

## **Maintaining service and serviceability to customers**

### **Introduction**

This section collects information on the base capital maintenance expenditure that Scottish Water proposes is necessary to maintain service and serviceability to customers over the Strategic Review of Charges 2010-14 business planning period. Expenditure must be expressed in 2007-08 prices, using COPI.

The next section, Section 6 collects information associated with schemes for enhancement, such as: new quality obligations, enhanced levels of service and the provision of additional supply/demand capacity. All other capital expenditure should be reported in this section, Section 5.

Schemes that jointly satisfy enhancement and maintenance drivers will appear in both Sections (5 and 6), with the total scheme expenditure allocated accordingly between the two sections.

Section 5 separately identifies expenditure for the water and wastewater services, and also distinguishes between infrastructure and non-infrastructure. Scottish Water should report its base capital maintenance expenditure in the following four tables:

- Table 1 - Water infrastructure base capital maintenance expenditure
- Table 2 - Water non-infrastructure base capital maintenance expenditure
- Table 3 - Wastewater infrastructure base capital maintenance expenditure
- Table 4 - Wastewater non-infrastructure base capital maintenance expenditure

Where base capital maintenance schemes affect both infrastructure and non-infrastructure assets, the expenditure should be allocated accordingly between the tables. Similarly, if any scheme applies to both water and wastewater, then an appropriate allocation should be made.

Detailed scheme (>£1m) or programme specific information for capital maintenance will be provided in the 'Investment and Output Plan', and this must reconcile with the Tables and commentary in this section.

Scottish Water should review historical performance data and maintenance expenditure and assess its future capital maintenance needs so as to:

- Maintain operational capability and performance of the assets as designed so that they achieve their original purpose
- Ensure that the levels of core services provided to customers through Scottish Water's assets do not deteriorate, whilst complying with the full range of statutory obligations.

### **Reporting requirements**

The reporting requirements are set out in four sections:

- Format of the submission

- Guidance for Scottish Water
  - Overview of the approach taken by Scottish Water
  - Application of network studies
  - Quality of data
  - Tables
- Guidance for the reporter
- Guidance for the commentary on cost estimating (Annex One)

## **Format of the submission**

### **Commentary**

Scottish Water should provide an overview of its approach to estimating the expenditure required, as specified below.

Scottish Water should provide general commentary explaining the overall approach. The commentary must be provided in the context of how the processes and systems are used to inform asset management planning.

The format of the tables is generic hence the commentary should make it clear where the processes and systems are applied across the entire programme or where aspects relate specifically to each of the main service areas.

The detailed expenditure review should be based on expenditure allocated between the asset groups defined in the section B summary table 1, the Asset Inventory (Part B of this submission). For support services the explanations should address significant expenditure allocated to asset groups included in section B, the Asset Inventory as outlined below.

- Water infrastructure
  - Water resources
  - Water mains
- Water non-infrastructure
  - Water treatment works
  - Water storage
  - Water pumping stations
- Wastewater infrastructure
  - Sewers
  - Sewer structures
  - Sea outfalls
- Wastewater non-infrastructure
  - Sewage pumping stations
  - Sewage treatment works
  - Sludge facilities
- Support Services (Management & General)
  - Offices and laboratories
  - Depots and workshops
  - Control Centres
  - Vehicles & plant
  - Telemetry systems
  - Information systems (computers)
  - Other non-operational assets

### ***Commentary on cost estimating – Annex One***

A separate commentary is required to explain Scottish Water's approach to the preparation of capital cost estimates. This commentary is to be included as Annex One to Section 5 but relates to the preparation of estimates for the whole of the investment programme, not just capital maintenance. The commentary should also include a description of the sources and magnitude of expected future cost efficiencies for both base service capital maintenance and enhancement capital expenditure, and an explanation for the forecast efficiency savings included in the tables.

### **Tables**

Scottish Water should complete Table 1 (water infrastructure), 2 (water non-infrastructure), 3 (wastewater infrastructure) and 4 (wastewater non-infrastructure) in accordance with the guidance below. There is no separate table for support services. Scottish Water is expected to allocate support services projects across the other four categories in accordance with allocation rules which must be explained in the commentary on cost estimating (Annex One).

### **Interdependencies with other sections of the plan**

Detailed scheme and programme specific information will be provided in the 'Investment and Output Plan', and this must reconcile with the Tables and commentary in this section

Outputs and activities maintained and funded from base capital maintenance are included in Sections 2 & 3 of the business plan submission. A structured approach to the derivation of operating expenditure is included in Section 4, including the derivation of accounting charges arising from the proposed level of base maintenance expenditure.

