

COMPETITION IN THE WATER INDUSTRY

This paper examines the state of the regulated water and sewerage industry in England and Wales (hereafter the 'water industry') and, in particular, the respective roles of competition and regulation. It then discusses ways in which competitive forces in water could be strengthened and the benefits of doing so.

1. The contrast between water and the other utilities

Since the water industry was privatised in 1989, growing differences have emerged between it and the other industries which before privatisation were described as 'public utilities'. This increasing gap is the result both of the form of privatisation and of the way regulation has been conducted. A key feature is that the boundary between the area where competition rules and that where regulation applies has been drawn differently in water from most of the other utilities.

In water, the privatisation scheme envisaged there would be very limited competition in the industry (and that just for extremely large consumers). Moreover, the regulator had a duty only to 'facilitate' competition, rather than the more positive duty to 'promote' it as in most of the other utilities¹. Subsequent legislation has left that situation essentially intact, with competition having only the most marginal role², mainly via a very small number of 'inset appointments' for big customers³. In telecommunications and gas, the regulators were active soon after appointment in using their competition-promotion

¹ The main duty of the Director General of Water Services is to ensure that water and sewerage companies can carry out and finance the functions specified in the Water Industry Act 1991. Secondary duties are to protect the interests of consumers, promote efficiency and facilitate competition. These duties are explained in Section 2 of the Act and summarised in 'The Role of the Regulator', Ofwat Information Note No.26, March 1994 (revised February 1996).

² Colin Robinson, 'Introducing Competition into Water', in M.E.Beasley (ed.), *Regulating Utilities: Broadening the Debate*, Readings 46, Institute of Economic Affairs, 1997.

³ The first of these was for Buxted Chickens in Suffolk. See Ofwat News Release 18/97, 28 May 1997. Large customers in this context are those with an annual consumption of 250 megalitres or more. Even though the number of inset appointments is very small, there may have been some effect on the terms offered to other big consumers by water companies wishing to avoid inset appointments in their areas.

powers. The electricity scheme went further: there was a specific provision at the time of privatisation⁴ for the staged introduction of competition so as to extend it to all consumers over a period of eight years.

The consequence is that, in gas, electricity and telecommunications, larger consumers have already had a choice of supplier for several years and more recently even the smallest consumers have been granted that choice⁵. Competition is now well established and the scope of regulation is either already diminishing or is expected to do so soon. Within a few years, in gas, electricity and telecommunications, price regulation should apply only to 'natural monopoly' networks of wires and pipes, though industry regulators and the Office of Fair Trading (OFT) will maintain a general oversight of the industries to ensure there are no anti-competitive agreements and that dominant positions are not abused.

Views about what constitutes 'natural monopoly' in utilities have altered radically in recent years but this change of view has had no discernible impact on water regulation. Before privatisation, it was often assumed that each utility in its entirety constituted a natural monopoly: even if initially there were several competing companies, because of economies of scale eventually only one would remain. But one of the effects of privatisation was to reveal that substantial sectors of the utilities are potentially competitive: only the networks of pipes or wires are genuine natural monopolies⁶.

In gas and electricity, the concept of natural monopoly has been constantly challenged and pared away: for example, potentially competitive activities which used to be associated with the networks, such as gas storage and gas and electricity meter provision and reading, are either already competitive or soon will be. Competition takes place in production and in supply of the product to consumers, using the core natural

⁴ The privatisation scheme for England and Wales was set out in *Privatising Electricity*, Cm.322, February 1988.

⁵ The latest to enter the competitive market were a final group of electricity consumers in summer 1999.

⁶ Even the networks may not remain natural monopolies for ever. The fixed networks in telecommunications used to be regarded as natural monopolies but the monopoly has been undermined by technological advance.

monopoly network as a transport medium. There has been no similar attempt by the water regulator to identify and isolate the natural monopoly element in the industry.

