

Public Spending Code

All Irish public bodies are obliged to treat public funds with care, and to ensure that the best possible value-for-money is obtained whenever public money is being spent or invested.

The Public Spending Code is the set of rules and procedures that apply to ensure that these standards are upheld across the Irish public service. The Code brings together in one place all of the elements of the value-for-money framework that has been in force up to now, updated and reformed in some respects. The Code is maintained on this website under the management of [Government Accounting Unit](#) in the Department of Public Expenditure & Reform as a resource for the entire Irish public service. In September 2013, Departments and Offices were formally notified by [circular](#) that the Public Spending is in effect.

The Public Spending Code is structured as follows:-

The [Introduction](#) sets out the core principles of the Public Spending Code, including the new principle of consultation and participation. As a general working principle, amendments to the Public Spending Code will be subject to peer review by stakeholders. In keeping with this approach, some elements of the Public Spending Code are flagged as “consultative drafts”, and will not be formally in effect until the peer review process has been completed.

[Part A](#) of the Code sets out general provisions, which apply in principle to all types of spending at different stages of the project life-cycle. Part A includes a [map or overview](#) of the entire Public Spending Code, and is a useful starting point for public service users wishing to know what elements of the Code apply to their work.

[Part B](#) of the Code relates to the appraisal and planning of public projects, before expenditure is incurred.

[Part C](#) concerns the ongoing management, control and ongoing review / evaluation of expenditure projects and programmes that are underway.

[Part D](#) brings together user-friendly guidance material on the analytical techniques that are applied in appraisal of both capital and current expenditure. These elements of the Code deal with basic introductory material, through to more technical and advanced guidance on how the analytical techniques are applied.

[Part E](#) is a technical reference section, showing the key central technical references and parameter values for use in financial and economic appraisal.

Document Update Log

Most people have an intuitive feel for what constitutes **value for money**, whether dealing with their own spending or with expenditure from the public purse. In very simple terms **value for money** is achieved when you are:

- *doing the right thing* – that is, spending money to achieve the right objectives, and
- *doing it right* – that is, spending money as efficiently as possible, avoiding waste.

This means that:

Good choices are made on the areas where money is spent. Resources (including all of the costs that arise over the lifetime of a project) are allocated to meet priority needs identified and the most cost-effective interventions are chosen to meet those needs. This involves good appraisal of proposals for new expenditure. Having made good choices on how resources are allocated, projects and programmes are then implemented efficiently i.e. minimum input is used to generate the outputs required and projects and programmes are only continued if they are effective in achieving the outcomes intended.

Ensuring that the State achieves **value for money** demands more than an intuitive feel. A disciplined approach needs to be applied to all aspects of the expenditure life-cycle, from the moment a proposal is put together, through its implementation and beyond when *ex-post* reviews are undertaken. The **Public Spending Code** brings together in one place details of the obligations that those responsible for spending public money are obliged to adhere to as well as guidance material on how to comply with the obligations outlined.

Elements of the Public Spending Code apply to any project or programme that:

- may incur expenditure in the near future (Appraisal, Planning)
- is currently incurring expenditure (Management, Monitoring, Evaluation)
- has incurred expenditure in the recent past (Review, Evaluation)

The Public Spending Code applies to both Capital and Current expenditure. The Code sets out to explain what is required of public service managers at different points of the expenditure lifecycle and offers advice on how to fulfil those requirements.

All Government Departments and public bodies and all bodies in receipt of public funding must comply, as appropriate, with the relevant requirements of the Public Spending Code. In the case of State Companies, the Board of each must satisfy itself annually that the Company is in full compliance with the Code.

Nothing in the Public Spending Code should be taken as precluding Government or Ministers, under the delegated sanction arrangements set down by the Minister for Public Expenditure & Reform, from deciding to approve projects independent of the detailed application of the Public Spending Code. Such decisions still require Departments to ensure that best practice is adhered to as regards public financial procedures generally, in terms of ensuring that necessary terms and conditions are applied to secure full accountability and transparency for the funds concerned.

General Points on the Public Spending Code:

- *Building on Good Practice*

The Public Spending Code builds upon some long-established elements of the VFM arrangements that have been in place in Ireland over many years. In particular, public service managers who are familiar with the *Capital Appraisal Guidelines* from 2005, as they have been expanded in subsequent Circulars and advice notes, and with the previously issued *Working Rules on Cost-Benefit Analysis*, will already have a good grounding in the main elements of the Public Spending Code. Equally however, there is a need to consolidate all of the previous advisory material, to bring procedures up to speed with best national and international practice, and to strengthen procedures so that citizens can be assured they are getting the best value for scarce public funds.

- *Aids to good decision making*

Programme evaluation and project appraisal are aids to inform decision making. They do not constitute final decisions in themselves. The basic purpose of systematic appraisal is to achieve better investment decisions. Proposals for public sector investment invariably exceed the resources available. Choice and priority setting are inescapable. It is not enough to be satisfied that investment is justified; it is also necessary to ensure that it produces its planned benefits at minimum cost. This cost includes the ongoing current costs generated by the use of capital assets, as well as the initial

capital cost. The systematic appraisal and professional management of all capital projects and current expenditure programmes helps to ensure that the best choices are made and that the best value for money is obtained. It should also be noted that in arriving at policy decisions on investment programmes or individual projects, Ministers have to take all relevant factors into account – the economic costs and benefits are not the only relevant factors, and a judgement on social or public-good expenditure (which may not be directly amenable to costing as regards economic impact) will also be brought to bear. Accordingly, the Public Spending Code does not preclude Government or Ministers from deciding to approve projects independent of the detailed application of the Code.

- *Proportionality*

The complexity of the appraisal or evaluation of a project or programme and the methods used will depend on the size and nature of the project or programme and should be proportionate to its scale. The resources to be spent on appraisal or evaluation should be commensurate with the likely range of cost, the nature of the project or programme and with the degree of complexity of the issues involved.

- *Appraisal never to be “case-making”*

The [Sponsoring Agency](#) is responsible for ensuring that the appraisal is done on an objective basis and not as a ‘case-making’ exercise. Good quality appraisal at this stage will make it easier to complete the planning and implementation stages and minimize the potential for difficulties and risks to arise in the later stages.

- *Avoiding Premature Commitments*

All involved in the appraisal and management of expenditure proposals should guard against the danger that when a project is mooted, it is given a premature commitment. This must be avoided. A sequence of considered decisions will lead to progressively greater commitment of resources, but an irrevocable commitment to a proposal should only be made after all appraisal stages have been satisfactorily passed, and final approval obtained. **Where necessary, Departments and public bodies should be prepared at any stage, despite costs having been incurred in appraising, planning and developing a project, to abandon it if, on balance, continuation would not represent value for money.**

- *EU Funding*

Aid from the EU is a national resource and must be used as effectively, and economically, as any other national resource. The EU expects us to ensure this. The availability of EU aid for a project is not a justification for investment in that project. The consideration that the EU may aid a project must not lead to less rigorous appraisal and decision making than if that aid was not forthcoming. If the project does not go ahead the EU aid can be applied to better effect elsewhere. In addition to the national project appraisal procedures outlined in the Public Spending Code, projects aided by the EU Funds must meet specific Community appraisal requirements. As a general principle, the provisions of the Public Spending Code should be at least as rigorous – and applied at least as rigorously – as Community appraisal. Irish citizens are entitled to know that they are getting the maximum value-for-money for their funds.

- *Adapting Guidelines to suit the decisions you have to make*

Obligations and good practice are generally described at a high level and these should be taken and adapted to suit your organisation's own circumstances. It is the responsibility of each [Sanctioning Authority](#) to ensure that Departments and agencies draw up their own procedures for management and appraisal of programmes and projects consistent with the principles set out in these guidelines.

- *A responsive and evolving Code*

The Public Spending Code will change as needs be to incorporate new requirements, better practices and other revisions to keep the code relevant and as user-friendly as possible. Since the Code represents an evolution of established VFM procedures, in which all Government Departments and agencies are stakeholders, a new model of consultation and quality-proofing is being introduced. Several elements of the Code are flagged as “Consultation Drafts” and should be regarded as provisional for the present: these will not be formally instituted as binding elements until they have been subject to peer review by all relevant stakeholders. In particular, the Central Expenditure Evaluation Unit (CEEU) of the Department of Public Expenditure & Reform will engage actively with the broader evaluation community, in the public and private sectors and in academic life, to ensure that Ireland's Public Spending Code evolves to keep pace with best practice both nationally and internationally.

A-01

Public Spending Code: Arrangement and Programme Life Cycle

A-01

Update log document A01

Document Summary: This document acts as a map to the Public Spending Code, and is intended to serve as a starting-point for public service users in planning and managing public expenditure in line with the Code requirements. Part I lists the contents of the Public Spending Code. Part II describes the various stages of the Project/Programme Life-cycle (also referred in parts of the Public Spending Code as the “Expenditure Life-cycle”) and points to the key Public Spending Code documents that are relevant to each stage.

I – Public Spending Code Layout: The Public Spending Code is made up of four sections: Section A – General Provisions: (These documents apply to all stages of the life-cycle.)

- A-00 [Introduction](#)
- A-01 [Public Spending Code Layout & Project/Programme Life-Cycle](#)
- A-02 [Clarify your Role](#)
- A-03 [General Conditions of Sanction for Capital](#)
- A-04 [Quality Assurance – Compliance with the Public Spending Code](#)

Section B – Appraisal & Planning (Expenditure being Considered):

- B-01 [Standard Appraisal Steps](#)
- B-02 [The Planning Phase](#)
- B-03 [Approvals Required and Scale of Appraisal](#)
- B-04 [Procurement Guidelines](#)
- B-05 [PPPs](#)
- B-06 [Appraising Current Expenditure](#)
- B-07 [Conducting a Regulatory Impact Analysis](#)

Section C – Implementation (Expenditure being Incurred) & Post-Implementation (Expenditure has recently been completed)

- C-01 [Management](#)
- C-02 [Periodic Evaluation/Post-Project Review](#)
- C-03 [Reviewing and Assessing Expenditure Programmes](#)

Section D – Standard Analytical Procedures

- D-01 [Overview of Appraisal methods and techniques](#)
- D-02 [Carrying out a financial appraisal for capital expenditure](#)
- D-03 [Carrying out an economic appraisal - guidelines on how to conduct a CBA](#)

Section E – Central Technical References and Economic Appraisal Parameters

- Calculating Staff Costs
- Social Discount Rate
- Shadow Price of Public Funds
- Shadow Price of Labour
- Shadow Price of Carbon

ICT projects:

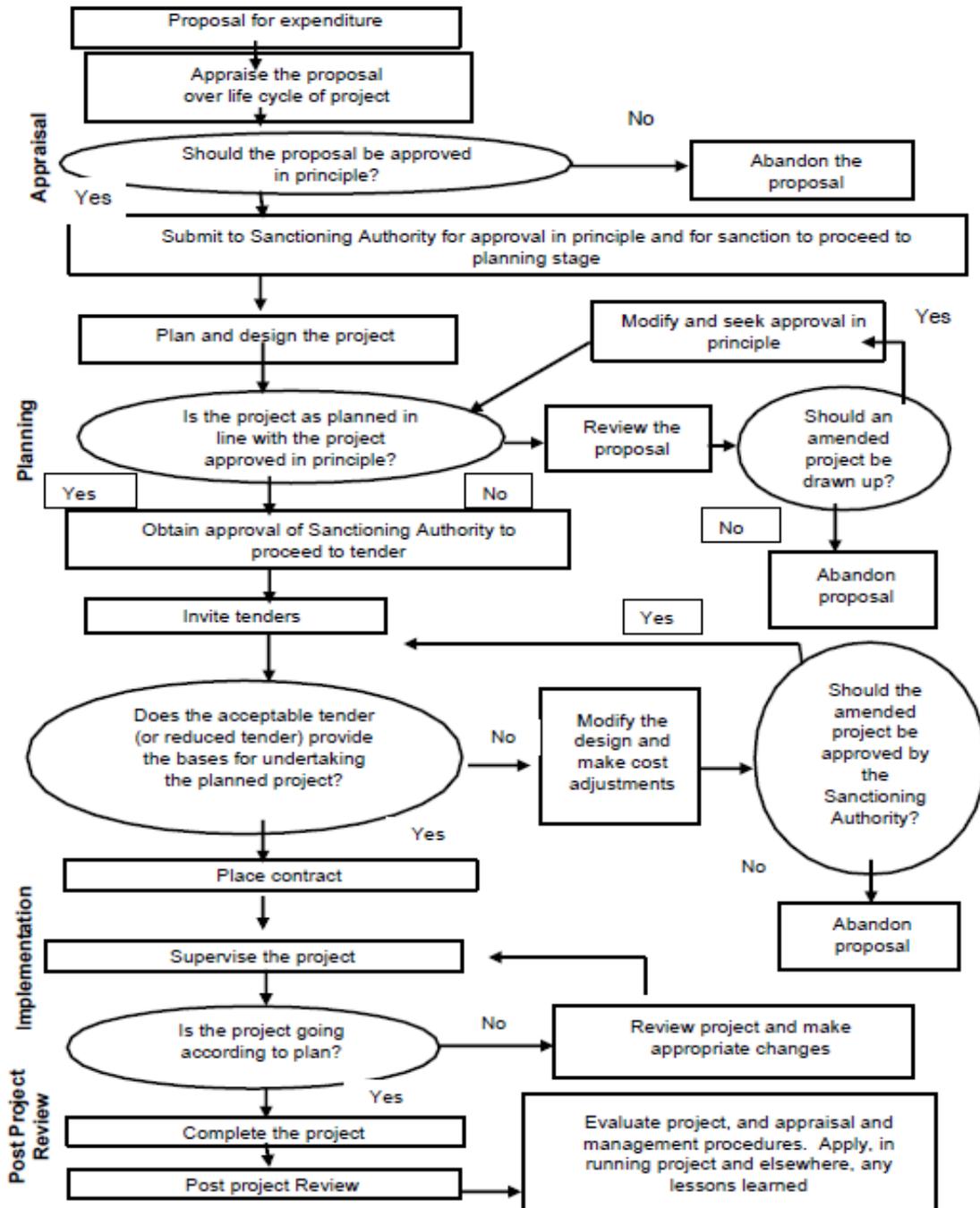
The principles and guidelines in the Public Spending Code apply to all expenditure including expenditure on ICT. ICT projects are subject to some specific additional requirements. The document [ICT Expenditure Approval Process](#) briefly describes the additional requirements.

II – Project or Programme Life-Cycle The four stages in the life-cycle of a project or programme are:

1. Appraisal: assessing the case for a policy intervention
2. Planning/Design: a positive appraisal should lead on to a considered approach to designing how the project/programme will be implemented
3. Implementation: careful management and oversight is required for both capital and current expenditure. Ongoing evaluation should also be a feature of current programmes
4. Post-Project or Post-Implementation Review: checking for delivery of project objectives, and gaining experience for future projects.

The successive stages should follow a realistic time schedule and have clear starting and finishing points. The appraisal and planning stages may overlap. Good detailed appraisal will require some design and planning work. Decision-making takes time and allowance should be made for this in time schedules. Figure 1 overleaf gives an overview of how the various stages are inter-related.

Figure 1: OVERVIEW OF THE PROJECT APPRAISAL AND MANAGEMENT PROCESS¹



* This is an Overview of the process when outsourcing is used for the development or implementation of the project/scheme. Where outsourcing is not being used the latter part of the Planning and Design Phase and the beginning of the Implementation Phase will be different as there will neither be a tender or a contract.

1. Appraisal – Before Expenditure is Incurred

(i) Preliminary Appraisal

The preliminary appraisal aims to establish whether, at face value, a sufficient case exists for considering a proposal in more depth. It leads to a recommendation on whether or not to proceed to the detailed appraisal stage which can often be a costly exercise.

For proposals costing **more than €5m**, a preliminary appraisal should be undertaken by the [Sponsoring Agency](#). It involves an initial specification of the nature and objectives of the proposal and of relevant background circumstances (economic, social, legal, etc.). The reasons why it is thought that public resources should be committed should be set out, having regard to what the private sector is doing or might be willing to do, independently or with State participation or encouragement.

A preliminary appraisal should include a clear statement of the needs which a proposal is designed to meet and the degree to which it would aim to meet them. It should identify all realistic options, including the option of doing nothing and, where possible, quantify the key elements of all options. It should contain a preliminary assessment of the costs (particularly financial costs) and benefits of all options.

On the basis of the preliminary appraisal, the Sponsoring Agency should **decide whether formulating and assessing a detailed appraisal would be worthwhile** or whether to drop the proposal. A recommendation to undertake a detailed appraisal should state the terms of reference of that appraisal. If significant staff resources or other costs would be involved in a detailed appraisal, the prior approval of the relevant Sanctioning Authority should be sought.

(ii) Detailed Appraisal

The detailed appraisal stage aims to provide a basis for a decision on whether to drop a proposal or to approve it in principle. It involves the clarification of objectives, exploration of options, quantification of costs and a method of selecting the best solution from competing options. See:

- Document B-01 [Standard Appraisal Steps](#) for further information on a Detailed Appraisal
- Document B-03 [Approvals Required and Scale of Appraisal](#)
- Section D of the Public Spending Code for guidance on particular appraisal methods and
- Section E of the Public Spending Code for technical parameter values.

2. Planning/Design

Planning/Design starts with the Approval in Principle from the Appraisal stage (although some elements of planning/design may need to be completed to fully inform the appraisal). No commitment to finance a project should be made until this stage is completed and a decision taken on whether to proceed is taken. This stage involves detailed planning and costing of the project. The latter end of this stage may involve procurement and lead to the evaluation of tenders and an assessment of whether the best proposal received meets the requirements and is within the approvals required. For more information on the Planning/Design stage see documents:

- B-02 [The Planning Phase](#)
- B-03 [Approvals Required and Scale of Appraisal](#)
- B-04 [Procurement Guidelines](#)

3. Implementation

This stage may, if an external provider is involved, begin with contract placement. Management, Monitoring, Supervision and Control are key terms that apply to this stage. For capital projects the implementation stage will be of limited duration but the implementation of current expenditure programmes could extend over many years or even decades. In the case of current expenditure, evaluation will also play an important role. Both continuous evaluation using pre-determined performance indicators and more formal evaluations will be required to ensure that programmes are operating efficiently, are achieving the outcomes as planned and are serving needs that remain a priority. Documents in the Public Spending Code that are specifically relevant to the stage include:

- C-01 [Management](#)
- C-02 [Periodic Evaluation/Post-Project Review](#)
- C-03 [Reviewing and Assessing Expenditure Programmes](#)

4. Post-Project or Post Implementation Review

Post-Project Reviews aim to confirm whether project objectives have been met, the project has been delivered to required standard, on time and within budget and to ensure that experience gained can be used on other projects. It may also help to inform managers on the continued best use of a new asset. Documentation on the appraisal undertaken is the key starting point or reference for any post-project review.

The Post-Project Review stage is more relevant to capital expenditure. Current expenditure is likely to be reviewed during what is typically a more extended implementation period but reviews post-

implementation may also be relevant. Documents in the Public Spending Code that are relevant to this stage include:

- C-02 [Periodic Evaluation/Post-Project Review](#)

Document Update Log

Document Summary: An organisation's responsibilities under the Public Spending Code depend on whether it is responsible for proposing and subsequently implementing a project or programme or whether it grants approval for a project or programme to proceed under the management and oversight of another body. This document describes the roles of the Sponsoring Agency and the Sanctioning Authority. These roles are referred to throughout the Public Spending Code.

Most parts of the Public Spending Code but in particular *Public Spending Code B.03 – [Approvals Required and Scale of Appraisal](#)* make references to the *Sponsoring Agency* and the *Sanctioning Authority*. This document outlines the different roles that organisations play in the life-cycle of a project.

Sponsoring Agency

The **Sponsoring Agency** has the overall responsibility for the proper appraisal, planning and management of projects/schemes (incl. current expenditure). Sponsoring Agencies are also responsible for post-project review. (The Sponsoring Agency may be a Government Department, local authority, health agency, University or other State body.)

The Sponsoring Agency must obtain the necessary [approvals](#) from the Sanctioning Authority and ensure that the project/scheme proceeds along the lines approved by the Sanctioning Authority. All capital projects being sponsored by a State company must be specifically approved by the Board of the company or, by management in accordance with any delegated authority from the Board, before its submission to the Sanctioning Authority. If a subsidiary company or agency is set up specially to undertake a project, it is important that the responsibilities of the parent body are not diluted.

Where the Office of Public Works (OPW) is undertaking a project in response to a request from a Government Department/Office it is the responsibility of the relevant Government Department/Office to complete the project appraisal and to secure the approval of the Sanctioning Authority before involving the OPW in the planning and implementation stages. In the case of a PPP project, the

Sponsoring Agency is the public body or agency sponsoring the project, subject to subsequent assignment of responsibilities under PPP contractual arrangements.

Sanctioning Authority

The **Sanctioning Authority** is responsible for granting the approvals required as projects/schemes, funded with public assistance, proceed through the project/expenditure life cycle. The approvals required include the approval in principle following detailed appraisal and pre-tender approval. If there is not procurement there should still be an approval checkpoint at the equivalent stage i.e. when the quantity of internal resources required is known.

The Sanctioning Authority may also set conditions under which a project may proceed. It is also responsible for paying the public assistance to the Sponsoring Agency and for ensuring the project's delivery as approved. While implementation is the responsibility of the Sponsoring Agency the Sanctioning Authority must be satisfied that the Sponsoring Agency delivers the project/scheme as approved.

The Sanctioning Authority is normally the Government Minister or Department or public body with sectoral responsibility for implementing Government policy and for providing public financial assistance in that sector. In the case of major projects the sanctioning authority may be the Government. As a rule the Government will be the Sanctioning Authority for very large projects, costing more than €100m, but the Government could also be the Sanctioning Authority for projects below this value. Where the Government is the Sanctioning Authority, the day to day oversight functions of a Sanctioning Authority revert to the line Department. The Government is involved at the major decision points. The Sanctioning Authority should take the necessary steps to ensure that it has the requisite expertise to assess project appraisal proposals from Sponsoring Agencies.

Each Sanctioning Authority is responsible for drawing up its own procedures applicable to its area of control. These procedures should comply with the principles set out in the Public Spending Code. Each Sanctioning Authority should also ensure that bodies under its aegis follow the procedures laid down by it. If there is an intermediary body (e.g. the Higher Education Authority) between the Sanctioning Authority and the Sponsoring Agency it is the responsibility of the Sanctioning Authority to define clearly the roles and responsibilities of any such intermediary bodies in regard to programme/project appraisal and management consistent with these guidelines.

In some instances the Sponsoring Agency and the Sanctioning authority, in relation to individual projects, may be the same body e.g. the National Roads Authority, non-Exchequer funded commercial State Companies. All such projects will, however, be part of a multi-annual programme or business plan which will have been appraised by a parent Department and/or Board of the company. Individual projects will still have to be appraised and approved in accordance with these guidelines with internal approval processes substituting for an external sanctioning authority.

Finance/Budget

The source of finance for a project is a good guide to the role played. The provider of the finance is usually the sanctioning authority and the organisation making the payments or incurring the expense is usually the sponsoring agency. If the finance has been received with delegated sanction that allows the funded organisation to make decisions up to a certain limit under certain conditions then the sanctioning authority and sponsoring agency may be the one body. Any organisation whether a sponsoring agency or sanctioning authority has to ensure that the necessary arrangements have been made for the financing of a project before any commitment is entered into.

Proposals made by bodies other than those responsible for their implementation. Proposals may be initiated by bodies other than those which will be responsible for them. Submissions and research documentation coming from such sources may provide some of the information required for a preliminary appraisal. However, the Sponsoring Agency must satisfy itself that such information is accurate and objective.

Document Update Log

General Conditions of Sanction for Multi Annual Capital Envelopes

Capital investment allocations are typically made on a multi-annual basis by the Government, so that Government Departments can undertake proper medium-term planning for the cost-effective delivery of investment projects. Sanction from the Department of Public Expenditure & Reform to each other Department for the multi-annual investment framework is subject to the following conditions:

(a) Contractual commitments

The level of contractual commitments (meaning formal legal contract or grant approval) made in the current year in respect of 2014 will not exceed 75% of that year's allocation for the department. The corresponding limits in subsequent years are 60% and 50% of each year's allocation. These limits will be rolled over each year. **No contractual capital commitments beyond these ceilings can be entered into without the explicit sanction of the Minister for Public Expenditure and Reform.**

(b) Virement

The Multi-Annual Investment Framework does not affect the normal rules for operation of virement between Vote subheads. Virement between capital and current sub-heads should only occur in exceptional circumstances and with the prior approval of the Department of Public Expenditure & Reform. Virement from capital to current should not be used as a tool of expenditure management. Where Public Private Partnership (PPP) contracts were signed before July 2010, a separate subhead has been established in your Vote to meet unitary payments arising under those contracts. Unitary payments from this subhead under contracts in respect of projects delivered by PPP will be "ring fenced" and regarded as non-discretionary current expenditure. Unitary payments for PPP projects signed in or after July 2010 will be met from your Vote's capital envelope. Virement will not apply to the carryover sums at (g) below.

