

# SPECIFICATION

## Benchmark costs database and guidance on the application of the Cost-Effectiveness Methodology

### 1. Background

- 1.1 In implementing the Water Framework Directive, information on the costs of measures and on the relative cost-effectiveness of different combinations of measures will be important in developing programmes of measures and setting appropriate objectives.
- 1.2 The Directive allows considerable discretion over the measures used to make the environmental improvements necessary to achieve its environmental objectives. To avoid unnecessary implementation costs, it is desirable that information and methods of analysis are developed that will facilitate the identification of the most cost-effective combination of measures for delivering the necessary improvements.
- 1.3 The Directive's environmental objectives include a number of alternatives to its default objective of achieving good status by 2015. Member States can set one of these alternative objectives where, among other things, achieving good status in a water body by 2015 would be disproportionately expensive. These objective setting decisions will require information on the costs of measures.
- 1.4 The Department for Environment, Food & Rural Affairs (Defra) and the Welsh Assembly Government (WAG) have the responsibility for undertaking the economic analysis required to implement the Water Framework Directive in England and Wales, while in Scotland and Northern Ireland the economic analysis is being lead by SEPA and the Department of the Environment Northern Ireland (DOENI) respectively.
- 1.5 A UK-wide Economic Steering Group (ESG) is overseeing the economic analysis. This group includes members from Defra, the Scottish Executive, Department of the Environment Northern Ireland and relevant agencies, including the Environment Agency and SEPA. In addition Economic Advisory Stakeholder Groups (EASG) have been set up for Scotland and for England. Due to the need for a common approach across all parts of the UK this project has a UK focus.
- 1.6 Further background information on the implementation of the Water Framework Directive (WFD) is available from the Defra website (<http://www.defra.gov.uk/environment/water/wfd/index.htm>) and, in Scotland, from the SEPA website (<http://www.sepa.org.uk/wfd/index.htm>)
- 1.7 This project is part of a Collaborative Research Programme (CRP) – UK Collaborative Research Programme on River Basin Planning Economics, which will run from April 2004 to March 2007. This Collaborative Programme involves The Department of Environment, Food and Rural Affairs (Defra), The Environment Agency (EA), Scottish Environment Protection Agency (SEPA),

Scottish Executive, Welsh Assembly Government (WAG), The Scottish and Northern Ireland Forum for Environmental Research (SNIFFER), Department of Trade and Industry (DTI), English Nature, UK Water Industry Research (UKWIR), Royal Society for the Protection of Birds (RSPB), UK Major Ports Group (UKMPG) & British Ports Association, Country Landowners Association (CLA), The National Farmers Union (NFU) and the Joint Environment Programme (JEP). The Programme is chaired by Defra.

## **2. Introduction**

2.1 The project will follow on from the methodologies that have been developed in Project 2a (Development of a Methodology to Determine the Effectiveness of Combinations of Measures for the Water Framework Directive) and in Project 2b (Developing Methodologies to Assess Costs and Economic Impacts Even Handedly for the Main Types of Measures).

2.2 This project will provide:

- (a) Estimates of approximate benchmark costs of the main measures for reducing the pressures on the water environment from the main sectors; and
- (b) Practical guidance on undertaking and auditing cost-effectiveness analyses

2.3 The guidance and the benchmark cost data for the typical measure options are intended to help:

- (a) Water users simply and efficiently assess the costs of reducing their pressures on the water environment;
- (b) The relevant regulator judge the most cost-effective way in which environmental carrying capacity could be shared between water users;
- (c) The relevant regulator check that the most cost-effective combination of measures for achieving a standard required for good status has been considered before use is made of an alternative objective; and
- (d) Defra and the devolved administrations assess the impact of different policy options.

## **3. Objectives**

- **To provide benchmark cost data on the main measure options available for delivering environmental improvements; and**
- **To provide clear, concise and easy-to-use practical guidance for non-economists on how to undertake and audit assessments of the cost-effectiveness of different options for delivering environmental improvements**

## **4. Products**

4.1 The principal outputs from the project shall be:

- (A) A database of benchmark cost estimates for each of the main measure options for mitigating significant adverse impacts on the water environment. This database should be developed on the basis of the recommendations made by Project 2b (specifically tasks 4 and 9), which examined the potential availability and usefulness of cost data for different sectors and measures;
- (B) Guidance on the extent to which the actual cost of a particular measure could differ from the corresponding benchmark cost because of the effects on costs of local factors or because of other sources of error in the benchmark cost estimates.
- (C) Clear, concise and easy-to-use guidance on how to undertake and audit a cost-effectiveness analysis. The guidance shall turn the methodology developed by Projects 2a and 2b together with the cost database into a form that can be easily understood and applied by water users and by non-economists in the regulatory agencies.
- (D) Training materials in the use of the guidance produced under Point (C). The materials should be based on worked examples of the application of the cost-effectiveness guidance.

