# MARKET COMPETITION IN THE WATER AND SEWERAGE INDUSTRIES IN ENGLAND AND WALES

*A Position Paper by Dŵr Cymru*

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## EXECUTIVE SUMMARY

Competition has the potential to play a major role in the delivery of yet better value water and wastewater services to customers in Wales. The experience of other sectors has shown that by introducing market forces into potentially competitive segments of the "production process" significant benefits, in terms of better and different services, and lower prices, can be realised that generally outweigh the costs associated with the creation of market frameworks and their consequences.

In order to determine what form competition should take, however, it is essential to examine the potential benefits and costs of different options from first principles. Whilst the experience of other sectors offers many important lessons to assist policy-makers, it cannot be assumed that if the features of other sectors are mimicked in water, the same net benefits will flow. In carrying out such an analysis, policy-makers would confront, and would have to "work through", a number of considerations, none of which necessarily constitute "show-stoppers" but all of which would have to be addressed. Examples include:

- whether the abstraction and treatment segments of the four hundred or so water supply systems in England and Wales could really provide the basis for active markets in "production", or whether other possibilities should be examined, such as the desirability of "inter-connection" and the creation of fully-tradable water rights;

- where the "dynamic benefits" of competition, which have played such a major role in telecommunications and energy, for example, could come from in the water sector, given the limits imposed by regulation, for example, on product and service differentiation, and investment decisions;

- the effect on the cost of capital of significant changes in markets' perception of undertakers' revenue risk, and the consequences for the delivery of quality and environmental objectives; and

- the apparent conflict between certain forms of competition and other policy objectives (e.g water efficiency, outlawing disconnection of households for non-payment), and the availability of suitable ways of reconciling such difficulties.

When Defra and the Assembly carried out their extensive review of the scope for further competition, spanning two consultations in 2000 and 2002, they concluded that a case could only be made for a comparatively limited extension of competition in the form of the subsequently-implemented WSL regime. They also acknowledged that other forms of competition, such as the extensive use made by Dŵr Cymru of competitive out-sourcing in both operations and investment activities, can also deliver significant benefits to customers. If, now, a case is to be made for a different form of competition, the onus falls upon Ofwat (and others) to demonstrate that in fact greater market liberalisation does offer the prospect of the delivery of net benefits to customers. It is not sufficient, however, to put in place arrangements that simply bring about new entry. This may create the appearance that "market forces are working", but if no significant benefits arise, and such arrangements merely add to costs (particularly the cost of finance), then customers may end up being worse off as a result.

# 1. INTRODUCTION

Since Dŵr Cymru was acquired by Glas Cymru and re-structured on a "not for profit basis" its primary objective has been the delivery of water and wastewater services of the right quality at least cost to the communities that it serves. Since competition can, in principle, deliver outcomes that further this objective, the company is keen to ensure that opportunities to extend the role of market forces are properly explored and evaluated. Already, the company has delivered significant benefits to customers in the form of nearly £100m worth of "customer dividends", paid directly by way of reductions to customers bills, made possible in part by the company's extensive use of competitive out-sourcing to carry out the bulk of its operations and capital investment activities.

Ofwat's latest consultation on the development of competition, published on 13th July 2007, offers an opportunity for all those involved in the sector to take a fresh look at the issue. Whilst it is clear that Defra, together with the National Assembly for Wales (and in consultation with the relevant regulators) undertook a very thorough analysis of the scope for new forms of market competition during the period 2000-2002, culminating in the creation of the WSL regime, Dŵr Cymru believes that it is entirely appropriate, five years on, to re-examine the issues and policies in order to determine whether (and why) further steps should now be taken.

Dŵr Cymru has responded separately to the thirty-five specific questions posed by Ofwat in its consultation. However, in addition, Dŵr Cymru believes that the questions that are being asked need to be reviewed in the light of "first principles". The purpose of this new "position" paper[1] is to map out the analytical framework that Dŵr Cymru believes any policy-maker, whether a Government department or a regulator, should apply, in order to ensure that outcomes are likely to be in the best interests of customers. It also sets out some of the major considerations that, in Dŵr Cymru's view, policy-makers would have to address in order to ensure that conclusions and recommendations were sound. It draws no firm conclusions as to "what is the right answer", precisely because the issues involved do require detailed and thorough analysis that is beyond the scope of this exercise. However, it does urge Ofwat (and other policy-makers) to ensure that that analysis is properly carried out, and that any case for further development of market competition is based on a clear demonstration that the expected benefits are likely to outweigh the likely costs.

# 2. THE BASIC ANALYTICAL FRAMEWORK

Competition is not an end in itself. It is a means by which the objective set out above, namely the delivery of the right outputs at the least cost, can be achieved. In markets for

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[1] As noted above, the role that competition can play in delivering better outcomes for customers has been an important issue for Dŵr Cymru since its acquisition by Glas Cymru in 2001, so when Defra launched the national debate on competition in 2002 the company prepared its first "position paper" on this subject. This is attached, for information, as an Annex.

goods and services which are *not* characterised by the presence of natural monopoly elements or other forms of "market imperfection", competition may be expected to generate benefits of the following three types:

- allocative efficiency gains, by providing signals which direct resources to their most valuable use;

- productive efficiency, i.e. the provision of goods and services at minimum cost; and

- dynamic efficiency, the stimulation of innovation in ways of providing goods and services, and in the development of new goods and services.