2. Price cap regulation in water

Because of the emphasis on regulation in the water industry, the price control system is of more significance than in the other utilities where, as explained above, the area to which price control applies shows signs of shrinking.

Price cap (RPI-x) regulation, which has become the norm in Britain's privatised utilities, was originally intended to fill a gap during the period before competition arrived in the relevant industry (in 'pre-competitive markets'); thereafter it would apply only to 'natural monopoly' sectors where there seemed no prospect of competition. It was conceived as a superior alternative to US-style rate-of-return regulation where there are perverse incentives which tended to generate inefficiencies⁷.

The RPI-x regime was conceived as the nearest regulatory equivalent to a competitive market. The essence of such a market is that companies which are innovative - increasing the quality of existing products, introducing new ones or reducing costs - can hold on to 'excess' profits for a period, though in the end the force of rivalry results in those profits being competed away. RPI-x has some similarities in the sense that, if companies can reduce costs more than expected at a particular price review, they can keep the resulting profits until the next price review at which time the benefits are passed, either immediately or gradually, to consumers⁸.

The system relies upon regulators' willingness to review prices only at intervals specified in advance (usually 5 years under the British system). Very frequent reviews

⁷ M.E.Beasley and S.C.Littlechild, 'Privatisation: Principles, Problems and Priorities, *Lloyds Bank Review*, July 1983 and H.A.Averch and L.L. Johnson, 'Behavior of the Firm under Regulatory Constraint', *American Economic Review*, 52 (5), December 1962.

⁸ M.E.Beasley, 'RPI-x Principles and Their Application to Gas', in M.E.Beasley (ed.), *Regulating Utilities: A Time for Change?*, Readings 44, Institute of Economic Affairs, 1996, especially page 213.

or reviews which come in the middle of a previously-specified review period undermine the incentive properties of the system: unless companies expect to be able to retain the fruits of cost reductions for a period they will lack the incentive to make those reductions.

But, in practice, RPI-x is a very imperfect substitute for a competitive market. For example, incentives to improve quality are not the same as in a competitive market. There is a well-recognised problem in capping prices - that companies may reduce quality for a given price - so regulators usually offer some 'reward' for improved quality or new products or apply penalties if quality standards are not met.

More important, the RPI-x regime cannot simulate the competitive pressures which are the principal factor driving innovation. Since the companies are not actually in a competitive market, even they do not know how they would have behaved in such a market. The problem is much more serious than the commonly-perceived issue of information asymmetry, where the companies are assumed to know more than the regulator and to conceal information from him or her. The information which a competitive market would have produced simply does not exist if there is no such market. Companies may be unsure of their present cost structures and very uncertain about what those costs might be in the future. Everyone will be in the dark about such fundamental matters as what an efficient, innovative company would look like.

In such circumstances, regulation rests on shaky foundations. It relies on guesstimates made at the time of a price review by the regulator, after considering information from companies, about such crucial factors as future capital costs, operating costs, the cost of capital and demand for the product. The cost estimates become targets which the companies aim to beat, thus improving efficiency, but there is a substantial arbitrary element in them as there is in all price regulation.

Furthermore, strategic bargaining between regulated companies and their regulator clouds the issues at the time of a price review. The regulator tends to claim that companies can make bigger cost reductions than he really believes they can manage and he may also raise demand estimates beyond what he thinks likely. He behaves in this way to counter the suspected tendency for the companies to over-estimate costs

and (depending on how the price cap is applied) to under-estimate demand and therefore revenues in the hope of a less onerous price cap.

Given such problems, a price cap system of regulation is unsuitable when it is applied - not temporarily to pre-competitive markets and thereafter only to natural monopoly areas where it is unavoidable⁹ - but to a whole industry for the indefinite future. An enormous weight is placed on the regulator who becomes, in effect, the chief executive of the industry, controlling all major decisions without the guidance about prices and standards of service which is automatically provided when consumers and producers are permitted to interact freely.

