suggested that a little de-averaging may not be a bad thing. The idea is that some improvement in price signals could lead to better resource allocation and that the negative incidence effects could therefore be contained. However, de-averaging is made possible by the ability to access different parts of the upstream value chain and by the economic incentive for a customer (working with its retailer) to identify ways to keep their charges to the lowest sustainable level.

It is not something that can be limited ahead of time unless thresholds are introduced. This would have perverse environmental consequences (by reducing the pressure on a large user to use less its bill is now lower!). And even if we accept that consequence, any benefit accruing to a large water user has to be paid for by all other customers. It is not clear what real benefit would accrue to society more broadly from allowing large users to benefit in this way.

## **The arguments for and against local costs**

The local costs incurred in supplying customers in different locations can be very significant. These differences reflect availability of water resources, distance from source/discharge, quality of the raw water, topography and population density.

An economic argument that is sometimes used is that charges should reflect these local variations as this will result in a more efficient allocation of scarce water resources over time. The assertion is that businesses using a lot of water would be attracted to lower cost areas and that this would reduce the likelihood of over-abstraction in more vulnerable water supply zones.

Although it is hard to argue against more efficient resource allocation, the pursuit of allocative efficiency sits uneasily with the reality of the water and sewerage industry. This is because it fails to acknowledge that while it is right for a water company to make decisions on the basis of local costs (and seek maximum allocative efficiency), that same company does not need to charge customers based on these same local costs.

We would argue instead that the best economic outcome is likely to be achieved by making best use of existing or sunk assets before seeking to introduce new assets (we will return to this issue in Technical Note 4).

### **The nature of water industry costs: sunk, marginal and average....**

The structure of the water industry's costs is quite unique. Its assets last a very long time and can have expected lives of well over 50 years. Investors need to have confidence that sufficient revenue will be allowed over the life of the asset such that it can be operated, maintained, return the capital invested and earn a reasonable return. Anything that has an adverse impact on this increases the cost of capital.

There are three points that are vital in this regard:

1. There can be quite large differences between the costs of supplying different customers (in different locations within a company area), even on a marginal cost basis. These differences are a function of raw water quality, distance the water has to be moved and the topography of the local area. These differences become more significant when costs are considered over the longer term.
2. As mentioned earlier, investments in treatment works, pipes or water sources tend to have long asset lives. A lower cost solution will only have an immediate impact in lowering costs if it replaces an asset that has reached the end of its functional life and has been "bought and paid for". Replacing an asset, in whole or in part, before this point will increase the overall costs of improving, maintaining and running the network. Constraining revenues to avoid these incidence effects could mean that investors do not receive the return they could have expected for the efficient operation of the system; this would undoubtedly increase the cost of capital to the detriment of all who use water and sewerage services.
3. Water and sewerage systems tend to be complex and increasingly inter-related. The same sources, treatment works, trunk mains and local distribution mains will usually serve both households and non-household customers. To allocate the local costs of these systems even to classes of customer, let alone individual customers, is likely to involve quite arbitrary decisions.

In addition, water and sewerage systems provide public services such as highway drainage and water for firefighting. Some of those citizens and businesses who benefit from these services will not be connected to the water and sewerage system (if, for example, they have a private supply).

It would therefore be extremely difficult to attempt to identify and separate out the local costs that relate purely to the supply of non-household customers. In reality actual costs of supply change constantly as new properties are connected, demand for services changes within the existing customer base, and properties are disconnected (whether temporarily or permanently).

Even if these issues could all be addressed satisfactorily, decisions would have to be taken about how a business customer (who had substantially opted out of the water service) would be charged for back-up and the fire-fighting safety net. Such decisions are clearly as much about social and regional policies as about pure economics.

### **Water charges are unlikely to have a material impact on a business's location decisions**

We consider that water charges are unlikely to be a major factor in the location a business chooses for two main reasons.

1. Water and sewerage costs represent a relatively small proportion of costs, even for the largest of users (it is reported, for example, that in manufacturing water bills can cost around 1-2% of turnover<sup>2</sup>). Few businesses are likely to take decisions about where they locate based solely on these costs. Other factors such as rents, rates, transport links, access to markets and availability of an appropriate workforce are likely to be at least, if not more, important.
2. At least in Scotland, areas that have abundant, good quality raw water are relatively cheap to supply with water but may be relatively expensive to supply with waste water services.

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<sup>2</sup> <http://argyle-energy.co.uk/waterandeffluent.html>

[http://businessdatabase.indicator.co.uk/business advice directory/articles/planning/plan of attack for 2009/UKTAENAR EU0307/67/search?&t=170&k=2139](http://businessdatabase.indicator.co.uk/business%20advice%20directory/articles/planning/plan%20of%20attack%20for%202009/UKTAENAR%20EU0307/67/search?&t=170&k=2139)

We are also aware that there is evidence to suggest that security of supply is rather more important than price. Some multinational corporations have taken high profile decisions to locate in Germany because they were guaranteed a supply of water (at a much higher cost) whereas in the UK non-households are not guaranteed a supply in the event of a water shortage.

### **So local costs are irrelevant?**

While there may be no substantive case in favour of de-averaging tariffs, local supply costs are important to efficient investment decisions. Companies can use information about local supply costs to increase the effectiveness with which they operate the water (or waste water) system. However, it is not always straightforward to understand these costs and, at least initially, companies are likely to have to rely as much on professional judgement as on documented evidence.