(c) Programme contingency provision

The Department will make a contingency provision within its overall envelope to meet any unforeseen demands or additional costs which might emerge for the programme as a whole.

(d) Project contingency

In making provision for each project, account should be taken not just of the contract price but limited provision should also be made for likely price increases for inflation for projects with a construction duration of more than 3 years, and unforeseeable variations that might arise during project construction. In this respect, the project contingency shall have regard to the extent of risk that is retained by the contracting authority having undertaken adequate risk analysis prior to tender.

(e) Project costings

Departments must in their evaluation of a project satisfy themselves that any staffing and other current costs arising are consistent with Government policy on staffing and should be fully consistent with the figures in the Employment Control Framework (ECF). Given current and foreseeable budgetary circumstances, resources are and will be very limited and Departments must take account of this.

(f) Grants to private companies, individuals and community groups

An appropriate contractual arrangement must be put in place by the Department or its agencies, as appropriate, for all significant grants of public funding to private companies and individuals or community groups relating to the State's interest in the asset. In such cases they should, in particular, have in place a written contract to safeguard the Exchequer interest in the event of change of ownership. The contractual provisions should also provide for the repayment of such grants where the terms are not adhered to and in the event of sale of the asset. Departments should also take account of the requirements set out in Circular 17/10- Requirements for Grants and Grants-in-Aid issued by this Department on 22 December 2010.

(g) Carryover of unspent annual allocations

Any proposal by a Department to carryover unspent capital will be subject to a ceiling of 10% of the current year's Voted capital allocation (excluding Dormant Accounts capital funding) as adjusted by

any pertinent Government decision. Any such sums approved for carryover will be lodged to the credit of the Department's PMG Account and may, in accordance with the provisions of Section 91 of the 2004 Finance Act, be spent in the following year upon approval by the Dáil of the Ministerial Order specifying the amounts by subhead. Any sum which is carried over and not spent in the following year will be surrendered to the Central Fund.

(h) Reporting requirements

The Department should make arrangements:

(i) to report regularly (at least every six months) to its MAC on the appraisal of capital projects prior to approval, the management of capital projects and on progress on its capital programmes;

(ii) to highlight variances against the agreed budget; and,

(iii) to undertake an annual Quality Assurance exercise to ensure compliance with the Public Spending Code and to report the findings of such Quality Assurance exercises annually to the Department of Public Expenditure & Reform. This new Quality Assurance procedure replaces and updates the "spot check" requirements previously laid down in Circular letter dated 15th May 2007 and should take the form of a short summary report which will be generated as a matter of course through compliance with steps 1-4 of the quality assurance procedures of the Public Spending Code (see section A04 of the Code). This report should be submitted by the end of February each year in respect of the previous calendar year. The report should be certified by the Accounting Officer and published on the Department's website. The Central Expenditure Evaluation Unit will carry out reviews of these Quality Assurance reports. These periodic assessments may also be published on the Department of Public Expenditure and Reform website.

(i) Adherence to National and EU requirements in relation to capital appraisal, public procurement etc.

The Department will comply fully with:

- The Department of Public Expenditure & Reform's Public Spending Code including the requirement that projects over €20 million are subject to a Cost Benefit Analysis (CBA) or Cost Effectiveness Analysis (CEA). Prior to Approval in Principle the CBA (or CEA) should be submitted to the Department of Public Expenditure and Reform who may seek the views of the

CEEU. The CEEU will give its views on the appraisal to the Sponsoring Agency and may publish their review of the CBA (or CEA) on their website, with any necessary redaction to protect the State's interest in the tender process and commercial sensitivity.;

- Where appropriate, requirements for undertaking Public Private Partnerships as set down by the Department of Public Expenditure & Reform, including the requirement to consult with the National Development Finance Agency on financing options for all projects in excess of €20 million;
- Public Procurement Procedures – both National and EU; and
- Tax clearance requirements as laid down by the Revenue Commissioners.

(j) North-South commitments Departments will fulfil all commitments entered into in respect of the North-South Bodies established under the Good Friday Agreement.

Quality Assurance – Compliance with the Public Spending Code

Document Update Log

Document Summary: The Public Spending Code will only be of use if it is complied with by those that are responsible for expenditure at the appraisal, planning, implementation or post implementation stages. This document describes what is expected of the internal independent team that will carry out quality assurance checks and produce the annual quality assurance report.

The Public Spending Code imposes obligations, at all stages of the project/programme life-cycle on organisations that spend public money. These obligations apply to those that have responsibility at the different stages i.e. those within the Sponsoring Agency or Sanctioning Authority responsible for appraising, planning, approving, implementing or reviewing.

An additional obligation of the Public Spending Code is that each Department should put in place an internal, independent, quality assurance procedure involving annual reporting on how organisations are meeting their Public Spending Code obligations. This new Quality Assurance procedure replaces and updates the “spot check” requirements previously laid down in Circular letter dated 15th May 2007. The old procedure required a report with five sections – (i) Steps taken to disseminate the Guidelines (ii) Description of current systems for appraisal and management (iii) Coverage of the spot-checks and the findings (iv) measures in place to ensure compliance and (v) the views and responses of Departments and Agencies regarding the spot-check findings.

This new Quality Assurance Process aims to be easier to understand, more of an aid to compliance and easier to complete. The QA process should not place an undue burden on organisations. QA does not involve doing or redoing any of the appraisal, evaluation or review work that is required elsewhere in the Code. QA reviews pieces of ex-ante appraisal, management, evaluation or review work done by others.

The Quality Assurance procedure is made up of five steps:

1. Draw up inventories of projects/programmes at the different stages of the Project Life Cycle. It is expected that the Organisation’s Finance Unit is best placed to draw up this inventory. They

may have to consult with others to ensure that they have the full picture on projects that are at the appraisal/planning stage i.e. have yet to incur expenditure. The person responsible for the Quality Assurance process should be satisfied that they have a full and complete inventory.

2. The Organisation's Finance Unit should publish summary information on its website of all procurements in excess of €2m, related to projects in progress or completed in the year under review. A new project may become a "project in progress" during the year under review if the procurement process is completed and a contract is signed. Department's should also publish details of the website references where its agencies have placed information on procurements over €2m.
3. Complete the checklists contained in this guidance document. Only one of each checklist per Department/Agency is required. Checklists are not required for each project/programme. The QA process is based on a sample.
4. Carry out a more in-depth check on a small number of selected projects/programmes
5. Complete a short summary report for the Department of Public Expenditure & Reform. The report, which will be generated as a matter of course through compliance with steps 1-4, involves minimum administrative burden and should be submitted by the end of February in respect of the previous calendar year.

Step 1 was not formally a part of the old process but it would have had to be completed in order to select the projects that were to be checked. The second step is new but should not be a significant burden as the inventory compiled as part of Step 1 will provide the master list. The set of checklists to be completed for Step 3 serve as prompts that allow organisations to self-assess how compliant they are at a general level and will allow them to identify areas that need attention. They can also measure progress from one year to another. Step 4 is the most detailed step. Organisations are required to look in detail at a small number of projects/areas of expenditure. The detailed checks will verify whether the assessments made when completing the checklists are accurate or not. Organisations may think that they are very compliant based on the initial surface checks but find that when the detailed checks are undertaken that the practice does not live up to the theory or vice-versa. This may prompt a revisit to the checklist assessments.

Responsibility for Quality Assurance

The Quality Assurance requirement rests mainly with the Sponsoring Agency. The questions in the self-assessment questionnaires have to be answered by the organisation that is responsible for the appraisal or management of an area of expenditure i.e. the Sponsoring Agency.

Departments are usually Sanctioning Authorities in respect of one part of their budget and Sponsoring Agencies for the remainder. Where the Department is the Sponsoring Agency it carries out Steps 1-5 of the QA process in respect of that part of its expenditure.

Departments in their role as Sanctioning Authorities must choose how they will implement the QA process for agencies that they fund. The Sanctioning Department could require those that they fund to complete the QA process and report it into them or the Sanctioning Authority could decide to take a hands-on role in part of the QA process particularly Step 4 where the Sanctioning Authority chooses to undertake one or more of the in-depth reviews.

Only Departments are required to send an annual QA report to the Department of Public Expenditure & Reform

Who Quality Assures compliance with the Public Spending Code?

The Quality Assurance process should be undertaken by internal staff that are as independent as possible of the areas responsible for appraisal, planning and implementation e.g. staff from the economic /evaluation units, financial management units, internal audit, staff from an evaluation unit in another Department or academics on a *pro bono* basis. The process should be led by a small group chaired at senior level (*minimum PO*).

Supplementary Quality Assurance by the CEEU

In addition to the quality assurance checks undertaken by Departments themselves, the Central Expenditure Evaluation Unit (CEEU) in the Department of Public Expenditure & Reform may undertake its own quality assurance checks from time to time. This exercise, which aims to promote a consistent approach to Quality Assurance and VFM enforcement across the public service, will not replicate the internal quality assurance process but may instead involve in-depth reviews of the processes followed for specific projects or programmes.

The five steps in the Quality Assurance procedure are described in more detail below.

1. Drawing up Inventories of projects/programmes

For Departments to know that they are compliant with the Public Spending Code they first need to be aware of the areas of expenditure to which the Code applies in their Department. The first step in the process is to draw up or update your inventories of:

(i) Expenditure being considered:

- Capital projects that are or were under consideration during the year. These should be broken down by their anticipated cost (between €0.5 – €5m, between €5m – €20m, greater than €20m). Grant schemes for capital purposes should also be included here.
- New Current expenditure programmes or significant extensions to existing programmes that will involve annual expenditure of €0.5m or more.

(ii) Expenditure being incurred

- Capital Projects (> €0.5m) that are at the implementation stage
- Capital Grant Schemes (> €0.5m) that are incurring expenditure
- Current expenditure schemes or programmes (> €0.5m) that are incurring expenditure

(iii) Expenditure that has recently ended

- Capital Projects (> €0.5m) that were completed in the year being reviewed
- Capital Grant Schemes (> €0.5m) that were completed or were discontinued
- Current expenditure schemes or programmes (>€0.5m) that were completed or were discontinued

It is expected that the Organisation's Finance Unit is best placed to draw up this inventory. They may have to consult with others to ensure that they have the full picture on projects that are at the appraisal/planning stage i.e. have yet to incur expenditure. The person responsible, for the Quality Assurance process, should be satisfied that they have a full and complete inventory.

2. Publish summary information on your website of all procurements in excess of €2m, whether new, in progress or completed

Drawing from the inventory compiled or updated in Step 1 the organisation should publish, annually on its website, summary details of all procurements (capital and current) where the value exceeds €2m. This information should appear under the standard heading **PROCUREMENTS/PROJECT PROGRESS** on all Departmental websites. This information should be published concurrently with the quality assurance report i.e. by the end of February each year. The table below should be published for **each** project/procurement >€2m:

Project Details:	
Year	
Parent Department	
Name of Contracting Body	
Name of Project/Description	
Procurement Details:	
Advertisement Date:	
Tender advertised in:	
Awarded to:	
EU contract award notice date	
Contract Price:	
Progress:	
Start Date:	
Expected Date of Completion per Contract:	
Spend in Year under Review:	
Cum Spend to end Year:	
Projected final Cost:	
Value of Contract variations:	
Date of Completion:	
Outputs:	
Expected Output on completion (e.g. X km of road, No. units)	
Output achieved to date (e.g. Y km of road, no. units)	

There should be an entry for all new projects and projects still in progress. Completed projects feature for the last time in respect of the year that they were completed.

The presentation of this information can be in tabular or spreadsheet if that is more convenient.

3. Checklists to be completed in respect of the different stages

Step 3 involves completing a set of basic checklists covering all expenditure. These are high level checks that should be readily completed within each organisation. The objective of the exercise is to provide local and senior management, and the public more generally, with a self-assessment summary overview of how compliant the organisation is with the Public Spending Code. More in-depth checks are carried out as part of Step 4.

The first checklist captures obligations/good practice that apply to the organisation as a whole. Each of the remaining checklists listed below (checklists in the Appendices) might apply to a number of projects/areas of expenditure. Only one of these checklists is required for each organisation. Organisations are asked to estimate their compliance on each item on a 3 point scale (Scope for significant improvements = a score of 1, compliant but with some improvement necessary = a score of 2, broadly compliant = a score of 3). This self-assessed estimate of compliance can be based on an appropriate sample of the projects/areas of expenditure that are relevant to the checklist. The sample could be 5-10% of projects/programmes. The sample should rotate from year to year. Using a sample, to form a view on what should be included for the organisation in the Checklist answers, is in keeping with the intention that the QA process does not become over burdensome.

Checklist 1: General Obligations not specific to individual projects/programmes

Checklist 2: Capital Projects or Capital Grant Schemes being considered

Checklist 3: Current expenditure being considered

Checklist 4: Capital Expenditure being incurred

Checklist 5: Current Expenditure being incurred

Checklist 6: Capital Expenditure completed

Checklist 7: Current expenditure completed

4. Carry out a more in-depth check on a small number of selected projects/programmes

Parts 1 & 3 of the Public Spending Code Quality Assurance process will give an organisation a good overview of how compliant its processes are with the Public Spending Code. Quality Assurance Step 4 is about examining in more detail a small subset of its practices to see if the practices used are of a high standard. This step requires a higher level of analysis and judgement than previous steps in the QA process. It may for example involve drawing conclusions on whether the CBA used to appraise a proposal for a large project was satisfactory or not.

Selection of subset for closer examination:

Over a 3-5 year period every organisation should ensure that every stage of the project life-cycle and every scale of project is subject to a closer examination. In any given year this may involve looking at a couple of large projects at appraisal/planning, implementation or review stages or looking at a larger selection of smaller projects. Not every organisation has a large project every year so where large projects, in the year under review, are at the appraisal stage, implementation stage or have recently been completed it is opportune to select them for closer examination. In other years when large projects may not be a feature there is an opportunity to select a number of smaller scale projects. The value of the projects selected per annum, should be at least 5% of the total value of all projects in the inventory. This includes projects at the appraisal stage that have yet to incur expenditure. A subset of more than 5% may be needed for large organisations or because of the way that expenditure is divided a 5% sample would not give good coverage. To allow flexibility the minimum of 5% can be achieved as an average over a three year period e.g. 8%, 4%, 3%. The same projects should not be selected more than once in a three year period unless it is as a follow-up to serious deficiencies discovered previously.

Where there is a scheme that involves a large number of grants then it is the scheme itself that is the unit that is examined, not all of the individual grants i.e. it will not be necessary as part of this QA process to check 5% of all grants paid. The appraisal work on the scheme itself might be reviewed i.e. was there sufficient analysis to reach a conclusion that introducing the scheme was the best option to meet the objectives pursued? A small number of individual grants might be checked to confirm (i) that the conditions attaching to a grant matched the scheme design e.g. is this the subset of the population that we intended to target, and (ii) that there was reasonable evidence that the scheme conditions were complied with.

This approach leaves organisations the greatest flexibility to cover the whole spectrum of projects and life-cycle phases over a number of years but also allows them to focus on large items at the most appropriate time.

What is expected of a more in-depth check?

Step 4 will look at a small subset and probe the quality of the work carried out. Step 3 above looks for basic indicators of compliance with the Public Spending Code i.e. if the project is over €20m, a CBA is required. Step 3 does not involve an assessment of whether or not the CBA is up to standard. Step 4, in contrast, looks in more detail at the quality of the appraisal, planning or implementation work done. This may mean:

- examining a CBA for a large project,
- an appraisal of a project under the €20m threshold,
- looking at how the outputs and outcomes for a current expenditure programme are defined and whether the data exists for on-going monitoring and evaluation
- examining how a large project was managed or
- looking at a post-project review

and **making a judgement** on whether the CBA, post-project review etc. was of an acceptable standard. Adverse findings might be that the estimated number of users of the proposed project was too optimistic, that the value of the benefit was overstated or unfounded, that other realistic options were not considered, that all costs including lifetime costs were not included, that the outputs were not defined prior to implementation or that data was not gathered during implementation to allow ongoing monitoring etc.

Step 4 may highlight, that while processes are in place and the organisation looks very compliant as per the checklists, there are deficiencies when more detailed checks are made.

Step 4 is a in depth look at how the organisation complies with the Public Spending Code. It is different from a Value for Money Policy Review (VFMPR). Step 4 looks at how the decision was

made initially, was it soundly based, was it well managed and reviewed in more depth when necessary.

The VFMPR looks at whether the intervention chosen worked or not or whether it was efficiently implemented. An organisation can do everything right as per the Code and come through this Quality Assurance check with a clean bill of health but an intervention it has chosen to fund may be shown in a VFMPR to have failed in spite of the best appraisal, planning and management. They are two separate exercises. If a VFMPR found that an intervention failed then continued compliance with the Public Spending Code should mean that the intervention is either abandoned or redesigned to address the deficiencies.

5. Complete a short report for Department of Public Expenditure & Reform.

The final step in the Quality Assurance process is the completion of a report to be submitted to the Department of Public Expenditure & Reform by the end of February in respect of the previous calendar year. The report should contain:

- the inventory of project/programmes, current & capital as compiled by the organisation's Finance unit;
- the website reference where details of procurements over €2m are published;
- completed checklists as per Step 3;
- the Department's judgement on the adequacy of the appraisal/planning, implementation or Review work that it examined as part of Step 4 and the reasons why the Department formed these judgements; and - the Department's proposals to remedy any inadequacies found during the Quality Assurance process.

This report should be certified by the Accounting Officer and published on the Department's website.

The Quality Assurance Process should serve as an aid to each Department in its ongoing task of achieving the best value for money. The Quality Assurance process takes stock of how well an organisation does its job as steward of a significant block of public expenditure. Compiling and submitting a report will allow the Department of Public Expenditure & Reform to be of greater

assistance in how it supports the achievement of this objective. It will also allow the D/PER and Departments generally to assess how appropriate this Quality Assurance Process is in practice and to make whatever adjustments may be required, in the context of the broader Consultation and Review procedures that are now integrated into the Public Spending Code itself.

CEEU Review of Compliance with Public Spending Code

The CEEU may make an annual assessment of each Department's compliance with the Public Spending Code and may publish this assessment on its website. The assessment will be based on Departments' Quality Assurance Reports, their record in completion of VFMs and any reviews that the CEEU itself conducts in Departments. Rather than focus only on deficiencies and shortcomings, it is important that instances of good practice be acknowledged, and that due credit should be given to Departments when they themselves identify and address deficiencies as part of the internal Quality Assurance process.

QA Checklists

When completing the checklists, organisations should consider the following points.

- ❖ The scoring mechanism for the checklists is as follows:
 - Scope for significant improvements = a score of 1
 - Compliant but with some improvement necessary = a score of 2
 - Broadly compliant = a score of 3
- ❖ For some questions, the scoring mechanism is not always strictly relevant. In these cases, it may be appropriate to mark as N/A and provide the required information in the commentary box as appropriate.
- ❖ The focus should be on providing descriptive and contextual information to frame the compliance ratings and to address the issues raised for each question. It is also important to provide summary details of key analytical outputs covered in the sample for those questions which address compliance with appraisal / evaluation requirements, i.e. the annual number of CBAs, VFMs/FPAs and Post Project Reviews. Key analytical outputs undertaken but outside of the sample should also be noted in the report.

Checklist 1 – To be completed in respect of general obligations not specific to individual projects/programmes.

General Obligations not specific to individual projects/programmes	Self-Assessed Compliance Rating: 1 - 3	Discussion/Action Required
Does the organisation ensure, on an ongoing basis, that appropriate people within the organisation and its agencies are aware of their requirements of the Public Spending Code (incl. through training)?		
Has internal training on the Public Spending Code been provided to relevant staff?		
Has the Public Spending Code been adapted for the type of project/programme that your organisation is responsible for? i.e., have adapted sectoral guidelines been developed?		
Has the organisation in its role as Sanctioning Authority satisfied itself that agencies that it funds comply with the Public Spending Code?		
Have recommendations from previous QA reports (incl. spot checks) been disseminated, where appropriate, within the organisation and to agencies?		
Have recommendations from previous QA reports been acted upon?		
Has an annual Public Spending Code QA report been submitted to and certified by the organisations Accounting Officer and published on the organisation’s website?		
Was the required sample of projects/programmes subjected to in-depth checking as per step 4 of the QAP?		
Is there a process in place to plan for ex post evaluations?		
How many formal evaluations been completed in the year under review? Have they been published in a timely manner?		
Is there a process to follow up on the recommendations of previous evaluations?		
How have the recommendations of VFMs, FPAs and other evaluations informed resource allocation decisions?		

Checklist 2 – To be completed in respect of capital projects/programmes & capital grant schemes that were under consideration in the past year.

Capital Expenditure being Considered – Appraisal and Approval	Self-Assessed Compliance Rating: 1 - 3	Comment/Action Required
Was a preliminary appraisal undertaken for all projects > €5m?		
Was an appropriate appraisal method used in respect of capital projects or capital programmes/grant schemes?		
Was a CBA/CEA completed for all projects exceeding €20m?		
Was the appraisal process commenced at an early stage to facilitate decision making? (i.e. prior to the decision)		
Was an Approval in Principle granted by the Sanctioning Authority for all projects before they entered the planning and design phase (e.g. procurement)?		
If a CBA/CEA was required was it submitted to the relevant Vote Section in DPER for their views?		
Were the NDFA consulted for projects costing more than €20m?		
Were all projects that went forward for tender in line with the Approval in Principle and if not was the detailed appraisal revisited and a fresh Approval in Principle granted?		
Was approval granted to proceed to tender?		
Were procurement rules complied with?		
Were State Aid rules checked for all supports?		
Were the tenders received in line with the Approval in Principle in terms of cost and what is expected to be delivered?		
Were performance indicators specified for each project/programme which will allow for a robust evaluation at a later date?		
Have steps been put in place to gather performance indicator data?		

Checklist 3 – To be completed in respect of new current expenditure under consideration in the past year.

Current Expenditure being Considered – Appraisal and Approval	Self-Assessed Compliance Rating: 1 - 3	Comment/Action Required
Were objectives clearly set out?		
Are objectives measurable in quantitative terms?		
Was a business case, incorporating financial and economic appraisal, prepared for new current expenditure?		
Was an appropriate appraisal method used?		
Was an economic appraisal completed for all projects exceeding €20m or an annual spend of €5m over 4 years?		
Did the business case include a section on piloting?		
Were pilots undertaken for new current spending proposals involving total expenditure of at least €20m over the proposed duration of the programme and a minimum annual expenditure of €5m?		
Have the methodology and data collection requirements for the pilot been agreed at the outset of the scheme?		
Was the pilot formally evaluated and submitted for approval to the relevant Vote Section in DPER?		
Has an assessment of likely demand for the new scheme/scheme extension been estimated based on empirical evidence?		
Was the required approval granted?		
Has a sunset clause been set?		
If outsourcing was involved were procurement rules complied with?		
Were performance indicators specified for each new current expenditure proposal or expansion of existing current expenditure programme which will allow for a robust at a later date?		

Have steps been put in place to gather performance indicator data?		
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Checklist 4 – To be completed in respect of capital projects/programmes & capital grants schemes incurring expenditure in the year under review.

Incurring Capital Expenditure	Self-Assessed Compliance Rating: 1 - 3	Comment/Action Required
Was a contract signed and was it in line with the Approval in Principle?		
Did management boards/steering committees meet regularly as agreed?		
Were programme co-ordinators appointed to co-ordinate implementation?		
Were project managers, responsible for delivery, appointed and were the project managers at a suitably senior level for the scale of the project?		
Were monitoring reports prepared regularly, showing implementation against plan, budget, timescales and quality?		
Did projects/programmes/grant schemes keep within their financial budget and time schedule?		
Did budgets have to be adjusted?		
Were decisions on changes to budgets / time schedules made promptly?		
Did circumstances ever warrant questioning the viability of the project/programme/grant scheme and the business case incl. CBA/CEA? (exceeding budget, lack of progress, changes in the environment, new evidence, etc.)		
If circumstances did warrant questioning the viability of a project/programme/grant scheme was the project subjected to adequate examination?		
If costs increased was approval received from the Sanctioning Authority?		

Were any projects/programmes/grant schemes terminated because of deviations from the plan, the budget or because circumstances in the environment changed the need for the investment?		
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Checklist 5 – To be completed in respect of current expenditure programmes incurring expenditure in the year under review.

Incurring Current Expenditure	Self-Assessed Compliance Rating: 1 -3	Comment/Action Required
Are there clear objectives for all areas of current expenditure?		
Are outputs well defined?		
Are outputs quantified on a regular basis?		
Is there a method for monitoring efficiency on an ongoing basis?		
Are outcomes well defined?		
Are outcomes quantified on a regular basis?		
Are unit costings compiled for performance monitoring?		
Are other data compiled to monitor performance?		
Is there a method for monitoring effectiveness on an ongoing basis?		
Has the organisation engaged in any other 'evaluation proofing' of programmes/projects?		

Checklist 6 – To be completed in respect of capital projects/programmes & capital grant schemes discontinued in the year under review.

