Competition and access pricing in the UK water industry

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Abstract

Following the passing of the Competition Act 1998 which came into force in March 2000, the context for competition in the UK water industry changed. This paper is concerned with the issue of access charging in light of the requirement under the Competition Act 1998 that incumbent water undertakers must grant entrants access to certain parts of their infrastructure on reasonable terms. Beginning with a review of the regulatory and structural features of the current water industry relevant to the issue of access pricing, this paper then undertakes a detailed examination of alternative access pricing rules including the Efficient Component Pricing Rule (ECPR), Long Run Marginal Cost Pricing (LRMC), and Fully Allocated Cost Pricing (FAC). The opinion presented in this paper is that ECPR is more likely to lead to the development of efficient competition in the specific circumstances of the UK Water Industry than the alternative pricing rules.

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1. Introduction

The Competition Act 1998, which came into force on March 2000, has set a new context for the introduction of competition into the UK water industry. One of the most important aspects of the CA 1998 is its implication for open access in the water sector. Under the CA 1998, water undertakers risk infringement if they refuse access to any parts of their infrastructure deemed to be an “essential facility” without objective justification, or if they offer access on unreasonable terms.1

Previously water and sewerage companies in England and Wales were able to grant access to other parties, and may have been required to grant this if declared in Court under competition law, but did not face penalties for refusing access pending such a case.

Ofwat has used the Competition Act to encourage further competition into the water industry, and has published a number of consultation papers and guidance documents that set out principles for companies to follow when setting out the terms and conditions under which access will be provided. It is envisaged by Ofwat that through the granting of access to third parties, new entrants can compete with incumbent water companies to provide their services in upstream and downstream markets. The terms on which water companies offer access to their facilities, and in particular, the pricing terms are a crucial determinant over whether competition can develop in upstream and downstream markets.

The introduction of a new Competition Act based entirely on the EU competition legislation represents the conclusion to almost twenty years of actual and attempted competition law reform in the UK. Why these changes should have happened now is a multi-faceted question, although it is certainly the case that a publicly ‘pro-competition’ government, and political pressure to ensure increased competition in all sectors of the economy has been important. The observed benefits from competition in the energy and telecommunications sector, in the form of increased choice and lower consumer prices, have also increased pressure for change in the water sector.

2. Background: industry structure and access scenarios

The E&W water industry was privatised in 1989 with the sale of 10 publicly owned vertically integrated water and sewerage companies (WaSCs). Four of the existing WaSCs are now part of major multi-utility organisations.
Within the regions of the WaSCs, however, there are companies that supply water (but not sewerage services) in designated areas in place of the local WaSC. At the time of privatization in 1989 there were 28 water-only companies (WoCs), supplying about a quarter of the total population of England and Wales. This has since been reduced by mergers to 15.

Since privatisation, the development of direct market competition into the water industry has been limited. There are some examples of “Inset Appointments”, defined as when the appointed regions of undertakers are varied to allow a ‘new’ undertaker to serve a customer previously served by the incumbent, usually by seeking a bulk supply from the incumbent. Currently, Inset Appointments are restricted to those customers with demands >100 ml/year. As of February 2002, 8 inset appointments had been approved. There are also some examples of cross-border supplies (where domestic customers can receive water supplies from a neighbouring undertaker with no changes to appointments) and private (unregulated) supplies.

The CA98 which came into force in March 2000 opened up the scope for a different form of competition, namely common carriage. In an open letter to the Managing Directors of water and sewerage undertakers, the Director General of Water Services (DGWS) said:

> From March 2000, I will have stronger legal powers to remove barriers to competition. Within this new legal framework there are significant opportunities for market competition to develop. In particular, the Act opens up the scope for market competition through shared networks i.e. common carriage. (Ofwat, November, 1999)

Following the implementation of the Competition Act, Ofwat stated that all water companies must publish “Access Codes” that set out these terms and conditions for common carriage. Further, it has issued a series of letters and consultation papers on the constraints imposed by the CA98 on the terms and conditions, including pricing terms. By Autumn 2000, all water companies had published their own access codes, at least in draft form.

Whether or not the CA98 provides the appropriate legal framework for increased competition and common carriage is a matter for debate. Until recently, Ofwat maintained the line that the CA98 provided a sufficient legal basis for effective competition to result through common carriage. However, Philip Fletcher, the new DGWS who replaced Ian Byatt in the summer of 1999, has stated that the industry “needs a Water Bill” and that the “current WIA/CA98 is not ideal” (Ofwat, January, 2002) as the legal framework for water sector competition. At the time of writing, the Government, through the Department for Environment Food and Rural Affairs (DEFRA), had recently announced its intention to publish a consultation paper later in 2002, which is expected to contain further details on the legal framework for competition, including the details of a proposed Water Bill.