3. Efficiency comparisons

The regulator is therefore forced to employ very unsatisfactory methods, such as 'comparative' ('yardstick') competition which has come to occupy a central place in efficiency comparisons in the water industry. Comparing different companies and trying to bring the less efficient up to the level of the more efficient might superficially seem like a way of simulating real competition. But, in practice, it is not.

First, there is a big difference in principle between dynamic competition in a real market and static comparisons between companies in a non-competitive market¹⁰. Where there is no competition, the incentive for improvement which exists in competitive markets is absent. In tightly regulated markets, companies are not so much trying to better their rivals by innovating and reducing costs: they are trying to impress their regulator.

Second, making meaningful comparisons in a comparative competition regime is extremely difficult. In principle, the problem is that there are many variables which affect the costs of any given company. Some means of standardising for these has to be

⁹ There are alternatives to regulation even for natural monopolies. They can, for instance, be franchised for a period of years. Competitive standards for networks can also be established by permitting new companies to build extensions.

¹⁰ Jeremy Bryan, 'Inset appointments: meeting supply through trading water rights', *Economic Affairs*, Vol. 18 No.2, June 1998.

found if useful efficiency comparisons are to be made. Econometric methods, as used by the water regulator, may seem the answer because they are the economist's equivalent of a laboratory experiment in which some variables are held constant whilst the effects of others are estimated. But, as anyone who has used such methods recognises, there are numerous practical problems to be overcome. It is not easy to specify the relevant models, especially in an industry where operating conditions differ so much from company to company¹¹. Consequently, spurious results are difficult to identify. Moreover, the results will often appear inconclusive, once the standard econometric tests are applied. Expecting such methods to give practical guidance on such a crucial issue as relative efficiencies places on them a greater burden than they can reasonably bear. Ofwat applies 'judgment' in using the models, as do virtually all users of econometric models, but the application of judgment is not straightforward when the value of the underlying models is unclear.

Third, concentration on comparative competition distracts attention from introducing the real thing. It has also produced side-effects in water which verge on the ridiculous. There is such concern to avoid 'losing' comparators that takeovers which would have that effect have been blocked¹². Paradoxically, in an industry where product market competition is virtually absent, the resulting problems are compounded because an excessive attachment to comparative competition stops the market for corporate control from working except in cases where no comparators would be lost by a proposed takeover.

4. The complications of environmental and social regulation

An additional complication in water is that as well as an 'economic' regulator (the Director General of Water Services) who, *inter alia*, applies the price cap regime, there

¹¹ The information which has been revealed about the econometric models used by Ofwat shows that a surprisingly small number of 'explanatory' variables has been used. It seems most unlikely that the models are well-specified.

¹² For example, separate bids for South West Water in 1996 by Severn Trent and Wessex Water were blocked by the Monopolies and Mergers Commission because a comparator would have been lost.

is a prominent role for 'social' regulation (for environmental, health and safety reasons and to protect disadvantaged consumers). All industries are, of course, subject to environmental, health and safety requirements but the complications are particularly severe in water where 'social' regulation has a specified place¹³.

The Environment Agency, the Drinking Water Inspectorate and the European Union authorities as well as British politicians all have a hand in water regulation. At the time of privatisation, a big investment programme was launched, designed to improve the quality of water and sewerage services so as to make up for a long period of apparent neglect and to meet EU standards. Indeed, the major factor driving up customers' water bills since privatisation has been the cost of 'improving' water, mainly to comply with EU directives¹⁴.

As in economic regulation, there is a considerable arbitrary element in social regulation. For example, regulators do not know people's preferences for water quality: it will only be by chance that the quality standards they impose are those which would have appeared in a market in which groups of consumers were free to make choices about water quality¹⁵. Surveys of consumers which ask hypothetical questions about which combinations of quality and price customers would prefer, such as those undertaken in the water industry¹⁶, do not face customers with real decisions and so cannot substitute for real choices in the marketplace.

