



## SID 1 ROAME Statement

### General notes

1. The first stage of the ROAME (Rationale, Objectives, Appraisal, Monitoring, Evaluation) process requires a clear and succinct statement of the commissioning organisation's rationale for funding research. The SID 1 provides the customer's reasons for requiring research in a particular policy area and the policy and scientific objectives of that research. It forms the basis for all research proposals and is vital to ensure overall direction and ultimate evaluation of the research programme.
2. The level at which the SID 1 statement is set is for the policy customer to decide. Each Programme should focus on one or more related policy objectives and the related scientific objective(s). However, policy customers may wish to set SID 1 statements at a higher level, e.g. where a large research programme addresses similar policy and scientific objectives.
3. **The SID 1 is an important working document, which stems from and supports Defra's Evidence and Innovation Strategy. All SID 1s will be published and used to inform contractors and other funders of research of the rationale and key policy drivers underpinning Defra's research programmes.**
4. A SID 1 **must** be produced for each research programme. It should be **approved at Director level, or at a lower level only through formal delegation of authority.** Science Units within Defra are responsible for ensuring that all research is commissioned and contracted under a SID 1 which complies with this guidance. A SID 1 should typically be no more than 5-6 pages long, although this can vary depending on the complexity and size of the programmes covered.
5. SID 1s should be reviewed every 3-5 years. If new or revised forms are produced (for example, following a review), these should annex the original form to provide a historical record of programme change. Please refer to the Science Handbook for further guidance.
6. This form is in Word format and the boxes may be expanded, or reduced, as appropriate.

## 1. Area of Policy/Research

Please state the title of the proposed research programme – including FPS Programme Code Assessment Unit or Sub-Programme Code.

Theme A of Waste and Resources Evidence Strategy 2007-2011: *Understanding Economics and Incentives*

## 2. RATIONALE for Defra Funding

- (a) Describe the policy problems to be addressed by this research.

The evidence base requiring continued development is laid out in Defra's *Waste and Resources Evidence Strategy 2007 – 2011 (September 2007)* – see Section 2.4. Some of the evidence and research questions emerging from the policy engagement discussions in 2007 under Theme A of the evidence strategy are:

### Landfill Tax

- ❖ How can we monitor the effects of landfill tax and other charging schemes along side other policies? What effect do they have on fly-tipping? To what extent will actors change their behaviour as a result of changes to landfill tax?

### Landfill Allowance Trading Scheme (LATS)

- ❖ How can the disincentives in LATS to collect and divert municipal and commercial waste be reduced or removed?

### Household incentives for recycling

- ❖ How is household waste management behaviour related to income, age and other social factors? What are the most effective financial incentives in the UK context?

- (b) Explain how the research will support Defra Strategic Priorities, PSA targets and Evidence and Innovation Strategy.

#### **Supporting Defra Strategic Priorities**

In summary, the relevant Defra Intermediate Outcome is – *Less waste, more materials recovery, energy from waste and much less landfill*. This is one of two outcomes feeding into Defra's Departmental Strategic Objective – *Sustainable patterns of production and consumption* and through that to Defra's overall goal – *To secure a healthy environment in which we and future generations can prosper*.

The UK Government's Sustainable Development Strategy, *Securing the Future*<sup>1</sup>, establishes consistent principles and priorities for sustainable development across Government. The five principles focus on living within environmental limits, while the four agreed priorities are sustainable consumption and production, natural resource protection, climate change and sustainable communities. Defra is the government champion for sustainable development and waste and resource management plays a particularly important part in making progress on all of the UK Government's sustainable development priorities.

The overarching aim of Defra's Waste Programme is the protection of human health and the environment by producing less waste and by using it as a resource wherever possible. Through more sustainable waste management – reduction, re-use, recycling, composting and using waste as source of energy – Government aims to break the link between economic growth and the environmental impact of waste.

The overall environmental rationale for the work is stated as follows (see *Waste Strategy for England 2007*):

- ❖ reducing greenhouse gases – notably methane from landfill sites but also carbon dioxide emission (through re-use and recycling);
- ❖ improving resource efficiency – saving energy and reducing material use through waste prevention, re-use, recycling and renewable energy recovery;
- ❖ protecting public health through safe management of potentially hazardous substances;
- ❖ protecting ecosystems (soils, groundwater, emissions to air);
- ❖ safeguarding social amenity – by ensuring household waste is collected, reducing fly tipping by households and businesses, and limiting local nuisances from waste facilities.