As long as the incumbent water companies remain vertically integrated statutory undertakers then access through common carriage will mean that the existing incumbent water undertakers will compete with new entrants in upstream (e.g. resource development) and downstream (e.g. billing, customer services) activities. The government’s most recent proposals have stated its intention to continue with this vertically integrated arrangement (DEFRA, March, 2002), although many industry commentators have argued that competition is only likely to be effective if the industry is vertically separated. I return to this issue below.

The exact definition of what constitutes an “essential facility” to which access must be provided is likely to raise issues. Most water company’s access codes do not state precisely to which assets their codes apply. Within one region, it is generally considered that the network of pipes and sewers would be too expensive to duplicate: they are likely to constitute essential facilities. The Ofwat guidelines to the CA98 state that treatment facilities (not clear whether water, sewerage or both) in addition to network pipelines, may be considered essential facilities to which access should be provided. The development of sewage pre-treatment systems, and in some cases on site water treatment facilities, shows that such facilities can be economically duplicated. In this journal edition, David Aitman suggests that the issue of essentiality will need to be evaluated on a case by case basis. Amongst the “possible” access scenarios are the following:

- Access to raw water systems e.g. new supplier attempts to supply raw water to new or existing customers using raw water networks.
- Access to potable water system e.g. an entrant obtains its own resources and treats them, and wants the use of an incumbent’s potable mains to supply the water to new or existing customers.
- Access to treatment and potable water systems e.g. new supplier obtains abstraction licence and wants access to an incumbent’s treatment facility and mains to supply new or existing customers in the vicinity.

New suppliers might also request access to an incumbent’s water networks solely as transmission networks—i.e. not to supply potential customers in an incumbent’s area, but as through-ways to supply customers in other parts of the country. Unlike in the electricity and gas industry, there is no national pipeline and the economic feasibility for transport over long distances is relatively limited due to high transport costs and quality issues. In some cases, long distance common carriage arrangements that operate through displacement of water and/or redirection of current water supply flows might be possible although this seems the exception rather than the norm.
In theory, the sewerage system and sewage treatment facilities might also be regarded as essential facilities and it is possible to imagine a situation whereby a third party seeks access to parts of an incumbent’s sewerage system in order to compete upstream or downstream e.g. new supplier develops cheaper treatment works, obtains discharge consent and seeks access to an incumbent’s collection system to serve new or existing sewerage customers. There are, however, a variety of additional issues surrounding the common carriage of waste water that may prove harder to resolve such as how to monitor discharges, and how to ensure discharges and extractions are of similar quality when there are different types of effluent being mixed together. For such reasons, the government has indicated that the Water Bill will limit third party access to elements of the water service only, although this is subject to further consultation.

Given that it is a network industry, a significant proportion of water infrastructure costs are not directly related to any one user and/or any one service that is provided. Instead, many costs are likely to be joint across different customers and/or common across different activities. Water companies also typically operate using multi-tasking teams meaning that even operating costs cannot always be directly attribute to a market segment. The importance of joint and common costs in the water industry means that it may be difficult to attribute costs to the particular facility to which access is being provided.

A further consequence of the large scale investments in the UK water industry is that, what economists call “stranded assets”, are a real possibility. An asset becomes ‘stranded’ if, through the introduction of competition, the use of this asset becomes redundant, and the recovery of the embedded costs of this asset are no longer possible. An appropriate access pricing system can prevent the possibility of stranded assets.

3. Background: regulatory framework

While the regime for access is currently being driven by competition law considerations, it is necessary to consider the implications of sectoral regulation. The industry is regulated by the Director General of Water Services (the DGWS) who heads the Office of Water Services (Ofwat). Water companies are regulated according to a RPI+K price cap formula where RPI stands for the percentage increase in the retail price index and K (which may be positive or negative) is a company-specific number that reflects the increases in the costs of meeting environmental and quality obligations and the scope for operating cost efficiency.\(^2\)

The Licenses held by all water companies provides for five yearly determinations of their price caps by the DGWS.\(^3\) The 1999 Water Industry Act gave the regulator powers to approve companies’ annual charging scheme and allows him to be more prescriptive with regard to the levels and structures of tariffs offered by companies to different types of customer.\(^4\) The fact that retail charges are regulated has implications for the application of ECPR and other types of access pricing mechanisms, as discussed below.

The DGWS is also required, among other duties, to ensure that the interests of customers in rural areas are protected, to ensure that tariffs are not unduly preferential or discriminatory. The effect of this is that customer tariffs are currently averaged across wide regions, so as not to disadvantage rural customers for example, even though they can actually impose a much higher cost on the system than urban customers. The Government has indicated that it wishes to see existing cross subsidies remain in place with respect to final end user prices.

The structure of final end user prices has important implications for competition. If the expectation of regional averaging of tariffs remains for the incumbent, but is not reflected in deciding access arrangements, new entrants might be able to “cherry-pick”, i.e. to target the most profitable customers by charging them the lower cost of their supply or more. Entry might then increase total supply costs, and be inefficient. This is an issue that has arisen in other industries such as telecommunications, postal services etc. although arguably it is particularly acute in the water industry because of the extent of locational differences in the costs of supplying certain customer groups.