Capital Expenditure Recently Completed	Self-Assessed Compliance Rating: 1 - 3	Comment/Action Required
How many post project reviews were completed in the year under review?		
Was a post project review completed for all projects/programmes exceeding €20m?		
Was a post project review completed for all capital grant schemes where the scheme both (1) had an annual value in excess of €30m and (2) where scheme duration was five years or more?		
Aside from projects over €20m and grant schemes over €30m, was the requirement to review 5% of all other projects adhered to?		
If sufficient time has not elapsed to allow for a proper assessment, has a post project review been scheduled for a future date?		
Were lessons learned from post-project reviews disseminated within the Sponsoring Agency and to the Sanctioning Authority? (Or other relevant bodies)		
Were changes made to practices in light of lessons learned from post-project reviews?		
Were project reviews carried out by staffing resources independent of project implementation?		

Checklist 7 – To be completed in respect of current expenditure programmes that reached the end of their planned timeframe during the year or were discontinued.

Current Expenditure that (i) reached the end of its planned timeframe or (ii) was discontinued	Self-Assessed Compliance Rating: 1 - 3	Comment/Action Required
Were reviews carried out of current expenditure programmes that matured during the year or were discontinued?		
Did those reviews reach conclusions on whether the programmes were efficient?		
Did those reviews reach conclusions on whether the programmes were effective?		
Have the conclusions reached been taken into account in related areas of expenditure?		
Were any programmes discontinued following a review of a current expenditure programme?		
Were reviews carried out by staffing resources independent of project implementation?		
Were changes made to the organisation’s practices in light of lessons learned from reviews?		

The Public Spending Code: B. Expenditure under Consideration

Standard Appraisal Process

Document Update Log

Document Summary: The techniques used in appraising proposals or new areas of expenditure vary depending on the scale of expenditure involved. The more complex techniques are explored in the Standard Analytical Guidance Section of the Public Spending Code. Regardless of the scale or the technique used all appraisal involves a series of steps from objective definition and options exploration through to selection of the preferred option. This document sets out those standard appraisal steps. For expenditure involving less than €5m, following the standard appraisal steps should ensure a good appraisal.

Appraisal involves both the Sponsoring Agency and the Sanctioning Authority being clear about the objectives of a proposal/intervention and consideration of all the options open to the Sponsoring Agency in meeting these objectives. All publicly funded projects or initiatives should be appraised carefully for:

- consistency with programme/policy objectives;
- value for money (taking account of deadweight⁽¹⁾ and displacement⁽²⁾)

Appraisal by the Sponsoring Agency should follow the general approach in the checklist below. Appraisal of **all** new expenditure (whether capital or current), large or small should be subjected to the general appraisal process described below.

The *appraisal and planning stage will often overlap*. In reality, it is very difficult to carry out a detailed appraisal unless some planning and/or initial design work has been done.

There are seven standard steps and these are expanded upon below.

- (i) Define the objective

- (ii) Explore options taking account of constraints
- (iii) Quantify the costs of viable options and specify sources of funding
- (iv) Analyse the main options
- (v) Identify the risks associated with each viable option
- (vi) Decide on a preferred option
- (vii) Make a recommendation to the Sanctioning Authority

Further guidance on particular techniques and methods are contained in Section D of the Public Spending Code and parameter values are to be found in Section E.

(i) Define the Objective

Define clearly the objective of the proposals i.e. what needs are to be met and what is the planned scale on which those needs will be met, measured as precisely as possible. This is a key step that does not always get the required attention. If the objective changes during the appraisal or planning process then all parts of the appraisal need to be reviewed.

Needs and Objectives

An objective is the explicit intended result of a particular programme or project, measured as precisely as possible. For example, there may be a need to improve traffic flow on a road. To state the objective of works on that road as being “to reduce average journey times” would be unsatisfactory since it would not provide a basis for judging whether investment proposed to improve the roads would produce sufficient benefit. Something more explicit is needed. “To reduce average journey times between Town A and Town B by X percent by the year 2020” is a precise objective. It assists in addressing such questions as what are the various ways in which this objective can be reached; what costs and what results can be expected from each alternative course of action; and are the benefits sufficient to justify the costs.

Project and programme objectives should be expressed in terms of the benefits they are expected to provide and those whom they are intended to benefit. For example, road building programmes are

not ends in themselves, as they must be seen in the light of the needs of the economy as a whole, and of the target groups for which the programmes cater (for example, freight traffic, tourist traffic, commuters. etc.). There is a need for realism in stating objectives.

Where programmes have multiple objectives it is necessary to be clear about the relative importance of each and how this should be reflected in resource allocation and in the appraisal process. Objectives should be expressed in a way which will facilitate consideration and analysis of alternative ways of achieving them. They should not be so expressed as to point to only one solution. For example, population growth may put pressure on the schools in a particular area and an objective might be expressed as being “to build new schools in the area” to meet this pressure. The objective “to provide school places to meet population growth within the area” would provide a better basis for considering alternative ways of achieving this objective, such as the provision of new schools, the expansion of existing schools, on a permanent or temporary basis, or making better use of the existing stock of schools by provision of special transport (school bussing) arrangements.

New projects should only be undertaken where there is a clearly established public need for the projects or service provided; existing services should be reviewed to ensure that the kind of service provided is the kind of service required, and is on the appropriate scale. Costly and wasteful over-supply, and/or under-utilisation of resources should be avoided.

Identifying the most appropriate policy response to a “need” can be difficult. Every effort should be made to identify available research that will assist in identifying a problem properly and which may have looked at how different types of solutions work.

(ii) Explore Options – taking account of constraints

- list the **options** i.e. realistic alternative ways in which the objective can be achieved; include the option of doing nothing, or consider whether an objective could be met by ways other than expenditure by the State;
- list the constraints;
- The output from this step should be a list of realistic options that meet the objective(s). If the objective cannot be met from the available options then the objective should be revisited.

Options & Constraints

All realistic ways of achieving stated objectives should be identified and examined critically when considering project options for the first time. This should be done with a completely open mind, and

should always include the option of 'doing nothing' or 'doing the minimum'. Different scales of the same response should be included as separate options, where appropriate. There should be no presumption that public sector responses are the only ones available; options which involve, or rely totally on, the private sector should also be considered. The alternatives should be described in such a way that the essentials of each alternative, and the differences between them, are clear. Options on the appropriate procurement method will also be considered i.e. traditional design build (DB), Design Build Finance (DBF), Design Build Finance Operate (DBFO) and Design Build Finance Operate and maintain (DBFOM) etc.

Constraints

There will invariably be constraints in reaching objectives. There will normally be resource constraints. There may be technical constraints; for instance, there may be only a limited number of ways in which a product can be made, or a service delivered. Constraints may also arise as a result of previous policy or investment decisions, but these may be amenable to change. Constraints must also be explored and fully taken account of, because they will limit the range of solutions which are feasible or acceptable. The following is a checklist of the kinds of constraint which typically should be considered in appraising a proposal:

- Financial

- Technological

- Legal/regulatory

- State Aids rules

- Environmental

- Physical inputs/raw material

- Availability of manpower and skills

- Time

- Administrative /managerial ability

- Distributional (e.g. between regions, income groups, etc.)
- Social
- Spatial policy
- Land use planning
- Co-operation required from other interests
- General policy considerations.

Considering the possible alternatives in the light of the constraints will usually lead to the conclusion that some of the alternatives are not feasible. Others may conflict with existing policies. Objectivity is important in considering options. There is a danger that the selection of options may be manipulated in order to make a case for a course of action which is already favoured. For example, options for which there is a very weak case may be put forward in order to make a poor option look good. If the poor option is the best available it should be considered alone on its own merits.

(iii) Quantify the costs of viable options and specify sources of funding

For capital projects, cost quantification should cover ongoing capital and life cycle costs relating to the operation and maintenance of the project, and receipts generated by the use of capital assets, as well as the costs involved in their creation. The cost of the project should be the expected outturn cost, including construction costs, property acquisition, risk and contingency. The cost of possible future price increases and variations in project outputs should be factored into the calculation of project costs.

Costs of current programmes or capital grant schemes will largely depend on the amount per eligible individual and the expected take-up. Reliable estimation of take-up is key. The costs of current programmes or capital grant schemes can be more difficult to predict. Cash limits on schemes should be used to protect the exchequer from unexpected exposure. Projected administration costs should also be included and external sourcing must be one of the methods of delivery considered for any new service that is to be introduced.

(iv) Analyse the main options

This step and the next step on the consideration of risk will lead to a recommendation on the preferred option. Different forms of analysis provide different kinds of information about investment proposals, and it is important to identify clearly, and to agree with the Sanctioning Authority, which forms of analysis are appropriate. The chief criterion used in deciding on the appropriate forms of analysis is whether or not the project is to be operated on a commercial basis.

The costs of the possible options will have been determined in the previous step. Depending on the scale of the project the analysis of options may involve placing a monetary value on the benefits.

Types of analysis that may be used include:

- Multi-criteria analysis (MCA)
- Financial analysis
- Cost benefit analysis
- Cost effectiveness analysis
- Exchequer cash flow analysis

Further information on when a particular method is required is contained in document B-03 Approvals Required and Scale of Appraisal and further guidance on each type of analysis is available in the Standard Analytical Techniques Section of the Public Spending Code.

Sensitivity Analysis:

Sensitivity analysis involves evaluating proposals over a range of assumptions about key factors (e.g. prices, costs, interest rates on any borrowed funds, growth rates, demographic changes) and should always be undertaken. If an option yields acceptable results only with particular combinations of circumstances, and the results are very sensitive to variations in these circumstances, then it should probably not be undertaken. If the relative merits of options change with variations in the assumed values of variables, those values should be examined to see whether they can be made more reliable. It may be possible to attach probabilities to ranges of values, to help pick the best option.

(v) Identify the risks associated with each viable option

Identify the potential impact of adverse circumstances on each option, and draw up, if possible, a strategy for dealing with risks. Important aspects of an appraisal will necessarily be based on assumed future outcomes and events. **Realistic** assumptions must be made about future prices, costs, market growth, and other relevant factors. Appraisal reports should always clearly state their assumptions. Over optimism should be avoided. Assumptions should be based on analysis of past performance, bad years as well as good and careful study of possible future developments. Realistic assumptions reduce, but cannot eliminate, the element of uncertainty in the decision-making process, and the risk that decisions made on the basis of the analyses may turn out to be wrong. Good project appraisal highlights the elements which are uncertain, so that the Sponsoring Agency and the Sanctioning Authority are aware of the risks involved in proceeding, or not proceeding, with any proposal. Suitable strategies to minimise risk, and its consequences, should be put in place e.g. in project management organisation, review procedures, information flows, etc. An appropriate level of contingency should be built into the costings.

(vi) Decide on a preferred option

Decide on the preferred option, specify it and a clear and detailed **time profile** for actions, (including time for planning and decision making) and for expenditure. Excessively high quality and cost specifications should be avoided. A balance must be struck between specifications which are excessive relative to needs and low quality specifications which may generate short-term economies but which lead to greater costs in the long-run.

(vii) Make a recommendation to the Sanctioning Authority

The Sponsoring Agency should recommend the preferred option – with reasons for its choice and an indication of its sensitivity to changes in key assumptions – for consideration and approval by the Sanctioning Authority.

^[1] Deadweight : would have happened anyway in the absence of public funding ^[2] Displacement: to what extent have existing facilities or activities been displaced by those that are now grant-aided

B-02

The Public Spending Code: B. Expenditure under Consideration

The Planning Stage

B-02

Document Update Log

Document Summary: This stage moves the preferred option that was been approved in principle after appraisal to the point where contractors put a price on delivering a fully specified solution and the Sponsoring Agency selects the one that it would place a contract with. This stage has a number of checkpoints and if expected costs or environmental conditions change a reappraisal and re-approval may be required

The planning stage involves seven steps. These are

- establishment of project management structure;
- preparation of a project brief;
- detailed planning and design;
- review of proposal, using information provided by the planning process;
- obtaining approval of the Sanctioning Authority to go to tender;
- obtaining tenders for projects; – review of proposal, using tender prices.

1. Management of Projects

The scale and complexity of the project should be reflected in its management structure and information system. Unless it already exists (e.g. for ongoing capital programmes) the management structure should always be identified and established once approval in principle has been obtained. In some cases, it may be possible to outline the proposed structure, filling some of the roles immediately and leaving others to be filled later on, as appropriate. However, the senior decision-

makers for the project, and the senior managers should all be identified clearly at the outset, and their involvement and relative role clearly agreed. Three issues should be carefully considered. These are:

- what kind of management structure would be suitable for the project?
- who is to be accountable for what aspects of the project?
- what kind of reporting systems should be installed?

The management of the project should usually be organised along the following lines:

Sanctioning Authority

The Sanctioning Authority (Government, Department, Local Authority, etc.) is responsible for conveying approval to a project, within specified cost, to specified standards and time limits, etc.

Sponsoring Agency

The Sponsoring agency has overall responsibility for the proper management of the project, including its detailed planning; for obtaining necessary approvals from the Sanctioning Authority and for ensuring that the project proceeds along the lines approved by the Sanctioning Authority. Usually, the Sponsoring Agency is the body with whom the contractor(s)/supplier(s) will have a legal commitment.

Steering Group

A Steering Group has the responsibility for overseeing the execution of the project. A Steering Group will usually be required on a complex and large scale project and particularly where a number of bodies are interested or involved in the project. It should usually be chaired by a representative of the Sponsoring Agency. The group should include appropriate professional staff e.g. architect/engineer/quantity surveyor. The Group may include a representative from the Sanctioning Authority and/or the Department of Public Expenditure and Reform.

Project Co-ordinator

The Project Co-ordinator is the person who is responsible for the execution, on time to the requisite quality and within budget, of the decisions taken by the Steering Group, or by the Sponsoring Agency

in the absence of a Steering Group (where the project is small). For very large projects it may be necessary to appoint a professional firm to take on the task of actually managing the project. It would report to the Project Co-ordinator (who in turn would report to the Steering Group, and/or Sponsoring Agency, as appropriate) and it would be responsible for ensuring that the project came in on time and within cost.

Design Team Leader

A Design Team Leader should normally be appointed for every project with more than one technical consultant. The Design Team Leader would report to the Project Co-ordinator or, where a project management firm had been appointed, to that firm.

Information Flows The following should be established as early as possible:

- The information needs at various levels of the management structure.
- The format that should be used for presenting this information. In this connection the standard forms in *National Standard Building Elements and Design Cost Control Procedures* should be used wherever these are appropriate. However, particular projects may require special forms which vary from those standard forms
- The frequency of the submission of reports.
- Who is responsible for supplying and for compiling information? The information system should reflect the nature of the project but should deal with all of these points.

2. Project Brief

The project brief is essentially a description of the project option which has been approved in principle, detailing the objectives and parameters to be taken into account by the planning professionals. All the client's requirements should be set out in appropriate detail (e.g. for buildings, specify schedule of accommodation and room sizes etc.).

The project brief should not call for over-elaborate designs and/or the specification of standards which exceed the minimum necessary to achieve a satisfactory **and cost-effective** end product. The

programme for the completion of the work specified in the detailed appraisal should also be given. The services to be provided by consultants, architects, engineers, etc., should be clearly identified.

Cost limits/targets for the project should be included in the project brief. Estimated costs for the project itself and for project planning will have been included in the detailed appraisal. These should be used as the permitted expenditure limits.

3. Detailed Planning and Design

Once design has commenced on the basis of the project brief, **changes in the scope or objectives of the project should not be made unless absolutely necessary**, or unless the proposed changes could reduce the overall cost of the project. If changes are to be made, the cost implications (including the effects on design costs) and the effects on the timing of the project should be fully appraised, and the express approval of the Sanctioning Authority sought, before an amended design brief is given to consultants.

Employing Consultants

Depending on the type of project and the availability of skills within the Sponsoring Agency, it may be necessary to engage the services of consulting architects, engineers, quantity surveyors, etc. Outline guidance on selecting consultants is contained in Appendix 1.

Costs

In managing the design process, it is important to consider regularly how the information being produced is likely to affect the estimated cost of the proposed project.

Departments and public bodies will be in a position to develop and update standard costs of providing typical projects or elements of projects. These will be used as a benchmark for appraising project costs. Regard should be had to national and international benchmarks for larger and more complex projects.

If the designs furnished by consultants to the Sponsoring Agency exceed the cost limit(s) set in the project brief, they should be referred back to the consultants by the Sponsoring agency to ensure that costs are reduced to stay within the said overall cost limit(s). Significant changes in specification to

achieve cost reduction should be notified to the Sanctioning Authority for approval, with information on any change in the quality of the works being undertaken.

Data Gathering for Evaluation

It is during the detailed Planning & Design stage that the data, required for the subsequent monitoring and evaluation, should be specified. Failure to specify data gathering requirements from the start of implementation should be the subject of critical comment in any subsequent VFM or similar evaluation. Many evaluations fail to reach conclusions on the value of an investment/expenditure programme due to lack of data. This can lead to years of further wasteful expenditure while data is gathered.

Changes in Circumstances/Time Scale

Changes which are relevant to a project, and which may make it more or less beneficial for the economy, may occur at any time (e.g. developments in technology, fluctuations in the availability or cost of raw materials or other inputs, changes in the domestic and international economies, legal changes). Such changes may alter radically the needs to be met, the priority which they are to be given, the scale on which they should be met, and the feasibility of possible alternative solutions. Under or over-estimation of relevant factors, notably cost, may be discovered during detailed planning following approval in principle, or when tenders are received.

Changes in the time scale of a project can also have very significant effects. Unscheduled delays (due, for example, to time overruns on particular stages or to delays in reaching decisions) may result in circumstances changing so as to alter radically the case for a proposal. Similarly, decisions to delay a project (i.e. to change the time profile) may result in significant changes in factors affecting decisions made. When significant alteration of the planned time scale occurs, it is particularly important to reassess fully the basis on which earlier decisions were made.

The detailed appraisal is the framework against which the impact of changes can be assessed. In setting it up, it is important to identify clearly factors which are so significant to the appraisal that unexpected changes in them would warrant speedy reappraisal, and corrective action, if necessary.

Indefinite Postponement of Project

If a decision is taken to defer a project indefinitely, then it should be fully reappraised before being started again. For instance, a project deferred indefinitely after architectural or engineering plans have been drawn up should not subsequently be proceeded with, without returning to the detailed appraisal stage.

4. Pre-Tender Review

When plans and designs have been finalised, the project proposal should be reviewed, taking into account any major changes in relevant circumstances and the more precise information generated by the design process. In particular, if the expected total cost of the project has increased, then the project should be re-examined and reductions achieved without lowering the quality standard of the project below acceptable levels, in order to bring the project within the approved limit. Works should not be omitted so as to achieve reductions if they will have to be reintroduced later as being essential for the completion of the project, or for the generation of its full benefits, or if they significantly change the nature of the project. The Sanctioning Authority should be notified of any significant changes.

The pre-tender review is necessary to provide the information required by the Sponsoring Agency and the Sanctioning Authority to decide whether or not to approve the project and to allow it to proceed to Request for Tender.

Planning Permission Requirements

If a project requires planning permission, a final decision to proceed with it should not be taken until permission is obtained from the appropriate Planning Authority or An Bord Pleanála. The implications of any conditions attaching to the planning permission should be fully assessed, going so far, if warranted, as to consider whether the project should be abandoned. Before these steps are carried out financial exposure in respect of the project arising, for example, out of contracts, should be minimised. Similar considerations should apply to the requirements of various statutory codes operated by local authorities and other bodies, e.g. Building Control (Fire Safety Certificate), Air or Water Pollution Licence, Waste Permit, or Integrated Licence (Environmental Protection Agency).

Under Design and Build Contracts responsibility for obtaining planning permission may be assigned to the successful contractor.

5. Obtaining Approval of Sanctioning Authority

Approval of the Sanctioning Authority is required before tenders are invited.

6. Tendering

Tendering should, as appropriate, be invited in accordance with national procurement guidelines or where the costs exceed EU thresholds on the basis of the procedures set out in EU Directives.

7. Review using Tender Price

When a tender price and other relevant information become available, the case for proceeding with the proposal should again be reviewed. The analysis contained in the detailed appraisal once again provides the framework for undertaking this review. The award criteria in the tender document will be used to select the best proposal received. The best proposal is then compared with what was expected at the Approval in Principle point. If the costs and output from the best proposal do not match the costs and benefits that led to the Approval in Principle then the Appraisal decision may have to be reviewed.

If tenders exceed the approved budget, the project should be re-examined and reductions achieved without lowering the quality standard of the project below acceptable levels, in order to bring the project within the approved limit. Works should not be omitted so as to achieve reductions if they will have to be reintroduced later as being essential for the completion of the project, or for the generation of its full benefits, or if they significantly change the nature of the project. The Sanctioning Authority must be informed of all significant works omissions.

If serious additional costs have arisen, the sanctioning authority should require the Sponsoring Agency to undertake, as appropriate, a revised cost-effectiveness analysis or cost benefit analysis having regard to the increased costs. Where a revised cost-effectiveness analysis or cost benefit analysis has been carried out and the project is either no longer affordable or the best value option, the procurement should be terminated and the resources diverted to more worthwhile projects.

If tenders are over the approved limit re-appraisal may be required to determine whether the project should be abandoned or proceeded with. If this re-appraisal suggests proceeding at higher cost the approval of the Sanctioning Authority to a raised financial limit must be sought before contracts are placed. If it is decided that the project should be abandoned at this post-tender stage, and if substantial amounts have already been spent on planning etc. at this stage, the position should be reviewed to determine why the project came to proceed to this stage and was then abandoned.

Proceed to Implementation

It is at this point that the bulk of the spending on the project itself (spending will have been incurred at the appraisal and planning stages in relation to design fees, planning fees environmental assessments, site investigations etc.) can be sanctioned. (Once this point has been passed, it is often very difficult to withdraw from the project without incurring very large costs.) An explicit amount should be sanctioned.

[Figure 4](#) summarises the various steps that are required during the Planning Stage.

Appendix 1 Employing consultants for construction contracts

If the necessary resources are not available within the public sector to fully appraise a project the employment of outside consultants may be considered.

- Management consultants may be required to undertake detailed studies/appraisals.
- Technical consultants may be needed to give technical advice at various stages.

The first priority in engaging consultants is to ensure that the best quality of professional service is provided. It is essential that every authority which engages consultants should establish formal systems for monitoring and assessing the effectiveness and efficiency of consultants in the discharge of their contracts.

A comprehensive brief for consultants is of fundamental importance. All the clients requirements should be set out in proper detail, together with a tentative programme for the completion of the work. The service to be provided by each of the consultants must be clearly identified.

Separate agreements are required for consultancy tasks at the appraisal stage and at the planning and implementation stages of a project and that the contract under which consultants are engaged for particular tasks must make it clear that, if the project proceeds, they may not necessarily be engaged on later tasks. Fees should be sought on a competitive tendering basis.

The importance of complying with these requirements in employing consultants can be illustrated in a situation where, for instance, a project has proceeded to the planning stage. If, at this stage, circumstances warrant revising or abandoning the project, it is important that provision has been made in consultants' contracts for termination without incurring undue costs/liabilities.

Departments should try to anticipate their likely needs for consultancy services for project appraisal and planning purposes. Allowances for such services should be included in annual Departmental Budgets.

B-03

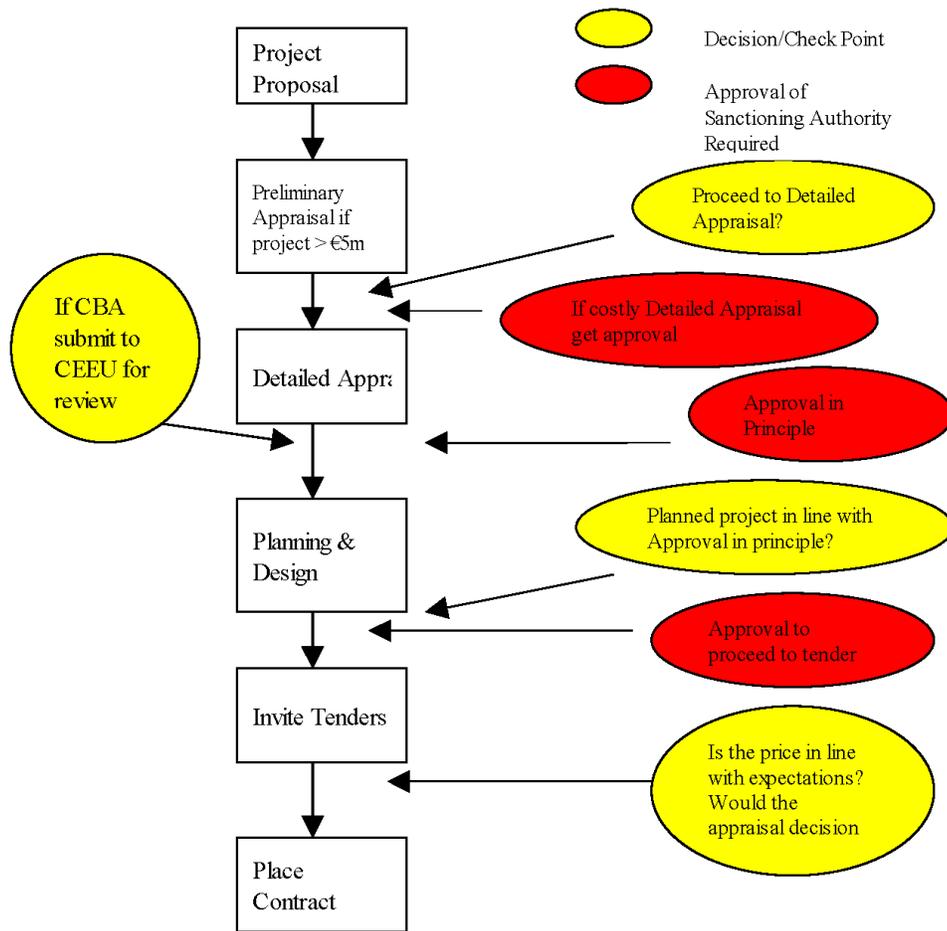
The Public Spending Code: B. Expenditure under Consideration

Approvals Required and Scale of Appraisal

B-03

Document Update Log

Document Summary: There are several checkpoints and approvals required before a proposal can proceed to implementation. The type of Appraisal required will depend on the type or scale of project. This document summarises the checkpoints and approvals required before a proposal can proceed to full implementation.



