

# THE NORTHERN IRELAND PRACTICAL GUIDE TO THE GREEN BOOK

***DFP'S GUIDE TO THE APPRAISAL, EVALUATION, APPROVAL AND  
MANAGEMENT OF POLICIES, PROGRAMMES AND PROJECTS***

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[www.dfpni.gov.uk/economic\\_appraisal\\_guidance](http://www.dfpni.gov.uk/economic_appraisal_guidance)

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## INTRODUCTION

Public expenditure in Northern Ireland (NI) amounts to more than £10 billion annually. It is vital both that this money is put to good use and also that it can be accounted for. The *Northern Ireland Practical Guide to the Green Book* (hereafter abbreviated to the *NI Practical Guide*) is designed to help achieve these ends. It represents current Department of Finance and Personnel (DFP) guidance and requirements on the appraisal, evaluation, approval and management of policies, programmes and projects. These are essential elements in the cycle of policy, programme and project planning and delivery.

The *NI Practical Guide* replaces the Northern Ireland Preface to the Green Book, published by DFP in 1997. It generally accords with the principles of the latest HM Treasury *Green Book*<sup>1</sup> but contains more practical guidance tailored specifically to the needs of NI Departments, including some issues that are not covered in the *Green Book*. For example, it covers DFP's approval requirements and takes account of local policies and institutional arrangements. The *NI Practical Guide* is the primary guide for NI Departments. However, it should be read in conjunction with the *Green Book*, which remains an authoritative guide to the principles of appraisal and evaluation, and contains more detail on some aspects of them.

**The principles in this guide must be applied, with appropriate and proportionate effort, to all proposals that involve spending or saving public money, including EU funds, or changes in the use of public resources. All such proposals should be supported by evidence of suitable appraisal, approval, management and evaluation. There are no exceptions to this general requirement.**

The *NI Practical Guide* builds on the achievements associated with the introduction of the Northern Ireland Preface to the Green Book in 1997. It maintains as much continuity as possible with established procedures. For example, it retains a 10-step approach to appraisal similar to that introduced in the Northern Ireland Preface to the Green Book. However, it also incorporates developments since 1997.

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<sup>1</sup> The Green Book is the name given to the HM Treasury Guide "Appraisal and Evaluation in Central Government" (ISBN 0115601074) which may be purchased @ £19.95 per copy from the Stationery Office. It is also available together with supplementary guidance on the Treasury website at [http://www.hm-treasury.gov.uk/Economic\\_Data\\_and\\_Tools/Greenbook/data\\_greenbook\\_index.cfm](http://www.hm-treasury.gov.uk/Economic_Data_and_Tools/Greenbook/data_greenbook_index.cfm)

These include the key changes introduced by the 2003 Green Book. In some cases these are adopted fully, in others allowance is made for local circumstances. The main changes arising from the new Green Book are:

- 1) The discount rate is reduced from 6% to 3.5% in real terms i.e. after adjusting for inflation. **See 2.8 below**
- 2) The new 3.5% rate is also to serve as the Resource Accounting and Budgeting Cost of Capital Charge (RABCCC). **See 2.8**
- 3) Greater stress is placed upon the identification, management and realisation of benefits. **See 2.5.35 & 10.6.10**
- 4) There is more emphasis on assessing distributional impacts of proposals **See 2.7.13**
- 5) There is a new requirement to adjust assumptions to counter appraisal optimism. **See 2.6.15**
- 6) New adjustments are adopted to reflect the differing tax liabilities of options in PFI cases. **See 5.11**

The *NI Practical Guide* is more comprehensive than the Northern Ireland Preface to the Green Book in other respects. For example, it includes new, revised or expanded guidance on:

- New Targeting Social Need **2.7.21 & Appendix 5**
- Policy Appraisal **Section 3**
- Additionality and Displacement **4.2.7 & 4.3**
- IFI and Other Grants to Non-Government Bodies **4.7**
- PPP proposals **Section 5 and Appendices 3 & 4**
- Procedures for Office Accommodation Projects **Section 7**
- Business Cases **Section 8**
- Approval Procedures **Section 9**
- Project Management **Section 10**
- The Gateway Review Process **Section 10.5**
- Differences in Economic and Commercial Appraisal **Appendix 2**
- The Weighted Scoring Method **Appendix 6**
- Discounting **Appendix 7**

Section 9 of the *NI Practical Guide* sets out the general principles to be applied by approving authorities when approving capital projects and other expenditures. All of these principles need to be applied but the following one deserves special attention:

Approvals in principle should not be granted prior to the completion of a suitable business case, including an appropriate economic appraisal. Only when needs, objectives, options, costs, benefits, risks, funding,

affordability and other relevant factors have been thoroughly investigated according to the relevant appraisal methodology can approving authorities be assured that a particular proposal is likely to represent VFM and satisfy accountability requirements.

The *NI Practical Guide* also states DFP's basic requirements for cases that need DFP approval, and clarifies the standard conditions of DFP approval. These are covered in sections 9.2 and 9.3. It should be noted in particular that:

It is now a general condition of DFP approval that Supply must be notified if at any time costs or other assumptions vary by more than 10%, or if implementation is delayed by more than 24 months, by comparison to the estimates given in the business case upon which DFP approval was based.

Where the term "Departments" is used in this guide, it should be understood to cover all the public bodies for which Departments have responsibility. Departments are responsible to ensure that appropriate procedures exist in relation to **all** the UK and EU grants, expenditures and resources for which they are accountable, including those of their Agencies, Non-Departmental Public Bodies (NDPBs) and other bodies. This includes ensuring that any relevant current guidance is updated promptly to meet the requirements of the *NI Practical Guide*.

The principles of this guide apply to all expenditures regardless of whether they are above or below delegations from DFP to Departments. However, it is important that they are applied with appropriate and proportionate effort. This vital concept is explained in section 1.3.

The full text of this guide is (or will shortly be) available on a new DFP web page at [www.dfpni.gov.uk/economic\\_appraisal\\_guidance](http://www.dfpni.gov.uk/economic_appraisal_guidance) together with a number of other useful appraisal resources including spreadsheets to help calculate NPVs and optimism bias.

Suggestions to improve the *NI Practical Guide* are welcome, and should be addressed in the first instance to DFP's Economic Appraisal Branch at Rathgael House.

## **Department of Finance and Personnel**

September 2003

## TERMINOLOGY AND ABBREVIATIONS

**Appraisal.** In this guide, the term "appraisal" is normally used to refer to economic appraisal – which is broadly synonymous with "investment appraisal", "option appraisal", "policy appraisal" and "project appraisal". It is *not* generally used to refer to other forms of appraisal such as, for example, "financial appraisal", "commercial appraisal", "affordability appraisal" or "public expenditure appraisal".

**Business case.** This term is generally used to refer to a document that includes both an economic appraisal and additional information on the relevant details concerning management, financing, marketing, procurement and arrangements for monitoring and evaluation. See section 8 for specific guidance on business cases.

### Abbreviations

|        |   |        |  |
|--------|---|--------|--|
| ARG    | Audit Review Group                                      | NI     | Northern Ireland   |
| BDS    | Business Development Service, DFP                       | NIAO   | Northern Ireland Audit Office                                  |
| CFG    | Central Finance Group, DFP                              | NPC    | Net Present Cost   |
| CPD    | Central Procurement Directorate                         | NPV    | Net Present Value  |
| CSG    | Corporate Services Group, DFP                           | OAB    | Office Accommodation Branch, DFP                               |
| DAO    | Dear Accounting Officer                                 | OB     | Optimism Bias  |
| DARD   | Department of Agriculture and Rural Development         | OBC    | Outline Business Case  |
| DCAL   | Department of Culture, Arts and Leisure                 | OFMDFM | Office of First Minister and Deputy First Minister             |
| DCF    | Discounted Cash Flow                                    | OGC    | Office of Government Commerce                                  |
| DE     | Department of Education                                 | PE     | Public Expenditure   |
| DEL    | Department for Employment and Learning                  | PFI    | Private Finance Initiative                                     |
| DETI   | Department of Enterprise, Trade and Investment          | PIR    | Post Implementation Review                                     |
| DFP    | Department of Finance and Personnel                     | PO     | Project Owner  |
| DHSSPS | Department of Health, Social Services and Public Safety | PPE    | Post Project Evaluation  |
| DPFO   | Dear Principal Finance Officer                          | PPP    | Public Private Partnerships (incl. Private Finance Initiative) |
| DRD    | Department for Regional Development                     | PSA    | Public Service Agreement                                       |
| DSD    | Department for Social Development                       | PSC    | Public Sector Comparator                                       |
| FBC    | Full or Final Business Case                             | SIB    | Strategic Investment Board                                     |
| GANI   | Government Accounting Northern Ireland                  | SMART  | Specific, Measurable, Achievable, Relevant and Time-dependent  |
| GB     | Great Britain   | SOC    | Strategic Outline Case   |
| HSENI  | Health & Safety Executive for Northern Ireland          | TSN    | Targeting Social Need  |
| HMT    | Her Majesty's Treasury                                  | VFM    | Value for Money  |
| IFI    | International Fund for Ireland                          | VLA    | Valuation and Lands Agency, DFP                                |
| IT     | Information Technology                                  | TDO    | Training and Development Officer                               |
| NDPB   | Non-Departmental Public Bodies                          |        |  |



## ECONOMIC APPRAISAL: SUMMARY OF BASIC STEPS

| STEP  | MAIN PROCEDURES IN BRIEF  | GUIDANCE   |
|---|---|--|
| 1. EXPLAIN THE STRATEGIC CONTEXT                                  | <ul style="list-style-type: none"> <li>▪ Refer to underlying policy or strategy, e.g. policy statements, statutory requirements, or business plans.</li> <li>▪ Indicate how the proposal is expected to contribute to the relevant strategic aims and objectives.</li> </ul>  | <p>NI Practical Guide section 2.1</p> <p>Green Book chapters 3 &amp; 4</p>   |
| 2. ESTABLISH THE NEED FOR EXPENDITURE                             | <ul style="list-style-type: none"> <li>▪ Establish the need for expenditure by:-                             <ul style="list-style-type: none"> <li>▫ analysing the expected demand for services; and</li> <li>▫ identifying deficiencies in current service provision.</li> </ul> </li> <li>▪ Justify and quantify the proposed level of service provision over the appraisal period.</li> </ul> <p><i>Where funding the non-Govt sectors is in view:-</i><br/>Assess <b>Additionality</b> i.e. establish that the proposed assistance is the minimum necessary.</p>   | <p>NI Practical Guide section 2.2</p> <p>Green Book chapters 3 &amp; 4</p><br><p>NI Practical Guide section 4.3</p>  |
| 3. DEFINE THE OBJECTIVES AND CONSTRAINTS                          | <ul style="list-style-type: none"> <li>▪ Define the expected outcomes and outputs.</li> <li>▪ Specify targets that are SMART i.e. <b>S</b>pecific <b>M</b>easurable <b>A</b>chievable <b>R</b>elevant and <b>T</b>ime-dependent.</li> <li>▪ Include implementation targets e.g. dates, milestones.</li> <li>▪ State the key constraints on the project, e.g. technical, financial, legal, timing etc.</li> <li>▪ Indicate the relative priority of individual objectives or elements of the proposals</li> <li>▪ Provide sufficient detail to enable option generation and option performance assessment.</li> </ul>  | <p>NI Practical Guide section 2.3</p> <p>Green Book chapter 4</p>  |
| 4. IDENTIFY & DESCRIBE THE OPTIONS                                | <ul style="list-style-type: none"> <li>▪ Identify and describe a baseline option, usually the status quo, and a suitably wide range of alternative options.</li> <li>▪ Consider variations in scale, quality, technique, location, timing and funding method.</li> <li>▪ Examine alternative procurement options including appropriate consideration of a PPP solution.</li> <li>▪ Choose a suitable number of options for full appraisal.</li> <li>▪ Where some are rejected before full appraisal, explain reasons for rejection.</li> </ul>  | <p>NI Practical Guide section 2.4</p> <p>Green Book chapters 5</p>   |
| 5. IDENTIFY & QUANTIFY THE MONETARY COSTS AND BENEFITS OF OPTIONS | <ul style="list-style-type: none"> <li>▪ Detail capital costs, including any refurbishment costs, and annual recurrent costs and benefits of all options.</li> <li>▪ Express costings in total rather than incremental terms, to expose full resource consequences.</li> <li>▪ Include opportunity costs and residual values for all assets employed, whether already owned or not.</li> <li>▪ Assess displacement, and adjust costings accordingly.</li> <li>▪ Adjust for inflation and (where relevant) tax differences.</li> <li>▪ Where cost savings or efficiency improvements are projected, indicate whether they will represent financial savings or redeployment of resources.</li> <li>▪ Consider costs and benefits to other parts of the public and private sectors.</li> </ul> <p><i>Where funding the non-Govt sector is in view:-</i><br/>Assess <b>Cost-Effectiveness</b> by reference to relevant ratios such as cost per job, public assistance to project cost, etc.</p> | <p>NI Practical Guide section 2.5</p> <p>Green Book chapter 5 and Annex 3</p> <p>HMT supplementary guidance on the taxation of PFI and the public sector comparator</p><br><p>NI Practical Guide section 4.4</p> |

|   |   |  |
|---|---|--|
| <p><b>6. APPRAISE RISKS AND ADJUST FOR OPTIMISM BIAS</b></p>  | <ul style="list-style-type: none"> <li>▪ Prepare a risk log identifying and quantifying the main risks associated with the proposal.</li> <li>▪ Consider how risks compare under the different options.</li> <li>▪ Adjust costs, benefits and timing assumptions for optimism bias.</li> <li>▪ Develop suitable risk management and risk reduction strategies.</li> </ul>   | <p>NI Practical Guide section 2.6</p> <p>Green Book chapter 5 and Annex 4;<br/>HMT supplementary guidance on the treatment of optimism bias.</p> |
| <p><b>7. WEIGH UP NON MONETARY COST &amp; BENEFITS (INCLUDING NEW TSN &amp; EQUALITY)</b></p>                             | <ul style="list-style-type: none"> <li>▪ Identify relevant non-monetary costs and benefits.</li> <li>▪ Quantify them in suitable units where possible.</li> <li>▪ Employ appropriate technique to show how they compare under the different options e.g. "list and describe" in simpler cases; "impact statement" or "weighted scoring method" in others.</li> <li>▪ Consider distributional issues incl. New TSN &amp; Equality.</li> <li>▪ Explain assumptions clearly e.g. weights and scores should be explained individually.</li> <li>▪ Interpret the results of the non-monetary analysis.</li> </ul>  | <p>NI Practical Guide section 2.7</p> <p>Green Book Annexes 2 &amp; 5</p>  |
| <p><b>8. CALCULATE NET PRESENT VALUES (NPVs) AND ASSESS UNCERTAINTIES</b></p>   | <ul style="list-style-type: none"> <li>▪ Identify phasing of monetary costs and benefits over suitable time period, adjusted for inflation, optimism bias and (where relevant) displacement and tax differences.</li> <li>▪ Calculate NPV (or NPC) for each option, using correct discount rate.</li> <li>▪ Include spreadsheets detailing the calculations, including disaggregation of cost/benefit items.</li> <li>▪ Show, for each year, the discount factors used, the total NPV for the year, and the cumulative NPV to that year.</li> <li>▪ Identify the price basis and base year for discounting.</li> <li>▪ Test and interpret the sensitivity of the NPVs (or NPCs) to changes in important assumptions, and explain choice of variations covered.</li> <li>▪ Interpret the results e.g. estimate the probability of various possible outcomes and implications for option ranking.</li> <li>▪ Provide sufficient detail to enable checking of calculations.</li> </ul> | <p>NI Practical Guide section 2.8</p> <p>Green Book chapter 5 and Annex 6</p>  |
| <p><b>9. ASSESS ARRANGEMENTS FOR FINANCING, MANAGEMENT, PROCUREMENT, MARKETING, MONITORING AND EX POST EVALUATION</b></p> | <ul style="list-style-type: none"> <li>▪ <i>Financing:</i> Include budget, cash flow and funding statements, phased over time.</li> <li>▪ <i>Management:</i> Give details of proposed personnel, procurement method, timetable, benefits realisation plan, accommodation needs, staffing issues etc.</li> <li>▪ <i>Marketing:</i> Provide market assessment and marketing plan as appropriate</li> <li>▪ <i>Monitoring:</i> Indicate how the proposed option will be monitored during and after implementation.</li> <li>▪ <i>Evaluation:</i> Record pre-implementation levels of resource use and service provision. Indicate factors to be evaluated, when, how and by whom.</li> </ul> <p><i>Where funding the non-Govt sector is in view:-</i><br/>Assess <b>Viability</b> i.e. examine cash flows, management &amp; financial arrangements to ensure that funding is not wasted on proposals that will fail prematurely.</p>   | <p>NI Practical Guide sections 2.9, 10 &amp; 11</p> <p>Green Book chapters 6 &amp; 7</p> <p>NI Practical Guide section 4.5</p>                   |
| <p><b>10. ASSESS THE BALANCE BETWEEN THE OPTIONS AND PRESENT THE RESULTS &amp; CONCLUSIONS</b></p>                        | <ul style="list-style-type: none"> <li>▪ Write up the steps of the appraisal in the order shown here.</li> <li>▪ Give details of assumptions and calculations, using appropriate appendices.</li> <li>▪ Include summary of main results (i.e. NPVs/NPCs, unquantifiables and uncertainties) for each option.</li> <li>▪ Draw out the balance of advantage among options, assess VFM and affordability, and record conclusions and recommendations.</li> </ul>   | <p>NI Practical Guide section 2.10</p> <p>Green Book chapter 6</p>   |

## **1. WHAT IS ECONOMIC APPRAISAL AND WHEN IS IT REQUIRED?**

### **1.1 What is Economic Appraisal?**

1.1.1 Economic Appraisal - hereafter referred to simply as “appraisal” - is a key tool for achieving value for money and satisfying public accountability requirements. It is a systematic process for examining alternative uses of resources, focusing on assessment of needs, objectives, options, costs, benefits, risks, funding, affordability and other factors relevant to decisions. Appraisal is:-

- designed to assist in defining problems and finding solutions that offer the best value for money (VFM).
- a way of thinking expenditure proposals through, right from the emergence of the need for a policy, programme or project, until its implementation.
- the established vehicle for planning and approving public expenditure policies, programmes and projects.

1.1.2 The principles of appraisal are applicable to all decisions, even those concerned with small expenditures. However, the scope of appraisal is very wide. It is about assessing VFM in terms of the national interest. Costs and benefits should generally cover all those falling on United Kingdom residents. It is also important to assess the specific regional impact on Northern Ireland. There is a role for narrower appraisals, for example of the commercial or financial impact upon a particular public body, but these should generally supplement an appraisal from a national or regional perspective, they should not generally be conducted instead of it.

1.1.3 The basic elements of appraisal are listed at 1.4 below and explained in Section 2. Other sections elaborate on more specific aspects.

1.1.4 Good appraisal leads to better decisions and VFM. It facilitates good project management and project evaluation. Appraisal is not optional; it is an essential part of good financial management, and it is vital to decision-making and accountability.

### **1.2 When is Appraisal Required?**

1.2.1 The principles of appraisal apply to all decisions and proposals involving expenditure or resources. They apply equally to policies, programmes and projects. **DFP requires the principles of economic appraisal to be applied, with appropriate and proportionate effort, to all**

decisions and proposals for spending or saving public money, including EU funds, and any other decisions or proposals that involve changes in the use of public resources.

1.2.2 For example, appraisal must be applied irrespective of whether the relevant public expenditure or resources:

- involve capital or current spending, or both;
- are large or small;
- are above or below delegated limits.

**EXAMPLES OF DECISIONS THAT REQUIRE APPRAISAL**

|  |   |
|--|---|
| <b>Policy and programme development</b>    | <b>Decisions on the level and type of services or other actions to be provided, or on the extent of regulation.</b>   |
| <b>New or replacement capital projects</b> | <b>Decisions to undertake a project, its quality, scale, location and timing, and the degree of private sector involvement.</b>   |
| <b>Use or disposal of existing assets</b>  | <b>Decisions to sell land, or other assets, or relocate facilities or operations, whether to contract out or market test services.</b>  |
| <b>Specification of regulations</b>        | <b>Decisions on the standards for health &amp; safety, environmental quality, sustainability, or to balance the costs and benefits of regulatory standards and how they can be implemented.</b> |
| <b>Procurement decisions</b>               | <b>Decisions to purchase the delivery of services, works or goods, usually from private suppliers.</b>  |

1.2.3 It is important to begin applying appraisal early in the gestation of any proposal that has expenditure or resource implications. The justification for incurring any expenditure at all should be considered. Appraisal should be applied from the emergence of a need right through to the recommendation of a particular course of action. It should continue to be applied, where applicable, in the subsequent assessment of bids from the private sector obtained through a tendering process, until a contract is awarded.

1.2.4 Retrospective appraisal, that is, going through the motions of appraisal after decisions have been taken or expenditure committed, is bad management practice. Appraisal should *not* be used merely as the means

to refine the details of a predetermined option, or to provide post hoc justification for decisions or actions already taken.

1.2.5 Approvals in principle should not be granted, nor should commitments to funding be given (e.g. through a Letter of Offer), prior to the completion of a satisfactory appraisal and business case. The importance of appraisal to the approval process is elaborated in section 9 below.

1.2.6 Appraisal reports contain information on the relative merits of different potential investments. Departments should use the results of appraisals as an input to the prioritisation of their spending plans.

### 1.3 Appropriate and Proportionate Effort

1.3.1 Appraisal itself uses up resources. The effort that should go into it and the detail to be considered is a matter for case-by-case judgement, but the general principle is that the resources to be devoted to appraisal should be in proportion to the scale or importance of the objectives and resource consequences in view. Similar principles apply to ex post evaluation.

1.3.2 Judgement of proportionate effort should take into consideration the totality of the resources involved in a proposal. However, particular weight should be given to the *total public funds* (including EU funds) involved, since it is primarily for these that public bodies are accountable to the taxpayer.

1.3.3 It is also important that the appraisal is *appropriate* in the sense that the correct methodology is used and tailored to suit the case in hand, because there are variations in how the steps of appraisal apply in different spending areas. Judging this is a matter of experience and Departmental economists should be consulted where there is any doubt.

1.3.4 Irrespective of the amount of effort applied, appraisals should normally seek to take account of all the costs and benefits arising from a proposal, whether they fall to the public sector or to other sectors of the economy. This is because the general aim is to make best use of all the resources in the economy. However, some appraisals are more restricted in scope, as is explained at 1.5 below.

1.3.5 Appraisal is a way of thinking which is indispensable even when dealing with small amounts of expenditure or resources. It is always appropriate to establish the need for a proposed expenditure or change of resource use, consider alternative options, and weigh up the costs and benefits of the alternatives. However, small scale decisions do not require as much appraisal or evaluation as larger scale decisions. Appendix 1 provides practical advice on how to decide the proportionate appraisal effort when dealing with small expenditures, including the use of pro formas.

## 1.4 Basic Elements of Appraisal

- 1.4.1 Appraisal may take various forms. Appendix 2 explains the main forms of economic appraisal and how it is distinguished from commercial appraisal. However, irrespective of the precise form of an appraisal, a number of basic elements are common to most of them. The following ten key steps should generally be addressed:

- „ *explain the strategic context*
- „ *establish the need for expenditure*
- „ *define the objectives and constraints*
- „ *identify and describe the options*
- „ *identify and quantify the monetary costs and benefits of each option*
- „ *assess risks and adjust for optimism bias*
- „ *weigh up non-monetary costs and benefits including New TSN and Equality*
- „ *calculate Net Present Values and appraise uncertainties, including appropriate sensitivity analysis*
- „ *record proposed arrangements for financing, management, marketing, procurement, monitoring and post project evaluation*
- „ *assess the balance of advantage between the options and present the results and conclusions*

- 1.4.2 Where funding of the private or voluntary sectors is in view, then, in addition to the ten key steps, assessment of the following three criteria is also a basic appraisal requirement:

- „ *additionality*
- „ *viability*
- „ *cost-effectiveness*

- 1.4.3 These basic steps are summarised in a fuller checklist on pages 9 & 10 above. Section 2 is devoted to explaining the ten key steps in more detail. Section 3 explains them in relation to policy appraisal. Section 4 explains additionality, viability and cost-effectiveness, and expands on the appraisal of funding of the private, voluntary and community sectors. The particular

requirements for certain cases such as PPP, IT and accommodation projects are explained in subsequent sections.

## **1.5 Other Forms of Appraisal**

1.5.1 Other forms of appraisal may be required in addition to an economic appraisal. For example, an affordability appraisal is generally required. (See section 2.9.2 below for elaboration). Another example is the necessity to assess the commercial viability of proposals when appraising assistance to the private, voluntary and community sectors, as is explained in Section 4 below. This normally includes assessment of the general financial position of the applicant, consideration of its management capability, marketing appraisal, identification of relevant financial cash flows, and calculation of NPVs on a commercial appraisal basis.

1.5.2 The differences between economic appraisal and commercial appraisal can be a cause of confusion. **Appendix 2 of the *NI Practical Guide* defines the main forms of economic appraisal, lists some common errors in appraisal and explains how economic appraisal is distinguished from commercial appraisal.** It also includes a checklist to help identify what items to include in each. Commercial appraisal calculations, where required, should normally be done separately from, and in addition to, the calculation of NPVs on an economic appraisal basis.

1.5.3 A commercial appraisal, or affordability appraisal, or any other appraisal of some specific aspect of a proposal, should never be seen as an alternative to an economic appraisal covering the ten steps listed at 1.4 above.

## **1.6 Management of Appraisals and Evaluations**

1.6.1 Appraisal and evaluation are stages in the general management of projects, programmes and policies. Responsibilities for carrying out appraisals and evaluations should be clearly defined. Departments should ensure that appropriate procedures are in place, and that they are properly applied and kept up to date. It is essential that staff engaged in PE and resource decisions recognise the need to undertake appraisal and evaluation, seek specialist help where appropriate and ensure that appraisals and evaluations are carried out.

1.6.2 Conducting an assessment can be resource-intensive. Appraisals and evaluations should be carried out collaboratively wherever possible between stakeholders, but lead responsibilities need to be well defined, and accountability for accuracy and thoroughness clearly understood. Carrying out assessments should never be regarded as a specialist activity, and therefore sidelined.

- 1.6.3 It should generally be the responsibility of policy and executive divisions to take the lead in carrying out appraisals, drawing on expert advice, where appropriate.
- 1.6.4 In order to ensure an independent and objective approach, evaluations should be led by individuals or teams who have had no responsibility for or involvement in the management or implementation of the proposal under consideration. However, they must have the co-operation of those who have been involved and possess the necessary information.
- 1.6.5 Departments and Agencies should consider how appraisals and evaluations are integrated with decision-making processes and governance structures. To ensure a coordinated approach to conducting assessments, the *Green Book* encourages consideration of:
- Establishing formal evaluation or assessment units, or other centres of technical expertise;
  - Formalising access to internal and external auditors. In complex cases, it may be helpful to discuss appraisal methodology with sponsor departments, DFP or the Northern Ireland Audit Office;
  - Providing incentives for conducting thorough and timely appraisals; and evaluations; and
  - Maintaining an accessible archive.
- 1.6.6 For individual assessments, early consideration should be given to:
- The availability and cost of financial and specialist resources that may be needed;
  - The possible need for quality assurance, for example, by economists and other experts and by service providers;
  - How the findings are to be disseminated (e.g. publication of assessments; dissemination via web sites, etc);
  - The possibility of deferring a proposal pending further research; and,
  - Establishing a project plan for the assessment, setting out key milestones, resources and work streams.
- 1.6.7 Economists within your Department have an important role to play. They can advise on the full range of issues relating to business cases, including for example appraisals, feasibility studies, business plans and evaluations. They can supply advice on the appropriate techniques to use, help to draft terms of reference, provide quality assurance, assist with the selection and management of external consultants and help to undertake relevant



analysis. Where possible, those undertaking appraisals, evaluations and other studies should be independent of those quality-assuring them.

- 1.6.8 It is particularly important to involve economists in the more costly, complex or contentious cases before committing resources to them. Departments should consult their economists in all cases requiring DFP approval, and should take account of their views **before** submissions are made to DFP.

## 1.7 Issues Relevant to Appraisal and Evaluation

- 1.7.1 The *Green Book* refers to a wide range of generic issues that may need to be considered as part of any assessment. The following list should be checked for relevance to options under appraisal, and used for later evaluations:

- **Strategic impact** – new proposals can be said to have strategic impacts on organisations if they significantly affect the whole or major part of an organisation over the medium to long term. Proposals should therefore be considered in terms of their potential scale of impact, and how they fit in with the strategy of the organisation(s) they affect.
- **Economic rationale** – proposals need to be underpinned by sound economic analysis, which should be provided by a cost benefit analysis in an option appraisal. See *NI Practical Guide* sections 2.1 & 3.1.3, and *Green Book* Chapter 5.
- **Financial arrangements and affordability** – proposals need to be affordable, and an affordable financial plan needs to be developed. See *NI Practical Guide* section 2.9 and *Green Book* Chapter 6.
- **Achievability** – all proposals should be assessed for their achievability, and recognised programme and project management arrangements set up as necessary. See *NI Practical Guide* section 10 and *Green Book* Chapter 6.
- **Commercial and partnering arrangements** – proposals need to take account of commercial, partnering and procurement arrangements; what can be delivered in the market; how costs and benefits can be guaranteed through commercial arrangements; how contracts will be managed through to completion. See *NI Practical Guide* section 5 and *Green Book* Chapter 6.
- **Regulatory impact** – the impacts of new proposals on businesses, voluntary sector and charities should be assessed. A regulatory impact assessment (RIA) is a policy tool that assesses the impact, in terms of costs, benefits and risks of any proposed regulation that could affect

businesses, charities or the voluntary sector. It is Government policy that all government departments and agencies where they exercise statutory powers and make rules with general effect on others must produce an RIA. They should also produce an RIA for proposed European legislation that will have an effect on businesses, the public sector, charities or the voluntary sector in the UK. Although the trigger for producing an RIA is that the proposal could affect businesses, charities or the voluntary sector, the RIA itself should cover the full range of economic, social and environmental effects, in line with the *Green Book* methodology.

Guidance on RIA is available at <http://www.cabinet-office.gov.uk/regulation/> or via the OFMDFM Integrated Impact Assessment website <http://www.ofmdfmi.gov.uk/iia>

- **Legislation** – consideration should be given to legislation specific to the case in hand, as well as statutes that affect many proposals, such as the Human Rights Act, or the Data Protection and Freedom of Information Acts.
- **Information management and control** – The information requirements of proposals, including the data needed for later evaluation, and the supporting IT that may be required. Further guidance is available from BDS.
- **Environmental impacts** – The effects on the environment should be considered, including air and water quality, land use, noise pollution, and waste production, recycling and disposal. Further guidance is available from DOE and at <http://www.ofmdfmi.gov.uk/iia>
- **Rural issues** – The government is committed to ensuring that all its policies take account of specific rural circumstances. Appraisers should assess whether proposals are likely to have a different impact in rural areas from elsewhere. Further guidance is available from DARD and at <http://www.ofmdfmi.gov.uk/iia>
- **Equality** – Impacts on various groups in society should be considered as part of an appraisal. The *NI Practical Guide* section 2.7.13 describes how equality and other distributional issues should be brought into the appraisal process.
- **Health** – the impacts of proposals on health should be considered, and evaluation made of the impact on health of poverty, deprivation and unemployment, as well as poor housing or workplace conditions. DHSSPS can provide advice on Health Impact Assessment.
- **Health and safety** – the health and safety of people at work or arising from work activity may need to be safeguarded. Obviously this is of particular concern in construction. HSENI (Health and Safety Executive

for Northern Ireland, DETI) and CPD (Central Procurement Directorate, DFP) can provide further advice.

- **Consumer focus** – Assessments may need to involve consideration of the cost and quality of goods and services, as well as access to, choice of, and information about them. See The Policy Hub website <http://www.policyhub.gov.uk>
- **Regional perspectives** – The Policy Hub provides guidance on how regional perspectives are best incorporated into the policy making process.
- **European Union** – It will often be important to take account of proposals and activities in other European Union countries, as well as specific legislation and regulations. State aid rules are particularly important to consider, as these prescribe the extent to which government can intervene. DFP's European Division can provide general advice on EU matters. DETI's Policy Services Unit advises on State Aid – see section 4.8 below.
- **Design quality** – The design quality of facilities can be important in ensuring that objectives are successfully achieved. See the Commission for Architecture and the Built Environment (CABE) website <http://www.cabe.org.uk> Further advice can be provided by DCAL and DFP's Central Procurement Directorate (CPD).

## **2. STEP BY STEP GENERAL APPRAISAL GUIDANCE**

### **Introduction**

The Northern Ireland Preface to the Green Book introduced a 10-step approach to appraisal in an effort to simplify the practical business of carrying out an appraisal. This seems to have proved helpful and a similar approach is adopted in the *NI Practical Guide*.

The steps are broadly the same as before but there have been some modifications. For example, the assessment of risk and adjustment for optimism bias are now positioned as a new Step 6 to make clear that they should occur before the calculation of Net Present Values; and assessment of uncertainty (sensitivity analysis etc) is now grouped together with the calculation of Net Present Values within Step 8.

The steps are presented broadly in the sequence in which they should be undertaken, but this should not be interpreted rigidly. For example, it is not necessary to wait until all the options are defined before starting to consider costs, nor is it necessary to identify all the costs and benefits before beginning to identify risks and uncertainties.

However, something that may generally be interpreted rigidly is that the conclusions and recommendations should **not** be decided before the analysis is undertaken!

## 2.1 **STEP ONE:**

### **Explain the Strategic Context**

#### **Rationale for Government Intervention**

- 2.1.1 When appraising a policy or a programme, it is important to establish clearly the rationale for Government intervention, and to consider whether that intervention will be cost-effective i.e. that the benefits will exceed the costs. Section 3 explains this in more detail (see 3.1.5 below).
- 2.1.2 When considering an individual project, it is not usually necessary to review the rationale for the policy or programme to which it belongs, but it is still necessary to assess the specific need and objectives in view (see Steps 2 & 3 below).

#### **Strategic Objectives**

- 2.1.3 Public Expenditure (PE) strategy is reflected in the Programme for Government and in numerous policies, strategy documents, and statutes. Departments have entered into Public Service Agreements (PSAs) that spell out the outputs that they are to deliver in pursuit of the strategic aims. Departments, Agencies and other bodies have their own specific strategic aims and objectives.
- 2.1.4 Appraisal and evaluation reports should begin by explaining the strategic relevance of the proposed policy, programme or project. For example, they should indicate the particular strategic aims and objectives to which it will contribute, and explain specifically how it is expected to contribute to them. Reference should be made to the relevant statutes or strategy or policy documents.

## 2.2 **STEP TWO:**

### **Establish the Need For Expenditure**

- 2.2.1 Appraisals should establish that expenditure is needed. The proposed service provision or financial assistance needs to be justified, and it should be established that the chosen level of service or assistance is appropriate.
- 2.2.2 Business needs should be reviewed. The need to continue service provision should not be taken for granted. In some cases it may be appropriate to consider scaling down provision or ceasing it altogether.
- 2.2.3 Where appropriate, details should be given of deficiencies in current services, or in the assets or other resources used to deliver them.
- 2.2.4 Relevant projections of the future nature and levels of demand for services over time should be provided, suitably quantified. For example, projections of school enrolments, hospital caseloads, road traffic growth, numbers of trainee places required. These future projections should be set in context by providing historical evidence of the development of need e.g. figures for the past 3 to 5 years.
- 2.2.5 Projections of need or demand should be quantified and details of supporting calculations and assumptions should be provided.**
- 2.2.6 The need for a project is related to its potential benefits but these should normally be treated separately, i.e. need should be dealt with at Step 2 and benefits should be handled at Steps 5 and/or Step 7. A description of potential benefits does not usually amount to a justification of the need for a project. It is acknowledged that some projects are “benefits-driven” but even then it is usually possible to distinguish the need or demand for a particular service from the potential benefits of particular options.
- 2.2.7 In the case of financial assistance to the private, voluntary or community sectors, it is essential to establish that the Additionality criterion is satisfied. This is explained in Section 4.3 below.

## 2.3 STEP THREE:

### Define the Objectives and Constraints

2.3.1 Objectives must be stated so that it is clear what proposals are intended to achieve. The objectives of individual proposals should be consistent with statements of government policy, departmental or agency objectives, departmental Public Service Agreements (PSAs), and wider macro-economic objectives.

2.3.2 Objectives can often be specified in terms of a hierarchy of outcomes, outputs, and targets that should be clearly set out in an appraisal:

- **Outcomes:** These are the eventual benefits to society that proposals are intended to achieve. Often, objectives will be expressed in terms of the outcomes that are desired.

*Examples: improvements in health or education.*

- **Outputs:** Sometimes outcomes cannot be directly measured, in which case it will often be appropriate to specify outputs, as intermediate steps along the way. Outputs are the results of activities that can be clearly stated or measured and which relate in some way to the outcomes desired.

*Examples: numbers of patients treated, numbers of pupils achieving exam results.*

- **Targets** can be used to help progress in terms of producing outputs, delivering outcomes, and meeting objectives.

*Examples: the number of extra treatments or pupil places provided by a certain date.*

2.3.3 Objectives should initially be stated broadly enough so that a wide range of options to meet them can be identified. However, they must be developed in more specific detail, including targets that are "**SMART**" - **S**pecific, **M**easurable, **A**chievable, **R**elevant and **T**ime-dependent:

- Objectives must be defined in specific detail, in order to:
  - provide a clear basis for identifying and defining options,
  - enable appraisal of how well the options perform,

- facilitate ex post evaluation, and
  - provide for accountability.
  - It is particularly important that objectives are **measurable** – otherwise it will not be possible to gauge whether or how well they have been achieved.
  - Vague, qualitative objectives do not provide for any of these things and should be avoided.
  - Objectives should not normally be expressed in terms of inputs – however, targets for the process of project implementation should be stated, including, for example, milestones for achievement of various stages.
  - Where there are numerous objectives, or there is a potential conflict between objectives, it is helpful to indicate their relative priority, both to inform option assessment and to assist in post project evaluation.
- 2.3.4 Important constraints upon the proposals should be explained. These may be technical, legal, financial or political in nature, or they may have to do with timing or location.
- 2.3.5 Sometimes an existing policy commitment may be regarded reasonably as a constraint upon appraisals, but this should not always be taken for granted. Policies may deserve to be reviewed, particularly when a significant time has elapsed since they were decided. This can apply equally to other apparent constraints - they may be reasonable in some cases but should not always be taken at face value.
- 2.3.6 Objective setting should normally precede option appraisal. However, if circumstances change, or as appraisal reveals more about the options, it can be appropriate to revisit initial objectives and revise them during the course of an appraisal.
- 2.3.7 Output specification generally should occur only after needs and objectives have been identified, but the precise point at which it occurs thereafter may vary. Specifying the required outputs involves asking questions about the degree to which need should be met, and the level and type of outputs that should be provided. This may require consideration of strategic options. In some cases, the scope for varying outputs may be constrained, in which event output specification can occur at a relatively early stage. For example, it tends to happen early in schools projects, where the Building Handbook specifies the outputs appropriate for various enrolments. However, in other



cases it may be appropriate to conduct detailed appraisal of alternatives offering different levels of output, before selecting a particular output specification.

**The following questions may help to set suitable objectives and targets:**

- What are we trying to achieve? What are our objectives? What would constitute a successful outcome or set of outcomes?
- Have similar objectives been set in other contexts that could be adapted?
- Are our objectives consistent with strategic aims and objectives as set out, for example, in the department's PSAs?
- Are our objectives defined to reflect outcomes (e.g., improved health, crime reduction or enhanced sustainable economic growth,) rather than the outputs (e.g. operations, prosecutions or job placements), which will be the focus of particular projects?
- How might our objectives and outcomes be measured?
- Are our objectives defined in such a way that progress toward meeting them can be monitored?
- What factors are critical to success?
- What SMART targets can we then set? What targets do we need to meet?

## 2.4 **STEP FOUR:**

### **Identify and Describe the Options**

- 2.4.1 Comparison of alternative courses of action is at the heart of appraisal. It is only by comparing the alternatives that the real merits of any particular course of action are exposed.