Scottish Water should explain in its commentary for Section 5 how it has avoided double-counting of expenditure between the capital maintenance proposals and other areas of expenditure, particularly enhancement expenditure (for quality, supply/demand and enhanced service levels). Scottish Water will explain its assumptions in respect of overlap between the enhancement programme and base capital maintenance expenditure and complete the appropriate table entries in Section 6 of the business plan.

## **Guidance for Scottish Water**

### **Overview of the approach taken by Scottish water**

Scottish Water should demonstrate that the base capital maintenance investment proposals are based on the continuing levels of service measures set out in Section 2 Performance for customers. Scottish Water should set down the basis for its policies, operating practices and planned routine maintenance activities that it considers will be necessary and underpins its expenditure projections. It should identify any changes to or reinforcement of existing policy resulting from the application of the common framework or equivalent.

Scottish Water should explain how the output of various studies and analyses feed into its economic assessment and optimisation of capital maintenance to maintain service and serviceability to customers and the environment. Scottish Water should also explain the extent to which new technology (field and office) has been employed in informing an integrated approach to understanding their asset systems, to updating

their underground asset management plans as required by good practice, and in anticipating and prioritising the need for investment.

Scottish Water should identify future maintenance expenditure to meet Ministerial and regulatory objectives.

It should describe its preparation work, service forecasting and intervention analysis. This should include a description of all the tools that it has used and critically, how it has validated its estimates with a statement of the robustness of its various forecasts of service and related costs. The approach taken on cost forecasting should be set out in Annex One to this section of the business plan.

Scottish Water should compare and explain the results of the future projections analysis and make a robust case for the required level of capital maintenance. This should include an assessment for the scope for further efficiencies.

Scottish Water should include, in its capital maintenance proposals, provision for “early start” investment for Q&S3b and Q&S4 to allow an ordered transition of work between investment periods and improved procurement efficiency. The accompanying commentary should detail the “early start” component of the expenditure proposals and provide justification for each element of the “early start” programme.

### **Detailed methodology**

We expect to see a fully reasoned and rational methodology for estimating economic maintenance requirements in the Strategic Review of Charges 2010-14 plan period. As a minimum, the approach needs to incorporate:

- i) Preparation work
- ii) Review of historical and current maintenance expenditure
- iii) Review of asset serviceability patterns
- iv) Review of asset failure records
- v) Intervention analysis
- vi) Forecast expenditure including the impact of future obligations
- vii) The application of expected cost efficiencies
- viii) Accurate integration with Q&S3b schemes generated by other cost drivers, to demonstrate the absence of any double counting
- ix) Quantification of overlap with quality schemes (to be reported in Section 6 Enhancement capital expenditure)

We recognise that Scottish Water will use its expert judgements where information gaps exist. We expect these judgements to be clearly explained and exposed to scrutiny by the reporter.

### ***Preparation of the plan***

Scottish Water's preparation work should summarise, for each asset category outlined above, in free format or tabular form, how it has:

- Focussed the analysis;
- Selected the planning objective;
- Monitored service and failures; and

- Designed & initiated customer surveys (where applicable).

The focus of the analysis should be identified for or within each asset category and reasons given for the selection of the planning objectives.

#### ***Historical maintenance expenditure***

Scottish Water should identify historical and assessed current expenditure by asset category including trends where available. This should include a review of cost allocation, particularly capex/opex which should be set out in Annex One to this section of the business plan.

#### ***Asset serviceability patterns***

Scottish Water should review service and asset performance and selected serviceability indicators. The review should look at historical and current values, reveal underlying trends with explanations where this is not evident from the data alone, and draw conclusions as to whether service and serviceability to customers and the environment is stable.

Scottish Water should confirm whether the serviceability of assets is either satisfactory or questionable in respect of compliance with water quality obligations.

#### ***Asset failure records***

It should identify and describe its information and procedural systems for monitoring service and reporting failures, giving an indication of the degree of validation of the data so captured and its reliability for using in forecasting.

Scottish Water should identify asset failure modes and relevant asset observations, and report the extent to which it has recorded such information, and its plans to develop historical records and trends for the future. This should explain how it has:

- Identified failure modes and effects
- Obtained asset observations
- Developed estimation methods for:
  - Probability of failure
  - Consequences of failure
  - Cost of failure.
- Validated estimation methods
- Forecast service.