Approval in Principle

'Approval in principle' is a decision given by a Sanctioning Authority to a Sponsoring Agency at the end of the appraisal stage. It permits the successive steps in planning a project or scheme to proceed, stopping short of the placement of major contracts or the making of any irrevocable commitments to undertake the project/scheme. It commits relatively limited resources to planning the project. Those resources are expended progressively. If circumstances warrant, it should be possible to revise or drop the proposal during the planning process without incurring all of the planning costs or any of the more substantial liabilities associated with the project itself. **If the value of the capital project exceeds €20m then the CBA (or CEA) should be submitted to the CEEU in the Department of Public Expenditure and Reform for their views, prior to the Sanctioning Authority granting the Approval in Principle.** The CEEU will give their views to the Sponsoring Agency and may publish their review of the CBA (or CEA) on their website, with any necessary redaction to protect the State's interest in the tender process and commercial sensitivity. Redactions,

if necessary at all, should be kept to a minimum and a justification for the redactions should be published with the document.

For current expenditure proposals expected to incur over €20m (with an annual spend of at least €5m) an economic appraisal should be submitted to the Vote Section who may seek the views of the CEEU. If the CEEU is asked to give their observations on the appraisal of a current expenditure proposal they may decide to publish their review of the appraisal on their website. For more information on appraisal of Current Expenditure proposals see document B-06 Appraising Current Expenditure.

Pre-Tender Approval

When plans and designs have been finalised, the project proposal should be reviewed. Account should be taken of any major changes in relevant circumstances and the more precise information generated by the design process. In particular, if the expected total cost of the project has increased, then the project should be re-examined and reductions achieved without lowering the quality standard of the project below acceptable levels, in order to bring the project within the approved limit. Works should not be omitted so as to achieve reductions if they will have to be reintroduced later as being essential for the completion of the project, or for the generation of its full benefits, or if they significantly change the nature of the project. The Sanctioning Authority should be notified of any significant changes.

The pre-tender review is necessary to provide the information required by the Sponsoring Agency and the Sanctioning Authority to decide whether or not to approve proceeding to seek tenders.

Review using Tender Prices

When a tender price and other relevant information become available, the case for proceeding with the proposal should again be reviewed. The analysis contained in the detailed appraisal once again provides the framework for undertaking this review. The award criteria in the tender document will be used to select the best proposal received. The best proposal is then compared with what was expected at the Approval in Principle point. If the costs and output from the best proposal do not match the costs and benefits that led to the Approval in Principle then the Appraisal decision may have to be reviewed.

If tenders exceed the approved budget, the project should be re-examined and reductions achieved without lowering the quality standard of the project below acceptable levels, in order to bring the project within the approved limit. As stated above in relation to the pre-tender stage, works should not be omitted so as to achieve reductions if they will have to be reintroduced later as being essential for the completion of the project, or for the generation of its full benefits, or if they significantly change the nature of the project. The Sanctioning Authority must be informed of all significant works omissions.

If serious additional costs have arisen, the sanctioning authority should require the Sponsoring Agency to undertake, as appropriate, a revised cost-effectiveness analysis or cost benefit analysis having regard to the increased costs. Where a revised cost-effectiveness analysis or cost benefit analysis has been carried out and the project is either no longer affordable or the best value option, the procurement should be terminated and the resources diverted to more worthwhile projects.

If tenders are over the approved limit re-appraisal may be required to determine whether the project should be abandoned or proceeded with. If this re-appraisal suggests proceeding at higher cost the approval of the Sanctioning Authority to a raised financial limit must be sought before contracts are placed. If it is decided that the project should be abandoned at this post-tender stage, and if substantial amounts have already been spent on planning etc. at this stage, the position should be reviewed to determine why the project came to proceed to this stage and was then abandoned.

3. Scale of Appraisal

Every spending proposal should be appraised carefully. However, the resources spent on appraisal should be commensurate with the cost of projects (or proposals for current expenditure), and with the degree of complexity of the issues involved. Small and routine projects should be appraised with a readily applicable methodology which is used consistently and which reflects the principles set out in this document.

Simple appraisals involving expenditure of less than €500k may be completed within a matter of days. The appraisal of complex projects involving expenditure of more than €20m, which will involve a Cost Benefit Analysis, may take a number of months.

(i) A simple assessment will be carried out for minor projects with an estimated cost below €0.5 million, such as projects involving minor refurbishment works, fit outs etc.

(ii) Projects costing between €0.5 million and €5 million should be subject to a single appraisal incorporating elements of a preliminary and detailed appraisal.

(iii) A Multi Criteria Analysis (MCA) should be carried out at minimum for projects between €5 million and €20 million.

(iv) Projects over €20 million should be subjected to a Cost Benefit Analysis (CBA) or Cost Effectiveness Analysis (CEA). **Prior to Approval in Principle the CBA (or CEA) should be submitted to the Central Expenditure Evaluation Unit in the Department of Public Expenditure & Reform for their views.** The CEEU will give its views on the appraisal to the Sponsoring Agency and may publish their review of the CBA (or CEA) on their website, with any necessary redaction to protect the State's interest in the tender process and commercial sensitivity. Redactions, if necessary at all, should be kept to a minimum and a justification for the redactions should be published with the document.

For **current expenditure proposals expected to incur over €20m (with an annual spend of at least €5m) an economic appraisal should be submitted to the Vote Section who may seek the views of the CEEU.** If the CEEU is asked to give their observations on the appraisal of a current expenditure proposal they may decide to publish their review of the appraisal on their website.

(v) Programmes with an annual value in excess of €30 million and of 5 years or more duration to be subject to prior and mid-term evaluation at the beginning and mid point of each 5 year cycle or as may be agreed with the Department of Public Expenditure & Reform. Programme Evaluation should consider five key questions:

1. **Rationale** -What is the justification or rationale for the policies underpinning the programme? What is the underlying market failure justification for Government intervention?
2. **Relevance** – What are the implications for the programme of changes in the wider socio-economic environment and in the context of overall Government policy?
3. **Effectiveness** – Is the programme meeting its financial and physical objectives?
4. **Efficiency** – Could more be achieved for the resources invested?

5. **Impact** – What socio-economic changes can be attributed to the programme. Most projects will be considered in the context of a sponsoring agency's business plan or a multi-annual investment programme. The Sanctioning Authority should ensure that there is adequate consultation between sponsoring agencies, relevant Departments and public bodies having functional responsibilities in the sector or cross-sectoral responsibilities.

Cost-Benefit or Cost-Effectiveness Analysis?

There are two basic forms of economic analysis, one of which should be applied in the appraisal of each non-commercial investment proposal valued over €20m (see figure 6 below):

Cost-Benefit Analysis

The general principle of cost-benefit analysis (CBA) is to assess whether or not the social and economic benefits associated with a project are greater than its social and economic costs.

Cost-Effectiveness Analysis

Cost-effectiveness analysis (CEA) compares the costs of different ways of achieving a particular objective. A choice can then be made as to which of these options (which all achieve the same or similar ends) is preferable. Cost-benefit and Cost-effectiveness analysis are very similar. Ideally, cost-benefit analysis would always be undertaken. However, there are situations where significant costs or benefits associated with a project cannot be quantified or valued, and where this occurs cost effectiveness analysis may have to be relied on. CEA is employed to determine the least cost way of determining the project objective. Whether undertaking cost-benefit or cost-effectiveness analysis, a number of important considerations arise:

- There may be significant costs or benefits which do not affect the Sponsoring Agency but which are important to other persons or agencies or to society in general. These are usually called 'externalities' (i.e. they are external to the sponsor's direct concerns).
- There may be no market prices available for evaluating some costs or benefits associated with project options as they may not be traded items.
- In some cases, though resources consumed and outputs produced may be traded, the prices may not reflect the real value to society of those resources or outputs.

For further information on Appraisal Techniques see Document D.01.

Project Finance including PPPs:

The Sponsoring Agency is required to seek the advice of the NDFA on all projects above €20 million and should do so at preliminary appraisal stage and in any event no later than before tender documents are finalised. The Agency's statutory functions include advising public bodies on the optimum means of financing the cost of public investment projects to achieve value for money and providing advice in relation to all aspects of financing, refinancing and insurance including risk analysis of public investment projects.

The option of procuring a project by PPP for projects costing over €20m should be considered by the sponsoring agency as part of the project appraisal. The separate Guidelines on Public Private Partnerships should be followed when considering the PPP option – see www.ppp.gov.ie.

[Figure 6](#): Identifying the Appropriate Type of Analysis

The Public Spending Code: B. Expenditure under Consideration Procurement Guidelines

The Public Spending Code: B. Expenditure under Consideration

Procurement Guidelines

B-04

Document Update Log

Capital projects as a rule and in some cases current expenditure programmes will involve third party provision on a contractual basis. Having attained an Approval in Principle on completion of the Appraisal phase and an Approval to Proceed to Tender during the planning phase the project moves on to Procurement which is a phase of planning that is governed by extensive regulations and guidance.

Procurement Regulations aim to give potential suppliers a fair opportunity to compete. From a Value for Money perspective lower prices are secured when competitive processes are used. To be compliant with the Public Spending Code, Departments and Agencies have to comply with Procurement Regulations and Guidelines.

For regulations and guidance on procurement see: <http://per.gov.ie/public-procurement-2/>

Contract Placement

The Sponsoring Agency should procure the services of a contractor in accordance with EU and national procurement requirements. Depending on the kind of project being undertaken, the Sponsoring Agency may have a choice of engaging in a single contract with one contractor, or of coordinating a number of minor or sub-contracts. The task of managing a large number of contracts should not be underestimated; any potential cost savings associated with such an approach should be weighed against the inevitable additional management costs. **The use of nominated subcontractors is not permissible in any public works contract. The contract should make clear the specific responsibilities of the parties.**

Public Procurement National Public Procurement Policy Unit (NPPPU)

The NPPPU was established in June 2002 and is charged with the formulation of policy and guidance in public procurement and the delivery of the government's e-procurement strategy. It is also responsible for producing national procurement guidelines, transposition of EU directives and for the Government Contracts Committee. The unit can be contacted at 01 6318034 or 01 6318101 or email: procure@per.gov.ie.

National Procurement Service (NPS)

The NPS was established in April 2009 on foot of a Government Decision assigning responsibility for procurement to the Minister of State at the Department of Finance with special responsibility for the Office of Public Works.

The establishment of the NPS is part of an overall vision for Public Procurement, which sees policy and operational structures working together. The NPS has been tasked with centralising public sector procurement arrangements for common goods and services (excluding the construction sector). By identifying key markets and analysing procurement trends, the NPS develops a more integrated approach to procurement across the public sector utilising procurement tools such as aggregation and framework agreements.

The NPS establishes central framework agreements and contracts for use by the wider public service. These central contracts are publicised through www.procurement.ie. This website also contains guidance material and standard procurement documents for use by public service buyers and suppliers.

The NPS administers the www.etenders.gov.ie website which is the portal through which all public service contracts over the value of €25,000 must be advertised. This website also allows full access to the Official Journal of the European Union. **The NPS can be contacted on 046-9426000 or email nps@ope.ie and is based in OPW Headquarters, Jonathan Swift Street, Trim, Co. Meath.**

The Public Spending Code: B. Expenditure under Consideration Public Private Partnerships

The Public Spending Code: B. Expenditure under Consideration

Public Private Partnerships

B.05

Document Update Log

Public Private Partnerships are an alternative way of financing a project. As stated in Public Spending Code Document [B-03 Approvals Required and Scale of Appraisal](#) procurement using PPP should always be considered when the value of the project exceeds €20m.

A Public Private Partnership (PPP) is an arrangement between the public and private sectors (consistent with a broad range of possible partnership structures) with clear agreement on shared objectives for the delivery of public infrastructure and/or public services by the private sector that would otherwise have been provided through traditional public sector procurement.

The PPP approach has the potential to offer value for money and timely delivery of infrastructure when applied to projects of the right scale, risk and operational profile.

One key aspect of the PPP approach is that risk is transferred to the party that can manage it best.

Further information on PPPs can be found on the Central PPP Unit's website at www.ppp.gov.ie

The Public Spending Code

B06. Appraisal and Planning Appraising Current Expenditure

Document Summary:

The Public Spending Code extends the requirement for expenditure appraisal to current as well as capital expenditure. While section B.01 sets out the standard appraisal steps which apply to public expenditure both current and capital, this section of the Code provides more detail on specific *ex ante* requirements before new current expenditure projects/programmes are undertaken or sanctioned. The new obligations are:

- (a) Preparation of a detailed Business Case incorporating a financial and economic appraisal for consideration by the relevant vote section of D/PER, assisted by the CEEU as appropriate.
- (b) Resubmission of Business Cases in order to address any issues identified by D/PER
- (c) Provision for a 'sunset clause', after which the expenditure scheme will be reviewed and discontinued unless it can be demonstrated to meet VFM criteria.
- (d) Fixed cash limits for demand-led schemes.
- (e) Pilot implementation of new proposals required before final approval, where feasible
- (f) "Evaluation-proofing" of all Business Cases and related Memoranda for Government.

These obligations apply to new current spending proposals involving total expenditure of at least €20m over the proposed duration of the programme and a minimum annual expenditure of €5m. In particular, the current appraisal provisions apply to:

- (i) New grant/subsidy schemes
- (ii) Extension, renewal or re-orientation of existing programmes/schemes
- (iii) New delivery mechanisms for existing services
- (iv) New public services
- (v) New State bodies or amalgamations of State Bodies
- (vi) Measures deriving from broad cross sectoral or framework policy initiatives

This section also sets out some items of good practice to ensure appraisal of current expenditure is robust and an overview of required content for a Business Case. Additional guidance will be developed in line with the evolving nature of the Public Spending Code.

Table of Contents

1	Introduction	63
2	Distinction between current and capital expenditure	64
3	Scope	65
3.1	New grant/subsidy schemes	66
3.2	Extension, renewal or re-orientation of existing schemes	66
3.3	New delivery mechanisms for existing services	67
3.4	New public services	67
3.5	New State Bodies	67
3.6	National/Cross Sectoral Policy Programmes and Frameworks	67
4	Obligations/Rules	68
4.1	Business Case	68
4.2	Sunset Clauses	69
4.3	Cash limits for demand led spending proposals	69
4.4	Evaluation proofing	70
4.5	Pilot exercises	70
4.6	Approvals	71
5	Key success factors for high quality appraisal	73
5.1	Key components of the appraisal	73
5.2	Good practice checklist	73
5.3	Analytical techniques	75
5.4	Revising the appraisal	75
5.5	Practical steps to ensure a high quality appraisal	76
Appendix A	High Level Guidance on Business Cases	77

1 Introduction

Prior to the formulation of the Public Spending Code, project/programme appraisal requirements only formally applied to capital expenditure. There were no specific published rules and guidelines regarding new *current* spending proposals, and the procedures for assessing such proposals were devised on a case-by-case basis. Although Regulatory Impact Assessment (RIA) Guidelines (2009) impose certain appraisal requirements when a new regulation is proposed, these generally only cover instances of new current expenditure involving a regulation and are not designed to cover all types of current spending. This section of the Public Spending Code puts the procedures for assessing and appraising current expenditure on a standardised basis.

The appraisal rules have been designed to address, in particular, a number of shortcomings that can commonly arise in the case of new current spending proposals. These include:

- Poor objective setting
- Poor appraisal and planning
- Inadequate estimation of demand and take-up by clients
- Underestimation of the full costs of implementation
- Lack of sufficient piloting and testing
- Inadequate risk assessment
- Little effort made to design appropriate management information arrangements e.g. data collection streams to support ongoing monitoring and review.

The Public Accounts Committee (PAC) of Dáil Éireann has also recommended that new initiatives should be underpinned by Business Cases and cost benefit analysis¹.

This section explains the scope of the new requirements and outlines the specific obligations for Departments and Agencies that are developing current expenditure proposals. It also outlines critical success factors for best practice in appraising current expenditure. It includes an appendix which highlights the main high level components required for a Business Case submission.

1

Dáil Éireann Committee of Public Accounts Final Report on: Appropriation Accounts 2008 & 2009; Annual Reports of the Comptroller and Auditor General 2008 & 2009; and Special Reports of the C&AG (Hearings of the Committee in the period July 2009 to January 2011), July 2011

2 Distinction between current and capital expenditure

A differentiation is made between capital and current spending in accounting for public expenditure. Capital spending generally involves the creation of an asset where benefits accrue to the public over time e.g. a road, a rail line, a school or a hospital. Public funds are allocated to time-bound projects where substantial once-off costs are incurred in earlier time periods with investment on land acquisition, construction materials and human capital. The targeted benefits usually arise in future time periods once initial investment is completed. However, current expenditure involves day to day expenditure and typically includes spending on:

- Salaries of public servants involved in delivering public services
- Non-pay costs such as materials (drugs, teaching materials etc) and administrative overheads as well as other commercially procured products and services
- Income supports for targeted groups
- Grant payments to achieve specific economic and/or social objectives
- Payments for services carried out by professionals (e.g. training etc) or other business sectors.

The cost profile for current spending proposals also tends to be more evenly distributed over time. In some cases, the benefits of current expenditure materialise directly as expenditure is incurred (e.g. income supports such as social protection schemes) but in other cases, positive outcomes arise over longer time horizons (e.g. early childhood intervention schemes).

It should be noted that programmes and projects often have both current and capital characteristics. In addition, capital expenditure projects generally include current costs such as operating and maintenance costs which are subject to the same appraisal requirements as the upfront investment costs. The majority of the general provisions in the Public Spending Code as set out at sections A and B are equally applicable to current and capital expenditure.

Analysts carrying out current expenditure appraisals will generally be required to devote more attention to the following issues:

- Costing staff time including pay overheads such as employers PRSI and pensions (usually existing internal Departmental/agency staff or new staff)
- Difficult to measure personal and programme outcomes and wider effectiveness indicators
- Administrative costs of services e.g. management costs, non pay costs such as IT
- Costing different methods of delivery including external sourcing.

It is beyond the scope of this section to set out all the detailed current expenditure appraisal issues for different project types across different sectors. The appraisal requirements can vary significantly from area to area, and the precise approach often needs to be customised to suit the type of spending under consideration. Each Department should draw up its own guidelines for the conduct of appraisal of new current expenditure programmes/schemes. Proposed guidance may be submitted to the CEEU for consultation purposes. The advice of the CEEU can be sought at the outset of the current appraisal process to discuss best practice. In particular, it may be difficult to quantify and monetise outcomes. Targeted outcomes may be influenced by many causal factors and isolating the specific impacts of one causal factor can be a technical and complex task, particularly if the quantum of programme expenditure is small relative to the overall scale of other expenditure interventions in the policy area.

3 Scope

This section describes the scenarios where the new current expenditure guidelines apply. The appraisal guidelines apply to the main activities involved in the appraisal stage of the project/programme lifecycle as summarised below:

- 1) Identify proposal
- 2) Preliminary appraisal
- 3) Detailed appraisal
- 4) Finalisation of business case
- 5) Planning and design
- 6) Pilot Implementation

As with capital projects, some of the elements of the appraisal activities necessarily overlap with the planning and design stage (e.g. piloting). Further detail on the stages is set out on page 13.

Departments and agencies will be required to appraise the options for new current expenditure proposals before a determination is made that the proposal is approved in principle and should move on to the planning stage.

The obligations and guidance for current expenditure appraisal apply to proposals which involve a total

budget of at least €20m or more for the duration of the programme and an annual expenditure of at least €5m. Some indicative examples of the scope of current spending proposals covered by the new obligations are set out below in sections 3.1 to 3.6.

3.1 New grant/subsidy schemes

It may be proposed to introduce a new grant scheme² or subsidy to achieve specific objectives for particular sectors of the economy or to promote social development. Grant schemes may be provided by Government Departments or Agencies and typically include grants to the agricultural, arts, energy, sports and enterprise sectors. Grants are also paid to third sector or voluntary bodies to achieve a range of social objectives

Some examples of new grant schemes launched in recent years include:

- Suckler Welfare Scheme (Department of Agriculture, Food and the Marine)
- Employment Subsidy Scheme (Enterprise Ireland)
- Language Support Schemes (Arts, Culture and the Gaeltacht)

The new current appraisal obligations apply to new grant schemes introduced across all Government Departments and Agencies.

3.2 Extension, renewal or re-orientation of existing schemes

In some cases, existing spending schemes may terminate because schemes are time-bound or because scheduled payments to beneficiaries have finished. It is common for Departments and Agencies to develop proposals to either extend schemes or develop successor schemes with similar objectives. In both these instances, the new appraisal obligations are deemed to apply. The appraisal obligations apply even if the change to the scheme does not involve any significant additional spending relative to the pre-existing scheme i.e. a rigorous appraisal of the entire scheme must be carried out as if it were being implemented for the first time. An evaluation of an existing scheme (whether by way of VFM & Policy Review or FPA) may also act as valuable inputs to this appraisal as well as any other evidence based policy outputs.

² This should not be confused with grant-in-aid payments which are payments to State agencies, public and voluntary bodies to cover running costs or payments to a specific public or private agency to cover the cost of a particular activity carried out by that body (Requirements for Grants and Grants-in-Aid, Circular 17/2010, Department of Public Expenditure and Reform)

3.3 New delivery mechanisms for existing services

New spending proposals may also involve a major change in delivery mechanisms to achieve more cost-effective delivery of the same objectives for a programme or project. For example, a buy vs. lease decision to address housing objectives could involve the design of new mechanisms to meet housing needs for eligible claimants but the long term objectives for the intervention may not change. Another example could involve a change in the administration of services such as individualised budgeting instead of block grant allocation for social care programmes. There are also instances where public services or administrative functions could be delivered using a shared service model or external sourcing. In these cases, there should also be a strong focus on a financial analysis and an Exchequer cashflow analysis including, in particular, an assessment of administrative savings.

3.4 New public services

Merit goods such as healthcare, social and educational services may be introduced to achieve Programme for Government objectives. These are often delivered by professional frontline staff. These services are also subject to the new appraisal requirements. Quantifying the targeted outputs to be delivered and designing appropriate measures of outcomes are important tasks to be addressed in the appraisal of these services.

When considering the delivery mechanism for all new services the option of external sourcing must be considered.

3.5 New State bodies

The creation of a new agency or public body also requires adherence to the new appraisal obligations. This also applies to proposed amalgamations of existing public bodies. In this case, an important element of the appraisal efforts should be the Exchequer cash flow analysis or financial analysis which illustrates the potential savings from amalgamations.

3.6 National/cross sectoral policy programmes and frameworks

Broad policy frameworks or cross sectoral policy initiatives may be formulated by lead Departments e.g. the Framework for Sustainable Development. These strategic documents generally set out broad principles and aims for a given policy area (s). However, inclusion of measures at a strategic level in these

frameworks does not obviate the requirement for proper appraisal of specific current and capital spending proposals arising from high level policy aims. The Department proposing specific measures should apply the Public Spending Code appraisal requirements as approval of broad policy frameworks does not confer automatic approval of the specific actions, schemes or programmes which result from these frameworks.

In general, the obligations for appraising new current expenditure proposals do not apply automatically to the broad range of existing current expenditure schemes i.e. it is not intended that all existing programmes must be appraised each year as this would be highly resource-intensive and the VFMPR/FPA arrangements set out at section C apply instead to ongoing expenditure. Similarly, it is not intended that these arrangements for appraisal of new current expenditure apply to routine administrative budgets already in place as the focus is on new programme expenditure. However, as pointed out at section 3.2 above, any proposed extension, renewal or re-orientation of existing schemes should be informed by expenditure appraisals.

If it is uncertain as to whether or not the new arrangements apply to a spending proposal, line Departments should consult the relevant vote section in D/PER and the CEEU. In general, the approach should be taken that even if there is some doubt as to whether expenditure is new or not, it is more than likely that the area of spend would benefit from appraisal and evaluation.