#### **Long Lists, Short Lists and Feasibility Studies**

- 2.4.2 It is useful to begin by identifying a 'long list' of options, containing all the initial ideas about possible solutions. This should include not only the conventional solutions, but also any more innovative suggestions, however outlandish they may at first appear. Imaginative thinking should be encouraged. Appraisal reports should generally record all the long listed options.
- 2.4.3 Where the technical feasibility of one or more of the long-listed options is in doubt, and if there is a reasonable prospect that they will offer a VFM solution, it may be appropriate to commit resources to exploring further whether the option(s) can be delivered and at what cost. This may be considered, for instance, where particularly innovative solutions are in view. How much effort to devote to this is a matter for case-by-case judgement. Sometimes a separate 'feasibility study' report may be prepared. Such feasibility studies should be treated as inputs to the process of refining the options within an appraisal. They should not be confused with or regarded as a substitute for an appraisal or business case.
- 2.4.4 The long-listed options usually need to be sifted to produce a more manageable 'short list' of options for in-depth appraisal. This should be done according to specific, stated criteria. These may be expressed in terms of, for example, failure to satisfy the principal objectives of the proposal, or violation of important constraints regarding finance, manpower availability, policy commitments, site suitability and so on. Where options are rejected in this way, the precise manner in which they fail to meet the criteria should always be explicitly explained.
- 2.4.5 Where approval is granted in stages, as described in Section 9 below, it may be the case that some options can be ruled out at the preliminary option appraisal stage, so that the more detailed analysis is confined to a narrower range of options. However, this will not always be appropriate. In any event, good reasons should always be given for rejecting options.

## The Status Quo and 'Do Minimum' Options

- 2.4.6 The options selected for in-depth appraisal should include a baseline or benchmark option<sup>2</sup>. This should usually be the "status quo" option<sup>3</sup>, representing the genuine minimum input necessary to *maintain services at, or as close as possible to, their current level*. The status quo should normally be short-listed and appraised even where it is not considered to be a realistic option. Its function is to provide a benchmark so that the VFM of the alternative 'do something' options may be judged by reference to current service provision. The exception to this requirement is where the appraisal concerns the introduction of a wholly new service, that is, where there is no existing provision to appraise.
- 2.4.7 Sometimes the status quo may represent the realistic "do minimum" option. In other cases, (e.g. where there is a new legal imperative or a policy commitment to develop services), the realistic 'do minimum' will differ from the status quo option. In the latter case, DFP still expects the status quo to be appraised, so that the differences between current and proposed provision are fully clarified. In that event, the 'do minimum' should normally be appraised as a 'do something' option in addition to the status quo.
- 2.4.8 The amount of effort to be put into appraising the status quo requires judgement. Where it is considered to be a realistic option, it should be appraised in the same detail as the alternative options. Where it is clearly unrealistic, a less sophisticated analysis may be sufficient. However, appraisals should always provide some details of both current costs and current service provision.

## The 'Do Something' Options

- 2.4.9 Alternatives to the status quo are referred to as the 'do something' options. These should generally cover a range of levels of provision, for example, from 'minimum acceptable provision' to the highest standards of provision. They should reflect variations in the scale, content, timing and location of services. The range of options considered should be as wide as possible.

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<sup>2</sup> In keeping with HM Treasury practice, the term 'base case' is avoided here. The term base case is now reserved for 'the best estimate of how much a proposal will cost in economic terms, including allowance for risk and optimism'. Thus every option has its own base case

<sup>3</sup> Previous DFP guidance used the term "do nothing" to refer to a status quo option as described here, and people still use "do nothing" in that sense. It is sometimes confused with the option of literally doing nothing i.e. ceasing provision altogether, and for this reason the term "status quo" is considered preferable. However, the underlying meaning is unchanged.

2.4.10 Consideration should be given to alternative techniques for delivering the required outputs. Conventional approaches should be considered alongside more innovative methods.

2.4.11 The number of options to be subjected to full appraisal will vary according to the scale and significance of the proposal, the constraints under which it is conducted, and considerations of feasibility and affordability. In relatively straightforward appraisals, the number of options short-listed for full appraisal might be in the range 3 to 6 in addition to the status quo. (This is a very broad guideline, not a stipulated minimum number). In more complex cases, a larger number of options may be appropriate.

2.4.12 Alternative approaches to procurement should be appraised. The scope for solutions involving Public Private Partnerships (PPPs), including the Private Finance Initiative (PFI), should generally be considered as alternatives to traditional procurement methods. Section 5 explains how to do this. Experience suggests that PPP approaches suit some situations better than others, and resources should not be wasted investigating PPP solutions where they are clearly not appropriate. Where there is doubt over the relevance of PPP solutions, advice should be sought from Departmental PPP advisers, the Public Private Investment Unit or DFP Supply.

2.4.13 It is important to consider alternative options for funding of proposals. This is essential when appraising proposals concerning assistance to the private, voluntary or community sectors, as there will usually be various possible scales or types of funding, but it may also be important in other cases. Section 4 explains how to appraise assistance to these sectors.

2.4.14 Completion of an economic appraisal report does not necessarily bring the consideration of options to an end. For instance, changing circumstances may invalidate the report's assumptions and conclusions prior to project implementation, necessitating a review of the options. Also, identification of a preferred option is often followed by a tendering process in which bids are sought from the private sector. The principles of option appraisal should be applied at this stage in order to help determine which bid offers the best VFM.

### **Creating Options**

2.4.15 Establishing a range of options can be challenging. The *Green Book* suggests the following actions:

- Research existing reports, and consult widely with practitioners and experts, to gather the set of data and information relevant to the objectives and scope of the problem.

- ❑ Analyse the data to understand significant dependencies, priorities, incentives and other drivers.
- ❑ From the research, identify best practice solutions, including international examples if appropriate.
- ❑ Consider the full range of issues likely to affect the objective.
- ❑ Identify the full range of policy instruments or projects that may be used to meet the objectives. This may span different sorts or scales of intervention; regulatory (or deregulatory) solutions may be compared with self-regulation, spending or tax options.
- ❑ Develop and consider radical options. These options may not become part of the formal appraisal but can be helpful to test the parameters of feasible solutions. Well-run brainstorming sessions can help to generate such a range of ideas.

**Examples of strategic and operational options include:**

- ❑ Varying time and scale
- ❑ Options to rent, build or purchase
- ❑ Changing the combination of capital and recurrent expenditure
- ❑ Refurbishing existing facilities or leasing and buying new ones
- ❑ Co-operating with other parts of government
- ❑ Changing locations or sites
- ❑ Provision of the service, such as maintenance, or facility by the private sector
- ❑ Co-locating, or sharing facilities with other agencies
- ❑ Using IT to improve delivery, as part of wider organisational changes
- ❑ Transferring service provision to another body, or improving partnership arrangements
- ❑ Varying the balance between outsourcing and providing services (or retaining expertise in-house)

- ❑ Engaging the voluntary, community or private sectors
- ❑ Regulation, including private sector self regulation, and voluntary action
- ❑ Different standards or compliance procedures for different groups (e.g. large and small businesses)
- ❑ Varying quality targets
- ❑ Different degrees of compulsion, accreditation, monitoring, and inspection regimes, including voluntary codes, approved codes of practice or government regulation
- ❑ Action at a regional, national, or international level (e.g. European wide)
- ❑ Better implementation of existing measures or initiatives
- ❑ Information campaigns
- ❑ Deregulation and non-intervention
- ❑ Changes that will be permanent in the foreseeable future, or initiatives with specified time horizons

## 2.5 **STEP FIVE:**

### **Identify and Quantify the Monetary Costs and Benefits of Options**

#### **The Relevant Costs and Benefits**

- 2.5.1 The aim of appraisal is to obtain VFM from a broad economic perspective. This requires assessment of costs and benefits to the NI economy as a whole. The relevant costs and benefits include all those falling on Northern Ireland, however wider impacts upon the United Kingdom should also be appraised. In practice, there may often be little to distinguish between the NI and UK impact. However, this is not always the case. For example, a grant to a company in NI may displace business elsewhere in the UK. Such effects should always be appraised and taken into account.
- 2.5.2 In the case of cross-border projects involving the Republic of Ireland it is generally appropriate to consider both the totality of the costs and benefits, and also those falling specifically to NI and the UK. The primary aim should still be to obtain good VFM from a NI and UK viewpoint, but this should include allowance for any benefits of cross border cooperation.
- 2.5.3 Appraisals should account for all the costs and benefits to NI and UK residents. They should therefore cover costs and benefits to both the government and non-government sectors e.g. the private, voluntary and community sectors, and individual private residents. The benefits of most public spending programmes fall to private individuals, and these should be included. Where proposals involve the use of private sector or other non-government resources, these should be costed because their use represents a cost to the economy.
- 2.5.4 Following the latest HM Treasury terminology, **the term ‘base case’ is now reserved for the best estimate of costs and benefits for any option, after adjustment for optimism bias**. Thus every option has its own base case. Before discounting is applied, costs and benefits should generally be adjusted for both optimism bias and inflation. Other adjustments may be needed in some cases e.g. for tax differences among options or for displacement. Guidance on most of the necessary adjustments is given in this section together with general principles of cost and benefit measurement. The adjustment for optimism bias is explained in STEP 6.
- 2.5.5 The relevant base case costs and benefits to government and society of all options should be valued, and the net benefits or costs calculated. The decision maker can then compare the results between options to help select

the best. In this context, relevant costs and benefits are those that can be affected by the decision at hand. Although they will vary depending on the scope of the proposal, some general principles apply. It is useful early on in the appraisal process to consider widely what potential costs and benefits may be relevant.

- 2.5.6 Wider social and environmental costs and benefits for which there is no market price also need to be brought into any assessment. They will often be more difficult to assess but are often important and should not be ignored simply because they cannot easily be costed. Section 2.7 below provides more information on how to take into account the impacts of proposals that can not be expressed in money terms.

### Principles of Cost Measurement

- 2.5.7 Costs should generally be valued on an *opportunity cost* (or *economic cost*) basis. The opportunity cost of using a resource is its value in its next best alternative use (i.e. its most valuable use other than as proposed in the project). In other words, the cost to the economy of using a resource in one investment is the benefit foregone by keeping it from use in the next best investment opportunity. An emphasis on opportunities foregone is central to the way of thinking that underpins all the costings in an economic appraisal.
- 2.5.8 It is important to explore what opportunities may exist. An example is to use land in a different, more valuable, way than in its current use. Another is the alternative use of an employee's time. Full time equivalent (FTE) costs should be used to estimate the costs of employees' time, which should include not only basic salaries but also accommodation, superannuation, employer's national insurance contributions, allowances, and other overheads as indicated in the latest HMT Fees and Charges Guide.
- 2.5.9 *Current market prices* should generally be used to measure opportunity costs, because they reflect what firms, households or other entities are willing to pay to draw resources into the next best alternative use. Households and firms generally know their own costs and preferences best and have strong incentives to respond to market signals by putting their resources to their best possible use.
- 2.5.10 It is important to cost *all* the public resources used in each option, not just those for which cash will change hands, or which fall to a particular Government Department or budget. Resources should be costed even if they are already owned by the public sector; they have an opportunity cost because they could be sold or put to another use.
- 2.5.11 Costs and benefits considered should normally be extended to cover the period of the useful lifetime of the assets encompassed by the options under



consideration, although, if the appraisal concerns the contractual purchase of outputs and outcomes (e.g. in PFI), the appraisal period may be different.

2.5.12 It can be useful to distinguish between fixed, variable, semi-variable and step costs:

- ❑ **Fixed costs** remain constant over wide ranges of activity for a specified time period (such as an office building);
- ❑ **Variable costs** vary according to the volume of activity (external training costs, for example, varying with the number of trainees);
- ❑ **Semi-variable** costs include both a fixed and variable component (maintenance is an example, where there is usually a set planned programme, and a responsive regime whose costs vary in proportion to activity, i.e. the number of call-outs); and,
- ❑ **Semi-fixed, or step costs**, are fixed for a given level of activity but they eventually increase by a given amount at some critical point (e.g. after telephone call volumes reach a certain level, a new call centre may be required).

2.5.13 Categorising costs in this way can aid sensitivity analysis, but the categorisation should be used carefully. A cost that is fixed relative to one factor may change with another. More complex modelling may be required to describe how costs change over time and with different variables.

2.5.14 For substantial proposals, the relevant costs are likely to equate to the full economic cost of providing the associated goods and services, and for these proposals, the full economic cost should be calculated, net of any expected revenues, for each option. The full cost includes direct and indirect costs, and attributable overheads. The full cost of the base case for each option (i.e. the best estimate of its costs and benefits), as built up in this way, should also equal the total of the analysis of costs into their fixed, variable, semi-variable and stepped elements. A dual cost analysis of this kind enables opportunity costs to be fully considered, and sensitivity analysis to be conducted later on.

2.5.15 Appraisals leading to short-term or non-strategic decisions are likely to have a smaller set of relevant costs. The relevant costs are likely to be those that are marginal to the organisation's overall activity.

2.5.16 Cost estimation can be difficult, depending on the class of costs under consideration. It will normally involve input from accountants, economists and other specialists, depending on the type of appraisal. The appraiser needs to understand and communicate clearly the scope of the appraisal to ensure that specialists provide relevant cost information, whilst ensuring that opportunities have been thoroughly explored.

- 2.5.17 Depreciation and capital charges should not be included in an appraisal of whether or not to purchase the asset that would give rise to them (although for resource budgeting purposes they may be important). Depreciation is an accounting device used to spread the expenditure on a capital asset over its lifetime. Capital charges reflect the opportunity cost of funds tied up in capital assets, once those assets have been purchased. They are used to help test the value for money of retaining an asset. However, they should not be included in the analysis of economic costs and benefits informing the decision whether or not to purchase the asset in the first place.
- 2.5.18 Even where an appraisal covers the full expected period of use of an asset, the asset may still have some residual value, in an alternative use within an organisation, in a second-hand market, or as scrap. These values should be included, and tested for sensitivity, as it may be difficult to estimate the future residual value at the present time.
- 2.5.19 Base case costs and benefits should reflect opportunity cost values. Affordability analysis should be conducted separately. Cash flows are important for this purpose. Proposals are also likely to require resource budgets, so that it is clear how they will be funded, and, ex post, accounted for. However, cash flows and resource budgets do not reflect opportunity costs. See Step 9 for further details on appraisal of affordability.
- 2.5.20 Public spending should be cost-effective, that is, the ratio of outputs to costs should be satisfactory in relation to experience of similar cases. Judgement of this is aided by comparing the ratios for the proposal in view with those for other similar cases e.g. cost per job, cost per m<sup>2</sup> of floor space, cost per trainee place, cost per dwelling. If unit costs appear too high, the costings may need to be reviewed, or the proposal re-designed or rejected.
- 2.5.21 Assessment of cost-effectiveness is an important element in appraisals concerning assistance to the private, voluntary and community sectors and is explained in more detailed in section 4.4 below.
- 2.5.22 Expenditures that have already been incurred on goods and services, or resources that are already irrevocably committed, should be ignored in an appraisal. They are “**sunk costs**”. What matters are costs about which decisions can still be made. However, the latter includes the opportunity costs of continuing to tie up resources that have already been purchased. For example, assets such as land, buildings, machinery or vehicles that are already owned have an opportunity cost, because, if the project were not to proceed, these assets could be sold or put to an alternative use. Current market values of such assets should therefore be included as opportunity costs when appraising any option that will make use of them.

## Total Versus Incremental Costing

- 2.5.23 Costs and benefits should be measured by reference to a common baseline, to enable fair comparison of options. There are two aims in view here: to clarify the differences between the options; and to ensure that all the resources used in the project are accounted for. The approach that addresses both of these aims best is to include the **total** resource consequences of all options, including the 'status quo' baseline option. DFP generally requires this approach to be adopted.
- 2.5.24 However, the project boundary should be sensibly defined. For example, if a new management information system is to be introduced to a Department, then, in regard to staff costs, it should be sufficient to cost only the staff time directly affected by the new system, not the cost of all the Department's staff. Large blocks of cost that are common to *all* options do not need to be appraised in detail, although they should generally be indicated.
- 2.5.25 An alternative **incremental** approach is to set the baseline for cost/benefit measurement equal to those of current provision or a do minimum, so that only the costs and benefits over and above this are included for the alternative options. This incremental resource approach is less informative than the total resource method, provides poorer accountability by distracting attention from the totality of the resources devoted to a proposal, and can pose problems for post implementation evaluation. For these reasons, the total cost approach is generally required.
- 2.5.26 However, if estimating the total resource consequences of options proves difficult, for example, because of serious data limitations, some flexibility may be needed; and the relevant Departmental economist should be consulted to help determine the most suitable modified approach.
- 2.5.27 In such cases, where DFP approval is required, DFP's agreement to the use of the proposed modified approach should be sought via the appropriate Supply Officer.

## Treatment of Taxes and Subsidies

- 2.5.28 Goods and services procured by government should generally be costed **gross of tax and subsidies**. The ideal would be to assess all options net of tax and subsidies, but this is not generally straightforward and in most cases the costs of options can be compared gross of tax and subsidies without biasing the appraisal. In practice it is rarely worthwhile to adjust market prices for taxes or subsidies.
- 2.5.29 However, in some circumstances it will be appropriate to consider adjusting for taxes and subsidies. For instance, adjustment may be necessary where

land is subsidised – see 2.5.37 and 2.5.51 below. The need to make adjustment arises primarily where the tax structures of options differ very substantially in nature, such that failure to allow for differing tax treatment could distort the choice of best option.

- 2.5.30 This is particularly relevant when appraising proposals under the Private Finance Initiative (PFI), because the contractor is subject to a different tax treatment than a public provider. Departments should follow the detailed HM Treasury guidance on the required adjustments in PFI cases (see 5.12 below).
- 2.5.31 It is important to adjust for any tax differences between options arising from different contractual arrangements, such as in-house supply versus buying-in, or lease versus purchase. For example, when considering contracting out a service that was previously provided in-house, at least a part of the tax payable by the contractors and their funders would not have been paid under a “do minimum” option of continued in-house provision.
- 2.5.32 Adjustment for indirect taxes such as VAT **is not generally required**. It is appropriate only where the adjustment may make a material difference, and this is a matter for case by case judgement. However, adjustment is required where options attract different VAT conventions e.g. new build versus refurbishment. Such options should usually be compared as if *either* the same VAT payments or none were made in all options.
- 2.5.33 Where a decision is taken to exclude VAT or any other tax or subsidy from an appraisal, this fact should be noted in the appraisal report. In such cases, the excluded tax or subsidy should be accounted for in any separate financial or PE appraisal.

### **Treatment of Transfer Payments**

- 2.5.34 A transfer payment is one for which no good or service is obtained in return. Social security payments are an example. They may change the distribution of income but they do not of themselves represent direct economic costs, except for any associated costs of administration or compliance. Transfer payments should be excluded from the costs and benefits in an appraisal, but recorded separately and taken into account in analysis of PE or exchequer costs

### **Estimating the Value of Benefits**

- 2.5.35 The purpose of valuing benefits is to consider whether an option’s benefits are worth its costs, and to allow alternative options to be systematically compared in terms of their net benefits or net costs. The general rule is that benefits should be valued unless it is clearly not practicable to do so. Even if

it is not feasible or practicable to value all the benefits of a proposal, it is important to consider valuing the differences between options.

- 2.5.36 In principle, appraisals should take account of all benefits to the UK. This means that as well as taking into account the direct effects of interventions, the wider effects on other areas of the economy should also be considered. These effects should be analysed carefully as there may be associated indirect costs, such as environmental costs, which would also need to be included in an appraisal. In all cases, these wider effects should be clearly described and considered.
- 2.5.37 Real or estimated market prices provide the first point of reference for the value of benefits. There are a few exceptions where valuing at market prices is not suitable. If the market is dominated by monopoly suppliers, or is significantly distorted by taxes or subsidies, prices will not reflect the opportunity costs and adjustments may be required and specialist economic advice will be needed. An example of this is the effect of EU subsidies on the market for agricultural land.
- 2.5.38 The results of previous studies may sometimes be used to estimate the economic value of changes stemming from current programmes or policies. There will be increasing scope for using this ‘benefit transfer’ method as databases expand, though care must be taken to allow for different circumstances. The characteristics of the consumers or client group for which data exist may differ from those of the proposal under consideration. These factors can limit the extent to which values can be transferred or generalised.
- 2.5.39 In the absence of an existing robust (i.e. reliable and accurate) monetary valuation of an impact, a decision must be made whether to commission a study, and if so how much resource to devote to the exercise. Annex 2 of the *Green Book* sets out the key considerations that may govern a decision to commission research.
- 2.5.40 Where it is concluded that a research project to determine valuations is not appropriate, a central estimate, together with a maximum and minimum plausible valuation, should be included if possible. These figures should be included in sensitivity analyses to give assurance that benefit valuation is not critical to the decision to be made. A plausible estimate of the value of a benefit or cost can often be drawn out by considering a range of issues which are summarised in Annex 2 of the *Green Book*.
- 2.5.41 Most appraisals will identify some costs and benefits for which there is no readily available market data. In these cases, a range of techniques can be applied to elicit values, even though they may in some cases be subjective. There will be some impacts, such as environmental, social or health impacts,

which have no market price, but are still important enough to value separately. Annex 2 of the *Green Book* describes the relevant techniques, and provides further information on how they are being applied in practice.

- 2.5.42 Costs and benefits that have not been valued should also be appraised; they should not be ignored simply because they cannot easily be valued. All costs and benefits must therefore be clearly described in an appraisal, and should be quantified where this is possible and meaningful. Guidance on the appraisal of non-monetary cost and benefits is given at section 2.7 below.

### **Cost Savings, Efficiency Improvements and Redundancies**

- 2.5.43 Cost savings and efficiency savings or improvements may be claimed as part of the justification for projects. In such cases, the appraisal report should make it clear whether the projected cost savings are intended to result in financial savings or in re-deployment of resources. Details of the expected financial savings or planned re-deployment should be given. This is particularly important where *staff savings* are projected. Specific points to note about cost savings include:

- (i) When total costs are used for all options including the baseline option (as is generally required by DFP), cost savings are automatically accounted for in the differences in cost between the baseline option and the alternative options. In these circumstances it is *incorrect to include cost savings on the benefit side of the calculations* as this would be double counting.
- (ii) Where staff reductions are projected, a detailed analysis of them should be included separately. This should show the numbers and organisation of staff by grade prior to implementation (which should generally be the same as that assumed at the commencement of the baseline option); and how the numbers and organisation of staff by grade are expected to change year by year over the term of the appraisal under the preferred option.
- (iii) Where it is assumed that staff time savings will be taken up by extra output, or reallocation to other duties, *justification must be provided* and DFP will reserve the right to challenge the need for it.
- (iv) Redundancy payments should generally be treated as transfer payments. Details of any redundancy proposals should be explained fully in the appraisal report, including their financial implications. In some cases they may give rise to local

economic and social difficulties, in which event their impact should be assessed. Such impacts may be significant where the numbers of redundancies are relatively large and where unemployed workers with characteristics similar to those being made redundant are taking longer than average to find jobs or are becoming inactive.

### **Adjusting for Displacement**

2.5.44 Consideration should be given to Displacement. This is the degree to which a promoted activity will be offset by reductions in activity elsewhere. It is important to assess this because appraisal is about identifying a proposal's *net* impact on the UK. Displacement occurs when a grant-assisted business expansion takes business away from competitors in the same market. It also occurs where a service development in one region (e.g. of health, education, or transport services) will draw customers away from similar service provision in an adjacent region.

2.5.45 Where Displacement can be quantified in money terms, the cost/benefit streams should be adjusted to reflect the proposal's net impact. This is more likely to be the case for a business expansion than a service development. In any case, the nature and extent of anticipated Displacement should be identified and reported fully in appraisal reports. Where significant potential Displacement is foreseen, it may be appropriate to reconsider the nature or scale of the proposed service development or to refuse financial assistance. *Fuller guidance on assessing displacement is given at 4.2.7 below*

### **Multiplier Effects**

2.5.46 In most appraisals it is sufficient to cost direct or 'first round' expenditure and employment effects. Multiplier or 'second round' effects should normally be excluded on the grounds that the alternative uses to which the resources would otherwise be put would also generate multiplier effects; and differences in such effects are often difficult to distinguish with confidence or without disproportionate effort. Also, to include them in some appraisals but not in others would distort project comparisons.

2.5.47 However, in a minority of appraisals, for example, those concerned to regenerate specific sub-regions, there may be justification for calculation of multiplier effects in order to estimate the full impact of a particular proposal. Thus, there is flexibility to calculate multiplier effects in cases where they are of special interest.

## **Appraisal of Land, Buildings and other Assets**

- 2.5.48 The employment of assets including land and buildings should be costed using opportunity cost values. The valuation of property should be based on the higher of the most valuable feasible alternative use, or the best value that could be obtained for its current use.
- 2.5.49 Determining the right values requires expert advice. The District Valuer in the Valuation and Lands Agency (VLA) should be consulted on all property valuation matters relating to appraisals. This applies to all public sector appraisals, including those involving private sector consultants. DFP regards the views of VLA as authoritative, and recommends that Departments should use their services. Details of the services provided by VLA are included at 12.4.4 below.
- 2.5.50 The VLA can provide assessments of the values of land and buildings in their existing and most valuable alternative use. Where Departments require advice on the market valuation of assets, other than standing timber, a request should be made to the VLA. In circumstances where the VLA is unable to meet the request within the required timescale, advice may be sought from other suitably qualified and experienced valuation surveyors, for instance, members of the Royal Institution of Chartered Surveyors or the Institute of Revenues, Rating and Values. Where there is any dispute over individual values, DFP will rely on the views of VLA, rather than those of any other property experts.
- 2.5.51 In many cases, an up-to-date market value should provide a satisfactory measure of opportunity cost. However, valuations based on market prices reflect private rather than social costs and benefits, hence they will not always reflect opportunity costs. For example, they may not take full account of the actual or potential amenity value or environmental impact of a particular land use; or where the current use of land is subsidised, market prices may need adjustment to reflect the impact of the subsidy; or where the market value of a site is enhanced by planning permission the property should be valued to reflect the actual planning approval.
- 2.5.52 Assessing the value of buildings in their most profitable use is fairly straightforward where the building can be readily adapted to different users requirements, such as standard office accommodation. However many public sector buildings, such as prisons and hospitals, may not be readily adaptable to other purposes. In the absence of an alternative use for the buildings, the higher of the value of the site for redevelopment, and a valuation in current use of the site plus buildings, should be used. The latter can be estimated in terms of depreciated replacement cost (DRC).



2.5.53 DRC value may represent what the land and buildings are worth to the occupier, but a DRC approach is normally only used where no market exists for a property for its existing use. It would not be unusual for the alternative use value, which represents market value, to be much less than DRC value. The DRC value should not be used to represent the expected proceeds of any sale/disposal. It is unlikely that the market would pay as much as the DRC value.

2.5.54 Land and buildings should generally be costed in terms of *either* capital values or annual rents. It is normally appropriate to use capital values in appraising freehold property, properties with development value, and longer leasehold interests. In other cases it is usually appropriate to use annual rentals. Actual rent paid on leasehold property (the passing rent) will often differ from the market rent. It is the market rent that should be used in appraisal. Common errors in appraisal are either to omit the rental or capital value of land and buildings already owned, or to double count the cost by including both the capital cost and rental value.

2.5.55 Capital values of land, buildings and other assets should be attributed as costs at the beginning of any period in which they are employed by an option. Property should be costed whether or not any financial transaction is anticipated. For instance, it should be costed whether or not it is already owned or needs to be purchased. In new build cases, the cost of construction should be included. Costs of refurbishment should be included in the years in which they are expected to occur.

2.5.56 Where assets have a residual life, their residual values should be included as benefits in the year in which they are released by an option, or the last year of the appraisal period, whichever is sooner. Any enhancement of the value of a building during its life, for instance, due to refurbishment should be taken into account in estimating its residual value. Residual values should be attributed whether or not the property is to be sold or retained.

2.5.57 Double counting of the cost difference between options should be avoided. It is generally sufficient to cost in the alternative option(s) the sites actually employed in those options. For example,

- ❑ suppose there is an option to use a site already in ownership worth £5,000 ("Option 1") and an alternative option to acquire and use another site worth £8,000 ("Option 2").
- ❑ The difference in cost between these options is adequately reflected by including a cost of £5,000 in Option 1 and a cost of £8,000 in Option 2.
- ❑ It would be incorrect to add a benefit of £5,000 to Option 2 to reflect the sale or release of the owned site.

- That would give the misleading impression that Option 2 is less costly than Option 1 by £2,000; whereas it is more costly by £3,000.

2.5.58 Deciding the correct treatment of opportunity costs can be less straightforward than in the above example. For instance,

- suppose there is another alternative (“Option 3”) that involves employing the £5000 site for the first two years and then moving the function to a new £8000 site.
- In this case, £5000 should be included as an opportunity cost at the start of the appraisal period;
- a residual value for the same site should be included as a benefit in Year 2;
- an opportunity cost of £8000 should also be included in Year 2; and
- a residual value for new site should be included at the end of the appraisal period.

2.5.59 In some cases it may be helpful to separate the value of the land from the buildings. This is because buildings usually depreciate in real terms over their lifetime but site values may appreciate or depreciate. For instance, site depreciation may be attributable to, for example, contamination, mineral workings, or poor ground conditions.

2.5.60 Appraisals should include any land price appreciation as a consequence of the project or programme. This may occur with appraisals of urban regeneration projects, or of flood protection. In such cases great care is needed, as the appreciation itself is likely to be most uncertain. Expert advice is required.

2.5.61 Costs to the public sector as a whole must be taken into account in the appraisal calculation. This will be important in the case of jointly occupied buildings where there might be difficulties in finding a replacement tenant if one occupier were to quit, so imposing additional costs on the major occupier.

2.5.62 Allowance should be made for an appropriate level of ongoing maintenance costs. If maintenance is not carried out to an appropriate standard this will be reflected in the increased costs of refurbishment, or reduced sale price of a freehold property, while in the case of leasehold property dilapidations payments will be incurred at the termination of the lease.

2.5.63 Costs of providing temporary accommodation and other costs of decanting staff should be included in appraisals.

- 2.5.64 When a building requires refurbishment, the relative merits of refurbishment, and alternative options such as redevelopment, relocation and disposal should be appraised.
- 2.5.65 Where possible, appraisals should include both freehold and leasehold options to test both for value for money.
- 2.5.66 The time period for appraisal should relate to the life of the services being provided and be sufficiently distant to cover all the important cost and benefit differences between options. The appropriate period may be shorter than the physical life of the buildings, or longer than the period for which they are leased. A time period of about 25 years is typically used, with suitable allowance for refurbishment costs and residual values. However, there is flexibility to tailor the time period to suit the circumstances of the case in hand.
- 2.5.67 Property issues are important in appraisals concerning options for accommodation of civil servants. Procedures for undertaking accommodation appraisals are set out in section 7 of the *NI Practical Guide*.
- 2.5.68 Annex 3 of the *Green Book* contains more detailed guidance on the treatment of land and buildings in appraisal. However, the issues can be complex and the Valuation and Lands Agency (VLA) of the Department of Finance and Personnel should be consulted where there is any doubt about the correct treatment.

### **The Acquisition and Disposal of Assets**

- 2.5.69 Departments have a duty to dispose of property surplus to requirements within three years and should not hold land speculatively. Departments should seek the advice of the VLA when considering disposal of surplus property.
- 2.5.70 Projects should not use more land than is cost effective. Available plots of land for new developments may not precisely match requirements, but where a plot exceeds requirements the surplus should be disposed of as soon as possible.
- 2.5.71 Decisions involving the acquisition or disposal of assets require the application of appraisal with proportionate effort, including, for example, examination of different options and their associated costs and benefits.
- 2.5.72 The use of appraisal is intended to ensure that Government acquires an asset only where the resulting benefits are greater than or equal to the cost of the asset including any revenue costs. Similarly Government when

- considering the disposal of an asset should ensure that the options open to it have been subject to appraisal.
- 2.5.73 The market valuation of the asset will be one of the information requirements of an appraisal involving acquisition/disposal of assets. In rare cases the market value of assets may differ from the economic or resource cost values that should be used in an appraisal. For example the market price of agricultural land may reflect the value of agricultural subsidies in addition to resource costs, and may need to be adjusted downwards accordingly. In such cases it is advisable to seek expert advice in order to make the necessary adjustments.
- 2.5.74 Disposal of property, the sale of freehold property, or the assignment or subletting of leasehold property, will generally involve significant costs, e.g. legal fees, marketing costs and removal costs. In a depressed market the timing of disposal must be appraised. VLA can advise on this. Timing will be critical where there is excess supply in the market for the particular type of accommodation, or where the property is 'over rented'. In such cases it might be possible to dispose of a lease by paying a reverse premium, which will be at least equal to the present value of the difference between the passing rent and the market rent until the market improves or the termination of the lease.
- 2.5.75 Strenuous efforts should be made to dispose of surplus property; but in poor markets it may be necessary to include in an appraisal the costs of holding the property until disposal, or to cover such initiatives as refurbishment to enhance marketability.
- 2.5.76 The service provided by the VLA is intended to provide Departments with assessments of the *open market* values of assets in order to ensure that Government obtains the highest possible price for an asset which it decides to sell and pays no more than a reasonable market value for an asset which it decides to purchase. Apart from exceptional circumstances, and then only with the prior approval of DFP, Departments should not:-
- (a) propose to acquire assets at a price in excess of open market value notwithstanding the appraisal results;
  - (b) consider disposal restricted to open market value where the appraisal indicates a higher continuing operational use value to Government.
- 2.5.77 Under the 1994 "Efficiency Scrutiny into the Management and Disposal of Government owned Property", Departments, together with the VLA's Central Advisory Unit (CAU), are now charged with adopting a more active strategy towards disposals. Through the introduction of formal property audits,

Departments in future will be required to justify the retention of all property assets.

- 2.5.78 Departments should note that the requirement to undertake an appraisal embraces cases that fall within the terms of DAO(DFP)3/99 and the associated CAU guide "Disposal of Surplus Land and Buildings by Public Sector Bodies". Use of appraisal in these circumstances will serve to highlight the costs which would be incurred by Government should the market price prove to be inadequate to fully compensate for net benefits foregone. The amount and depth of analysis required however will of course vary from case to case and will, among other things, depend on the size of the asset to be disposed of.

## **Checklist of Typical Capital and Revenue Costs and Benefits**

Costs and benefits to be covered by an appraisal will typically include:

- (i) **initial capital costs**, such as:
  - purchases of land and buildings, including accommodation for staff, computers, equipment and vehicles;
  - purchases of equipment, vehicles, hardware and software;
  - installation and implementation costs;
  - development costs including staff costs and consultancy fees;
  - testing;
  - training;
  - special furniture;
  - infrastructure and works services;
  - communications; and
  - initial security and contingency costs.
- (ii) **opportunity costs**, based on up-to-date market valuations, of capital assets which are already in public ownership, such as land, buildings, equipment and vehicles.
- (iii) **replacement costs** required during the appraisal period. These may be needed in respect of any of the capital assets employed on the project.
- (iv) **staff costs** recurring throughout the appraisal period, including not only salary costs but also the costs of accommodation, superannuation, employers' national insurance contributions, allowances and other overheads as set out in the current HM Treasury's Fees and Charges Guide (HMSO, 1992. *A new edition is due in 2003*). Double counting should be avoided e.g. if the purchase cost of a new building for staff has already been included, then it would be incorrect also to include an allowance for accommodation within annual staff costs. Relevant staff may include those involved in:
  - management;
  - operation;
  - support; and
  - ongoing training.

- (v) **operating costs** recurring over the whole term of the appraisal, such as:
- maintenance charges;
  - licensing and support costs;
  - bureau services;
  - leasing and rental costs;
  - recurring contingency and security costs;
  - energy costs;
  - rates; and
  - cleaning.
- (vi) **residual values** of capital assets used in options, either at the end of the appraisal period, or in the year in which they are released from use, whichever is sooner.
- (vii) any other costs and benefits that can be valued in money terms, such as **revenues**.
- (viii) costs and benefits affecting **other parts of the public or private sectors**.
- (ix) Quantified measures, or at least descriptions, of those **costs, benefits or impacts which can not be measured in money terms**.

## 2.6 **STEP SIX:**

### **Assess Risks and Adjust for Optimism Bias**

2.6.1 In appraisals, there is always likely to be some difference between what is expected and what eventually happens, because of biases unwittingly inherent in the appraisal and material risks and uncertainties.

2.6.2 The analysis of risks and uncertainties is a key element in appraisal. The NIAO has stated that appraisals must be based on sound and realistic assumptions, and costings that address risks and uncertainties.<sup>4</sup> The analysis has four broad purposes:

- (a) To adjust assumptions about costs, benefits and timing to allow for optimism bias
- (b) To inform decisions on how best to manage risks, by drawing attention to risk factors which require particularly careful monitoring and management, and enabling suitable risk management measures to be built into the project plan;
- (c) To decide how best to allocate risks between the public and private sectors; and
- (d) To inform the option selection decision, by examining how risks and uncertainties affect NPVs and the balance of advantage between options.

2.6.3 Paras 5.57 to 5.75 and Annex 4 of the *Green Book* deal with these in some detail. Item (c) above is chiefly relevant to PPP proposals. There is extensive separate guidance on PPP issues, including the treatment of risks. See section 5 of the *NI Practical Guide* for more details. Item (d) is dealt with under STEP 8 below. This section of the *NI Practical Guide* concentrates on basic principles relating to items (a) and (b) above. It covers the following elements of risk analysis:

- Identify and Analyse Risks
- Adjust for Optimism Bias
- Risk Management and Risk Reduction Strategies

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<sup>4</sup> Grants Paid to Irish Sport Horse Genetic Testing Unit Ltd, NIAO report HC 396, para 52.



## Identify and Analyse Risks

- 2.6.4 Risk arises because of the possibility of more than one outcome occurring. This possibility may exist because, for example:
- construction costs depend on ground conditions, or the weather;
  - operating costs depend on the success of a new technology;
  - the demand for an outcome or output depends on future incomes;
  - there are uncertainties about future wage or fuel costs, or changes in consumers' tastes, or competition from other suppliers.
- 2.6.5 No matter how robust the assumptions about these and other factors, there will still generally be risks to consider, and there will be uncertainty over the range of possible outcomes.
- 2.6.6 A distinction may be drawn between a *risk*, which is measurable and has a known or estimable probability, and an *uncertainty*, which is more vague and of unknown probability. In practice, this distinction is not always clear cut however the *NI Practical Guide* uses the term risk in STEP 6 and uncertainty in STEP 8.
- 2.6.7 *Variability*, or *Variance*, is the spread of possible outcomes around an expected outcome. All projects have a range of possible outcomes, although the range will be wider, and variability more important, for some cases than for others. For instance, the range may be wider for cases involving new technology.
- 2.6.8 In general, for proposals where the benefits and costs accrue to the community as a whole, the cost of variability is so small relative to the margin of error in appraisal or evaluation as to be negligible, and Government may be regarded as *Risk Neutral*. In other words, decisions should be based on expected outcomes, not their variability.
- 2.6.9 However, there may be some situations where it is appropriate to take account of variability as well as expected outcomes and be *Risk Averse* i.e. be inclined to reject certain risky investments despite positive expected outcomes. For instance, this may apply where risk is:-
- *concentrated* i.e. where risks are large relative to the income of the section of the population that must bear them; and
  - *systematic* i.e. where variability is correlated with income e.g. where better outcomes from a project or policy are likely to accrue in good times and worse in bad times.