Any failure mode and effect analysis (FMEA) and related studies should include an explanation of how asset deterioration is being monitored to inform future performance and timely intervention.

#### ***Intervention analysis***

Scottish Water should:

- Describe its intervention analysis, including
  - options identified
  - the impact of interventions

- intervention costs
- where cost benefit approaches are used, how it has valued service,
- Set down and explain the reasoning behind its selection of optimal interventions (which may include age, condition and/or performance level). This should include reference to the tools it has used for
  - economic assessment and optimisation
  - cost benefit analyses, where relevant
  - customer information
  - compliance information
  - asset observations
  - network studies
- Describe the results of sensitivity analyses, and explain how optimal interventions have been identified, outlining the rationale behind any judgmental decisions.
- Summarise findings, having collated and categorised cost forecasts, and where relevant, benefits to customers and/or the environment.
- Set down the justification for operating expenditure projections believed to be necessary for the plan period, including sensitivity analyses.
- Submit to the Reporter copies of any studies or plans requested by him. Also provide WICS with copies of any studies mentioned in the plan on request.

### ***Forecast expenditure***

Scottish Water will use the results of the foregoing analysis and the cost estimating procedures described in Annex One to generate its base maintenance investment programme to meet the planning objectives and stated outputs.

Scottish Water should outline the analytical approach used to plan capital maintenance and data relevant to each asset group (for example are maintenance plans based on historic trends only, age or condition based etc). For each asset group Scottish Water should explain the primary approach and provide further details of any secondary approaches used for validation purposes.

Unless already included in the plan overview Scottish Water should provide commentary on the achievability of the proposed programme in the context of construction and maintenance capacity in Scotland and the UK generally, and any international influences on the ability to deliver the programme. Information should be provided on any “early start” element of the programme which Scottish Water is proposing.

The programme will be a mix of individual maintenance projects, allocations to base maintenance from multi-purpose projects and budget allocations for ongoing routine maintenance at groups of smaller sites. Exceptional or atypical items should be identified in the commentary.

Expenditure must be proportionally allocated into the correct sub-service in line with RAR 2 v3 April 2007. Scottish Water should continue to apply the allocation rules that it adopted for the preparation of the 2005 Business Plan Submission and provide comment on any material changes in allocation methodology.

Scottish Water should explain, at the appropriate points, how information from its network studies is used to inform the forward-looking analysis.

**Enhanced service levels**

Scottish Water should provide a clear statement describing any proposed enhanced service levels together with supporting information in Section 6 Enhancement capital expenditure. Details of any customer surveys supporting proposed changes in levels of service should be set down, including alignment with best practice and advice obtained from WICS.

**Cost efficiencies**

Scottish Water should set out how it has established the sources and magnitude of expected future efficiencies in Annex One to this Section of the submission.

**Double counting**

Scottish Water must demonstrate accurate integration with Q&S3b schemes generated by other cost drivers, to prevent double counting. Scottish Water should make the case and set down the impact on base service outputs (Section 2) and expenditure (this Section 5) resulting from a planned change in performance of assets, whether through capital or operational expenditure.

**Overlap with Enhancement expenditure**

Scottish Water should explain its assumptions regarding overlap between capital maintenance expenditure and that from other cost drivers. It should be noted that any resulting cost adjustments should be made in the relevant quality, enhanced service level or supply demand balance tables. Quantification of overlap with quality schemes is to be reported in Section 6 (Enhancement capital investment), for example where the projected maintenance activity is being accelerated because of the planned enhancement programme, or where maintenance requirements are decreased because of benefits from past enhancement activity.

**Special Factors**

In this Section, Scottish Water should set out (in a free-form submission) any special factors that it considers appropriate for the capital maintenance econometric models. Scottish Water should ensure that the information on special factors satisfies the criteria set out in the Commission's methodology information paper 22 (page 4).

**Application of network studies**

The guiding principles of distribution zone studies and drainage area plans are an important adjunct to the process, which should inform the assessment of investment needs at both area and national level. Scottish Water should include detailed explanation of the process for undertaking these studies in its commentary for the Asset Inventory section B of this submission. As well as asset information, Scottish Water should include an explanation of how customer information, such as complaints of low water pressure, interruptions to water supply and sewer flooding is incorporated into the plans, and used to inform a strategy to maintain and improve serviceability to customers.

**Quality of data**

In making the case, Scottish Water should highlight perceived weaknesses in data or information, where it has made value judgements and whether and where shortfalls in desirable data or information have materially affected conclusions.