4 Obligations/Rules

The specific obligations for current spending appraisals are set out below.

4.1 Business Case

Line Departments are required to submit a Business Case (see Appendix A of this section for overview guidance on the contents of a Business Case) for current expenditure proposals with total expenditure over the duration of the programme/scheme of at least €20m and a minimum annual expenditure of €5m to the relevant Vote section in DF/PER. The vote section may send the Business Case to the CEEU for formal technical review to determine compliance with the Public Spending Code. The CEEU may publish this assessment. The economic and financial appraisals are key components of the Business Case document.

Re-submission will generally be required by the Vote section in any case where an appraisal requires further work and the Business Case document will be required to be developed through as many iterations as are necessary to address the relevant appraisal issues.

It is important that preparation of Business Cases begin at an early stage to be consistent with budgetary timetables. Ideally, work on a new spending proposal should commence 9 to 10 months prior to the core period of the estimates cycle i.e. a business case for a spending proposal intended to begin in 2013 should be initiated in quarter 4 2011.

A multi criteria analysis should be carried out at minimum for new current expenditure proposals between €5m and €20m. Projects costing between €0.5m and €5m should be subject to a single appraisal incorporating elements of a preliminary and detailed appraisal. The scale of appraisal should be commensurate with the level of expenditure proposed (see also document B03).

4.2 Sunset clauses

All new proposals should contain specific dates for the application of "sunset clauses". The sunset clause is the specification of a fixed date by which spending the programme or project will terminate, unless the value for money of the programme can be demonstrated on foot of a rigorous review. Even for schemes where spending is expected to continue for a significant period of time (e.g. merit goods involving human services), a sunset clause should still be applied to facilitate a review of the merits of the scheme taking into account effectiveness to date and changes in the external environment. Sunset clauses are of particular importance for new grant schemes and new agencies.

4.3 Cash limits for demand led spending proposals

In keeping with the multi annual expenditure framework reforms, any new demand-led spending proposals should incorporate strict cash limits³. This is so that unexpected or unanticipated rises in demand do not automatically pre-empt other uses for scarce resources, whether in that Department/Agency or elsewhere. Cash limits are also a necessary feature of modern expenditure management in the context of fixed multi-annual expenditure ceilings in each departmental area.

If eligibility or qualifying criteria is the mechanism used for selection then the scheme should have a cash or other volume limit. A queuing system may be appropriate to determine the distribution of the fixed

³ See also part 10 of section C3 in the Public Financial Procedures, 2008

allocation among competing applicants. In general, commitments should be managed to avoid the risk of incurring expenditure that is significantly in excess of what is intended or budgeted.

The cash limits for demand led spending proposals do not apply to some social protection schemes where expenditure is driven by demographics or macro-economic issues and where competing applicants is not appropriate e.g. unemployment related payments.

4.4 Evaluation proofing

New spending proposals proposed in Business Cases should include a detailed plan for evaluation and monitoring. The plan should specify the data to be collected and the methods for gathering the data. It should also include the following:

- Articulation of the programme logic model which outlines the contribution of all relevant factors to the objective of the intervention and sets out the linkages between objectives, inputs, activities, outputs and outcomes
- Specific measures to set up systematic data collection and data collection streams to support reporting of performance indicators for monitoring , performance budgeting purposes⁴ and evaluation (VFM's and FPA's)
- Specific evaluation techniques proposed to track outcomes including plans regarding the design of control/comparison groups where feasible (i.e. experimental evaluations) e.g. surveys, focus groups, statistical analyses, longitudinal studies, phased introduction, before and after studies
- Schedule of pilot studies and evaluations as well as an identification of who will carry these out

The feasibility of assessing outcomes can vary from programme to programme and monetising outcomes can be difficult. However, at minimum, it should be possible to quantify the types of outcomes targeted.

4.5 Pilot exercises

In principle and as general rule, no new programme / scheme can be introduced without a pilot. Final approval for full implementation of a scheme should not be granted until the pilot has been completed, formally evaluated and submitted for approval to the vote section in the Department of Public Expenditure and Reform. The piloting exercise will enable testing of different variants of the policy

⁴ Performance budgeting information is set out in the Revised Estimates for Public Services volume published annually by the Department of Public Expenditure and Reform

proposal, will highlight potential drawbacks and generate data about outcomes. However, pilot schemes may not be feasible for each new spending proposal and exceptions to this rule may be considered where issues of equity, feasibility or proportionality of expenditure arise. The Business Case should include a section on piloting. In this section, the proposing Department/Agency would set out the planned arrangements for piloting or provide a justification as to why piloting is not feasible.

4.6 Approvals

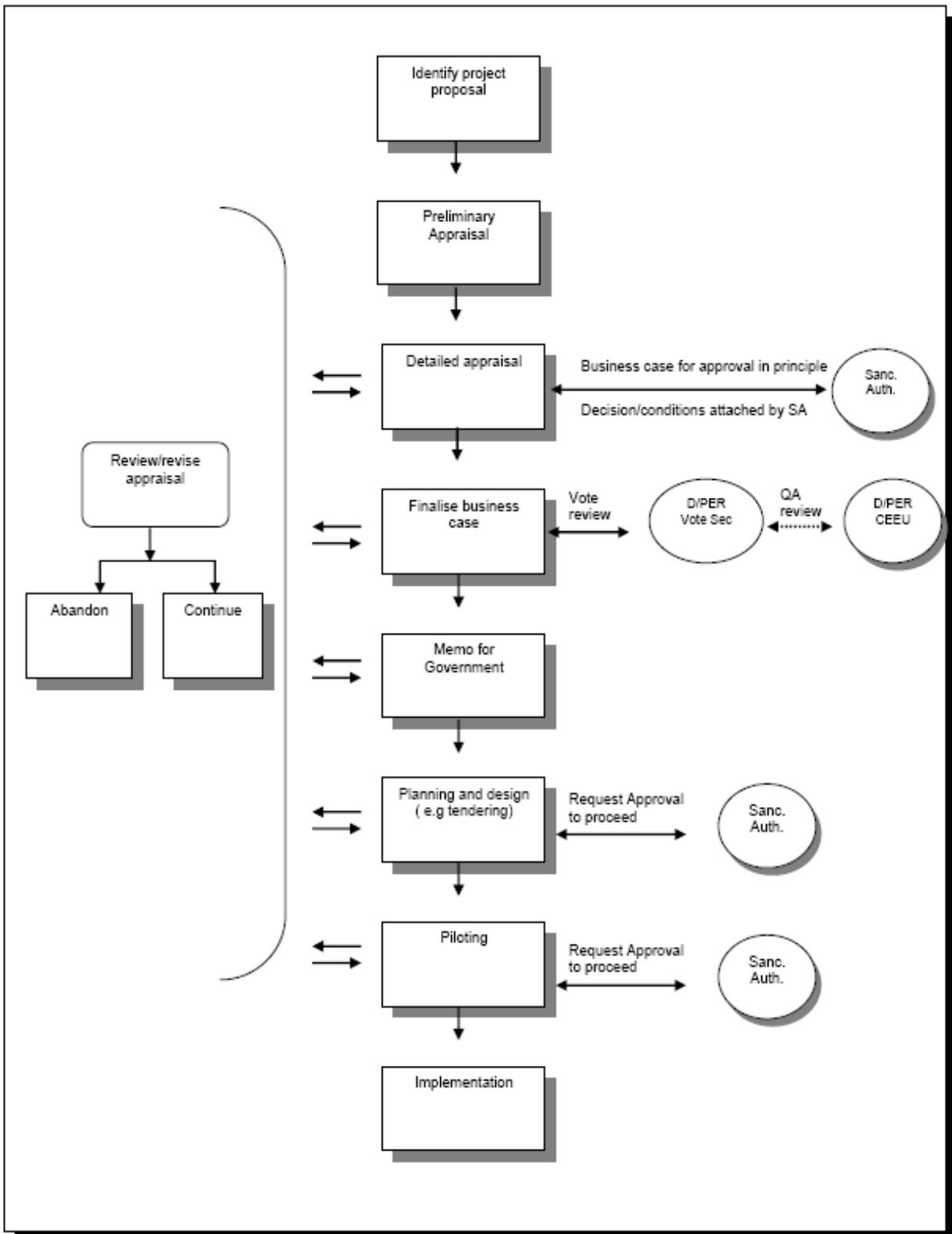
A similar sequencing of approvals by the sanctioning authority is required for current expenditure as is required for capital expenditure. Figure 1 (page 12) shows the main stages in the appraisal process for current expenditure proposals, illustrates when approval by the sanctioning authority is typically required and also when the appraisal should be revised in light of new information or conditions attached to approvals and assessments. The main triggers for a review/revision of the appraisal are when:

- The sanctioning authority approves the proposal in principle and includes conditions or changes in scope
- The Department of Public Expenditure and Reform provides feedback on technical aspects of the appraisal
- Changes arise as a result of a Government decision
- Additional and more detailed information is gathered during planning and design
- More detailed appraisal information emerges from the piloting process

In practice, appraisal is an iterative process with the analysis undergoing continuous updating as new information emerges.

There are a number of differences in the stages for capital expenditure projects and current spending. For example, a capital project will generally involve tendering for goods and services provided by the private sector. This is generally considered to be part of the planning and design stage because a decision for approval is required after tender prices become available and the project may still be abandoned. However, for a current spending proposal, there may not always be tendering as a scheme or programme may be delivered using internal resources only. This does not obviate the need for a revision of the appraisal and seeking approval based on up to date planning and design information at key stages of the decision cycle.

Figure 1 Illustrative Stages and approvals required for current expenditure appraisal



5 Key success factors for high quality appraisal

A review of the core principles which apply equally to current and capital spending proposals is an important starting point in appraising current expenditure. below: (see also overview of [VFM framework](#) for more detail). It can be resource intensive to carry out a rigorous appraisal. However, a properly conducted appraisal will ensure better decision making and greater allocative efficiency. This section outlines some high level success factors for carrying out a robust appraisal. The resources and practical guidance in relation to appraisal on the Public Spending Code website will be subject to ongoing development in line with the requirements of users.

5.1 Key components of the appraisal

As with the appraisal of capital projects, there will be significant overlap between the appraisal and planning/design stages. However, a certain amount of planning/design information will be required to carry out a proper appraisal in the first instance e.g. eligibility conditions and related demand.

The appraisal should incorporate an appraisal of the merits of the proposal (i.e. an economic appraisal such as a CBA) and also a separate financial analysis.

In general, the Business Case should incorporate both economic and financial appraisal. The economic appraisal (e.g. CBA or CEA) should be presented to demonstrate the merits of the scheme. As part of the overall appraisal, a separate financial appraisal should also be carried out. In most cases, the financial flows will be included in the economic appraisal. The financial appraisal will generally also incorporate an Exchequer cashflow analysis, a note on budgetary impact (i.e. consistency with multi annual expenditure ceilings) and a note on the sources of funds. In certain narrow circumstances, economic appraisal may be less relevant for certain types of spending proposals where the costs and benefits relate solely to elements of the Exchequer. This is the case where the proposal involves a redesign of a scheme/programme to achieve the same objective but at a lower cost to the Exchequer, an agency amalgamation which aims to generate efficiencies, a shared services decision or an external sourcing decision. Where an economic appraisal has not been carried out, the justification for this decision must be clearly set out in the Business Case.

5.2 Good practice checklist

Box 1 overleaf highlights some high level issues to consider to ensure a robust appraisal of new current expenditure proposals.

Box 1 Critical success factors for current expenditure appraisal

Objectives

- Proposals should pay particular attention to the specific articulation of quantifiable objectives.
- Due account should be taken of other Government programmes with similar objectives to avoid duplication and to ensure a whole of Government approach
- The team involved in compiling the appraisal should complete the programme logic model to illustrate the links between objectives, inputs, activities, outputs and outcomes
- Appraisals should pay particular attention to the intended clients of schemes, relevant demographic characteristics (location, income, household composition etc) and the predicted level of take up. Likely demand should be linked to anticipated funding levels and eligibility considerations.
- Demand estimation should be based on empirical research.
- Appraisals should clearly consider the impacts (costs etc) on other Departments arising from spending proposals. Any potential overlaps or duplication with other schemes/tax expenditures should be identified.
- Distributional/equity concerns i.e. is the programme/scheme targeted at those with most need

Options appraisal

- Appraisal of spending proposals should incorporate a detailed options appraisal to ensure decisions are fully informed. Realistic options can include operational implementation options, private sector alternatives, varying scale solutions or alternative types of economic intervention (subsidies, taxes, regulations etc). The do-nothing or do-minimum options should always be considered.
- For new services external sourcing must be considered as one of the possible delivery mechanisms.
- The costs and benefits of each option should be appraised and not just the favoured option.

Quantification of costs and benefits

- Detailed research should be carried out in order to quantify the costs and benefits of the spending proposal under consideration using primary sources where possible. This is subject to the principle of proportionality.
- Appraisals should incorporate address deadweight (e.g. eligibility conditions, rates of subsidy/grant and duration of programmes/schemes), displacement and additionality issues Evaluation methods should be designed to ensure these can be measured in future evaluations.
- Include opportunity cost of internal staff re-assigned to administer and manage new schemes
- Cost recovery issues and/or financial contributions from programme participants (these should feature in the financial analysis)
- The pattern and timing of programme/scheme take up is critical for planning/design purposes, particularly given the importance of adhering to multi annual spending ceilings
- In the event that private, community or third sector organisations are involved in programme delivery, the forthcoming supplementary guidance for this sector should be taken into account

Reporting

- The final iteration of the business case, including the appraisal, should be completed before piloting and implementation.

5.3 Analytical Techniques

The Business Case for new current spending proposals should include a financial and economic appraisal. The key appraisal techniques which should be applied include:

- CBA
- Exchequer cashflow analysis
- Multi criteria analysis (MCA)

More detail on the specific application of these techniques are set out in section D of the Public Spending Code. This section of the website is subject to ongoing development. In particular, CBA is the main economic appraisal technique required by the Public Spending Code. In circumstances, where CBA is not appropriate due to the difficulty in monetising outcomes, CEA may be considered.

Given that the outcomes of some current spending proposals may be difficult to monetise, MCA can also be an additional, useful tool to rank competing options according to different criteria. This does not mean that no attempt should be made to monetise outcomes but targeted outcomes can also be expressed in performance indicator terms and the expected effectiveness of options can be ranked accordingly. Examples of such outcome measures include:

- Unit cost per job created (enterprise sector)
- State subsidy per subscriber (national broadband scheme)
- Annual energy savings over baseline levels (energy schemes)

If all outcomes cannot be fully monetised, the qualitative assessment should always be carried out in a structured way.

5.4 Revising the appraisal

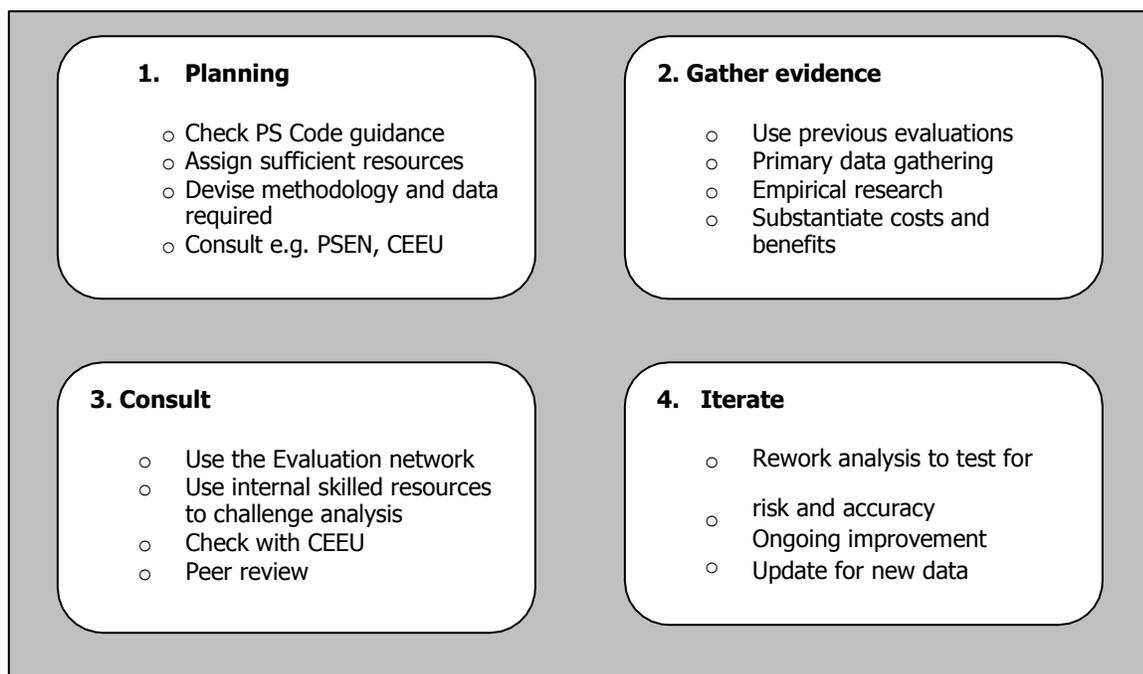
Unlike a capital project, tendering may not always play a significant role in the delivery of many current expenditure programmes/schemes. This does not detract from the requirement to revise the CBA at key decision points. The appraisal for a current expenditure programme/scheme should be reviewed and potentially revised at key decision points (see Figure 1, p.13).

Appraisals should always be revised if the scope of the proposal changes or there is a significant lapse in time between the initial appraisal and the approval decision.

5.5 Practical steps to ensure a high quality appraisal

In order to carry out a successful appraisal, there should be a systematic approach to generate the analytical outputs required. Box 2 below summarises the steps which should be taken to ensure a high quality appraisal.

Box 2 Best practice in carrying out an appraisal



Appendix A High Level Guidance on Business Cases

The Business Case is the formal submission presenting the spending proposal that Departments make internally to senior management as well as to the Department of Public Expenditure and Reform. It becomes the key document of record and integrates all the various elements required to support a decision on the merits of a proposal. The Business Case should incorporate the following key elements:

- Objectives
- Scope
- Feasibility
- Options Appraisal
 - Economic
 - Financial
 - Risk analysis
- Planning and design issues
- Evaluation plan
- Recommendation

The Business Case should be prepared by the sponsoring agency. It is important that there is input from staff resources with experience of economic analysis and evaluation to underpin the quality of analysis carried out.

While the Business Case will contain some planning and design information, it will not be possible to include all planning and design related details until the proposal has proceeded to this stage. Nonetheless, a certain amount of planning and design information is required to carry out the appraisal. For example, the eligibility conditions and rate of subvention are important design considerations for a new grant scheme.

Box A1 High level Outline of Business Case requirements

Nr	Item	Detail
1	Objectives	<ul style="list-style-type: none"> ➤ Definition of the policy proposal and its objectives ➤ Economic rationale for the proposal ➤ Programme logic model showing linkages between inputs, outputs and outcomes
2	Scope	<ul style="list-style-type: none"> ➤ Duration of spending proposal (including identification of sunset clause) ➤ Departments affected ➤ Number of clients
3	Feasibility	<ul style="list-style-type: none"> ➤ Constraints ➤ Administrative feasibility ➤ Previous experience
4	Options Appraisal	<ul style="list-style-type: none"> ➤ Options appraisal (including justification of options)
4a	<i>Economic appraisal</i>	<ul style="list-style-type: none"> ➤ Core assumptions ➤ Decision criteria ➤ Limitations
4b	<i>Financial</i>	<ul style="list-style-type: none"> ➤ Exchequer cashflow analysis ➤ Affordability analysis (MTEF) ➤ Analysis of sources of funding
4c	<i>Risk analysis</i>	<ul style="list-style-type: none"> ➤ Identification of risks ➤ Sensitivity and scenario analysis ➤ Risk mitigation strategy
5	Planning and design issues	<ul style="list-style-type: none"> ➤ Scheme design i.e. eligibility, payment rates ➤ Administrative issues e.g. IT, staffing, ➤ Roles, responsibilities and reporting ➤ Project implementation plan ➤ Procurement issues e.g. outsourcing ➤ Cross cutting issues
6	Evaluation plan and proofing	<ul style="list-style-type: none"> Pilot arrangements ➤ Performance measurement framework <ul style="list-style-type: none"> ○ Data collection streams ○ Indicators ○ Techniques to measure outcomes ➤ Proposed monitoring/evaluation arrangements ➤ Schedule of evaluations
7	Recommendation	<ul style="list-style-type: none"> ➤ Key results from appraisals ➤ Qualitative issues
8	Appendices	<ul style="list-style-type: none"> ➤ Assumptions, parameters, input values ➤ Detailed methodology

B07 – Conducting a Regulatory Impact Assessment Discussion Draft

B07 – Conducting a Regulatory Impact Assessment

Discussion Draft

[Document Update Log](#)

Regulations and their implementation often result in considerable costs to the public service, to citizens and to businesses. It is important that these costs are taken into account. Regulatory Impact Assessment (RIA) is a tool to assess the likely effects of a proposed new regulation and involves a detailed analysis to:

- (i) ascertain whether or not the new regulation would have the desired impact and
- (ii) to identify the costs and benefits associated with the regulation.

Regulatory Impact Analysis (RIA) is used by all Government Departments and Offices and applies to:

- (i) proposals for primary legislation involving changes to the regulatory framework
- (ii) significant Statutory Instruments
- (iii) proposals for EU Directives and significant EU Regulations when they are published by the European Commission
- (iv) Policy Review Groups bringing forward proposals for legislation are also expected to carry out RIAs. Departments have responsibility for conducting and preparing RIAs, which is comprehensively addressed in the RIA Guidance Manual, which can be found at:

[Revised RIA Guidelines June 2009](#)

In addition, the CEEU in the Department of Public Expenditure and Reform is available to advise on some of the more analytical components of RIA, for example in the identification and measurement of costs, benefits and impacts. Requests for advice should be circulated via the relevant Vote Section in the Department of Public Expenditure and Reform.

The Public Spending Code:

C. Implementation and Post-Implementation Management

C-01

Document Update Log

Document Summary: From a Value for Money perspective the Management or Implementation stage can be key. Good appraisal leading to a well chosen solution can go to waste if implementation is not properly managed. Current Expenditure Programmes or Capital Grant schemes can be allowed to drift on with no evidence that objectives are being achieved. This document outlines at a high level what Sponsoring Agencies and Sanctioning Authorities should be conscious of. This includes proper structures, performance indicators and reporting requirements. Being aware that termination is an option if the circumstances justify it is also highlighted. .

Implementation

The implementation stage of a project begins once final approval for the award of a contract has been secured. Capital Grant Schemes or Current Expenditure programmes enter this stage once final approval is secured. The critical tasks at this stage are management and monitoring to ensure that what is planned is executed satisfactorily, within budget, to standard and on time.

Implementation is the responsibility of the Sponsoring Agency while the Sanctioning Authority must be satisfied that the Sponsoring Agency delivers what has been approved. Where the Government is the sanctioning authority, the responsibility for ensuring delivery – for the management and monitoring functions in the implementation stage will rest with the relevant line Department (the Department which presented the proposal to Government).

The Sanctioning Authority should satisfy itself that the Sponsoring Agency has systems in place and system checks in place to ensure that the project is delivered as per the contract, approved project specification and within the approved budget and in compliance with these guidelines.

Actions or responsibilities at the Implementation Stage can vary depending on whether you are responsible for:

- a large capital project i.e. > €20m
- a capital project of a smaller scale
- a programme of capital expenditure
- a capital grant scheme
- an area of current expenditure

All require:

- a) assigned responsibility for delivery
- b) an appropriate structure to monitor and manage the implementation phase
- c) regular reporting
- d) a means of measuring if the project, programme, capital grant scheme or current expenditure intervention is delivering on its expectations

This document sets out a combination of specific requirements and some high-level pointers for the Implementation Phase. It does not aim to be prescriptive about every situation as the nature of what is being implemented; the scale of expenditure and the period of implementation all have a bearing on what is appropriate. Sponsoring Agencies responsible for implementation together with the Sanctioning Authority must decide on the best approach for each individual situation taking account of the guidance in this document.

Note: The monitoring, management, evaluation or review of discrete areas of expenditure should incorporate the relevant administrative expenditure associated.

(a) Assigned Responsibility for Delivery

For capital projects a Project Manager should be appointed within the sponsoring Department or Agency at the planning/procurement stage of the project. The person appointed to the role should be a senior official including an official at MAC level or equivalent where appropriate. The project manager should be assigned personal responsibility for monitoring progress on the project against the contract requirements and for reporting progress and issues arising to the Project Board.

Similarly responsibility for capital programmes, capital grant schemes and current expenditure programmes should be assigned within Departments and Agencies.

(b) Appropriate Structure for monitoring and management

All expenditure, whether capital or current, has to be actively managed. This will involve monitoring against plans and expectations, monitoring and assessing changes in the broader environment that may impact on the underlying need and making decisions on adjustments or even termination.

Capital projects will have a Project Board with appropriate expertise and authority. It will include the Project Manager and a representative of the sanctioning authority.