- 2.6.10 If a set of circumstances or course of action or inaction could lead to a very adverse outcome, even if with a very small probability, action to avoid that outcome may be appropriate. This is the “precautionary principle”. It also applies where the probability attaching to a possible outcome involving significant harm is uncertain. In such circumstances, it may be appropriate to consider precautionary action specifically to mitigate or avoid the risk of the particular outcome. An example would be restrictions on movements of people and cattle during an outbreak of foot and mouth disease.
- 2.6.11 Where a project or programme risks potentially irreversible consequences (e.g. it would rule out important subsequent investment opportunities or a use of resources that might subsequently be preferred) this should be carefully appraised. Examples of irreversibility are destruction of natural environments or historic buildings.
- 2.6.12 Some projects expose the government to contingent liabilities – that is commitments to future expenditure if certain events occur. These should be appraised (and monitored if the proposal goes ahead). One class of contingent liabilities is the cancellation costs for which the government body may be liable if it terminates a contract prematurely. Such liabilities, and the likelihood of their coming about, must be taken into account in appraising the initial proposal. Redundancy payments fall into this category, but as the wider social and economic consequences of these should also be assessed, advice from economists should be sought.
- 2.6.13 A vital first step in the analysis is to identify and analyse the important risks and uncertainties relevant to the case, and to show how they compare under each option. This risk analysis should help inform the adjustments for optimism bias and identification of risk management and reduction measures (see below). It is good practice to summarise the relevant information in a tabulation, called a *Risk Log* or *Risk Register*, which identifies each relevant risk and compares how it impacts upon each option. This should cover not only the 'economic' risks and uncertainties, such as possible variations in cost/benefit assumptions, but also relevant managerial, legal, financing and other risks and uncertainties. Textual description should be accompanied by *quantification* where possible. A *Risk Log* should contain the following information:
- Risk number (unique within register)
  - Risk type
  - Author (who raised it)
  - Date identified
  - Date last updated
  - Description

- Likelihood
- Interdependencies with other sources of risk
- Expected impact
- Bearer of risk
- Countermeasures
- Risk status and risk action status

2.6.14 The Office of Government Commerce (OGC) website provides an example of a risk log and further information on risk identification and management. See <http://www.ogc.gov.uk>

### **Adjusting for Optimism Bias**

2.6.15 There is a demonstrated, systematic tendency for project appraisers to be overly optimistic. This is a worldwide phenomenon that affects both the private and the public sectors. Many project parameters are affected by optimism; appraisers tend to overstate benefits and understate timescales and costs, both capital and operational. It may occur, for example, through failing to reflect fully the chances of cost underestimation or time overruns; or by including projections of demand that are too generous.

2.6.16 To redress this tendency, HM Treasury has developed an approach that is designed to complement rather than replace the good practice work that is often currently undertaken to identify project-specific risks. It requires appraisers to make explicit adjustments and thus determine a suitably optimism bias-adjusted NPV for each option. These adjustments will have the effect of increasing the cost estimates, decreasing the projected benefits and extending the timescales over which the costs and benefits are assumed to accrue, compared to the initial unadjusted estimates for each option.

2.6.17 NI Departments should follow the guidance in Annex 4 of the *Green Book* on how to deal with optimism bias in relation to capital works, works duration, operating costs, and under-delivery of benefits; and on how to prevent or minimise optimism bias. Further HM Treasury guidance, including adjustment percentages for generic project categories based on a study by Mott MacDonald, is given in 'PDF file on supplementary guidance on the treatment of optimism bias' on the HMT website *Green Book* page at [http://www.hm-treasury.gov.uk/economic\\_data\\_and\\_tools/greenbook/data\\_greenbook\\_index.cfm](http://www.hm-treasury.gov.uk/economic_data_and_tools/greenbook/data_greenbook_index.cfm)

- 2.6.18 The principles in Annex 4 of the Green Book and in the HMT supplementary guidance should be applied with proportionate effort in a manner that suits the circumstances of NI Departments. **Wherever possible, the relevant adjustments should reflect local experience in preference to use of the HMT generic figures.** They should be based on data from past projects or similar projects elsewhere, and adjusted for the unique characteristics of the project in hand. When such information is not available, Departments are encouraged to collect data to inform their estimates of optimism, and in the meantime use the best available data.
- 2.6.19 In any case, Departments should be satisfied that the adjustments made are realistic and justifiable in relation to local experience. They should represent a meaningful effort to improve the quality of assumptions rather than arbitrary percentage adjustments.

### Adjusting for Optimism Bias Step-by-Step

The HM Treasury supplementary guidance provides recommended adjustment ranges and advocates a 5-step approach to adjustment:

1. **Decide which project type(s) to use** e.g. Is it a building or civil engineering project? Is it 'standard' or 'non-standard'?
2. **Always start with the upper bound** i.e. select the appropriate upper value from the recommended range of adjustments.
3. **Consider whether the optimism bias factor can be reduced** according to the extent to which the contributory factors have been managed and mitigated.
4. **Apply the optimism bias factor** i.e. multiply the relevant cost or benefit estimate by the OB factor and add the result to the estimate.
5. **Review the optimism bias adjustment** and reduce it where this is justified by further mitigation of contributory factors.

See the HMT supplementary guidance for a detailed explanation of these steps including worked examples.

- 2.6.20 Adjustment for optimism bias is a relatively new concept but from experience to date a number of issues arise. Firstly, the application of adjustment factors should not be a one-off event in the life of a project. In fact it should be regarded simply as a starting point for dealing with appraisal optimism. As a project proceeds, risk management should be applied to mitigate factors identified as contributing to appraisal optimism, allowing the adjustment factors to be amended accordingly. Thus the optimism bias-adjusted (or "OB-adjusted") NPV for each option should be refined over time.

- 2.6.21 It follows that business cases should show evidence of progressive reduction in the adjustments made for optimism bias. In general, the allowances for optimism bias should be largest in a high-level business case (for instance a Strategic Outline Case), smaller in a more detailed business case (such as an Outline Business Case), and smallest in a fully developed business case (a Full Business Case). Large allowances for optimism bias will not normally be acceptable in a Full Business Case. If optimism bias remains high at Full Business Case stage, approval may be withheld pending further research, costing and risk management.
- 2.6.22 It is plausible that some high-level business cases might have fairly low allowances for optimism bias, where for instance there is a long track record of successful projects (say, if building the 8th of 10 standard workspace units) or if the project is concerned with off-the-shelf products or where there are published prices (e.g. buying a fleet of cars or vans).
- 2.6.23 Optimism bias must be assessed individually for each option. Different options can be expected to be subject to different risks and as a result different levels of optimism bias. For example accommodation options involving new build on an unidentified site will have different risk factors than options involving, say, new build on a known site, refurbishment, rent and fit-out, purchase and fit-out, or temporary accommodation.
- 2.6.24 Where costs consist mostly of revenue costs (for instance staff costs) and capital expenditure is low in both absolute terms and relative to the NPC then there may be little value in adjusting costs for optimism bias. However, in such cases the appraisal should state the rationale behind any decision not to adjust for optimism bias to demonstrate that it has at least been considered. This would not affect the need to consider optimism bias adjustments for project duration and benefit shortfall.
- 2.6.25 Some costs and other assumptions may not be amenable to adjustment for optimism bias because the uncertainty surrounding them is due more to market conditions or the general economic climate than optimism. For example, rents assessed by VLA are based upon current market conditions but rents may go up or down in the future due to demand and supply in the market. Such assumptions should be tested using sensitivity analysis (see STEP 8 below).
- 2.6.26 The funding provision for a project including contingency allowances should be sufficient to cover expenditure after adjustment for optimism bias. As optimism bias adjustments are reviewed and reduced during the development of a business case, the corresponding estimates of required funding should be revised accordingly.

2.6.27 Business cases should demonstrate that optimism bias has been considered and that appropriate adjustments have been made. Full details of the adjustments made including all calculations should be shown. Where optimism bias adjustments are reduced on account of mitigation of contributory factors, the reductions should be explained and clear evidence supporting the mitigations should be provided.

### **Risk Management and Risk Reduction Strategies**

2.6.28 Active risk management strategies should be adopted for the appraisal and implementation of large policies, programmes or projects, and risk management principles should be applied to smaller proposals. Before and during implementation, steps should be taken to prevent and mitigate both risks and uncertainties. It is important to be transparent with sponsors about the potential impact of risks and biases in proposals.

2.6.29 Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the policy, programme or project lifecycle. It involves a series of well-defined steps to support better decision making through good understanding of the risks inherent in a proposal and their likely impact. Risk management includes:

- Identifying possible risks in advance and putting mechanisms in place to minimize the likelihood of their materialising with adverse effects
- Having processes in place to monitor risks and access to reliable up to date information about risks
- The right balance of control in place to mitigate the adverse consequences of the risks, if they should materialise; and
- Decision-making processes supported by a framework of risk analysis and evaluation

2.6.30 Following identification and analysis of risks, generation of a OB-adjusted expected NPV, and assessment of options' exposure to uncertainty, appraisers need to consider and adopt strategies to prevent and mitigate risks and uncertainties. Steps to be considered include:

- **early consultation** - to identify needs at the outset and avoid costs increasing later due to poor initial understanding of requirements
- **deferring irreversible decisions** - to allow more time to investigate mitigating measures or alternative ways to achieve objectives
- **pilot studies** - to acquire more information about risks and take steps to mitigate adverse consequences or increase benefits

- **design flexibility** - increasing the flexibility of designs to make proposals more robust against changes in future demand
- **taking precautionary action** - to reduce the risk of a very bad outcome, even where the probability is considered small
- **transferring risk to the private sector** - through contractual arrangements e.g. insurance. (The *Green Book* elaborates on ways to transfer risk)
- **making less use of leading edge technology** - where simpler methods can reduce risk considerably
- **reinstating or developing different options** - where risk analysis suggests this is worth doing
- **commissioning research** - to confirm or disprove the reliability of new technology, or to reassess the nature of a danger
- **undertaking site investigations** - to reduce risks from unforeseen ground conditions or refurbishment costs
- **staging a project** - so that it can be altered at successive review points
- **abandoning the project** - because it is too risky.

2.6.31 Business cases should report on all activity undertaken regarding Identification and analysis of risks and uncertainties, adjustment for optimism bias, assessment of uncertainty, risk management and risk reduction strategies.

## 2.7 STEP SEVEN:

### Weigh Up Non-Monetary Costs and Benefits (including New TSN and Equality)

- 2.7.1 Where possible, costs and benefits should be valued in money terms, using techniques such as those presented in Annex 2 of the Green Book. However, it is not always cost-effective or practical to value costs and benefits in money terms. In many assessments there are non-monetary impacts such as environmental, social or health effects that can not be valued cost-effectively. These non-monetary costs and benefits must be taken into account and should not be assumed to be any less important than the monetary values. They may be crucial to the decisions needed.
- 2.7.2 The aim therefore is to find a suitable way to assess non-monetary factors and present them alongside the money values. In the simplest cases, it may be adequate just to list and describe them. However, it will often be appropriate to use a more sophisticated technique. The umbrella term Multi-Criteria Analysis (MCA) is frequently used to describe the range of techniques available.
- 2.7.3 MCA brings structure and transparency to judgement of how options compare regarding factors that are not expressed in money values. It should generally relate closely to the stated objectives of the project, and consists of comparative assessments, both quantitative and qualitative, of how well each option meets the objectives. Sometimes the stated project objectives are sufficient to serve as the relevant criteria for the MCA, in other cases they may need to be developed into a set of more detailed criteria.
- 2.7.4 The nature of the option assessment can vary from (in the simplest cases) qualitative description, or ticking a box to indicate that an option satisfies a particular constraint; or (in larger or more complex cases) measurement of impact in suitable non-monetary units, or the use of relative weights for each criterion and explicit scoring or ranking of each option.
- 2.7.5 MCA techniques include, for example:-
- *Impact statements or performance matrices.* This method tabulates the impact of each option upon each non-monetary factor. This is a versatile approach that is generally recommended by DFP - see para 2.7.9 below for explanation.
  - *The weighted scoring method.* This involves assigning numerical weights to each factor to reflect its comparative importance; scoring the performance of each option against each factor on a





## Impact Statement

|             | Option 1 | Option 2 | Option 3 |
|-------------|----------|----------|----------|
| Objective 1 |          |          |          |
| Objective 2 |          |          |          |
| Objective 3 |          |          |          |

2.7.10 If the weighted scoring method is used, DFP requires the figure work to be supplemented by explanations of:-

- what the chosen non-marketed outputs (or "attributes") mean;
- why particular weightings have been chosen; and
- the reasoning behind the choice of each option score.

Failure to explain weights and scores properly has been a feature of a number of past appraisals, and can delay approvals. DFP will not accept figures that are not fully explained.

2.7.11 In some cases the primary concern of an appraisal may be to determine the least-cost option for achieving a specified level of service provision. However, even in these cases there may be a need to appraise benefits as well as costs. It is rarely the case that options offer identical benefits; there will usually be some differences in performance that need to be appraised along with the cost information.

### Integrated Impact Assessment

2.7.12 An inter-Departmental group led by the Economic Policy Unit of OFMDFM has produced guidance on and a tool to assist with **integrated impact assessment**. These are tailored specifically to suit local policy requirements and are available at <http://www.ofmdfmni.gov.uk/ia>. They are being piloted initially but are available for use by Departments as a good practice tool. More detailed guidance is available on specific types of impacts, for example health, environment, or equality impacts, both via the IIA website and directly from the relevant Departments or, in the case of equality, the Equality Commission (see reference at 2.7.18 below). Departmental economists can advise on the more specific guidance that is available.

### **Distributional Effects (including New TSN and Equality)**

- 2.7.13 Policies, programmes and projects may give rise to distributional effects, for example, between people of different incomes, ages, genders, religions, ethnic groups, health states, skills, or locations. Expenditures or other policy proposals often lead to both gainers and losers, and information on how the costs and benefits are distributed among different individuals, organisations, or sectors of the economy can be very important. In general, proposals that deliver greater net benefits to lower income groups should be rated more favourably than those that benefit higher income groups.
- 2.7.14 Significant distributional effects should be identified and, as far as possible, quantified in appraisals and evaluations. How the options differ regarding these effects should be analysed in much the same way as for other non-monetary factors. For instance, where an impact statement is being used, the distributional impacts should be summarised in it, together with those of all the other non-monetary factors. Alternatively, they may be scored as attributes in a weighted scoring exercise.
- 2.7.15 The new *Green Book* lays greater emphasis upon assessment of distributional impacts. Paras 5.33 - 5.41 and Annex 5 of the new *Green Book* give general guidance on the subject. DFP generally endorses this guidance. However, in Northern Ireland particular attention should be paid to local policies and legislation including, for example, the *Statutory Equality Obligations of the Northern Ireland Act 1998* and the Government initiative of *New Targeting Social Need* (New TSN). Further details of how to assess equality impact and New TSN impact are given below.
- 2.7.16 The *Green Book* includes a method for applying explicit distributional weights. NI Departments should consider this method carefully before deciding to use it. Clearly, it is only applicable in cases where benefits to income groups are actually valued monetarily, and this can require a substantial effort in terms of information collection and analysis. Judgement of the appropriate approach should be informed by consideration of the scale and significance of the distributional impact of the proposal in view; and the ease or cost-effectiveness with which distributional impacts can be measured.

### **Equality of Opportunity**

- 2.7.17 Section 75 and Schedule 9 of the Northern Ireland Act 1998 came into force on 1st January 2000 and provided the legislative basis for the replacement of the previous Policy Appraisal and Fair Treatment (PAFT) guidelines. The legislation places a statutory obligation on public authorities (including some UK Departments operating in Northern Ireland) in carrying out their functions, to have due regard to the need to promote equality of opportunity

between the range of social categories (i.e. religious belief, political opinion, gender, marital status, having or not having dependants, ethnicity, disability, age, or sexual orientation); and, without prejudice to this obligation, to have regard to the desirability of promoting good relations between persons of different religious belief, political opinion or racial group.

- 2.7.18 The main vehicle by which a public authority fulfils its statutory obligations is through its Equality Scheme and the commitment to carry out Equality Impact Assessments (EQIAs) on new policies which satisfy the screening criteria set out in the Equality Commission for Northern Ireland “Guide to the statutory duties” (pages 36 and 37). The Guide can be found on the Commission’s website at [www.equalityni.org](http://www.equalityni.org) (click on ‘Recent Publications’ and then ‘Statutory Duty’). The Commission has also issued guidelines on carrying out EQIAs, “Practical Guidance on Equality Impact Assessments” which can be found at the same website.
- 2.7.19 The legislation only requires an EQIA for new policies that meet the Equality Commission’s screening criteria. However, this does not mean that equality issues are irrelevant in other cases. When appraising or evaluating other policies (i.e. existing policies and new policies that do not meet the screening criteria) and individual projects, it is still important to consider whether there will be any equality impact. In some cases, there may be no significant equality issues at all. In other cases, there may be some equality impacts to take into account, in which event the principles in the EQIA guidance may be applied, with proportionate effort. The appropriate depth of analysis is a matter for judgement depending upon the importance of the equality issues in individual cases.
- 2.7.20 Equality Impact, where relevant, should be taken into consideration in the broadly the same way as Environmental Impact, Health Impact, Transport Impact and so on - but subject to the proviso that is backed by a statutory equality duty. As noted above, the Equality Commission has issued specific guidance on how to conduct an EQIA, and they can offer advice to Departments on their requirements under the statutory obligations. The Equality Directorate within OFMDFM provides general advice on equality issues – see 12.4.8 below for contact details. In addition, all Departments have Equality branches, usually located within Central Management Units. The IIA website includes pro formas which can be used for equality screening and for documenting the results of an EQIA.

### **New Targeting Social Need (New TSN)**

- 2.7.21 New TSN was announced in the *Partnership for Equality* White Paper (Cm 3890) published in March 1998. Its aim is to tackle social need and social exclusion in Northern Ireland by targeting its efforts and available resources on people, groups and areas in greatest social need. New TSN targets

social need objectively, wherever it is found, and does not favour or discriminate against any section of the community. It is complementary to the Statutory Equality Obligations, but has a different focus.<sup>6</sup> New TSN comprises three complementary elements:

- It has a particular focus upon tackling the problems of unemployment and increasing employability
- It aims to tackle inequalities in areas such as health, housing and education, and the problems of disadvantaged areas
- It includes Promoting Social Inclusion (PSI), through which Departments work together, and with partners outside Government, to identify and tackle factors which can contribute to social exclusion; and to undertake positive initiatives to improve and enhance the life and circumstances of the most deprived and marginalised people in our community.

2.7.22 New TSN is not a spending programme. There is no separate New TSN budget. It is a policy running through all relevant existing spending programmes, across all Northern Ireland Departments, including Next Steps Agencies, Non-Departmental Public Bodies and North-South Implementation Bodies. It means changing the way they target the money they have, so that more of it can be used to benefit those who are most disadvantaged.

2.7.23 Appendix 5 explains how to take appropriate account of New TSN in economic appraisals and evaluations. Further general information is given in the New TSN Annual Reports. Personnel seeking to address New TSN in appraisals and evaluations should have a grasp of the contents of these and subsequent Annual Reports and Action Plans. General advice on New TSN is available from the New TSN Unit - see 12.4.8 for contact details.

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<sup>6</sup> New TSN should contribute to the aims of Statutory Equality Obligations by reducing unfair social and economic differentials. The Statutory Equality Obligations have a much wider scope in that it is not confined to socio-economic issues and seeks to take account of the impact of the Government's actions on a broader range of social groups.

2.8 **STEP EIGHT:**

**Calculate Net Present Values and Assess Uncertainties**

**Discount Rates and Net Present Values**

- 2.8.1 In appraisals, we generally need to compare options that will impact over a period of years into the future. This raises the question of how future cost and benefits should be valued in today’s terms. Normally people prefer to receive cash sooner rather than later, and pay bills later rather than sooner. This is true even after allowing for inflation. For an individual this *time preference* may be indicated by the real interest rate on money lent or borrowed.
- 2.8.2 In the public sector, likewise, we reflect *social time preference* by giving more weight to earlier than to later costs and benefits. This is usually given effect by applying a “discount rate” to future costs and benefits. The discount rate defines how rapidly the value today of a future real pound declines through time, just as a real rate of interest determines how fast the value of a pound invested now will increase over time. Guidance on the practical application of the discount rate is given in Appendix 7.
- 2.8.3 **The standard discount rate is 3.5% per annum in real terms.** The new 3.5% rate is also to serve as the Resource Accounting and Budgeting Cost of Capital Charge (RABCCC). This rate should be applied in all but a few exceptional cases. The main exception concerns assistance to industrial and commercial activities (See below).
- 2.8.4 The 3.5% rate should be applied to all costs and benefits up to and including the 30<sup>th</sup> year of an appraisal. However, there is good reason for discounting longer term impacts less heavily. This is explained in Annex 6 of the *Green Book*. The main rationale for declining long-term discount rates arises from uncertainty about the future. Thus, instead of applying 3.5% to all future years, the following schedule should be used:

| <b>Years</b>         | 0-30 | 31-75 | 76-125 | 126-200 | 201-300 | 300+ |
|----------------------|------|-------|--------|---------|---------|------|
| <b>Discount Rate</b> | 3.5% | 3.0%  | 2.5%   | 2.0%    | 1.5%    | 1.0% |

## Treatment of Inflation

- 2.8.5 The standard discount rate is defined *in real terms*, and should therefore be applied to values which are also expressed in real terms, as opposed to nominal or cash values. This means that *the anticipated effects of general inflation should be removed from all the figures before discounting*.
- 2.8.6 The most common assumption is that inflation will affect all prices equally, in which case all values are expressed in constant prices at a given date. This is adequate in a majority of appraisals. The effect of expected future inflation in the general price level should be removed by deflating future cash flows by forecast levels of the relevant deflator. Over a long-term period, the Bank of England's annual inflation target (currently set at 2.5% p.a.) is the appropriate measure of prices to use as a general deflator.
- 2.8.7 In some cases, it may be anticipated that a certain cost or benefit item, for example wage earnings or oil prices, will experience inflation at a significantly different rate to that of general inflation. In such circumstances, the cost or benefit stream for that item should be adjusted accordingly before discounting. Specialist advice should be sought about how to do this if necessary.

## Adjustment for Optimism Bias

- 2.8.8 It is important to note that the adjustment for optimism bias (OB) explained under STEP 6 above should be made **before** the calculation of NPVs. Following HM Treasury terminology, the base case for each option is the best estimate of its costs and benefits after allowance for appraisal optimism. The base case NPV for each option is its OB-adjusted NPV.

## Net Present Value

- 2.8.9 Appraisals should generally include, for each option, a calculation of its Net Present Value (NPV). This is the name given to the sum of the discounted benefits of an option less the sum of its discounted costs, all discounted to the same base date. Where the sum of discounted costs exceeds that of the discounted benefits, the net figure may be referred to as the Net Present Cost (NPC). Alternatively, the term 'negative NPV' may be used.
- 2.8.10 The NPV is the key summary indicator of the comparative value of an option. It not only takes account of social time preference through discounting, but also, by combining capital and recurrent cost and benefits in a single present day value indicator, enables direct comparison of options with very different patterns of costs and benefits over time. For instance, it solves the problem of how to compare a low capital cost / high running cost option with that of a high capital cost / low running cost alternative.

- 2.8.11 The decision rule is to select the option that offers to maximise NPV, or minimise NPC. This is subject to account being taken of those impacts which can not be valued in money terms. Conceptually, these also have an NPV or NPC, but inability to express them in money terms means that they must be judged by other means, as indicated at STEP 7 below, and weighed alongside the monetary values in coming to a decision.
- 2.8.12 The time horizon for NPV calculations should reflect the economic life of the services being appraised, or the useful life of relevant key assets, and should be sufficiently distant to cover all the important cost and benefit differences between options. For projects expected to have a very long life, the effect of shorter horizons should be illustrated for key years.
- 2.8.13 Discount calculations should be shown in detail. Net Present Value (NPV) calculations should show a breakdown of the main cost/benefit items covered, and how their incidence is distributed over time. In addition, DFP generally expects the calculations to show:
- (i) the discount factors used, year by year;
  - (ii) the total NPV (or NPC) for each individual year; and
  - (iii) the cumulative total NPV (or NPC), for each year of the calculations.
- 2.8.14 Appraisal reports should record both:-
- the *price basis* of the money values (i.e. the date at which prices have been held constant); and
  - the *base date for discounting* (i.e. the date corresponding to start of the appraisal - usually the beginning of Year 0 in the NPV calculations).
- 2.8.15 Discount calculations are facilitated by the use of software packages or a calculator. Departmental economists can advise about this and can normally supply spreadsheets suitable for adaptation to the needs of individual cases. DFP intends to make a basic NPV spreadsheet available on its Economic Appraisal Guidance web page [www.dfpni.gov.uk/economic\\_appraisal\\_guidance](http://www.dfpni.gov.uk/economic_appraisal_guidance)

### **Basics of Discounting**

- 2.8.16 The basic principles of discounting are explained further in Appendix 7, which also provides tables giving discount factors, equivalent annual cost factors and annuity factors.



## **Discount Rate for Commercial and Industrial Activities**

- 2.8.17 The main exception to the use of the 3.5% discount rate is where Government is selling goods or services commercially, or is providing support to industrial or commercial activities. Where government is acting in a competitive environment, it should achieve a rate of return set neither to advantage nor disadvantage it against its competitors. Similarly, when it is supporting industrial or commercial activities, for example through financial assistance, the viability of the proposed activities needs to be assessed by reference to commercial rates of return. Indeed, where financial assistance is granted, it should generally be just sufficient to enable the cash flows including subsidy to satisfy commercial investment criteria. This requires the use of a rate that reflects commercial returns. **Until further notice from DFP, the recommended rate for the purpose of assessing commercial viability remains at least 8% per annum in real terms.**
- 2.8.18 A DCF (discounted cash flow) Test is required as part of the National Economic Efficiency assessment for financially-assisted projects with primarily economic objectives. (See section 4.2 below for details). There is a specific discounting regime for this purpose, based on a methodology agreed by DTI and HM Treasury. DETI economists can advise on this.

## **Required Rates of Return and Pricing Rules**

- 2.8.19 Some central government bodies sell goods or services commercially, including to the government itself. These activities may be controlled by requiring prices to be set to provide a required rate of return (RRR) on the capital employed by the activity as a whole. Government policy is generally to set charges for goods and services sold commercially at market prices, and normally to recover full costs for monopoly services, including the cost of capital as defined in the HM Treasury Fees and Charges Guide. (An update of the Guide is due to be published during 2003).

## **Assessing Uncertainty**

- 2.8.20 The OB-adjusted NPVs provide a starting point for understanding the impact of risk between different options. However, the future is inherently uncertain therefore no matter how thoroughly costs, benefits, risks and timing are identified and analysed, and even after best efforts have been made to adjust for optimism bias, there will remain uncertainty over the accuracy of the assumptions made. It is essential to test how these uncertainties may affect the choice between options. Whereas OB-adjustment is primarily about ensuring NPVs are based on best estimates, assessment of uncertainty is chiefly about testing the robustness of the appraisal conclusions.

- 2.8.21 **Sensitivity analysis** is the key technique for this purpose and it is fundamental to appraisal. It is the process of examining how *the balance of advantage among options* is affected by reasonable variations in key assumptions. Its purpose is to *influence* the option selection decision; it is not something to be applied merely to a preferred option after it has been selected. The need for sensitivity analysis should always be considered, and, in practice, dispensed with only in exceptional cases. It is always potentially useful but is particularly valuable when the NPVs of options are relatively close to each other.
- 2.8.22 The basic procedure is to alter an assumption, recalculate the OB-adjusted NPV for each option, and consider the impact on both the total net benefits, and on the balance of advantage between the options.
- 2.8.23 It is generally recommended to consider the effect of varying assumptions one at a time as this helps to isolate the assumptions that have the most impact. Some variations may have little impact on NPVs or option ranking, in which case they may not be regarded as a cause for much concern. Other variations may alter the ranking of options or significantly change the NPV. Such variations should be considered carefully and may require specific risk management actions. For example, it may be appropriate to seek to reduce the uncertainty over particular assumptions in order to make them more robust, and improve the chances of a good outcome. (See section on *Risk Reduction Strategies* in STEP 6 above).
- 2.8.24 The calculation of 'switching values' is a particular form of sensitivity test. It shows by how much a variable would have to fall (if it is a benefit) or rise (if it is a cost) to switch the balance of advantage from one option to another, or switch the NPV from positive to negative. This may be a crucial input into the decision as to whether a proposal should proceed. For example, it can help answer key questions such as:
- By how much can we allow benefits to fall short of expectations, if the project is to remain worthwhile? How likely is this?
  - How much can operating costs increase without jeopardising the VFM of the proposal? How likely is this?
- 2.8.25 In any particular case, judgement in the light of past experience should be used to decide upon the assumptions that are worth subjecting to sensitivity analysis, and the range of variation to be examined for each assumption. A prior analysis of costs into fixed, step, variable, and semi-variable categories can help in understanding the sensitivity of the total costs of proposals. Examples of the assumptions which should be considered for sensitivity analysis include:

- projections of need or demand e.g. school enrolments, traffic forecasts, projected sickness incidence rates
  - estimates of key costs and benefits e.g. items of capital or recurrent costs, forecasts of revenue income
  - changes in real prices e.g. growth of real wages or real oil prices
  - weights and scores attached to non-monetary factors
  - the phasing of costs or benefits
  - the time horizon for the appraisal
- 2.8.26 The reasons for choosing the assumptions investigated and the range of variations examined should be recorded. Slavish analyses of variations of plus or minus some arbitrary percentage in every assumption should be avoided.
- 2.8.27 Presentation of sensitivity analyses is important, particularly when many are undertaken. Summary tables should generally be provided, comparing the key results of all the sensitivity tests undertaken. Inclusion of large numbers of spreadsheets that repeat most of the rows of figures in the main spreadsheets is not very helpful. Sufficient information should be provided to facilitate checking of sensitivity calculations.
- 2.8.28 Departments should explain the implications of sensitivity analysis for option selection. It is not good practice simply to append sensitivity analyses to appraisal reports without explaining their significance.**
- 2.8.29 It can sometimes be helpful to group potential variations into scenarios, for example, to enable consideration of “optimistic” and “worst case” scenarios. “Scenario planning” looks at the consequences of various possible states of the world for anything from an individual investment project to an entire corporate strategy. Scenario planning supplements sensitivity analysis by describing alternative internally consistent possible future economic and political environment, and outcomes. Scenarios are often useful for planning an investment programme and may also be justified for exceptionally large and complicated projects, or for policies that are very sensitive to the external environment.
- 2.8.30 Scenarios should be chosen to draw attention to the major technical economic and political uncertainties upon which the success of the project or option or strategy depends. Generally the best approach is to set up two or three scenarios that differ in important dimensions. The expected NPV

can be calculated for each scenario. It may also be helpful to undertake some sensitivity analysis within and between scenarios.

- 2.8.31 More sophisticated techniques should be used as appropriate in particularly large or complex appraisals and in PFI projects. More explanation is given in the *Green Book*. For example,
- in PFI cases, it may be appropriate to use Monte Carlo analysis to calculate expected values rather than single point estimates for NPVs. Specialised computer software and expert assistance may be required.
  - Proposals requiring sequential decisions can be analysed using 'decision trees', which are graphical representations of the set of possible strategies. Different strategies result in different NPVs depending on the events (or states of the world) that occur. An extension of the technique can be employed when the probability of any particular risk is assigned.

## 2.9 **STEP NINE:**

### **Record proposed arrangements for Financing, Management, Marketing, Procurement, Monitoring and Evaluation**

2.9.1 DFP requires suitable information on these aspects to be provided in submissions for approval. The following paragraphs expand on the information required on Finance, Management, Marketing, Procurement, Monitoring and Evaluation.

#### **Affordability, Funding, Cash flows and Commercial Viability**

2.9.2 Affordability should always be considered when developing and selecting options. It can influence option selection, therefore it is not usually sufficient to restrict consideration of affordability to a 'preferred option'. In accordance with the *Green Book*, in addition to the analysis of economic costs and benefits, appraisals usually need three major financial statements, at least for the lead options.

- 1) A **budget** statement. This should be based on resource accounting and budgeting (RAB) principles, and show the resource costs over the lifetime of the proposal.
- 2) A **cash flow** statement. This should show the additional cash that will be spent on the lead options if it goes ahead.
- 3) A **funding** statement. This should show which internal departments, partners and external organisations would provide the resources, and in some cases the cash, required.

2.9.3 Regarding the **budget** statement, it should be noted that the RAB Cost of Capital Charge has been set at 3.5% p.a. in real terms since 1<sup>st</sup> April 2003.

2.9.4 Regarding the **cash flow** statement,

- The public expenditure (PE) implications should be set out in full, year by year, for the shortlisted options.
- The price basis of the PE figures should be recorded.
- Departments should confirm the extent to which they already have the necessary PE provision. It should be borne in mind that DFP approval of a particular project relates solely to agreement to proceed with a project. It does not imply approval for expenditure to be incurred beyond existing agreed PE provision.

- The figures in an economic appraisal often require adjustment to derive the relevant PE implications. For instance, adjustment may be required to account for factors such as values of buildings already in public ownership, or time savings that have no PE effect.

2.9.5 Regarding the **funding** statement, Departments should:-

- indicate **all** the proposed sources of funding, including, *for example*, PE, private finance, EU grants, International Fund for Ireland grants, Lottery funding and so on.
- provide a detailed breakdown of the proposed funding, showing the expected amounts by source and their phasing over time.
- indicate how firmly committed to the proposal the various sources of funding are, together with relevant information on any interdependencies between funding commitments.

2.9.6 In addition to these statements, it is sometimes necessary to assess the **commercial viability** of proposals. This generally applies when appraising financial assistance to the non-Government sectors. For example, assessment of the general financial position of the applicant may be required, and it will often be appropriate to identify the relevant financial cash flows and calculate NPVs on a commercial appraisal basis. This is explained further in Section 4.5 below. Commercial appraisal may also be necessary, for instance, when selling goods or services into private markets.

2.9.7 Commercial appraisal should normally be done separately from, and in addition to, the calculation of NPVs on an economic appraisal basis.

2.9.8 The differences between economic appraisal and commercial appraisal can be a cause of confusion. Appendix 2 of the *NI Practical Guide* seeks to explain this. It includes a checklist to help identify what items to include in each.

2.9.9 A commercial appraisal, or affordability appraisal, or any other appraisal of some specific aspect of a proposal, should never be seen as an alternative to an economic appraisal covering the ten steps listed in Section 1.4 above.

### **Project Management and Procurement**

2.9.10 Business cases should explain the proposed management arrangements for the proposal, including:

- (i) The Project Execution Plan;

- (ii) The proposed management structures, covering all of the stakeholders in the project, and the relationships between them;
- (iii) The **key personnel** responsible should be identified in terms of a specific postholder and/or a named individual. For example, in the case of construction projects:
  - the Investment Decision Maker;
  - Project Owner / Senior Responsible Owner;
  - Project Sponsor; and
  - Project Manager.
- (iv) Confirmation that documented **project management procedures** are in place reflecting advice in the current relevant guidance authorised by DFP or HMT e.g. the PRINCE2 guidance or the Achieving Excellence in Construction guidance. (See section 10 of the *NI Practical Guide* for details of these procedures);
- (v) The intended approach to **procurement**, including, for example, suitable consideration of traditional approaches and PPP alternatives. Section 5 of the *NI Practical Guide* explains the specific requirements regarding the consideration of PPP cases. The justification for the proposed approach should be explained;
- (vi) The **benefits realisation plan**. (See section 10 of the *NI Practical Guide* for relevant guidance);
- (vii) The **timetable** for implementation;
- (viii) Accommodation issues;
- (ix) Staff and TUS issues;
- (x) Any other important management issues.

## Market Assessment and Marketing Plan

2.9.11 Where goods or services are to be sold in private markets:

- a substantial market assessment should be undertaken and reported, demonstrating that sales projections are firmly based upon an appreciation of the current state of and future prospects for the relevant markets.
- a marketing plan should be provided, including details of all the planned marketing activities, costed over the life of the project.

## Planning for Monitoring and Evaluation

2.9.12 Sections 10 and 11 of the *NI Practical Guide* provide guidance on monitoring and evaluation. **Every appraisal of any substance should indicate how the proposals concerned will be monitored and evaluated after completion, including who will be responsible for them and how the results of the evaluation will be disseminated.** This applies to policies and programmes as much as to projects. Approving authorities should ensure that adequate arrangements are made at the appraisal stage for subsequent monitoring and evaluation of all the public expenditure and resources for which they are accountable.

2.9.13 Good evaluation depends upon good appraisal, and appraisal procedures should be designed with evaluation in mind. For example:

appraisals should include clear aims and objectives, quantified as much as possible, so that outturns can be measured against them; and

key calculations, assumptions and judgements should be recorded, together with the extent and conclusions of sensitivity analyses.

2.9.14 Poor information on both the deployment of resources and the level of service provision prior to implementation can be a serious hindrance to evaluation. It is important to record details of these in appraisal reports. The precise requirements will depend upon the scope of the evaluation in view, but in general it is good practice to include:

- ¶ a detailed breakdown of annual costs before implementation;
- ¶ details of the accommodation, equipment and other assets in use prior to implementation;
- ¶ an organisation chart showing the main pre-implementation functions, and the numbers of staff by grade related to each function;
- ¶ details and measures of pre-implementation service provision, including quantification (e.g. indications of activity, output, effectiveness, efficiency and economy) supplemented by appropriate text; and
- ¶ details of the expected phasing over time of the resources and outputs associated with the preferred option.



## Monitoring and Evaluation Plan

2.9.15 Appraisal reports should generally include a monitoring and evaluation plan. This should provide details of:

- (i) **who** will be responsible for monitoring and evaluation (the organisation, division, post, individual(s));
- (ii) **what** factors (e.g. costs, outputs, outcomes) will be monitored and evaluated, and **how**;
- (iii) **what** staff and other resources will be required;
- (iv) **who** needs to be consulted;
- (v) **when** monitoring and evaluation will be undertaken (the intervals at which monitoring will occur, and the completion dates for evaluations); and
- (vi) **how** the results will be disseminated, including identification of the target audience.

## 2.10 **STEP TEN:**

### **Assess the Balance of Advantage between the Options and Present the Appraisal Results and Conclusions**

- 2.10.1 The ultimate outcome of any appraisal is a decision whether or not to proceed with a proposal or a particular option. Such decisions can have far reaching consequences. Therefore the presentation of the results and conclusions of an appraisal to decision makers and stakeholders can be as important as the analysis itself.
- 2.10.2 In all cases, transparency is vital. The presentation should make the analysis accessible to personnel who do not have an intimate knowledge of the project but need to make judgements based upon the information given. Presentations should be clear, logical, well founded and geared towards helping the decision at hand. Summary reports in particular should be drafted in non-technical language wherever possible, but if it is necessary to use technical terms, they should be explained.
- 2.10.3 Reports should provide sufficient evidence to support their conclusions and recommendations. They should provide an easy audit trail for the reader to check calculations, supporting evidence and assumptions. Major costs and benefits should be described, and the values attached to each clearly shown rather than netted off or hidden within highly aggregated totals. Appraisal reports should contain sufficient information to support the conduct of any subsequent evaluation.
- 2.10.4 The results of sensitivity and scenario analysis should be included in presentations and summary reports to decision makers, rather than just single point estimates of NPV values. Decision makers need to be enabled to understand that there are ranges of potential outcomes and hence to judge the capacity of proposals to withstand future uncertainty.
- 2.10.5 Appraisal results should be presented within a strategic, outline or full Business Case, as explained in section 8 below. **Business Cases should be comprehensive and include *all* of the steps of appraisal listed at 1.4 above, undertaken in accordance with this guide.**
- 2.10.6 The main body of the appraisal report should generally follow the sequence indicated at para 1.4. However, DFP will accept variations in the style of presentation where they are clearly more suited to a particular type of project, provided all the necessary information is still covered. Detailed

assumptions, calculations and supporting material should be included, but consideration should be given to recording these in separate appendices rather than in the main text.

- 2.10.7 It is important to include a section which draws together the main findings and conclusions of the appraisal. This should summarise the main results *for each option* including, for example, the:

NPV or NPC

Capital and recurrent costs

Non-monetary impacts, including costs and benefits not easily valued, distributional issues, and other factors

Main risks and uncertainties

Budget, Cash Flow and Funding implications

- 2.10.8 **Summary tables** or matrices should be used to facilitate comparison of the results of the option analysis.

- 2.10.9 The balance of advantage among the options should be assessed, taking account of the appraisal results, and a preferred option should be identified. In the simplest cases, this may be a matter of choosing the option with the lowest NPC. In other cases, non-cost factors may be crucial and may justify selection of an alternative that is not the least costly. Timing considerations and affordability may also influence option choice. Whatever the justification for the preferred option is, its VFM should be confirmed and its advantages over the main alternatives should be explained specifically.

