

# **PRIVATISATION AND PUBLIC PRIVATE PARTNERSHIP IN THE WATER INDUSTRY**

**Gordon H Bateman**  
**Contracts Manager, Thames Water Engineering**

## **Abstract**

The paper reviews privatisation in the water industry, with particular reference to the United Kingdom (UK). It describes the factors that would make privatisation attractive to government, and the way in which the UK privatised water industry is structured.

The paper describes the regulatory framework that must form part of the total privatised industry, which in the UK is provided by an economic regulator and two quality regulators. In addition to the benefits to government, some of the other benefits that can be achieved are described, particularly the benefits of enhanced investment, improved quality of water supplies and limited increases in prices.

The paper then provides an overview of Public Private Partnership (PPP), giving some examples of PPP projects.

The review makes particular reference to the experiences of Thames Water.

## **Introduction**

It is not a new concept for water industry undertakings to be private companies rather than public bodies. As with other utilities some of the earliest water supply organisations in the UK were private companies. In contrast, sewage disposal was always undertaken by a public authority, usually by the local authority.

Some of those early private companies were absorbed by the public authorities (the former Metropolitan Water Board in London had some companies amongst its predecessors), while others remain to this day.

Nevertheless, in a number of countries there has been a deliberate move in the last ten or more years to move the water supply, and in many instances also the sewage disposal, functions into the private sector.

This paper describes privatisation mostly from the viewpoint of the experience of the UK water industry.

In the UK there were in the year 1910 some 2,160 separate organisations involved in water supply or sewage disposal. Since that time nearly 100 years ago, there has been a steady combination of adjacent bodies which culminated in 1973 in the creation in England and Wales of just ten regional water authorities, together with the retention of some 18 small water-only companies.

It was the ten water authorities which were turned into companies (with the exception of certain functions relating to the rivers, water resources and environmental protection, which remained in the public sector) in 1989. This was the privatisation of the water industry in England and Wales. In addition the small water-only companies, who operate within the areas of the large authorities, remained as separate companies.

In Scotland where the political climate is slightly different, the water industry has moved from the local authorities managing, along with their other functions, both water supply and sewage disposal into three water and sewage authorities. Currently plans are advanced for the three to be combined into a single Scottish water authority. The concept of privatisation is currently politically unacceptable in Scotland.

Nevertheless, in order to benefit from some of the advantages of privatisation the Scottish water authorities have embarked on various Public-Private-Partnerships (PPP), an approach which has been adopted in other public sectors in the UK (eg the health service, and – almost implemented – major elements of the metro system in London (London Underground)).

## **Why privatisation ?**

What then are the drivers for changing these utility public bodies into companies – with the shares of the companies freely available on the stock market for anyone to buy (or more accurately they were: some of the UK water companies have been taken over by other companies and therefore their shares are no longer trading).

The water industry is an industry needing long-term investment. Works such as dams, river intakes, water or sewage treatment works, pipelines and tunnels all have long lives, need very long-term planning, and projects for their development, design and construction take a long time to implement.

Although the various public bodies previously responsible for water and sewage functions were not directly part of the central government, the amount of money available to them was largely dictated by central government: local taxation is subject to government review and in any event is heavily subsidised by central government.

The result was that too often investment in water and sewage works by those public bodies was delayed for political reasons: other matters were seen as being more important and necessary by central government. There are generally no votes in water, and even less in sewage.

In the UK this lack of investment in the water industry went on for some 20 years or more from the mid-1960's. By the late 1980s new quality standards for drinking water and (more especially) new standards for the effluent from sewage treatment works, which had been set by the European Union, had to be complied with.

Having embarked on a number of privatisations (British Telecom was one of the earliest in the early 1980s) the UK government decided that the best way of dealing with the major investment problems of the water industry was to privatise it.