Capital Programmes, capital grant schemes and current expenditure programmes also need formal structured arrangements to ensure that there is systematic co-ordinated monitoring and management of programmes. Responsibility for putting these structures in place may primarily rest with the sanctioning authority or the sponsoring agency depending on the nature and scale of the expenditure. These structures may include a programme co-coordinator to coordinate implementation of the programme and a monitoring committee to monitor and review progress. Where the programme is a cross-cutting programme the monitoring committee will be representative of relevant Government Departments, implementing public bodies and sectoral interests.

(c) Regular Reporting

Monitoring of all types of expenditure is required to ensure that milestones are being met and expenditure is within budget. Regular reports should be submitted to the Project Board or other structure as discussed above. If adverse developments occur such as potential cost overruns or delays the progress report should include recommendations to address the situation, including where warranted the option of project/scheme termination.

For projects costing over €20m a separate progress report for each project must be submitted to the Department's MAC for Departmental projects and to Management and/or the Board for Agency projects and then to the relevant Minister on a quarterly basis. These reports may be subject to audit by the Department of Public Expenditure & Reform.

(d) A means of measuring if on target with expectations

For capital projects, milestones in the contract and in the project plan can be used by the Project Manager and Project Board to ensure that the project is on schedule and within budget. Other performance indicators may have to be developed for changes in the external environment that could influence the project.

For non-project expenditure performance indicators should be developed at the outset as well as a means of gathering the data to support performance indicator measurement. These performance indicators will then be used as part of the monitoring and management of the Implementation Stage for capital programmes, capital grant schemes and current expenditure programmes. There may be schemes or programmes underway that do not have suitable performance indicators. If this is so then suitable performance indicators should be developed as soon as possible.

Adverse Developments or Changes in Circumstances

Regular management reports should be prepared by the Sponsoring Agency covering all significant developments relating to the project and its costs. If adverse developments occur, including unforeseen cost increases, which call into question the desirability or viability of the project, the Sponsoring Agency should submit a report at the earliest possible moment to the Sanctioning Authority, detailing the necessary measures proposed to rectify the situation.

Where, despite these measures, increased costs above those already approved are likely to arise, the approval of the Sanctioning Authority for the extra expenditure should be obtained before any commitment is made to accept cost increases. Any application for such approval should outline the reasons for the excess, along with a detailed explanation of why it was not possible to take appropriate measures to offset the increased cost. The viability of the project, given the changed circumstances, should also be reported on.

If a project is going badly wrong, there should be a willingness to terminate it before completion. Action of this kind can be justified if the cost of the project escalates above earlier estimates or if the benefits expected from it are not likely to be realised. An attitude that, once work on a project commences, it must be completed regardless of changed circumstances, is to be avoided. Before making a final decision to terminate a project that is not going according to plan, the costs of termination (for example, payments that might have to be paid by way of compensation to contractors etc.) should be ascertained and made known to the appropriate authorities.

Post-Implementation

The main requirement post-implementation is one of review. This is discussed in Document C-03 Periodic Evaluation/Post Project Review.

[Figure 5](#) reviews the Implementation Stage.

C. Implementation and Post-Implementation

Periodic Evaluation/Post-Project Review

Document Update Log

Document Summary: All expenditure is subject to ongoing monitoring using appropriate performance indicators. Ongoing analysis of performance indicators should give management a good idea of whether an investment or intervention is yielding the expected outputs and outcomes. A subset of expenditure in any one year will be subject to further in-depth evaluation. Evaluation/post-project review of some expenditure is mandatory i.e. capital projects > €20m whereas there is discretion on the selection of other projects/programmes/schemes that will be selected for evaluation. This document outlines why there is a need for more in-depth evaluations and what must be evaluated and also the importance of aligning evaluation timetables with the new 'Whole of Year' Budgetary process.

The importance of active management, regular reporting and monitoring and the use of performance indicators was outlined in Public Spending Code Document [C-01 Management](#). Active management allows a sponsoring agency to assess whether a capital project is on schedule and within budget. For capital grant schemes and current programmes a regular analysis of performance indicators should give the sponsoring agency and sanctioning authority a good idea of whether an intervention is achieving its objectives or not.

In addition to the active management and regular analysis of performance indicators there is a need for periodic evaluations of areas of expenditure. This requirement is there because:

- regular monitoring of performance indicators needs to be supplemented with a more in-depth study to assess efficiency and/or effectiveness
- an independent review of efficiency, effectiveness and continued relevance is sometimes needed

- the outcomes of the intervention will not occur for some time and a different approach to measuring effectiveness is required
- the scale of the investment/intervention justifies an in-depth evaluation

For capital projects the benefits will not be seen until the project has been completed. The project has by then exited the active management stage. All large capital projects and a proportion of other capital projects have to be subjected to a post-project review to see if the predicted benefits of the project were realised. Post-project reviews should be undertaken once sufficient time has elapsed to allow the project to be properly evaluated with sufficient evidence of the flow of benefits/costs from it. There are two separate focuses of review – (i) project outturn and (ii) appraisal and management procedures. The second element can be done after project completion as it involves reviewing administrative and management procedures. The timing of the first element will depend on the nature of the project i.e. the period required to observe the expected benefits. This period should be no longer than one third of the timeframe used in the Appraisal. The detailed appraisal provides the base against which the outturn review is made. The aim of a review of project outturn is to determine whether:

- the basis on which a project was undertaken proved correct;
- the expected benefits and outcomes materialised;
- the planned outcomes were the appropriate responses to actual public needs;
- the appraisal and management procedures adopted were satisfactory;
- conclusions can be drawn which are applicable to other projects; to the ongoing use of the asset; or to associated policies.

Post-project reviews for capital grant schemes and for current expenditure programmes may also be needed particularly where evaluations were not undertaken when the schemes were active or if the benefits would not be apparent for some time. Post-implementation reviews reveal if the type of intervention chosen is effective and efficient and informs future decision making.

The Value for Money and Policy Review process aims to subject some significant portion of an organization's expenditure to an in-depth review every year. There are also more focused reviews that may not examine all of the evaluation questions posed by a VFMPR.

(See [Public Spending Code Document C-04 Reviewing and Assessing Expenditure Programmes](#)).

Note: The monitoring, management, evaluation or review of discrete areas of expenditure should incorporate the relevant administrative expenditure associated.

Evaluations and the Annual Estimates and Budgetary Timetable

Whether evaluations are undertaken as part of the VFMPR initiative, with a full set of terms of references or focused on a targeted subset of evaluation questions e.g. effectiveness or efficiency they should be completed within a reasonable period (6-9mths for full set of terms of reference and much less for more focused evaluations). They should be scheduled so that their findings are available for the forthcoming budgetary cycle.

From 2012 the budgetary process is moving to a 'Whole of Year' timetable. Oireachtas Committees will feed their views into the process starting in the spring of each year. It is expected that by the Autumn of each year Committees will be informed by the VFM reviews generated on an ongoing basis by Departments.

It is important therefore that Departments target the completion of their evaluations for the Autumn of each year at the latest so that the findings can inform opinions and decisions, in Departments, in the Committees and in the Department of Public Expenditure and Reform at the earliest opportunity. Failure to adhere to this schedule seriously undermines the value of the evaluation work. To give Departments their best chance of meeting this timetable significant new evaluations should begin in the Autumn/early Winter.

Mandatory Evaluation/Post-Project Review Requirements

- Capital Grant Schemes with an annual value in excess of €30m and of five years or more duration to be subject to prior and mid-term evaluation at the beginning and mid-point of each five year cycle or as may be agreed with the Department of Public Expenditure & Reform.
- All Capital Projects costing > €20m⁽¹⁾ are to be subject of a post-project review
- At least 5% of other capital projects should be reviewed
- The VFMPR process obliges Departments to carry out a minimum numbers of VFMs. This varies depending on the size of the Department. See Public Spending Code Document C-04 – Reviewing and Assessing Expenditure Programmes.

Additional Evaluation/Post-Project Review Requirements

Departments and agencies should not restrict themselves to the mandatory evaluation or post-project review requirements. From time to time it may be apparent that while not mandatory, an area of expenditure would benefit from a more in-depth review based on the picture the performance indicators paint or maybe because the performance indicators are not as informative as originally thought.

Communicating lessons learned

As with all parts of the Public Spending Code any significant lessons should be translated into changes in the Sponsoring Agency's practices and communicated within the organization and to the sanctioning authority so that it can apply any general lessons learned to this Code or to supplementary information.

Responsibility for Evaluation/Review

It is the responsibility of the Sponsoring Agency to carry out the evaluations or post project reviews. Those conducting reviews and evaluations should not be the same people as conducted the appraisal or managed the implementation. VFM & Policy Reviews have specific requirements regarding Steering Committees and independent chairpersons.

⁽¹⁾ As the threshold for post-project review has been reduced from €30m to €20m, DPER will consider on a case by case basis whether projects costing between €20m and €30m and appraised when the previous threshold figure applied, will require a post-project review.

C. Implementation and Post-Implementation

Reviewing and Assessing Expenditure Programmes

Document Update Log

Document Summary: Current expenditure programmes are subject to review under the established system of VFM & Policy Reviews (VFMPRs). The procedures for conducting VFMPRs are being updated to ensure that they form an effective input into the ongoing resource allocation process. In particular: each Department / Office should prepare an annual and multi-annual VFMPR schedule, agreed with the Department of Public Expenditure & Reform, providing for review of strategic programmes over a three-year period; each such review should be completed within a 6 to 9 month timescale as a rule; and each Review should have a uniform output – a ‘balanced scorecard’ – assessing each programme against a range of criteria of use to decision-makers. In addition, the VFMPRs will be supplemented with sharper and more narrowly-focused assessments designed to answer specific issues of policy configuration and delivery, whether within a particular Department or on a cross-cutting basis. These Focused Policy Assessments will be conducted by Departmental Evaluation Units and by the CEEU. As a matter of course, Departments/Offices should also engage with relevant Committees of the Oireachtas to ensure that their evaluation work programme is aligned – in terms of content and timetabling – with Oireachtas requirements, and with the new ‘whole-of-year’ budgetary timetable announced by the Minister for Public Expenditure & Reform on 5 December 2011.

1. Background

VFM & Policy Reviews (VFMPRs) are now a well-established feature of the evaluation landscape in Irish public policy-making. The Reviews, which are conducted in accordance with detailed guidelines laid down in a 2007 Guidance Manual, are generally carried out thoroughly and are useful in addressing the standard VFM questions that are relevant for any such review, including:

- What is the rationale and the objectives for the scheme?

- Are the objectives still relevant, in light of evolving policy priorities?
- Has the scheme achieved its objectives?
- How efficiently has the scheme been delivered?
- How does the scheme rate against alternative ways of achieving the same objectives?

However, the VFMPR process has not achieved its full initial ambitions, in terms of breadth of coverage and direct relevance for the resource allocation process. Some shortcomings that have been identified by practitioners include the following:-

- The VFMPR process can be quite time-consuming and administratively burdensome. This does not lend itself to timely turnaround of reports, and indeed some VFMPRs have in the past taken several years from start to completion.
- Related to this, it is difficult for the VFMPR process to cover a broad range of spending areas in any one or two year period. This problem, which is exacerbated in some areas by the shortage of staff with relevant analytical expertise, can make the VFMPR process seem removed from the regular Estimates cycle, whereby policy-makers must form an overall judgement about how resources should be prioritised and allocated.
- The VFMPRs do not share a common format or presentation, and there is no uniform standard for reporting the outcomes of a Review. A more standardised approach would enable policymakers to digest the findings of a report more readily, and would help to orient the VFMPR so that it provides clear answers to the key questions.

For these reasons, the Government has decided to update and streamline the VFMPR process in a number of ways, and to supplement it with more focused policy assessments, which can be conducted more quickly by trained evaluators within Departments / Offices and by the Central Expenditure Evaluation Unit (CEEU). These measures draw upon the experiences of conducting the 2011 Comprehensive Review of Expenditure, and are detailed below.

2. Updates to VFMPR Process

2.1 Existing VFMPR Procedures

Up to now, the VFMPR procedure has been governed by a 2007 Guidance Manual which has been updated on an *ad hoc* basis, and the key provisions of which can be outlined as follows:

(a) **Selection of topics for review:** All VFMPRs should be targeted at areas of significant expenditure where there is the greatest potential for them to add value and influence policy developments. The Minister for Public Expenditure & Reform prepares an annual schedule of reviews for approval by Government, taking account of suggestions prepared by Departments.

(b) **Steering Committees:** Each VFMPR should be overseen, managed and delivered by a Steering Committee appointed by the relevant Department, with an independent chair, and include representatives of the Department of Public Expenditure & Reform.

(c) **Terms of Reference:** The Steering Committee prepares the ToR for each review, on the basis of standard template drawn up by the VFMPR Central Steering Committee.

(d) **Evaluation Framework:** Under the 'programme logic model,' evaluators must have a clear sense from the outset of the rationale for a spending programme, expressed in terms of inputs, activities, outputs, results / impacts; their linkage to specific strategic and programme objectives; the performance indicators that can be used for these purposes; and the evaluation criteria to be used (rationale, continued relevance, efficiency, effectiveness etc).

(e) **Planning:** Decide upon evaluation criteria, methodologies, involvement of stakeholders; and then manage the conduct of the VFMPR – including data collection, analysis and evaluation – within budget, on schedule, and to proper quality standards.

(f) **Methodologies:** Detailed guidance is provided on methodological approaches for conducting the VFMPR, by reference to the programme logic model of the Evaluation Framework.

(g) **Content:** Guidance is also provided on the standard elements for inclusion in a VFMPR Report.

These VFMPR procedures and guidelines remain valid, but need to be updated and streamlined in a number of respects to allow for more timely conduct of Reviews, and more direct linkage to the annual and multi-annual processes of expenditure allocation. The intention is that the VFMPR process, and other supporting processes outlined in this document, will be more effective in helping Departments / Offices to remain within the fixed expenditure allocations set out as part of the Medium-Term Expenditure Framework (MTEF).

2.2 Changes to VFMPR Procedures

(a) Selection of Topics for Review / Coverage of Reviews

Under the pre-existing arrangements of the VFMPR process, the areas of Health, Education, Social Protection and Justice & Equality are required to conduct one review per year, while all other line Departments plus the Office of the Revenue Commissioners and the Office of Public Works carry out 2 reviews each in the three-year period. The new approach will satisfy the following objectives:-

- **All Strategic Programmes of expenditure** – which form the basis of the performance budgeting framework – should be subject, in whole or in part, to rigorous evaluation over the three-year period. While it may not be practicable to evaluate the entirety of spending under each Strategic Programme, significant elements of expenditure should be covered and VFMPRs should not be focused on schemes that account for very minor elements of spending (the Focused Policy Assessments outlined in section 3 below may have a role in that respect). Departments should focus in particular on the more discretionary areas of programme expenditure, where issues of both effectiveness and efficiency feature strongly. For Departments / Offices with a relatively high proportion of “non-discretionary” ongoing expenditure, VFMPRs will still have a key role to play in assessing issues of efficiency, scheme design / alternative modes of delivery etc.
- To facilitate this breadth of coverage, all VFMPR analyses should be completed to report stage within a **6 to 9 month timescale**, as a rule, and should be planned and managed accordingly within each Department / Office.
- Following discussion between the line departments and the Department of Public Expenditure & Reform (D/PER) and following consultation with Government, the Minister for Public Expenditure & Reform will decide a **comprehensive VFMPR schedule of topics** to cover the coming year and the following two years (consistent with the new Medium Term Expenditure Framework or MTEF). The schedule will be made public and will be delivered upon by all Departments / Offices. The schedule will allow for limited flexibility to adjust topics on an annual basis, mainly to take account of viewpoints put forward by relevant Oireachtas Committees.

In proposing suitable topics for evaluation, Departments should have regard to the overarching objective of facilitating the prioritisation, and re-allocation, of expenditure in support of Government Programme commitments and consistent with MTEF spending ceilings. Accordingly, it will be necessary to target evaluation resources at areas of

significant expenditure, for which – on the basis of previous reports, the CRE or other analyses – there may be a *prima facie* case for critical examination of the current scale of resource allocation. In this regard, Departments/Offices will be required to clearly indicate the estimated total expenditure that the proposed reviews will cover.

Departure from the list of review topics approved by Government is only allowed in exceptional circumstances, and then only where a suitable topic of at least equal significance is substituted for a review being dropped.

(b) Steering Committee Membership and Meetings

Based on the experience of the 2009-11 round of VFMPRs, the Steering Committees of Reviews should be more focussed and limited to key relevant officials. The aim, where possible, should be no more than 5 officials on the Steering Committee, comprising the Chairperson, the lead evaluator, the D/PER representative and two other senior officials – whether from within the Department / Office or from elsewhere – with knowledge and experience that is relevant to the subject matter of the review and/or to the Department's review/audit process more generally. External evaluation expertise on the Steering Committee can also be considered but stakeholders that are beneficiaries or sectional interests should not be members. Their views will be sought as required as part of the evaluation.

With the exception of the lead evaluator and chairperson the work of Steering Committee ordinary members is additional to their normal 'desk jobs'. For this reason, care should be taken to minimise the demands upon their time. The Steering Committees, particularly in the case of smaller reviews, should hold fewer meetings at key stages in the process e.g. one/two to agree on ToR /work programme, two mid-review meetings to discuss progress and a final meeting to finalise the draft.

The work programme and role of the Steering Committee should be linked to key milestones in the lifecycle of a VFM. A timetable for delivery of key milestones should be agreed. The meetings of the Steering Committee will be dictated by the production of the required deliverable. If deliverables are produced in accordance with the agreed timetable then the VFMPR can meet its target delivery date. The role of the Committee is to sign-off deliverables associated with the key milestones and to give direction on work needed to produce the next deliverable.

Milestone/Deliverable	Comment
Sign-off: – Terms of Reference – Objectives of Programme being Reviewed – Programme Logic Model – Methodology incl. data required – Timetable for Deliverables	These are the basic foundation stones of a good evaluation and no further work should be done until these are signed-off. They should be signed-off after a maximum of two meetings of the Steering Committee.
Preliminary analysis of data gathered.	This allows the Steering Committee to form an opinion on whether the data received matches the expectations they had when the methodology was agreed. It also allows the Steering Committee to give advice/direction to the Evaluator on report drafting and further analysis of the data to support the findings that will emerge. One meeting of the Steering Committee
First draft of key chapters of the Report	Steering Committee gives its views on first draft of the key chapters. Gives advice and direction on the findings, on structure and drafting. One meeting of the Steering Committee
Final Report	Finalisation of the Report may take one or two meetings of the Steering Committee.

(c) Approval of Terms of Reference

The first key task of a VFM Review Steering Committee is to draw up the Terms of Reference for the review. When a draft of the ToRs has been discussed with the Steering Committee, it should be forwarded for consultation to the relevant Vote Section in the Department of Public Expenditure and Reform. This can be done informally through the Department of Public Expenditure and Reform representative from the relevant Vote section on the Steering Committee. However, it should be noted that Vote Sections should submit all draft ToRs for approval at Assistant Secretary level before advising line Departments/Offices of agreement to proceed.

Following this consultation, any amendments that might be agreed with the Department of Public Expenditure and Reform should be made to the draft ToRs before they are submitted to the Secretary General/Head of Office who is carrying out the review. Where a matter of dispute exists, direct consultation should take place between the Secretary General/Head of Office and the relevant Department of Public Expenditure and Reform Assistant Secretary with the aim of resolving the point at issue. Once the Secretary General/Head of Office is satisfied with the draft ToRs, he or she will give authority to formally commence the review.

(d) Role of the Evaluator

The lead evaluator has a pivotal role in the evaluation. S/he is not a secretary to the Steering Committee but is conducting the VFMPR under their direction. The lead evaluator should have sufficient analytical capacity to deliver the review. It is a person's knowledge/experience of evaluation and the VFMPR process that is important and not their prior knowledge of the programme being reviewed. The lead evaluator cannot be working in the area that is being reviewed. It is the lead evaluator's responsibility to produce the deliverables required for the Committee. In advance of the first meeting the evaluator should have prepared a background document/presentation on the area being reviewed as well as draft TORs, PLM and methodology. This will facilitate an efficient running of the review. Meetings of the Steering Committee will be dictated by production of deliverables by the evaluator rather than a set timetable of meetings. The Committee should not need to meet with stakeholders or conduct field visits. They may do so if they wish but it is quicker to give direction to the evaluator on who should be consulted. The lead reviewer should keep the Chairperson of the Steering Committee informed of progress in the review and of any issues that may require resolution, so that timely decisions can be made and reports finalised in time.

(e) Use of paid consultants

The engagement of paid consultants to carry out VFMPRs, as a rule, is not permitted. The VFMPR work should be conducted from within the evaluation / policy analysis resources that are developed and maintained within each Department / Office. Exceptions can only be justified on the basis that a particularly complex piece of analysis is required and that the necessary skills are not available internally. Even where this is the case it is not a justification to outsource the whole review.

(f) Independent Chairpersons

It is best practice to have a fully independent Chairperson in charge of each Steering Committee. The Independent Chairperson is responsible for driving the review within schedule and within its Terms of Reference and acts as a key channel between the lead reviewer and the Steering Committee. It is the responsibility of the independent Chairperson to see that the review deadline is met. The Chairperson should not be the lead reviewer.

The CEEU will maintain the existing central list of suitably-qualified retired officials at Principal Officer grade (or higher) to act as independent Chairpersons, and will also

compile a list of serving Principal Officers who have evaluation and VFM experience and who would be available to chair Steering Committees.

(g) Role of CEEU and publication of Assessments

The Vote Section in the D/PER will continue to be represented on the review Steering Committee. The CEEU of the D/PER will no longer be directly involved in reviews and will instead be involved in carrying out its own quality assessments of Reviews at terms of reference / work plan stage, interim and final draft report stages. These assessments will be made available to the Steering Committee and the final assessment will be made available online.

The evaluator should send the TORs, Objectives, PLM, Methodology, Timetable, first draft key chapters and first final draft, to the CEEU prior to the Steering Committee meeting at which these deliverables will be signed-off, and in reasonable time to allow the CEEU to return their written comments to the Steering Committee. The evaluator is free to avail of advice from the CEEU on a less formal basis prior to formally sending any deliverable. The CEEU may be requested by the Chairperson to attend to exchange views at particular meetings of the Steering Committee or to engage more fully on certain aspects of the review process, where in the Chairperson’s view this would be helpful; as a rule, the CEEU will endeavour to accede to such requests.

The CEEU will publish a simple tracking document on all VFMPR deliverables on its website in the format below. It will also publish its final review of the VFMPR here.

Tracking Table for VFMPRs

Department	VFMPR	TORs, Objs’ PLM, Methodology rec’d	CEEU sign-off	First draft of key chapters	CEEU sign-off	First final draft	CEEU sign- off
Dept of Industry	Employment Grants	•	•	•	x		
Dept of Sport	Sports Facilities	•	•	•	•	•	•

(h) Timetabling of reviews

In order to ensure the relevance of evaluations, the annual cycle of VFMPRs will be aligned more closely within the new, 'whole-of-year' approach to setting expenditure allocations (see section 4 below). This involves the following elements:-

- The schedule of VFMPRs should be decided, following consultation with Government, by the Minister for Public Expenditure and Reform during the autumn of each year.
- Work on the VFMPRs for the year ahead should get under way immediately with appointment of Steering Committee, agreement of Terms of Reference and commencement of fieldwork. VFMPRs for later years, as specified in the multi-year schedule, can be planned for in advance, but the precise timetabling of these future reviews will be subject to revision in light of views expressed by the relevant Oireachtas Committees.
- The VFMPRs should be concluded within a timeframe (6-9 months from their commencement) that allows for the final Reviews to be submitted to the Oireachtas Committees during the course of the year, to inform discussions and debate of the following year's Estimates.
- Accordingly, an end-date for each VFMPR should be specified from the outset of each Review, and this deadline will be regarded as fixed and binding.

(i) Compliance with Timeframes / Sanctions

In order for the evaluation process to be effective it is essential that, insofar as possible, that timeframes are strictly adhered to. If the Chairperson considers that the agreed timeframes may not be adhered to, he/she should notify the Head of Department/Office immediately, who in turn must request an extension of the deadline from the Head of the CEEU in the Department of Public Expenditure & Reform. In this context, the reason for slippage should be explained and a new deadline will be fixed, which will not exceed 3 months from original deadline.

(i) Principle of transparency

A primary rationale for the VFMPR process is to facilitate better resource allocation decisions by bringing to light, and testing, the evidential basis for spending programmes. Complementary to this is the general principle of transparency in relation to how public money is allocated, used and evaluated. The CEEU will maintain a central repository of all reports including terms of reference, timescale, status update and letters (if any) seeking extensions to deadlines on the <http://publicspendingcode.per.gov.ie> website. As a guiding

principle, all of the background material that would be released in response to an FOI request should be made public at the same time as the VFMPR report is published.

