RD7/93

9 June 1993

TO REGULATORY DIRECTORS OF ALL WATER AND SEWERAGE COMPANIES AND WATER ONLY COMPANIES

Dear Regulatory Director

THE LONG RANGE NORMATIVE CHARGE FOR INFRASTRUCTURE RENEWALS

1 The Accounting for AMP 2 Technical Group has been working over the past eighteen months on several accounting issues emerging from the AMP 2 process. These have included, inter alia, a detailed review of the infrastructure renewals charges currently being charged by companies in their current cost regulatory accounts and the identification of factors causing the significant variations which have been observed across the industry. This letter deals with one of these issues, the charge to the profit and loss account for the maintenance of infrastructure assets.

2 When the infrastructure renewals charge or more appropriately, the 'long range normative charge' ('LRNC') for infrastructure renewals - was initially derived, there was a lack of consolidated guidance on the most appropriate basis of calculation. This was the case both for the derivation of the charge from the underlying information on maintenance costs in companies' underground asset management plans, and for the subsequent adjustment to the annual charge.

3 Attached to this letter is draft guidance on the LRNC, which revisits the theory of infrastructure renewals accounting and its applicability to the water industry. The paper also addresses the practical implications for measuring the LRNC and identifies factors for companies to take into account in the AMP 2 calculations.

4 The paper covers a number of issues which are central to the determination of the provision for asset maintenance in the Strategic Business Plan, and the reflection of these costs in price limits and in accounts. These issues include:

- the presumption that the infrastructure renewals charge should be broadly constant in real terms between reviews;
- the distinction between the provision for backlog - required to bring assets up to steady state - and the long range normative charge;

- the coverage of the charge, and its relationship to other items in the AMP;
- the period over which the long range normative charge should be assessed;
- the basis of indexing the charge to reflect changes in prices; and
- the importance for establishing consistency in approach between companies.

5 The issues discussed in the paper will need to be addressed by all companies in the preparation of their Strategic Business Plans. It is important that the basis of the figures in the AMP 2 is consistent, and that there is a clear link between the expenditure profiles for asset maintenance included in the AMP 2 and the subsequent charge to the profit and loss account. Because of the importance of this link, there is a role for both engineering certifiers and auditors in reviewing the figures included in the Strategic Business Plan. We propose to discuss the paper with certifiers and auditors at a seminar to be organised later in the summer, and I should be grateful if you would send a copy of this letter and attachment to your certifier and auditor.

6 One issue which remains to be considered is the coverage of the infrastructure renewals charge in the accounts, in particular the treatment of reactive maintenance costs. Clearly AMP2 will need to include an estimate of these costs, and it is conceptually part of the long range normative charge. But it is currently not included in the infrastructure renewals charge in the accounts. RD2/93 sought comments from companies on whether, in future, reactive maintenance should be included within the infrastructure renewals charge. These comments are being considered further in the Accounting for AMP 2 Technical Group and in the Working Group on Accounting Issues for Regulation ('WGAR'). Companies will have an opportunity to comment separately on any proposals to modify Regulatory Accounting Guideline ('RAG')2.

7 Subject to any comments which you may have on the current paper, we intend that it should be issued formally as an Appendix to the Strategic Business Plan Manual, and also incorporated into a revised RAG 2.

8 Comments on the paper should be sent to me by 30 July 1993. If you have any specific queries on the content of this letter, please contact Liz Hamilton on 021 625 1353.

9 I am copying this letter to Janet Langdon (WSA), Michael Swallow (WCA), Neil Summerton (DOE) and Alwyn Jones (Welsh Office).

Yours sincerely

C W Bolt
Head of Economic Regulation

OFFICE OF WATER SERVICES

THE LONG RANGE NORMATIVE CHARGE FOR INFRASTRUCTURE RENEWALS

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1. WHAT IS THE LONG RANGE NORMATIVE CHARGE?

The Long Range Normative Charge ('LRNC') is generally referred to throughout the industry, and in the Regulatory Accounting Guidelines, as the Infrastructure Renewals Charge. Describing it as the LRNC has two advantages it avoids the common confusion with Infrastructure Charges, and also contains a reminder of the need to look some way ahead when determining it.

Put simply, the LRNC is the amount that must be charged to the Profit & Loss Account, each year that is sufficient to keep the entire system of infrastructure assets operating at the required level of effectiveness and therefore at the same level of value to the business as previously.