Water companies also undertake a number of services that may be classified as “community service obligations”. They undertake these for a number of reasons: legal obligations, regulatory guidance, government and political reasons, consumer pressures, and wider social purposes. Examples of such service community service obligations include provisions for fire-fighting, recreational and environmental services, domestic suppliers of last resort, provision of free metering services, special charges for vulnerable customers, services for customers with special needs, and subsidised or free supply pipe repairs. These

\(^2\) Following privatisation until 1999, prices have generally grown in real terms because of the large capital expenditure programmes of the companies. The post recent price review of 1999 saw prices fall (negative K factors) in real terms as the regulator imposed tougher efficiency targets and lower allowed rates of return.

\(^3\) Very little guidance is given in either the Act or the License as to how five year price determination will be undertaken, except that Under Section 2.(2) of the Water Industry Act 1991, the DGWS is required, inter alia, to exercise and perform his powers and duties: ‘in the manner that he considers is best calculated...to secure that companies are...able (in particular by securing reasonable returns on their capital) to finance the proper carrying out of [their] functions’. The reference in the legislation to reasonable returns on capital is unique to the water sector.

\(^4\) Previously, the regulator’s role was restricted to ensuring that proposed tariffs were consistent with an overall price cap (which is applied to a weighted basket of charges including metered and unmetered water, metered and unmetered sewerage, and trade effluent) and did not represent “undue discrimination” between customer types.
community service obligations have a cost which is currently factored into the final end-user retail prices but must also be factored into access charges, in order to avoid cream-skimming, if such obligations are to be sustained into the future. Identifying the cost of each of these obligations separately is currently beyond the capability of most water companies’ accounting systems.

One additional important issue that is considered by many industry commentators to be important with respect to the setting of access charges concerns what is known as the Capital Value Discount (CVD). The CVD refers to the difference between the replacement cost value of assets and the regulatory capital values, where the latter represents the asset values that are used to set prices, such that an efficient company can expect to earn a reasonable return on its regulatory capital value. It has been argued that the existence of a CVD can give incumbent firms an advantage over competitors who have to build new infrastructure, because they will have to pay the full replacement cost to purchase those assets. Based on recent data on Modern Equivalent Asset (MEA) values published in company accounts, the extent of the discount in the UK water sector is in the region of 7 times. This CVD does not exist in other utility sectors to any significant degree.

The above represent some of the important regulatory and structural features of the current E&W water industry that are considered by many commentators to require consideration when considering access prices in the UK water industry. There are many other issues that are relevant to the feasibility of access arrangements in the water industry such as quality and public health issues and these are also under consideration. One of the issues yet to be resolved is exactly how the different regulators within the water industry will interact in deciding whether an access arrangement is desirable. Water is somewhat unique amongst utility industries in the fact that it is subject to regulation by a number of different bodies: price regulation by Ofwat, environmental regulation by the EA and regulation of drinking water quality by the DWI. Access will have consequences for final end user prices, the water resource positions of company’s, and could have consequences for the drinking water quality of customers. What may be considered to be an acceptable/desirable access arrangement to Ofwat because of the impact on final user prices to customers, may be unacceptable to the EA because of the implications of the access on the environment and water resource position of a company, or unacceptable to the DWI because of the quality and public health issues that are raised. The role of each of these bodies, and the resolution of tensions between them, is important for whether or not access develops.

4. The importance of access prices

The level of access prices will ultimately determine whether or not competition in the upstream or downstream markets happens and the effectiveness of this competition. Set access prices too high and the result will be that too little entry occurs into the market and the potential benefits to competitors that might result from upstream or downstream competition will be missed.

Set access prices too low and the result may be excessive entry with the potential result being that existing incumbent water undertakers are unable to recover the costs of their sunk investments and are therefore reluctant to invest in the future, and/or face a higher cost of capital because their investments are more risky. The consequences of access prices that are too low in the water industry may therefore be a reduced service of supply as underinvestment leads to supply failures or higher long run costs to consumers as suboptimal investment decisions are made and long run financing becomes more expensive. Alternatively the new entrant may be discouraged from establishing its own infrastructure.

Three main pricing methodologies have emerged from water company access code.

- Efficient Component Pricing or Retail Minus;
- Accounting Based or Full Allocated Cost Approach;

Five companies access codes publicly stated that they would adopt an efficient component pricing structure; 7 companies stated that they will calculate access charges based on average cost principles (and provide details of how average costs will be calculated) and 4 of these companies state that LRMC will be used to inform the structure of the tariff. The charging methodologies used by around 9 other companies is unclear.