¹³ Robinson, op cit

¹⁴ Dieter Helm and Najma Rajah, 'Water Regulation: The Periodic Review', *Fiscal Studies*, Vol.15 No.2, May 1994. In the Foreword to Ofwat, *Prospects for Prices: A Consultation Paper on Strategic Issues affecting Future Water Bills*, October 1998 (page 4), the DGWS says that '...if it had not been for the massive capital cost of implementing quality obligations, primarily the EC Urban Waste Water Treatment Directive, prices would have fallen.' He is referring to the period from 1995 to 2005.

¹⁵ Choice of quality can only be made by a group (rather than individuals) except for consumers with their own sources of supply.

¹⁶ Details are given in Ofwat, *Prospects for Prices: a consultation document on strategic issues affecting future water bills*, October 1998, section 4..

5. The state of the water industry summarised

To summarise, the water industry is increasingly being distanced from the other utilities. The boundary between competitive markets and regulated activities has been so drawn in water that competition is almost excluded, with the implication that the industry as a whole is a natural monopoly whose activities will be subject indefinitely to prescriptive regulation.

Indeed, the regulatory regime in water seems inconsistent with the present government's commitment to protect consumers via competitive markets wherever possible¹⁷. A price review is even more important to the companies concerned than elsewhere in the utility sector because the scope of regulation is so wide. In the other utilities, companies are becoming more entrepreneurial - more and more occupied with ways to match and, where possible, beat the actions of their competitors. In water, there is a preoccupation with comparative competition. Real competition is marginal: regulation, both 'economic' and 'social', is the big issue because it bears such a huge weight.

Another symptom of the absence of competition in water is the tendency for government intervention in the industry to resume. Politicians evidently feel the need to prompt the regulator into setting targets (for example, for leakage) rather than using market incentives¹⁸.

6. A change of view?

Until recently, there was no sign that water would emerge from its highly regulated and increasingly politicised state. In 1996 the previous government published plans, supported by the water industry regulator, to increase competition in the industry,

¹⁷ *A Fair Deal for Consumers: Modernising the Framework of Utility Regulation - The Response to Consultation*, op cit., para. 42

¹⁸ See, for example, 'Prescott gets tough on water leaks', *The Financial Times*, 20 May 1997.

including proposals for common carriage¹⁹ but they were not pursued. A paper later that year discussed ways in which competition could be introduced into water²⁰, but at the time there seemed little interest in the subject.

Now, however, there are signs that views are changing. The government appears to recognise that the case for competition in water has not yet been properly examined by politicians and civil servants. In its 1998 review of utility regulation²¹ and in the 1999 Budget statement, the Labour government said it would be reviewing the case for competition in water; press reports suggest that the Director General of Water Services' present duty to 'facilitate competition' should be changed to the promotion of competition to bring it into line with the other utility regulators²²; and Ofwat has pointed out to the water companies the powers it will have under the new Competition Act after next March to take action if they are abusing dominant positions or concluding anti-competitive agreements²³. A bandwagon appears to be starting to roll and the chances are increasing that in the near future competition will make a belated appearance in water.

7. Why have views changed?

The reasons for this rather sudden change in the conventional wisdom about water competition are significant. The principal reason is probably the contrast between the success of competitive markets in the other utilities and the failure of the regulated market in the monopolised water industry. Consumers naturally want to know why they have choice of supplier in some utilities but not in water. Consumer pressure is not always effective because it is costly to organise large numbers of small consumers. But large consumers, who can more easily put pressure on government and regulator, can

¹⁹ Details are in Department of the Environment and Welsh Office, *Increasing Customer Choice: Competition in the Water and Sewerage Industries: The Government's Proposals*, HMSO, April 1996. See also Robinson, 'Introducing Competition into Water', op cit.

²⁰ Colin Robinson, 'Introducing Competition into Water'

²¹ *A Fair Deal for Consumers: Modernising the Framework of Utility Regulation - The Response to Consultation*, Department of Trade and Industry, July 1998, para 43.