Where significant market imperfections do exist, such as those associated with the presence of natural monopoly, unfettered competition may not generate these benefits, and the need arises for some form of economic regulation. However, although regulation seeks to mimic the disciplines that market forces would bring to bear on firms, it can never do this perfectly. Accordingly, since the "production processes" involved in providing utility services generally comprise potentially competitive elements, as well as those characterised by natural monopoly, policymakers (whether Governments or sectoral regulators charged with policymaking functions) can evaluate the desirability of allowing competition where it is feasible to do so, thus narrowing the role of economic regulation. It is this question of "desirability" that policymakers should address if their decisions are to be soundly-based.

Put simply, this requires an assessment of the benefits and costs of introducing competition into one or more "segments" of the production process. In practice, however, this can be far from straightforward, and may entail a fair degree of judgement on the part of the policymaker or regulator in question. This is especially the case in respect of the benefits, and in particular the third category listed above, improvements in dynamic efficiency. Whilst reasonable assumptions can be made to enable estimates of allocative and productive efficiency to be derived,[2] it is practically impossible to predict with any degree of confidence how significant the dynamic benefits caused by the introduction of competition might be. In particular, the benefits of technological innovations that have not yet been made clearly cannot be quantified and incorporated into the analysis. Equally, it is difficult, *ex ante*, to predict quite how extensive "product differentiation" can become prior to the liberalisation of markets and the entry by multiple firms, each with their own ideas of what will prove most profitable. To some degree, therefore, policymakers have to make something of a "leap of faith" as regards such benefits. As the following section argues, however, careful consideration of the conditions that are more or less likely to be conducive to the creation of significant dynamic benefits can and should be made.

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[2] For example, in the water sector, for productive efficiency Ofwat could make a reasonable assumption as to the percentage by which competition in the potentially competitive segments could reduce operating expenditures by more than the current regulatory approach and its extensive use of "comparative competition".

The evaluation of costs is, in principle, rather more straightforward, albeit that it, too, poses a number of challenges and is inevitably characterised by some uncertainty. Essentially, the introduction of competition into one or more segments of the production process entails the separation (whether structural or otherwise) of the natural monopoly elements of the production process from the potentially competitive elements (i.e. vertical disintegration), and the commensurate establishment of a regulatory framework within which participants in upstream or downstream markets can obtain access to the natural monopoly segment(s) on terms subject to the oversight of an economic regulator acting as "market authority" rather than "price cap-setter". These measures give rise to the following categories of cost:

- the losses of economies of scale and/or scope associated with the vertical fragmentation of utility businesses;[3]

- the additional transactions costs associated with the replacement of internal "command" relationships with external, arms-length contractual relationships between different stages of the production process, whether there is "accounting" (and therefore organisational) separation, or whether full separation into different commercial entities is implemented;

- the additional transactions costs associated with the establishment and operation of the regime governing the use of the natural monopoly facility by participants in upstream or downstream markets;

- the effect on the overall costs of regulation, which may be positive or negative;[4]

- the effect of the general perception of the capital markets of the risk characteristics of the sector, and therefore the returns that investors and creditors require in order to finance the delivery of services; and

- the "social" costs which might arise, for example, as a consequence of the role of market forces in unravelling the cross-subsidies inherent in prices.[5]

In the light of the stance taken by the Government in its 2002 consultation paper on competition, and the subsequent creation of the WSL regime in the 2003 Water Act, it is worth highlighting two points arising in connection with the application of the analytical

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[3] There may also be losses caused by the horizontal sub-division of the segment into which competition is to be introduced.

[4] As Ofwat's experience with the WSL regime demonstrates, the work of a "market authority" can entail significant costs. These may be more than offset, however, if the introduction of competition means that service performance regulation, for example, can be dismantled or scaled down.

[5] In theory, such effects represent transfers which can, in theory, be addressed through tax and benefits measures, in which case they should not strictly feature in the cost-benefit approach set out here. If, however, as is quite likely, there are real-world constraints to the making of compensatory transfers then they should be included.

framework set out above. First, since the nature of the costs of extending competition are such that they tend to be incurred "up-front", whilst (potentially) the most significant benefits, those associated with dynamic improvements, are more likely to accrue "long term", policymakers may be confronted with the prospect of allowing higher *short term* customer bills as the price to be paid for the more significant benefits that are expected to accrue in due course. Where this judgement is made, it follows that there may also be a case, initially, for "*tilting the playing field*" in favour of entrants in order to accelerate the development of competitive forces and thereby to bring forward the realisation of the dynamic benefits. However, in its 2002 consultation, the Government was quite clear that it was firmly *against* any short term increases in other customers' bills arising out of the extension of competition (and indeed it was this constraint that largely shaped the development of the WSL regime[6]). In other words, the Government explicitly ruled out the possibility of short term increases in customer bills as the means to achieve longer term dynamic benefits, implicitly because it took the view that those benefits would not, in the context of the water sector, be significant.