One consequence is that, to achieve this result, the annual charge to the Profit and Loss Account will also remain unchanged (in principle) in real terms, i.e. ignoring price inflation, when the size of the system remains basically unchanged and the standards of operating effectiveness also remain unchanged.

Similarly, when the size of the infrastructure system changes, or the standards of performance required of it increase, the new size or level of the system will be maintained by a new constant level of renewals expenditure. Why this should be so is not immediately obvious, and this paper sets out to explain it.

2. THE PRINCIPLES UNDERLYING RENEWALS ACCOUNTING

The concept of the LRNC arises from the renewals accounting approach. Renewals accounting has been adopted in the context of the infrastructure assets of the water industry, and what follows is a description of the theoretical basis for it.

Any individual asset, with the exception of freehold land, has a finite physical life and so loses value over time. Accounting tries to chart that loss of value and ascribe its progress to the accounting periods in which it occurs. This loss is generally described as depreciation.

Determining the amount of depreciation to allocate to each particular period is always a process of estimation, and the estimate becomes more and more a broad approximation the longer the estimated life of the asset. The quality of accounting for industries with very long-lifed assets is heavily dependent upon the quality of the process for making these estimates.

The LRNC is one way of making this estimate, but not the commonest way. However, it is intended to give the same answer in principle as the more usual methods of estimating. Let us look at the ordinary method first.

Route 1 Ordinary depreciation

The standard method for assessing depreciation involves first forecasting the life of the asset. Although actual physical life is important, the asset's useful economic life may be shorter than that and that is the life over which the fall in the value of the asset, from cost to any scrap value, must be charged against profits.

In economic terms, that loss in value (expressed in real terms) must be recovered out of income before the entity has made a profit. Recovery should be made period by period, according to how much of the value is lost in each period, and a second estimate is necessary to decide that.

Mostly, for all practical purposes it can be assumed that the loss occurs evenly over the life and so the expected loss of value is divided up evenly over the life and each period charged with a similar amount of the cost, i.e. depreciation for each period equals cost less residual value divided by total years of life.

What happens if the life is likely to be very long and there is great uncertainty about how long? Is there a better way of arriving at this estimate of the annual charge to the Profit and Loss Account in such circumstances?

The use of infrastructure renewals accounting and the LRNC is an attempt to formulate a better way. It is important to understand that it is not an attempt to avoid charging depreciation. It is a different method of determining an appropriate annual charge for the phenomenon known as depreciation.

Route 2 Infrastructure renewals accounting

A simple example serves to illustrate the principle.

Imagine a fleet of taxis. The owner runs five identical vehicles, one purchased in each succeeding year, each of which has a useful economic life of five years and (for simplicity only) a nil residual value.

In real terms, i.e. doing our calculations in £s of current value, not £s of the varying values at the time each vehicle was purchased, each year the owner will provide in his accounts for one-fifth of the cost of each vehicle. Each year, one vehicle will reach the end of its useful life and will be retired, to be replaced by a new successor.

So each year the cost of replacing the retired vehicle, one component of the fleet, will be precisely the same as the depreciation charged to the Profit & Loss Account, i.e. five cars times one-fifth of the current (new) cost of each. And the result in the Balance Sheet is that the depreciated carrying value of the fleet at the beginning of the year has been reduced by the depreciation charge, increased by the cost of the new vehicle and unaffected by the retiral of the old vehicle which by then stands at nil.

Since the cost of the new vehicle equals the total annual depreciation charge, the fleet carrying value remains the same. The size and economic effectiveness of the fleet also remains unchanged, with five vehicles ranging from a new one to one four years old. The fleet remains, as the term is, in 'steady state'*, in spite of the fact that its component parts are undoubtedly depreciating.

This very simple example serves to show that a system of assets in 'steady state will suffer depreciation of exactly the same amount as the cost of the new components necessary to replace the loss of effectiveness of the system as a result of the period's usage.

Consequently, you have a practical accounting choice. You may continue to charge the depreciation and capitalise the cost of the new components; but you will achieve exactly the same effect, in both the Profit & Loss Account for the period and the Balance Sheet, if instead you charge the cost of the new components to the Profit & Loss Account and leave the carrying value in the Balance Sheet unchanged. In case there is any doubt, this is illustrated in the following Examples 1 and 2.

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* Steady State is where a body of assets remains in indefinite equilibrium because its component parts are wearing out and being replaced at a constant rate such that the operational effectiveness and hence value of that body of assets remains a constant in real terms.