## **5. Method**

5.1 In relation to the development of benchmark cost estimates (Outputs A and B), the project shall:

- (a) Taking account of the outputs of Projects 1, 2a and 2b, other relevant projects allied to the Collaborative Research Programme and the results of the recent pressures and impacts analyses undertaken by the environment agencies, draw up a structured list of potential measure options for mitigating the impacts of each of the main pressures placing water bodies at significant risk of failing to achieve good status. For example, the measure options for reducing the amount of water abstracted might include measures for reducing leakage; measures for increasing the efficiency of water use; and measures involved in establishing alternative sources of supply;
- (b) Taking account of the outputs of Projects 2a and 2b and other relevant projects allied to the Collaborative Research Programme, identify the appropriate information to be included in the benchmark cost data for each measure. The information shall include estimates of: (i) the typical range of capital and running costs of each measure; (ii) the reduction in the magnitude of the pressure that could be delivered by each measure; (iii) the typical operating life of each measure; (iv) factors that can affect the actual cost of each measure and the magnitude of the effects of these

factors; and (v) estimates of uncertainty in the benchmark data and the reasons for that uncertainty;

- (c) Collate relevant existing data on the costs of each of the potential measure options identified in (a), taking into account the data sources identified by Project 2b;
- (d) Identify gaps in cost data for any of the measure options identified in point (a);
- (e) In the light of (b), (c) and (d), collect information from which to derive benchmark cost data for any measure options that might be particularly cost-effective but for which cost data is not available;
- (f) Organise the benchmark cost data in an appropriate digital form that can be readily accessed and interrogated by non-specialists staff in the UK government administrations and their regulatory agencies and by water users. In determining how to organise the data, consideration shall be given to examples of how benchmark cost information has been organised in other fields (e.g. cost guides used in construction industry – ‘spons’);
- (g) Identify options and recommendations for the future maintenance of the benchmark cost data

5.2 In relation to the development of guidance on applying the cost-effectiveness methodology developed by Projects 2a and 2b (Outputs C and D), the project shall:

- (a) Review of the cost-effectiveness methodology developed by Projects 2a and 2b and in particular the results of the pilot testing work;
- (b) Identify and assess the operational needs of the different users of the methodology;
- (c) Develop a series of worked examples of the application of the methodology;
- (d) Produce applied guidance tailored to the needs of the users of the methodology and illustrated with worked examples. The guidance should explain the ways in which the benchmark cost data provided in Outputs A and B can facilitate cost-effectiveness analyses;
- (e) Produce training materials on the application of the guidance;
- (f) Pilot test the guidance and the training materials and evaluate the results;
- (g) Revise the guidance and the training materials in the light of the results of pilot testing and comments from peer reviewers

5.3 In developing the guidance on applying the cost-effectiveness methodology (Outputs C and D), the project shall:

- (a) Make sure the guidance is applicable across all the measures and decision-making situations involved in river basin management planning in each of the different parts of the UK;

(b) Take account of the knowledge, skills, data, resources and time likely to be available to undertake cost-effectiveness analyses; and

(c) Take account of the added value that different levels of investment in cost-effectiveness analysis are likely to make to facilitating good decision-making.

5.4 Outputs A, B, C and D of the project shall be comprehensible and useable by:

(a) All relevant regulatory bodies, including the Environment Agency, the Environment & Heritage Service, Northern Ireland and the Scottish Environment Protection Agency;

(b) Policy-advisors in the UK administrations; and

(c) Water users

5.5 The source of any data included in any of the outputs of the project shall be identified together with information on the confidence, precision and limitations of that data.

5.6 Any datasets established by a Contractor as part of the project shall be provided in formats that are consistent with the established Information System architecture of the environment agencies. As such, and unless otherwise agreed by the technical architects of the environment agencies, all dataset shall be provided in an Oracle database. In the event that an Oracle database cannot be used for the datasets, the data structure shall still be of a format approved by the technical architects of the agencies with a view to integrating the Contractor's dataset into the agencies' Oracle based datasets. Data structures shall be referred to the technical architects for consistency with the corporate datasets of the agencies and shall be agreed by the project steering group.

5.7 Implementation of any tools or applications developed for the agencies shall conform to the application environments presently in use in the agencies and shall be agreed by the agencies' technical architects prior to commencement of any development work. As a minimum and unless agreed otherwise by the technical architects of the agencies, all applications will be developed for client-server or web-based n-tier multi-user environment.

5.8 The agencies and other partners in the Collaborative Research Programme shall own all rights to the technology or scientific methods developed as part of the project as well as all rights to the use and deployment of the datasets and any software tools that make use of the datasets, technology or scientific methods. Any use that any Contractor may wish to make of the tools for their own purposes will have to be agreed in writing by the agencies prior to use.