- 2.10.10 The proposed arrangements for financing and managing the preferred option should be provided; and the arrangements for ex post evaluation should be detailed.

- 2.10.11 Attention should be drawn to any outstanding issues that require special attention, for instance any important financial, managerial, industrial relations, legal or other issues that need to be resolved, or any risks or cost estimates or other factors that require further consideration before final decisions are taken.

### 3. POLICY AND PROGRAMME APPRAISAL

#### 3.1 Basic Principles

3.1.1 Public expenditure has a major impact on the use of Northern Ireland's resources, and the quality of life of its people, through the operation of numerous policies, programmes and projects. The latter may be distinguished, broadly, as follows:-

- A **policy** is a high level plan of action incorporating general goals. An example is the provision of free primary school education for all children of the appropriate ages. Policies are decided at the highest level, for example, by the Northern Ireland Executive or the UK Government.
- A **programme** is a body of procedures and practical actions designed to implement policies and achieve their aims. For example, the primary school building programme is designed to help implement the policy of free primary school provision. Programme details may be decided at a slightly lower level, for instance they may be generated in collaboration between Ministers and senior officials.
- A **project** is a separate component within a programme, for example a proposal to build or extend a certain primary school to serve the needs of a specific local school population. Projects are decided at the lowest level. They may be generated by officials, or (particularly where the programme involves financial assistance to non-Government bodies) they may represent proposals from the private, voluntary or community sectors.

3.1.2 It is vital that all policies, programmes and projects are thoroughly appraised, managed, monitored and evaluated to ensure that Northern Ireland's resources are put to the best possible use, and to satisfy the need for public accountability. This section deals specifically with issues that arise at policy level, although most of it applies equally to programmes.

3.1.3 The Policy Innovation Team within OFMDFM's Economic Policy Unit has produced a **Practical Guide to Policy Making** in 2003 covering all of the issues relevant to policy making. For example, it explains the features of good policy making, the importance of evidence-based policy making, and guidance on the processes of consultation and legislation. It can be accessed at <http://www.ofmdfmi.gov.uk/policylink> or copies obtained by telephoning 028 9052 2542. This section of the *NI Practical Guide* should be read in conjunction with the *Practical Guide to Policy Making* and does not attempt to duplicate its general guidance.

- 3.1.4 The *Practical Guide to Policy Making* explicitly recognises the need for policy decisions to be supported by economic analysis including the appraisal of options. The rest of this section briefly describes the key relevant principles of economic analysis in relation to policy making, including the establishment of the rationale for government intervention and the appraisal of policy options.

### **Rationale for Government Intervention**

- 3.1.5 A policy, programme or project is sometimes described as a 'Government intervention'. In other words, it is a means by which the Government intervenes in the economy or society in order to achieve an outcome that is better than would otherwise be the case.
- 3.1.6 Government intervention is costly, therefore there always needs to be a justification or rationale for it. The *Green Book* explains the rationale for Government intervention in terms of:
- the achievement of **economic** objectives by addressing inefficiencies in the operation of markets and institutions; and
  - the achievement of an **equity** objective, through, for instance, local or regional regeneration.
- 3.1.7 Intervention to achieve economic objectives is justified when markets fail to use resources in the most productive way possible. Reasons why this might be the case are explained in Annex 1 of the *Green Book* in terms of Public Goods, Externalities, Imperfect Information and Market Power. These are generally applicable to Northern Ireland.
- 3.1.8 Intervention to achieve equity objectives may be justified to improve the distribution of costs or benefits among different groups according to their income, gender, ethnic group, age, geographical location or disability. The principles underlying analysis of these equity, or 'distributional' considerations, are explained in Annex 5 of the *Green Book*. However, it should be noted that Northern Ireland has specific policies in this regard, including New TSN (Targeting Social Need) and the statutory equality obligations under Section 75 of the Northern Ireland Act 1998. See section 2.7.13 of the *NI Practical Guide* above for elaboration.
- 3.1.9 When introducing or reviewing a policy or a programme, it is important to establish clearly the rationale for intervention, and to consider whether that intervention will be cost-effective i.e. that the benefits will exceed the costs. This should include an analysis of the negative consequences of intervention, as well as the results of not intervening, both of which must be outweighed to justify action. In many cases, the preliminary step will

involve research to set out the scope of the issue to be addressed, and the reasons for intervention.

### **Appraisal of Policy Options**

- 3.1.10 Consideration of alternative options is an important part of the policy making process. It is about identifying the range of possible courses of action, and comparing their relative merits, including the costs, benefits, and risks that are associated with them, in order to inform selection of the best policy implementation option.
- 3.1.11 Having established the rationale for government intervention, the basic steps of appraisal and evaluation in section 2 of the *NI Practical Guide* generally apply as much to policies and programmes as to projects. For example, it is generally appropriate to:-

→ **Establish the policy need.**

Identify the specific populations that will be targeted, quantify the extent of the problems or demands to be addressed, show how policy intervention will contribute to strategic aims.

→ **Define the policy objectives.**

Objectives should initially be stated broadly enough to enable a range of policy options to be identified. They should normally be developed into more specific terms, including measurable targets, to provide a basis for detailed appraisal of the policy options and subsequent measurement of the policy's success.

→ **Identify and describe the policy options.**

Define a "status quo" or "do minimum" baseline option and a suitably wide range of alternative policy options for consideration.

→ **Detail the costs, benefits, risks and other relevant impacts.**

Analyse the economic, social and other costs, benefits, and risks associated with each of the policy options. Consider the need for integrated impact assessment or specific forms of impact assessment e.g. equality, environmental, health or regulatory impact assessment.

→ **Spell out the funding implications including the priorities for funding.**

The relative **priority** of different elements of the proposals, should be stated clearly. This is particularly important when appraising a policy containing numerous separable objectives or costly components. Funding may not be available to undertake everything that Departments would like to do, or as soon as they would like to do it.

Prioritisation helps to focus on what are the most important things to do first. Presentation of 'wish lists' containing numerous costly proposals without any indication of priority does not aid funding decisions.

→ **Summarise the findings and recommend the preferred policy option.**

Summarise, for each option, the costs, benefits, risks and other impacts. Compare the relative merits of the options and recommend the preferred one.

→ **Make arrangements for managing, monitoring and evaluating the policy.**

Arrangements for these activities need to be built in from the outset.

- 3.1.12 The principle of proportionate effort should be applied throughout. It is arguable that more effort should be put into appraising and evaluating policies and programmes than projects. Policies can have major cost implications and the effort put into appraisal and evaluation should reflect that.
- 3.1.13 Specialist advice may be required. Departmental economists can advise on the design and conduct of suitable appraisals of options and can advise on other forms of economic analysis relevant to policy making such as relevant economic research.

## **4. APPRAISING ASSISTANCE TO THE PRIVATE, VOLUNTARY & COMMUNITY SECTORS**

### **4.1 General Principles**

4.1.1 Proposals involving financial assistance to the private, voluntary or community sectors should be appraised and evaluated with proportionate effort by the relevant Department or other funding body. Proportionate effort should be judged primarily on the basis of the totality of the public element (including EU funds) of the expenditure or resources over the whole life of the proposal under consideration.

4.1.2 **Financial assistance should not be approved in principle, nor should commitments to funding be given (e.g. through a Letter of Offer), prior to the completion of a satisfactory appraisal and business case. The importance of appraisal to the approval process is elaborated in section 9 below.**

4.1.3 The type of financial assistance offered should be tailored to the particular case at hand. There should be no presumption that financial assistance should take the form of grant aid in every case – alternative forms of assistance might be equally effective to tackle a particular market failure and at a lower cost to the exchequer. For instance where market failure is restricting a firm's access to capital this might be tackled more cost-effectively with financial assistance in the form of loans or equity.

4.1.4 Appraisal should be applied not only to schemes for financial assistance when they are being established but also to individual grants or other assistance subsequently paid out under such schemes. The appropriate level and type of appraisal will be different when a scheme rather than a grant is appraised, bearing in mind the principle of proportionate effort. For example, a major appraisal may be appropriate when considering what scheme to introduce; a large grant or loan application may deserve quite a substantial appraisal; and a small grant or loan may be adequately appraised using a suitable application form or appraisal pro forma.

4.1.5 Where a proposal involves more than one source of public or EU funds, the relevant funding bodies can avoid duplication of effort by co-operating to produce a single appraisal. There are no hard and fast rules about how to cooperate in these circumstances but a sensible rule of thumb is that the funding bodies should supply resources to the appraisal broadly in proportion to their proposed shares in the funding. It may also be appropriate that the major public funder should take the lead in co-ordinating and ensuring completion of the appraisal. When it comes to the



stage of assessing completed appraisals, cooperation between funding bodies is also likely to be beneficial.

- 4.1.6 Where assistance to the private sector is under consideration, there is a need to ensure an adequate private sector contribution to the funding of the proposed investment. One of the important lessons identified by the Committee of Public Accounts following their enquiry into the De Lorean project was that “there must always be a significant contribution of risk capital from the private sector”.<sup>7</sup> Further, it has been an established principle since 1985 that **there must be at least £1 of private sector investment for every £1 of Government assistance**. Strictly speaking, this applies only to the private sector, not to the voluntary or community sectors. The latter operate in a different environment and may not be expected to be able to match Government funding in every case, although they should be expected to contribute to funding according to their ability to do so. Whatever the sector being assisted, public funding should generally represent the **minimum assistance necessary** to bring about the investment.
- 4.1.7 It is good practice to advise applicants for assistance, from the outset, regarding the appraisal and approval procedures that will be necessary, the timescales that these may require, and the help that is available to them. Scheme documentation for applicants should contain this type of information.

### **Preliminary Screening**

- 4.1.8 It is generally appropriate for funding bodies to subject applications for assistance to **preliminary screening**. In its simplest form, this involves a very basic assessment of the application to decide whether it is eligible for funding under the relevant scheme. More generally, preliminary screening offers the opportunity to test thoroughly the need for the project and its objectives, before committing resources to a full appraisal. It can be aided by the use of relatively simple scoring systems, in which applications are allocated scores by reference to relevant scheme criteria. Departmental economists can assist to establish suitable preliminary screening systems.
- 4.1.9 Where preliminary screening indicates that the proposal is clearly unsuitable, it should be rejected, thus avoiding nugatory expenditure on an unnecessary full appraisal. Funding bodies should be satisfied that applications are eligible and offer a reasonable prospect of success before committing resources to a full appraisal.

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<sup>7</sup> Twenty-fifth Report of Session 1983-84, HC 127. Dr Rhodes Boyson, speaking on behalf of the Government in a debate on the De Lorean case on 1 May 1985, stated that for future projects there must be at least £1 of private sector investment for every £1 of Government assistance.

- 4.1.10 Preliminary screening may also be used to help decide what priority an application should carry in relation to other applications, in terms of the order in which all the eligible applications should be subjected to a full appraisal. This is particularly relevant where the resources available to undertake appraisals are scarce in relation to the numbers of eligible applications to be appraised.

### **The Use of Pro Formas**

- 4.1.11 The appraisal of small grants or other assistance to the private, voluntary and community sectors can be facilitated by designing application forms so that they provide the information that funding bodies need to appraise them. This may be taken to include cases involving total financial assistance (including for example all sources of PE, EU and IFI funding) of up to £250k over the whole life of a project. Pro formas for appraisal of small grants should be geared towards addressing the issues in this section of the *NI Practical Guide*, including economic efficiency, additionality, displacement, viability and cost-effectiveness.
- 4.1.12 It is normally the funding bodies who should be doing the appraising using appraisal pro formas. Applicants may complete application forms, but they should not be expected to appraise their proposals critically. Appraisals must reflect an independent and unbiased view of proposals.
- 4.1.13 Departments should be satisfied that the relevant application form or pro forma in use for each particular programme presents adequate information to enable the funding body to appraise expenditures. They should also ensure that funding bodies have suitable procedures in place to actually appraise the information submitted by applicants in the forms.

### **Funding of Consultants**

- 4.1.14 Previously some Departments provided funding to project sponsors to employ consultants to undertake appraisals. It is now considered that a more independent appraisal will be obtained if the funders rather than the sponsors employ the consultant. For instance, this encourages greater objectivity and allows more direct control over the quality of the appraisals provided by consultants. This approach is now generally recommended.

### **The Scope of the Appraisal**

- 4.1.15 Appraisals of applications for financial assistance should generally cover the whole of the project for which financial assistance is sought, not just the financially-assisted elements of it. For instance, an appraisal should detail all the sources of funding, and should cover all the costs and all the benefits associated with the proposal, including those falling to the private

and voluntary sectors as well as to the public sector. This is to enable a judgement of the overall value for money and viability of the proposal. The same principles apply to ex-post evaluations of financially-assisted projects.

- 4.1.16 Appraisals of financial assistance to the private, voluntary and community sectors should assess VFM from a national perspective, like appraisals in general. This requires an economic appraisal covering basically the same elements of appraisal as those identified at section 1.4 above. A project that offers a satisfactory economic appraisal result is said to satisfy the **National Economic Efficiency** criterion. However, in addition, appraisals of applications for financial assistance should *also* ensure that the criteria of **Additionality**, **Viability** and **Cost-Effectiveness** are satisfied. The technical meaning of these criteria, and how to assess them, is explained below.

## 4.2 National Economic Efficiency

- 4.2.1 Financially-assisted projects should be subjected to a National Economic Efficiency assessment, which is an appraisal of VFM from a national perspective, involving estimation of the *net* economic benefits arising from the project. There are two broad approaches to National Economic Efficiency, according to the nature of the financial assistance in view. One is designed for 'economic cases' e.g. financial assistance to industry or agriculture; while the other is appropriate for 'social cases' i.e. most other financial assistance. These approaches are described in turn.

### National Economic Efficiency in 'Economic' Cases

- 4.2.2 'Economic' cases are financially-assisted projects with primarily economic objectives. These include those assisted by Invest Northern Ireland (Invest NI) including inward investment and other industrial assistance cases, cases involving assistance to small businesses, and cases involving assistance for research and development and assistance for tourism projects. The relevant methodology for most of these cases has been developed by the Department of Trade and Industry (DTI).<sup>8</sup> It includes the following main elements:-

- (i) a DCF Test, that is, a **discounted cash flow** of the costs and benefits of supporting a project based on the applicant's financial forecasts. This test is designed to measure the project's impact upon National Income;

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<sup>8</sup> For a full explanation of the DTI methodology and how it is applied in Northern Ireland, contact the Departmental economists in DETI or INI.

- (ii) an appraisal of **wider national costs and benefits, including displacement**;
- (iii) where relevant, an allowance for the effects of **foreign ownership**; and
- (iv) where necessary, an analysis of **regional benefits**.

4.2.3 Financial assistance to the agriculture industry provide another example of economic cases. DARD economists can advise on the details of how to appraise such cases.

4.2.4 There are a number of points regarding National Economic Efficiency which DFP would emphasise in relation to 'economic' cases. These arise both from DFP experience and from comments made by NIAO. They also apply in varying degrees to other grant assistance cases:

- (i) The appraisal of National Economic Efficiency should be undertaken at a stage early enough to influence negotiations and decisions, since it indicates the prospective economic benefits of a proposal.
- (ii) **Offers of assistance should not be made before the impact upon National Economic Efficiency has been appraised and the results fully considered.**
- (iii) **The utmost caution should be exercised in considering whether to assist projects which fail to demonstrate a positive impact upon National Economic Efficiency.** For example, where a project is considered to fail the National Economic Efficiency Test, taking account of the DCF calculation and any wider *national* costs and benefits, it should generally be assisted only if the failure is *marginal*, and if specific *regional* economic or social benefits of sufficient magnitude to offset the national loss are demonstrated. The DTI guidance explains both the concept of a *marginal* failure that should be applied, and the difference between wider *national* and *regional* costs and benefits.
- (iv) Wider national and, where appropriate, regional costs and benefits should be fully appraised and documented. The appraisal should specify how, why and on what scale such benefits will occur (and why they would not occur in the absence of the project) with supporting evidence. Projections of job creation should be analysed in depth, including, for example, an

assessment of the skills mix and other characteristics of the jobs, in addition to their anticipated numbers and phasing.

- (v) It is recognised that the scope for appraising options in financial assistance cases can be more limited than in other cases where the public sector has fuller control over project expenditure. Nevertheless, it is still good practice to consider options. Alternative funding packages should generally be examined. Variations in the scale, content, location and timing of proposals should be given appropriate consideration and appraised, for instance, during the negotiations between the funding authority and the applicant.
- (vi) The counterfactual to be used in the DCF calculations should be designed carefully to reflect the details of the case. For example, where investments would be delayed or reduced in the absence of assistance, the counterfactual should reflect this rather than a simple without-project scenario; or where a NI-owned company is claiming assistance for a mobile project, the counterfactual should reflect the fact that the post-tax profits from such a foreign investment will return to NI.

### **National Economic Efficiency in 'Social' Cases**

4.2.5 The DTI method is designed for cases where it is possible to estimate the impact upon National Income based on the projected financial sales and costs of commercial firms. This is not usually possible or appropriate regarding other forms of financial assistance for which the objectives are primarily social or environmental, and in which the benefits are more difficult to measure in money terms. These include many cases of assistance to urban and rural regeneration projects, assistance to community groups, and so on

4.2.6 **In the case of non-industrial financial assistance, the National Economic Efficiency criterion is normally satisfied by addressing the usual steps of appraisal, as indicated at section 1.4 above, and by thus demonstrating that the benefits of the proposal exceed the costs.** This approach still involves DCF calculations and consideration of wider costs and benefits, including displacement, but there is no requirement to demonstrate a positive impact upon National Income. The methodology at each stage should normally reflect the general guidance in the *NI Practical Guide*, rather than the DTI method, but judgement is required to decide the precise approach that is most suited to particular cases.

## **Displacement**

4.2.7 Consideration of **displacement** should be included in the assessment of National Economic Efficiency for all types of financial assistance, whether economic or not. Displacement is the degree to which an activity promoted by government policy is offset by reductions in activity elsewhere. A modest degree of displacement may be acceptable, but more substantial displacement may constitute grounds to refuse an application for assistance. For instance, this may be the case where a proposal appears likely to succeed largely by diverting business from other UK or NI firms or service providers. To provide assistance in such circumstances can represent poor value for money and may result in a legal challenge by competitors whose businesses are threatened. Thus it is generally important to identify the potential for displacement and assess its impact nationally and regionally.

4.2.8 Displacement may occur in the product/service or factor markets in which the applicant operates. For example, in the product/service market, assisting a firm to develop its business may cause a reduction in the business of other companies in the same sector; or development of community facilities may lead to a reduction in the use of other similar facilities in the surrounding area. Basic questions which appraisals should address regarding the product/service market include:

- (i) Who are the applicant's competitors within the UK and Northern Ireland? (They may be other firms producing similar products, or other groups/service providers producing similar facilities/services).
- (ii) Is the market growing, and what share of the business is the applicant likely to take?
- (iii) Is the applicant's proposal likely to have a significant impact on the business of particular competitors? Will it damage their viability or threaten closure?

4.2.9 Displacement may also occur in the labour market. For example, an applicant's proposal may displace significant labour from other employers in the UK or NI labour markets. The level of displacement of an employment creation programme, or of individual proposals to safeguard jobs or that involve redundancy, should be assessed by examining the characteristics of the relevant jobs, in relation to the characteristics of the local labour market. Where potentially large changes to employment are in view, a thorough analysis of the local labour market may be required. If, however, only small changes in employment are likely, then a less detailed analysis may be more appropriate.

- 4.2.10 When considering whether to offer assistance designed to safeguard employment in a particular firm, a basic consideration is whether the assistance is necessary to do this. The local labour market might also be analysed in terms of age, skills and experience of those whose jobs are being safeguarded, and how these compare with the characteristics of the unemployed, particularly the long term unemployed, and those who have recently found employment. The analysis might also assess the likelihood of new investment in the region in the event that the job losses occurred, accounting for the inflow onto the local labour market of labour with particular skills and experience.
- 4.2.11 Generally, displacement will tend to be greatest, and of most concern, under the following circumstances:-
- the greater the existing excess capacity in the market;
  - the larger the increase in market output arising from the project;
  - the longer the excess capacity is expected to persist, that is, when it is structural rather than cyclical;
  - the greater the share of the market to be served by the project which otherwise would be served by other NI or UK suppliers;
  - the newer and more efficient the capacity that will be displaced.
- 4.2.12 Where displacement is expected to be small, it is normally enough to document its likely nature and extent. Where it is considered to be significant, as for example in many tourism projects, the benefit stream in the relevant NPV calculation or DCF test should be reduced accordingly, in order to provide a more meaningful calculation of the prospective stream of net benefits to the economy. It may be helpful to undertake the NPV calculation or DCF test both with and without adjustment for displacement in such cases.
- 4.2.13 **Substitution** is a particular form of displacement in the labour market which should be considered in relevant cases. It is the extent to which those who gain from a policy do so at the expense of an equivalent loss to others in the labour market. This may occur when a firm substitutes one activity for another similar activity to take advantage of government assistance. For example, if an incentive is given to employ long term unemployed workers, then a firm may substitute an applicant who is in long term unemployment for another applicant who is not, leading to no overall increase in employment.

- 4.2.14 In general, substitution is undesirable and should be minimised. For instance, if substitution is significant, the net exchequer cost of the programme may be unacceptably high. However, some substitution may be acceptable when the totality of a proposal is taken into account. In some cases it may even be desirable. Taking the previous example, redistribution of jobs may contribute to a specific policy aim, such as getting more of the long-term unemployed to work.

### **Regeneration**

- 4.2.15 Annex 1 of the *Green Book* sets out a number of specific issues that should be addressed in the appraisal and evaluation of regeneration projects. These are:
- **The Rationale.** This needs to make clear:
    - Who the intended beneficiaries of the project are;
    - What are the mechanisms which will extend the benefits to them;
    - What structural benefits are expected as a result of the project; and
    - The means by which these will be achieved.
  - **The Objectives.** The objectives of regeneration programmes are likely to include improvements in one or more of the following:
    - Labour supply and skills;
    - Quality of Life;
    - Physical environment; and
    - Local business opportunities.
  - **Outcomes.** These should be identified with respect to the relevant intermediate objectives. Regeneration outcomes might include:
    - Reductions in crime;
    - Improvements in the capacity of community organisations; or
    - Increases in local income or employment.
  - **Partnerships.** Partnerships between the local community, business and government are important for the sustainability of regeneration projects and the well being of local communities. Most local regeneration projects involve partnerships, and are likely to have some effect on existing institutional relationships. An appraisal should include a description of the partnership and, where possible, its expected impact on the area. The use of social capital indicators, such as those developed by DSD, may help to capture the value added of voluntary



and community-based activity in addition to conventional performance indicators of economy, efficiency, equity and effectiveness.<sup>9</sup>

- 4.2.16 Government intervention in the economy is sometimes undertaken with an employment objective in mind. In other cases, although employment is often retained as a principal objective, the justification for intervention is more far-reaching and the objectives tend to be more broadly cast. This is typical of regeneration projects.
- 4.2.17 Where programmes have multiple objectives, such as environmental improvements, these other additional benefits (and any associated costs) should be covered in the appraisal, together with employment impacts. The geographical focus of regeneration projects means that it is particularly important to assess displacement effects at both the local and national levels, particularly if the programme or project is substantial.

### 4.3 **Additionality**

- 4.3.1 The success of government intervention through assistance to the private, voluntary or community sectors is usually assessed in terms of its 'additionality'. This is its net, rather than its gross, impact after making allowances for what would have happened in the absence of the intervention. To put it another way, **Additionality is the extent to which an activity takes place at all, or is undertaken on a larger scale, or earlier, or to a higher standard, or within a policy target area, as a result of public sector intervention.**
- 4.3.2 Additionality needs to be appraised to help ensure that assisted projects receive the minimum Government assistance required to bring them about. Any excess over this amount is "deadweight". Additionality should be measured at programme and project level, adjusting the form of the assessment to the nature and objective of the activity.
- 4.3.3 A project is regarded as fully additional if, without assistance, it would not happen at all. However, additionality may be partial. For example, without assistance:-

- The project might have been carried out in a location of some lower priority;
- The same project might have been carried out later;
- A different project might have been carried out, or the same project on a smaller scale or to a lower standard of quality.

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<sup>9</sup> See Report on Research into Evaluating Community-Based and Voluntary Activity in Northern Ireland (DSD Voluntary & Community Unit, 2003).

4.3.4 The appraiser needs to probe the claims made by the applicant regarding additionality. There are several possible avenues to pursue, including:-

- **direct** questioning of the applicant - regarding the applicant's need for assistance, the financial resources at its disposal, its efforts to obtain other sources of funds, its contingency plans if the grant application should fail, and so on. Does the applicant make a credible case for needing the assistance?
- **checking** and monitoring of information supplied by the applicant - for instance, site visits to check whether the project has actually started, checks on the financial and staffing/personnel information provided. Does the applicant's behaviour match its claims?
- **drawing** on the knowledge of the appraiser's own organisation, where it has experience of dealing with similar applications or has had previous dealings with the applicant. Does the application stack up with past experience?
- **consulting** other organisations who are experienced in the relevant field of activity, or who have previous experience of the applicant - for example, partner organisations, other funding bodies, banks, and so on. Does others' experience confirm the bona fides of the application?

4.3.5 Whatever the methods It is important to record reasons why the additionality criterion is considered to have been satisfied.<sup>10</sup> Appraisal reports should:-

- demonstrate the additionality of the proposal by reference to the criteria at 4.3.3 above, indicating its nature and extent.
- record reasons for the proposed level of assistance, related individually to the nature, scale and timing of the project;
- summarise the negotiations with the applicant on the level of assistance;
- review the applicant's financial position and ability to fund the project from non-Government sources; and
- where relevant, assess the project's mobility, including, where possible, substantive evidence of a viable alternative location.

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<sup>10</sup>This was emphasised by the Committee of Public Accounts in its 1986-87 examination of the Additionality criterion in relation to industrial development cases. The Northern Ireland Audit Office, in its 22nd February 1993 report (No. 418) on IDB selective financial assistance criteria, recommended the preparation of a separate file paper on additionality, addressing points similar to those listed here.

- 4.3.6 Assessments should not be based on *unsubstantiated claims* by applicants, for example, that a project's return was too low compared to its internal hurdle rates, or that an alternative location was being considered:-
- In the case of very high hurdle rates, the applicant should have to demonstrate that it does in fact use high hurdle rates, and justify their use. Generally, a very high hurdle rate indicates an inefficient investment criterion, and is therefore a good reason to reject an application, as the government should not encourage inefficient behaviour. An applicant using an inefficiently high hurdle rate is likely to offer poor prospects for future investment.
  - Where an applicant claims that an alternative location is being considered, for instance, where it claims assistance is being offered elsewhere, then sound evidence to support the claim should be provided, normally including detailed appraisals of each option.
- 4.3.7 The effort used to appraise Additionality should be appropriate to the scale of the project. The effort needed for a small grant to a community group is much less than that required for a major industrial assistance proposal. Where small sums are involved, judgement based on direct questioning of the applicant may be sufficient, or it may be possible to define the qualifying conditions in a way that ensures that any accepted proposal is additional.
- 4.3.8 In larger cases, a more in-depth analysis will be appropriate and a full examination of the financial factors driving the need for a certain level of assistance should be undertaken to ensure that any offer of assistance is the minimum required to bring about the project. Claims of lack of funds should be backed with an analysis of the applicant's ability to fund the project using internal reserves, additional equity, debt financing, or some combination of these. Where the investment in a project spans a number of years the applicant's future finances, and not just its current finances, will be relevant to its ability to fund the project from non-Government sources.
- 4.3.9 In some cases it will be appropriate to consider the returns to the applicant in light of the cost to it of financing the project. Broadly speaking, from the applicant's perspective a project will only be attractive as long as the anticipated return from the project is the same or better than the applicant's (marginal) cost of capital. An analysis of the extent to which the project's return falls short of the applicant's cost of capital can provide valuable information on the minimum level of assistance required to bring about the project. An example of how this might work in practice is included below.

- 4.3.10 In summary, Additionality should be appraised and documented in detail, and assertions that the Additionality criterion is met should be supported by substantial evidence and analysis. Partial additionality should be reflected in the levels of assistance offered. Assistance should not be awarded to projects that have already gone ahead without it.

### Project Returns & The Cost of Capital: Some Simple Examples

Example 1: A company has a £10m project for which it is seeking financial assistance. The costs and benefits of the project *to the company*<sup>11</sup> are outlined in the table below.

|                  | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|------------------|--------|--------|--------|--------|--------|--------|
| Turnover £k      |        | 6500   | 6000   | 6000   | 6000   | 6000   |
| Variable Cost £k |        | -3000  | -3000  | -3000  | -3000  | -3000  |
| Overheads £k     |        | -362   | -362   | -362   | -362   | -362   |
| Capital Cost £k  | -10000 |        |        |        |        |        |
| Net Cash Flow    | -10000 | 2638   | 2638   | 2638   | 2638   | 2638   |
| Return (IRR)     | 15%    |        |        |        |        |        |

If the company has a cost of capital or internal hurdle rate of 12% then it is clear that the project should generate a satisfactory return<sup>12</sup> for the firm's investors *without* the aid of financial assistance.

On the other hand if, say, access to finance was the factor underpinning the additionality argument then there might still be a role for financial assistance. In this event assistance in the form of loans would tackle the market failure without the need to resort to more costly forms of assistance such as grant aid.

Example 2: A company has a £10m project for which it is seeking financial assistance. The costs and benefits of the project *to the company* are outlined in the table below.

|                  | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|------------------|--------|--------|--------|--------|--------|--------|
| Turnover £k      |        | 6000   | 6000   | 6000   | 6000   | 6000   |
| Variable Cost £k |        | -3000  | -300   | -300   | -300   | -300   |
| Overheads £k     |        | -362   | -362   | -362   | -362   | -362   |
| Capital Cost £k  | -10000 |        |        |        |        |        |
| Net Cash Flow    | -10000 | 2638   | 2638   | 2638   | 2638   | 2638   |
| Return (IRR)     | 10%    |        |        |        |        |        |

<sup>11</sup> This information can usually be derived from the applicant's financial forecasts and the DCF test.

<sup>12</sup> The return, measured by the Internal Rate of Return, is the discount rate at which the NPV of a project is zero.

If the company has a cost of capital or internal hurdle rate of 12% then the project would not go ahead, as the return from the project would be insufficient to provide the return expected by its investors or financiers.

However, if financial assistance in the form of, say, a capital grant were offered to the company then the effective capital cost of the project *to the firm* is reduced and the return on the project for its investors is increased.

|                  | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|------------------|--------|--------|--------|--------|--------|--------|
| Turnover £k      |        | 6000   | 6000   | 6000   | 6000   | 6000   |
| Variable Cost £k |        | -3000  | -3000  | -3000  | -3000  | -3000  |
| Overheads £k     |        | -362   | -362   | -362   | -362   | -362   |
| Capital Cost £k  | -10000 |        |        |        |        |        |
| Capital Grant £k | 490    |        |        |        |        |        |
| Net Cash Flow    | -9510  | 2638   | 2638   | 2638   | 2638   | 2638   |
| IRR              | 12%    |        |        |        |        |        |

The table above indicates that if a grant of £490k were offered to the firm then the return on the project would become 12%. A return at this level would be sufficient to persuade the company's investors and financiers to fund the project. In this example £490k would represent the minimum Government assistance required to bring about the project.

#### 4.4 Cost-Effectiveness

- 4.4.1 It is important that public expenditure on projects or programmes is cost-effective. This is achieved when the ratio of the outputs from a project or programme to the costs to the taxpayer of producing them is satisfactory.
- 4.4.2 Judgement of cost effectiveness is aided by benchmarking, that is, by comparing the ratios for a specific project with those for other similar projects. This helps to indicate whether the cost-effectiveness is acceptable. If the unit costs are considered too high, this should lead to redesign of the project, or to it being rejected.
- 4.4.3 Relevant indicators of cost-effectiveness should be presented. These should normally include the ratio of total public assistance to total project cost, but other measures will also be appropriate depending upon the particulars of the case, for example, cost per job, cost per m<sup>2</sup> of floor space, cost per room, cost per trainee place provided, cost per dwelling and so on.
- 4.4.4 When calculating these indicators, the cost element should generally include *all* sources of UK and EU funding, not just the costs to an individual budget or programme. This is particularly important where there

is more than one source of funding. (It is recognised that funding bodies may *also* wish to monitor the unit costs to their own budgets or programmes, for their own management purposes). On the benefit side, the number of outputs included should be net of displacement, so that the indicators reflect the net additional outputs arising from the activity.

4.4.5 It is important that all forms of assistance from public sector sources are counted. Where assistance takes the form of cash grants, this cost is obvious, but there are many other possible forms of assistance, for some of which the true cost is less transparent. Common examples include participating grants, equity finance, cheap loans, premises at low rents, and land, infrastructure, training support or advice provided free of charge.

4.4.6 A basic condition for cost-effectiveness is that the activity assisted should actually occur, that is, that the project should proceed and achieve the additionality claimed for it. Where a grant is paid, arrangements to secure repayment of that grant in the event of premature closure, or failure to deliver the promised outputs, should help to ensure this.

#### 4.5 Viability

4.5.1 Project Viability should be assessed to help ensure that public money is not wasted on projects that will fail prematurely. There should be evidence of sound business planning, which requires thorough analysis of:

- the anticipated cash flows, and
- the planned financing, marketing and management arrangements.

4.5.2 In cases where the aims are primarily *economic*, assistance should be given only to firms which are themselves considered to be viable. This requires appraisal of:

- the firm's financial position; and
- the quality of its management,

both in general terms and with specific regard to those charged with carrying out the project. Any previous track record may help to inform judgement of viability.

4.5.3 **If assistance is awarded, it should generally be just sufficient to enable the project cash flows including subsidy to satisfy commercial investment criteria. In these cases, a viable project is one which, having received assistance on a once for all basis, is**

expected to earn sufficient profits to be self-sustaining without continuing subsidies other than those available as of right to all eligible enterprises. There should be a strong presumption against projects receiving assistance more than once, because this would encourage grant-dependency and poor management in both the assisted firm and the responsible Department.

- 4.5.4 In the case of financially-assisted projects pursued primarily for *social* rather than economic aims, the Viability criterion applies less strictly, to the extent that socially-oriented projects need not be expected to achieve overall financial profitability. However:
- any commercial elements of 'social' projects should still be expected to achieve financial profitability; and
  - in all cases it should be confirmed that there is sound business planning and specifically that adequate arrangements for finance and management are in place.
- 4.5.5 Sustainability should be considered. Where funding is awarded for a limited period, consideration should be given to a suitable 'exit strategy'. In particular, the assumptions about subsequent funding should be made clear. If it is assumed that funding will continue, confirmation of agreement to this should be provided from the relevant funding body. It is good practice to make continuation funding conditional upon a satisfactory independent evaluation of the activities undertaken using the initial funding, in addition to a fresh forward-looking appraisal.

## **Business Plan**

- 4.5.6 Applications for grant assistance should generally be supported by a Business Plan in addition to an Economic Appraisal, covering the following key elements:

### **MANAGEMENT PLAN**

The key management personnel, their roles, their relevant experience and qualifications, and the proposed organisational structure should be identified and explained fully.

### **FINANCIAL PROJECTIONS**

The estimated financial costs and revenues arising from the proposal should be set out year-by-year over its life. This should be disaggregated to show all individual cost and revenue items.

For commercial activities, a financial NPV should be calculated at 8% p.a. in real terms, or as advised by Departmental economists. All financial assumptions should be stated.

### **FUNDING PLAN**

The financial position of the applicant should be analysed, including assessment of its ability to contribute own funds to the proposal. Where applicable, the most recent statement of accounts should be supplied.

All sources of funding should be identified, including names of relevant funding bodies, the corresponding amounts of funds, and their phasing.

The status of each funding application should be indicated e.g. Confirmed, Awaiting Response etc

### **MARKETING PLAN**

The current and projected market for the planned products or services should be assessed.

Specific planned marketing activities should be identified and costed.

### **MONITORING AND EVALUATION PLAN**

The proposed arrangements for monitoring and evaluation should be explained, including who will do these activities, what factors will be examined and when.



#### **4.6 Treatment of European Union (EU) Financial Assistance**

- 4.6.1 All proposals involving EU financial assistance are subject to the general requirement to undertake appraisal and evaluation. Relevant appraisals should address the main steps of appraisal as indicated at section 1.4. Where EU financial assistance to the non-Government sectors is in view, the guidance in sections 4.1 to 4.5 should generally also be followed.
- 4.6.2 The nature and extent of EU assistance proposed should be clearly identified for each option under consideration. When costing options, EU grants and other forms of financial assistance should generally be treated in the same way as UK Exchequer grants and included in appraisals at their full cost.
- 4.6.3 Special arrangements exist in relation to the treatment of assistance to agriculture under the Common Agricultural Policy. In appraisals involving such assistance, it is advisable to consult the relevant economists in the Department of Agriculture and Rural Development.
- 4.6.4 Advice on applying for EU financial assistance and general EU matters is available from DFP's European Division. Their website address is <http://www.europe-dfpni.gov.uk/>

#### **4.7 International Fund for Ireland (IFI) and other ex-UK Grants**

- 4.7.1 IFI funding consists largely of monies pledged by non-UK countries including, for example, the USA, Canada and Australia. It also includes an element of EU funding. Clearly, IFI funding, to the extent that it is sourced from outside the UK, represents a beneficial injection to the UK economy. It enables more projects to be undertaken than would be the case in its absence. This might suggest that IFI-funded expenditures should be included as benefits in appraisals.
- 4.7.2 However, in appraising individual projects, it should be recognised that, once Northern Ireland's share of IFI funds has been pledged, it has become effectively a UK resource, which, if not committed to one project within Northern Ireland, will be committed to another. Thus, the use of IFI funds in one project means the loss of the opportunity to undertake another project. In short, all expenditure funded by the IFI represents a UK resource cost at project level.
- 4.7.3 None of this conflicts with the position of the IFI as a body which is independent of Government, draws up its own policies for the deployment of its resources, and considers and approves each project. However, the proposed approach recognises that the use of funds committed to

Northern Ireland by the IFI has an opportunity cost, and that the alternative uses to which they might be put deserve to be appraised with the same rigour as other resources which are pledged to Northern Ireland.

- 4.7.4 This issue has been discussed with HM Treasury and they have agreed that IFI funds, once pledged to Northern Ireland, should be treated as UK resources. Accordingly, all expenditures funded by the IFI should be included at their full cost in all relevant options in economic appraisals.
- 4.7.5 The principles for IFI grants apply equally to any other grants and donations from outside the UK. They represent a beneficial injection to the UK economy, but once pledged to the UK, they have an opportunity cost which should be accounted for in appraisals. All such grants or donations should be considered to have an opportunity cost unless they are not pledged to the UK and would be lost to the UK if the individual option or project under consideration did not proceed.

#### **4.8 State Aids**

- 4.8.1 State aids are transfers of state resources which provide selective support to particular companies. When the state confers even a limited advantage on an undertaking, there is usually a distortion, or risk of distortion, of competition. To protect competition across the EU, the European Commission provides a complex body of treaty-based legislation, frameworks and case law to establish which aid is, and is not allowable.
- 4.8.2 Aid is payable through a large variety of measures and instruments, including tax relief, soft loans and provisions to help prepare an undertaking for privatisation as well as grants and subsidies. As such, it is important that the state aid rules are considered from the onset of any proposal to ensure that proposed measures will be compatible with EU competition rules. Further general information is provided on the European Commission's website on competition <http://www.europa.eu.int> See also the State Aid website [www.dti.gov.uk/europe/stateaid](http://www.dti.gov.uk/europe/stateaid)
- 4.8.3 Advice is available from the DETI Policy Services Unit, which has an awareness generation, co-ordination and advisory role in relation to State Aid issues. DETI carries out this role for all aspects of public sector activity, with the exception of agriculture matters on which DARD take the lead. See 12.4.11 below for contact details.
- 4.8.4 The following checklist indicates the issues that need to be addressed in determining whether policy proposals, existing policies or programmes to implement them, fall within the State Aid ambit. It is recommended that where any doubts exist that initial contact be made with the DETI Policy Services Unit.