#### **Supporting the Evidence and Innovation Strategy**

The research to be commissioned under the Waste & Resources Evidence Programme (WREP) is specifically related to Defra's Evidence and Innovation Strategy as it was developed according to the four stages of evidence in the policy process as advocated in *Our approach to evidence and innovation*, the concluding document of the Evidence and Innovation Strategy review. The E&IS advocated approach described above has enabled us to produce a robust framework for commissioning policy-relevant evidence that is of high scientific quality and adheres to standards of evidence-based policy making (EBPM).

#### **Supporting PSA targets**

As a Defra science programme, the WREP also contributes to Defra's overall Science Service Delivery Agreements which states:

- ❖ Defra policies are increasingly recognised in Government, Parliament, the science community and the public to be soundly based on scientific evidence.
- ❖ Defra-funded science is demonstrated to be of high quality in scientific audit and/or through accreditation.

Further detail is provided below as to how we will ensure a high quality of both scientific standards and policy relevant evidence that is of value for money.

- (c) Explain how this research will be co-ordinated with other Defra science and policy activity. This should cover co-ordination with other Defra research programmes, including economic, social science and the Horizon Scanning Programme and other Defra science activity, e.g. monitoring and surveillance programmes.

<sup>1</sup> HM Government (2005) *The UK Government Sustainable Development Strategy, Securing the Future*. Cm 6467. <http://www.sustainable-development.gov.uk/publications/uk-strategy/index.htm>

We have gone to great lengths in developing this new programme of work to ensure we have worked closely with our policy colleagues and external stakeholders to jointly scope and interpret the key policy drivers and goals that result in the evidence needs our research programme must provide. We have then assembled, synthesised and interpreted these needs in order to identify the main types of research the evidence base will focus on, in addition to the ways we will work together with others to deliver it. This has included the use of horizon scanning techniques and recognising the importance of social science in advising on the behavioural aspects of waste reduction. We have looked at both sets of timescales necessary to deliver evidence, both the longer timeframe needed to procure primary research and the shorter timescales needed for secondary research. Our programme of procuring and delivering the evidence base will be based on cross-cutting, integrated, multi-disciplinary evidence and research across a range of Defra activities, but most importantly will build on and develop new synergies with existing activities, whilst remaining policy-focussed throughout. The term 'evidence' is used, instead of research, to emphasise the varied types of 'knowledge' that are required to deliver sustainable waste and resources management policy in the UK. Evidence is any information that can be used to turn strategic policy goals into something concrete, manageable and achievable.

In working on this theme of Waste and Resources Evidence Strategy 2007-2011: *Understanding Economics and Incentives*, we shall depend significantly on the expertise and advice of our economics colleagues. Thus, the WREP draws upon traditional scientific expertise that provides quantitative and technical inputs, whilst at the same time increases use of the qualitative disciplines, including a range of social science and behavioural change research. Specialists must be in place who can act as a bridge between different types of research and then synthesise research outputs for policy makers. The programme will continue to be cross-cutting, as it addresses the key evidence needs for waste and resource management, but will take a stronger multi-disciplinary approach to evidence generation. A greater emphasis on secondary analysis will be employed allowing us to interpret what the current evidence base is telling us so that we can scope new research accordingly. Social science and interdisciplinary research will continue to play an important role in our research programme so that we can provide information to policy makers and the public on effective intervention methods. We will take a strategic approach to data collection, working with our statisticians to understand how data will be used in a research context and determining appropriate methods of data collection. The Waste Data Strategy team and Waste Evidence Branch (WEB) will work closely together to ensure the waste data and evidence gaps are appropriately addressed. The Waste Data Strategy will provide the key baseline data for long term monitoring of trends in waste arisings and management, whilst under the WREP one-off data projects may be commissioned with specific research objectives.

Our evidence base will be closely aligned with the policy and evidence work of SCP, in addition to our own waste and resource management policy colleagues, so that we can work towards understanding the life cycle and resource flows of products and key materials so we more accurately target our waste prevention efforts. While it will be important to maintain the distinction between SCP's product-centred policy programme, as focussed on the entire system of consumption and production, and the Waste and Resources Evidence Programme, with its particular focus on the waste and resource life cycle of key materials, there are important synergies between the two programmes that need to be better exploited.

We also plan to make considerable efforts to encourage greater alignment and coordination with other parts of Defra to ensure that waste evidence is made available and mainstreamed into broader environmental policy areas such as energy and climate change. We have already begun this process with the Food and Farming Group, particularly within the evidence base teams supporting the Food Chain Programme. Energy and climate change colleagues will be another important link as the recovery of energy from waste continues to figure prominently in waste and resource management policy activities.