In Dŵr Cymru's view, therefore, in carrying out its review of competition, Ofwat's first step should be a fresh re-examination of the question of the costs and benefits of extending competition over and above existing forms of competition, including the comprehensive competitive out-sourcing programme that has been implemented by Dŵr Cymru, as well as self-supply, comparative competition, and so forth. Once this basic analysis has been completed, a range of consequential questions (e.g whether accounting or structural separation should take place) naturally fall to be considered, and indeed become rather more straightforward to answer.

Second, it is worth pointing out that the cost-benefit decision-making framework outlined above would appear to be exactly what is intended by the various references to competition in the legislation. In particular, the first of the primary duties of the Secretary of State, the Assembly, and Ofwat is the furthering of "the consumer objective", which is defined as "*to protect the interests of consumers, wherever appropriate by promoting effective competition….*". Plainly, if competition is extended in a manner that increases *entry*, but in a way that yields benefits (including the longer term dynamic category described above) that fall short of costs, then bills will be higher and consumers' interests will have been damaged, not protected, contrary to that primary duty.

It falls to policymakers and regulators, therefore, to make the case for extending competition by reference to first principles and the over-riding objective. The following section sets out

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[6] In effect, the Government decided that profitable entry should only be possible where either allocative or productive efficiency gains (or both) were available, i.e where an entrant could offer customers either something they were not getting before, or something they were getting at a lower price. The recent Ofwat consultation paper adopts the presumption that the lack of entry (so far) is a "bad thing", and does not address the important question of whether this is due to the existence of significant barriers to entry, or whether it simply reflects the relative scarcity of such beneficial entry opportunities.

some of the major considerations which Dŵr Cymru believes Ofwat should address in its application of the framework set out above.

# 3. THE DESIRABILITY OF EXTENDING COMPETITION IN WATER AND WASTEWATER – SOME CONSIDERATIONS

If, as Dŵr Cymru believes, the policy evaluation framework set out above is to be properly applied, there are several considerations which should be addressed.

## 3.1. What is the Market?

As noted above, the basic strategy for introducing competition into utility (and similar) industries involves the isolation of the "natural monopoly" or "bottleneck" segment(s) of the production process, and the liberalisation of the remainder, supported by vertical separation, whether partial (accounting) or full (structural). The creation of "retail choice" allows multiple suppliers each to seek to ascertain and meet the preferences of consumers (especially as regards risk) which are then effectively articulated by means of market signals in upstream markets – a job that no monopolist can ever expect to be able to achieve by itself.

The first task for the policymaker, therefore, is to ascertain what are the "potentially competitive" segments in the production process. In Dŵr Cymru's view, this is by no means straightforward in the water sector. In its 2002 consultation paper Government effectively took the view that water treatment was a potentially competitive segment. However, whereas in the electricity sector, for example, there is a national (if not international) market that enables a wind farm in Cornwall to compete with a coal-fired power station in Yorkshire, there is no such national market in water. Rather, it is estimated that undertakers operate some 400 or so discrete water supply systems, each of which might be seen as constituting a separate potential market, but with many served by only one treatment works at present (which itself may be below what might be reasonably regarded as minimum efficient scale) the scope for competition would not appear to be promising.[7]

Further, even if there were a single national market, it would appear that the share of the potentially contestable segment(s) in the value chain in water supply accounts for a much smaller proportion than in other sectors. According to the analysis presented on page 6 of the 2002 position paper (see Annex), "generation" and "retail" account for about 50% of the value chain in electricity, but just 15% in water supply, with the remainder accounted for by "distribution".

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[7] As touched upon in Ofwat's consultation paper, though, it is always conceivable that technological change will make small-scale water treatment more competitive, thus lowering the minimum efficient scale and alleviating this particular constraint on the development of competition.

If water treatment does not presently offer the scope for meaningful dynamic benefits arising out of the extension of competition, where should policymakers' attention focus? Dŵr Cymru believes that there are two avenues that should be examined.

First, the feasibility of establishing a national market should be properly evaluated. Rather as in the energy sectors, the creation of "inter-connectors" between previously separate markets can bring together larger numbers of "buyers and sellers", which by definition will generate greater benefits. The question to be addressed is whether the costs of "manufacturing" a larger market for water supply can be justified (and indeed whether the proposal is technically feasible). Note, however, that even if integration is worthwhile, "the market", *per se*, may not deliver the required investment: regulatory measures may need to be taken to licence and remunerate the provision of such services.