Scottish Water should identify the specific activities and costs of gaining additional information that they would look to recover in future charges, and the expected improvement this would bring to the robustness of the case, in broad statistical terms, at subsequent reviews.

### **Tables**

All expenditure should be presented in 2007-08 prices (indexation for capital costs to be carried out using the Construction Output Price Index (COPI). Expenditure is to be reported Net of Grants and Contributions (an additional line on each table is available to input G&C estimates). Annual expenditure inputs are required from 2002-03 to 2017-18.

The four tables 1, 2, 3 and 4 provide for a detailed assessment of Scottish Water's forecast capital maintenance expenditure, split between infrastructure and non-infrastructure assets, for both water and sewerage services. Expenditure should be proportionally allocated in line with the Regulatory Accounting Rule 2 and relevant Scottish Water policy but the commentary explaining the justification for the expenditure can be located in the most appropriate sub-service (in the example of water distribution the commentary should be located within the infrastructure tables).

The format of the data tables for Section 5 is generic hence the guidance which follows relates to all of the tables.

#### ***Tables Block A Actual & forecast expenditure***

Scottish Water should enter the total actual and forecast expenditure for the investment programme under the following line titles:

- Line 1 Gross capital maintenance expenditure.
- Line 2 Grants and contributions.
- Line 3 Component of expenditure that is associated with carryover from previous regulatory period.
- Line 4 Adjusted projection to exclude carryover and grants and contributions.

#### ***Tables Block B Scope for Improvements in Efficiency***

Scottish Water should enter the annual expected expenditure saving for improvements in efficiency (commentary in Annex One). Scottish Water should explain the impact of its overall assumed efficiency improvement profile on capital maintenance, highlighting key areas. Block B has the following line titles:

- Line 5 Assumed efficiency improvement percentage.
- Line 6 Overall assumed efficiency improvement profile.

#### ***Tables Block C Actual and forecast expenditure (post efficiency)***

Block C consists of the following line that calculates the capital maintenance expenditure subsequent to efficiency adjustments:

- Line 7 Total capital maintenance expenditure – post efficiency.



## **Guidance for the reporter**

### **Summary of requirements**

The Reporter should provide an overview of Scottish Water's approach in order to:

- Confirm the suitability of its procedures and systems to provide data to inform analyses of risk to serviceability;
- Comment on the extent to which best practice has been followed, identifying gaps in procedural steps and its effect on the quality of study outputs;
- Comment on the implications of the asset management information system for the proportional allocation of costs used by Scottish Water when assigning expenditure to capital maintenance or other cost drivers;
- Comment on the linkage of Scottish Water's stated policies on maintenance and serviceability with the conclusions and proposals in its commentary;
- Comment on the extent to which Scottish Water has validated its assumptions and judgements, where it has made them and the limitations or constraints this has placed on its proposals and conclusions;
- Confirm that the tables and commentary in this section reconciles with the detailed scheme and programme specific information provided in the 'Investment and Output Plan'.

The Reporter should challenge Scottish Water on the basis of the cost estimates (Annex One) and the link between the outputs it proposes to achieve (Sections 2 & 3) and the investment proposed (this Section 5).

The Reporter should comment on:

- The clarity of supporting information.
- The robustness of the cost estimates (strengths and weaknesses).
- Consistency of approach.

### **Overview**

The Reporter should check whether the overview provided by Scottish Water accurately reflects the contents of its plan. The Reporter should confirm whether the explanatory statement fairly reflects how the output of various studies and analyses feed into Scottish Water's economic assessment and optimisation of capital maintenance to maintain serviceability to customers and the environment in line with best practice, e.g. the common framework for capital maintenance planning or equivalent.

### **Assessment of approach**

The Reporter should describe the process established by Scottish Water to ensure it is well founded and consistently supported by the asset condition and performance information. The audit trails linking proposed investment with the supporting information shall be reviewed and their adequacy commented upon. The Reporter should audit the process on a sample basis. The Reporter should give an opinion on the effectiveness of the process and whether it has been followed. In addition the

Reporter should audit Scottish Water's proposals for capital maintenance and comment on how they integrate with and affect other areas of the business plan.

### **Network Studies**

Specifically in respect of network studies, the Reporter should confirm whether Scottish Water's explanation of how customer information is incorporated into its asset management plans fairly reflects actual practice by Scottish Water, and whether the plans submitted (with Section B the Asset Inventory) are typical of the standard of studies and plans used by it for the purposes of asset management planning.