EXAMPLE 1 – STEADY STATE – assuming unchanged prices

A taxi fleet consists of five vehicles, each lasting five years, one purchased each year. Cost each time = 100.

Year of Purchase	Cost @ Year 5	Cum Dep'n @ Year 5	Net @ Year 5	Annual Dep'n @ Year 6	Cum Dep'n @ Year 6	Net @ Year 6
Year 1	100	80	20	20	100	-
Year 2	100	60	40	20	80	20
Year 3	100	40	60	20	60	40
Year 4	100	20	80	20	40	60
Year 5	100	-	100	20	20	80
	500	200	300	100*	300	200
Year 6	100*					100
						300

EXAMPLE 2 – STEADY STATE – assuming rising prices

Fleet of vehicles as in Example 1, but costs over 5 years of (say) 100, 120, 130, 160 and 170 respectively. Cost in Year 6 has risen to 180. Shown in current cost terms for Year 6.

Year of Purchase	Repl. Cost Year 5 @ Year 6 prices	Cum Dep'n Year 5 @ Year 6 prices	Net Year 5 @ Year 6 prices	Annual Dep'n @ Year 6	Cum Dep'n @ Year 6	Net @ Year 6
Year 1	180	144	36	36	180	-
Year 2	180	108	72	36	144	36
Year 3	180	72	108	36	108	72
Year 4	180	36	144	36	72	108
Year 5	180	-	180	36	36	144
	900	360	540	180*	540	360
Year 6	180*					180
						540

In both examples, the steady state of the system or fleet is maintained because the total depreciation charged each year precisely equals the cost of the replacement capitalised.

One conclusion that may be drawn from this is that, if you are operating a system of assets with an unchanging operating capability (i.e. one which behaves as though it is in a steady state), one way of measuring the extent of depreciation of that whole system in any one period is to look at how much it is necessary to spend in that period to maintain that system. That amount constitutes prime facie evidence of the depreciation figure.

However, that prima facie evidence can be rebutted. As we have seen, if the amount which needs spending in each succeeding period is not (in real terms) identical, then one of two things has happened. Either you have not measured the amount you need to spend correctly, or the system you are dealing with is not in steady state. The first conclusion would send you back to do your calculations more carefully. The second would invalidate justification for using this method and force you to return to more conventional ways of measuring the depreciation, which must be occurring.

3. APPLICATION TO THE WATER INDUSTRY

How does this apply to the water industry? This is an industry whose underground assets can last so long that even some of those built in the nineteenth century are still in use and there is a shortage of empirical evidence about the length of useful economic lives, especially of underground assets. Some components of the system have moving parts and their rates of wear and tear may be predictable to within normal levels of estimating accuracy, but they only account for a very small proportion of the total value of the system.

Some years ago a new proposal was developed. It was observed that entire systems for each entity continued to operate effectively and achieve the standards required of them, as a result of the expenditure of modest and reasonably predictable amounts for maintenance and renewals each year. This provided prima facie evidence that the systems were in a steady state and therefore renewals accounting could reasonably be adopted -which is what happened.

There were a number of reasons for developing and adopting this proposal but one element in particular seems to have played a part. The process of ascribing lives to infrastructure assets, necessarily delegated to engineers in each entity, had been a source of concern to the industry and seen, by the engineers in particular, as excessively arbitrary. On the other hand, engineers also had the task of assessing the probable course of renewals and repair work, a more tangible and less arbitrary task than assessing lives.

With the development of the regulatory regime and the Asset Management Plan, it was necessary to develop a more far-sighted view of future renewals expenditure anyway. While clearly that process is subject to all the uncertainties of any process of estimation, it is a process that takes full account of current knowledge and experience and one with which engineers are familiar and in which they have some confidence. The attractions of satisfying both reporting requirements and the industry's concerns over estimates with no grounding in real experience proved sufficient reason to encourage the adoption of the alternative of renewals accounting.

What remained was the need to codify and systematise the measurement of the necessary charge to the Profit & Loss Account, i.e. the depreciation substitute. Although some work has been done on this, the wide diversity of the charges that have emerged suggests that not everyone understands the basis on which the charge needs to be determined, or perhaps the criteria which it needs to meet, in order to be credible and satisfy the requirements of a renewals accounting system (assuming that there is no strong wish to return to trying to estimate depreciation by the adoption of arbitrary asset lives).