- 5.9 All guidance shall be written in non-technical English and be designed so that it can be readily understood and applied by non-economists
- 5.10 Delivery of the project shall involve consultation and liaison with water users and regulatory bodies for the purposes of:
- (a) Obtaining the information from which to derive benchmark cost estimates and associated guidance;
  - (b) Identifying the most appropriate form and content for guidance on undertaking and auditing cost-effectiveness analyses;
  - (c) Pilot testing the outputs of the project
- 5.11 The Contractor shall organise a workshop for representatives of the main users of the outputs of the project in which it will describe the utility of the outputs by means of practical illustrations of their application.
- 5.12 The Contractor shall provide independent advice on separate guidance being produced by the environment agencies for the Collaborative Research Programme on collecting and recording cost information from individual water users. Specifically, the contractor shall advise on the compatibility and comparability of the approach proposed by the agencies with:
- (a) The approach used in this project to estimate benchmark costs for the different economic sectors; and
  - (b) The methodology and guidance developed by Projects 2a, 2b and this project for assessing cost-effectiveness

## **6. Quality Assurance**

- 6.1 The draft outputs will be peer reviewed by a panel selected by the Project Steering Group from the Programme's peer review pool. The Peer reviewers shall be invited to comment on:
- Key options being considered during the production of each of the draft outputs specified in Section 4; and
  - The draft of each of the products (A,B,C and D) specified in Section 4
- 6.2 The comments received from the peer reviewers on the draft products shall be fed back to the Contractors for consideration prior to the delivery of each output.

### **Reporting structure**

The project executive for this project is Peter Pollard of SEPA and the day to day management will be the responsibility of Dominic O'Neill of the Environment Agency. A steering group will be drawn from the Collaborative Research Programme and the successful tenderer will present to this group.

## **IPR and publication**

The CRP shall hold the intellectual property rights of the project and all its outputs. They will have copyright and will publish as appropriate.

## **Timetable**

Submission of tenders	Mid September 2005
Project start	End September 2005
Interim progress report identifying gaps and proposed solutions	October 2005
Testing of draft applied guidance for cost-effectiveness analysis	February 2006
Final draft Outputs delivered	End April 2006

## **Tendering**

Tenders from consortia will be acceptable but contract negotiations will take place with the lead consultant. Tenders will include a detailed breakdown of each individual's costs and commitments in terms of days to delivering the component parts of the project. This will be presented in the form of a single matrix and such that the cost of each task and output is readily discernable.

It is anticipated that the prospective Contractor will need to deploy a team of staff that can demonstrate knowledge and experience of the following subjects:

- Recent and relevant multi-disciplinary project management experience;
- Production of clear, concise and easy-to-use practical guidance for non-specialist users;
- Liaison with relevant industries and businesses, and their representatives;
- A good understanding of the Water Framework Directive;
- An understanding of the water environment and water uses;
- An understanding of water management and the processes and bodies involved

## **Environmental statement**

Contractors must adopt a sound proactive environmental approach, designed to minimise harm to the environment.

Environmental criteria should be considered as part of your tender submission with credit given for innovation. Factors to be considered could include areas such as:

- Paper use: All documents and reports prepared by consultants and contractors are produced wherever possible on recycled paper containing at least 80% post consumer waste and printed double sided.
- Travel: use of public transport, reduce face to face meetings by using email and videoconferencing. Meetings to be held in locations to minimise travel and close to public transport links.

- Packaging: should be kept to a minimum. Re-use and disposal issues must be considered.
- Efficient Energy and Water Use.
- Disposal of Waste: Whilst on site the contractor is responsible for the disposal of their own waste and can only use Environment Agency facilities with express permission from the on site facilities officer.
- Whilst on site, contractors should comply with the local environmental policy statement which will be made available to you in advance or on arrival.

### **Data Protection Act addendum to specification**

#### **Protection of Personal Data**

In order to comply with the Data Protection Act 1998 the contractor must agree to the following:

- You must only process the personal data in strict accordance with instructions from the Environment Agency.
- You must ensure that all the personal data that we disclose to you or you collect on our behalf under this agreement are kept confidential.
- You must take reasonable steps to ensure the reliability of employees who have access to personal data.
- Only employees who may be required to assist in meeting the obligations under this agreement may have access to the personal data.
- Any disclosure of personal data must be made in confidence and extend only so far as that which is specifically necessary for the purposes of this agreement.
- You must ensure that there are appropriate security measures in place to safeguard against any unauthorised access or unlawful processing or accidental loss, destruction or damage or disclosure of the personal data.
- On termination of this agreement, for whatever reason, the personal data must be returned to us promptly and safely, together with all copies in your possession or control.

#### **Further Information**

Further information can be obtained from either Dominic O'Neill  
[dominic.oneill@environment-agency.gov.uk](mailto:dominic.oneill@environment-agency.gov.uk) or Peter Pollard  
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