The Reporter should comment on the adequacy of distribution zone studies and drainage area plans for the purposes of maintaining up to date underground asset management plans. The Reporter should audit a sample of Scottish Water's studies and plans (not necessarily limited to the 'typical' plans provided by Scottish Water with Section B Asset Inventory) and provide a statement as to whether in the Reporter's professional opinion, the scope and detail of the studies and plans is sufficiently comprehensive for the purposes of efficient management and operation of underground assets. In selecting the sample, the Reporter should take account of the population served in each zone/area and in other respects, shall ensure that the sample taken is representative of the asset networks.

Factors that should be considered are:

- The coverage of the entire distribution and drainage systems.
- The degree of compliance of the studies and plans with the definitions set out in Section D of WICS annual return reporting requirements.
- The frequency at which the studies and plans are updated.
- Scottish Water's understanding of the relationship of each zone/area with others, particularly in respect of water quality.

### **Asset data**

The Reporter should review and comment on Scottish Water's chosen asset observations (and if used, the failure mode and effect analysis (FMEA)) or other analyses and the adequacy of the process which incorporates them into its asset management plans, and used to maintain and improve serviceability. Factors which should be considered are:

- Extent to which assessment is based on historical expenditure.
- Relevance of the asset observations to the impact of failure.
- Reliability of the data.
- Appropriateness of the analyses.
- Relationship between asset data and proposed interventions.
- Degree of judgement exercised by Scottish Water, and limitations of the analyses.
- Robustness of Scottish Water's approach, particularly in respect of deterioration analyses.
- Potential improvements in data reliability by the next review.

### **Forecast investment**

The Reporter shall focus on areas of large investment and on asset types where there are significant differences between historical and forecast expenditure.

The Reporter should confirm that the expenditure in tables 1 – 4 relates only to base service and has been allocated to the correct categories in accordance with RAR2 v3 April 2007 and Scottish Water rules on proportional allocation (set out in Annex One to Section 5 of this submission).

The Reporter should provide commentary on:

- The robustness of the process for identifying optimal interventions
- The likelihood that the chosen intervention will achieve the stated output/objective and that the interventions are aligned with Scottish Water's long term plans.
- Whether the forecast capital maintenance activity is achievable within the 2010-14 period (for example does Scottish Water have the necessary resources in place to deliver the levels of activity set out in Sections 2 & 3 of the plan).
- The robustness of cost data and estimating process (Annex One to Section 5 of the submission) used to develop capital maintenance expenditure estimates.
- The robustness of the estimates of capital efficiency savings which have been included in the tables.
- Whether historical expenditure within each asset group matches the expenditure reported in the Annual Return. Where there are discrepancies the reporter shall ensure the reasons are explained.
- Scottish Water forecasts in Block A for grants and contributions for capital maintenance; particularly where it is projecting significant changes in the level of grants and contributions during the Strategic Review of Charges 2010 - 14 period.
- The robustness and consistency of Scottish Water's proposals, if any, for early start of Q&S3b and Q&S4 projects and whether these proposals are consistent with an orderly transition between investment periods and obtaining procurement efficiency.

### **Compliance with the guidance**

The Reporter should comment on Scottish Water's compliance with the guidance in the business plan information requirements and the effects of any non-compliance on the robustness of its overall strategy.

### **Material assumptions**

The Reporter should summarise and comment on the key material assumptions underpinning the capital maintenance investment proposals.

### **Efficiency assumptions**

The Reporter should audit and comment on how assumptions about efficiency have been reviewed by Scottish Water board and developed into a statement of assumptions on efficiency improvements approved by the board.

### **Areas of concern and challenges**

The Reporter should set out the major causes for concern and challenges made to Scottish Water during his audit of Section 5 of the business plan, and whether these challenges were satisfactorily resolved.

### **Customer surveys and support for changes in level of service**

If as a result of the asset studies undertaken for Section 5 Scottish Water proposes an enhanced level of service (to be reported in Section 6), then the Reporter will comment on the factual content of the evidence presented. The Reporter should comment on whether customer surveys were robust, including reporting on his challenges of Scottish Water's assumptions and survey conclusions and to report the findings of such challenges.

### **Special Factors**

The Reporter should comment on whether the information presented in Scottish Water's free-form special factors submission is drawn from appropriate corporate records and confirm its consistency (or otherwise) with other aspects of the Plan.

## **Annex One**

### **Guidance for the commentary on cost estimating**

All expenditure shall be based on recently experienced costs and should therefore reflect current levels of efficiency (i.e. not including adjustments for the scope for efficiency improvements).