5. The Efficient Component Pricing Rule (ECPR)

The ECPR was first proposed by Willig (1979) and Baumol (1983). The ECPR has a compelling logic. Its essence can be illustrated by the following diagram which describes an access scenario where an entrant seeks to supply an existing water company’s customer using its own abstraction facilities but seeks access to the incumbents treatment and distribution system. Under ECPR, the access charge is calculated by starting with the retail tariff that the customer is currently paying and deducting (or providing an entrant with a rebate) for the costs that the existing company can avoid after losing this customer which may include operating costs or abstraction facilities, abstraction licenses, and capital costs if the new entry makes downsizing of abstraction pipes feasible.

As Fig. 1 shows, the entrant will only be able to offer a lower final price to its consumer if its own total costs are lower than the avoidable costs of the incumbent. By pricing in this manner, ECPR seeks to ensure that entry will only result if it leads to lower total costs of overall
supply to the customer. In other words, ECPR seeks to ensure that entry is efficient.

ECPR tariffs can also be justified by the bottom up. Fig. 2 illustrates that ECPR tariffs can be calculated as the sum of the incremental cost of the access (in this case the incremental cost is water distribution) plus the contribution paid by a customer to non-avoidable costs/sunk costs of embedded infrastructure plus the contribution to social obligations and profit. The important feature is that the new entrant pays an exactly equal contribution to the non-avoidable/sunk costs as the final customer was paying. In this way, these contributions constitute the opportunity cost of the access arrangement.

Several features of ECPR are worth expanding on. First, ECPR ensures that every component of the final retail tariff, except the avoidable costs of abstraction, treatment and other activities, is included in the access charge. In this way ECPR ensures that companies still recover their embedded costs if supply of a customer is replaced by a new entrant’s supply.

Second, ECPR ensures productive efficiency by ensuring that entry only takes place if it is more efficient and lowers the total costs of supply to customers. Any price lower than ECPR may lead to lower prices in the short term, by encouraging customers to switch to new entrants, but this means companies are not recovering some of their embedded costs of supply or contributions to social obligations. The idea of stranded assets may not be a problem to new entrants, but in the long term, if companies are not reassured that their investments will be funded, it is argued this will either lead to a higher cost of capital, sub-optimal investment decisions and/or reduced service quality.

Third, the transaction costs of ECPR are small. ECPR access charges are relatively easy to calculate and customers can see that they are consistent with the final charges being levied to existing customers that are approved by the regulator, Ofwat. A transparent charging policy is consistent with the development of effective competitive pressures. Fourth, the ECPR has the advantage of allowing the recovery of the costs of government-imposed social obligations without explicit quantification of those costs. If these were not included in the interconnection price and not dealt with in some other way, inefficient entry is likely to be a problem. With the limitation of regionally averaged tariffs, the main burden falls on the incumbent who will be unable to recover the costs of providing this service. Even if it is appropriate to subsidise and/or encourage entry it is not at all clear why the incumbent should be forced to burden the costs.

There have been a number of conceptual criticisms of ECPR that have been taken sufficiently seriously in some regulatory jurisdictions such that alternative pricing policies have been adopted. Perhaps the two most important criticisms of ECPR are:

- **Dynamic Inefficiency**: ECPR may not be optimal where the dynamic efficiency gains from competition through development of new products, innovation etc. are large;
- **Preservation of Monopoly Profits**: related to the fourth point, there is a concern that ECPR may preserve any pre-existing monopoly profits on the facility to which access is sought.5

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5 The reason, it is argued, is that if the monopolist who controls the bottleneck facility does not price at marginal cost (the first assumption is violated), the ECPR leads to a perpetuation of high prices for end-to-end services. Accordingly, consumers who would have been served in a competitive market are, under the ECPR, excluded from...
Both of these issues have attracted a fair amount of academic literature and are deeply contested by proponents of ECPR notably Baumol and Sidak (1994), and Kahn and Taylor (1994).

Whatever the conceptual merits of these arguments, they are of much less importance to the current circumstances of the UK water industry than they are in other circumstances. Of the privatized industries the UK water industry is probably the most likely industry where dynamic efficiency gains as a result of competition would be the smallest. Unlike the telecommunications industry the introduction of interconnection and common carriage competition into the UK water industry is unlikely to bring about a proliferation of new “products” and companies, and a widescale expansion of the consumer market. In telecommunications the argument that ECPR could stifle new entry that would bring about dynamic efficiency gains is certainly more credible. However, it is certainly by no means clear that the right policy solution in those circumstances where competition is considered likely to stimulate technological advance pertains to forcing incumbents to levy lower access prices to subsidise new entrants in the short run on the conjecture that dynamic gains will result.

What common carriage could bring about is the better allocation of existing resources and facilities, so that where there is spare water resource capacity in one region, the company has the incentive to utilize that capacity in an efficient manner by supplying customers in a neighbouring region. There may also be developments in treatment processes as companies look to cut treatment costs through the development of new techniques.

It is also relevant that, at least in the early stages of common carriage competition, many of the new entrants are likely to be current incumbents who already have the incentive to undertake new cost innovating techniques, through the reward for efficiency outperformance under the price cap system.