The key objectives were:

- (i) Freeing the government of the problems of funding the necessary capital investment, as it was now for the companies to raise the finance on the open markets as best they could;
- (ii) Any borrowing by the companies would, unlike the former public authorities, not form part of public sector borrowing, thereby enabling the government to argue that public borrowing was well controlled;
- (iii) Raise very significant sums of money for the government through the sale of shares in the companies, thereby enabling the government to spend money on other things (in the UK the sale of the water companies raised £5.25B sterling, around NT\$264.81B); and
- (iv) Have the water companies charging their customers prices which relate to the actual cost of the services provided – and not amounts which are either subsidised for political purposes or are a hidden form of taxation.

These four basic drivers would perhaps be major reasons for privatisation of any industry in any country: together they provide a very forceful argument to any Minister of Finance. Inevitably there were other reasons, and they will be described below.

### **How was the privatised industry structured?**

The exact mechanisms of the privatisation were that by Act of Parliament the activities of the former water authorities were passed to new companies that were created to undertake the water supply and sewage disposal functions in their designated geographical areas. These companies employed the same people working with the same assets as the former authorities: on the first day this was in one sense merely a change of name.

Each of the water companies is licensed by the government to undertake its primary water supply and sewage disposal activities (or for the water-only companies, water supply) within a defined geographical area. The boundaries inevitably have their roots in the earlier local authority boundaries of the predecessor organisations.

The old water authorities were governed by a Board made up of representatives from local government and other stakeholders in the industry: Thames Water Authority had a board of 50 or more people. Such a large number was unable to drive for efficiency, it was held back by its own bureaucracy.

The new companies each had a small Board of perhaps six or seven Directors including the normal mix of executive and non-executive Directors. The small Board was able to be a proactive force in considering the issues of the business and take things forward, being the focal point for new practices and new ways of working.

The company which replaced the water authority was, in the case of Thames Water, a company called Thames Water Utilities Limited (TWUL), a wholly owned subsidiary of Thames Water plc. Both companies were established at the time of privatisation, and the shares of Thames Water plc (the parent company) were owned by the government.

Some five months after the companies were formed the government sold the majority of the shares (of the parent company) on the stock market. The privatisation was complete.

The reason for establishing two companies, with the subsidiary company as the one licensed to manage water supplies and sewage disposal in the licensed area, was simply that it was envisaged that the privatised companies may wish to operate in other markets – eg internationally or undertake other work in the UK. Ofwat (the economic regulator described below) would be most concerned if TWUL, the regulated business, were to take on work in such other markets where various risks

outside those of the regulated business may seriously affect the work in the licensed geographical area. Such risks could have serious impacts on the customers in the licensed area. It is of course only the work of TWUL in its statutorily defined area that is subject to Ofwat.

As expected, Thames Water, along with the other water companies, have developed many other subsidiary companies to represent their interests in other markets and other countries. Today Thames Water operates in 44 countries serving 56 million customers around the world. It is a very different company from the one that was privatised in 1989, when it operated only in London and adjacent parts of southern England with just 12 million customers.

### **Regulation – an essential part of privatisation**

As part of the whole strategy of freeing up the water organisations to be private companies, regulation of the companies was seen as vital. Regulation was not new: the earlier privatisation of other utility sectors (telecoms, gas, electricity) had all included regulation.

Indeed, it can be argued that the former water authorities were completely regulated, but that regulation was lost in the diffuse nature of the public sector. So much was this the case that, for example, the former water authorities combined the operation of the sewage works with responsibilities for river quality: a combination of the roles of potential law-breaker and law-enforcer in one organisation which no longer applies, as described below. In such a structure, it would require major political pressure to bring about changes to poor management.

In the new arrangements of privatised water companies there was a need for regulation to be quite separate from the influence of local and national politics.

Direct competition is generally not easily achieved. The water companies are seen as natural monopolies - a householder is served by the company in whose area he

lives. There would therefore be real concerns about prices. A regulator was necessary to promote competition and efficiency.

The UK water industry has three key regulators:

1. The Office of Water Services (Ofwat)
2. The Drinking Water Inspectorate (DWI)
3. The Environment Agency (EA)

*Ofwat* is an economic regulator, with a prime duty to protect customers and to promote competition and efficiency. *Ofwat* determines the amount by which prices charged to customers by each of the water companies may rise (or shall decrease) each year. These mechanisms are linked to the Retail Price Index.