Second, taking a rather different direction, and accepting that the treatment function will continue to exhibit significant natural monopoly characteristics in most water supply systems for some time, policymakers should look "further up" the "production process" and evaluate whether or not competition for raw water (i.e water rights in the environment) could generate meaningful and beneficial market activity. *Prima facie,* on the basis that the opportunity cost of raw water varies significantly from user to user[8], from one time period to another, and from one place to another, the introduction of markets for water rights in England and Wales theoretically offers significant benefits. Obviously, however, since this would mean reflecting the opportunity cost of water in customers' bills, they could be significantly higher as a consequence. It should also be clear that this would entail a fundamental reform, not just of the law but of institutions as well: the current provisions for "trading" licences are a side-feature of what is still, in essence, an administered system. For markets in water rights to operate properly it would be necessary, for example, to create a separate "market authority" out of the Environment Agency, with functions and duties enshrined in law, leaving the Agency to own (and trade, as it wishes) water rights pursuant to its role as the statutory guardian of the aquatic environment. Although this might appear to be far-reaching, it is worth noting that it resembles, in some respects, the upstream segment of gas supply in the UK, and has some relevant precedents in other countries, including those cited in the consultation paper. Certainly, in Dŵr Cymru's view, the potential for benefits through the creation of markets for water rights far outweighs any that might arise as a consequence of competition in either abstraction and treatment or "retail" activities. It acknowledges, however, that there are major questions of feasibility and cost that would have to be addressed.

Finally, as an aside, it is worth completing this discussion by re-iterating one of the points that Dŵr Cymru made in response to the Government's 2002 consultation paper, because it is highly relevant to the way in which the WSL regime is being promoted. There, we said:

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8 The interests of the environment, of course, constitute one especially significant "user".

*"…whilst we do not object to the introduction of "wholesale" obligations in respect of entrants who wish to "retail", we have some doubts as to whether these arrangements would bring any benefits. There are no savings to an undertaker by providing a "wholesale" service to a retailer. The same water has to be provided to the same standards of service, and there is no effect on the billing and collection function – other than a change in the name of the undertaker's "customer"…..We wonder, therefore, whether "retail" competition as envisaged by the consultation paper is really meaningful and worthwhile."*

Our view remains the same as in 2002: if anything, it has been hardened by the experience of the development of the WSL regime. The problem, as we see it, is this: "retail" competition as envisaged under that regime is completely different from "retail" competition in, for example, electricity and gas. There, although service providers are, in a sense, "retailing" to final customers, they are also participating in the upstream markets, looking for the best deals, options, contracts, etc that will facilitate the most efficient supply to their customers, and it is that feature, not whether or not one supplier has a quicker or cheaper billing system than its competitors, that is the primary driver of the benefits created by the retail market. In none of the examples cited by Ofwat has "retail" competition been introduced on the sole basis of "wholesale" supply by incumbent service providers, and been viewed as a success.

Given the analytical framework set out above, the counter-argument might reasonably be made that the costs of facilitating "retail competition" have been fairly low, so why not allow it? The difficulty, we believe, is that the regime appears to have created an expectation amongst would-be entrants that they should be able to profit simply by interposing themselves between undertakers and large customers, and their failure to do so has, to some extent, been attributed to inadequate cost dis-aggregation on the part of undertakers. The response of Ofwat has been to demand ever more detailed and burdensome requirements of undertakers, all of which simply adds to costs but cannot manufacture benefits if none are there to be unearthed. In our view, so far as the WSL regime is concerned, Ofwat should place far more emphasis on the "combined supply" type of competition (which does, at least, offer some meaningful potential benefits).

## 3.2. Dynamic Benefits

As noted above, it is the dynamic benefits of competition that generally constitute the most significant prize from market liberalisation. In order to evaluate the extent to which they might be significant in the water sector, Ofwat should consider the three main categories.

### 3.2.1. Investment Decisions

The introduction of competition in other sectors is widely perceived to have driven major efficiencies in investment decisions. Put simply, whilst a monopoly firm will have its own view as to how the capital stock should be developed and enhanced to meet consumers' needs, a market that attracts multiple players whose good decisions will be rewarded and whose bad decisions will be penalised is likely to produce much better outcomes. The

obvious example is power generation in the UK following the break-up of the CEGB and privatisation in 1989.

The scope for investment decisions to be subject to market forces in the water sector appears, however, to be somewhat limited by the very heavy regulatory involvement in investment decisions that characterises the sector. For example, the analogy with the power sector would imply that multiple providers could usefully compete to address the long term supply-demand balance issues confronting the London area, rather than leaving the investment decisions up to a single firm. In practice, however, the decisions will be substantially shaped by the Environment Agency, possibly a public inquiry, and to some degree by the Drinking Water Inspectorate as well (because of the regulatory requirements as regards what treatment processes are used). Other than nuclear power generation, it is difficult to think of any other sector where regulatory requirements play such a significant role in investment decisions, which must inevitably diminish the role for market signals.[9]

### 3.2.2. Innovation and Technological Development

The liberalisation of markets may also act as a boost to innovation and technological development. It is argued that this has been the case most notably in the telecommunications sector. Policymakers would need to consider the extent to which a further extension of competition in the water and wastewater sector might have a similar effect on innovation in technologies that are relevant to the sector. In doing so, it would be necessary to evaluate the extent to which the present structure of the industry already provides sufficient stimulation to the markets (both domestic and international) that supply technology to the sector to drive innovation and technological development. Many would argue, for example, that the major capital investment programme that has been implemented in England and Wales since privatisation has already provided that boost, with multiple suppliers competing for contracts from multiple service providers, all trying to achieve the same objectives but in their own individual ways. Certainly, Dŵr Cymru's own experience is that there is fierce competition amongst suppliers for contracts with undertakers. In 2004, for example, 76 expressions of interest were received from firms seeking to work with Dŵr Cymru on the delivery of its 2005-10 capital investment programme, and 16 tenders were received for the six contracts that were subsequently awarded.