The second argument that ECPR preserves monopoly profits, while important in some circumstances, is also less relevant in the UK water industry as a consequence of the fact retail tariffs are already regulated. Additionally, Ofwat, via the 1999 Water Industry Act, has powers to approve annual charging schemes and ensure that charges for specific groups of customers (e.g. large users) are set in accordance with cost-based criteria.

Baumol (1983) and others have argued, however, that even if final retail prices did contain monopoly rents, other regulatory instruments (such as retail price regulation) might be required to eliminate those—but it is neither the objective nor the function of ECPR to do so. This issue came to the fore in the legal arguments between Clear and NZ Telecom in the 1990s where NZ telecom’s final tariffs were not regulated, that actually went all the way to the UK Privy Council (1995), where the legality of ECPR was challenged. In this case, the court actually concluded “the risk of monopoly rents has no bearing on the question as to whether the application of the BW (ECPR) rule prevents competition in the contested area”.

In its findings, the Privy Council found that the use of ECPR was not an abuse of dominant position under NZ Commerce Act as it led to the charging of the same prices as would have been charged by a company operating in a perfectly contestable market. The Privy Council also argued that if monopoly rents were included in the retail prices, other regulatory instruments (such as retail price regulation) might be required to eliminate those.

6. Practical ECPR issues: calculation of avoidable costs

An important practical issue in applying ECPR in the UK water industry is the time period over which avoidable costs should be calculated. In MD163 Ofwat states that:

“The ECPR would result in prices that encourage access only when to do so would reduce the total costs of supply in the short run (Section 4). (…) Companies may also infringe CA98 if they set access prices to deter entry that would have reduced costs only in the long run (Section 5)” (Ofwat, June 2000).

The obvious response to this implicit criticism of ECPR is that it is simply not correct to say the ECPR only allows for entry where the total costs of supply would be reduced in the short run. ECPR can be applied by ensuring that “avoidable costs” take account of longer run capital cost savings from entry rather than simply calculated by including short run avoidable operating costs. This will ensure that entry occurs where the entrants’ long run costs (i.e. including capital costs) are lower than the costs that the incumbent can avoid over the longer run. Moreover, where entry leads to price reductions over time, then the access prices will also reduce reflecting the reduction in the opportunity cost of entry.

The issue of the appropriate time period for the calculation of costs is not new for the UK water industry and other network industries. The water industry also faces the market because of the high price. This results in a significant allocative inefficiency.

6 The notion of dynamic efficiency gains needs to be distinguished from the notion of long run efficiency gains. For this argument to be valid, the nature of the dynamic efficiency savings must be such that they cannot be forecast by new entrants and/or taken into account by capital markets when funding new entrants. Such efficiency gains may result, for example, as a result of entry with ‘learning by doing’ leading to the development of new products, new techniques or new technologies.
the issue of whether efficient marginal cost pricing requires marginal prices to final consumers to signal the short-run cost consequences of demand changes or whether long run cost consequences should be taken into account as well.

The implication for both access prices and final retail prices of the time period for the calculation of costs is this: if prices are set in line with short run avoidable (or decremental) costs then prices will need to be re-set over time as these short run costs change and prices will also need to signal the “congestion costs” of demand changes. By contrast, if prices are set in accordance with long run avoidable (costs) then prices at any location and time reflect the short run factor costs of making the supply plus the long run marginal capacity expansion costs caused by meeting that supply.

With respect to final retail prices, the water industry has preferred to adopt a pricing rule that says prices should be in line with Long Run Marginal Costs (LRMC). The latest guidance from the regulator is that the calculation of LRMC should be based using a planning horizon “lasting up until at least 2024-25, consistent with the Water Resource Plan forecasts” (Ofwat, May 2001). In other words, Ofwat have recommended that prices set to final customers, in line with LRMC methodology, should signal the cost consequences of demands evaluated over a period of 25 years.

To date, LRMC has been Ofwat’s preferred basis for pricing in the water industry, mainly because LRMC tends to be smooth while SRMC is volatile, and it is thought undesirable for water prices to fluctuate at short notice to specific groups of customers. SRMC also imposes testing data requirements because of the need to estimate expected congestion costs to take account of the probability of supply-demand imbalances as well as the expected costs of meeting such imbalances.7

Ofwat has also said that it expects to see consistency between the calculation of avoidable costs and the company’s estimates of LRMC:

“In many circumstances, LRMC is an appropriate measure of avoidable costs since it should approximate to the savings made by a company in the event of not supplying an additional unit of water”7...“Where a competitor is providing bulk treated water for common carriage by the incumbent, the LRMC of resources and treatment could measure avoidable costs to the incumbent.”(Ofwat, May 2001).