*Ofwat* sets the price changes in five year periods, having regard to the costs which it believes each company will incur. There are perhaps three broad headings of such costs:

- Return on capital employed,
- Operating expenditure, and
- Costs of capital maintenance and new capital expenditure.

In considering these and other matters, *Ofwat* will consider the amount of capital investment which each company must undertake in order to achieve its quality objectives as determined by legislation and the other two regulators.

Some two years before a new five year period is due to start, each company will make a detailed submission to *Ofwat* as to what it believes it needs to do by way of investment in the next five year period, what efficiencies it can achieve and hence what charges it believes are necessary to fund the work. *Ofwat* in turn will examine these submissions in detail, make comparisons between the companies (hence the

competition is traditionally indirect, but that is changing – see below), and will eventually determine what the price rises should be.

There is a range of other measures whereby Ofwat monitors the performance of the water companies throughout the five year periods, including various customer-related matters (eg the length of time taken to answer telephone calls to the Customer Centre, and to answer letters received from customers). Other topics include the amount of leakage from the water mains network: a water company may consider it to be cheaper to have a comparatively high level of leakage rather than spend a lot of money reducing the leakage. Nevertheless, the EA will consider leakage to be a waste of valuable water resources that should be constrained.

Despite the need to protect the customer from inefficient and high-charging water companies, a key objective of Ofwat is that each water company must remain a viable business: there are no prizes for Ofwat so reducing prices that the companies are driven out of business.

In contrast to Ofwat the other two regulators are quality regulators.

*DWI* sets the quality standards of the drinking water supplied to customers, and monitors the water companies' performance in achieving those standards. The latter is largely done by the water companies themselves, in that they each have (or use) quality-assurance accredited laboratories where numerous samples will be analysed each year. *DWI* can of course inspect the working arrangements of those laboratories to satisfy itself that they are properly reporting on the water quality. That quality is measured both on the water company's treatment works and in the premises of the customers – at the kitchen tap.

Each year the *DWI* publish a report on the standard of drinking water and the performance of each water company in achieving the required standards.

The **EA** has a wider remit than just the water industry, being the agency for all environmental and pollution issues. The water quality of the rivers is a primary concern of the EA, and sewage treatment works are major discharge points into such rivers with an obvious potential to do much damage. Raw sewage can easily kill all the fish in a clean stream. The EA sets the standard of effluent quality for each sewage treatment works (any one "consent" will be set having regard to the general quality of the receiving river, the amount of dilution etc) and monitors the effluent through the work of the water companies' laboratories, to ensure that the required standards are achieved. Failures will be subject to action through the Courts and the company will be fined. In addition the EA publishes annually tables showing who are the worst polluters (such tables may include major industrial companies that have polluted rivers as well as any water companies).

The EA also has overall control of water resources in England and Wales and manages abstractions from rivers and aquifers by the issuing of licences. Every abstraction point must be licensed and the quantities abstracted must be within the licensed amount.

Like the DWI, the EA both sets standards and monitors achievement. In addition the setting of standards may be by legislation – either national legislation or, more likely, European Union legislation. A major example of the latter some years ago was the requirement to stop the dumping at sea of sludge from sewage treatment works. This required the UK water companies (and others – see below) to invest in alternative disposal mechanisms. For Thames Water that meant the construction of two major sludge incinerators on the estuary of the River Thames to the east of London. Those incinerators provide a valuable source of electricity which the company sells.

The EA is keen to promote change and improvements in the environment, and in that is keen to influence the amount of environmental work which the water companies undertake. It is therefore inevitable that the EA will, during the five-yearly review of

water company prices, be pressing Ofwat to allow the companies more money to be spent on environmental issues.

Ofwat, the DWI and the EA are all agencies established by statute with considerable autonomy. They are not a part of government.