### 3.2.3. Product and Service Differentiation

The third type of dynamic benefit is the innovation in the range and types of products and services that are actually offered to consumers. Whereas a monopolist may be inclined to offer just the package of services that it thinks customers want (or is told by customers representatives that they want), competition at the retail end allows multiple firms to offer

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[9] Indeed, under the WSL regime licensees who wish to develop their own water sources and treatment facilities are subject to the same regulatory requirements as undertakers.

differentiated packages, with the market rewarding those that most successfully meet consumers' needs (including preferences as to risk) and penalising those who do not. Product differentiation has, again, been most notable in the telecommunications sector.

Once again, however, there are compelling empirical reasons that would have to considered as to why this particular benefit might not materialise to any significant degree in the water sector. For one, unlike in telecommunications where the same piece of optic fibre cable can simultaneously be used for a phone call, surfing the internet, and indeed controlling the operation of water industry assets, the water that is supplied from a pipe to one customer cannot be different from what is supplied from the same pipe to the customer next door. As the experiences of gas and electricity have shown, competitors that are bound to supply the same core service seek to differentiate themselves in ancillary ways, e.g by offering "air miles", or other inducements, but this type of differentiation is no different from that which characterises many service industries (insurance, banking, and so on) and, crucially, does not of itself drive dynamic efficiencies in the production of the core service.[10]

It should also be pointed out that, even if water companies were looking to compete through product differentiation, there would have to be a fundamental change in the "legal architecture" for water supply. At present, it is probably fair to say that 99% of the characteristics that define the water supply service that a customer receives are "hard-wired" through legislation and other legal instruments that specify quality, constancy, pressure, and so on. Even if an undertaker wanted to "differentiate" its water supply service (e.g by offering "grey water" to households for toilet-flushing, it would find that this is prohibited under the Act)[11]. This does beg the question as to why Parliament has been so prescriptive in determining what water supply service customers should receive, and whether or not Government would be willing to allow consumers to take more responsibility for choosing what they want and making sure they receive it, a further issue which warrants careful consideration.

Finally, for completeness, it should be pointed out that just because product differentiation is not feasible as part of competition by means of common carriage, this does not mean that customers' differing needs cannot be met by other markets. On the contrary, there are already active and competitive markets that serve customers' varying requirements outside of the utility supply framework which is the subject of Ofwat's consultation paper, and the generally uniform service that it necessarily provides. These include markets:

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[10] This is not to say that there is no competition involving differentiated water quality. In the industrial sector, use of on-site water treatment plants (e.g in beverage production) is widespread, and indeed in the domestic sector customers use a variety of filters, water softeners, and other devices, to obtain the "quality" of water they want. All of these activities, however, are "end-of-pipe", and none are feasible by means of common carriage through the undertakers' distribution network.

[11] Under section 68 of the Water Industry Act 1991, undertakers must ensure that water that is supplied for domestic purposes is wholesome. Section 218 defines "domestic purposes" to include "sanitary purposes". In effect, therefore, the Act requires that only potable drinking water can be supplied by undertakers for toilet-flushing.

- for alternative drinking waters, including bottled water, domestic water filters, and on-site industrial treatment plants (e.g for brewers);

- for alternative industrial supplies of raw water. In a survey of private abstractions for industrial use in Wales last year, Dŵr Cymru estimated that the ratio of the total abstraction rights held by self-suppliers and private suppliers for industrial use in Wales (excluding power generation) exceeds the non-potable water supplies by Dŵr Cymru by a ratio of approximately nine to one. It is because this market is, by definition, private, that it does not generally come to the attention of Ofwat and others;

- for alternative sources of water, such as water butts and industrial equivalents; and

- for on-site pre- and self-treatment of wastewater, whether in conjunction with the use of undertakers' services, or by means of direct discharge to the environment.

In summary, it does appear that the dynamic benefits that have been at the heart of the "success stories" where competition has been extended in other sectors are not obviously available in water, certainly to such a degree. Of course, the argument can always be made: "well you won't know how significant the dynamic benefits will be until market forces are properly and fully unleashed", but unless the above considerations are confronted and addressed, the "leap of faith" that that would entail would appear large and somewhat reckless. Indeed, it appears that this was the Government's conclusion as regards household water customers following its analysis of the scope for competition by means of common carriage during the period 2000-02. In the 2002 consultation paper, it stated:

*"The Government believes that, based on evidence currently available, the drawbacks of increasing competition for household customers are likely to outweigh the potential benefits."*

It would appear, therefore, that the onus would be on Ofwat (and others) to present the alternative or updated evidence that would demonstrate the reverse.