The charge for each period is not intended to be precisely what is actually spent. The actual timing of spend can be unpredictable, not least because the point at which any individual part of the segment fails and requires replacing is generally reckoned to be random. Over an entire system, the number of such random incidences of breakdown in any period is a more predictable figure, but still subject to external vagaries, for example extreme weather conditions. Any difference between actual spend and the long range charge, over or under, is included in the balance sheet as either a prepayment or an accrual.

4. BACKLOG

Some confusion tends to arise because of similarities between the LRNC and what is known throughout the industry as Initial Backlog.

The process of regulating the industry has been complicated by certain of the mechanisms inherited as a result of the privatisation process. One of these was the determination of an amount entitled Initial Backlog as at the start of the first period of regulation. It has proved a source of confusion, complicating the understanding of the LRNC - with good reason, because the expenditure involved in reducing Initial Backlog may be identical in kind to that involved in the LRNC. It is worth spending a moment on explaining the difference and how it works.

To enable companies to start using renewals accounting, it was necessary to make an assumption about whether systems were or were not in steady state. Few companies could sign up to the proposition that their infrastructure systems were already demonstrably in a steady state, if only because the standards of operating required of the industry had been rising.

Consequently, there was a backlog of expenditure necessary to bring systems up to a level of operating effectiveness required by existing standards and incorporated in the initial Asset Management Plan. Estimates were made at the time of the original flotation of the water authorities, and those estimates of backlog figures were subsequently accommodated in regulatory current cost

accounts under RAG 1, as a reduction in the carrying value of the assets.

All that the Initial Backlog represents is an accrual of renewals expenditure, made necessary because that work was not carried out to the new standards in earlier periods. It may appear to be no different from the accrual that has to be made when expenditure in the period falls short of the pre-determined LRNC. The crucial practical differences are as follows:

i) the Initial Backlog is, in certain companies, a particularly large number which will not be eliminated, i.e. the expenditure will not be fully incurred, for many years - up to twenty, or more in some cases;

ii) expenditure each year to catch up on the identified backlog is additional to the need for a constant (real) annual renewals charge;

iii) Initial Backlog and any LRNC accrual are treated differently in the balance sheet - the backlog provision carried forward (the balance of Initial Backlog still remaining) is deducted from the carrying amount of the infrastructure assets (with the same net effect as if it were depreciation) while the LRNC accrual appears as an accrual in working capital; and

iv) consequently, expenditure to reduce Initial Backlog is capitalised, while LRNC expenditure is charged to the Profit & Loss Account.

The principal practical consequence is that it is important, in respect of every element of renewals and maintenance expenditure, to distinguish between that which was undertaken to rectify the shortfall identified as a part of Initial Backlog and that which forms part of the period's LRNC.

There are two reasons why this is important: first, because the continuing size of Initial Backlog remains an uncomfortable reminder of the original heroic assumption and a potential political stick with which to beat members of the industry for demonstrably not having their infrastructure assets up to new standards; and secondly, because any confusion between the two will distort the size of any LRNC accrual (or prepayment) and risk creating confusion when attempting to review forecasts of the necessary level of the LRNC at each Periodic Review.

5 PRACTICAL IMPLICATIONS FOR MEASURING LRNC

We have looked at the underlying theory of renewals accounting and the focal role played by the LRNC in that theory. This section looks at what this means for the industry in practical terms when accounting for the LRNC, based both on the requirements of the theory and on the experience of the industry to date in operating renewals accounting.

5.1 Practical requirements for a credible LRNC

The basic requirements for a credible renewals charge, the LRNC, may at this point be summarised as follows:

i) it must be at broadly the same level of cost each successive year, in real terms; or, if there has been any material change in the size of the system from year to year, the renewals charge for subsequent years should continue to be broadly the same proportion of the carrying value of the system (in current cost terms). *

Other possible reasons for variation would include technological change and t he imposition of new standards of service. The former may presently be discounted, because technological change is not predicted to have any noticeable impact on the infrastructure assets of this industry in the foreseeable future. The latter, new standards of service, will impose new levels of maintenance from time to time, and the charge for maintaining them will need to be forecast separately as a discrete element of the renewals charge and, like the basic charge, might be expected to remain a constant in real terms, for the same reasons.

ii) it must be practicable. While a company may expect to spend more or less than the LRNC in any given year, a planned continuously cumulating difference between LRNC and actual spend which is not expected to reverse and start unwinding at some point in the future tends to call the calculated steady state of the system into question.

Similarly an LRNC of a size demonstrably well beyond the company's capacity to plan, manage and carry out the work would tend to raise doubts as to credibility. If the company accrues for work it clearly has not intention of carrying out at some definable point in the future, then the assets are unlikely to be in steady state and any provisions would more properly be described as depreciation.