## **STATE AID IDENTIFICATION CHECKLIST**

State aid rules apply to organisations involved in economic activity ('undertakings'). The organisation does not have to be profit-making if the activity carried out is one which has commercial competitors. In some instances, public and voluntary sector organisations, such as universities and charities, could be classified as undertakings, as can the State itself.

There are 5 questions you need to consider in order to establish whether a measure constitutes state aid. Only if you answer 'yes' to all 5 questions is state aid involved. If you answer 'no' to one or more of the following, the funding is not state aid and therefore the state aid rules do not apply.

- 1) Is the measure granted by the state or through state resources? As well as central government departments, this includes regional or local authorities and other public or private sector bodies designated or controlled by the state. State resources include tax exemptions and also funds not permanently belonging to the state but under state control, e.g. lottery funding.
- 2) Does it confer an advantage? A benefit to an undertaking, granted for free or on favourable (non-commercial) terms, could be state aid. This includes the direct transfer of resources, such as grants and soft loans, and also indirect assistance – for example, relief from charges that an undertaking normally has to bear, such as a tax exemption or the provision of services at a favourable rate.
- 3) Is it selective, favouring certain undertakings? A general measure affecting the whole of the state's economy (e.g. nation-wide fiscal measures) is not considered a state aid, while aid that targets particular businesses, locations, types of firm (e.g. SMEs) or sectors is.
- 4) Is the activity tradable between member states? The Commission's interpretation of this is broad – it is sufficient that a product or service is subject to trade between member states, even if the aid beneficiary itself does not export to the EU. Consequently most activities are viewed as tradable.
- 5) Does the measure distort or have the potential to distort competition? If it strengthens the position of the beneficiary relative to other competitors then there will probably be state aid implications. The distortion of competition does not have to be substantial or significant, and includes small amounts of aid and firms with little market share. Most interventions have the potential to distort competition.

## **FINANCIAL ASSISTANCE TO THE PRIVATE, VOLUNTARY AND COMMUNITY SECTORS: A GENERAL CHECKLIST**

### **General**

Has eligibility for assistance been established?

Is a full economic appraisal required?

Does the proposed assistance represent a State Aid?

### **National Economic Efficiency**

Is it an economic or social case?

Are there alternative options to consider?

Are costs and benefits identified in sufficient detail?

Are adjustments needed for foreign ownership?

Are NPVs correctly calculated?

Has displacement been considered - with adequate supporting evidence?

What are the wider national costs and benefits?

Is it a marginal case?

Is assessment of regional costs and benefits appropriate?

Is the project worth doing?

### **Additionality**

Has the applicant's financial position and ability to fund the project been examined?

Have details of the negotiations with the applicant on the level of assistance been recorded?

What is the evidence that assistance will make a difference to the project's location, scale, quality or timing?

Where project mobility is claimed, is there substantial evidence of a viable alternative location?

Are reasons recorded for the proposed level of assistance, related to the location, nature, scale or timing of the project?

Is the proposed assistance the minimum needed to bring about the project?

### **Cost-Effectiveness**

Are appropriate ratios included? E.g. total public assistance to total project cost, cost per job, other unit costs.

All UK and EU funding taken into account?

Is the proposal cost-effective?

### **Viability**

Business plan provided?

Are the project management arrangements clear?

Are the key management personnel identified and do they have the right experience and qualifications?

Are anticipated cash flows set out in suitable detail?

Will the proposed assistance enable the project to (a) cover all its costs and (b) earn a commercial rate of return?

Are the applicant's financial position and previous track record stated?

Are arrangements for funding clear and unambiguous?

Is there a sound marketing plan?

Is the project sustainable beyond the proposed period of funding? Is there a clear exit strategy?

Do plans provide for suitable monitoring and evaluation?

Is the project viable?

## 5. PPP PROJECTS & PROCUREMENT ISSUES

### Introduction

- 5.1 Where there are alternative procurement options, they should be examined carefully before proceeding. DFP's Central Procurement Directorate (CPD) provides detailed guidance on the procurement options that are available, and how to conduct the relevant procurement process.<sup>13</sup> If the private sector is involved, proposals should be fully developed before tenders are invited.
- 5.2 Where implementation will be by procurement, there are extensive requirements that need to be met under European Commission Directives and also under regulations within the United Kingdom. Often, these impose requirements over and above those stipulated by the *Green Book*, and must be complied with at all stages. Specialist advice can be sought from either the procurement unit within a Department or agency or from CPD.

### Public Private Partnerships (PPP) Policy Framework and Guidance

- 5.3 The policy framework for PPPs, including Private Finance Initiative (PFI) projects, in Northern Ireland is set out in *Working Together in Financing Our Future* (OFMDFM/DFP, 2003) available at <http://www.ofmdfmi.gov.uk/ppp/> This framework was adopted with regard to the recommendations of the *Report of the Working Group on Opportunities for Public Private Partnerships* (available at <http://www.ppp-ni.gov.uk/>) and an extensive consultation exercise that followed its publication.
- 5.4 The framework applies to all Northern Ireland Departments and their Agencies and NDPBs. It encourages the uses of PPPs for the procurement of public services where it is appropriate to do so. Appropriateness must be judged in relation to:
- **Value for Money (VFM)** – the project must deliver value for money compared to conventional procurement, as assessed in relation to a properly constructed Public Sector Comparator (PSC) where it is appropriate and necessary.
  - **Affordability** – the PPP must be sustainable in the longer term and compatible with the effective management of public expenditure.

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<sup>13</sup> The CPD website is at <http://www.cpdni.gov.uk/>

- **Best Practice** – PPPs should be taken forward in an open and transparent manner consistent with social partnership arrangements but respecting commercial confidentiality. The need for consistency with European Union requirements and best procurement practice applies in full to PPPs

- 5.5 The framework explains the role of the **Strategic Investment Board (SIB)**, which will include working with Departments to develop strategically important PPP projects, assisted by a new Public Private Investment Unit. (See fuller reference to SIB at 12.4.9 below). The framework also lists various sources of guidance that are relevant in Northern Ireland. This includes the HMT/OGC guidance on PPPs, which generally applies to NI Departments.<sup>14</sup> This guidance stresses the importance of considering the PPP route to procurement as an alternative to traditional procurement methods.
- 5.6 Guidance on PPP is updated periodically, and Departments should seek to take account of revisions to guidance as and when they emerge. For example, HM Treasury published a significant new PFI policy document on 15 July 2003. *PFI: Meeting the Investment Challenge*<sup>15</sup> is concerned only with the PFI programme, and not other forms of PPP. It sets out the Government's approach to PFI, provides detailed analysis of the performance of the PFI programme to date and outlines a number of proposals designed to ensure that, as PFI evolves, the public sector effectively captures the VFM benefits that PFI can deliver, including:

- **reforms** to improve the assessment of VFM appraisal, to continue to ensure there is no bias in favour of any one procurement option and that decisions are made on the basis of best VFM. These include reforms to the Public Sector Comparator. These changes mean that a VFM assessment of both PFI and conventional procurement options are fully taken into account prior to the procurement of a project, and that there is greater clarity on transferring soft services staff to ensure that application of VFM does not come at the expense of employee terms and conditions;
- **measures** to improve the efficiency of the procurement process, including more rigorous enforcement of standardisation, the accreditation of advisors, new models of procurement and greater transparency;
- **proposals** to revise the scope of PFI and focus its use on where it works best - exploring new applications for PFI where existing evidence suggests it could deliver benefits - in social housing, urban regeneration and waste, but using conventional procurement methods in areas such as IT and small value projects where experience suggests that, conventional methods are the best approach for driving more efficient procurement.

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<sup>14</sup> See Appendix 3 for further references to the relevant guidance.

<sup>15</sup> See [http://www.hm-treasury.gov.uk/documents/enterprise\\_and\\_productivity/PFI.cfm](http://www.hm-treasury.gov.uk/documents/enterprise_and_productivity/PFI.cfm)

- **investigating** the potential for new methods of financing projects, for example, through “framework funding” for small PFI schemes bundled together and by piloting the potential for using credit guarantees as an additional means of funding PFI projects.

## **Involvement of the Private Sector**

- 5.7 The extent of involvement of the private sector can vary from minor elements of a proposal being contracted-out through to full privatisation, with various forms of contracting, outsourcing and PPPs (including PFI) in between. Public bodies need to consider carefully which procurement route is likely to be most effective. In some cases, the appropriate balance between public or private sector provision will be clear. In others, the best solution must be identified across a range of public, private and partnership options.
- 5.8 Private sector provision may be more likely to provide a better solution where the scope for the following is greatest:
- Innovation to reduce costs or to improve observable outcomes;
  - Generating additional revenue flows by sales to third parties;
  - Reduction in risk of cost overrun or benefit shortfall;
  - A contractor is able to exploit economies of scale in the provision of services (e.g. IT support or facilities maintenance);
  - Savings in whole life costs and/ or for improved outcomes through effective design (e.g. where a broad range of services may be provided in association with an asset, or when many inputs must be integrated in delivering a service, or where whole life and operating costs are importantly determined by good design);
  - Clear specification of quality standards in absolute terms or in terms of client satisfaction;
  - Ability of private sector to control discrete elements of the project without excessive oversight or interference; or,
  - Clear boundaries and interfaces between public and private sectors.
- 5.9 Provision by the private sector may be less appropriate where:
- Risks which threaten the viability of a project are outside the control of the contractor (and these risks cannot be separated contractually from the project);



- ❑ The predominant risks are ones where the public sector has the comparative advantage in managing them;
- ❑ A large degree of discretion is required in determining the quality of services, and quality is not observable; or,
- ❑ Bidding costs are large in proportion to the value of the project (although there may be means of reducing these costs).

### **The Outline Business Case (OBC)**

- 5.10 The option of pursuing a PPP solution should be considered in OBCs by reference to the above criteria and in light of the current relevant HMT/OGC guidance. Where a PPP solution is ruled out without detailed analysis, the reasons for doing so should be stated explicitly in the OBC by specific reference to these criteria. Experience suggests that PPP approaches suit some situations better than others, and resources should not be wasted investigating PPP solutions where they are clearly not appropriate. Where there is doubt over the relevance of PPP solutions, advice should be sought from Departmental PPP advisers, the Public Private Investment Unit or DFP Supply.
- 5.11 Where PPP procurement is under serious consideration, the OBC should include a full economic appraisal and details of project management and finance in accordance with the general requirements of *The NI Practical Guide*. However, the potential for a PPP solution should be assessed in more depth. The PPP assessment should include detailed analysis of the scope for risk transfer, the affordability of a PPP option, and the output specification. Further details of the expected content of an OBC where a PPP is in view are provided in Appendix 3.

### **New Guidance on Tax Adjustments**

- 5.12 The *Green Book* indicates that the adjustment of market prices for tax is appropriate where it may make a material difference to the decision. This will be the case for some PPPs. For example, the tax regime for a PFI option is quite different to that for a PSC, so tax differences need to be stripped out to ensure their resource costs are compared on a like-for-like basis.
- 5.13 Accordingly, HMT has published new “supplementary guidance on the taxation of PFI and the public sector comparator”. It can be found on the Treasury website at [http://www.hm-treasury.gov.uk/economic\\_data\\_and\\_tools/greenbook/data\\_greenbook\\_index.cfm](http://www.hm-treasury.gov.uk/economic_data_and_tools/greenbook/data_greenbook_index.cfm)

- 5.14 This guidance should be applied by Northern Ireland Departments in all relevant appraisals. It includes a step-by-step flowchart approach to derive an appropriate percentage adjustment to the net present cost of the PSC. Effective use of the flowchart requires the user to have a detailed understanding of the project and the key corporation tax risks in relation to it. The advice of finance/tax specialists may be required to apply it successfully.

### **Commercial Agreements**

- 5.15 Appraisals are generally made up of estimates that are forecast some time in advance of either the projected costs being incurred or benefits being realised. Any estimate made well in advance may or may not prove to be correct once a project has been implemented. The less well developed an appraisal, the greater the variability there is likely to be between the estimated value attached to a cost or benefit and the outturn.
- 5.16 By transferring risk away from the public sector in different ways, different procurement options provide procuring authorities with choices about how they might manage and mitigate certain risks around estimated costs and benefits. For example, typically PFI contracts transfer to the PFI partner the risk that capital costs will exceed estimates made by the procuring authority in a way that some conventional contracts may not. Equally, a payment mechanism that calibrates payments made under a contract with the delivery of well-defined benefits provides procuring authorities with a way of ensuring that certain costs are incurred only if certain benefits are delivered.
- 5.17 The level of confidence that public bodies can have that estimated costs and benefits will be similar to eventual outturn will depend on:
- The length of time between the cost or benefit estimate being made and the date of contract award; and
  - The procurement option chosen.
- 5.18 In relation to the latter, for example, costs which are fixed under contract and which become payable against measured milestones of physical progress in construction will have a higher probability of being incurred than costs which, although fixed under contract, are only payable to the extent that defined benefits, outcomes or contractual outputs associated with the contract are delivered. Comparisons between various procurement options need to take account of the impact that different contractual terms have on the likelihood that, in fact, certain costs will be incurred and benefits realised at the level estimated by the procuring body.

## **DFP Approval of PPP Projects**

- 5.19 PPP (including PFI) projects generally require approval in two stages, corresponding to the submission of an Outline Business Case (OBC) and a Full Business Case (FBC). DFP requires all PPP projects above delegation limits to be submitted to DFP for approval at *both* of these stages. The FBC should be submitted for DFP approval even if the decision at FBC stage is not to proceed with a PPP solution.
- 5.20 Where DFP approves a PPP procurement at OBC stage, the Full Business Case (FBC) must be submitted subsequently to DFP for approval, even if the decision at FBC stage is not to pursue a PPP solution.
- 5.21 When approval has been granted on the basis of an OBC, the principles of appraisal should continue to be applied through until a contract is awarded. Thus, for example, private sector bids obtained through a tendering process should be subjected to the principles of option appraisal. An important difference between PPP and traditional procurement at this stage is that, in the case of PPP, the appraisal should normally cover a PSC in addition to the bids from the private sector. This appraisal should be documented in a Full Business Case (FBC). Appendix 3 explains further what is required in a FBC.

## **6. APPRAISING INFORMATION TECHNOLOGY PROJECTS**

- 6.1 The principles of appraisal apply equally to proposals supported by information services and technology (IT) as to all other areas of public expenditure. Accordingly, the general principles in the *NI Practical Guide* apply to them. However, substantial more specific guidance has been prepared for use in the appraisal of IT-enabled proposals, in the form of a new Dear Accounting Officer (DAO) letter and a series of accompanying annexes.<sup>16</sup> Departments should refer to this more specific guidance when undertaking IT appraisals and evaluations.
- 6.2 The guidance on business cases in section 8 below applies generally to IT-enabled proposals. However, Annex B of the new DAO letter provides more specific advice on IT business cases. For example, it reflects the fact that the Strategic Outline Case (SOC) is considered to be an important initial appraisal stage in IT cases particularly for Programmes and larger Projects.
- 6.3 BDS IS Services Branch can provide general advice on the new DAO letter and accompanying guidance. In particular, they can advise on the completion of IT business cases (SOCs, OBCs and FBCs) as well as the production of PMEs and PBEs. Advice is also available on other relevant DFP-approved methods such as PRINCE2, CRAMM and HMG Infosec standards. Where necessary, the assistance of BDS should be sought as early as possible, particularly for larger projects.

### **DFP Approval of IT Projects**

- 6.4 The approval of DFP Supply must be obtained for IT proposals where 'additional total project cost' as defined in the new DAO letter exceeds the current delegated limit. In these circumstances, a business case including an economic appraisal consistent with the current guidance should be submitted to DFP Supply.

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<sup>16</sup> The number of the new DAO was unavailable at the time of publication. All current DAO letters are included at DFP's Accountability & Accountancy Services Division website <http://www.aasdni.gov.uk/>

## **7. APPRAISAL OF ACCOMMODATION PROJECTS**

### **7.1 Introduction**

- 7.1.1 The roles of client Departments in accommodation projects, and those of DFP's Corporate Services Group (CSG), Central Procurement Directorate (CPD), and Valuation and Lands Agency (VLA), are explained in this section. It is generally consistent with guidance issued by HM Treasury, at the instigation of the Public Accounts Committee, about the roles of client Departments and other public bodies involved in undertaking appraisal of projects involving expenditure on accommodation.
- 7.1.2 This section should be read in conjunction with the Office Accommodation Standards Code which sets the standards for accommodation and furnishings in the Northern Ireland Civil Service. The purpose of the standards is to achieve efficient, economical and equitable allocation of the Government Office Estate and to ensure that civil servants are housed in safety and in reasonable comfort.
- 7.1.3 The Code is a reference document to be applied to the staff accommodation element of all projects. Departments and other public bodies should seek CPD advice in the development of the accommodation brief and demonstrate to CPD that the final project plan complies with the standards set out in the Code.

### **7.2 The Need for Overall Appraisal**

- 7.2.1 Accommodation costs often represent a significant proportion of the total cost of a project and can therefore be a crucial factor in deciding whether or not the proposal should proceed. An appraisal must therefore be carried out which covers the cost of the project as a whole. The appraisal should refer to the (Departmental) Property Strategy as maintained by the Property Centre Manager, which contains the definitive statement of the (Department's) ongoing strategy for the meeting of operational need.

### **7.3 Responsibilities of Departments, CSG, CPD and VLA**

- 7.3.1 The client Department or public body is in the best position to assess its requirement for accommodation. However, where Office Accommodation Branch (OAB) of DFP's Corporate Services Group normally provides accommodation to meet Departmental requirements, it retains responsibility for the prioritisation and implementation of all projects concerned with new or replacement buildings. VLA, CPD and CSG are well

placed to assist in developing the various ways in which the accommodation needs can be met.

- 7.3.2 It is for the client Department or public body to co-ordinate the appraisal effort and take responsibility for appraising the project as a whole, incorporating the contribution of CPD, VLA and CSG. In-house economists can provide relevant general appraisal advice and should be part of the appraisal group.
- 7.3.3 **Departments and public bodies should always begin appraisals concerned with the provision of new or replacement buildings with an analysis of the prior need for service provision.** It is not sufficient for Departments merely to list the defects of current accommodation or simply state a space requirement. Departments must also justify the need for continuation or development of the relevant service (e.g. by reference to changes in policy, changing staff numbers and so on) **before** considering options to accommodate it. The amount of effort that should be devoted to such justification will vary depending on the nature of the case and is, therefore, a matter for judgement. In simple cases it may be sufficient to refer to a recent relevant report or policy document. In other cases a more sophisticated analysis of the appropriate level and/or quality of service may be necessary. Nevertheless, the question of need should always be addressed prior to the consideration of options.
- 7.3.4 Appraisals concerned with new or replacement buildings should always be initiated at the earliest possible moment. The scope for PPP options should be thoroughly examined by reference to the criteria indicated at paras 5.8 to 5.11 above. Experience suggests that new build options are frequently more cost-effective than alternatives such as lease or purchase options. However, there may be a tendency to rule them out in favour of more costly options on the grounds that the urgency of accommodation needs do not permit the delay associated with new build. This should not generally be the case.
- 7.3.5 Appraisals concerned with the location of offices and other buildings may in some cases be constrained by policy aims expressed in terms of factors such as equal opportunity and urban regeneration. Such constraints should not always be taken at face value, and should be balanced against other considerations including cost. For example, if such factors suggest restricting options to relatively high cost city centre locations, it may be appropriate to consider options at other, lower cost locations so that the cost of pursuing particular policy aims is made explicit.
- 7.3.6 Accommodation needs rarely arise overnight. Proper forward planning, including early appraisal (i.e. when the accommodation needs first appear, not at some later date when, for example, an attractive building happens to

come on the market) should be conducted to minimise the extent to which 'urgency' is permitted to constrain option selection by ruling out new build solutions.

#### **7.4 Procedures for Departments**

7.4.1 At the outset of a project the client Department should agree with CSG, CPD and VLA how the appraisal of the project will proceed. In particular it should be agreed what information should be exchanged, and when.

7.4.2 At the same time CSG will be able to consider whether:-

- (a) they can fund the request within existing provisions;
- (b) the request is compatible with standard office accommodation; and
- (c) the need fits in with broader accommodation plans in the particular area.

7.4.3 There should be continuing liaison and mutual exchange of updated information as the project develops. Departments should consult CSG on accommodation matters during the course of an appraisal, and they should consult other technical experts such as CPD, VLA or Departmental economists as appropriate.

7.4.4 Departments should note that contracts, such as to lease or purchase buildings, should not be negotiated or signed prior to the completion and approval by the appropriate authority of a satisfactory appraisal.

7.4.5 Where DFP Supply approval is required for accommodation projects, it remains the responsibility of CSG to seek the necessary approval. However, in cases where accommodation is required to meet a new service or development of an existing service, separate Supply approval is required and it is for the client Department to seek it. This applies to all appraisals that cover proposed service changes as well as accommodation requirements. In such cases, the client Department's submission to Supply should indicate clearly that CSG has been consulted throughout on the accommodation options and has approved that element of the appraisal.

7.4.6 It is the responsibility of the client Department to provide the additional capital and other resources to meet the accommodation cost.

#### **7.5 Dispersal of Civil Service Functions**

7.5.1 Within accommodation appraisals Departments must also carry out a rigorous examination of the feasibility of dispersing the functions to a

location outside the Greater Belfast area in accordance with guidance issued by DFP. The current version of this guidance was issued under cover of John Hunter's minute of 22 March 1999 to Permanent Secretaries. This guidance is kept under review and Departments will be notified of any changes.



## 8. BUSINESS CASES

### 8.1 Introduction

- 8.1.1 Appraisals should be undertaken and presented within a wider business case. A business case consists of an economic appraisal and other information including the proposed arrangements for financing, management, marketing, procurement, monitoring and evaluation of the relevant policy, programme or project. The *NI Practical Guide's* 10-step approach is specifically designed to provide for this in that the 'other information' is generally covered by completing Step 9 as indicated in Section 2 above.
- 8.1.2 Development of the business case for any proposal should be a continuous process from inception to implementation. It is not just to be prepared for purposes of obtaining approval and then shelved. The business case document should be a living document, to be revisited and updated regularly during the development of a proposal. For example, in a PRINCE2 project, the business case should be updated at every 'End of Stage' at least.
- 8.1.3 The *Green Book* refers briefly to separate guidance on business cases prepared by the Office of Government Commerce (OGC). This advocates developing the business case through a number of stages including High Level Options and Strategic, Outline and Full Business Cases. It recommends a "five case model" i.e. the business case should cover the strategic case, economic case, financial case, commercial case and project management case. For details, see:  
<http://www.ogc.gov.uk/sdtoolkit/workbooks/businesscase/buscase.html>  
Further guidance should be sought from the appropriate centre of procurement expertise or from DFP's Central Procurement Directorate (CPD).
- 8.1.4 DFP broadly endorses the OGC guidance but accepts that Departments may need to tailor the development of business cases to suit their particular circumstances.
- 8.1.5 The terms business case and business plan are not interchangeable. DFP uses the latter term in the context of financially-assisted or commercially-oriented projects, for which a business plan is required in addition to an economic appraisal in order to establish project viability. This is explained in section 4 (see pages 94 - 96).

## **8.2 Business Cases and Expenditure Approval**

- 8.2.1 The business case is a key document both in the management and development of a project and in the approval process. Expenditure approval should be based on a fully developed business case – i.e. a “Full Business Case” in OGC parlance. It is acknowledged that the terms Outline and Full Business Case can have different connotations in different contexts e.g. they have a particular meaning in the context of PPP cases (see section 5). The important point is that approval should be based on a fully developed business case.
- 8.2.2 **The essential content of a Full Business Case is a complete economic appraisal covering the 10 standard appraisal steps in accordance with section 2 of the *NI Practical Guide*.**
- 8.2.3 Business cases should normally present the 10 appraisal steps in the order in which they are listed at 1.4 above. However, DFP will accept variations in the style of presentation where they are clearly more suited to a particular type of project, provided all the necessary information is still covered. For instance, business cases for financial assistance to the private, voluntary and community sectors should cover broadly similar ground but with special emphasis on the issues in Section 4 of the *NI Practical Guide*.
- 8.2.4 After approval has been given on the basis of an Outline or Full Business Case, the principles of appraisal should continue to be applied to any subsequent options that arise prior to the award of a contract. For example, any bids obtained from the private sector should be appraised using standard appraisal techniques, irrespective of the procurement route adopted. Departments should ensure that they have appropriate documentation of this process.
- 8.2.5 Sections 5 and 6 contain guidance on business cases for PPP and IT cases. Separate guidance on the business cases required for external consultancy assignments is also available (See section 12.2).

## **9. APPROVAL OF DEPARTMENTAL EXPENDITURE**

### **9.1 General Principles**

9.1.1 In central government, approval is required for all capital projects, financial assistance and other expenditures, but the "approving authority" will vary depending on the nature and scale of the project and the level of delegation. The approving authority could, for example, be a finance division, a Departmental Minister or the Department of Finance and Personnel (DFP).

9.1.2 In approving any capital project, financial assistance or other expenditure, the following principles should be applied by the approving authority:

- (i) There should be an early opportunity for the approving authorities to consider and influence the choices made. This could take the form of the formal submission of a strategic outline case for approval or, on some occasions, of informal contacts between the project sponsor and the approving authority.
- (ii) The economic appraisal is an important factor in the consideration of any spending proposal, and Departments are responsible for ensuring that this is carried out and that the proper methodology is used. Points to note in this regard include:-

(a) Approvals in principle should not be granted, nor should any commitment to funding be given (e.g. through a Letter of Offer) prior to the completion of a suitable business case, including an appropriate economic appraisal. Only when needs, objectives, options, costs, benefits, risks, funding and other relevant factors have been thoroughly investigated according to the relevant appraisal methodology can approving authorities be assured that a particular proposal is likely to represent VFM and satisfy accountability requirements.

(b) Departments should be aware that appraisal techniques should be used for all proposals, not only for those above the limit at which they need to seek DFP approval. The principles of appraisal should be applied with appropriate and proportionate effort to all expenditures, including those at policy, programme and project level. DFP Supply will request sight of appraisals of expenditures below delegation limits from time to time.

- (iii) In some cases, it may be appropriate to grant approval in stages. For example, PFI projects generally require DFP approval at *both* Outline Business Case and Full Business Case stages. For some other types of proposal, it may be appropriate to grant approval to proceed to detailed planning and design work on the basis of a preliminary option appraisal; and to grant final approval based on a more detailed analysis of the options. Where approval is given in stages, each stage should have a clear statement from the Project Sponsor of the status and progress of the project (e.g. percentage of design completed) and the accuracy of the estimates of cost and time, highlighting main risks and how they can be managed.
- (iv) Before firm commitment, the approving authority should receive an up-to-date business case and economic appraisal of the project, covering the following:
- ❖ scope of the project;
  - ❖ capital costs;
  - ❖ annual costs/savings/benefits and their phasing;
  - ❖ statement of accuracy of estimates and main areas of remaining uncertainty and their possible effects on the project;
  - ❖ recalculated Net Present Values (NPVs);
  - ❖ a Project Execution Plan, including definition of roles (Investment Decision Maker, Project Owner and Project Sponsor), risk management proposals, value management proposals, project timetable (including level and amount of project management resources); and
  - ❖ proposed monitoring and evaluation arrangements.
- (v) No firm commitment should be made by the approving authority until the costs and the timetable for the project are well established. The probability of project cost or time being more than 10% above the estimated figure should be no more than 10%; for straightforward or repetitive projects, the margin of error should be no more than 5%. The stage of firm commitment will vary - for many projects it may be after final sketch plan, but in some cases earlier commitment may be possible. For particularly risky projects, firm commitment might not be given until tenders are received.

- (vi) For particularly risky or contentious projects, approval at strategic outline case stage might be given only for development work to refine the estimates further by better project definition, with no commitment to the project itself.
- (vii) At initial approval of each subsequent approval stage, the approving authority should specify parameters or conditions under which the project must be resubmitted for approval. Re-submissions might be required where:-
  - a specified time elapses before the commencement of the next stage of the project;
  - estimated capital costs rise by more than a given amount or percentage of original estimate;
  - the estimated time for completion slips by a specified period;  
or
  - the NPV of the project alters to a negative figure.
- (viii) Re-submission should generally be required in any case for which a satisfactory economic appraisal has not been completed. Depending upon the case, this may mean complete revision of an appraisal, or re-submission of certain unsatisfactory elements of it. It should be the Project Sponsor's responsibility to monitor progress of the project and to resubmit it as soon as it appears likely that a triggering condition will be met.

9.1.3 Departments are asked to ensure that the above principles are adhered to as a minimum in all cases. Where a Department is at present applying more rigorous guidelines it should continue to do so. Where appropriate, Departments should have regard, in consultation with their Supply Divisions, to relevant practice in GB Departments.

9.1.4 DFP Supply will occasionally request information to satisfy itself that proper procedures are in place regarding expenditure below delegation limits, including, for example, random samples of appraisal documentation.

## **9.2 DFP Approval of Projects in Excess of Delegated Limits**

9.2.1 General guidance about DFP approval and delegation is given in GANI chapter 2.4 and is not repeated here. This section concentrates on approval and delegation specifically in relation to economic appraisals and business cases.

- 9.2.2 Arrangements on the level of delegation from DFP are subject to agreement between Departments and DFP. The level of delegation will take account of past history of project management, and the current expertise in project management, as evidenced by documented client project management procedures and client training.
- 9.2.3 DAO(DFP)19/99, issued to Departments on 14 December 1999, listed the current delegations and set out the requirements for Departments to obtain prior DFP approval before making commitments to or incurring expenditure. Delegations are currently being reviewed and DAO(DFP)19/99 is expected to be superseded by a new DAO letter shortly. Supply Officers can advise on the current delegations.
- 9.2.4 Where a Department is proposing to introduce a new policy or programme of expenditure, prior DFP approval must be obtained before any relevant expenditure is incurred.
- 9.2.5 DFP approval should be sought only after the sponsoring Department has considered the proposals thoroughly itself and granted formal approval to them.**
- 9.2.6 Where expenditure proposals exceed the Department's delegated limits, DFP Supply will act as the approving authority. The principles at 9.1 above will generally apply, but DFP would also emphasise the following additional points.
- 9.2.7 **Where DFP approval of expenditure is required, none of the relevant expenditure should be committed, and none of the relevant works should commence, until DFP approval has been granted.** When DFP's approval has not been sought, DFP will not generally grant retrospective approval in cases where the relevant expenditure has already been committed or project works have commenced.
- 9.2.8 **Submissions to DFP should be made at a stage early enough to permit dialogue on assumptions and methodology between DFP and the relevant Department; and to permit revision of business cases or re-appraisals to be undertaken where necessary.** DFP reserves the right to withhold approval when there is inadequate time for the appropriate scrutinies and discussions to be undertaken.
- 9.2.9 Submissions to DFP should normally be in the form of a Full Business Case (FBC) as described in Section 8 above. Thus they should include not only an economic appraisal, but also the necessary information (as

- described in Section 2 under Step 9) on financial implications and affordability, arrangements for project management, marketing and procurement, and plans for monitoring and evaluation.
- 9.2.10 Delegation and approval arrangements for PPP cases, Information Technology projects and accommodation projects are explained in sections 5, 6 and 7 respectively of the *NI Practical Guide*.
- 9.2.11 Submissions should demonstrate that all of the steps of appraisal - as listed at 1.4 above (and in the same sequence unless agreed otherwise) - have been undertaken in accordance with the *NI Practical Guide*. DFP will continue to monitor the quality of submissions and will expect proposals both to comply with the appropriate procedures and to offer VFM.
- 9.2.12 It is a function of Departmental economists to quality assure economic appraisals. Departments should consult their economists in all cases requiring DFP approval, and should take account of their views **before** submissions are made to DFP.

### 9.3 **Standard Conditions of DFP Approval**

- 9.3.1 The following are standard conditions of DFP approval:

- Approval is always given on the basis that projects will be implemented as described and costed in the business case upon which the approval is based. If a Department wishes to implement a project on a basis other than that approved by DFP, it should consult DFP again to ensure that any proposed changes to the original business case do not alter DFP's view of the project.
- **Tolerance levels on cost are 10%**. If it becomes apparent that the capital costs or Net Present Costs indicated in the business case will be exceeded by more than 10%, Supply should be notified as soon as possible and appropriate further action agreed between the Department and Supply.
- The same applies where project implementation is expected to be delayed by more than 24 months by comparison to the timescale indicated in the approved business case.
- **Supply should be informed as soon as possible of any substantial changes to the project which occur at any time after DFP approval is granted.** This applies to both *proposed* substantial changes to the project, and to *actual* substantial differences in outturns compared to the assumptions in the business case. In this regard, a substantial

change may be defined broadly as a variance of 10% or more from the assumption in the approved business case.

- 9.3.2 **If there is any doubt as to whether any of these conditions has been triggered, Supply should be consulted.** In exceptional cases, Supply may stipulate or agree to different conditions.
- 9.3.3 With specific regard to capital works projects, client changes - particularly changes in design or specification after the contract has been awarded - have been shown to be a very significant element in cost overruns on major projects. In order to seek to minimise cost overruns, Supply will require projects to be re-submitted if:-
- (a) the cumulative cost of client changes exceeds 5% of the approved budget (unless some other limit has been agreed with Supply to reflect particular circumstances); or
  - (b) the trend of drawing on the contingency margin is more rapid than in the expenditure profile established when the project was approved; or
  - (c) more than 50% of the original contingency provision has been used for client changes; or
  - (d) a significant new risk has been identified in the risk assessment on which the last approval was based.
- 9.3.4 DFP approval of a particular project relates solely to agreement to proceed with the project. It does not imply approval for expenditure to be incurred beyond existing agreed public expenditure (PE) or budgetary provision.
- 9.3.5 Supply **will** ask to see post-project evaluations for all projects approved by DFP and, where a project which requires DFP approval is part of a continuing programme, may make the submission of a post-project evaluation a condition of proceeding with subsequent projects.



## 10. IMPLEMENTATION, MANAGEMENT & MONITORING

### 10.1 Implementation

10.1.1 Economically justifiable and financially affordable proposals are of no value if they cannot be implemented. In this context, implementation refers to those activities that are required during the period after appraisal to put in place a policy, or complete a programme or project. The implementation of proposals must be considered as part of the appraisal process, enough to ensure at least that proposals are viable, risks are manageable, and that benefits can be realised, before significant funds are committed. These aspects of appraisal develop iteratively as with the analysis of costs and benefits.

### 10.2 Programme and Project Management<sup>17</sup>

10.2.1 Programme management is a structured framework for defining and implementing change within an organisation. It provides a framework for implementing business strategies and initiatives through the management of a portfolio of projects that give organisations the capability to achieve benefits that are of strategic importance. All large programmes should have recognised programme management methodologies with relevant governance and responsibilities defined.

10.2.2 Effective management of projects is an essential element of resource control. It is vital that Departments have in place robust, proactive systems for project management, to ensure that projects are managed satisfactorily and within budget. Evidence of effective project management systems under implementation will be a factor in considering projects for approval and in setting revised delegated limits. Although this section focuses upon projects, the underlying principles are also broadly applicable to policies and programmes.

10.2.3 DFP expects Departments to manage projects according to the most up to date good practice guidance produced by the Office of Government Commerce (OGC). There are several strands to this guidance, including:-

- The principles and procedures set out in the current OGC Achieving Excellence in Construction guidance. These are designed specifically for use in construction or capital works projects, and DFP recommends their use in such cases.

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<sup>17</sup> This section of the *NI Practical Guide* deals chiefly with *project* management. Guidance on wider management issues is given in *Government Accounting Northern Ireland* ('GANI') which is available at AASD's website <http://www.aasdni.gov.uk/>

- The principles and procedures as set out in the latest OGC PRINCE (**P**rojects **I**n a **C**ontrolled **E**nvironment) documentation. These are applicable to projects in general. DFP recommends their use for all projects other than construction or capital works projects.
- The concept of Gateways and Gateway Reviews.

10.2.4 Brief elaboration of these principles and concepts is given below. However, to ensure that they are applied appropriately in practice, Departments should seek advice from DFP's Central Procurement Directorate (CPD) and refer to the relevant OGC guidance. The latter may be found at the OGC website <http://www.ogc.gov.uk/> It includes the Successful Delivery Toolkit (located at <http://www.ogc.gov.uk/sdtoolkit/index.html>) which is a useful resource containing proven good practice for procurement, programmes, projects, risk and benefits management.

### **10.3 Construction (or Capital Works) Projects: OGC Achieving Excellence in Construction Guidance**

10.3.1 The principles in the current OGC Achieving Excellence in Construction guidance should be applied and should be reflected in NI Departments' documented client procedures for the management of projects. This guidance advises Departments of the principles for the management of capital works projects which should be integrated into Departmental systems. Departments should have in place procedures to control capital projects which, as a minimum, include these principles. Where a Department is at present applying more rigorous guidelines it should of course continue to do so.

10.3.2 The "Achieving Excellence in Construction" initiative is explained at the OGC Government Procurement Service Website at <http://www.ogc.gov.uk/sdtoolkit/reference/achieving/achievin.html>.

10.3.3 The Achieving Excellence suite of guidance replaced the Construction Procurement Guidance series in 2003. The new series reflects developments in construction procurement over recent years and builds on departments' experience of implementing the Achieving Excellence in Construction initiative. In taking forward Achieving Excellence, new targets for government clients have been established; these are outlined in the Achieving Excellence documents. **DFP's Central Procurement Directorate (CPD) will coordinate on the adoption and dissemination of this guidance.**

10.3.4 The current OGC Achieving Excellence suite of guidance includes:

|  |  |
|--|--|
| Achieving Excellence – Building on Success                           |  |
| Achieving Sustainability in Construction Procurement                 |  |
| Improving Standards of Design in the Procurement of Public Buildings |  |
| Achieving Excellence in Construction: A Manager’s Checklist          |  |
| Construction Projects Pocketbook                                     |  |
| AE Guide 1   | Initiative Into Action                         |
| AE Guide 2   | Project Organisation                           |
| AE Guide 3   | Project Procurement Lifecycle                  |
| AE Guide 4   | Risk and Value Management                      |
| AE Guide 5   | The Integrated Project Team                    |
| AE Guide 6   | Procurement and Contract                       |
| AE Guide 7   | Whole Life Costing and Cost Management         |
| AE Guide 8   | Improving Performance                          |
| AE Guide 9   | Design Quality (forthcoming)                   |
| AE Guide 10  | Achieving Excellence Through Health and Safety |
| AE Guide 11  | Sustainability (forthcoming)                   |

10.3.5 These guides are available in full on the OGC Government Procurement Service Website.

10.3.6 The principles set out in the OGC guidance form part of a continuum of good capital project management practice. They are especially important in relation to major projects which involve considerable expenditure, but are relevant to projects of all sizes. Departments should exercise their judgement in applying appropriate control measures to projects of different size and scope.

### **Roles**

10.3.7 A key principle is the establishment of roles. Departments' documented client project management procedures must identify the client roles of Investment Decision Maker, Project Owner (or Senior Responsible Owner) and Project Sponsor. The procedures must also draw a clear distinction between the *client* roles and the *provider* roles. The latter roles are that of the Project Manager, the design functions and the works contractors. The main client and provider roles are defined in AE Guide No 2.

10.3.8 Whereas the client roles can be undertaken by intelligent lay-persons with appropriate training, the Project Manager must have technical expertise. The Project Manager is the person appointed by the Project Sponsor to be responsible for managing the project on a day-to-day basis. He or she must ensure that the Department's agreed systems and procedures are adhered to and that the contractor/supplier complies with requirements.

The Project Manager reports progress to the Project Sponsor at agreed intervals.

- 10.3.9 In addition, in the case of projects that are above the delegated limit, there will be an approving authority role that will be exercised by the Supply Divisions of DFP. The Project Sponsor should report progress to the approving authority at agreed points during the management of the project. Departments must submit progress reports to Supply in accordance with any conditions/timetable set at the time the project was approved by DFP.

### **Project Planning and Control**

- 10.3.10 Proper attention must be paid to planning and controlling the project at all stages. AE Guide No 3 includes a general framework for construction procurement, describing all the main stages in a project's development. This should be adapted to suit the needs of the specific case in hand.
- 10.3.11 Greater emphasis should be given at project initiation stage by way of definition, estimating and risk assessment and management under the responsibility of the Project Sponsor. The Project Sponsor should ensure that there is a clear project brief which provides a comprehensive statement of the Department's requirement for the project. This should be based on close consultation between the Project Sponsor, Project Owner, users and stakeholders.
- 10.3.12 Greater thoroughness prior to formal approval is considered to be one of the most important factors in achieving better control and performance. Performance in terms of completion within budget and time depends crucially on thorough specification, and careful assessment of cost and time required, and the development of a Project Execution Plan.