## 3.3. Other Considerations

There are seven additional considerations which Dŵr Cymru believes Ofwat should address at the outset of its review of the scope for extending competition in the sector.

### 3.3.1. Financing and the Cost of Capital

One of the distinctive features of the water sector in England and Wales has been its capacity to deliver the huge levels of capital investment required to achieve the quality and environmental improvements demanded by Governments and regulators. Since privatisation in 1989 undertakers have spent some £55 billion in today's prices, equivalent to over £2,000 per household, on new and upgraded assets. Under the methodology adopted

by Ofwat for setting price caps, however, customers are not asked to pay for those assets as they are acquired. Rather, undertakers generally raise finance from the capital markets (whether debt or equity) to pay for the investments, and it is the returns on that finance (interest and dividends), which are incorporated into the price cap. As a consequence, in any one year, undertakers have typically spent more on investing in and operating their assets, and paying returns to their investors, than they receive by way of customers' bills: that is to say, they have been *cash negative*, relying on fresh finance to fill the gap.

It is highly unusual for a private company to be cash negative for a protracted period of time, because this is generally seen as a sign of distress, which would generally deter any new investors from committing further capital to the business. What makes the water sector so unique, however, is the legal, institutional, and regulatory structure within which undertakers operate. Whilst there are no guarantees, that framework, together with the relatively low risk characteristics of the business, offers investors a measure of assurance that the returns that they require will be forthcoming. Commensurate with this, Ofwat has been able to set price limits on the basis of a relatively low cost of capital, typically around 5% (in real terms). It is generally accepted, therefore, that the large capital improvements required of the industry have been very efficiently financed. As a consequence of all the money that has been invested in the sector, however, the proportion of customers' bills accounted for by the return on capital has steadily increased, and now stands as high as 40% for some companies, and nearly one third for the average of the sector as a whole.

It is not easy to predict exactly what would be the effect on the cost of capital of a major increase in competition in the sector. However, there can be little doubt that full market liberalisation, along the lines of the gas and electricity sectors, for example, would fundamentally alter the capital markets' approach to financing. In particular, 5% would certainly be insufficient to attract new finance to enable further improvements in source and environmental quality to be made, because of the perceived increased riskiness of the sector. This would feed through into additional costs for the industry, which would have to be included in the overall assessment of costs and benefits. The significance of this factor can be illustrated by considering that with the return on capital currently accounting for 33% of the average customer bill, every 1% increase in the cost of capital would add a further 5% or so to that bill.[12]

### 3.3.2. Universal Service and Disconnection

In order for markets to function, buyers and sellers must be able to enforce the transactions they enter into. The water sector is not unique in having a "universal service obligation", a feature which has been addressed by policymakers when other sectors have been opened up

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[12] By contrast, it should be pointed out that competition of the form employed by Dŵr Cymru in its out-sourcing strategy, if anything, reduces the cost of capital, because the transfer of operational and cost risks to the contract partners is viewed as a "credit positive" by investors.

to competition.[13] However, it is unusual in outlawing suppliers' rights to withdraw their service from households (and some non-households, such as hospitals) for non-payment. Although undertakers have developed extensive strategies for recovering debt from non-payers, it remains the case that, unlike gas, electricity, and telephone companies, they cannot cut customers off.

There is clearly a basic conflict between competition and the social policy objectives that underpin the ban on disconnection, but without apparent precedent it is not obvious what effect the ban would have if liberalisation were to take place. There are some limited parallels with the liberalisation of the energy markets, where suppliers have generally targeted the better-off, with the less well-off paying higher prices as a consequence. This suggests that entrants would target the "good credit" water customers, leaving the bad credit customers with the undertakers who would therefore be increasingly handicapped in their efforts to compete as a consequence. It is possible to envisage some kind of arrangement for compensating undertakers for having to bear this burden, but it would not be a straightforward matter to determine the level or means of compensation. Certainly, if the promotion of competition were seen as the over-riding objective, the best solution would appear to be the restoration of the right to disconnect in order that firms could compete secure in the knowledge that market transactions could be "enforced" quickly and efficiently. Clearly, though, this might not be the preferred way of reconciling the conflict between the two policy objectives.

### 3.3.3. The Role of Corporate Failure in Competition

Competition delivers benefits by rewarding the good and sanctioning the poor. The successful must be able to reap their rewards and the unsuccessful must face the ultimate sanction, going out of business.

At present, in recognition of the "essentiality" of the water and wastewater services, undertakers cannot, by law, "fail". The special administration provisions in the Water Industry Act do provide a means by which the owners of undertakers can "fail", but the businesses themselves are required to be sustained, potentially with Government financial support if necessary, in order that the functions of the undertaker continue to be delivered.