Innovation will underpin all our activities as we work towards achieving step-changes in our waste and resources management policy and activities. Most importantly, we have worked hard to ensure our programme is flexible and adaptable, allowing us to respond to emerging policy issues and priorities, to make iterative refinements when needed, and to ensure the evidence is in place to support them.

- (d) Explain how the proposed programme will align with the work of other Departments and funders of research. This should cover UK funders and, where possible or appropriate, funders in other countries or international bodies; whether co-ordination is needed or foreseen and, if so, how and when such co-ordination or collaboration should take place.

We will continue to build on our collaborative work with delivery bodies and agencies and improve cross departmental co-ordination. We have a programme advisory group that is formed from major stakeholders in the waste management field. This forum provides excellent opportunities for exchange of information and collaboration on projects of joint interest. In addition, the programme is either already aligned, or mechanisms are being developed to align, with several other relevant funders of research.

#### **EA and WRAP**

We have established tripartite meetings with the Waste and Resources Action Programme (WRAP) and the Environment Agency (EA) where we will meet on a bimonthly basis to discuss ongoing evidence work and emerging issues and priorities. These meetings will be an added mechanism through which to improve coordination of the evidence base for waste and resources research in the UK. In addition, several of the Environment Agency's research programmes interact with waste and resources management and Defra's programmes in this area. These close links are recognised and mechanisms are in place to ensure research efforts are complementary, but not overlapping. We will continue to ensure that the resources available to both the WREP and the EA's research programme are efficiently and effectively utilised to support the policy making and regulatory requirements of the waste and resources management sector.

#### **Energy Group Initiatives**

There are advantages to the integration of waste and carbon policies and the exploitation of synergies with the recent Energy White Paper, the UK Climate Change Programme, the Stern Review and the Local Government White Paper and we foresee taking efforts forward to ensure synergies are exploited. It is noted within the Waste Strategy for England 2007 that energy from waste (EfW) has been held back in the UK because of public fears over alleged health effects and concerns that infrastructure development would lock in wastes which could otherwise be minimised or recycled. Our aim is to explore collaborative arrangements with BERR's Energy & Environment Research Programme particularly in the area of energy from waste. The Emerging Energy Technologies programme has transferred to the Technology Strategy Board in order to contribute to its overall aim, to ensure that the emerging technologies of today become the growth sectors of tomorrow.

#### **OGDs**

Several research programmes within other government departments (OGDs) and the devolved administrations interact with waste and resources management, e.g. the Waste and Minerals Planning research programme in CLG, the ongoing research in the Health Protection Agency, the considerable programmes within BERR and DIUS and the research conducted by Defra's Agencies, such as the Central Science Laboratories. We will continue to contribute to wider Defra initiatives aimed at increasing strategic planning of evidence and innovation needs with major providers, such as the Research Councils, and emphasising international co-ordination.

#### **International collaboration**

Increasingly, we anticipate aligning national research programmes with EU and other international programmes. FP7 is expected to provide further opportunities for collaboration within the WREP. Bodies such as the International Waste Working Group (IWWG) and the International Solid Waste Association (ISWA) provide worldwide contacts with waste researchers; e.g., the IWWG Sustainable Landfill group provides interactions with research in Italy and particularly northern European nations such as Sweden, Denmark, the Netherlands and Germany. Relevant research is also funded by the Nordic Council of Ministers. Similar links are maintained with the U.S. EPA at Research Triangle Park and its waste related research programme, although, of late, funding for such work seems to be somewhat limited.

- (e) Provide a brief summary as to why Defra should fund the proposed research. You are required to justify the use of Defra resources for the proposed project. In your justification you should clearly set out that no other existing or current research or body of information meets the policy needs; why R&D is the most suitable method to provide evidence; and the intended outcome of the programme.

Our basic criterion is that our policy colleagues have identified a need for the research. This has been provided in the Waste Strategy for England 2007 and its implementation plan. We rely on both the UK and the wider international evidence and research base as a fundamental source of knowledge for developing, evaluating and informing the identified policy goals. WREP's advisory group collates information on recent and current research, both national and international, to assist with this activity. This group is formed of the major stakeholders in this area and regular meetings allow us to take advantage of collaborative research wherever it can provide cost savings in gathering underpinning knowledge. However, stakeholders' aims and objects do not always coincide sufficiently with those of our policy colleagues. In order to maximise the value of research for Defra's policy makers, we must ensure that the full breadth and entirety of its evidence, research and data needs are met. This evidence base contributes to Defra's ability to negotiate successfully at the EU level, craft effective policies and ensure effective mechanisms are put in place to implement those policies, with minimal cost to industry and the public. Research allows us to assess the need for action in order to protect the environment and the public from any harmful effects of waste management activities. It allows us to be forward looking and pro-active rather than reactive.