### **What are the benefits of privatisation?**

In addition to the benefits for the government and the water companies themselves set out above, there are many benefits which flow from the freedom for the company to manage its own affairs through a small Board of Directors and not be directly accountable through a very large Board to the government.

One of the key changes was a reduction in focus on managing the water supply and sewage disposal systems, with a much greater focus on the needs of customers. I shall not attempt to describe this focus on customer issues in any detail as my colleague Barbara Moir has submitted a paper on this topic to the conference. Nevertheless, it was and is a major element in our drive for success.

Before and during privatisation there was a major concern that the new water companies would have no particular interest in maintaining water quality and standards. Some people argued that because the companies would be driven solely by profit requirements, cost reductions would only be achieved by sacrificing quality. In fact the opposite has happened. When Thames Water was privatised less than 96% of drinking water samples were compliant with the DWI standards – in 1992 we failed to reach those standards 27,000 times. By the year 2000 we had improved this figure to 99.89% compliance with just 485 failures. The customers are receiving ever better quality drinking water.

Prices have not risen dramatically, particularly bearing in mind the vast amount of capital investment that has taken place since 1989. Last year Ofwat imposed an 11% price reduction on Thames Water, reflecting the fact that the backlog of under-

investment had been cleared and tremendous efficiencies have been built into the company. Investment continues at a level twice that which was spent in the ten years before privatisation.

Thames Water is proud that its combined water and wastewater charges remain the lowest of all the UK companies.

In the area of capital investment, constructing major new tunnels, pipelines, water treatment works and sewage treatment works, our ways of working have moved on out of all recognition.

The former public authorities were very constrained, decisions were taken at a high level without a full understanding of the detail. The management was very hierarchical, and decisions were taken in a risk averse way: better to take a lengthy and expensive route rather than risk criticism for taking a risk. Contracts with contractors were traditional in style, disputes were frequent and they led to litigation or arbitration. Again the risk averse approach meant that no-one, even at Director-level, would agree to settle a claim where they may be criticised for being too generous in the amount of money paid to the contractor. Better, it was said, to go to the expense of litigation or arbitration: if the Court or arbitrator ordered that such a sum be paid, that was outside our control. That the litigation cost a lot of money and consumed a lot of management and staff time was not relevant.

Today, led by a Board of Directors which is keen to see such wasted legal costs kept to a minimum, much better ways of contracting are employed. Appropriate forms of contract are used which encourage the contractors and ourselves to work together, sharing the savings to be made. Alliances have been entered into with just six contractors to undertake the major part of the capital investment programme for the current Ofwat five-year programme of work. Proper risk analysis and value management mean that things are managed in a way that did not happen before. There has not been a formal dispute for ten years on any contract. We very much

continue to develop these new ways of working – both as a client and as a contractor.

One of the benefits of privatisation has been the enabling of companies such as Thames Water to take on the role of a contractor. Not in the traditional sense as a company that directly builds structures, but to work with clients in developing solutions to their problems – as described below.

### **Competition in the privatised water industry**

It has been described above how the water companies are near monopolies, in that the individual customer has no opportunity to change supplier other than by moving house. However, following the advent of a new Competition Act in the UK, competition within the UK water industry is opening up in that large consumers (ie industrial users) are able to choose to be supplied by a water company other than the one within whose area they are situated. For example, Thames Water has contracts with various organisations to supply water to their premises which are outside the Thames Water licensed area. Such supplies are based on boreholes.

In the longer term it is envisaged that such competition will be widened to include smaller commercial users, and perhaps eventually domestic customers.

### **Public-Private-Partnership (PPP) – what is it?**

There is no agreed definition of PPP. It appears as a variety of means whereby a contractor or service provider will work alongside a public sector client and undertake some of the day-to-day functions of that client, in a way in which the customer of that client will probably not be aware that they are being serviced by a contractor rather than the client itself.

PPP in the UK has grown out of something else called the Private Finance Initiative (PFI).