It is not so clear, however, that Ofwat are right to promote LRMC as the right basis for calculation of avoidable costs for the purpose of setting access charges. The most obvious problem is that the contract period for a proposed access arrangement may be significantly shorter than the 25 years plus that is used to calculate LRMC. Under a bulk water common carriage arrangement, avoidable costs of resources and treatment, for example, may be low if the proposed contract is not sufficiently long and/or the avoided supply is too small for the incumbent to avoid significant planned resource and treatment capital expenditure. But the company’s estimate of LRMC may be significantly higher if new resource and treatment facilities are expected to be needed in the longer term to meet demand changes.8

There is also a regulatory dimension to consider here. Under the regulatory framework, final price limits are set for a period of five years. Since ECPR uses final retail prices as the basis for setting access charges, then any ECPR-based access charges outside of this regulatory period will need to be based on assumptions about the regulator’s allowed price limits at subsequent review periods.

An example might help clarify the possible interaction between the regulator’s behaviour in setting final retail prices and the company’s behaviour in setting access prices: Suppose an entrant is providing bulk treated water for common carriage by the incumbent for a contract period of 10 years and suppose that the outstanding regulatory period is significantly less, say 1 year. Suppose further that the access arrangement would lead to the deferral/abandonment of planned treatment and resource schemes that had been planned for years 2–10. Should the access charge that is set to the new entrant in year 1 reflect the cost savings that result from the deferral/abandonment of planned treatment and resource schemes in years 2–10?

The problem for the incumbent is that, since final retail price limits have not been set for years 2–10, then it cannot be sure what will be the value of the avoidable cost of the access arrangement. For example, should the regulator decide not to make any allowance for deferred resource and treatment expenditure in setting the price cap, on the basis that as a result of the access arrangement such expenditure is not now required, then the actual avoidable costs of the access arrangement to the incumbent would not reflect these costs savings. However, an access charge that did not reflect the costs savings from the deferral of such planned capital schemes in the avoidable costs would implicitly mean that the new entrant would be paying the unadjusted retail tariff.

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7 It is hard to find a definitive justification by Ofwat as to why LRMC is the right basis for setting retail tariffs. In MD170, Ofwat say: “Given the characteristics of the water industry and the continuous nature of most water demands, it is generally most appropriate to analyse marginal costs with respect to the effect of permanent increments (or decrements) in water consumption on a continuing basis rather than day-to-day fluctuations in demand”

8 Avoidable costs might also change with time, for example under the EA’s influence, and an access agreement would need to set out the conditions under which they might be reviewed.
and be sharing the benefits of deferment with other customers (who would be paying a lower retail tariff than they would otherwise). This could result in a significantly higher access charge to the new entrant, and discourage efficient entry.

The above example shows how the interaction of the regulatory framework with the competitive framework could result in an incorrect application of ECPR. This situation could be avoided by ensuring that the regulator’s methodology for setting price caps at the next review makes a full allowance for planned expenditure that would need to take place in the absence of the new entrant’s supply. Under this assumption the access charge would then reflect avoidable costs associated with actual deferment made possible by the entrant’s supply, without sharing the benefits with other customers.

One further difficulty with taking into account the long run avoidable costs of entry is that any higher costs in the short run will be suffered, whereas claims about lower long-run costs may never turn out to be true. This point is also relevant in theory to the use of LRMC rather than SRMC for the setting of retail prices, although it has less practical relevance in the context of retail prices since LRMC is often less than average costs meaning that some mark-up is needed in tariffs in order to ensure cost recovery whatever version of marginal cost is used. For both of these reasons, the appropriate avoidable costs to be reflected in access charges may be less than the company’s estimates of LRMC.

Of course, competition authorities will need to form their own views on what time period avoidable costs should be calculated over in order for access prices not to be regarded as anti-competitive and they may not be influenced by the regulatory complexities and industry preference for the setting of prices in accordance with longer run costs concepts. Some guidance may be taken from the literature on predatory pricing; the issue of the time period for calculation of costs has attracted considerable interest by both academicians and competition law authorities. The widely accepted Areeda–Turner rule (1975) proposed that price below average variable costs should be seen as predatory, but much debate has arisen over the time period for the calculation of such variable costs. In the Akzo case, the European Commission stated that:

“in most cases neither the very short nor the very long run are appropriate” and “the Commission will often need to examine the incremental cost of a service, and may need to examine average incremental costs over a period of longer than one year” (European Commission, 1991).

The Guidelines to the 1998 Competition Act express similar views. According to Baumol (1996), however, the choice is not arbitrary and follows unambiguously from the use of the Areeda–Turner rule. Baumol argues that the time horizon over which avoidable costs should be calculated is the time period over which the price in question prevailed or could reasonably have been expected to prevail. If we followed Baumol in considering the appropriate calculation of avoidable costs for the purpose of applying ECPR, at least three different conclusions could be reached. These include:

- 1 year consistent with the time period during which retail prices remain unchanged;
- consistent with the outstanding regulatory period under which the regulatory price cap remains unchanged (<5 years);
- consistent with the contract period (likely to be 5 years plus for water access arrangement).