²² For example, 'Road to American dream never runs smooth', *The Financial Times*, 16 December 1999.

²³ Ofwat, *Competition Act 1998*, OFT 422, July 1999.

be very effective agents of change. For some time they have been pressing for competition in water²⁴: as in other utility markets, they now seem to be achieving some success.

In saying regulation has failed, I do not mean to blame the water regulator. As explained above, attempts to regulate major industries without any help from competitive forces are always doomed to fail²⁵. There is no way a regulator can make objective assessments of such crucial variables as the cost of capital, the general efficiency trend in an industry or the relative efficiencies of different companies. In attempting to make such judgments the water regulator has faced the same insuperable problems which led to central planning being discredited.

Furthermore, regulation always leads to more regulation, becoming increasingly prescriptive over time as companies try to exploit the loopholes which inevitably appear and which the regulator then tries to close. So the 1999 Price Review was bound to be more prescriptive and occupy many more pages of print than the 1994 review: the associated documents seem to have expanded from about 60 to about 600 pages²⁶.

8. The way forward

I have for some years argued that the way forward for the water industry in England and Wales is for competitive markets to be introduced²⁷. If they are not, the most likely outcome is still tighter and more arbitrary control by the regulator which will result eventually in a takeover by the politicians who will not allow regulators to exercise so much power. Thus, by a circuitous route, we shall find ourselves back in a situation which is no clear improvement on nationalisation - there will be government control of the industry, though not government ownership.

²⁴ 'Water users demand competition', *The Financial Times*, 25 September 1997.

²⁵ John Blundell and Colin Robinson, *Regulation Without the State*, Occasional Paper 109, Institute of Economic Affairs, 1999.

²⁶ Colin Mayer,

²⁷ For example, Robinson, 'Introducing Competition into Water', op cit, FT, DT, Utilities Journal

However, if there is to be competition in water, some political action is required because the regime established at privatisation will have to be changed. If it presses ahead, the government will have to ignore the complaints from some parts of the industry about the dire consequences of introducing competition. No doubt many water companies will produce arguments similar, *mutatis mutandis*, to those of the electricity and gas industries which, before liberalisation, claimed competition was neither feasible nor desirable. Enterprising companies, however, will see advantages from being able to compete vigorously.

All the details of a competitive regime are not clear, but it seems to me the eventual structure of the industry should be similar to the structures which have proved successful in stimulating competitive markets in gas and electricity. That is, the 'network' elements in the industry should be separated from the rest and 'economic' regulation should apply only to the network. The obstacles which now hinder competition in the production and the supply of water should be removed so that these *potentially* competitive markets are *actually* competitive: after a brief transitional period during which competition is established, the production and supply of water should no longer be subject to price control and other forms of economic regulation. The networks of pipelines would, however, be regulated by Ofwat for the foreseeable future²⁸.

Briefly, the changes in the industry which seem to be necessary if competitive markets are to develop are as follows.

First, entry to production (including treatment and storage) will have to be made easier if a competitive market at the production stage is to appear. At present, abstraction licences are issued by the Environment Agency, giving the licensee protected rights and they are not directly tradable so it is very difficult for potential entrants to find supplies they can exploit. The government already intends to change the regime, placing time limits on the licences²⁹, but more radical action will be required to stimulate

²⁸ An alternative to regulation would be to introduce competition to operate the networks of pipelines by periodic franchising. So far no British government has been bold enough to franchise the 'natural monopoly' element of any of the utilities.

²⁹ *Taking Water Responsibly: Government decisions following consultations on changes to the water abstraction licensing system in England and Wales*, Department of the

a competitive market. It may be possible to use the Competition Act from March 2000 if incumbents are relying on their protected rights to frustrate entry to the industry³⁰. But a change to the licensing system - so licences are more freely available and are tradable - would be better.