(k) Completing the Report & Memorandum for Government

The final report should be submitted by the Steering Committee Chairperson to the Secretary General and Minister of the relevant Department for publication. A copy of the report should also be circulated to the Minister for Public Expenditure and Reform at this stage. Before publication of the final report the relevant Minister should bring a Memorandum to Government. This Memorandum should outline the main findings and recommendations of the report and the proposed responses to address any issues arising. The Memorandum should be submitted to Government within one month of the finalisation of the report. The following steps should be taken once the report has been cleared for release:

- lay the report before both Houses of the Oireachtas, ideally, along with the response of the Department/Office to the report's recommendations; the Oireachtas Library requires six copies of the document together with the completed form. For further information, contact Oireachtas Library.
- copies of each review must also be forwarded to the relevant Dáil Select Committee. The Clerk of the Committee will be able to advise how many copies the Committee will need;
- the report (and the Department's/Office's response) should be published on the website of the Department/Office;
- two copies should be forwarded to the Central Expenditure Evaluation Unit;
- a copy of the report should be sent to the Department of Public Expenditure Vote Section;

(l) Uniform Reporting: 'Balanced Scorecard'

As highlighted in the 2011 Comprehensive Expenditure Report⁽¹⁾, in order to bring greater uniformity and standardisation to the evaluation process, each VFMPR will include a 'Balanced Scorecard' which will be used to assess the programme against a range of criteria of use to decision makers. This standard approach will represent one key, recognisable output of the Reviews for all programmes, and will to some extent facilitate performance comparisons across programmes and across Departments. A draft approach to the Scorecard is outlined in Box 1 and will be further developed in consultation with the Public Service Evaluation Network.

3. Focused Policy Assessments (FPAs)

Building upon the experience of the 2011 Comprehensive Review of Expenditure (CRE), the full VFM & Policy Reviews will also be complemented with sharper and more narrowly focused assessments designed to answer specific issues of policy configuration and delivery. The experience of the Comprehensive Review of Expenditure – including the major analyses conducted by each Department, and the cross-cutting and thematic evaluations undertaken by the Central Expenditure Evaluation Unit (CEEU) in the Department of Public Expenditure & Reform – showed that it is possible to get a quicker turnaround, to high standards of quality, when specific timelines and specific policy questions are set.

These Focused Policy Assessments (FPAs) can play a useful role in addressing the following types of policy issue:-

- Cross-cutting issues of relevance to one or more department; typically conducted by the CEEU or by evaluation staff from relevant Departments working together;
- Evaluation of a discrete expenditure programme, to answer specific questions of programme design and delivery, by reference to one or more evaluation criteria;
- Preliminary evaluation of a more complex programme or inter-connected set of programmes, to scope issues that may benefit from full VFMPR.

To optimise the effectiveness of the FPAs, it is intended that the overarching process will be flexible and not overly prescriptive, however it is envisaged that the FPAs:

- Operate under a clear mandate from the relevant official with responsibility for Programme area and the Head of CEEU.
- Are conducted by a Department's evaluation unit and / or by an evaluator from CEEU. Ideally there should be no more than one or two evaluators.
- Have tightly framed terms of reference focusing on the key issue at hand.
- Do not require a steering committee; the responsibility of the evaluation should be under the management of the head of the departmental evaluation unit or the head of CEEU, as appropriate.
- Are completed within tight timeframes, 3 months as a rule.

- Are routinely published on <http://publicspendingcode.per.gov.ie> subject to any necessary redactions arising under FOI legislation. Redactions should be kept to the minimum necessary and a justification for redactions should be published with the document.

4. Role of the Oireachtas and its Committees

The *Comprehensive Expenditure Report 2012-2014* set out range of reforms and an enhanced role for the Oireachtas. As can be seen from the timetable below the Oireachtas and its Committees will now play an ongoing part in the new 'Whole of Year' budgetary process.

Input from the Oireachtas: A New Annual Estimates Timetable
<p>Under the new arrangements Estimates allocations will be determined in the following manner.</p> <p><i>Start of year: Multi-annual expenditure ceilings are known</i></p> <p>Spending allocations are set for each Department not just for the forthcoming year (n), but also for years (n+1) and (n+ 2). Ministers and officials have up to two years to plan their affairs so as to achieve policy objectives within these allocations.</p> <p><i>Spring of each year: Engagement with Oireachtas Committees on allocations / Estimates</i></p> <p>It is open to the Oireachtas Committees, from the early part of each year, to engage with Ministers and their Departments to exchange views on how the fixed allocations for future years should be allocated to best effect. These perspectives can be taken into account by Government as the Estimates allocations are considered over the remainder of the year.</p> <p><i>April: Stability Programme Update</i></p> <p>Just as the November 2011 Medium-Term Fiscal Statement set out the Government's overall fiscal adjustment path for the 2012-2015, the Stability Programme Update (SPU) published in April each year will adjust these targets as necessary to reflect economic developments, input from the assessments of the independent Fiscal Advisory Council and indeed the views of the Oireachtas Committees. In this context, the multi-year fiscal planning horizon will be extended by a further year, including the new overall expenditure figures.</p> <p><i>Autumn of each year: Further engagement on expenditure policy</i></p> <p>As the Government's annual Estimates process becomes more advanced, Oireachtas Committees will have further opportunities to engage on specific policy proposals. The Committees will be informed by the range of VFM Reviews and focused policy analyses generated on an ongoing basis as part of the Government's new Public Spending Code.</p> <p><i>End of each year: Estimates are finalised</i></p>

The Estimates for the coming year will be published as part of the annual Budget process, having been informed by the input of the Oireachtas Committees over the preceding year.

February of the following year: Revised Estimates and "Performance Budgets"

More detailed versions of the annual Estimates, which will now include key performance information, will be published and referred to Dáil Select Committees for consideration. In this context, Ministers and public service managers can expect to be held to account for delivery – or non-delivery – of the targets and objectives spelled out previously.

This new approach allows greater opportunities for Oireachtas members, as representatives of the public, to play a more substantive role throughout the entire budgetary process, from initial allocation of funds, through to holding Ministers and public service managers to account for the achievement – or non-achievement – of stated performance targets. The VFMPRs in particular will be used to assist Oireachtas Committees in their assessment of resource allocation priorities. Completion of these reviews will therefore have to be more closely aligned with this timetable. The Oireachtas Select Committees can also play a role in setting the agenda of topics and programmes to be reviewed in the VFM process, and holding Departments to account for timely progress.

Each Department should avail of the opportunity presented by the new process to work in a proactive way – including through submitting lists of topics for the annual and multi-annual review cycle to Committees and soliciting their feedback, and through timely completion and submission of reviews during the course of the year to facilitate Committee consideration.

^[1] <http://www.budget.gov.ie/Budgets/2012/Documents/CER%20-%20Estimates%20Final.pdf>

Box 1

'Balanced Scorecard': A New Standard for Programme Evaluation

A criticism of the VFM & Policy Reviews is that they are each conducted differently, the various Reports are presented differently from one another, and it is hard for policy-makers to form a common view of how particular programmes rate relative to other programmes. As part of the new process, all Reviews will have to include a standard report – a 'balanced scorecard' – based upon a number of important criteria that are common to all evaluations. These criteria include:-

Quality of Programme Design

- Are the programme objectives clearly specified?
- Are the objectives consistent with stated Govt priorities? Is there a clear rationale for the policy approach being pursued?
- Are performance indicators in place from the outset, to allow for an assessment of programme success or failure in meeting its objectives? If not, can such success/failure indicators be constructed *ex post*?

- Have alternative approaches been considered and costed, through cost-benefit analysis or other appropriate methodology?
- Are resources (financial, staffing) clearly specified?

Implementation of Programme / Scheme

- To what extent have programme objectives been met? In particular, what do the success/failure indicators show?
- Is the programme efficient in terms of maximising output for a given input and is it administered efficiently?
- Have the views of stakeholders been taken into account?

Cross-cutting aspects

- Is there overlap / duplication with other programmes?
- What scope is there for an integrated cross-departmental approach?
- Are shared services / e-Govt channels being used to the fullest extent?
- Can services be delivered more cost-effectively by external service providers?

This approach allows for an overall, standardised quality score to be put in place, providing a programme rating that is of use to policy-makers and to those – including Oireachtas Committees and the general public – scrutinising the cost-effectiveness of spending. In other countries, more general programme ratings using the 'traffic light' system are found to be useful:- HIGH Score (Green light) – the programme is well-specified, achieving its objectives, and cost-effective in general terms. INTERMEDIATE Score (Amber light) – the programme scores highly in some areas, poorly in others: scheme re-design or efficiency improvements must be considered. LOW Score (Red light) – poor evidence of delivery of objectives; scheme funding should be available for reallocation to other priority areas.

The Public Spending Code: D. Standard Analytical Procedures Overview of Appraisal Methods and Techniques

The Public Spending Code: D. Standard Analytical Procedures

Overview of Appraisal Methods and Techniques

D.01

Document Update Log

Document Summary: This document outlines the main appraisal methods and techniques which should be used as part of the Public Spending Code. It provides a brief introduction to each technique and contains reference material at the end of the document. This information is intended to provide a general overview of these techniques, helping to orient new Public Spending Code users and point the way to further more detailed material, both in the Public Spending Code and more generally.

1. Overview of appraisal

The basic purpose of systematic appraisal is to achieve better spending decisions for capital and current expenditure on schemes, projects and programmes. This document provides an overview of the main analytical methods and techniques which should be used in the appraisal process. These techniques can also be used in the evaluation process. More detailed information on individual techniques can be found in financial and economic textbooks, examples of which are listed at the end of this document and in other guidance material on the VFM portal.

An understanding of discounting and Net Present Value (NPV) calculations is fundamental to proper appraisal of projects and programmes. A good understanding of Cost Benefit Analysis (CBA), Internal Rate of Return (IRR), Multi Criteria Analysis (MCA) and Cost Effectiveness Analysis (CEA) is also essential for economic appraisal purposes.

2. Analytical methods

The recommended analytical methods for appraisal are generally discounted cash flow techniques which take into account the time value of money. People generally prefer to receive benefits as early as possible while paying costs as late as possible. Costs and

benefits occur at different points in the life of the project so the valuation of costs and benefits must take into account the time at which they occur. This concept of time preference is fundamental to proper appraisal and so it is necessary to calculate the present values of all costs and benefits.

Net Present Value Method (NPV)

In the NPV method, the revenues and costs of a project are estimated and then are discounted and compared with the initial investment. The preferred option is that with the highest positive net present value. Projects with negative NPV values should be rejected because the present value of the stream of benefits is insufficient to recover the cost of the project.

Compared to other investment appraisal techniques such as the IRR and the discounted payback period, the NPV is viewed as the most reliable technique to support investment appraisal decisions. There are some disadvantages with the NPV approach. If there are several independent and mutually exclusive projects, the NPV method will rank projects in order of descending NPV values. However, a smaller project with a lower NPV may be more attractive due to a higher ratio of discounted benefits to costs (see BCR below), particularly if there affordability constraints.

Using different evaluation techniques for the same basic data may yield conflicting conclusions. In choosing between options A and B, the NPV method may suggest that option A is preferable, while the IRR method may suggest that option B is preferable. However in such cases, the results indicated by the NPV method are more reliable. The NPV method should be always be used where money values over time need to be appraised. Nevertheless, the other techniques also yield useful additional information and may be worth using.

The key determinants of the NPV calculation are the appraisal horizon, the discount rate and the accuracy of estimates for costs and benefits.

Discount rate

The discount rate is a concept related to the NPV method. The discount rate is used to convert costs and benefits to present values to reflect the principle of time preference. The calculation of the discount rate can be based on a number of approaches including, among others:

- The social rate of time preference
- The opportunity cost of capital
- Weighted average method

The same basic discount rate (usually called the test discount rate or TDR) should be used in all cost-benefit and cost-effectiveness analyses of public sector projects.

The current recommended TDR is 4%. However, if a commercial State Sponsored Body is discounting projected cash flows for commercial projects, the cost of capital should be used or even a project-specific rate.

Internal Rate of Return (IRR)

The IRR is the discount rate which, when applied to net revenues of a project sets them equal to the initial investment. The preferred option is that with the IRR greatest in excess of a specified rate of return. An IRR of 10% means that with a discount rate of 10%, the project breaks even. The IRR approach is usually associated with a hurdle cost of capital/discount rate, against which the IRR is compared. The hurdle rate corresponds to the opportunity cost of capital. In the case of public projects, the hurdle rate is the TDR. If the IRR exceeds the hurdle rate, the project is accepted.

There are disadvantages associated with the IRR as a performance indicator. It is not suitable for the ranking of competing projects. It is possible for two projects to have the same IRR but have different NPV values due to differences in the timing of costs and benefits. In addition, applying different appraisal techniques to the same basic data may yield contradictory conclusions.

Benefit / Cost ratio (BCR)

The BCR is the discounted net revenues divided by the initial investment. The preferred option is that with the ratio greatest in excess of 1. In any event, a project with a benefit cost ratio of less than one should generally not proceed. The advantage of this method is its simplicity.

Using the BCR to rank projects can lead to suboptimal decisions as a project with a slightly higher BCR ratio will be selected over a project with a lower BCR even though the latter project has the capacity to generate much greater economic benefits because it has a higher NPV value and involves greater scale.

Payback and Discounted payback

The payback period is commonly used as an investment appraisal technique in the private sector and measures the length of time that it takes to recover the initial investment. However this method presents obvious drawbacks which prevent the ranking of projects. The method takes no account of the time value of money and neither does it take account of the earnings after the initial investment is recouped. For example, a project requires a €3 million investment and Option 1 returns €2 million in the first year and Option 2 returns €3 million for the same year. On this basis Option 2 is the preferred option as the payback period is shorter but if the cashflows changed in subsequent years and Option 1 returned €2 million annually while Option 2 only earned €1 million annually, the chosen option would have been incorrect. The ordinary payback period should not be used as an appraisal technique for public investment projects.

A variant of the payback method is the discounted payback period. The discounted payback period is the amount of time that it takes to cover the cost of a project, by adding the net positive discounted cashflows arising from the project. It should never be the sole appraisal method used to assess a project but is a useful performance indicator to contextualise the project's anticipated performance.

Sensitivity analysis

An important feature of a comprehensive CBA is the inclusion of a risk assessment. The use of sensitivity analysis allows users of the CBA methodology to challenge the robustness of the results to changes in the assumptions made (i.e. discount rate, time horizon, estimated value of costs and benefits, etc). In doing so, it is possible to identify those parameters and assumptions to which the outcome of the analysis is most sensitive and therefore, allows the user to determine which assumptions and parameters may need to be re-examined and clarified.

Sensitivity analysis is the process of establishing the outcomes of the cost benefit analysis which is sensitive to the assumed values used in the analysis. This form of analysis should also be part of the appraisal for large projects. If an option is very sensitive to variations in a particular variable (e.g. passenger demand), then it should probably not be undertaken. If the relative merits of options change with the assumed values of variables, those values should be examined to see whether they can be made more reliable. It can be useful to attach probabilities to a range of values to help pick the best option.

Sensitivity analysis requires a degree of exploratory analysis to ascertain the most sensitive variables and should lead to a risk management strategy involving risk mitigation measures to ensure the most pessimistic values for key variables do not materialise or can be managed appropriately if they do materialise. It is important to take into account the level of disaggregation of project inputs and benefits – sensitivity analysis based on a mix of highly aggregated and disaggregated variables may be misleading.

Scenario analysis

The scenario analysis technique is related to sensitivity analysis. Whereas the sensitivity analysis is based on a variable by variable approach, scenario analysis recognises that the various factors impacting upon the stream of costs and benefits are inter-independent. In other words, this approach assumes that altering individual variables whilst holding the remainder constant is unrealistic (i.e. for a tourism project, it is unlikely that ticket sales and café-souvenir sales are independent). Rather, scenario analysis uses a range of scenarios (or variations on the option under examination) where all of the various factors can be reviewed and adjusted within a consistent framework.

A number of scenarios are formulated – best case, worst case, etc – and for each scenario identified, a range of potential values is assigned for each cost and benefit variable. When formulating these scenarios, it is important that appropriate consideration is given to the sources of uncertainty about the future (i.e. technical, political, etc). Once the values within each scenario have been reviewed, the NPV of each scenario can then be recalculated.

Switching values

This process of substituting new values on a variable-by-variable basis can be referred to as the calculation of switching values. These can provide interesting insights such as what change(s) would make the NPV equal zero or alternatively, by how much must costs or benefits fall or rise, respectively, in order to make a project worthwhile. The switching value is usually presented as a % i.e. a 20% increase in investment costs reduces project NPV to 0.

This is very useful information and should be afforded a prominent place in any decision-making process. Moreover, given the importance of this information the switching values chosen should be carefully considered and should be realistic and justifiable. For example, for capital projects requiring an Exchequer commitment over the medium to long-term, operating and maintenance costs should always be examined. Similarly, any

project reliant upon user charges should always examine the impact of changes in volumes and the level of charges.

Finally, the European Commission have suggested that when undertaking a sensitivity analysis a useful determinant of the most critical variables is those for which a 1 per cent variation (+/-) produces a corresponding variation of 5 per cent or more in the NPV.

Distributional Analysis The calculation of NPV's makes no allowance for the distribution of costs and benefits among members of society. This is an important drawback if the intended objectives of a programme/project aimed at specific income groups. Differential impact may arise because of income, gender, ethnicity, age, geographical location or disability and any distributional effects should be explicit and quantified where appropriate. A common approach to take account of distributional issues is to divide the relevant population into different income groups and analyse the impact of the programme/project on these groups. Weights can be attached to the different groups to reflect Government policy. Carrying out a distributional analysis can be a difficult task because costs and benefits are redistributed in unintended ways.

3. Economic appraisal techniques

Economic analysis aims to assess the desirability of a project from the societal perspective. This form of appraisal differs from financial appraisal because financial appraisal is generally done from the perspective of a particular stakeholder e.g. an investor. Sponsoring Authority or the Exchequer. Economic analysis also considers non-market impacts such as externalities.

CBA

The general principle of cost benefit analysis is to assess whether or not the social and economic benefits associated with a project are greater than its social and economic costs. To this end, a project is deemed to be desirable where the benefits exceed the costs. However, should the benefits exceed the costs, this does not necessarily imply that a projects will proceed as other projects with a higher net present value (NPV) may be in competition for the same scarce resources. In addition, there are affordability constraints which mean that projects should not proceed even if the NPV is positive.

In cost-benefit analysis all of the relevant costs and benefits, including indirect costs and benefits, are taken into account. Cash values, based on market prices (or shadow prices, where no appropriate market price exists) are placed on all costs and benefits and the

time at which these costs/benefits occur is identified. The analytic techniques outlined above (i.e. NPV method, IRR method, etc.) are applied using the TDR. The general principle of cost-benefit analysis is that a project is desirable if the economic and social benefits are greater than economic and social costs. It is vital that cost-benefit analysis is objective. Its conclusions should not be prejudged. It should not be used as a device to justify a case already favoured for or against a proposal. Factors of questionable or dubious relevance to a project should not be introduced into an analysis in order to affect the result in a preferred direction.

A more detailed guide on how to carry out a CBA is set out in *Public Spending Code D.03 – Guide to Economic Appraisal: Carrying out a CBA*.

Cost Effectiveness Analysis (CEA)

It is difficult to measure the value to society of public investment in social infrastructure because the outputs may be difficult to specify accurately and to quantify, and are not frequently marketed. In cases like these, the cost of the various alternative options should be first determined in monetary terms. A choice can then be made as to which of the options (if they all achieve the same effects) is preferable. CEA is not a basis for deciding whether or not a project should be undertaken. Rather, it is concerned with the relative costs of the various options available for achieving a particular objective. CEA will assist in the determination of the least cost way of determining the capital project objective. A choice can then be made as to which of these options is preferable.

Evaluating options in CEA is best done by applying the principles of the NPV method to the stream of cash outflows or costs. The recurring costs of using facilities as well as the capital costs of creating them should be taken into account, particularly if they differ between alternative options. Usually, the aim will be to select the option which minimises the net present cost.

There is a particular need for consistency in the assumptions and parameters adopted for CBA and CEA appraisals. CEA is most applicable to healthcare, scientific and educational projects where benefits can be difficult to evaluate.

Cost Utility Analysis (CUA)

CUA is a variant of CEA that measures the relative effectiveness of alternative interventions in achieving two or more objectives. It is often used in health appraisals. In a CUA, costs are expressed in monetary terms and outcomes/ benefits are expressed in

utility terms e.g. outcomes are often defined in quality adjusted life years (QALYs). This outcome measure is a combination of duration of life and health related quality of life. Whereas in a CBA, there is a requirement to attempt to place a monetary value on all benefits, CUA allows for a comparison of the benefits of health interventions without having to place a financial value on health states.

Multi Criteria Analysis (MCA)

Multi-criteria analysis (MCA) establishes preferences between project options by reference to an explicit set of criteria and objectives. These would normally reflect policy/programme objectives and project objectives and other considerations as appropriate, such as value for money, costs, social, environmental, equality, etc. MCA is often used as an alternative to appraisal techniques because it incorporates multiple criteria and does not focus solely on monetary values.

MCAs often include “scoring and weighting” of the relevant criteria reflecting their relative importance to the objectives of the project. Care should be taken to try and minimise the subjectivity of decision making in an MCA as this is a common problem with carrying out MCA’s. The relative importance of objectives and criteria to achievement of the project will vary from sector to sector. The Sponsoring Agency should agree these with the Sanctioning Authority.

In constructing a multi criteria analysis scorecard and determining the weightings to be given to criteria the aim should be to achieve an objective appraisal of project options and consistency in decision making. Judgments regarding the scoring of investment options should be based on objective, factual information. The justification for scoring and weighting decisions must be documented in detail. In this regard, the system should be capable of producing similar results if the selection criteria were applied by different decision makers.

The main steps in the MCA process include:

1. Identify the performance criteria for assessing the project
2. Devise a scoring scheme for marking a project under each criterion heading
3. Devise a weighting mechanism to reflect the relative importance of each criterion
4. Allocate scores to each investment option for each of the criteria
5. Document the rationale for the scoring results for each option
6. Calculate overall results and test for robustness
7. Report and interpret the findings

The importance of explaining the weights and scores fully, and interpreting the results carefully, cannot be over-stressed.

Sources for further reading

Brealey, R. A. and Myers, S. C., *Principles of Corporate Finance*, Ninth Edition.

Commonwealth of Australia, *Handbook of Cost Benefit Analysis*, 2006 European

Commission, Regional Policy, *Guide to Cost -Benefit Analysis of Investment Projects*, July 2008 Edition.

Gray, A. W., *EU Structural Funds and Other Public Sector Investments – A Guide to Evaluation Methods*, 1995.

HM Treasury, *'The Green Book', Appraisal and Evaluation in Central Government*, HMSO, 2003.

HM Treasury, *'The Magenta Book, Guidance for Evaluation'*, 2011.

IPA edited by Michael Mulreany, *Cost Benefit Analysis Readings* (2002),

New Zealand Treasury, *Cost Benefit Analysis Primer*, The Treasury, July 2005

The Public Spending Code: D. Standard Analytical Procedures Carrying out a financial analysis D.02

The Public Spending Code: D. Standard Analytical Procedures

Carrying out a financial analysis

D.02

Document Update Log

Document Summary: This document provides a high level guide to carrying out a financial analysis. Financial analysis is an important element of overall appraisal, and focuses upon the cash implications of particular projects or programmes. Every spending proposal must include a separate financial analysis with the level of detail commensurate with the extent of expenditure involved. A financial analysis is usually undertaken from the perspective of the sponsoring agency. There are different forms of financial analysis depending on the perspective taken. In addition to a financial analysis from the perspective of the sponsoring agency, an Exchequer cashflow analysis is also an important analytical tool. This analysis considers all direct and indirect flows which impact on the Exchequer and not just the sponsoring agency. An Exchequer cashflow analysis must accompany every CBA (mandatory for projects over €20m). Financial analysis is also of relevance for commercial semi-state companies which are appraising investments. This guide also explains the differences between a financial analysis and an economic appraisal and describes the main steps in carrying out a financial analysis. The main application of this guide is for capital projects but the general principles also apply to current projects as an understanding of financial flows is critical to any spending proposal.

Introduction

Detailed appraisal is a key stage in the project or programme lifecycle. This document provides introductory guidance on how to carry out a financial analysis. A financial analysis or appraisal is an important building block in the overall appraisal process and acts as a first step before carrying out the economic appraisal. A financial analysis only considers financial cash flows whereas an economic analysis in the form of a CBA examines all costs and benefits for society and not just the direct financial flows arising from the project.

It should be noted that financial analysis is a broad term which can cover many different types of assessments carried out for different purposes. Some of the variants of financial analysis used for appraisal purposes include:

1. A general financial analysis identifies and quantifies financial inflows and outflows.
2. Exchequer cash flow analysis is a specific financial analysis which takes into account direct and indirect flows which impact on the Exchequer. This is an important type of analysis because it isolates the cashflow impact of spending proposals for the Exchequer, regardless of which part of the Exchequer is affected by the cashflows.
3. Affordability analysis – an assessment of whether or not a project is affordable with reference to expenditure ceilings, the timing of payments and the opportunity cost of investments.
4. Analysis of sources of funds – a breakdown of the sources of finances for a given project.