An argument could be made for any of these alternatives, with the use of a short run time horizon being more consistent with short run allocative efficiency whilst the use of a longer run time horizon for the calculation of avoidable costs—either the regulatory period or the contract period—would lead to lower transaction and informational costs as a result of increased price stability. The right approach would likely vary across sectors and individual access arrangements, with increased price stability having greater value in some circumstances than others.

What is important, however, is that the regulatory arrangements for setting final retail prices are consistent with the approach that is taken by companies to set access prices; in particular, where avoidable costs are calculated over a long run time horizon, the regulator must set final retail prices to take account of the expenditure that would have been required over exactly the same time horizon in the absence of the access arrangement. It is only through ensuring this consistency that the objective of guaranteeing that access charges recover the full opportunity costs of providing access will be achieved.

7. Other types of access pricing approaches: long run marginal cost and average cost pricing

Two alternative methodologies for setting access charges are the Long Run Marginal Cost (LRMC) methodology and the Fully Allocated Cost (FAC) methodology. Both are mentioned in some E&W water company access codes and in Ofwat’s guidance on pricing issues for common carriage (Ofwat, June 2000).

Setting access prices on the basis of LRMC involves working out the marginal costs of providing access, in a “bottom-up” manner. LRMC pricing is designed to ensure that access prices reflect forward looking marginal costs of the resources required to satisfy demand.

Under a FAC methodology, the access charge is set according to an accounting rule. Accounting systems
attribute all costs in some way to all of a firm’s activities. Some costs are directly attributable to certain activities. Other costs, however, are common to more than one activity. In these cases a mark-up is usually applied on top of the directly attributable costs. The mark-up can be fixed, e.g., proportional to output, revenue or directly attributable cost.

Some comments on these two approaches:

- First, both methodologies work in a “bottom-up” manner, requiring the aggregation of costs (marginal or average) involved in providing access. One difficulty with such methodologies is that identifying the cost changes associated with providing access to a third party is not a trivial task. Currently water companies’ charges are “bundled” for all water and sewerage services. Identifying the costs of each activity in the supply chain (even at a whole region level) will require reforming companies’ accounting systems, developing agreed treatments of those costs which are joint to multiple activities or common to multiple customers and devising an acceptable way of allocating the costs of community service obligations across different system users including new entrants.

- Second, a deep criticism of both methodologies is that they can result in an under-recovery of the costs of existing infrastructure. The LRMC methodology is not designed to ensure cost recovery and may—if applied without adjustment—result in revenues that are higher or lower than normal profit levels. A fully allocated cost methodology does not necessarily ensure that ongoing costs associated with stranded or by-passed network facilities will be incorporated in the access charge.

Failure of pricing methodologies to ensure recovery of embedded investment costs is likely to lead to difficulties, especially in a regulated industry where the implicit regulatory contract requires that investors receive adequate returns. Allowing companies to recover prudently incurred costs associated with previous regulatory obligations is necessary not only to honour the regulatory contract but also to ensure future investment into the industry.

Finally, neither a LRMC nor a FAC methodology for setting access charges leads to an efficient level of entry into an industry. With the opening up of the services to competition, incumbent utilities with social obligations funded through retail prices—perhaps regionally averaged retail prices—may lose business to “cream-skimming” entrants with less burdensome obligations. If the opportunity costs due to entry are not accounted for in the setting of access charges, the funding of social obligations may not be sustainable in the longer term and inefficient entry is likely to be a problem. By contrast, the ECPR has the advantage of allowing the recovery of the costs of government-imposed social obligations. As noted by King (1995):

“The efficient component pricing rule is the only rule that ensures inefficient ‘cream-skimming’ of some form will not occur.”

It is clear that neither LRMC nor FAC pricing can ensure inefficient cream skimming will not occur since LRMC fails to guarantee recovery of total costs and the arbitrary manner in which the FAC methodology attributes overhead costs in an essentially arbitrary manner.

8. Conclusions

The Government, DEFRA and the pro-competition lobbyists need to pay attention to the possible negative sides of increased competition in an industry that is characterized by pervasive community and social obligations. Specifically, they must ensure that companies are not provided with an incentive to interpret their community service obligations in a narrow way or even to by-pass them.

With this in mind, this paper has promoted ECPR as an attractive basis for setting access charges. The opinion promoted here is that, in the early stages of competition, ECPR is more likely to lead to access prices that reflect the need to cover total costs, is more likely to avoid inefficient entry, and is more likely to allow companies to meet existing customer service obligations and to limit the possibility of “cream skimming” that would put pressure on companies to unwind existing regionally averaged retail tariff structures.

The central argument against using ECPR, as reflected by Ofwat (2000) in the comments in MD163, seems to be a scepticism that ECPR will provide the right incentives for dynamic efficiency in E&W water industry, which itself rests on the hypothesis that competition will bring with it significant dynamic efficiency gains that justified entry assistance measures in the form of lower access prices. The rationale for such entry assistance measures in the form of lower access prices needs to be weighed against the potential risks of inefficient entry that
would occur if current incumbents were forced to levy access charges that are lower than the ECPR dictates.