Second, as in all the network utilities, the *transportation* stage is crucial. If incumbents are to feel a credible threat of entry by newcomers those newcomers have to be able to move their water through an open access network to consumers. Ofwat is proposing to use the Competition Act to try to force common carriage on the companies³¹ but previous experience in gas and electricity (though admittedly not under the new competition legislation) suggests that more is required. In my view, separation of the water distribution networks from the rest of the industry is the answer so that the means of distribution - the natural monopoly element in the industry - is in the hands of one or more bodies which have no interest in excluding newcomers.

One of the best analyses of the case for network separation is in the 1993 Monopolies and Mergers Commission report on gas, which said of British Gas that it was

‘...both a seller of gas and owner of the transportation system which its competitors have no alternative but to use. In our view, this dual role gives rise to an inherent conflict of interest which makes it impossible to provide the necessary conditions for self-sustaining competition.’³²

Separation is required in water, where the companies have the same ‘dual role’ which the MMC criticised in the case of gas, if entrants to water supply are to have access to potential customers. Accounting separation would be a start but full structural separation is desirable. In the gas case, accounting separation was the first step but the company itself eventually decided that full separation would be more appropriate

Environment, Transport and the Regions/ Welsh Office, March 1999.

³⁰ *Competition Act 1998: application in the water and sewerage sectors*, op cit., paras. 3.51-3.54.

³¹ *Competition Act 1998: application in the water and sewerage sectors*, op cit., paras. 3.28-3.32.

³² Monopolies and Mergers Commission, *Gas and British Gas plc*, 1993, Vol.1, para. 1.6.

given that pipeline business is a a distinct activity which can more efficiently be run on its own.

A *third* awkward issue which will have to be tackled if there is to be a competitive water industry is to curb the powers of the environmental regulators. There is an element of denial on this subject: the conventional wisdom is so strongly in favour of more environmental protection, apparently regardless of cost, that very few people are willing to suggest that in some cases we might need less. But it is obvious that in an industry where environmental regulators, in Britain and in Brussels, have such an explicit role and can intervene at all stages of the industry, proposals for competitive markets might often be opposed for apparently plausible environmental, health or safety reasons.

Under the present regime, environmental regulators have no incentive to seek such markets. Indeed, their incentives are more likely to favour the continuation of monopolies, which they will think they can control more easily. They are also likely to play safe, as regulators often do, trying to push companies towards the technological limits. In that way, they not only receive the 'psychic income' which accrues from appearing to be at the frontiers of technology but they can hope to avoid blame if there are accidents or safety problems.

There is no obvious limit to the regulations which might be imposed to 'improve' the quality of water: I fear the present regime will produce an increasing edifice of regulation, erected for the benefit of the regulators rather than the public, not because the regulators are ill-intentioned but because that is the way their incentives propel them.

In the long run, the answer to the problem of environmental regulation in water is probably a much more light-handed approach. Regulation would become less detailed and less prescriptive, allowing companies to set their own health, safety and environmental standards on which their reputations would then rest. Such a regime would probably in the long run produce faster technological advance, improved safety and greater environmental protection. As a safeguard, there could be a specific inspection regime (as there is for oil and gas facilities in the North Sea) to check on the adequacy of company programmes.

In the shorter term, to make progress towards competitive markets some quicker-acting expedient is required. One way would be to place on the environmental regulators a duty to promote competition so that their actions could be challenged if they were hindering the development of competitive markets.

9. Conclusions

My conclusion is that government Ministers should now be thinking radical New Labour thoughts about a competitive water industry to replace the *de facto* central planning regime which has evolved by stealth in water in the last few years. There are practical difficulties to be overcome but so there have been in all the markets which have been liberalised in recent years.

Continuation of the present regime is not a genuine option. It is not working well and in any case, as I have argued, it is unlikely to be sustainable. But a serious effort to consider and overcome the practical difficulties should be very productive. By the early years of next century there could be a genuine market system of incentives to increase efficiency and improve standards of service in water in place of the present excessive reliance on regulation.

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