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* Conceptually, there might also be an expectation that proportions would be broadly similar across the industry, but it is possible that differences of approach to planning renewals might be capable of accounting for consistent differences between companies.

5.2 What expenditure should be included?

What therefore will be include in the long range normative charge? In principle, it should include all expenditure of every kind involved in sustaining the system in its present state and protecting it from falling in value. This would cover:

- the cost* of renewing any components that fail, for whatever reason, during the period;
- the cost* of planned maintenance of any elements of the system;
- the cost* of emergency repairs to any part of the system;**
- the cost* of that part of any planned improvement or expansion of the system which relates to the otherwise unplanned renewal or maintenance of an existing part of the system;
- overheads directly associated with the planning and carrying out of renewals and maintenance.

Critical to the determination of the LRNC is the categorisation of renewals and maintenance expenditure described in RAG 2, which focuses particularly on the REVENGE classification, distinguishing between the REV (Revenue) element and the ENGE (enhancement, growth and efficiency, i.e. capitalisable) elements. Some points which impact upon the measurement of the LRNC include:

i) operating costs described in RAG 2 as 'routine maintenance expenditure which is not in the AMP and which arises in a reactive way on a day to day basis'. It has tended to be assumed that, because this does not form a part of REV, it does not form part of the LRNC.

This is not logical as it is bound to constitute expenditure intended to restore infrastructure assets to full operational condition. To the extent that provision is made in the Asset Management Plan, and hence in price limits, for a certain quantity of repair work of random incidence (e.g. bursts), it is planned. To the extent that more of such work has to be undertaken in a period than had been budgeted for, it is unplanned i.e. has occurred sooner than expected.

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* All costs should be net of third party contributions.

** In practice, emergency repairs are currently included as an operat ing cost, not as part of the infrastructure renewals charge.

By definition, it will therefore have been anticipated in principle as a part of a future year's LRNC. Occurring now, it reflects only a timing difference in the LRNC, a prepayment. In the event that such expenditure happened to vary widely from year to year, failing to include it in the LRNC could either account for the LRNC varying in size or, where the LRNC is correctly provided for as a constant, distorting the accrual or prepayment by effectively double-counting this expenditure.

ii) proportional allocation. Some expenditure designed to enhance the system necessarily involves the early replacement of parts of the existing system, and guidance is given in RAG 2 on how to allocate the overall cost between REV and ENGE, i.e. LRNC and capital cost.

Where this occurs, the REV element is again merely a bringing forward of replacement expenditure anticipated at some future point in the LRNC. This will be a recurring feature every year, and will therefore be a normal element of the LRNC for as far into the future as we can see. Unless this element of REV cost is expected to be quite abnormally large in any year or over several years, it should not distort the constant nature of the LRNC.

There may be practical distortions occurring if there is any doubt over consistent application of proportional allocation between the planning stage and accounting for the actual expenditure. Unless there are safeguards in place in each company's system to check that planned schemes involving proportional allocation are in fact accounted for in the event in the same way as they were included in the LRNC, it is possible that an accumulation of non-reversing differences could build up, which would be a source of concern.

Revisions are being considered to RAG 2 which could include the redefinition of REV expenditure to embrace additionally all repair and maintenance costs* associated with infrastructure assets which have previously been included as part of Operating Costs. Including such costs within REV expenditure in AMP 2 could eliminate confusion.

5.3 Over what period should expenditure be averaged?

Over what timescale should the renewals charge be reviewed in order to determine (generally by taking a simple arithmetic average) the appropriate annual level of LRNC? As we have seen, the number we are attempting to predict is the number which will be broadly consistent as a percentage of the systems' carrying value.

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* The kind of expenditure which might bec ome a part of REV instead of Operating Costs includes that on repairing, maintaining and renewing infrastructure assets on a routine reactive basis, including both direct costs and the standing charges associated with employing maintenance teams for both emergency repairs and regular maintenance.

Evidence for the appropriate level of charge should be sought partly from evidence of past costs, where appropriates, but particularly from future expenditure plans. Engineers, who are best placed to advise on foreseeable expenditure needs, will indicate what they regard as likely in the short, medium and perhaps long term, in order to keep the system operating properly to specified levels. They will probably indicate figures that vary from year to year for operational reasons. The need therefore is to look far enough ahead to have reasonable confidence that the average of those forecast annual charges, in real terms, will continue to be a broadly appropriate level of expenditure when extrapolated further into the future hence the term 'long range'.