### **Project Execution Plan**

- 10.3.13 The Project Execution Plan is the key management document governing the project strategy, organisation, control procedures, responsibilities, and, where appropriate, the relationship between the project sponsor and the project manager. It is a formal statement of the user needs, the project brief and the strategy agreed with the project manager for their attainment. The scope of the plan will depend upon the size and nature of the project. It is a live active management document, regularly updated, to be used by all parties both as a means of communication and as a control and performance measurement tool. Fuller guidance on the Project Execution Plan is given in AE Guide No. 3.

- 10.3.14 The Project Sponsor should ensure that a Project Execution Plan is agreed. The Project Sponsor must be satisfied that the Project Execution Plan represents a viable and realistic plan for implementing the project and achieving its objectives.

### **Cost Management**

- 10.3.15 It is essential that capital projects should be managed on time and within budget. AE Guide No. 7 contains appropriate guidance on budget estimation and cost management, including allowance for risks and whole life costs. Applying these guidelines should help alert Departments to potential cost overruns in sufficient time to take appropriate remedial action. When monitoring project management performance, sponsoring Departments should pay particular attention to the management of risk giving rise to time and cost slippage.

### **Project Reports**

- 10.3.16 The project manager should issue regular reports to the project sponsor regarding the current status of the project, key issues and problems requiring resolution and the steps being taken to resolve them. The project sponsor should normally forward copies or summaries of them to the project owner for information and will draw the project owner's attention formally to any matters of serious concern to the department.

### **Advice**

- 10.3.17 Advice on establishing appropriate systems for the management of construction or capital works projects is available from CPD. Their website is at <http://www.cpdni.gov.uk/>

## **10.4 PRINCE: Management of IT and Other Projects**

- 10.4.1 PRINCE (**P**rojects **I**n a **C**ontrolled **E**nvironment) is a structured method for effective project management that is designed for use on any type of project in any environment. It contains a complete set of the concepts and processes required for a properly run and managed project. It was originally established by the CCTA in 1989, but the latest version (PRINCE2) was published by the Stationery Office in 2002<sup>18</sup>. General information on PRINCE 2 including details of other PRINCE2 publications is available on OGC's PRINCE 2 website at <http://www.ogc.gov.uk/prince/index.htm>

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<sup>18</sup> *Managing Successful Projects with PRINCE2*. (Office of Government Commerce, The Stationery Office, 29 April 2002. ISBN 0113308914 £55).

- 10.4.2 PRINCE2 is used extensively by the UK government, and is widely recognised and used in the private sector, both in the UK and internationally. Its key features are:-
- Its focus on business justification;
  - A defined organisation structure for the project management team;
  - Its product-based planning approach;
  - Its emphasis on dividing the project into manageable and controllable stages to which resources are committed one at a time;
  - Its flexibility to be applied at a level appropriate to the project;
  - Management by exception; and
  - Management of risk.
- 10.4.3 The way that PRINCE2 is applied to each project will vary considerably, and tailoring the method to suit the circumstances of a particular project is critical to its successful use.
- 10.4.4 Under PRINCE2, senior management direction and control of the project is exercised through a Project Board, representing Executive, Senior User and Senior Supplier interests. The role of the Senior Responsible Owner (SRO) is crucial. He is responsible for ensuring that the project or programme meets its overall objectives and delivers its projected benefits. The role of the Project Manager is also vital. He is given the authority to run the project on a day to day basis on behalf of the Project Board, within constraints specified by it. These and other roles are explained in the PRINCE2 document.
- 10.4.5 PRINCE2 includes guidance on appropriate project management documentation, including, for instance, the Project Brief and the Project Initiation Document (PID), which provides the baseline of estimated costs and time against which progress of the project is monitored. The Project Manager should provide the Project Board with Highlight Reports to summarise progress at defined intervals. PRINCE2 always focuses on delivering specific products to meet a specific Business Case. Throughout the project, the Business Case is reviewed and progress is measured against any revised expectations of achieving defined benefits. Any deviations from the original Business Case must be controlled through the Project Board.
- 10.4.6 The PRINCE2 model includes eight distinct management *processes*, from setting the project off on the right track, through controlling and managing the project's progress, to the completion of the project. These processes define the management activities to be carried out during the project. In addition, PRINCE2 describes a number of *components* that are applied

within the appropriate activities, covering organisation, plans, stages, controls, risk management, configuration management, change control and quality review. These processes and components are described fully in the PRINCE2 manual.

- 10.4.7 CPD and the IS Services Branch of DFP's Business Development Service can provide advice on the application of PRINCE2.

## **10.5 The Gateway Process**

- 10.5.1 New procurement projects are subject to Gateway Reviews. The Gateway Process examines a project at critical stages in its lifecycle to provide assurance that it can progress successfully to the next stage. It is designed to be applied to projects that procure services, construction/property, IT-enabled business change projects and procurements utilising framework contracts.

- 10.5.2 In simple terms, a Gateway Review is a peer review of a procurement project carried out at a key decision point by a team of experienced people, independent of the project team. Procurements are any finite activity designed to deliver a government requirement and involving government expenditure. Gateway Reviews need to be scheduled into programme and project plans.

- 10.5.3 The Gateway Process is based on well-proven techniques that lead to more effective delivery of benefits together with more predictable costs and outcomes. The process considers the project at critical points in its development. These critical points are identified as Gateways. There are six Gateways, four before contract award and two looking at service implementation and confirmation of the operational benefits. Gateway 0 generally applies to a programme while Gateways 1-5 apply to its individual projects. The process emphasises early review for maximum added value.

- 10.5.4 The Project Owner (PO) or Senior Responsible Owner (SRO) uses the Project Profile Model (PPM) to determine the level of risk associated with a project. A PPM template is available from CPD. The scale of the review should be decided based on the degree of risk involved with the project and the potential impact to the business. **Gateway Reviews must be undertaken on all projects with a PPM score of 31 or more. However, a PO/SRO may request Gateways Reviews on a project with a lower score where that project is complex, innovative or has a specific risk.**

- 10.5.5 The teams vary in size but typically are between three and five people. Each review takes about three to five days, with a complete report provided to the PO/SRO before the team leaves the site. The targeted review is designed to avoid any delay to the project.
- 10.5.6 A Gateway review is conducted on a confidential basis for the PO/SRO and ownership of the report rests with the PO/SRO. This approach promotes an open and honest exchange between the project and review teams delivering maximum added value. Accountability rests with the SRO/PO for the implementation of recommended remedial action and project progression.
- 10.5.7 CPD is responsible for the Gateway Review Process in the Northern Ireland public sector and will provide guidance, Review Teams and training.

## **10.6 Performance Management, Measurement and Monitoring**

- 10.6.1 Performance management concerns tracking the success of a policy, programme or project in achieving its objectives and in securing the expected benefits. For appraisal and evaluation purposes, it involves the systematic collection of data relating to the financial management and outcomes of the policy, programme or project during implementation.
- 10.6.2 Monitoring involves checking at regular intervals that a project, programme or policy is being implemented on target, on time and within budget. This provides an essential source of information, indicating the extent to which objectives are being achieved, giving an early warning of potential problems, and of the possible need to adapt the policy, programme or project to ensure success. Monitoring also provides information for the evaluation stage. To be fully effective, plans for monitoring must form part of the initial planning of a policy, programme or project.
- 10.6.3 The Northern Ireland Audit Office has stressed the importance of careful monitoring of all projects from the outset, particularly any projects being delivered by a new organisation without a proven track record of successfully delivering publicly funded projects; financial management systems and procedures should come under particular scrutiny.<sup>19</sup>
- 10.6.4 The use of formalised capital works management procedures should provide senior management with a hierarchy of performance measures/indicators on the effectiveness, efficiency and economy of their

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<sup>19</sup>Grants Paid to Irish Sport Horse Genetic Testing Unit Ltd, NIAO report HC 396, para 52.



- management of capital works. The measures should as a minimum provide the required information for the annual HM Treasury return allowing comparisons of pre-tender to post-tender to outturn cost and duration estimates, and analysis of cost and duration estimate changes.
- 10.6.5 The facility to compare performance measures/indicators against targets, over time and between sub-groups is an essential aspect of the development of capital works' management procedures.
- 10.6.6 Effective performance measurement and monitoring means tracking all categories of benefit and ensuring that:
- ❑ Projects have defined target benefits and outputs;
  - ❑ Ownership of the delivery of benefits remains with the PO or SRO;
  - ❑ Outputs of a project or policy remain consistent with changing government objectives;
  - ❑ Costs are closely monitored and managed; and,
  - ❑ Forecast costs and benefits are frequently reviewed.
- 10.6.7 A monitoring system should establish:
- ❑ Whether management data is actually measuring what it purports to measure; and,
  - ❑ Sufficient controls to ensure that the data is accurate.

### **Financial Reporting**

- 10.6.8 Regular financial reporting on policies, programmes and projects should be performed. Reports may be integrated into the normal financial reporting cycle of an organisation, issued separately, or possibly combined with the reporting of progress against plan, benefits, and risks. For example, they may be included in highlight reports from Project Manager to Project Board.
- 10.6.9 Finance reports are likely to show expenditure to date, forecasts for the year, and variances against budgets. In large complex projects, the financial reporting is likely to integrate with contract management, with contractors providing regular 'Work In Progress' statements.

## **Benefits Management and Realisation**

10.6.10 The management and planning of policies, programmes and projects should include specific provision for benefits management and realisation. Benefits management is the identification of potential benefits, their planning, modelling and tracking, the assignment of responsibilities and authorities and their actual realisation. In many cases, benefits management should be carried out as a duty separate from day to day project management.

10.6.11 Benefits management complements and overlaps with appraisal. While appraisal provides the justification for the investment, benefits management allows organisations to plan for and achieve the benefits. Costs and benefits cannot be viewed in isolation, and the benefits management process and the overall appraisal should be planned together. Benefits management also interfaces with performance management, a means of measurement and management that monitors and reports achievement of outcomes.

10.6.12 Benefits management is a process that:

- **identifies** expected benefits, contributions to business objectives and stakeholders
- **establishes** a benefits management structure defining functions, relationships, communications, roles and responsibilities
- **develops** models of benefits, including baseline measurements and intermediate and final outcomes
- **defines** the benefits, including their attributes and measures, owners and risks
- **assesses** value and organisational impact, dependencies and risks; it will also show how the benefits are interrelated
- **develops** a benefits realisation plan, including a schedule for delivery, assessment or review points, alignment/linkage/interdependencies with other modules, projects or programmes, and business change processes for implementation and delivery
- **establishes** accountability for realisation and a means of tracking benefit realisation, including any performance management requirements

10.6.13 Benefits fall into four main categories, as indicated below.

| <b>Benefit</b> |                            | <b>Example</b>   |
|----------------|----------------------------|--|
| Financial      | Quantitative               | Operating cost reduction, revenue increase   |
| Non-financial  | Quantitative               | No. of customer complaints, reduction in road accidents, % of Government Departments on-line |
| Non-financial  | Qualitative                | Staff skills, staff morale   |
| Outcomes       | Quantitative & Qualitative | Improved standards of health care  |

10.6.14 **Benefits Realisation Plans should be included in Business Cases. They should identify the benefits to be achieved in the above categories, the activities that will be undertaken to pursue and realise them, and who is responsible for each benefit realisation activity.**

10.6.15 Further guidance on benefits management and realisation including workbooks is available as part of the OGC's Successful Delivery Toolkit at <http://www.ogc.gov.uk/sdtoolkit/index.html>

### **Contract Management**

10.6.16 When contracts have been let, it will be important to ensure that the respective roles and responsibilities set out in the contract are fully understood and fulfilled to the contracted standard. The likelihood of the benefits being realised will be affected by the contractual terms, and any incentives built in to the contract. Where contracted standards are not fulfilled, the contracting public body should apply mechanisms established in the contract to rectify any under-performance. Guidance is available from CPD on dispute resolution.

## 11. EVALUATION

### 11.1 Introduction

- 11.1.1 Evaluation plays an important role complementary to appraisal. Evaluation is an ex post activity which examines the outcome of a project, programme or policy, and is designed to ensure that the lessons learned are fed back into the decision-making process. This ensures government action is continually refined to reflect what best achieves objectives and promotes the public interest.
- 11.1.2 Departments should make arrangements to measure outcomes and record them. Outcomes should be compared with initial estimates and the results used to consider how to improve the quality of the assumptions in future appraisals, including, for example, the estimates of costs and benefits and the assumptions made about risks and appraisal optimism.
- 11.1.3 Evaluation is like appraisal conducted in retrospect. Thus the general principles and techniques of the *NI Practical Guide* and the *Green Book* apply as much to evaluation as to appraisal. This includes the principle of proportionate effort.
- 11.1.4 When any policy, programme or project is completed or has advanced to a pre-determined degree, it should undergo a comprehensive evaluation. Major or on-going programmes, involving a series of smaller capital projects, must also be subject to ex post evaluations (also known as post project evaluations (PPEs) or post implementation reviews (PIRs)). Major expenditures or changes in resource use should be followed by full scale post implementation reviews. Lesser decisions require a more modest evaluation effort.
- 11.1.5 Every appraisal of any substance should indicate how the proposals concerned will be evaluated after completion and how the results of the evaluation will be disseminated.
- 11.1.6 PPEs or PIRs are an integral part of the process involved in completing a project and should not be seen as an additional complication to the appraisal process, but rather as an opportunity to learn valuable lessons and to avoid repeating mistakes.
- 11.1.7 An evaluation might address a project, programme or policy, particular aspects of one of these activities, or key issues affecting a number of activities. Where a large number of small scale projects or activities requires evaluation, it may be appropriate to select a representative

sample for evaluation. It may be appropriate to conduct more than one PPE for a particular project, for example, where it has been implemented in stages.

11.1.8 The proliferation of terms in this area can be confusing. For example, the PRINCE2 guidance envisages evaluation at two stages:

- 1) A **Project Evaluation Review (PER)**, sometimes known as a Project Management Evaluation (PME):
  - The Project Manager is responsible for this evaluation, which should be conducted at project closure i.e. on implementation. It should result in an **End Project Report** and a **Lessons Learned Report** as described in the PRINCE2 guidance. This is concerned with the effectiveness of the project management up to the point of project closure. While it is useful and should be undertaken, it is not a post implementation assessment and is not a substitute for a PIR or a PPE.
- 2) A **Post Project Review (PPR)**, sometimes known as a Project Benefit Evaluation (PBE):
  - This should be conducted 6 to 12 months after project closure by an individual outside the Project Board and Project Team. The PPR is essentially a PIR or PPE. Although the PRINCE2 guidance emphasises the evaluation of benefits achieved, it is also generally expected to examine outturn costs.

### Evaluation Terms

|            |   |
|------------|---|
| <b>PPE</b> | <b>Post Project Evaluation</b><br>General term for an ex post assessment of a project   |
| <b>PIR</b> | <b>Post Implementation Review</b><br>General term for an ex post assessment of a policy, programme or project   |
| <b>PER</b> | <b>Project Evaluation Review</b><br>PRINCE2 term for an ex post assessment of management effectiveness, conducted at project closure i.e. on implementation<br>Also known as a <b>Project Management Evaluation (PME)</b> |
| <b>PPR</b> | <b>Post Project Review</b><br>PRINCE2 term for an ex post assessment of benefits obtained from an activity, conducted 6 to 12 months after implementation<br>Also known as a <b>Project Benefit Evaluation (PBE)</b>      |

## 11.2 Conducting an Evaluation

- 11.2.1 Evaluations should be led by individuals who have not been involved in the management or implementation of the proposal under consideration. This is so that they are in a position to take an independent and unbiased view. Basic principles for planning and managing evaluations are outlined at 1.6 above.
- 11.2.2 It is important to begin planning for evaluation at the appraisal stage and ensure that appraisal reports contain the information needed for evaluation. This should include an outline plan, setting out the general boundaries of the proposed evaluation, as indicated at 2.9.12-15 above.
- 11.2.3 An evaluation, whether it is called a PIR, PPE, PPR, PBE or something else, should normally follow this sequence:
- (i) Establish exactly what is to be evaluated and how the outturns can be measured.
  - (ii) Define the counterfactual i.e. estimate what would have happened if the intervention (e.g. the project, programme policy or financial assistance) had not occurred.
  - (iii) Compare the outturn with the target outturn, and with the effects of the chosen counterfactual(s).
  - (iv) Present the results and recommendations.
  - (v) Disseminate and use the results and recommendations.
- 11.2.4 The status quo or other baseline option used in the original appraisal should normally inform the counterfactual. However, viewing events from a post hoc position, evaluators may judge that the counterfactual would actually have been quite different from what was envisaged at the time of the appraisal, due to, for example, alternative states of the world and/or alternative management decisions. In such circumstances it may be helpful to consider other counterfactuals in addition to the original baseline option. The streams of costs and benefits that would have occurred in the counterfactual(s) should be estimated and set out so that the actual outturn costs and benefits can be compared with them.
- 11.2.5 The above sequence applies broadly as much to projects as to policies and programmes. However, proportionate effort should be applied e.g. when dealing with individual projects, particularly smaller projects, there tends to be less emphasis upon detailed consideration of alternative counterfactual states of the world. **In most cases effort should be concentrated upon evaluating the extent to which**

objectives have been achieved, whether assumptions have proved accurate (e.g. by comparing outturns with target outturns), and what lessons can be learned.

11.2.6 In general, evaluation reports should summarise:

- (i) whether, and if so, why the outturn differed from that foreseen in the appraisal;
- (ii) how effective the activity was in achieving its objectives, and why;
- (iii) the cost-effectiveness of the activity; and
- (iv) what the results imply for future management or policy decisions.

11.2.7 The results obtained should generally lead to recommendations for the future. These might include, for example, changes in procurement practice, improvements to methods for estimating costs or benefits, changes to management procedures, or the continuation, modification or replacement of a project, programme or policy.

11.2.8 The results and recommendations should feed into future decision making. The methods used to achieve this may require senior management endorsement. Efforts should be made to disseminate the results widely within the organisation, and for this purpose it may be useful to employ summaries of the main points, and synthesis reports incorporating the results from a number of evaluations with common features.

### **11.3 DFP Monitoring of Post Project Evaluations (PPEs)**

11.3.1 In January 1993 the Audit Review Group (ARG) examined the control of capital projects and recommended that DFP Supply should rigorously pursue and monitor the completion of PPEs. Supply Branches regularly monitor Departments' performance in completing PPEs with the assistance of Economic Appraisal Branch.

11.3.2 In the interest of ensuring good practice and VFM, DFP may occasionally require Departments to produce a list of all projects approved in the previous year which were below delegated limits, but above de minimis levels, and to specify when these projects will be, or have been, completed and whether PPEs have been undertaken or when they are

- due to commence. (De minimis levels will be notified in the forthcoming new DAO letter referred to at 9.2.3 above).
- 11.3.3 DFP may ask to see a sample of these PPEs from time to time by way of quality assurance. DFP may also ask for examples of documented client management procedures, again as a quality assurance measure.
- 11.3.4 All projects should be subject to proper monitoring and control measures including PPEs for expenditures above de minimis levels and, in the case of capital works, completion of appropriate project reports. Such measures ensure good VFM by identifying difficulties, preventing the repetition of mistakes and identifying positive points which may be of use in other projects and/or other departments. In future, DFP approval of all projects above delegated limits will be conditional upon satisfactory arrangements for PPEs.



## **12. EXPERT ADVICE, USE OF CONSULTANTS AND TRAINING**

### **12.1 Expert Advice**

12.1.1 Appraisal and evaluation often require and generally benefit from a multi-disciplinary approach, calling on the expertise of a range of specialists. It is important that the right skills and advice are sought and applied as appropriate to the case in hand.

12.1.2 Departmental economists can provide general advice on economic appraisal and evaluation. DFP Supply Officers can advise on general issues concerning approval procedures. Advice and support is also available on certain aspects from a variety of other experts. Further information including contact details is given at 12.4 below.

### **12.2 Use of Consultants**

12.2.1 Project sponsors should first consider using internal resources to complete appraisals. If the necessary skills are not available within the Department or Agency, internal consultancy services including Departmental economics branches should be approached before considering the use of external consultants. If, having investigated these possibilities, the Project Sponsor is satisfied that internal resources and consultancy services cannot complete the appraisal to the necessary level of technical quality and/or within an acceptable timescale, the use of external resources such as economic consultancy firms may be considered. The overriding objective in deciding whether to use internal or external consultancy services must always be to secure value for money.

12.2.2 Previously, some Departments provided funding to project sponsors to employ consultants to undertake appraisals. It is now considered that a more independent appraisal will be obtained if the funders rather than the sponsors employ the consultant. For instance, this should encourage greater objectivity and allow more direct control over the quality of the appraisals provided by consultants. This approach is now generally recommended.

12.2.3 Extensive guidance on how to go about the employment of consultants is given in [DAO \(DFP\) 03/05](#). Further guidance should be sought from the appropriate centre of procurement expertise or from DFP's Central Procurement Directorate (CPD).

12.2.4 Among other things, the DPS letter explains the nature of the business case that is required to support proposed external consultancy assignments. Annex B of the letter explains that such business cases should set out:

1. The purpose of the assignment
2. The benefits to be derived and when they are likely to accrue
3. A systematic assessment of the alternatives other than the consultancy considered
4. The deliverables expected from the consultant
5. The proposed project management arrangements
6. The proposed division of work between the consultant and the in-house staff who will be involved in the assignment
7. The expected costs both of the consultants and the in-house effort
8. The performance review arrangements to be employed
9. How eventual implementation will be handled and how it will be monitored

12.2.5 All business cases for external consultancy assignments should cover these issues in appropriate detail, with effort proportionate to the expenditure involved.

12.2.6 Additional guidance in relation to private finance is provided in HM Treasury Taskforce Technical Note No. 3 *How to Appoint and Manage Advisors*.

12.2.7 Departmental economists can assist to draft the terms of reference for external economic assignments and to monitor and quality assure their implementation and completion.

### 12.3 Training Courses in Appraisal and Evaluation

12.3.1 Departmental economists can supply general advice on training in appraisal and evaluation. They can provide informal training in appraisal and evaluation, and may undertake formal briefings, seminars and courses on demand.

12.3.2 The BDS Centre for Learning and Development (CLD) provides training courses in appraisal at two levels: an Awareness Course (1 half-day) offering a management awareness of the subject, and a Practitioners' Course (2 days) designed to give staff a basic working knowledge of the practical application of appraisal methods. A 2-day Practitioners' Course in Assembling an IT Business Case is also available. In addition, CLD can

- offer tailor-made courses for particular groups of staff or to cover specific subject areas
- 12.3.3 Client training in project management skills (for example, the roles of the Investment Decision Maker, Project Owner and Project Sponsor; Value Management; and Risk Management) is also available through BDS. A number of Project Management Consultants specialise in providing such training. General advice on client training in project management skills is available from DFP's Central Procurement Directorate (CPD).
- 12.3.4 For further details of relevant BDS courses and seminars, contact your Departmental Training and Development Officer (TDO).

## 12.4 **CONTACT DETAILS**

The following details were correct at the time of going to press, but are subject to change.

### 12.4.1 **ECONOMICS BRANCHES**

General queries on economic appraisal and evaluation should be addressed first to Departmental economics branches. Departmental economists can provide advice on the full range of issues relating to appraisals and evaluations. For example, they can advise on the appropriate techniques to use, and help to draft terms of reference, undertake and quality assure appraisals and evaluations, and select and manage external consultants. They can also advise on or provide relevant training. Current contact points for economists are as follows:

#### **Department of Agriculture and Rural Development**

Economic & Statistics Division, Dundonald House, Stormont, Belfast BT4 3SB  
*Telephone:* 028 90525010      *Fax:* 028 90524676

#### **Department of Culture, Arts and Leisure**

Economics Unit, 3<sup>rd</sup> Floor, Interpoint Centre, 20/24 York St, Belfast BT15 1AQ  
*Telephone:* 028 90258963      *Fax:* 028 90258898

#### **Department of Education**

Economic Advisory Unit, Rathgael House, Balloo Road, Bangor BT19 2PR  
*Telephone:* 028 91279601      *Fax:* 028 91279100

#### **Department for Employment and Learning**

Analytical Services Branch, Adelaide House, 39/49 Adelaide Street, Belfast BT2 8FD  
*Telephone:* 028 90257606      *Fax:* 028 90257747

#### **Department of Enterprise, Trade and Investment**

Economics Branch, Netherleigh House, Massey Avenue, Belfast BT4 2JP  
*Telephone:* 028 90529420      *Fax:* 028 90529542

#### **Department of the Environment / Dept for Regional Development**

Economics Branch, Clarence Court, 10/18 Adelaide Street, Belfast BT1 2GB  
*Telephone:* 028 90540833      *Fax:* 028 90540829

#### **Department of Finance & Personnel**

Economics Branches, Rathgael House, Balloo Road, Bangor BT19 7NA  
*Telephone:* 028 91858254      *Fax:* 028 91858098

#### **Department of Health, Social Services and Public Safety**

Economics Branch, Block D3 Castle Buildings, Stormont, Belfast BT4 3SQ  
*Telephone:* 028 90765609

#### **Department for Social Development**

Economics Branch, Brookmount Buildings, 42 Fountain Street, Belfast BT1 5EE  
*Telephone:* 028 90251953      *Fax:* 028 90251937

**Invest Northern Ireland**

Invest NI Economist, 64 Chichester Street, Belfast BT1 4JX  
*Telephone:* 028 90541921      *Fax:* 028 90545111

**Office of First Minister & Deputy First Minister**

Economic Policy Unit, Block E, Castle Buildings, Stormont, Belfast BT4 3SR  
*Telephone:* 028 90522428      *Fax:* 028 90520199

**Office for Regulation of Electricity & Gas**

Economics Branch, Brookmount Buildings, 42 Fountain Street, Belfast BT1 5EE  
*Telephone:* 028 90311575      *Fax:* 028 90311740

12.4.2 **DFP SUPPLY DIVISIONS**

DFP Supply Officers can provide general advice on all matters relating to DFP approval of Departmental expenditures. Contact:

Supply Divisions, Department of Finance & Personnel, Rathgael House, Balloo Road, Bangor BT19 7NA  
*Telephone:* 028 91858150

12.4.3 **THE NORTHERN IRELAND STATISTICS AND RESEARCH AGENCY (NISRA)**

NISRA provides statistics and social research services to Northern Ireland Departments and Ministers to assist in policymaking, monitoring and evaluation. It offers advice on a wide range of related statistical issues including data requirements, sources, analysis and interpretation. It also advise on social policy evaluation methods. Contact:

NISRA, McAuley House, 2-14 Castle Street, Belfast BT1 1SA  
*Telephone:* 028 90348100      *Fax:* 028 90348106  
*Website:* <http://www.nisra.gov.uk/>

12.4.4 **THE VALUATION AND LANDS AGENCY (VLA)**

The District Valuer, Valuation and Lands Agency (VLA) of the Department of Finance and Personnel should be consulted on all property valuation matters relating to appraisals. This applies to all public sector appraisals, including those involving private sector consultants.

In this regard VLA can offer to Departments a complete property advisory service as follows:-

- (i) Assistance with the formulation of property options.
- (ii) Carrying out sites and/or premises searches.

- (iii) Advice on opportunity costs.
- (iv) Estimates of capital and rental values of sites and buildings.
- (v) Assessment of rateable values and rental performance.
- (vi) Calculation of residual values and advice on depreciated replacement cost (DRC) application.

Section 7 of the *NI Practical Guide* gives further details of VLA's role in accommodation projects.

VLA's Central Advisory Unit (CAU) is responsible for policy on disposal of public sector land in Northern Ireland. It also issues advice and guidance on many other aspects of estate management including economic appraisals and PFI. Contact:

VLA Central Advisory Unit, Queen's Court, 56/66 Upper Queen Street, Belfast BT1 6FD  
Telephone: 028 90250700 Fax: 028 90543930  
Website: <http://vla.nics.gov.uk>

#### 12.4.5 **DFP OFFICE ACCOMMODATION BRANCH (OAB)**

OAB is a branch within the Office Estates and Building Standards Division of DFP's Central Services Group (CSG). It is responsible for a wide range of services including the provision of the Department's external services to other departments and agencies, and management of the Stormont Estate. OAB advises on building and refurbishment costs, and on furniture and other supply items. (For details of OAB's role in the appraisal of accommodation projects, see Section 7 of the *NI Practical Guide*).  
Contact:

Office Accommodation Branch, 9th Floor, River House, 48 High Street,  
Belfast BT1 2AW  
Telephone: 028 90518302

#### 12.4.6 **THE BUSINESS DEVELOPMENT SERVICE (DFP)**

The Business Development Service (BDS) provides advice on the use of DFP approved methods relating to IT. Among other things, BDS offers general ICT best practice advice and guidance on the production of business cases, programme and project management, and the completion of PMEs and PBEs for IT projects.

The Business Development Service, Craigantlet Buildings, Stormont, Stoney Road,  
Belfast BT4 3SX  
Telephone: 028 90527437  
Website: [www.nics.gov.uk/bds/](http://www.nics.gov.uk/bds/)

#### 12.4.7 **CENTRAL PROCUREMENT DIRECTORATE (DFP)**

CPD is responsible for establishing procurement policy for the Northern Ireland Public Sector and for monitoring its implementation. It provides an advisory service on all matters concerned with the procurement of Capital projects, services and goods. It also provides operational procurement and design services to client bodies.

CPD, Rosepark House, Room 284, Upper Newtownards Road, Belfast BT4 3NR  
*Telephone:* 028 90526200  
*Website:* <http://www.cpdni.gov.uk/>

#### 12.4.8 **THE EQUALITY DIRECTORATE**

The Equality Directorate within OFMDFM provides general advice on equality issues such as the Statutory Equality Obligations, Anti-Discrimination legislation and New Targeting Social Need (TSN).

The Equality Directorate, Castle Buildings, Stormont, Belfast  
*Telephone:* 028 90 523143 Statutory Duty Unit  
028 90 523164 New TSN  
028 90 523124 Anti-Discrimination  
*Website:* <http://www.ofmdfmi.gov.uk/equality/index.htm>

#### 12.4.9 **THE STRATEGIC INVESTMENT BOARD**

The Strategic Investment Board Ltd (SIB) is a limited company owned by OFMDFM set up under the Strategic Investment and Regeneration of Sites (NI) Order 2003 to exercise strategic investment functions in relation to the Executive and bodies carrying out major investment projects. Departments have a duty to facilitate and co-operate with SIB. SIB's role is explained fully in the Article 7 Arrangements associated with the Order. In brief, the SIB's functions under the Order are:

- advising the Executive in relation to the formulation and implementation of its programme of major investment projects. This will involve advising and assisting with:
  - planning and prioritisation of programmes and projects;
  - funding of projects, including borrowings for that purpose; and
  - general implementation of projects.
  - advising and assisting bodies carrying out major investment projects including providing research, consultancy, advisory and other services and general assistance, and in some

cases participating, by agreement with those bodies, in the carrying out of such projects.

In pursuit of these functions, the SIB has three main objectives:

- Executive Investment Strategy (EIS) – a longer term objective which will consider and determine the strategic investment future in NI and how the Departments will be financed in relation to this;
- Strategic Investment Plan (SIP) – details announced on 19 February 2003 (see <http://online.bds.nics.gov.uk/press/dfp/030219aa-dfp.htm>); and
- Reform – the SIB will work closely with existing reform initiatives, and drive some specific reform agendas to ensure that the EIS works effectively and public sector procuring authorities in N Ireland get the best out of their investment programmes.

Strategic Investment Board Ltd., Stormont Castle, Stormont Estate, Belfast BT4 3TT  
*Telephone:* 028 9037 8202    *Fax:* 028 9037 8227  
*Email:* [contact.sib@sibni.org](mailto:contact.sib@sibni.org)  
*Website:*        [www.sibni.org](http://www.sibni.org)

#### 12.4.10 **DFP EUROPEAN DIVISION**

European Division provides general advice and guidance on matters relating to EU Structural Funds Programmes.

Contact the EU Helpdesk, Department of Finance and Personnel, European Division, Annexe F, Health Estates, Stoney Road, Belfast, BT16 1US.  
*Telephone:* 028 9052 3891  
*Website:*    <http://www.europe-dfpni.gov.uk/>

#### 12.4.11 **DETI POLICY SERVICES UNIT**

DETI's Policy Services Unit has responsibility for promoting awareness and offering value added advice on European Community State Aids.

DETI Policy Services Unit, Netherleigh, Massey Avenue, Belfast BT4 2JP  
*Telephone:* 028 9052 9276



## APPENDIX 1

### APPRAISAL AND EVALUATION OF SMALL EXPENDITURES

#### Introduction

- A1.1 Deciding on the right amount of effort to devote to an appraisal or an evaluation is largely a matter for case by case judgement. The decision should be based on for example, the experience gained over time through undertaking other appraisals and evaluations of similar scale and type. It is recognised that those undertaking appraisals and evaluations may sometimes find it difficult to judge what the appropriate effort should be, particularly where small expenditures are concerned. This Appendix seeks to give some practical assistance on the subject. Although it is couched largely in terms of appraisal, the principles generally apply also to evaluation.
- A1.2 This guidance refers *broadly* to proposals involving public expenditures of less than £250,000 in total. Where financial assistance is in view, it may be taken to refer to **total financial assistance (including, for example, all sources of PE, EU and IFI funding) of up to £250k over the whole life of the project**. However, the £250,000 figure is indicative, and the need for judgement is required whatever the expenditure level.

#### The Principle of Proportionate Effort'

- A1.3 Appraisals use up resources. It is therefore important to judge the level of input appropriate to any particular appraisal. The general rule is that the resources to be devoted to an appraisal should be proportionate with the scale and importance of the associated objectives and resource consequences.
- A1.4 The effort that should go into an appraisal and the detail to be considered are a matter of judgement. When the right questions are asked the appropriate effort is often easy to see. Small expenditures generally justify less detailed appraisal than large expenditures, but small items can add up to substantial totals, and small expenditures can have big effects, and the principles of appraisal still apply. These same principles apply also to evaluation.

- A1.5 In deciding the amount of effort required for an appraisal, it is appropriate to consider not only the costs and benefits to the public sector, but also those to the other sectors of the economy, since appraisal is about encouraging the best use of the nation's resources as a whole. The importance of a project to the national economy may be disproportionate to the public sector costs and benefits arising. For example, a small public grant to a private firm or voluntary body may represent only a small proportion of the total resource cost of the project; or a small pilot project may be undertaken in anticipation of a major new programme

### **The Steps of Appraisal**

A1.6 The key steps of defining needs and objectives, identifying alternative options, and assessing their costs and benefits should always be undertaken, no matter how small the proposed expenditure involved. The reason for insisting upon this is that they represent a *way of thinking* which is indispensable.

A1.7 However, while these steps are always to be followed, discretion may be exercised on the amount of effort required on each of them. For example, it may be unnecessary to spend much time or effort on defining needs and objectives when the concern is simply to replenish stationery and other basic office supplies.

A1.8 It may not always be appropriate to calculate net present values for the smallest of proposed expenditures, particularly where there are no significant recurrent costs or benefits. The other steps of appraisal, such as assessing risk and uncertainty and post project evaluation, should usually be considered even on relatively small expenditure proposals. However, in general there is less likely to be a need for detailed analysis under these steps for small expenditures than for larger expenditures. For instance, although the use of sensitivity analysis is useful for most proposals, there may be no need for it in the case of the smallest expenditures.

A1.9 There is thus a great deal of flexibility in applying appraisal, particularly where small sums are involved. The use of appraisal principles to think through expenditure proposals represents a common sense approach which need not involve a lot of unhelpful bureaucracy.

### **Costs of Appraisal**

A1.10 It is impossible to provide a definitive norm in cost terms for the effort to be devoted to small appraisals, because the circumstances may vary widely. Nevertheless, the following should act as a rough guide. The cost of the resources devoted to appraisal should normally be expected to be up to

2% of the value of the public grant or expenditure under consideration. Where the cost significantly exceeds this level, say where it is 5% or more of the relevant value, the question of disproportionate effort may arise.

- A1.11 In setting out this norm, it is emphasised that it represents a broad guideline rather than a rigid rule. There are likely to be many cases where appraisal will cost substantially less than 2% of the relevant expenditure, for instance, in simple decisions where the objectives are obvious, the options are very restricted and the costs, benefits and other factors are particularly transparent.
- A1.12 More rarely, there may also be circumstances to justify committing larger costs to appraisal where, for example, the expenditure in view will have a disproportionate impact on the economy or where it will affect a politically or socially important issue.
- A1.13 At the smallest end of the spectrum, involving expenditure of less than £10,000, appraisal should often require no more than one man-day of an experienced appraiser's time. However, different circumstances may justify more or less input.

### **Documentation**

- A1.14 Documentation requirements will vary according to the size or importance of the appraisal in hand. Whether the proposed expenditure is small or large, it is wise to document each step of the appraisal process as and when it occurs, rather than to defer all the writing up to a later stage.
- A1.15 Smaller scale appraisals should generally be documented in a step-by-step record, but need not meet the full requirements demanded of large submissions. For example, while risks and uncertainties and the need for post project evaluation should generally be considered, they may not require substantial documentation in small scale appraisals where these factors are considered unimportant. An appraisal concerning a small purchase may deserve a record extending to only a few pages. However, the key steps referred to at paragraph 4 should generally be recorded even in small expenditure appraisals.

### **Pro Forma Documentation**

- A1.16 The use of standard '*pro forma*' documentation can be helpful for appraising small expenditure proposals. A '*pro forma*' approach is very useful where there are a substantial number of small appraisals with similar characteristics. 'Economic Appraisal: The Basic Steps' (see pages 9 & 10 above) serves as a summary of the kind of issues that should generally be addressed in a *pro forma*, but clearly there is a need to tailor

forms specifically to suit particular programmes and projects. For example, the appraisal of small grants can be facilitated by designing application forms so that they provide the information that funding bodies need to appraise them. (See 4.1.11-13 above for elaboration).

- A1.17 The pro forma approach has been applied in practice to small projects in numerous areas, and Departmental economists can assist with their design.

### **Evaluation of Representative Samples**

- A1.18 It would be impractical and of limited use to conduct an ex post evaluation of every small expenditure. Where an activity consists of a large number of small scale expenditures it will normally be appropriate to select a representative sample for evaluation.

### **Expert Advice**

- A1.19 There remains scope for case-by-case judgement on the issues addressed in this Appendix. Departments should make the most of the economic expertise available to them in arriving at the appropriate decisions. For example, Departmental economists can help design relevant pro forma documentation where this is considered appropriate, and will provide general advice on the effort appropriate to individual cases.

## APPENDIX 2

### COMPARISON OF ECONOMIC AND COMMERCIAL APPRAISAL

#### Introduction

- A2.1 Differences between economic appraisal and commercial appraisal can be a source of confusion for practitioners. The purpose of this appendix is to highlight the key differences with the aim of dispelling some of the confusion that surrounds them. Discussion of each type of appraisal is followed by a checklist showing how various items are treated under each type.

#### Economic Appraisal

- A2.2 Appraisal should always include an assessment of value for money in terms of the national interest. This is the perspective of *Economic Appraisal* and its scope therefore is very wide. In fact it seeks to identify *all* the costs and benefits to the UK resulting from a project, policy or programme.

- A2.3 Section 2 of *The NI Practical Guide* explains how costs and benefits should be estimated in an Economic Appraisal, so there is no need to duplicate all that information here. However, in the context of this appendix, it is useful to be reminded of the following key features:

- All UK impacts, whatever their nature, are taken into account, including not only “economic” factors like income and employment, but also social, health and environmental factors, and any other important identifiable effects.
- Costs and benefits are valued according to their economic cost or “opportunity cost” (see para. 2.5.7 of the main text for explanation).
- Costs and benefits are included whether they fall to the public or private sector and whether they are quantifiable in money terms or not.
- Benefits are adjusted to account for displacement of competing activity, so that a proposal’s net impact on the UK is calculated.
- Economic Appraisal is not restricted to the narrow perspective of a particular public body - it is about putting the nation’s resources to the best use.