PFI is a particular form of the more general form of contracting commonly called Design-Build-Finance-Operate (DBFO) (or perhaps Build-Own-Operate-Transfer (BOOT)) in which a contractor would be employed to build a new facility with his own money (or money he borrowed from the bank) and then operate the facility for perhaps 25 years. He would be paid according to the nature of his supply. For example if he built a new water treatment plant, he would be paid a price per m<sup>3</sup> of water supplied. All the capital cost of building the plant, interest payable to the bank for the loan, as well as the operating costs, would come out of the price per m<sup>3</sup> that he was paid. Thames Water has such a project in Scotland for the design, construction and operation of a sludge disposal system at Edinburgh sewage treatment works, implemented because of the banning of sludge disposal to sea.

Many projects around the world are funded on this basis, and Thames Water is involved in several of them.

Elsewhere the client prefers to fund the capital investment directly, in the traditional way, but then employ the same contractor (or consortium of contractors) to operate the plant. In this arrangement the operating contract can be much shorter, as there is no capital loan to be repaid out of the price per m<sup>3</sup>.

Another approach is the Concession, whereby the contractor is responsible for management of an entire system (operations, maintenance, investment in new and replacement plant as necessary), often obtaining his revenues by directly billing the customers. In its pure form it is almost privatisation by contract.

In London the metro is in need of major capital investment. The government has decided to undertake this through the PPP process. The original London Underground staff will continue to drive the trains, operate the signals and staff the stations. However, all the cleaning, all the maintenance and capital investment – whether that be new or replaced track, maintenance of old tunnels, maintenance or replacement of trains, refurbishment of stations – which used to be done by London

Underground staff will in future be done by one of two companies under 30 year contracts.

In Scotland, as described above, the water industry remains in the public sector. Nevertheless a Water Commissioner has been appointed as an economic regulator, the equivalent of Ofwat. That Commissioner is putting the Authorities under strong pressure to improve their performance and efficiency in as short a timescale as possible.

In seeking to enhance their performance and take advantage of best working practices that have been developed by others such as Thames Water, the Scottish water authorities are seeking to have those organisations working alongside their engineering divisions in a joint approach to deliver their capital programme – for which they will provide the finance. Such an approach is another form of PPP with which Thames Water is involved as a contractor.

PPP agreements can be used where the full extent of the work is unknown, but where the contractor will work with the client to deliver the capital investment needed to achieve defined outputs – but for which (at the time of making the agreement) the details of the many individual projects have not been identified – indeed the projects themselves will not have all been identified. The contractor may also be responsible for all maintenance work.

Thus it may be that for a particular government or municipal water department the quality and quantity of water to be delivered to customers needs to be improved. Achieving that standard will require both improved practices from the operations staff as well as any investment in capital works (which may include leak detection and repair to save treated water; refurbishment of existing facilities and construction of new facilities). The PPP contractor would work very closely with the operations staff in identifying with them best practice improvements in their operations work so as to minimise the scale and hence cost of the capital works. Having identified those capital projects that were necessary, the contractor would manage the delivery of

those projects. Together they would draw upon both the contractor's and the client's knowledge and skills, so that the overall objectives of water of a defined quality and in sufficient quantity to meet customers' demands were achieved. The contractor would be paid on a basis which reflected his costs, while encouraging efficiencies, and which rewarded him for improvements in the water supply outputs.

For the client, this may be politically acceptable as the treatment works remain in his ownership and, if the PPP contractor's personnel wear the client's uniforms (or an adaptation of them which includes the client's name) the public correctly perceives that the client is still in control and has not simply contracted everything out.

Whatever the exact nature of a PPP relationship, the key issue is to ensure that the relationship is understood, and that the responsibilities of each of the parties are set out with the need to work together to develop jointly solutions to problems. The applicable payment mechanisms must also be clearly stated.

## **Conclusions**

In conclusion a well-structured privatisation can be very successful in delivering benefits to government, to customers and to those in the privatised water company. For those areas of the world where privatisation is politically unacceptable the various forms of PPP provide a vehicle for advancing the efficiency and effectiveness of public-sector water and/or sewage undertakings while retaining the public ownership of the organisation and the assets.

GH Bateman