Some companies originally limited themselves to the five-year planning period to the next likely AMP. Others looked ahead twenty years. A number of companies fell between these two. No period is necessarily right, because it depends upon circumstances. However, a twenty-year period would be sensible because that coincides with the AMP planning horizon, and the choice of a shorter period could imply failure of correlation with the AMP. Whatever period is settled on, it has to be in the confident belief that no significant peak or trough of such expenditure can be foreseen beyond the time horizon chosen. If such a peak of trough can be foreseen, then the time horizon chosen should be extended to include that peak/trough and its consequences.

There is no guarantee that twenty years is necessarily long enough for a wholly confident prediction of an LRNC. If engineers' experience of their system leaves them concerned that a twenty-year forecast of renewals and maintenance expenditure is inadequate, particularly if they confidently anticipate a heavy peak of expenditure in subsequent years, then it is necessary to improve the quality of the forecast. This would be achieved by extending the time-frame of forecasting the LRNC.

In extremis, theory would be satisfied by reverting to the more primitive method of predicting a physical life for the system and calculating the size of the arithmetic depreciation charge that would result - but this would be adopted if, but only if, that was the only method in which the engineers felt they could have confidence, the opposite of the view which led to the adoption of renewals accounting in the first place. (Physical life would be the critical determinant because nobody questions the idea that the economic useful life of the water and sewerage systems is indefinite. The physical life that one would be seeking would be the length of the life-cycle over which the major part of the system will need to be replaced.)

5.4 How is indexation for price change handled?

As we have seen, the LRNC should in principle be the same in real terms every period, for an unchanged system and unchanged service standards. In money terms of course it will vary as prices change. In the current cost accounts, opening balances expressed at last year's prices must be re-expressed in terms of this year's prices to be meaningful, hence the indexing forward, using the Retail Price Index (RPI), of all fixed asset gross values and, for non-infrastructure assets, aggregate depreciation brought forward.

Any LRNC accrual (the provision for renewals expenditure not yet spent) or prepayment is similarly re-expressed into £'s of that year's spending power as it is brought forward each year as part of working capital.

The re-expression of all these items (gross asset values, accumulated depreciation and accrued provisions for both LRNC and Initial Backlog) into £'s reflecting the current year's price levels using the RPI produces a total increase in net assets which is taken to reserves in the current cost regulatory accounts. No part of it is credited or debited to the Profit & Loss Account because it does not represent any gain or loss to either members or customers. (It is similar to the translation of items from one currency to another, but without any commission on the transaction!).

The only element which would find its way into the Profit & Loss Account for the period is where a material difference develops between the specific price of REV activity and the cost anticipated in the AMP re-expressed by using the RPI. As indicated in RAG 1.02 (para 1.10.13), that difference is in principle expensed/recovered in the period in which it arises.

6 CONCLUSION .CONSISTENCY CROSS CHECK

This paper has stressed that renewals accounting and depreciation accounting are simply two alternative ways of arriving at what in principle will be the same answer. The reason for adopting renewals accounting rather than the more conventional depreciation approach is simply because it offers, in the context of the water industry, a way of making the estimations necessary under either method with more confidence than the bald estimation of asset lives produced in the past. One further point emerges from this analysis, which can be useful.

All users of accounts are aware that, because (straight-line) depreciation is determined by dividing the gross asset by the life, so average life may be estimated by dividing the gross assets by the total depreciation charge. Because the LRNC is in principle the same figure as depreciation would have been if arrived at on a consistent basis, it may be used as a depreciation surrogate to determine an average asset life. Divide gross infrastructure assets by the annual LRNC and the result is an estimation of the weighted average life of the whole asset system.

Companies can make use of this fact, as well as Ofwat. These weighted average lives are easily calculated and compared for every company. Where significant variations arise, they may be explained by known differences between the companies, their systems and their approaches to maintenance and renewals. If material differences arise which are inexplicable, they need to be explored further and an explanation sought. A Company that finds its results are out of line with other similar companies in this respect, with no obvious reason available, may wish to initiate a collaborative exploration and comparison with another company to establish where, how and why differences on such a scale arise. It may be that, in such a case, the two parties have interpreted the guidelines on either the valuation of assets or the estimation of the LRNC very differently.

Discovering the source of such differences will provide guidance on whose numbers should change and why. The result would be to greatly enhance the credibility of both the figures and the approach to renewals accounting in that company.