- A2.4 Economic Appraisal always values costs and benefits on an economic cost basis. However, the approach to costs and benefits may fall into one of the following three main categories:

- (i) **cost benefit analysis (CBA)** which attempts to quantify *all* the costs and benefits *in money terms*;
- (ii) **cost utility analysis (CUA)** which is like CBA except that it seeks to measure benefits using non-monetary indicators of *utility*. Utility is an economist's term for the satisfaction or usefulness derived from a product. An example of CUA is the calculation of the cost per quality-adjusted life year ("QALY") resulting from a surgical intervention; and
- (iii) **cost effectiveness analysis (CEA)** in which *either* the benefits *or* the costs are held constant. In the former case CEA compares the costs of different ways of producing the same or similar outputs, which are not necessarily given a monetary value; in the latter case various ways of allocating a fixed sum are considered in order to maximise the benefits.

A2.5 CBA is rarely amenable in its purest form because relevant costs and benefits are often difficult to measure in money terms. Sometimes benefits can only be indicated in terms of intermediate outputs such as numbers of trainee places provided, or numbers of hospital cases treated. Even when appraising projects producing tradable goods and services (e.g. investments by the nationalised industries, grants to commercial firms) there may be non-monetary effects to take into account, such as environmental impacts and other qualitative outputs. CEA is used to some extent, particularly when the emphasis is upon choosing the least cost method of achieving particular objectives. However, many appraisals fall somewhere between CEA and CUA. They involve options which vary regarding both costs *and* outputs, and it is a matter of judging which of the alternatives is best by comparing the different costs and outputs which they offer.

A2.6 There are some specific forms of appraisal which do not amount to a full Economic Appraisal, but are nevertheless designed to contribute to the aim of assessing how best to use resources in the national interest. For instance, an **environmental appraisal** (or "environmental impact assessment") assesses the environmental effects of various options. Impact assessments may be conducted on a variety of other specific issues such as Equality, Health, and so on. Another example is **regulatory impact assessment**, which assesses the costs to industry of proposed changes to regulations and standards. Partial analyses like these may be used to feed into a fuller economic appraisal.

## Commercial Appraisal

- A2.7 Commercial Appraisal shares some of the characteristics of Economic Appraisal but is much narrower in scope. Its purpose is to establish whether a proposed activity will be viable in a commercial sense. A proposal may be considered commercially viable if, over its useful life, it is expected to earn sufficient revenue to cover its costs and yield an acceptable financial rate of return. Although it generally reflects the perspective of a private company rather than Government, Commercial Appraisal is relevant to the public sector in some circumstances.
- A2.8 Firstly, assessment of commercial viability is a necessary element of the appraisal of proposals to provide grant assistance to commercial activities. As indicated in section 4.5 of the *NI Practical Guide*, commercial viability (or “project viability”) should be assessed to help ensure that public money is not wasted on projects that will fail prematurely. Secondly, there exist some public trading bodies who sell goods or services into private markets or are subject to financial targets which require them to undertake Commercial Appraisal. Thirdly, some activities which are promoted primarily for social or other non-commercial purposes may include commercial elements and it is appropriate to seek to establish these on a firm commercial basis, to help avoid premature project failure.
- A2.9 Commercial Appraisal undertaken to establish a project’s viability covers several elements including analysis of projected cash flows, examination of the financing, marketing and management arrangements for the specific proposal in view, and assessment of the historical performance and general financial position of the relevant company or public sector trading body. Commercial Appraisal may address several of the steps at 1.4 of the *NI Practical Guide*, but will usually do so from a perspective of self-interest. Thus, for instance, it may take no account of the impact of its own activities upon other players in the market, and may ignore environmental and other wider costs and benefits to the UK.
- A2.10 It is specifically in the assessment of cash flows and calculation of Net Present Values (NPVs) that confusion most often arises over differences in approach between Economic and Commercial Appraisal. Both types of appraisal include identification of streams of costs and benefits over time and calculation of NPVs. Some of the figures used in the Economic Appraisal streams may be identical to those used in the corresponding Commercial Appraisal streams. This happens when economic costs and financial values coincide. For example, this is often the case with annual operating costs. However, the fundamental basis for measurement of costs and benefits is substantially different, and this is where confusion often arises. The crucial differences of substance are that costs and benefits are generally estimated:

- based on *economic cost* values in Economic Appraisal, but *financial* values in Commercial Appraisal;
- *for the UK or NI as a whole* in Economic Appraisal, but *only for an individual public sector trading body or private company* in Commercial Appraisal.

- A2.11 Many of the mistakes made in appraisals arise from failure to recognise these differences. Some of the more common errors are listed below under Common Errors in Economic Appraisal.
- A2.12 Confusion can also arise through misuse of terminology. In Commercial Appraisal, an NPV calculation is often referred to as a **Financial Appraisal**. This can confuse in two ways.
- Firstly, the term Financial Appraisal is sometimes used to describe the NPV calculations in an Economic Appraisal, which is misleading because NPVs in an Economic Appraisal are not based on financial values.
  - Secondly, Financial Appraisal may be used to describe a variety of financial assessments, including, for example, an affordability assessment, or an analysis of sources of funds.
- A2.13 The distinction between Economic and Commercial Appraisal is well illustrated by their use in projects involving assistance to industry, such as inward investment projects and industrial expansions. In these cases Economic Appraisal is used to assess the "national efficiency" of the project, that is, its VFM from the perspective of the national interest; and Commercial Appraisal is used to help assess "project viability". These cases demonstrate how Economic and Commercial Appraisals should *complement* each other in the process of assessing the overall soundness of a project. However, a Commercial Appraisal should not generally be used as a *substitute* for an Economic Appraisal.

### Common Errors in Economic Appraisal

- A2.14 Some common errors in Economic Appraisals include:

- **Statement of objectives in vague qualitative terms** such that their achievement can not be measured
- **Failure to cost assets already in public ownership.** These have an opportunity cost and should be costed at their current market value.



- **Inclusion of capital financing charges** such as loan charges. These may be relevant to a Commercial Appraisal or Affordability Assessment but do not represent an economic cost. In an Economic Appraisal, capital should be costed according to its purchase cost at current market values.
- **Double counting of capital expenditure with interest and depreciation charges.** In Economic Appraisal the cost of capital is adequately covered by including expenditure on capital costs in the years in which it occurs. In Commercial Appraisal the conventional approach is to include depreciation and interest charges. To combine these approaches is to count capital costs twice.
- **Inclusion of transfer payments** such as social security or redundancy payments. These do not represent economic costs.
- **Applying the test discount rate to cash or nominal values.** This is wrong because the discount rate is defined in real terms and must be applied to values expressed also in real terms.
- **Failure to consider costs and benefits to other bodies or budget holders.** Economic Appraisal is about *all* the costs and benefits to the UK and needs to go beyond the horizons of an individual Department or other body.
- **Ignoring Displacement.** The impact upon the business of other service providers or market competitors should be taken into account.
- **Lack of a clear explanation of the basis of all weights and scores,** leading to misunderstanding and delays until clarification is obtained.

## Checklist

- A2.15 The checklist overleaf provides an aide-memoire on whether particular costs and benefits should or should not be included in each type of appraisal. It is in the nature of a checklist like this that it can not cover every eventuality, so it should not be regarded as a substitute for the more detailed guidance on the treatment of costs and benefits which is included elsewhere in the *NI Practical Guide*.

## CHECKLIST OF COST AND BENEFITS

|  | Economic Appraisal | Commercial Appraisal |
|--|--------------------|----------------------|
| <b>1. COSTS</b>                              |                    |                      |
| a) <u>Capital Costs</u>                      |                    |                      |
| Land purchases                               | I                  | I                    |
| Land already owned                           | I                  | I                    |
| Fixed Capital purchases                      | I                  | X                    |
| Fixed Capital already owned                  | I                  | X                    |
| Depreciation on Fixed capital purchases      | X                  | I                    |
| Depreciation on Fixed capital already owned  | X                  | I                    |
| Interest payments, capital charges           | X                  | I                    |
| Change in Working capital requirement        | I                  | I                    |
| Capital subsidies/grants from UK             | I <sup>1</sup>     | I                    |
| b) <u>Current Costs</u>                      |                    |                      |
| Cost of inputs & outputs (excluding capital) | I                  | I                    |
| Insurance costs                              | I <sup>2</sup>     | I                    |
| Corporation Tax                              | X <sup>3</sup>     | I                    |
| VAT  | X <sup>3</sup>     | I                    |
| Import Duties                                | X <sup>3</sup>     | I                    |

|   | <b>Economic Appraisal</b> | <b>Commercial Appraisal</b> |
|---|---------------------------|-----------------------------|
| Redundancy payments<br>By UK public bodies                | X                         | I                           |
| Redundancy payments<br>By UK firms                        | X                         | I                           |
| Revenue grants from UK                                    | I <sup>1</sup>            | I                           |
| Repatriated profits from UK                               | I                         | X                           |
| <b>c) <u>Wider Quantifiable Costs</u></b>                 |                           |                             |
| On individuals and firms<br>(except transfer payments)    | I                         | X                           |
| On other public sector bodies                             | I                         | X                           |
| Increase in transfer payments<br>to individuals and firms | X                         | X                           |
| <b>d) <u>Unquantifiables</u></b>                          |                           |                             |
| Distributional Impact                                     | I                         | X                           |
| Image & social conscience<br>of firm/organisation         | I                         | I                           |
| Working environment                                       | I                         | I                           |
| Other effects such as<br>pollution, health, etc           | I                         | X                           |

## 2. BENEFITS

|   |                 |                   |
|---|-----------------|-------------------|
| <b>a) <u>Capital Benefits</u></b>       |                 |                   |
| Residual value (RV) of land             | I               | I                 |
| RV of fixed capital                     | I               | I                 |
| RV of working capital                   | I               | I                 |
| Capital subsidies/grants<br>from abroad | I               | I                 |
|   | <b>Economic</b> | <b>Commercial</b> |

|  | Appraisal      | Appraisal |
|--|----------------|-----------|
| <b>b) <u>Direct Benefits</u></b>                                     |                |           |
| Sales revenue  |                |           |
| VAT  | X <sup>3</sup> |           |
| Cost savings   |                |           |
| Redundancy Payments<br>From abroad                                   |                |           |
| Revenue grants from<br>abroad  |                |           |
| <b>c) <u>Wider quantifiable benefits</u></b>                         |                |           |
| On individuals and firms<br>(except transfer payments)               |                | X         |
| On other public sector<br>bodies                                     |                | X         |
| Decrease in transfer<br>Payments                                     | X              | X         |
| <b>d) <u>Unquantifiables</u></b>                                     |                |           |
| Distributional impact  |                | X         |
| Image  |                |           |
| Working environment  |                |           |
| Other benefits such as<br>reduced pollution,<br>Improved health, etc |                | X         |

Notes:

1. Strictly speaking, it is the use of the resources funded by the grant/subsidy that represent an economic cost, rather than the grant/subsidy itself.
2. Government has tended to bear risk centrally rather than purchase insurance. However, some public bodies do carry insurance.
3. In practice, adjustment of market prices for taxes is only undertaken in economic appraisal where it may make a material difference to the decision e.g. when comparing options that attract different VAT rates, or when comparing public and private options. See pages 35-36 above for details.

## APPENDIX 3

### PPP/PFI BUSINESS CASES

#### A3.1 Introduction

A3.1.1 Business Cases play a vital role in justifying Private Finance Initiative (PFI) and other Public Private Partnerships (PPP) projects. The purpose of this appendix is to clarify what DFP expects to be included in Business Cases for PFI projects, but is also broadly applicable to other PPPs. It replaces the DFP guidance previously given in *Guidance on Outline and Full Business Cases* (DFP, 1996 and 1998).

A3.1.2 An extensive body of guidance on PFI/PPP has been published through HM Treasury (HMT), the Office of Government Commerce (OGC) and Partnerships UK (PUK). The current guidance is available on the OGC and PUK websites.<sup>21</sup> This guidance generally applies to Northern Ireland Departments and Agencies. This appendix is not a substitute for the HMT/OGC guidance and must be read in conjunction with it.

A3.1.3 DFP expects Departments to keep abreast of HMT/OGC guidance and to follow it when preparing PFI and other PPP business cases. For example, the supplementary guidance on the taxation of PFI bids and the public sector comparator (PSC) published by HMT in 2003 should generally be applied.<sup>22</sup>

A3.1.4 Two current guides that are of particular relevance to PFI business cases are:

- *Step by Step Guide to the PFI Procurement Process* (April 1998); and
- *Technical Note No. 5: How to Construct a Public Sector Comparator* (October, 1999).

A3.1.5 *Step by Step Guide to the PFI Procurement Process* refers to the need for a Business Case to be prepared at Stage 3 and refined at Stage 9. It also indicates the need for appraisal of bids at Stage 11 and a final appraisal at Stage 12. This appendix explains more specifically what should be covered in the relevant Business Cases.

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<sup>21</sup> <http://pfi.ogc.gov.uk/> and <http://www.partnershipsuk.org.uk/index.shtml>

<sup>22</sup> The new supplementary guidance can be found at [http://www.hm-treasury.gov.uk/economic\\_data\\_and\\_tools/greenbook/data\\_greenbook\\_index.cfm](http://www.hm-treasury.gov.uk/economic_data_and_tools/greenbook/data_greenbook_index.cfm)

A3.1.6 A distinction is made between the Outline Business Case (OBC), which is to be prepared at Stage 3 and refined at Stage 9 as indicated in *Step by Step Guide to the PFI Procurement Process*; and the Full Business Case (FBC), which should include the appraisals required at Stages 11 and 12.

A3.1.7 The HMT PFI policy document *PFI: Meeting the Investment Challenge* published in July 2003<sup>23</sup> envisages a number of reforms to the assessment of VFM in PFI cases. These have not been finalised yet but Departments should take them into account as and when they are introduced. The changes proposed are:

- instituting a new assessment of the potential VFM of procurement options when overall investment decisions are made, to ensure PFI is used in those sectors where it is appropriate;
- reforming the Public Sector Comparator (PSC) to ensure an economically rigorous appraisal of a project at outline business case stage, prior to its procurement, to allow an alternative route to be chosen at this stage if it offers better VFM; and;
- introducing a final assessment of competitive interest in a project, and the market's capacity to deliver, at the procurement stage.

## A3.2 DFP Approval

A3.2.1 DFP requires Departments to submit OBCs for approval at Stage 3; and to submit FBCs for approval at Stage 12, before contracts are signed.

A3.2.2 Where the OBC results in a decision to pursue the PFI route, DFP approval at the OBC stage constitutes approval to proceed to tendering and preparation of a FBC, rather than approval of the expenditure associated with the proposed project. Where private finance is rejected in favour of a conventionally funded option, the OBC may provide a basis for approval of the expenditure required for the preferred option.

A3.2.3 Approval at FBC stage will generally sanction the expenditure required to pursue the recommended option, and allow the project to proceed to the award of a PFI contract or traditional procurement, depending on the outcome of the FBC.

A3.2.4 DFP approvals will generally be subject to all the usual terms and conditions applying to the approval of capital projects including, for example, those laid down in Section 9 of the *NI Practical Guide*.

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<sup>23</sup> [http://www.hm-treasury.gov.uk/documents/enterprise\\_and\\_productivity/PFI.cfm](http://www.hm-treasury.gov.uk/documents/enterprise_and_productivity/PFI.cfm)

### A3.3 Summary of OBC and FBC Requirements

A3.3.1 A summary table indicating what is required in both the OBC and the FBC is included in Appendix 4. It may be used as a checklist to aid assessment of whether an OBC or FBC covers all the necessary issues. DFP will expect Departments to address all of the issues indicated in Appendix 4 in their OBCs and FBCs, with appropriate and proportionate effort. The remainder of this Appendix elaborates on a number of key considerations concerning OBCs and FBCs.

### A3.4 Outline Business Case (OBC)

A3.4.1 The OBC provides the basis for a decision on whether to proceed to tendering and preparation of a FBC, or pursue a traditional procurement, or abort the project. It should cover Stages 1 to 3 as indicated in *Step by Step Guide to the PFI Procurement Process*. The components of an OBC include:

- 1) an **economic appraisal**, which reviews business need and assesses options in accordance with the *NI Practical Guide*. (See Appendix 4, component no. 1);
- 2) thorough coverage of the eleven **Treasury Taskforce ‘signing off criteria’** including Affordability, Output Specification, Risk Allocation and eight others. (See Appendix 4, components 2 to 12); and
- 3) consideration of other relevant issues including the intended approach to tendering, accounting treatment, and arrangements for post project evaluation. (See Appendix 4, components 13 to 16).

A3.4.2 The OBC should examine in detail the prospects for a successful PFI solution. The decision whether or not to proceed down the PFI route requires judgement of the potential for VFM, taking account of factors such as

- private sector interest in the project,
- previous experience of similar projects,
- external benchmarks,
- the estimated potential for risk transfer, innovation and third party revenues, and

- the extent to which the project appears likely to meet the favourable preconditions for a successful PFI project (for example, as set out in para 5.8 of the *NI Practical Guide*).

A3.4.3 All the relevant considerations should be detailed in the OBC. The likely cost of PFI solutions should be indicated where possible, but it is recognised that the comparative VFM of PFI options can not be established in detail until bids have been received and examined.

A3.4.4 An essential element of the Affordability assessment in the OBC is the **Reference Project**. This is explained at Stage 3 of *Step By Step Guide to the PFI Process*. In brief, the Reference Project:

- is a particular possible solution to the output requirement, combining capital investment, operations, maintenance and ancillary services;
- should be worked up in sufficient detail to provide a full and adequate costing, including quantification of the key risks inherent in the project, including cost or time overruns, and service underperformance;
- needs to be costed with sufficient reliability that the service appears affordable on a year-by-year basis, and this level of reliability requires a comprehensive estimation of whole life costs and an identification and evaluation of the risks inherent in undertaking the investment.

A3.4.5 The OBC should not become a dead document once it has been approved at Stage 3. It should be refined during the procurement process. In particular, it should be revisited before issue of the Invitation to Negotiate at Stage 10. This is referred to at Stage 9 of *Step by Step Guide to the PFI Process*, which stresses the importance of reaffirming affordability and funding commitments

### A3.5 Full Business Case (FBC)

#### Main Elements of the FBC

A3.5.1 The final test of VFM, affordability and risk transfer occurs at FBC stage. The FBC's purpose is to inform the final decision on the project and provide a basis for approval to proceed to the award of a PFI contract. The FBC should cover the requirements indicated in the Annex to this Appendix. In brief, it should:

- ¶ report key changes since the OBC, including any changes to the strategic context and the need for or objectives of the project;



- ∥ report the tendering process, including detailed description of private sector bids received;
- ∥ document the development of the PSC, including details of assumptions and calculations;
- ∥ appraise and compare the private sector bids and the PSC using conventional economic appraisal methods;
- ∥ confirm affordability and commitment of funders, and review the extent to which the other Treasury Taskforce signing-off criteria have been satisfied;
- ∥ set out a plan and timetable for final negotiations and award of PFI contract, or traditional procurement; and
- ∥ summarise the results of the appraisal and recommend a preferred option.

### **PFI options in the FBC**

A3.5.2 The PFI options will be based on the bids received from private firms responding to the invitation to tender. Each short listed bid represents an option to be appraised. Two categories of options may emerge:

- **Standard Bids:** Every short listed proposal should include a standard bid, for appraisal alongside the other standard bids and the PSC; and
- **Variant Bids:** In addition to a standard bid, firms may submit variant bids reflecting the scope which PFI allows for innovative solutions and the incorporation of commercial elements. Variant bids should normally meet the requirements of the output specification but offer special features which are additional to, or which vary from, those included in the standard bid. Variant bids should be treated as separate options to be appraised alongside the standard bids and PSC to see whether their special features offer benefits worth pursuing in terms of improved VFM or reduced risks to the public sector.

### **The Public Sector Comparator (PSC)**

A3.5.3 A PSC should normally be developed for appraisal alongside the PFI options emerging from the tendering process. The PSC should usually be a refinement of the Reference Project considered in the OBC. Whereas the main purpose of the Reference Project is to establish affordability, the primary use of the PSC is to help assess VFM.

- A3.5.4 Detailed guidance on the development of the PSC is given in *Technical Note No. 5: How to Construct a Public Sector Comparator*. This defines the PSC as “a hypothetical risk-adjusted costing, by the public sector as a supplier, to an output specification produced as part of a procurement exercise”. DFP will expect Departments to construct the PSC in accordance with that guidance.
- A3.5.5 As recommended in section 3.1 of *Technical Note No. 5*, documentation of the PSC within the FBC should cover:
- ◆ an estimation of basic procurement costs, including
    - capital costs, such as purchase, construction, project management (both internal and purchased from consultants), professional fees and fitting out costs;
    - an estimation of operating costs;
  - ◆ a report on the approach taken in relation to third party revenues;
  - ◆ a section dealing with the approach taken on asset values on transfer, disposal and termination of the contract;
  - ◆ a risk matrix showing the various sources of risk, their costs, the likelihood of their occurrence and the consequences for the project;
  - ◆ a discounted cash flow forecast showing the timing of the costs (both basic procurement and risks) which are discounted to yield an overall net present value of the costs of the project;
  - ◆ sensitivity analyses, showing the consequences of varying key assumptions; and
  - ◆ appendices.

### **Appraising the Bids and the PSC**

- A3.5.6 The VFM testing of the PFI options and the PSC in the FBC should employ economic appraisal principles similar to those applied in the OBC. It should cover, for the PSC and each PFI bid:

- identification of costs and benefits;
- calculation of NPVs;
- analysis of uncertainties;
- weighing of other factors; and
- presentation of the results.

A3.5.7 Comparison of the costs, benefits, uncertainties and other relevant factors should inform the selection of the preferred PFI bid; the judgement of whether it or the PSC offers the better VFM; and the decision on whether to proceed to final negotiations and award of a PFI contract, or pursue a conventional procurement, or abort the project.

A3.5.8 Calculation of the NPVs of the costs of the PFI bids and PSC is crucial. The calculation includes:

- for the PFI bids, the expected NPV of the service payments to the private sector over the life of the project;
- for the PSC, the expected NPV of the public sector costs required to procure the same service by non-PFI means, typically a capital investment and subsequent annual operating costs; and
- adjustments to ensure that the PSC and the PFI bids are fully comparable. In particular:
  - the PSC cash flows should be adjusted to take account of the risks that would be transferred to the private sector under a PFI solution; and
  - tax differences need to be stripped out in accordance with the new HMT “supplementary guidance on the taxation of PFI and the public sector comparator”, which can be found on the Treasury website at [http://www.hm-treasury.gov.uk/economic\\_data\\_and\\_tools/greenbook/data\\_greenbook\\_index.cfm](http://www.hm-treasury.gov.uk/economic_data_and_tools/greenbook/data_greenbook_index.cfm)

A3.5.9 The *NI Practical Guide* general guidance on NPV calculations is applicable to PFI cases, but does not cover the adjustments necessary to make the PFI bids and the PSC comparable. Departments must refer to the more detailed guidance given in *Technical Note No. 5* and the supplementary guidance on taxation referred to above. Identifying the appropriate risk and tax adjustments is not straightforward and specialist assistance may be required.

A3.5.10 Once calculated, the NPVs should be compared to see which offers the best VFM. If there is more than one PFI option, then these options can be ranked, and the lowest NPV of costs under PFI compared with the NPV of the cost of the PSC. Note however:

- NPVs are point estimates. It is sensible to consider ranges around these estimates, to avoid spurious precision. Sensitivity analysis,

involving the recalculation of NPVs for various possible outcomes of key assumptions, can help to achieve this;

- Not every risk relevant to a project can easily be quantified and included in the straight arithmetic comparison. It may be necessary to make a qualitative allowance for unquantified risks. An element of judgement is unavoidable;
- Comparison of NPVs is vital, but it is also important to *give due weight to non-financial considerations* such as how the bids perform against service quality criteria.

### **A3.6 Advice and Guidance**

A3.6.1 Most Northern Ireland Departments have PFI advisers who will provide general advice on PFI issues.

A3.6.2 Economic appraisal methods are required to prepare PFI business cases. Departmental economists can provide expert advice on these aspects.

A3.6.3 In preparing PSCs, a number of Departments and Agencies have used external advisers, such as actuaries and accountants, in addition to internal resources and other public sector help. Within reasonable cost limits, this use of advisers is encouraged when there is a business case in which value will clearly be added by external experts. This will often be the case where skills and experience (e.g. In financial modelling and risk assessment) are scarce in some areas of the public sector.

A3.6.4 The general guidance on the use of consultants in section 12.2 applies to the use of consultants for PFI/PPP proposals. For example, where consultancy costs are expected to exceed £10,000, an external consultancy business case is required before employing consultants to undertake any work associated with the preparation of an OBC. Separate justification is expected for any consultancy work beyond OBC stage. This should be provided either in a further external consultancy business case, or by including the equivalent information in the OBC itself.

## APPENDIX 4

### SUMMARY OF DFP PFI OBC/FBC REQUIREMENTS

| COMPONENT                           | OBC REQUIREMENT   | FBC REQUIREMENT  |
|-------------------------------------|---|--|
| <p><b>1. Economic Appraisal</b></p> | <ul style="list-style-type: none"> <li>▪ Appraisal should fulfil requirements of <i>NI Practical Guide</i> e.g. business need assessed, ‘SMART’ objectives detailed.</li> <li>▪ ‘Do minimum’ and alternative options appraised, including:                             <ul style="list-style-type: none"> <li>- different levels and types of output/service provision</li> <li>- alternative techniques for service delivery</li> <li>- alternative procurement methods</li> </ul> </li> <li>▪ Suitable calculation of NPVs, consideration of unquantified factors, sensitivity analysis etc.</li> <li>▪ Results summarised and preferred option indicated.</li> <li>▪ Level of detail should generally be similar to that in an appraisal for a traditional procurement.</li> </ul> | <ul style="list-style-type: none"> <li>▪ Business need and objectives reviewed and confirmed. Important changes since OBC detailed.</li> <li>▪ PFI bids and PSC identified and described.</li> <li>▪ Full appraisal of the PFI bids and the PSC, including calculation of NPVs, sensitivity analysis and consideration of other relevant factors.</li> <li>▪ Results summarised and recommendations made.</li> </ul> |
| <p><b>2. Affordability</b></p>      | <ul style="list-style-type: none"> <li>▪ Projected PFI service payments estimated.</li> <li>▪ Affordable over the whole life of the contract, taking into account all sources of existing revenue support and additional income from capital receipts or third party income.</li> <li>▪ Affordability analysis, and impact on budgets, accepted by the Dept or Agency.</li> </ul> <p><i>Reference Project identified and costed, including whole life costs and at least preliminary quantification of key risks.</i></p> <p><i>Impact on budgets set out clearly on a year by year basis, and commitment of funding sources confirmed.</i></p>   | <ul style="list-style-type: none"> <li>▪ OBC affordability analysis fully updated.</li> </ul>  |

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| <p><b>3. Output Specification</b></p>      | <ul style="list-style-type: none"> <li>▪ Requirement specified in terms of service outputs required, rather than particular assets or solutions.</li> <li>▪ Range of on-going services included in the requirement defined broadly, to offer scope for efficiencies and innovation.</li> <li>▪ Specification pitched at a level that is justifiable as the level at which the Dept or Agency would specify it using traditional procurement, by reference to precedent, or any enhancement in specification provides greater value for money.</li> </ul> <p><i>Output specification provided at least in outline form.</i></p> | <ul style="list-style-type: none"> <li>▪ Copy of the full detailed output specification provided.</li> <li>▪ Any significant changes since the OBC highlighted.</li> </ul> |
| <p><b>4. Risk Allocation</b></p>           | <ul style="list-style-type: none"> <li>▪ A risk register has been prepared, identifying all the foreseeable risks associated with the scheme, and making a preliminary risk allocation.</li> <li>▪ The preliminary allocation, as a minimum, transfers the principal risks associated with design, build finance and operation of the facilities, and considers the allocation of risks associated with levels of usage, residual values, technology and obsolescence and changes in legislation or regulation.</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Proposed risk allocation detailed in full.</li> <li>▪ Changes in thinking since OBC recorded.</li> </ul>                          |
| <p><b>5. Indication of Bankability</b></p> | <ul style="list-style-type: none"> <li>▪ Evidence of commercial interest.</li> <li>▪ Certainty of income stream to meet contract payments.</li> <li>▪ Willingness to consider all opportunities for generation of other revenues, either from sales of assets or third party use of assets and services.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Fully updated</li> </ul>  |
| <p><b>6. Key Terms and Conditions</b></p>  | <ul style="list-style-type: none"> <li>▪ Following a template for commercial and legal terms where one exists.</li> <li>▪ Heads of term or outline contract prepared.</li> <li>▪ Proposed payment mechanism that reflects risk allocation.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Fully updated.</li> </ul>   |

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|---|--|--|
| <p><b>7. Use of Appropriate Comparators</b></p>   | <ul style="list-style-type: none"> <li>▪ If a Public Sector Comparator (PSC) is to be prepared: baseline and level of direct costs identified; approach to valuing risks to be transferred identified.</li> <li>▪ If PSC is not required: the justification for that; an alternative approach to demonstrating VFM has been identified, including competition and other comparators (such as previous similar deals); the whole life costs of not carrying out the scheme have been identified.</li> </ul> | <ul style="list-style-type: none"> <li>▪ PSC developed in accordance with <i>Technical Note No. 5: How to Construct a Public Sector Comparator</i> (October, 1999).</li> <li>▪ Documentation consistent with section 3.1 of <i>Technical Note No. 5: How to Construct a Public Sector Comparator</i>.</li> <li>▪ Costings, risk adjustments, calculations and detailed assumptions explained clearly.</li> </ul> |
| <p><b>8. Suitability of Proposed Advisers</b></p> | <ul style="list-style-type: none"> <li>▪ Arrangements for obtaining legal, financial and technical advisers, with appropriate experience, and demonstrating VFM from advisers.</li> <li>▪ Willingness of advisers to share lessons and approaches, without undue confidentiality and copyright constraints.</li> <li>▪ Arrangements for periodic review of performance of advisers.</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Fully updated.</li> </ul>   |
| <p><b>9. Indicative Timetable</b></p>             | <ul style="list-style-type: none"> <li>▪ Timetable prepared.</li> <li>▪ Stages of procurement process kept to a minimum consistent with achieving VFM.</li> <li>▪ Total elapsed time from OJEC to completion realistic.</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Timetable updated and confirmed in detail.</li> </ul>   |
| <p><b>10. Project team</b></p>                    | <ul style="list-style-type: none"> <li>▪ Project management experience.</li> <li>▪ Appropriate range of skills and experience, whether from advisers or in house, for the deal envisaged.</li> <li>▪ Accessible to involvement of Taskforce.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Details of proposed management structure and team updated and confirmed.</li> </ul>   |
| <p><b>11. Statutory Processes</b></p>             | <ul style="list-style-type: none"> <li>▪ Statutory processes addressed (such as planning permission, public enquiry etc as appropriate).</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Fully updated.</li> </ul>   |

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|---|--|--|
| <b>12. Commitment of sponsors/users</b>             | <ul style="list-style-type: none"> <li>▪ Demonstrable support from key users and, where appropriate, consultation with those users.</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Fully updated.</li> </ul>   |
| <b>13. Tendering Process</b>                        | <ul style="list-style-type: none"> <li>▪ The intended approach to tendering should be indicated.</li> <li>▪ The EC Services Directive (Negotiated Procedure) will often be appropriate, with provision for standard and variant bids. Practical help is provided in <i>Technical Note No 2 How to follow EC Procurement Procedure and Advertise in the OJEC</i>. DFP's Central Procurement Directorate (CPD) can provide specialist advice on procurement issues.</li> </ul> | <ul style="list-style-type: none"> <li>▪ The following explained and recorded:             <ol style="list-style-type: none"> <li>i. the EC Directives relevant to the case;</li> <li>ii. the method of invitation to tender employed;</li> <li>iii. the bids received;</li> <li>iv. the short-listing process; and</li> <li>v. the negotiations conducted.</li> </ol> </li> </ul> |
| <b>14. Accounting Treatment</b>                     | <ul style="list-style-type: none"> <li>▪ Report progress on determining the appropriate balance sheet treatment.</li> <li>▪ State a view on whether the project is likely to be treated as 'on or off balance sheet'</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Provide update confirming the balance sheet treatment.</li> </ul>   |
| <b>15. Arrangements for Post Project Evaluation</b> | <ul style="list-style-type: none"> <li>▪ These need to be detailed in the OBC only if it is decided to pursue a traditional procurement, in which case section 11 of <i>NI Practical Guide</i> should be followed.</li> <li>▪ If PFI is being pursued, details may be deferred to FBC.</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Details should be given as indicated in <i>NI Practical Guide</i> section 11 including indication of the factors to be monitored and evaluated, the time scales involved, and who will be responsible</li> </ul>  |
| <b>16. Presentation of the Results</b>              | <ul style="list-style-type: none"> <li>▪ Economic appraisal presented according to requirements of <i>NI Practical Guide</i>.</li> <li>▪ Other material presented in the order of this Annex, using appendices for detailed assumptions as appropriate.</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Similar order of presentation as for OBC.</li> </ul>  |



## APPENDIX 5

### APPRAISING AND EVALUATING NEW TARGETING SOCIAL NEED

#### Introduction

- A5.1 This appendix provides guidance on how to take account of New Targeting Social Need (New TSN) objectives in appraisals and evaluations of policies, programmes and projects. It incorporates and replaces the guidance issued by DFP in November 2001.
- A5.2 Appraisals in which New TSN is relevant should cover all of the standard appraisal steps in accordance with the general guidance in the *NI Practical Guide*. However, consideration of New TSN is particularly important at the steps 'establish the need for the project', 'define objectives and constraints' and 'weigh up non-monetary costs and benefits'. The remainder of this note focuses on how to consider New TSN at these stages.

#### Consider the relevance of New TSN early in the appraisal process

- A5.3 The first consideration is to determine whether or not New TSN is relevant to the policy, programme or project being appraised. This should be established at the outset of the appraisal process, when defining the needs and objectives to be addressed, so that relevant New TSN needs and objectives can be taken into account from the beginning.
- A5.4 Appraisers need to be aware of the importance of thinking about New TSN at the commencement of appraisals. The New TSN dimension is more likely to be appraised successfully if it is identified and built into the appraisal at the outset, rather than at a later stage. For instance, the New TSN impact will be greater if New TSN criteria are used to influence option identification, than if consideration of New TSN impact only begins after the options have been determined.

#### Defining New TSN-relevant Needs

- A5.5 Early in any appraisal, it is important to establish the need for expenditure by, for example, identifying deficiencies in current provision and specifying the projected need or demand for services. For instance, where New TSN is relevant, it will be appropriate to consider and identify the specific people, groups or areas of social need who are to be targeted. The poorest should be identified objectively using measures of deprivation, fairly and consistently applied within programmes.
- A5.6 The method of targeting will depend on a number of factors, notably the level at which the programme is delivered. For instance, where programmes

- are delivered to individuals, Departments should identify the people who are least well off and who need the particular service most. One model that has proved successful is to undertake proactive initiatives, often in partnership with others including the voluntary sector, designed to improve the take-up of income-related benefits. These involve identifying and targeting particular groups and individuals and include action to remove or reduce barriers such as difficulties with language, poor literacy, little knowledge of entitlement or a fear of claiming.
- A5.7 Some areas and communities are subject to higher than average rates of unemployment and are more deprived than others. New TSN recognises this and commits Departments to target such geographic areas for special attention, where possible. Programmes such as the proposed Neighbourhood Renewal Strategy, the Rural Development Programme and other area-based interventions are particularly relevant in this regard. Indicators of multiple deprivation are an effective means of identifying the most disadvantaged areas when programmes attempt to address a range of different needs.
- A5.8 NISRA has published a report titled *Targeting Areas of Social Need in Northern Ireland* (NISRA Occasional Paper No.16, April 2001), which specifically addresses this question. It reviews various approaches that have been used to measure deprivation, with particular emphasis on the 'Robson measures'. These served as a basic tool for identifying the spatial distribution of disadvantage in Northern Ireland since 1994, but they have been superseded by the 'Noble measures' – as is explained below.
- A5.9 An illustration of the use of measures of deprivation is the way that they have contributed to the classification of areas used for targeting. For example:
- the International Fund for Ireland's (IFI) set of designated disadvantaged wards
  - the Community Economic Regeneration Scheme (CERS)
  - the Community Regeneration and Improvement Special Programme (CRISP)
  - the Making Belfast Work and Londonderry Initiatives
  - the Peace and Reconciliation Programme
  - the Building Sustainable Prosperity Programme
  - the Rural Development Programme
  - the LEADER II Programme
  - the designation of TSN areas at Local Government District level for use by IDB, IRTU and NITB

- The designation of TSN areas at Ward level for use by LEDU and T&EA
- A5.10 Measures of deprivation will have a continuing role in the targeting of need. NISRA commissioned research to review deprivation measures in Northern Ireland, conducted by a team led by Mike Noble of the University of Oxford, including the Queens University of Belfast. The results of their efforts have been published in the report *Measures of Deprivation in Northern Ireland* (Social Disadvantage Research Centre, Department of Social Policy and Social Work, University of Oxford, June 2001) which is available from NISRA.
- A5.11 The Noble Report contains a comprehensive new set of deprivation indicators, based largely on 1999 data. These are known as the new Northern Ireland Measures of Deprivation. They include:
- i. 7 Domain Deprivation Measures – covering Income; Employment; Health; Education, Skills & Training; Geographical Access to Services; Housing Stress; and Social Environment
  - ii. a Multiple Deprivation Measure, based on a combination of all the Domain Deprivation Measures
  - iii. a Child Poverty Measure, which is a subset of the Income Domain Deprivation Measure
  - iv. an Economic Deprivation Measure, which combines the Income and Employment Domain Deprivation Measures
- A5.12 Results have been produced at various levels e.g.
- at **ward** level for (i), (ii) and (iii) above;
  - at **enumeration district** level for (iv) above, and for the Income and Employment domains within (i) above; and
  - at **Local Government District** level for (ii) above
- A5.13 These results should provide a useful tool to assist with targeting area-based need. The choice of measures or indicators is important if the extent of need is to be gauged accurately. For example, incidence of Free School Meals might act as a useful proxy for income deprivation in some circumstances. However, such an indicator is generally unlikely to be as appropriate as a measure based directly upon Income data.

- A5.14 In addition, the spatial range for the measure or indicator needs to be carefully selected to draw out precisely where the need lies. For instance, a measure at Ward level might suggest limited deprivation but it could be masking a few very deprived areas within that Ward – as a result it may be more appropriate to use a measure based upon smaller areas, for instance, Enumeration Districts, in order to unearth the real pockets of need. As far as possible, the geographic range of the selected measure or indicator should match that of the project or programme in view, otherwise there is potential for poor targeting of resources.
- A5.15 The new Northern Ireland Measures of Deprivation are important, but other information sources also have a vital role to play. There is a wealth of social and economic statistics on Northern Ireland to draw on. For instance, the labour market statistics produced by the Department of Enterprise, Trade and Investment (DETI) will be relevant to the targeting of measures to increase employment and employability. Other Departments have their own data and information sources that should be used to help target their programmes.
- A5.16 Another consideration in targeting resources on an area basis is that the areas to which one type of programme is appropriate, for example, urban regeneration, may not be appropriate to other types of programme, such as rural development or forestry. The need for the particular service must also be taken into account. While areas may have similar overall levels of deprivation, their need for a particular service may differ.
- A5.17 There is no unique method for identifying needs. Different programmes have different objectives and target groups, and targeting has to be tailored to suit the specific programmes in view. Departments must judge the approach that is appropriate to each circumstance, drawing on specialist advice as necessary.