#### **Cost estimating – overall approach**

In Annex One to Section 5 of the submission Scottish Water shall provide commentary:

- Outlining its system for recording and updating actual (outturn) capital costs experienced through the delivery of the capital programme, in order to support robust capital cost estimates
- Explaining the basis of all forecast capital expenditure. Scottish Water should set out any differences in its approach across the main components of the capital programme. Wherever possible we expect Scottish Water to use its actual (outturn) costs as the basis for all forecast capital expenditure (and to do this consistently in any cost benefit analysis and to derive standard costs in the cost base submission in Section A). If actual (outturn) costs are not available, for example if Scottish Water has no relevant previous experience or has concerns about cost data reliability, then Scottish Water cost data should be supplemented by other sources. In this case Scottish Water must be able to demonstrate that it has taken measures to ensure the costs have been validated.
- Explaining the basis of the forecast efficiency adjustments included in Block B of the tables (see below)
- Setting out its method for inflating historic cost data into 2007-08 prices.
- Setting out its process for evaluating risks, uncertainties and opportunities for value improvements. In doing this Scottish Water shall explain how it ensures the forecast expenditure represents the most likely cost (central estimate). Scottish Water shall include information about significant risks that have been included in the project estimate within the relevant purpose category commentary.
- Setting out its policy on proportional allocation, highlighting any changes from the approach used for reporting actual expenditure during 2006-10. All forecast expenditure shall be proportionally allocated between investment categories in accordance with the Regulatory Accounting Rule 2 v3 April 2007.
- Explaining how it has considered programme level synergies. All forecast expenditure should reflect costs when considering the capital programme in its entirety (for example adjusted to account for economies of scale that can be achieved through combining similar aspects of capital maintenance and enhancement purpose categories). Scottish Water shall make all adjustments relating to programme synergies in the appropriate expenditure category; details shall be provided in the commentary for the relevant section of the business plan. The costs presented in the C5.1/C5.2 projects database shall be those after the application of synergies.

### **Cost estimating – specific approach within purpose categories**

In addition to the commentary on the overall approach as described above, Scottish Water shall provide further detail relating to the specific approach and data used for forecasting capital and associated changes in operating expenditure for capital projects in each purpose category. This commentary shall be provided in the appropriate Section 4, 5 or 6 of the business plan. Scottish Water shall explain:

- Any differences between the overall approach and the specific approach used to forecast expenditure in each component of their programme. It is not necessary to repeat the overall approach but Scottish Water is required to reference the relevant commentary in Section 6
- How the cost data used to forecast capital expenditure in each purpose category relates to the overall approach; and
- How the outputs and/or activity relate to the forecast expenditure.

For each component of the programme this commentary should reveal the factors that have a key influence on the confidence that might be placed in the estimates of cost for capital projects. Scottish Water should describe how it has incorporated provision for uncertainty within the cost estimates.

Scottish Water should comment on the robustness of the estimates included outlining any statistical assessments it has made and how provisions for uncertainty in the estimates have been influenced by these assessments.

### **Capital Efficiency**

When costing capital schemes, Scottish Water should decide on the scope for improving its efficiency through the plan period. Any constraints on making maximum use of this scope should be explained.

Scottish Water should:

- Set out its views on the scope for improvements in efficiency and identify the supporting evidence
- Explain how the supporting evidence leads to its assumptions about cost reductions from base year levels
- Describe how the assumed improvements have been incorporated in the business plan expenditure projections

These judgements should be informed by a view of:

- Stakeholder expectations for efficiency improvements
- Relative efficiency or inefficiency to other companies in the regulated industry (water companies in England and Wales)
- The findings of any benchmarking studies carried out
- Expectations of improving technology
- Scottish Water's recent trends in capital cost efficiency

Scottish Water should refer to any benchmarking studies it has conducted and explain how these and other studies have informed the assessments.

Scottish Water should make its assessments of relative efficiency using 2007-08 as the base year.

Scottish Water should explain in commentary how it intends to meet its efficiency assumptions. We also seek confirmation that its efficiency assumptions can be met, without increasing the risk of service or quality compliance failure.

For capital enhancements, the efficiency assessment should be made relative to current estimates of the projected cost of meeting quality obligations, enhancing service standards and maintaining the supply demand balance. Efficiency improvements will therefore be relative to the current unit cost models used to generate the investment projections for this category of expenditure. Efficiency improvements may result from either projected reduction in capital unit costs, or from anticipated adoption of new technologies and practices.