Another factor that is important in relation to local costs is that changes in customer behaviour can, in certain circumstances, have a considerable impact on costs. For example, reducing the extent of demand or changing the pattern of demand could free up capacity in the network and allow other customers, including households, to connect at much lower cost than would otherwise have been possible.

To bring about similar positive outcomes, it is important to establish a framework where both the customer who changes their behaviour (along with the retailer) and the wholesale business can benefit. This should ensure that collaboration becomes the norm, as opposed to undue rivalry resulting from a fear that revenue could be lost. Understanding local costs would be an important element in any such framework. But it should also illustrate how, even with a good understanding, in aggregate, these local costs to classes of customers will be at best problematical and would also change, potentially substantially, over time depending on changes in customers' usage patterns.

## **The regional and political implications of de-averaging**

Given the issues already outlined, it should be clear just how difficult it would be for a water company to charge its customers based on the local cost to serve. At one extreme, for example, a newsagent at one end of the street should be charged more (or less) than a newsagent at the other end of the street, based on their relative proximity to the treatment works.

Even if de-averaging tariffs could have the effects claimed for it, and it were possible to determine what those tariffs should be, there may still be good reasons not to pursue such a policy. This is because, in our view, the regional and political implications would more than offset the claimed benefits.

Attempting to charge tariffs that reflect the local cost to serve may reduce bills for some customers but would directly increase bills for others. In theory, it would be possible to cap the contribution household customers make towards costs in absolute terms (thereby insulating them from the effects of the contestable market). The precise impact would depend on just how many larger customers were relatively low cost to serve in any company's area.

However, even a relatively limited level of unwinding of the regional cross-subsidy in Scotland could initially increase non-household bills by about 10%. This is because retailers could potentially earn very high returns by pursuing these opportunities on behalf of their customers (and earn the return irrespective of whether other customers could suffer or whether society as a whole benefits).

## Some solutions?

We believe that it is possible to facilitate efficient upstream entry where necessary to overcome shortages in capacity and to encourage more innovative approaches, without having to experience the adverse effects of de-averaging.

### **Through charging rules**

One way to do this would be through charging rules. For example, it could be mandated that access to the network is priced in such a way that there can be no negative impact on the regionally averaged wholesale price. In this case, a retailer would have no incentive to procure water at a price higher than the long run marginal cost of the source that the appointed business currently uses. Thought would need to be given about how increases in cost over the remaining life of assets (caused by the price of the new retailer's water being higher than the appointed business' marginal cost) would be handled. Investors would seek to quantify the risk to their returns and price their cost of capital accordingly.

Thought would also need to be given to how any additional revenue that the appointed business receives from pricing the network in this way (beyond that allowed for in a regulatory price determination) could be ring-fenced and ultimately clawed back by the regulator such that there was no detriment to customers.

In such a scenario, retailers could focus on serving customers and meeting their needs and could bring more pressure to bear on incumbent wholesalers. This is because the opportunity to trump a competitor by identifying regional price/cost anomalies would have been removed. Moreover, retailers' challenges to wholesalers could not be deflected by claims that they were 'cherry-picking' customers.

The issue with this option is not just the difficulty of cost allocation highlighted above, but also the additional complication of turning these costs into prices that take account of different levels of risk.

### **Through an independent procurement entity**

A second approach was suggested by Professor Martin Cave in his review of competition and innovation in water markets. This would be to create an obligation on a water company to buy services from the most efficient supplier and to average the wholesale charge it levies on all customers to take account of the benefits or costs of its selection of water resources across all customers.

In coming to its decisions an independent procurement entity would have to consider both its operating and capital costs. It should also be under a clear obligation to pick the option with the lowest whole life cost and to have regard to sunk costs.

### **Through greater regulatory emphasis on creating resilience**

A third approach would be to require the appointed businesses to work together to build interconnectors between and within their regions. This would allow more sharing of water resources and the development of more joint resources where this may be cost effective. For example there could be a commitment to create regional grids over, say, the next five years and to prepare interconnection options in time for the 2020 price review.

This approach would require current water resource plans to be strengthened. There would also need to be a much better understanding of the costs of water resource, water treatment and distribution at a local level than there is at the current time.

It would also require a mechanism by which, as a minimum, a company could be sure that it would not be penalised for any additional operating costs it incurs whilst being remunerated for the capital that was committed to the new interconnector. This would ensure that the costs of interconnection could be delivered at the low cost of capital the industry currently enjoys.

It may be possible to combine elements of the second and third options to create other workable approaches.

## Conclusion

We agree that competition and some judicious changes to the industry's governance could bring about a more efficient allocation of resources and greater resilience in water supply, and improve the legitimacy of water and sewerage charges in the eyes of commercial customers. However, we need to make sure that we pursue reform in a balanced and measured way taking account not only of economics but also the operational and political realities of the industry.

As such, we do need to be careful how far we take the application of local costs. If retailers can profit by, for example, selling water from alternative sources, they are inevitably and almost immediately brought into a rivalry with the wholesale business. This can only make the identification of 'win-win' behavior more difficult – to the detriment of all customers and, ultimately, the environment. This issue will be discussed further in Technical Note 3.

In Scotland, retailers are required to buy at published wholesale charges. As a result, they focus their efforts on working constructively with their customers to reduce their bills and their environmental footprint. This is a different approach from enabling retailers to cherry pick customers who happen to reside in low-cost areas, to the general detriment of society. We would not recommend changing the current system in this way.

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