

EXECUTIVE SUMMARY

Scope of the study

Ofwat's September 2000 report, *Comparing the performance of the water companies in England and Wales in 1998-99 with water enterprises in other industrialised countries* suggested that levels of capital maintenance expenditure in England and Wales were higher than in comparable water companies in the Netherlands, the USA and Australia. WS Atkins was appointed to investigate these apparent differences in capital maintenance expenditure.

The project was in two phases. The first was an update and critical appraisal of the analysis that Ofwat carried out last year. We sent questionnaires to each company in order to gather information on the companies' policies and practices, confirm the comparability of the data and identify the reasons for the differences. The Australian companies responded positively with all eight questionnaires returned. Three out of the eight Dutch companies and one of the eight American companies returned completed questionnaires within the timeframe of the project.

The second phase involved a series of visits to water companies in the Netherlands, the USA and Australia in order to explore the information that we gathered through the questionnaires.

The terms used in this report are consistent with Ofwat's *Worldwide Water Comparisons 1999 – 2000*, dated December 2001. The capital maintenance unit costs are the charges to customers relating to depreciation of the companies' assets. Capital maintenance expenditure is the cost incurred by companies in the rehabilitation and replacement of assets to meet current service levels. The charge to customers and the expenditure to replace or renovate assets are different measures which, in the long term, should be related.

Results of the study

Water use in the USA and Australia is significantly higher than in Europe. This unduly influences comparisons of cost based on units of water delivered or sewage collected. For this reason we concluded that cost per property connected provided the best means of comparing expenditure between the companies.

To convert costs to Sterling we judged that Purchasing Power Parity exchange rates provided the best comparison between the countries. Purchasing Power Parity is a means of eliminating the effect of exchange rate distortions.

We estimated the unit costs of capital maintenance based on Purchasing Power Parity exchange rates to be as follows:

	Water service capital maintenance unit cost (£/property)	Wastewater capital maintenance unit cost (£/property)
England and Wales	38	42
Australia	25	24
Netherlands	32	-
USA	37	-

Only the Australian companies provide wastewater services.

The Australian capital maintenance unit costs reported in the Ofwat report *Worldwide Water Comparisons 1999 – 2000*, and presented in Section 3 are based on depreciation charges. About 65% to 80% of the charge relates to infrastructure assets where the level of expenditure is, in general, significantly less than depreciation. The depreciation charges are not representative of the long term expenditure needed to maintain levels of service.

We estimated infrastructure renewals charges for each company to calculate more comparable Australian unit costs. This analysis provides a more representative comparison as the same methodology is applied to companies in both England and Wales, and Australia. The Australian unit costs are estimates based on information provided by the companies, which in some instances was incomplete. Nevertheless, the analysis is valid and provides indicative values of a surrogate renewals charge for initial comparisons. The other countries' unit costs are based on depreciation charges as there was insufficient information to derive a surrogate infrastructure renewals charge. We concluded that unit costs based on depreciation charges were not necessarily representative of expenditure.

The cost base for the Australian and England and Wales unit costs is the financial year 1999-2000. The Australian financial year runs from July to June. In England and Wales it runs from April to March. The US costs are for the year 1999, the last year for which we have data. The Dutch costs are for the year 2000.

Reasons for the differences

In England and Wales, the cost of capital maintenance to the customer has two components: non-infrastructure depreciation and the infrastructure renewals charge. By far the largest component of capital maintenance is the depreciation charge. It represents 70% of the costs of water supply capital maintenance and 85% of the costs of wastewater capital maintenance. The value of the depreciation charge is affected by the method of asset valuation, assumed asset lives and accounting rules.

We found that in all three countries depreciation charges were lower than the England and Wales average. We found significant differences in the area of asset valuation and asset lives. Asset values expressed as unit cost per customer are lower because of the

relative complexity of assets, the method of valuation and in a few instances the accounting assumptions. The longer asset lives assumed in Australia lead to lower annual depreciation charges which explains a greater part of the difference with England and Wales.

The other component of capital maintenance is the infrastructure renewals charge. In our visits we explored the drivers for infrastructure renewals in the Australian water service and wastewater services and the Dutch and American water services.

There is an anomaly in the comparison of water main renewals as the relatively high historic renewal rate in England and Wales was driven mainly for water quality reasons. The costs of work carried out for quality are not fully included in the infrastructure renewals charge, nor reflected in the depreciation charge. While we are comparing mains activities on a similar basis the costs are not truly comparable.

Levels of water mains renewals over the past five years in the two Dutch companies for which we have data are similar to the average renewal rate in England and Wales. The drivers for much of the Dutch infrastructure renewals were projects to ensure the quality and quantity of water available.

We found varying rates of water main renewal in Australia due to the performance of mains in differing operational and ground conditions and the need to meet customer service levels more stringent than in England and Wales. Three of the companies had renewed lengths approaching the England and Wales average in the past five years. Some other companies are planning to increase their current renewal rate.

We were not able to obtain data on American companies' mains renewals.

Four of the Australian companies had sewer renovation programmes that involved renewing similar lengths to the England and Wales average over recent years. The other four Australian companies had carried out little in the way of sewer renewals.

A major component of the water supply infrastructure renewals charge in England and Wales is leakage detection and repair. Leakage is less of an issue in Australia, the Netherlands and the USA although there is growing awareness of the need to promote water efficiency. Few of the companies we visited carried out active leakage detection and repair. This is a further reason why infrastructure renewals expenditure was less than England and Wales.

Conclusion

This study has confirmed that the use of the capital maintenance unit costs is not a good proxy for expenditure. Restating the infrastructure element of the depreciation charge as a renewals charge based on actual and forecast levels of capital maintenance activity provides a more effective measure directly comparable with companies in England and Wales.

Unit costs for capital maintenance, as calculated using the above methodology, in the Netherlands, the USA and Australia are lower than in England and Wales. Differences arise through asset valuations, accounting methods and assumptions, and the allocation of infrastructure renewals expenditure. We have not been able to quantify these. We saw no evidence to suggest that the lower capital maintenance unit costs reflect lower levels of capital maintenance activity or lower levels of service. Leakage control activity and expenditure in England and Wales is greater than in other countries and has a significant impact on the capital maintenance charge.

Recommendations

To provide robust comparisons of capital maintenance, we recommend that:

- comparisons of capital maintenance unit costs across countries should be based on Purchasing Power Parity;
- principal comparisons should be presented as unit cost per property;
- the capital maintenance unit costs should be disaggregated and reported separately as infrastructure and non-infrastructure components.
- The infrastructure element of the capital maintenance unit costs should be derived from medium term activity levels rather than on depreciation charges.

To provide a more comprehensive review of capital maintenance and improve the process to obtain consistent and good quality information, we suggest the following actions:

- The Australian and Dutch companies should be retained within the sample. The inclusion of the American companies in the exercise should be reviewed.
- Additional European water utilities should be added, starting with preferably three utilities in three or four European countries. An initial survey would be needed to identify potential and willing utilities.
- The sample should include more utilities with sewerage services.
- More time should be allowed for companies to prepare and return their information.
- The data collection should follow the June Return format, possibly collecting information for tables 21 and 22 (operating costs), 25 (asset valuation) and 32 (expenditure). This would help in the derivation of more reliable and consistent infrastructure renewals charges.

We were unable to quantify the effect of the different asset lives, asset valuations and accounting rules on the depreciation charges. We recommend that any future work should address the effect of these differences and investigate actual expenditure on a like-for-like basis.