### **Define New TSN-relevant Objectives**

- A5.18 Having identified the specific people, groups or areas to be targeted, it is good appraisal practice to set precise and *measurable* objectives and targets. These should serve as parameters for the identification of options, and, importantly, provide a basis for appraising the comparative merits of options, and later evaluating post-implementation achievements.
- A5.19 New TSN has a particular emphasis on tackling the problems of unemployment and increasing employability. Poverty tends to be associated with other types of social need, and New TSN focuses on addressing the inequalities and needs of disadvantaged people in areas such as health, education and housing. Accordingly, within a particular appraisal, it may be appropriate to specify objectives directed towards achieving:-

- ◆ **increases** in employment opportunities for unemployed people;
  - ◆ **increases** in employability i.e. by facilitating the development of aptitudes or skills people need to equip them to work or reducing barriers which prevent them from working; and
  - ◆ **improvements** in the position of the most disadvantaged people by:-
    - *reducing inequalities in health, housing, and other relevant areas which are related to disadvantage*
    - *reducing inequalities in access to or take up of services where these are related to social need.*
- A5.20 These provide *qualitative* indications of New TSN-relevant objectives. However, when defining objectives in live cases, they should be expressed in terms that are SMART i.e. **S**pecific, **M**easurable, **A**chievable, **R**elevant and **T**ime-dependent.
- A5.21 In particular, the importance of including **measurable** objectives must be stressed. Without them, there will be little basis for appraising and evaluating the comparative performance of options. Accordingly, objectives need to be expressed in *quantitative* terms as far as possible.
- A5.22 The New TSN Action Plans provide specific examples of New TSN-related objectives and targets. These may be of direct relevance to some appraisals and evaluations, or they may be adaptable to suit them.
- A5.23 Where there are *multiple* objectives, there may be merit in prioritising them. It may be the case that the policy, programme or project in view will address both New TSN-relevant and New TSN-irrelevant needs and objectives, in which event it may be appropriate to prioritise the New TSN and non-New TSN objectives. Even if all the objectives are New TSN-related, prioritisation of the objectives may help to focus the appraisal.

### **Assess the New TSN Impact of the Options**

- A5.24 This is about analysing the extent to which the options will achieve the New TSN objectives specified in the appraisal. It requires consideration of the costs and benefits arising from the proposal. The *costs* of any measures needed to deliver the policy, programme or project should be estimated in accordance with general appraisal costing guidance. However, New TSN-specific *benefits* are likely to be more difficult to capture in monetary terms, and their assessment will normally be addressed under the general appraisal heading of 'weigh up non-monetary factors'.

A5.25 The method for assessing New TSN impact should be decided on a case-by-case basis, taking account of the circumstances. There is no unique way of doing this. Often the first step will be to identify that the benefits of a particular option will impact upon a designated New TSN area. In some cases, for example, when determining eligibility for a particular rate of grant, this may be all the impact analysis that is required. However, it may often be appropriate to go beyond this and attempt to assess the nature and extent of the New TSN impact.

A5.26 A simple but effective approach is to develop an *impact statement*. In essence, this consists of a table summarising the impact of each option upon the project objectives, including each relevant New TSN objective. The size of the table can be scaled to suit the needs of the case in hand. An accompanying commentary summarising the main trade-offs between the options is generally helpful.

**Impact Statement**

|                            | <b>Option 1</b> | <b>Option 2</b> | <b>Option 3</b> |
|----------------------------|-----------------|-----------------|-----------------|
| <b>New TSN Objective 1</b> |                 |                 |                 |
| <b>New TSN Objective 2</b> |                 |                 |                 |
| <b>New TSN Objective 3</b> |                 |                 |                 |
| <b>Other Objective 1</b>   |                 |                 |                 |
| <b>Other Objective 2</b>   |                 |                 |                 |
| <b>Other Objective 3</b>   |                 |                 |                 |

A5.27 The cells of the table should contain suitable *quantitative* impact measures or indicators; and/or *qualitative* impact analysis. For example, suitable economic and social indicators may be used to indicate the New TSN benefits, and thus help to compare how the options perform against the appraisal objectives, and how they compare with each other.

A5.28 A few broad examples of suitable indicators are given below for illustration. These will not always be relevant, and the list is far from definitive. There is a need to choose carefully, drawing on sources such as the Noble Report and the wide range of available Northern Ireland social and economic statistics, to come up with the right indicators to suit the individual policies,

programmes or projects in view. Statisticians and economists can help with this.

**Examples of Relevant Economic and Social Indicators**

|                      |  |
|----------------------|--|
| <b>Employment</b>    | jobs promoted or created<br>placements of long term unemployed or disabled           |
| <b>Employability</b> | trainee places provided<br>% of population in training/further education             |
| <b>Housing</b>       | new starts and rehabilitations<br>rates of homelessness and houses lacking amenities |
| <b>Health</b>        | cases treated<br>rates of accidents, incidence and death                             |
| <b>Education</b>     | enrolments and class sizes<br>% of pupils achieving grades/qualifications            |

A5.29 It may be appropriate to supplement quantitative analysis based on indicators like these with qualitative assessment, including textual description of impacts that are difficult to quantify, and interpretation of the quantitative material. For example, figures on jobs created can be supplemented by description of the quality of the jobs and interpretation of how beneficial they will be to the targeted people, groups or areas.

A5.30 When assessing the New TSN impact, consideration should be given to the **deadweight** and **displacement** associated with each option. Generally speaking those options that have the lowest incidence of deadweight and displacement will target resources best.

A5.31 **Deadweight** is expenditure targeted on a desired activity that would have occurred anyway, or on people or areas that do not need it. For example if it were established that the cost of public transport was a barrier to access to services in a particular New TSN area, then an option providing free travel to all would carry proportionately more deadweight than, say, an option restricting free travel to people in receipt of means tested benefits. Analysing the scope for deadweight inherent in each option can help develop proposals that target resources better.

A5.32 **Displacement** is the degree to which an activity promoted by a programme is offset by reductions in other similar activities. For example,

granting assistance to a business in a New TSN area may displace the trade of similar businesses already operating there, or in adjacent areas. Alternatively, a proposal for a community facility may duplicate some other existing or planned services in the area or elsewhere nearby. Minimising displacement helps to maximize the New TSN impact.

### **Balancing New TSN Impacts with Other Factors**

- A5.33 Consideration of New TSN objectives and impacts must be balanced by consideration of other relevant objectives and impacts. For example, achievement of value for money (VFM) is a general objective of policies, programmes and projects. An option offering additional New TSN benefits may offer less VFM in terms of cost per output than an alternative option. In this example, there would be a need for judgement of whether the extra cost is worth bearing to obtain the extra New TSN benefits.
- A5.34 In any given case there may be a variety of other objectives or constraints to be considered, for example operational requirements, policy objectives such as transport, health, education etc, and other 'difficult to value' factors as referred to in Section 2.7 of the *NI Practical Guide*. The relative priority of New TSN vis-à-vis these other considerations will vary according to the circumstances and should be judged and documented case by case
- A5.35 In some cases the primary objectives of a proposal may reflect New TSN concerns. In others, the primary motive may be something else entirely, but it may still be appropriate to assess New TSN impacts. On some occasions, New TSN may be of no relevance. In any event, appraisal reports should provide clear analysis of all the relevant considerations, in order to facilitate the necessary judgements.
- A5.36 It is important that appraisals and evaluations identify *all* of the relevant objectives, impacts and unquantified considerations, and present them in such a way that decision makers are informed of the trade-offs between New TSN, VFM and the other relevant factors. The approaches referred to in Section 2.7 of *The NI Practical Guide* can be employed for this purpose. For instance, as indicated at para A5.26 above, an *impact statement* may be used to tabulate the effect of each option not only upon New TSN, but also upon each of the other relevant objectives, constraints and other factors.
- A5.37 It is good practice is to cover all non-monetary factors by either the impact statement method or the weighted scoring method. It is not helpful to cover some factors in a weighted scoring calculation and others in an impact statement. This can cause confusion and invalidate the rankings emerging from the weighted scores. For example, it is not generally helpful to treat New TSN or Equality separately from a weighted scoring of other factors.



## **New TSN and Ex-Post Evaluation**

- A5.38 The Office of the First Minister and Deputy First Minister (OFMDFM) is responsible for evaluating the overall progress of New TSN within a framework that encompasses the Actions Plans of all NI Departments. However, this does not avoid the requirement for Departments themselves to consider how to allow for New TSN within their regular programmes of evaluation. The following are some basic principles for doing so.
- A5.39 General guidance on evaluation is given in Section 11 of the *NI Practical Guide*. It requires that: “Every appraisal of any substance should indicate how the proposals concerned will be evaluated after completion and how the results of the evaluation will be disseminated. This applies to policies and programmes as much as to projects”. This is not a new requirement, thus it applies to proposals with a New TSN dimension that are already under way, as well as to new cases.
- A5.40 Ex-post evaluation examines the outturn of a policy, programme or project and seeks to learn lessons from experience that will help in future planning and implementation. It is important to establish a baseline option or ‘counterfactual’, against which to compare the actual outcome, in order to estimate net additionality, that is, the benefits (including New TSN benefits) that are attributable to the policy, programme or project.
- A5.41 Evaluation is like appraisal conducted in retrospect, hence the principles outlined above for appraisal of New TSN will also apply broadly to its evaluation. The New TSN objectives and indicators employed at appraisal stage will generally be equally relevant when it comes to evaluating success post implementation. For example, if an appraisal projects job creation in a New TSN area, it would be appropriate subsequently to evaluate the jobs actually created, and specifically how they impacted upon the population in the New TSN area.
- A5.42 Meaningful evaluation of New TSN activities depends upon suitable preparation at the appraisal stage, particularly by recording good quality baseline information and establishing the baseline option. It is generally helpful to include details of the pre-implementation deployment of resources, levels of service provision, and social and economic indicators. Objectives, key calculations, and assumptions should be recorded in detail. Systems for recording relevant information during and after implementation need to be established. This all helps to aid comparison of outturns with estimates, assessment of success in achieving objectives, and consideration of how processes can be improved and resources better targeted to achieve New TSN aims.

## **Help and Advice**

- A5.43 Specialist advice may be needed. The New TSN Unit within OFMDFM's Equality Directorate can provide general advice and guidance on New TSN – see 12.4.8 for contact details. The OFMDFM Research Branch provides research and statistical support. Timely involvement of NISRA statisticians and Departmental economists can help to ensure that New TSN impacts are properly assessed and incorporated into appraisals and evaluations.

## APPENDIX 6

### THE WEIGHTED SCORING METHOD

#### Introduction

- A6.1 There are a number of approaches to the appraisal of costs and benefits that are difficult to value in money terms. These include, for example, listing and describing them, developing a matrix or impact statement, and applying the weighted scoring method. As indicated in section 2.7 above, these various approaches should be considered carefully before choosing the method most suited to the case in hand. Listing and describing is often adequate in simple cases. The impact statement approach is adaptable to most circumstances. The weighted scoring method, explained in this appendix, is a possible alternative approach.
- A6.2 Before explaining the weighted scoring method, some words of warning are appropriate.
- Firstly, DFP is generally content with the appropriate use of either the 'list and describe' or impact statement approaches, and does not require the use of the weighted scoring method.
  - Secondly, where the weighted scoring method is employed, DFP expects the rationale for each weight and each score to be fully explained. Failure to do this can cause delays in the approval process.

#### What is the Weighted Scoring Method?

- A6.3 The weighted scoring method, also known as 'weighting and scoring', is a form of multi-attribute or multi-criterion analysis. It involves identification of all the non-monetary factors (or "attributes") that are relevant to the project; the allocation of weights to each of them to reflect their relative importance; and the allocation of scores to each option to reflect how it performs in relation to each attribute. The result is a single weighted score for each option, which may be used to indicate and compare the overall performance of the options in non-monetary terms.
- A6.4 This process necessarily assigns numeric values to judgements. These judgements should not be arbitrary or subjective, but should reflect expert views, and should be supported by objective information. To achieve meaningful results which decision-makers can rely on, it is important that:

- (i) the exercise is not left to the ‘experts’, but is undertaken by a group of people who represent all of the interested parties, including, for example, those who are directly affected by the project, and those who are responsible for its delivery;
  - (ii) the group possesses the relevant knowledge and expertise required to make credible measurements and judgments of how the options will impact upon the attributes;
  - (iii) the group is led by an independent chairman to steer the process, probe opinions, promote consensus and avoid prejudice; and
  - (iv) the justification for the group’s chosen weights and scores is fully explained.
- A6.5 Appraisal reports should identify the personnel involved in the exercise, including an indication of their credentials, so that decision-makers are fully aware of whose views are represented. If there is a lack of consensus among members of the group regarding any of the weights or scores, the views of the dissenting individuals should be recorded.
- A6.6 The process of deriving weights and scores is explained below step by step, covering the following stages:
- i. Identify the relevant non-monetary attributes;
  - ii. Weight the attributes to reflect their relative importance;
  - iii. Score the options to reflect how each option performs against each attribute;
  - iv. Calculate the weighted scores;
  - v. Test the results for robustness; and
  - vi. Interpret the results.

### **Step 1: Identification of Non-Monetary Attributes**

- A6.7 Identifying the attributes may sound straightforward, but attributes must be clearly defined so that both appraisers and those reviewing appraisal reports have a clear understanding of them. To help in the scoring of options, attributes should be defined as far as possible in service or output-oriented terms, and they should generally relate closely to the service

objectives and performance criteria established at the outset of the overall appraisal. Considerable care is also needed to ensure that:

- (i) there is no double counting caused by an overlap in the attributes (e.g. aesthetic qualities and attractiveness);
- (ii) there is no double counting caused by attributes being covered by costs (e.g. including a 'reliability' attribute when reliability is already provided for by inclusion of maintenance costs); and
- (iii) all relevant attributes are included, even if they are common to all the options.

A6.8 Regarding point (iii), it is important to include cover relevant attributes even when all the options appear to impact equally upon them. Omission of common attributes can distort scores and lead to an imbalanced comparison of the differences between the options. For example, Options X and Y may score 200 and 100 respectively, when common attributes are overlooked, giving the impression that X is twice as beneficial as Y. However, if common attributes are worth 300, the correct scores for X and Y should be 500 and 400 respectively, indicating that X has a significantly smaller advantage over Y when all the non-monetary factors are taken into account. Apart from distortion of scores, there is a general risk that the appraisal may focus on attributes that are relatively insignificant while overlooking the most important attributes.

A6.9 Attributes are best defined so that the status quo or do minimum baseline option can be given a score other than zero. For example, if one of the project objectives is to improve access for the disabled, the attribute is better defined as 'accessibility for the disabled' than as 'improvement in accessibility for the disabled'. The first definition allows all of the options, including the baseline option, to be scored, and thus enables the options to be compared in proportion to the baseline. The second definition necessitates a zero score for the baseline option, which means that the scores for the alternatives can not indicate how much better they perform than the baseline option<sup>24</sup>.

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<sup>24</sup> This is not to say that the baseline option should never be given a zero score. In the accessibility example, the baseline option will deserve a score of 0 if the current provision is completely inaccessible to the disabled. However, the more likely position is that the disabled can access it with a degree of difficulty, in which case a suitably small positive score would be appropriate.

Example: In a certain health service appraisal, the relevant attributes are identified as:

- number of cases treated;
- waiting time;
- patient access; and
- disruption to services.

### **Step 2: Decide the Weights for Each Attribute**

A6.10 The second stage is to decide on the weights to be attached to each of the attributes identified. This should reflect the group consensus about the relative importance of the attributes, which is a matter for judgement, based on, for instance, relevant policy statements. The most common approach, and the one which is most readily comprehended, is to express the weights in percentage terms so that they sum to 100.

A6.11 **Justification for the weights ascribed should be recorded. Such an explicit approach helps to ensure that the basis of the weights is fully understood and accepted by all those participating in the exercise as well as those using its results.**

Example: The group appraising our hypothetical health services project has decided that the following weights are appropriate:

- |                           |     |
|---------------------------|-----|
| • number of cases treated | 40% |
| • waiting time            | 30% |
| • patient access          | 20% |
| • disruption to services  | 10% |

### **Step 3: Scoring the Options**

A6.12 The third stage is to score each option against each attribute on a suitable scale. The approach described here uses a *cardinal* scale. This means that if Option A is considered to perform three times as well as Option B, then Option A is given a score that is three times that of Option B. Simpler alternatives to cardinality are possible, for example an *ordinal* scale may be used. This provides a simple ranking of options against each attribute, which enables one to say that Option A is better than Option B, but it does not indicate *how much* better A is than B. Such an approach may be useful in some circumstances, but a cardinal approach, if sustainable, is more informative.

- A6.13 Options are scored against the attributes by reference to a scale, say from 0 to +20. A score of 0 will indicate that the option offers no benefits at all in terms of the relevant attribute, while a score of +20 will indicate that it represents some "maximum" or "ideal" level of performance. Scores between 0 and +20 will indicate intermediate levels of performance. The scale used does not have to be from 0 to +20, but mathematical consistency demands that the same scale is used for all attributes. The meaning of the maximum and minimum score should always be clearly defined and the whole scoring system should be documented clearly in the appraisal report. Group members should have a common understanding of it.
- A6.14 To achieve cardinality, the group needs to think carefully about the differences in the scores awarded to the options, and to provide meaningful justification for them. Suppose, for example, that the attribute 'waiting time' refers to the speed of delivery of a particular service, and that options are scored on a scale from 0 to +20. The group has decided that a score of 0 represents a waiting time that is completely unacceptable e.g. 12 months or more; while a score of 20 represents a waiting time at or close to zero. If Option C delivers in 3 months, while Option D delivers in 6 months, then, using the scale as defined, it would be reasonable to award Options C and D scores of 15 and 10 respectively. In another example, where the attribute is 'accessibility' it may be possible to justify different scores on the basis of objective information about differences in distances travelled.
- A6.15 **The weighted scoring method should not be used to avoid the effort of measuring differences between options in measurable non-monetary units. Nor should it be used to substitute vague subjective judgments of comparative performance for hard measurement. The credibility of the scores depends upon the provision of a rational justification to support them, including measurement where possible. In any case, project sponsors must be able to provide justification for each and every score that is awarded, and DFP will expect this to be recorded in full detail.**
- A6.16 Scores should be allocated to all of the options, including the baseline option (i.e. the status quo or 'do minimum'). A common error has been to overlook the baseline, but it is important to include it. However inadequate it may seem, the existing or 'do minimum' level of service will normally impact on the attributes to some extent, and scoring this helps to give a

sense of proportion to the scores of the other options, and to compare their performance to that of the current or minimum level of provision.

*Example:* The health service group scores four options against the attributes as follows:

|                        | Option P<br>(Status Quo) | Option Q | Option R | Option S |
|------------------------|--------------------------|----------|----------|----------|
| No. of cases treated   | 5                        | 10       | 12       | 15       |
| Waiting Time           | 8                        | 12       | 14       | 16       |
| Patient access         | 10                       | 10       | 15       | 15       |
| Disruption to services | 15                       | 5        | 5        | 10       |

#### Step 4: Calculate the Weighted Scores

A6.17 This simply involves multiplying each score by the weight for the relevant attribute. Thus weighted, the scores are totaled to obtain an aggregate weighted score for each option.

*Example:* Combining the last two examples results in the following weighted scores:

|                              | Option P<br>(Status Quo) | Option Q     | Option R     | Option S     |
|------------------------------|--------------------------|--------------|--------------|--------------|
| No. of cases treated         | 5x40 = 200               | 10x40 = 400  | 12x40 = 480  | 15x40 = 600  |
| Waiting Time                 | 8x30 = 240               | 12x30 = 360  | 14x30 = 420  | 16x30 = 480  |
| Patient access               | 10x20 = 200              | 10x20 = 200  | 15x20 = 300  | 15x20 = 300  |
| Disruption to services       | 15x10 = 150              | 5x10 = 50    | 10x10 = 100  | 5x10 = 50    |
| <b>Total Weighted Score:</b> | <b>790</b>               | <b>1,010</b> | <b>1,300</b> | <b>1,430</b> |



### **Step 5: Test the Robustness of the Results**

- A6.18 It is important to examine how robust the results are to changes in the weights and scores used. This can be done with the aid of sensitivity analysis. For example, the weighted scores can be recalculated to demonstrate the effect upon them of changing the weights. Similarly, they can be recalculated to show the impact of different scores.
- A6.19 Judgement should be used to select suitable variations in assumptions to subject to sensitivity analysis. For example, where there have been differences in opinion within the group about certain weights or scores, it will be helpful to explore the impact of using the different weights or scores advocated by different group members.
- A6.20 Details of the sensitivity analysis should be recorded, and the robustness of the results confirmed. Where appropriate, attention should be drawn to circumstances in which the ranking of options, or the differences in weighted scores, are particularly sensitive to plausible changes in certain weights or scores.

### **Step 6: Interpret the Results**

- A6.21 Non-monetary factors are generally important in public sector appraisals therefore weighted scores can have a crucial influence upon option selection. It is vital that they are compiled and interpreted carefully, and that the reasoning behind the figures is clearly presented in appraisal reports.
- A6.22 The results will consist of a set of weighted scores, including one for each option. These should act as indices for comparing the options' overall performance on non-monetary factors, indicating not only how the options rank but also how great are the differences between them. Thus they should serve a similar purpose in respect to non-monetary factors as NPVs do in respect to monetary factors. For example, if Options E, F and G have weighted scores of 2000, 1000, and 950 respectively, this indicates that Option E is significantly better (about twice as good) as either Options F or G, while Option F is slightly better than Option G. This is more informative than the use of an ordinal scale, which can only indicate the rank order of E, F and G.
- A6.23 Weighted scores can be directly compared with NPVs, to help assess trade-offs between costs and non-monetary performance. This is illustrated by the following example.

| 1.<br>Option | 2.<br>Net Present<br>Cost<br><br>(£M) | 3.<br>Weighted<br>Score | 4.<br>Total Cost<br>per Unit of<br>Weighted<br>Score<br><br>(£) | 5.<br>Marginal<br>Increase in<br>Weighted<br>Score<br><i>compared to<br/>Option P</i> | 6.<br>Marginal<br>Cost per<br>Extra Unit<br>of<br>Weighted<br>Score<br><i>compared to<br/>Option P</i><br><br>(£) |
|--------------|---------------------------------------|-------------------------|---|---|---|
| P            | 3.0                                   | 790                     | 3,797   |   |   |
| Q            | 4.5                                   | 1,010                   |   |   |   |
| R            | 4.0                                   | 1,300                   | 3,077   | 510   | 1,961   |
| S            | 5.0                                   | 1,430                   | 3,496   | 640   | 3,125   |

A6.24 Columns 2 & 3 show the Net Present Costs (NPCs) and Weighted Scores of Options P, Q, R and S. The information in these columns is sufficient to indicate that Option R dominates Option Q. In other words, Option Q is both more costly and less beneficial than Option R, and, other things being equal, can be dismissed from further consideration.

A6.25 The figures in columns 4 to 6 help to compare the cost-effectiveness of Options P, R and S. Column 4 implies that Option R is the most cost-effective in terms of total cost per unit of weighted score. Columns 5 & 6 help to indicate the differences between Options R and S and the least cost option, Option P. The figures suggest that Options R and S offers significant extra benefits than P, and that Option R does so at the lowest marginal cost.

A6.26 Such calculations need to be handled with care. It is important to bear in mind that weights and scores are based on judgements. They are not precise measurements against an interval scale, such as the measurement of temperature against the Fahrenheit or centigrade scales. The importance of explaining the weights and scores fully, and interpreting the results carefully, can not be over-stressed.

A6.27 The results of a weighted scoring exercise are specific to individual cases, and are not readily transferable to others. However, the attributes relevant to one project are likely to be relevant to other projects of a similar type.

The weights given to these attributes may not be the same, but the principles for deciding the weights should show some consistency across similar projects. There should also be some consistency in the principles used for scoring options within similar categories of project.

## APPENDIX 7

### BASICS OF DISCOUNTING

#### Introduction

- A7.1 Using a discount rate has the effect of reducing the value of future costs and benefits in present day terms. If society has a discount rate of 3.5% per annum, this implies that it values £1 today equally with the certainty of £1.035 in a year's time. Another way to express this is to say that £1 in a year's time is worth only 96.62p now, because  $1/1.035$  equals 0.9662. The 96.62p figure is called the Present Value (PV) of the £1, and the 0.9662 figure is the relevant 'discount factor'.
- A7.2 The following figures show how the PV of £1 declines in future years when the rate of discount is 3.5% per annum.

| Year of Payment<br>(mid year) | Present Value<br>(at middle of year 0) |
|-------------------------------|--|
| 0                             | £1.0000                                |
| 1                             | £0.9662 (= £1 x $1/1.035$ )            |
| 2                             | £0.9335 (= £1 x $1/1.035^2$ )          |
| 3                             | £0.9019 (= £1 x $1/1.035^3$ )          |
| 10                            | £0.7089 (= £1 x $1/1.035^{10}$ )       |

- A7.3 It is important to remember that the discount rate should generally be applied to figures that are:
- **expressed in real terms** i.e. excluding allowance for general inflation (See 2.8.5 above); and
  - **adjusted for appraisal optimism** (See 2.6.15 above)
- A7.4 In most appraisals it is sufficient to carry out discounting on costs and benefits identified at *annual intervals*. For example, it is common to identify streams of costs and benefits assumed to occur in the middle of Years 1, 2, 3 etc and to discount them all back to the middle of Year 0. Similarly, they may be assumed to commence at the start of Year 1, 2, 3 etc and discounted back to the start of Year 0.
- A7.5 Table 1 of this appendix (see below) shows the discount factors needed to calculate PVs at 3.5% per annum. Table 2 provides discount factors for discount rates from 1% to 10% per annum. Detailed discounting calculations are facilitated by the use of suitable computer software, avoiding the need to

refer to discount tables. However, tables can be useful in some circumstances, for instance when simple calculations are required. Departmental economists can advise on the design of spreadsheets to suit particular cases.

### Net Present Value

- A7.6 Net Present Value (NPV) is the name given to the sum of the discounted benefits of an option less the sum of its discounted costs, all discounted to the same base date. Its significance as a key summary indicator of the comparative value of an option is explained in section 2.8 of the *NI Practical Guide*. A negative NPV is generally referred to as a Net Present Cost (NPC).

**Example:** Equipment with 4 years of life requires replacement. There are two options A and B with different capital and recurrent costs. No monetary benefits are identifiable. The aim is simply to choose the least cost solution i.e. that with the lower NPC.

| Year            | 0   | 1      | 2      | 3      | 4      | NPC          |
|-----------------|-----|--------|--------|--------|--------|--------------|
| Discount Factor | 1   | 0.9662 | 0.9335 | 0.9019 | 0.8714 |              |
|                 | £k  | £k     | £k     | £k     | £k     | £k           |
| <b>Option A</b> |     |        |        |        |        |              |
| Capital Costs   | 100 |        |        |        |        |              |
| Revenue Costs   |     | 35     | 35     | 35     | 35     |              |
| Present Value   | 100 | 33.8   | 32.7   | 31.6   | 30.5   | <b>228.6</b> |
| <b>Option B</b> |     |        |        |        |        |              |
| Capital Costs   | 75  |        |        |        |        |              |
| Revenue Costs   |     | 47     | 47     | 47     | 47     |              |
| Present Value   | 75  | 45.4   | 43.9   | 42.4   | 41.0   | <b>247.7</b> |

Despite higher capital costs initially, Option A has the lower net present cost and should be preferred to Option B.

### Timing Considerations

- A7.7 NPVs should generally be calculated over the same time period for all options. The selected time horizon should reflect the economic life of the services in view, or the useful life of relevant key assets. It should be sufficiently distant to cover all the important cost and benefit differences between the options. For example, the appropriate period may be 5 years

for an information technology project, 10 years for an industrial development project, or 25 years or more for a longer term project.

A7.8 Assets with different lives can be accommodated within this approach by assuming replacement at appropriate times and making suitable use of residual values (RVs). For instance,

- Suppose Option 1 involves replacement of a piece of equipment with a 15-year life in Year 10 of an appraisal, while Option 2 requires replacement of similar equipment in Year 5;
- Using a common time horizon of 20 years, the difference in useful life remaining at the end of 20 years will be accounted for by assigning different RVs to each option in Year 20;
- In Option 1 the equipment will be assigned an RV of *approximately* one third of its value, since at Year 20 it will still have 5 years i.e. one third of its useful life remaining;
- In Option 2 the equipment will have a zero RV, because it will be at the end of its useful life.

### Equivalent Annual Costs

A7.9 In some cases it can be helpful to calculate PVs in terms of Equivalent Annual Costs (EAC), rather than NPVs or NPCs. A cost of £100 in the middle of Year 0 is equivalent to a stream of 10 annual costs of £12.03 starting in the middle of Year 1 when using a 3.5% annual discount rate. It can be demonstrated that such a cost stream has a PV of £100 when discounting at 3.5% per annum. An asset that costs £100 and has an expected life of 10 years is thus said to have an EAC of £12.032. Table 3 below provides EAC factors for a 3.5% discount rate.

A7.10 EACs can be useful when contemplating replacement of a capital asset, where there is a need to compare alternative assets with different lives.

**Example:** Consider two options for replacing a boiler. In Option X a boiler with an expected life of 7 years may be purchased for £2,000. Under Option Y another boiler with an expected life of 10 years may be purchased for £2,500. Which should be purchased? The relevant costs may be annuitised using EACs as follows:

| Option | Life (yrs) | Cost (£) | EAC Factor (@3.5%) | EAC (£) |
|--------|------------|----------|--------------------|---------|
| X      | 7          | 2,000    | 0.1635             | 327     |
| Y      | 10         | 2,500    | 0.1203             | 301     |

In this case, the initially more expensive boiler would be the more cost-effective choice.

### **Discounting Constant Annual Costs or Benefits**

- A7.11 Table 3 contains annuity factors, which are convenient for discounting a series of constant annual costs or benefits. For instance, suppose a constant annual payment of £10,000 in real terms has to be paid every year from Year 1 to Year 20. The PV of this cost stream may be calculated by applying the annuity factor for 20 years, which is 14.2339 using a 3.5% discount rate. The PV in this example is £142,339.
- A7.12 Annuity Factors may still be used where the constant stream of costs or benefits begins later than Year 1.

**Example:** What is the PV in the middle of Year 0 of 15 constant real annual costs of £75 starting in the middle of Year 7?

- 1) First, calculate the PV as if the costs started in Year 1. Using the annuity factor for 15 years and a 3.5% per annum discount rate, the PV is £865 ( = £75 x 11.5281).
- 2) However, given that the costs start in Year 7, this £865 figure represents the PV at the middle of Year 6.
- 3) To convert this to the PV at the middle of Year 0, apply the discount factor for Year 6, which is 0.8135.
- 4) The solution is thus £704 ( = £865 x 0.8135) or ( = £75 x 11.5281 x 0.8135).

**TABLE 1: DISCOUNT FACTORS @ 3.5% P.A.**

| <b>Year</b> | <b>Discount Factor</b> | <b>Year</b> | <b>Discount Factor</b> |
|-------------|------------------------|-------------|------------------------|
| 0           | 1.0000                 | 23          | 0.4533                 |
| 1           | 0.9662                 | 24          | 0.4380                 |
| 2           | 0.9335                 | 25          | 0.4231                 |
| 3           | 0.9019                 | 26          | 0.4088                 |
| 4           | 0.8714                 | 27          | 0.3950                 |
| 5           | 0.8420                 | 28          | 0.3817                 |
| 6           | 0.8135                 | 29          | 0.3687                 |
| 7           | 0.7860                 | 30          | 0.3563                 |
| 8           | 0.7594                 | 40          | 0.2651                 |
| 9           | 0.7337                 | 50          | 0.1973                 |
| 10          | 0.7089                 | 60          | 0.1468                 |
| 11          | 0.6849                 | 75          | 0.0942                 |
| 12          | 0.6618                 | 80          | 0.0833                 |
| 13          | 0.6394                 | 90          | 0.0651                 |
| 14          | 0.6178                 | 100         | 0.0508                 |
| 15          | 0.5969                 | 125         | 0.0274                 |
| 16          | 0.5767                 | 150         | 0.0167                 |
| 17          | 0.5572                 | 200         | 0.0062                 |
| 18          | 0.5384                 | 250         | 0.0029                 |
| 19          | 0.5202                 | 300         | 0.0014                 |
| 20          | 0.5026                 | 350         | 0.0009                 |
| 21          | 0.4856                 | 400         | 0.0005                 |
| 22          | 0.4692                 | 500         | 0.0002                 |



**TABLE 2: DISCOUNT FACTORS @ 1% TO 10% p.a.**

| Discount Rates |        |        |        |        |        |        |        |        |        |        |        |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Year           | 1.0%   | 2.0%   | 3.0%   | 3.5%   | 4.0%   | 5.0%   | 6.0%   | 7.0%   | 8.0%   | 9.0%   | 10.0%  |
| 0              | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 1              | 0.9901 | 0.9804 | 0.9709 | 0.9662 | 0.9615 | 0.9524 | 0.9434 | 0.9346 | 0.9259 | 0.9174 | 0.9091 |
| 2              | 0.9803 | 0.9612 | 0.9426 | 0.9335 | 0.9246 | 0.9070 | 0.8900 | 0.8734 | 0.8573 | 0.8417 | 0.8264 |
| 3              | 0.9706 | 0.9423 | 0.9151 | 0.9019 | 0.8890 | 0.8638 | 0.8396 | 0.8163 | 0.7938 | 0.7722 | 0.7513 |
| 4              | 0.9610 | 0.9238 | 0.8885 | 0.8714 | 0.8548 | 0.8227 | 0.7921 | 0.7629 | 0.7350 | 0.7084 | 0.6830 |
| 5              | 0.9515 | 0.9057 | 0.8626 | 0.8420 | 0.8219 | 0.7835 | 0.7473 | 0.7130 | 0.6806 | 0.6499 | 0.6209 |
| 6              | 0.9420 | 0.8880 | 0.8375 | 0.8135 | 0.7903 | 0.7462 | 0.7050 | 0.6663 | 0.6302 | 0.5963 | 0.5645 |
| 7              | 0.9327 | 0.8706 | 0.8131 | 0.7860 | 0.7599 | 0.7107 | 0.6651 | 0.6227 | 0.5835 | 0.5470 | 0.5132 |
| 8              | 0.9235 | 0.8535 | 0.7894 | 0.7594 | 0.7307 | 0.6768 | 0.6274 | 0.5820 | 0.5403 | 0.5019 | 0.4665 |
| 9              | 0.9143 | 0.8368 | 0.7664 | 0.7337 | 0.7026 | 0.6446 | 0.5919 | 0.5439 | 0.5002 | 0.4604 | 0.4241 |
| 10             | 0.9053 | 0.8203 | 0.7441 | 0.7089 | 0.6756 | 0.6139 | 0.5584 | 0.5083 | 0.4632 | 0.4224 | 0.3855 |
| 11             | 0.8963 | 0.8043 | 0.7224 | 0.6849 | 0.6496 | 0.5847 | 0.5268 | 0.4751 | 0.4289 | 0.3875 | 0.3505 |
| 12             | 0.8874 | 0.7885 | 0.7014 | 0.6618 | 0.6246 | 0.5568 | 0.4970 | 0.4440 | 0.3971 | 0.3555 | 0.3186 |
| 13             | 0.8787 | 0.7730 | 0.6810 | 0.6394 | 0.6006 | 0.5303 | 0.4688 | 0.4150 | 0.3677 | 0.3262 | 0.2897 |
| 14             | 0.8700 | 0.7579 | 0.6611 | 0.6178 | 0.5775 | 0.5051 | 0.4423 | 0.3878 | 0.3405 | 0.2992 | 0.2633 |
| 15             | 0.8613 | 0.7430 | 0.6419 | 0.5969 | 0.5553 | 0.4810 | 0.4173 | 0.3624 | 0.3152 | 0.2745 | 0.2394 |
| 16             | 0.8528 | 0.7284 | 0.6232 | 0.5767 | 0.5339 | 0.4581 | 0.3936 | 0.3387 | 0.2919 | 0.2519 | 0.2176 |
| 17             | 0.8444 | 0.7142 | 0.6050 | 0.5572 | 0.5134 | 0.4363 | 0.3714 | 0.3166 | 0.2703 | 0.2311 | 0.1978 |
| 18             | 0.8360 | 0.7002 | 0.5874 | 0.5384 | 0.4936 | 0.4155 | 0.3503 | 0.2959 | 0.2502 | 0.2120 | 0.1799 |
| 19             | 0.8277 | 0.6864 | 0.5703 | 0.5202 | 0.4746 | 0.3957 | 0.3305 | 0.2765 | 0.2317 | 0.1945 | 0.1635 |
| 20             | 0.8195 | 0.6730 | 0.5537 | 0.5026 | 0.4564 | 0.3769 | 0.3118 | 0.2584 | 0.2145 | 0.1784 | 0.1486 |
| 21             | 0.8114 | 0.6598 | 0.5375 | 0.4856 | 0.4388 | 0.3589 | 0.2942 | 0.2415 | 0.1987 | 0.1637 | 0.1351 |
| 22             | 0.8034 | 0.6468 | 0.5219 | 0.4692 | 0.4220 | 0.3418 | 0.2775 | 0.2257 | 0.1839 | 0.1502 | 0.1228 |
| 23             | 0.7954 | 0.6342 | 0.5067 | 0.4533 | 0.4057 | 0.3256 | 0.2618 | 0.2109 | 0.1703 | 0.1378 | 0.1117 |
| 24             | 0.7876 | 0.6217 | 0.4919 | 0.4380 | 0.3901 | 0.3101 | 0.2470 | 0.1971 | 0.1577 | 0.1264 | 0.1015 |
| 25             | 0.7798 | 0.6095 | 0.4776 | 0.4231 | 0.3751 | 0.2953 | 0.2330 | 0.1842 | 0.1460 | 0.1160 | 0.0923 |
| 26             | 0.7720 | 0.5976 | 0.4637 | 0.4088 | 0.3607 | 0.2812 | 0.2198 | 0.1722 | 0.1352 | 0.1064 | 0.0839 |
| 27             | 0.7644 | 0.5859 | 0.4502 | 0.3950 | 0.3468 | 0.2678 | 0.2074 | 0.1609 | 0.1252 | 0.0976 | 0.0763 |
| 28             | 0.7568 | 0.5744 | 0.4371 | 0.3817 | 0.3335 | 0.2551 | 0.1956 | 0.1504 | 0.1159 | 0.0895 | 0.0693 |
| 29             | 0.7493 | 0.5631 | 0.4243 | 0.3687 | 0.3207 | 0.2429 | 0.1846 | 0.1406 | 0.1073 | 0.0822 | 0.0630 |
| 30             | 0.7419 | 0.5521 | 0.4120 | 0.3563 | 0.3083 | 0.2314 | 0.1741 | 0.1314 | 0.0994 | 0.0754 | 0.0573 |

**TABLE 3**  
**EQUIVALENT ANNUAL COST & ANNUITY FACTORS @ 3.5% p.a.**

| <b>Years</b> | <b>Equivalent Annual Cost<br/>of £1 p.a.<br/>("EAC Factors")</b> | <b>Present Value of £1 p.a.<br/>("Annuity Factors")</b> |
|--------------|--|---|
| 1            | 1.035  | 0.9662  |
| 2            | 0.5264   | 1.8998  |
| 3            | 0.3569   | 2.8019  |
| 4            | 0.2723   | 3.6735  |
| 5            | 0.2215   | 4.5158  |
| 6            | 0.1877   | 5.3296  |
| 7            | 0.1635   | 6.1162  |
| 8            | 0.1455   | 6.8762  |
| 9            | 0.1315   | 7.6107  |
| 10           | 0.1203   | 8.3206  |
| 11           | 0.1111   | 9.0066  |
| 12           | 0.1036   | 9.6696  |
| 13           | 0.0971   | 10.3013   |
| 14           | 0.0916   | 10.9296   |
| 15           | 0.0869   | 11.5281   |
| 16           | 0.0827   | 12.1067   |
| 17           | 0.0791   | 12.6659   |
| 18           | 0.0759   | 13.2064   |
| 19           | 0.0730   | 13.7289   |
| 20           | 0.0704   | 14.2339   |
| 21           | 0.0681   | 14.7221   |
| 22           | 0.0660   | 15.1940   |
| 23           | 0.0641   | 15.6502   |
| 24           | 0.0623   | 16.0913   |
| 25           | 0.0607   | 16.5176   |
| 26           | 0.0593   | 16.9298   |
| 27           | 0.0579   | 17.3283   |
| 28           | 0.0567   | 17.7136   |
| 29           | 0.0555   | 18.0861   |
| 30           | 0.0544   | 18.4462   |

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