Ensuring value for money is of equal importance in procuring our E&I activities as is prioritising the areas of research. Defra's Science Handbook guides the procurement and delivery of research programmes that the Waste Evidence Branch follows in the provision of its research programme. As discussed in earlier sections, we work hard to ensure our research is cooperative in nature, allowing us to commission research which avoids direct overlap with others.

### 3. OBJECTIVES

- (a) State policy objectives which should be:
- achievable;
  - testable (i.e. in a form capable of verification, preferably in a quantitative fashion); and
  - time-bound (i.e. to be reached at a pre-determined date).

For the thematic programme area *Understanding economics and incentives*, specific policy objectives (as stated in the Waste Strategy for England 2007) are to incentivise efforts to reduce, re-use, recycle waste and recover energy from waste by:

- ❖ increasing the landfill tax escalator by £8/year from 2008 until at least 2010/11 to give greater financial incentives to businesses to reduce and recycle waste;
- ❖ introducing enhanced capital allowances for investment involving the use of secondary recovered fuel (SRF) for combined heat and power facilities;
- ❖ removing the ban on local authorities introducing household financial incentives for waste prevention and recycling so that local authorities would have the option to introduce revenue-neutral schemes
- ❖ reviewing the Landfill Allowances Trading Scheme (LATS) in 2007 to ensure it remains an effective and efficient manner of helping waste disposal authorities make their contribution to the achievement of England's share of UK obligations to the European Landfill Directive.

### 3. OBJECTIVES continued

- (b) State scientific objectives which must be achievable, verifiable and timebound. Science staff must decide where research can contribute to the achievement of policy objectives and agree with Policy DGs scientific objectives appropriate to meet the policy need. **They should also cover the key deliverables against which the success of the programme will be judged at review:**
- anticipated contribution to Defra policy development (i.e. to inform change of policy);
  - other outputs, such as new or refined industry practices/standards;
  - planned processes for Knowledge Transfer and Innovation and communication to the public.

The research outlined under the WREP as a whole links closely with overarching government objectives on sustainable development, cross-divisional initiatives on sustainable consumption and production, sustainable waste and resource management and the Waste Strategy for England 2007. The overall aim of the WREP is to deliver a robust sustainable waste and resources management evidence base. This will inform policy development, implementation, monitoring and evaluation, which incorporates an effective mechanism for assembling, analysing and communicating outputs. Thus, our evidence programme is set against a broad background of cross-cutting and multi-disciplinary research, including both the physical and social sciences.

**Overarching objectives of the WREP are:**

- ❖ to identify with policy colleagues the amount and type of evidence it is possible to assemble;
- ❖ to devise the most efficient way to gather robust evidence by pursuing joint funding opportunities with other stakeholders;
- ❖ to develop and deliver efficient and cost-effective access to UK-based waste and resources evidence for all stakeholders that enables research from relevant programmes to be coordinated and synthesised;
- ❖ to review regularly and to challenge with policy colleagues and stakeholders the developing evidence base by comparing evidence needs with policy development and the risks associated with any decision to be made to ensure that evidence is targeted correctly and to indicate where the evidence base might need strengthening;
- ❖ to analyse, communicate and consolidate research and evidence outputs in a timely manner;
- ❖ to account for uncertainty in the evidence, in order that it may be interpreted for policy purposes and the linkages between research and policy outcomes are transparent and clearly established.

**Specific scientific and evidence objectives of this theme**

The 'scientific objectives' below arose out of consultation with policy colleagues about the 'policy problems' for which evidence questions were identified (see 2a above). These were grouped according to the implementation plan for Waste Strategy for England 2007 in order to emphasise the importance of Defra's policy goals in the shaping of our evidence programme. After these problems were identified, we worked with policy colleagues to identify the key evidence areas over which Defra can claim jurisdiction. This has resulted in the scientific, 'evidence questions' given below. We believe this framework provides a more useful way in which to engage our policy colleagues and state the overarching objectives of the evidence programme. All projects commissioned under this theme will contribute to answering the questions listed below, and, as such, comprise our 'scientific objectives' for this ROAME statement:

- ❖ Could C&I waste be included in a carbon trading scheme? What would be the baseline and how would we account for different types of businesses and changes in the size of firms?