The risks of entry assistance measures lie in the fact that companies are left with stranded assets. Preventing cost recovery has adverse effects in the long term since this creates regulatory risk and undermines the credibility of future regulatory promises. This risk increases the cost of capital and/or raises the costs of supply, or leads to a deterioration of supply quality through postponement of investment.

Rather than stranded assets, another outcome is that the company looks to recover the costs of those stranded assets by raising its prices elsewhere (e.g. to final retail customers). The result may be that competitors are able to enter into the market even though their own incremental costs of supply lie above the incremental costs of the incumbent. The result is a decline in efficiency from which society as a whole cannot gain.

Another reason why the government and Ofwat should be very cautious about promoting a competitive regime that does not ensure recovery of existing costs is that it discourages the participation and cooperation of the incumbent companies in the liberalisation process, the importance of which should not be underestimated.

Overall, from an economic perspective, Ofwat must therefore be very careful to consider the various adverse consequences if current incumbents were forced to levy access charges that are lower than the ECPR. It should also be remembered that the arguments in favour of entry assistance measures are much less persuasive in the context of the slow moving technological nature of a water industry where the introduction of common carriage cannot be expected to lead to dynamic efficiency gains overnight.

From a legal perspective, access prices can currently only be judged according to application of the CA98. With this in mind, regard should be had to Article 82 precedents that recognise that dominant firms should not be forced to assist inefficient competitors. This is stated clearly by Bishop and Walker (1999):

“Article 82 recognises that dominant firms should not be forced to assist inefficient competitors. Any company, even if it is dominant, has the right to actively compete by all methods that are normally permitted. Hence even a dominant firm should be entitled to keep and use to the maximum any competitive advantage that it has legitimately acquired even if its competitors do not have any similar advantages and may not realistically be able to obtain them.”

The concern to safeguard investment has featured in a number of ECJ Article 82 judgements, although it has not always been reflected in OFT decisions. There are no EU Article 82 legal precedents that state that entrants should be assisted during the early stages of competition to stimulate long run efficiency. Such “infant-industry” reasons—if they can be shown to have merit for competition - need to be addressed through detailed sector specific regulation.

Any new government law or regulatory rule that denied companies the opportunity to recover their existing costs may also be challenged under EU community law, specifically the Human Rights Act 1998 (‘the Act’) that was enacted to give further effect to the rights and freedoms granted under the European Convention on Human Rights (ECHR). How the ECHR applies to de-regulation and stranded costs is a matter of legal interpretation, that has yet to be challenged, but there are good reasons to believe that it might militate against arbitrary changes in regulatory rules that undermine the reasonable certainty of cost recovery and other property rights.

access to a production, purchasing or distribution facility were allowed too easily, there would be no incentive for a dominant undertaking to invest in efficient facilities would be reduced if its competitors were, upon request, able to share the benefits”. By contrast, however, the OFT in the Southern Vectis case ruled that Southern Vectis was obliged to grant access to Grange a local bus operator to Newport Bus Station on terms such that Grange should have to pay no more than a fair share of the operating costs of the upkeep of the facility. This explicitly rules out any recognition of Southern Vectis’ ownership right in the creation of the hub and its associated commercial venture.

12 A particularly apposite example for the purposes of stranded costs scenarios is provided by the case of Stran Greek Refineries, which concerned measures taken by the new democratic government of Greece to overturn a contract made for the construction of a crude oil refinery by the applicants. The government argued that the termination of the contract was necessary to avoid prejudice to the national economy and the applicant claimed that he should be compensated for expenditure incurred in preparing to carry out the contract. The national courts later held that an arbitral award (which had declared that the applicants were entitled to some compensation for the termination of the contract) was rendered void by the legislation which had terminated the contract. While the national court’s preliminary judgment favoured the applicant, the Strasbourg Court held that this amounted to a mere hope that they would receive confirmation of their claim once the full investigation had been carried out. However, the arbitral award was final and binding and established the State’s liability up to a maximum amount, thus amounting to a ‘possession’ within Article 1 of the First Protocol. The Court then ruled that the effect of the legislation nullifying the arbitral award was to interfere with the applicant’s property right and accepted that the ground relied upon by the Greek State was a valid one in the public interest. However, its failure to provide (or indeed to accept that the arbitrators had obliged it to provide) compensation for the termination of the contract ‘upset, to the detriment of the applicants, the balance that must be struck between the protection of the right of property and the requirements of public interest.’

13 Article 1 of the ECHR allows expropriation of property only when it is in the general public interest. The ground of public interest must be made in each case. It seems likely that the arguments as to whether or not stranded costs are in the public interest will need to pay regard to the economic arguments set out in this paper relating to stranded costs and ECPR.
References