Indeed, not only are the special administration protections something of an anathema to competition, but the reverse is also the case. Special administration "works" because there is some price for some service that can be found that is sufficiently high to put the business back on its feet. However, that pre-supposes that the business has a monopoly: if it does

[13] Typically, the net cost of having to serve customers which loses a firm money is identified and shared between competitors as part of the cost of access to the bottleneck facility, or refunded by Government.

not, the job of the special administrator is impossible.[14] Markets just do not allow loss-making businesses to continue indefinitely.

There may be a solution to this issue. The special administration provisions could be removed in respect of the competitive segment(s). This would require full structural separation of undertakers so that the remaining monopoly segment(s) could remain subject to special administration. This would bring a fresh set of issues of its own, but there is no reason why they should be insurmountable. It is for policymakers, however, to set out what they are, and how they might be addressed.

### 3.3.4. The Price Level

The best way to "kick-start" a market is to ensure that entry is very attractive, and the best way to do that is to ensure that there is a prospect of handsome profits. Indeed, regulators and Governments have, in the past, used the tactic of allowing the regulated price level to be higher than it needs to be in order to do just that, secure in the knowledge that market forces will then drive prices down once it is established.[15]

For Ofwat, however, an issue for consideration is the fact that the existing price level is actually substantially *below* what might be regarded as the "competitive" price level, by which we mean the level at which an entrant could replicate the services provided by an undertaker and earn a normal rate of return. The reason for this is the fact that the water companies were sold for amounts (£6bn, or so, in total) which were far less than the value (in replacement cost terms) of their assets (approximately £120bn): this, in turn, reflected the fact that the prevailing price level at the time was not sufficient to generate a market rate of return on the replacement value of those assets. The result of this so-called "privatisation discount", which in a sense represents a subsidy to today's customers provided by yesterday's taxpayers, is that undertakers only earn a return of about 1.1% on the replacement value of their assets. Clearly, an entrant that needs to earn a market rate of return[16] on an asset such as a water treatment works is at a severe competitive disadvantage.

Again, whilst this is an issue that must be considered, there may be ways of addressing it. One straightforward option would be to allow the price level to rise sufficiently so as to

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[14] It is true that, in some circumstances, the special administration arrangements can be applied to "licensees" under the WSL regime who of course do not have a monopoly. However, it is not clear that the Government properly thought this through: whilst the law requires that a special administrator be appointed in certain circumstances for an ailing licensee, the absence of a certain future revenue stream would frustrate the purpose of the provisions. Indeed, it is likely that no administrator could be found to take on the job in the first place in these circumstances.

[15] In addition, it could be argued that because other sectors were opened up to competition relatively soon after privatisation, there was still considerable "public sector inefficiency" built into costs and prices, providing a further spur to entry. In water and wastewater, the comparative regime has had 17 years to drive out inefficiencies, and there is a common view that the "easy" opportunities for efficiency improvement have been more or less exhausted.

[16] Views differ as to what this might be, but there is general consensus that it would be well into double-figures, i.e in excess of 10%.

create a "level playing field", but this would clearly be out of the question. A better possibility would be to allow undertakers "prices" for the competitive segment(s) to rise to (or above) market levels, and to force down the prices for the "bottleneck" segment(s) to compensate. This may or may not be feasible: it could, for example, imply *negative* prices for the bottleneck segment, which would be a nonsense. It might also have undesirable consequences: for example, large industrial customers currently pay less, on average, than households, justified primarily on the basis that transportation costs to their premises are lower because they are not served through the "small pipe" local network. If costs are "shifted" out of transportation and into water resources and treatment then the effect of that difference on final price diminishes, implying increases in bills for the largest users as high as 50%.[17] Correspondingly, however, the bills to household customers would fall.

### 3.3.5. Conflicts with other policy objectives

One of the advantages of subjecting service providers to economic regulation rather than market forces is that policy-makers have much more scope to "dictate" the outcomes they want. When liberalisation occurs, firms' conduct is influenced primarily by market forces, and policymakers may find it more difficult to achieve the outcomes they seek.

A good example is "water efficiency". In its recent letter (RD 15/07) Ofwat has indicated that it would like undertakers to meet "targets" for the effects of their water efficiency efforts, and has put forward quantitative reductions it expects to see from each company. In due course, if Ofwat thought appropriate, it could reward some companies and penalise others through the existing system of economic regulation (rather as companies are rewarded and penalised for OPA performance) to give further effect to that policy. If there were full liberalisation of water supply, market forces would reward the suppliers who successfully encouraged their customers to use *more* water, and *vice versa*. Service providers would no longer, therefore, provide a ready vehicle for the implementation of the policy.

Other examples include the Government's objectives with respect to disadvantaged customers and those located in rural areas. At present, the specific duties imposed on the Secretary of State, the Assembly, and Ofwat as regards the protection of the particular interests of those groups translate through into the way those customers are dealt with by undertakers. Market forces would drive suppliers either to avoid competing for such customers, or to charge them higher prices for the additional costs they impose.[18] Policymakers would be faced with the choice between finding some alternative means of

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[17] In other words, the proportion of total costs accounted for by the segment for which large users enjoy a "discount" shrinks, and the proportion accounted for by the segment(s) for which they do not expands, leading to a convergence between charges to large users and charges to other customers.