**Landfill Tax**

- ❖ What are the implications of landfill tax changes on business waste streams?
- ❖ Do we need an improved landfill tax model that estimates the elasticity of demand for landfill, considers the price and availability of alternatives over the short and long-term, copes with significant changes in the tax rate and links to waste prevention measures?

**Landfill Allowance Trading Scheme (LATS)**

- ❖ How do we overcome barriers to developing a market in allowances?
- ❖ Do we have sufficient evidence on biodegradable MSW waste?

**Household Incentives for Recycling**

- ❖ Can we attribute the speed of diversion from landfill to specific measures or is this related to the speed with which the industry can adjust to the increasing cost of landfill, the provision of alternatives, the kind of technologies developed or imported and costs, distribution around the UK or the capacity of export markets?
- ❖ What are the likely impacts of charging on different groups in society? How is waste behaviour related to income, age and other social factors? What are the most effective financial incentives in the UK context?
- ❖ How would we set up an evaluation framework for charging schemes to encourage waste prevention? What would be the baseline for comparison and how would we attribute any changes to household incentives as opposed to other measures? What are the potential adverse impacts of incentives on waste prevention and management behaviour and how would we monitor them?

## 4. APPRAISAL

Explain your plans to ensure that you obtain fit for purpose research under this programme and value for money for the taxpayer. In particular, how will you ensure expert external input and challenge (e.g, through advice from expert groups/committees; peer review of project proposals; and level of competitively let

contracts) are taken into account.

At the individual project level within the programme, a number of measures are implemented to ensure that the commissioned research is good quality science. Independent evaluation of the initial expressions of interest and full proposals are conducted, many projects have project boards that include external stakeholders and an increasing number of final reports are subject to expert external peer review.

The programme will change the way it has previously monitored projects. Whereas in the past, WEB assigned research managing agents to individual projects, we will now retain oversight of entire thematic programme areas 'in house'. External 'specialist project monitors' may be called in on a case-by-case basis to monitor individual projects.

In order to strengthen the evaluative aspects of the programme and to measure our progress to date in commissioning and using research to support policy, we intend to conduct an outcome evaluation study, to be completed in 2009/10. The project will explore good practices drawn from international experiences in evaluating impacts of research on attaining policy outcomes. It will apply these experiences to the wider sustainable consumption and production and waste and resources evidence programmes. One of the outputs of this evaluation will be a revised M&E framework. Monitoring and evaluation will also become a central feature of our quarterly programme reporting to internal senior management.

## 5. MONITORING

Please explain how you plan to monitor progress against programme and project objectives, in particular any key programme review points.

Programme projects are monitored through conventional project management procedures. We take care to describe the purpose, aims and deliverables of each project together with their budgets, range, scope and timescales. We ensure that management processes and lines of responsibility are clear. We agree at the outset the frequency of review meetings and reporting and how progress and results will be measured. We establish 'break-points' at which to review and check progress against agreed milestones.

As stated above, we are currently commissioning a piece of work which will allow us to strengthen the way the programme is monitored and evaluated. A revised M&E framework will be one of the key outputs of this piece of work and we will update this section of each thematic programme area accordingly when that piece of work has reported in 2009/10.

## 6. EVALUATION

Please specify how you intend to evaluate the outputs of the programme against its objectives, ensuring appropriate external input and challenge. This should also include an assessment of the future of the programme.

As stated above, in order to strengthen the evaluation aspects of the programme and to measure our progress to date in commissioning and using research to support policy, we intend to commission an outcome evaluation study, to be completed in 2009/10. The project will explore good practices drawn from international experiences in evaluating impacts of research on attaining policy outcomes. It will apply these experiences to the wider sustainable consumption and production and waste and resources evidence programmes. One of the outputs of this evaluation will be a revised M&E framework. Monitoring and evaluation will also become a central feature of our quarterly programme reporting to internal senior management.

At present, the Waste Evidence Branch has just completed a significant evaluation review of the Waste and Resources Evidence Programme in the form of the development and production of the new Waste and Resources Evidence Strategy 2007-2011. As detailed above and in that strategy document, this process involved intensive discussion, challenge and informed review of the current suite of projects and strategic objectives of the initial phase of the Waste and Resources Research Programme by internal policy colleagues and external stakeholders. The new strategy has a revised set of programme themes and a corresponding interpretive framework for commissioning new evidence and research to support Defra's waste and resource policy objectives. In addition to the results of our outcome evaluation study, we anticipate continuing to use a strategy refresh process every 3 years to re-evaluate the programme as a whole.

This research programme will be reviewed by (insert year)

Approved by  Date

Name  Unit