[18] This is illustrated, for example, in the energy markets, where customers who cannot get bank accounts, and therefore cannot have access to direct debit-based tariffs, have to pay more for their services. Whilst this differential is partly related to the costs of payment processing, it also reflects the fact that households who cannot get bank accounts represent worse credit risks for suppliers.

achieving their objectives (as with, for example, winter fuel payments for the elderly), or abandoning such policies altogether.

Finally, it is worth observing that, although there are no examples of competition "in the market" by means of the vertical separation of water supply elsewhere in the world, several countries have implemented various forms of competition "for the market" (e.g operating contracts, concession contracts), similar in some respects to the strategy of competitive out-sourcing adopted by Dŵr Cymru. Under such "models", it is generally a straightforward matter to ensure that any specific policy objectives or requirements are built into the contracting framework, so that the interests of participants are aligned with those of society as a whole.

### 3.3.6. Regional average pricing

The sixth issue that policymakers would have to consider is the effect of market liberalisation on the regionally-averaged prices that undertakers currently apply. This is arguably the consideration that has always attracted most attention in debates about competition in the water sector (and, indeed, in postal services and other sectors) and is therefore not explored in detail here. In essence, market forces will always work to reveal underlying costs, which means that the prices to customers located in higher cost (typically rural) areas will tend to rise, and those to customers in lower cost (typically urban) areas will tend to fall, which may be in conflict with policymakers' social objectives (or, in the case of the Secretary of State, the Assembly, and Ofwat, their legal duties).

### 3.3.7. Underlying Growth

The final additional issue that would have a bearing on policymakers' considerations is the prospects for the overall size of the future market. In other sectors market liberalisation has taken place against a backdrop of strong expected future demand growth, so market forces have been brought to bear on the matter of finding and exploiting new sources of supply, not just displacing existing sources operated by incumbents. In addition, in the telecommunications sector the concurrent dramatic step changes in technology associated with innovations such as the microchip were bringing about rapid transformation in the cost functions of providing various services, and dramatically increasing capacity.

In water and wastewater, however, if anything the reverse is true. Whilst property growth in the domestic sector will continue to create upward pressure on total demand, the non-domestic sector will continue to decline (or stabilise at best), and leakage levels are more likely to fall than rise, all in the context of general pressures on companies and customers to *reduce* the amount of water taken out of the environment. Again, whilst this is by no means a "show-stopper", it does mean that the ground is less fertile as regards the prospects for vigorous competition, as compared with other sectors.

### 3.4. Summary of comparative features of the water sector and other sectors

By way of a conclusion to this analysis, the table overleaf provides a simple "ready-reckoner" of some of the relevant considerations that have been discussed in this paper as regards the conditions that are more or less conducive to the generation of significant customer benefits following market liberalisation.

| **Sector features that are associated with significant benefits for customers following liberalisation** | **Gas** | **Electricity** | **Telecoms** | **Rail** | **Post** | **Water** | **Wastewater** |
|---|---|---|---|---|---|---|---|
| Technological feasibility of common carriage | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | x |
| Significant scope for product or service differentiation | x | x | ✓ | ✓ | ✓ | x | x |
| Single national or international upstream market | ✓ | ✓ | ✓ | x | ✓ | x | x |
| Scope for major investment decisions to be determined primarily by market forces | ✓ | ✓ | ✓ | ✓ | ✓ | x | x |
| Ability of service providers to enforce market transactions | ✓ | ✓ | ✓ | ✓ | ✓ | x | x |
| Strong underlying growth in market demand | ✓ | ✓ | ✓ | ✓ | ✓ | x | x |
| Minimal or no policy constraints on the effects of the unravelling of cross-subsidies | ✓ | ✓ | ✓ | ✓[1] | x[2] | x | x |

[1] Policy objectives as regards the preservation of cross-subsidies can be met in rail by means of the system of franchise payments.

[2] There are signs that this constraint is weakening, as pressure grows for greater liberalisation of the postal services.

# 4. SUMMARY AND CONCLUSION

This paper has set out, in broad terms, the policy and analytical framework that Dŵr Cymru believes needs to be applied if the conclusions of a review of the scope for further competition are to be soundly-based and defensible, in the particular context of the UK water sector. Following the Government's lead in 2002, the onus falls on Ofwat (and others) to demonstrate that greater market liberalisation is likely to be beneficial, over and above the existing forms of competition (including Dŵr Cymru's extensive use of competitive out-sourcing), having regard to reasonable and informed estimates of the costs and benefits of the measures under consideration. This paper has also presented a short discussion of the main issues that must be considered as part of this analysis. The risk, if they are not, is that new arrangements are put in place based primarily on the approach of "mimicking" other sectors. The result may give the appearance of "working", because entry is occurring, but if dynamic benefits do not emerge, the regulation of the market proves onerous and expensive, and the overall cost of financing the functions that the sector has to perform rises even by a small amount, the overall result may be bad for customers.