A clear distinction must be drawn between the general financial analysis which should be carried for every spending proposal and which is reflective of inflows and outflows for the sponsoring agency and an Exchequer cashflow analysis which takes a whole of Exchequer perspective and which should accompany every CBA carried out.

This document describes the main features of financial analyses, explains the difference between financial appraisal and economic appraisal and outlines the main steps involved.

What is a financial analysis?

Financial analysis is a method used to evaluate the viability of a proposed project by assessing the value of net cash flows that result from its implementation. Such appraisals are routinely carried out in the private sector by companies to assess whether investment projects are commercially profitable.

Financial analyses are also relevant for the public sector, particularly where there is output to be sold and charges imposed e.g. light urban rail, water charges. A financial analysis allows for an assessment of the budgetary impact of projects by looking at the pattern of project related cash flows. Financial analyses are particularly important for appraising PPP projects, large projects with complex financing structures and for assessing the net return of projects developed by commercial semi-state companies. Nevertheless, any sponsoring agency must be able to quantify the financial cashflows associated with any spending proposals.

Financial analyses are prepared using many of the same principles which apply to economic appraisal techniques such as CBA e.g. incremental flows and the calculation of discounted cash flows. Although some elements are shared, financial analysis differ from economic appraisals in the scope of their investigation, the range of impacts analysed and the methodology used. An economic appraisal such as CBA typically considers all the social and economic impacts on society and not just the cash flows directly affecting the sponsoring body or the Exchequer. In addition, CBA also considers costs and benefits for

which market values are not readily available whereas a financial appraisal focuses only on cash flows. Figure 1 overleaf sets out the main differences between a financial appraisal and an economic appraisal. (More detailed information on economic appraisal and on CBA in particular, is located at document D03 – Guide to Economic Appraisal: Carrying out a CBA)

Figure 1 Differences between financial analysis and economic appraisal

Financial Analysis	Economic appraisal
<ul style="list-style-type: none"> ▪ Considers only financial cashflows ▪ Used by the private sector but can also be used by the public sector ▪ Focuses on financial flows directly affecting project sponsor and/or Exchequer 	<ul style="list-style-type: none"> ▪ Considers economic costs & benefits ▪ Used mainly by the public sector due to the focus on net benefit for society ▪ Focuses on economic and financial flows affecting society

It is important to note that whereas a CBA may illustrate that a proposal would generate a net benefit for society, the distributional analysis of the costs and benefits as between the Exchequer and private citizens can vary. For example, a project may involve significant costs to the Exchequer and a net benefit for society but the extent of the Exchequer costs are such that the project is unaffordable or the project causes significant costs for other components of the Exchequer other than the Sponsoring Agency.

Purpose of a financial appraisal

A financial appraisal focuses on financial cashflows as opposed to economic flows and in particular considers profitability and sustainability. The objectives of a financial appraisal can include:

- Identifying and estimating the financial cashflows
- Assessing financial sustainability i.e. can a project's revenues cover its costs and will a project run out of cash^[1]
- Determining that part of the investment cost which will not be recouped by net revenue
- Calculating performance indicators such as the Net Present Value (NPV) and Internal Rate of Return (IRR)
- Assessing the funding sources (public, private, EU) for the project and examining the return on capital for different sources of funds.

Who should carry out a financial appraisal?

Sponsoring agencies should carry out financial appraisals. As outlined in *Public Spending Code A.02 – Clarify Your Role*, these are normally Government departments, offices and

agencies or any body in receipt of public funds. Financial appraisals are the main focus of the investment appraisal^[2] process for commercial semi-state companies.

As previously stated, there are at least two types of financial analysis which must be carried out for projects over €20m:

- A financial analysis from the perspective of the sponsoring agency
- An Exchequer cashflow analysis

When to undertake a financial appraisal?

A financial analysis incorporating an analysis of cash flows, even at a simple level, should be carried out for all spending proposals regardless of scale because an understanding and quantification of financial flows is critical to the approval decision. The level of detail involved should be commensurate with the scale of expenditure.

The financial analysis should be carried out as one of the first steps in the overall appraisal stage because an understanding of the pattern of the cashflows is a critical building block for the overall business case as well as the CBA.

It is useful to distinguish the financial analyses from the economic appraisal because the former acts as a foundation on which the CBA is built, particularly regarding the estimation of project costs. In the case of an Exchequer cashflow analysis, it also allows for a separate consideration of the budgetary impact of the project on cashflows.

Main steps in carrying out a financial analysis

The main steps in carrying out an Exchequer cashflow analysis are set out below. The same basic steps also apply to a financial analysis from the perspective of the sponsoring agency with the exception that broader Exchequer cashflows are excluded.

1. Identify the time horizon (usually the same as the CBA time horizon) based on the economic useful life of the asset.
2. The incremental inflows and outflows should be identified for each of the main options. Figure 2 sets out some typical types of inflows and outflows.

Figure 2 Main types of cashflows in a financial appraisal

Outflows	Description
Investment costs	The initial capital outlay, usually a once off cost incurred at the outset of a project
Operating costs	Ongoing running costs for a project e.g. utilities, labour, material, accommodation costs, administrative costs

Start up costs	Preparatory studies, consulting, training, R&D, design, planning
Decommissioning cost	Costs associated with removing an asset from use
Inflows	
Operating revenues	Revenue from charges or tolls / dividends
Residual value	The value of an asset at the end of its useful life or at a point in time, usually a once off value. The residual value of an asset should usually be the discounted value of net future revenue after the time horizon. It can also be considered as the value of the asset in its best alternative use e.g. scrap.
Dividends	
Savings on unemployment payments (indirect)	These can be relevant but are not amenable to reliable costing. They should always be directly attributable to the project i.e. savings on welfare payments are not included if these savings occur regardless of the project going ahead
Additional tax revenue (indirect)	These can include income tax, VAT and corporation tax but should be included only to the extent that these are net of deadweight i.e. the revenue is additional revenue which would be not received in the absence of the project.

The analysis should take into account flows both directly and indirectly associated with proposals. Additional expenditure for which the sponsoring agency is not responsible but which are project related should be included. The costing of indirect flows should be strictly net of deadweight and displacement. Often, only a low proportion of social protection savings or additional tax revenue can be directly attributed to the project.

All sources of finance, including EU finance, should be included. The financial appraisal should also include all attributable overheads.

There are different ways of categorising costs. In addition to the direct/indirect categorisation, it may also be useful to categorise costs into variable, fixed and semi fixed groupings. Exchequer cashflows should be separately identified.

It is important to note that the following flows should not be included as part of a financial appraisal.

- Depreciation is an accounting transaction and not a cashflow and should be excluded from the financial analysis
- Reserves are also not cashflows.
- Other accounting items should be ignored such as :

- Sunk costs – costs which have already been spent or committed and cannot be changed by the decision under consideration. They should be ignored. However, the quantum of sunk costs to date is a noteworthy point of information in terms of progress under the project to date and should be noted separately
- VAT^[3]

For a commercial semi-state organisation carrying out a financial analysis, the profit and loss projections should also be included. This would show the impact of a project on the main revenues and costs of the organisation. Similarly, the balance sheet projections should also be shown by illustrating the impact of the project on the finances of the organisation with particular emphasis on its working capital, debt and resources. Commentary should be included where necessary.

3. Quantify the costs

Cost estimation is difficult and often requires the input of accountants, economists and other specialists. Costs should be based on the most accurate data available and should be as realistic as possible because underestimation of costs can be a common problem with appraisals.

Costs should be set out in constant prices to be consistent with the application of the real discount rate.

4. Identify the pattern of these flows i.e. in what years do these flows arise.
5. Discount the value of these flows to take account of the time value of money using the official Department of Public Expenditure & Reform discount rate (see section E of the Public Spending Code).
6. Carry out a sensitivity analysis of the most critical cost and revenue variables
7. Report the results

There should be a clear link between the financial analysis and the CBA so allow private and social costs and benefits to be separately identified.

An indicative sample Exchequer cashflow analysis is set out at Appendix A.

Common errors

It is a common problem to conflate financial flows with economic flows and include them in the same analysis. Other issues to avoid include:

- Not including residual values

- Incorrect valuation of residual values e.g. overly optimistic assessment of residual values given that residual values are difficult to predict
- Underestimation of costs
- Increases in costs from initial project conception to final delivery are common. Cost increases must be reconciled back to show or explain the reasons for the cost increases. Cost estimates must include all initial capital costs and lifecycle costs (in detail)
- Errors in the timing of cash inflows and outflows
- Not including cashflows which may affect other Exchequer components
- Overestimating the income tax receipts/benefits and social protection payments savings of projects^[4]
- Mismatching real/nominal values with real/nominal discount rates

Appendix A Sample Exchequer cashflow analysis for a capital project

Financial analysis template

	2012	2013	2014	2015*
Revenue from charges				
Residual value				
Dividends				
Total inflows				
Equity participation				
Subsidies/grants				
Operating costs				
<i>Materials</i>				
<i>Labour</i>				
<i>Other maintenance</i>				
<i>Administrative</i>				
Investment costs				

<i>Plant</i>				
<i>Machinery</i>				
<i>Planning and design</i>				
Decommissioning costs				
PPP payments				
Total outflows				
<i>Indirect taxes</i>				
VRT				
Carbon levy				
Customs and excise				
<i>Direct taxes</i>				
Income tax				
Corporation tax				
Total tax impact				
PPP Payments				
EU Finance passing through the Exchequer				
Fines				
Other flows				
Net cashflow				
Discounted net cashflow				

* The first four years are shown for indicative purposes, appraisal timeframes are generally longer

Analysis of sources of funds

	2012	2013	2014	2015
EU finance passing through the exchequer				
Exchequer contribution				
National Private capital				
EIB financing				
Other loans				
Total sources of finance				

[1] Sustainability occurs if the net flow of cumulated generated cashflow is positive for all the years considered

[2] Commercial semi-states should also assess the impact of a project on the profit and loss account and the impacts on the organisation's finances including working capital, debt and reserves.

[3] To the event that additional VAT revenue is generated as a result of the scheme, this revenue can be included but only if it is strictly additional and net of deadweight. In general however, VAT on inputs can be excluded as it is a transfer payment unless there are differences in tax treatment between options.

[4] These indirect flows must always be calculated net of deadweight and care is required.

Guide to economic appraisal: Carrying out a cost benefit analysis

D.03

Document Summary:

CBA is a key economic appraisal technique under the Public Spending Code. This document provides an introductory guide to CBA. It sets out the aims and principles of CBA and highlights the main technical issues in estimating costs and benefits. It also covers the important issues of CBA performance indicators and risk assessment. It concludes by outlining the presentation and reporting requirements for a completed CBA and provides some references for further reading.

Contents

1.	Introduction.....	128
	1.1 Background	128
	1.2 Public Spending Code.....	129
	1.3 Guidelines for CBA	130
	1.4 Purpose of the guide.....	131
	1.5 Target Audience	131
	1.6 Structure of the Guide.....	131
2	Principles of Cost Benefit Analysis	132
	2.1 Introduction	132
	2.2 Effectiveness in the Public Sector	132
	2.3 Defining the Project	133
	2.4 Defining the Benchmark	133
	2.5 Rationale for CBA.....	134
	2.6 Steps in carrying out a CBA	134
	2.7 When to carry out a CBA	134
	2.8 Limitations of CBA and related issues	135
3.	Identifying and Valuing Costs and Benefits	137
	3.1 Introduction	137
	3.2 Identifying costs and benefits.....	137
	3.2.1 Identifying costs	137
	3.2.2 Identifying benefits	138
	3.3 Valuing costs	139
	3.3.1 Sunk and Opportunity Costs.....	139
	3.3.2 Contingency costs	139
	3.3.3 Shadow Prices	139
	3.4 Valuing benefits	142
	3.4.1 Analysis of demand.....	143
	3.4.2 Value of time	143
	3.4.3 Value of Life	143

3.4.4 Residual Values.....	144
3.5 Other technical considerations.....	144

3.5.1 Externalities.....	144
3.5.2 Deadweight, displacement and additionality	145
3.5.3 Taxes and subsidies / Transfer payments.....	145
3.5.4 Doublecounting	146
3.5.5 Appraisal timeframe	146
4. Present Values and Discounting.....	147
4.1 Basics of discounting.....	147
4.2 Selection of Discount Rate.....	147
4.3 Inflation and Interest Rates	148
5 Analysing the Options	150
5.1 Net Present Value	150
5.2 Benefit Cost Ratio.....	152
5.3 IRR.....	152
5.4 Deciding on a preferred option.....	153
6 Risk and Uncertainty	154
6.1 Assessing risk and uncertainty	154
6.2 Sensitivity Analysis	155
6.3 Switching values.....	155
6.4 Optimism Bias	156
6.5 Scenario Analysis.....	156
6.6 Monte Carlo Analysis.....	157
7 Presentation and Reporting	158
8 Further reading and resources	161
8.1 Further reading	161
8.2 Other resources	163

1. Introduction

1.1 Background

The allocation of scarce economic resources to competing policy objectives is a challenge inherent to public sector investment. Any allocative decision will necessarily involve making choices between alternative approaches to the achievement of a specific policy objective and the ranking of priorities. Cost-Benefit Analysis (CBA) is an economic appraisal tool for the comparison of costs and benefits associated with alternative approaches. CBA provides a useful basis for decision-making and assists in the systematic appraisal and management of capital and current projects.

The Public Spending Code is intended to introduce best practice in the appraisal, implementation and evaluation of projects and programmes. **CBA is the mandatory appraisal technique for projects costing more than €20m.** CBA, including sector specific models, is already in use in certain sectors such as transport and enterprise. While periods of budgetary pressure underscore the need for careful appraisal of spending choices, it should be remembered that the public are entitled to receive value-for-money at all stages of the economic cycle: accordingly, rigorous application of CBA along with all other elements of the Public Spending Code is mandatory at all times. Robust appraisal is also required in order to prioritise competing projects for investment and decide whether investment proposals are justified. This has heightened the importance of proper appraisal and in particular has placed renewed emphasis on ensuring that CBA's are carried out as appropriate, meet the standards of best practice required for a CBA and are subject to internal and external quality assurance (e.g. by the Department of Public Expenditure and Reform) to improve robustness and reliability.

Traditionally, there have been some recurring problems with CBA analyses carried out across the public service. These problems have included:

- Departments and agencies not carrying out CBA analyses for investment projects as required according to the rules relating to scale of appraisal
- Underestimation of costs – some projects have cost significantly more than expected
- Lack of sufficient options analysis including no definition of the 'counterfactual'
- Lack of clarity over specific objectives for the project
- Double counting of benefits
- Insufficient sensitivity analysis.

The provision of additional CBA guidance material, along with other quality assurance processes (see *Public Spending Code A.04 – Value for Money Quality Assurance*), is intended to help address these historic problems with CBA and ensure that the highest standards are maintained by Departments and agencies.

This document should be read in conjunction with the *Public Spending Code section E – Reference and parameter values*, which is currently under development.

This guide has been developed by the Central Expenditure Evaluation Unit and is intended to be a resource and reference to be consulted. In keeping with the consultative and review processes that are now integrated within the Public Spending Code as a whole, this initial document will be revised and updated regularly to ensure that it remains in line with evolving best practice in Ireland and internationally. The document is intended as a draft for consultation and feedback.

This guide is pitched at an introductory level. If more information is required, the reader may contact officials at the Central Expenditure Evaluation Unit. It is planned to issue additional CBA guidance documentation on the Public Spending Code website – <http://publicspendingcode.per.gov.ie>

1.2 Public Spending Code

The Public Spending Code requires that projects and programmes are properly appraised. According to *Public Spending Code B.03 - Approvals Required and Scale of Appraisal*, the rules regarding which appraisal technique should be used depend on the scale of the project i.e.

- Estimated cost of €0.5m or less – a Simple Assessment
- Estimated cost of €0.5m to €5m – a Single Appraisal
- Estimated cost of €5m to €20m – a Multi-Criteria Analysis (MCA)
- Estimated cost of €20m or more – a Cost-Benefit Analysis (CBA)

The use of the CBA technique is integral to the Public Spending Code. At the first stage in the appraisal process the objective is to determine whether a proposal merits a full appraisal and thereafter, to provide a basis for a decision on whether to approve a proposal in principle and which option should be selected.

The economic appraisal principles underlying a CBA also apply to an appraisal of current expenditure projects or programmes. Similarly, a CBA can also be a useful analytical tool in the conduct of a VFM review where the evaluation team are satisfied that the CBA approach is merited. Proper conduct of a CBA should facilitate a rigorous post project review by providing a baseline for analysis.

1.3 Guidelines for CBA

There have been previous publications addressing the issue of guidance for CBA. The main developments regarding the development of guidance for CBA of the Guidelines are summarised below:

- June 1999 – The Community Support Framework (CSF) Evaluation Unit of the Department of Finance published the *Proposed Working Rules for Cost-Benefit Analysis* at the request of the CSF Monitoring Committee
- February 2005 – The Department of Finance updated the *Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector* (originally published in July 1994). These guidelines outlined the four stages of project appraisal and management and stipulated that projects costing in excess of €50m should have a CBA conducted.
- January 2006 – The Department of Finance issued the *VFM Circular letter of 25 January 2006*. Among the stipulations contained in this letter was the reduction of the threshold for undertaking full cost benefit analysis for major projects from €50 million to €30 million.
- 2007 – The Department of Finance revised the *discount rate* from 5% to 4%.

In addition, other Departments and agencies have issued guidelines for CBA analysis. Among others, these include:

- The Economic Appraisal System for Projects Seeking Support from the Industrial Agencies (Forfás, 2003)
- Guidelines on a Common Appraisal Framework for Transport Projects and Programmes (Department of Transport, 2009)
- Project Appraisal Guidelines (NRA, 2011)

A revised introductory guide for CBA is appropriate given the length of time since the last publication on CBA and the need to consolidate guidance material in one location.

1.4 Purpose of the guide

The primary objective of this guide is to provide practical and user-friendly assistance on the use of CBA in the appraisal of projects, including guidance on methodology, practice and technical considerations. Examples where appropriate, are also provided to enhance the practical usefulness of the guide. References to further reading and useful web resources are given. Further examples will be provided in later editions of this document.

The guide is not intended as a detailed sector by sector manual for carrying out a CBA as there are a variety of sector specific issues which cannot be addressed in detail here e.g. the valuation issues for particular benefits. Instead, this guide is intended to be a high level primer of the fundamental principles for CBA and the most common technical issues which arise. In addition, it is recommended that Departments adapt the Public Spending Code as required for their own sectors.

1.5 Target Audience

The target audience for the Guide is public servants who have been asked to conduct a CBA, managers of the appraisal process in Departments/Offices and evaluators. Any queries can be submitted to the VFM e-mail address – vmf@per.gov.ie.

1.6 Structure of the Guide

The structure and layout of the Guide is as follows:

- | | |
|-----------|--|
| Chapter 1 | Introduction to Cost Benefit Analysis and the Public Spending Code. |
| Chapter 2 | The principles of Cost Benefit Analysis as well as an overview of the issues and limitations of CBA. |
| Chapter 3 | A brief outline of the issues in identifying and valuing costs and benefits |
| Chapter 4 | An introduction to the concepts of discounting and present values |
| Chapter 5 | An overview of the main performance indicators for a CBA. |
| Chapter 6 | A summary of the main considerations for assessing risk and uncertainty |
| Chapter 7 | Recommendations about presenting and reporting the CBA analysis |
| Chapter 8 | Further resources. |

2 Principles of Cost Benefit Analysis

2.1 Introduction

This chapter looks at the theory and principles of CBA including the rationale for its use in the public sector, the importance of defining the project and the counterfactual. It also includes an overview of the issues and limitations of CBA.

Cost Benefit Analysis is concerned with economic choice and endeavours to assist decision makers in making choices concerning scarce resources. In the private sector, the goal of the organisation is purely financial - to maximise profits. In its investment decisions, the organisation is only concerned with private costs and benefits, which are decided by the market mechanism. The organisation will make those choices which contribute most to profit. The difficulty for the public sector is that it must consider the wider implications for society – the social costs and benefits. For the most part the public sector does not operate within the market mechanism for its goods and services and therefore the valuation of social costs and benefits is more difficult.

2.2 Effectiveness in the Public Sector

In the public sector there is a vast number and diverse range of potential uses of resources and the efficient use of resources has a significant impact on the welfare of citizens. As resources are finite, a decision to implement one proposal may preclude implementing others. There are always alternatives that need comparison even if the choice is between 'doing something' and 'doing nothing or the minimum'. In considering a spending proposal, decision makers need to be assured that the overall welfare of society is raised as a result of the proposed action. CBA attempts to evaluate the proposal from the perspective of society by placing all the costs and benefits on a comparative monetary scale.

2.3 Defining the Project

The importance of defining the scope and objectives of the proposal cannot be overstated. A project subjected to appraisal through CBA must be a clearly identified "*self sufficient unit of analysis*"¹. It is therefore essential to specify the project boundaries before attempting to define the project objectives. Box 1 sets out an illustrative example.

¹ European Commission 'Guidance on the Methodology for carrying out Cost-Benefit Analysis' – August 2008

Box 1: Defining the Project

If the project is to upgrade a commuter rail line the definition of the project should clarify exactly what is included and excluded. For example are rail stations, car parks and access roads to be included or excluded?

Sometimes, a project may consist of separable and independent components e.g. a regeneration project consisting of recreational facilities, residential units and roads. In this case, the separable components should be appraised on their own terms but also in combination. The entire package of components should also be appraised as a project.

Projects should include network effects as part of the project scope e.g. diverted road traffic due to a rail project. A good CBA will contain a definition of the scope of the project and justify this definition.

It is important that the objectives for proposals are specified in terms of a need to be met instead of a particular solution which has been prematurely selected.

2.4 Defining the Benchmark

A CBA study should clearly identify and examine a benchmark or counterfactual for comparative purposes. The counterfactual involves an assumption about the future state of the world in the absence of the project. Comparisons can be made between competing proposals including the status quo. Commonly used counterfactuals include '*do nothing*' or '*do the minimum*' options. However, it should be noted that counterfactuals based on the do nothing are often unrealistic as there are generally certain costs associated with current arrangements which must be incurred even if a spending proposal does not go ahead e.g. operational, maintenance or repair costs. The do-minimum option is therefore a better benchmark for analysis. It is important that several, realistic options are analysed against the benchmark so that the most effective option can be identified.

2.5 Rationale for CBA

No policy programme or project should be adopted without first having to answer the following questions:²

- What are the specific objectives and outcomes sought?
- Are there better ways to achieve these outcomes?
- Are there better uses for these resources?

CBA is a useful evaluation tool which takes a long term and wide view of the consequences of a programme or project and has been developed to help answer these types of questions. CBA is flexible and can be adopted to include all the costs and benefits – private and social, direct and indirect, tangible and intangible. There are some limitations described in Section 2.7 and in particular, it may not be possible to assign a monetary value to all costs and benefits.

2.6 Steps in carrying out a CBA

The CBA is one part of the overall appraisal process for a programme, project or scheme. Document B01 sets out the standard appraisal steps for a project or programme. These are:

- (i) Define the objective
- (ii) Explore options taking account of constraints
- (iii) Quantify the costs of viable options and specify sources of funding
- (iv) Analyse the main options
- (v) Identify the risks associated with each viable option
- (vi) Decide on a preferred option
- (vii) Make a recommendation to the Sanctioning Authority

This document focuses mainly on steps (iii) to (vii) which comprise the key tasks in a CBA.

2.7 When to carry out a CBA

A CBA should always feature at the detailed appraisal stage prior to the project approval decision. It is necessary to carry out or update the CBA at other points in the project cycle (at the planning stage when more accurate information will be available on project scope and costs). A revised CBA should be undertaken where project costs increase significantly prior to contract signing. A final reassessment of demand and costs should be undertaken if there is a significant time lag between the appraisal and commissioning of the project.

² NZ Treasury 'Cost-Benefit Analysis Primer' - December 2005

2.8 Limitations of CBA and related issues

The CBA approach is a very useful analytical tool for public sector decision makers which enables the identification of a preferred option and supports resource allocation decisions. It can make assumptions explicit that may otherwise have been overlooked and it also provides an indication of the efficiency of projects. It provides a structured approach for appraisers to consider all the impacts of a project. However, there are limitations associated with the technique.

In the private sector, factors such as profit motive, shareholder wealth and increased market share may all be considered as indicators of effectiveness or benefits from undertaking a particular project. All of these benefits are easily quantifiable and comparable. The public sector must serve the public interest and must consider broader indicators of effectiveness which are less quantifiable. In particular, it is difficult to monetise certain intangible benefits (e.g. noise pollution, benefits of scenic attractions etc).

There are also problems around the specification of objectives. Public projects often have broad, complex or unclear objectives or indeed multiple or apparently conflicting objectives. There may also be different perceptions of objectives and difficulty in distinguishing outputs from outcomes and effects or linking outcomes to objectives. The analysis often includes subjective assumptions regarding non-economic variables, made by the appraiser, and the results therefore require careful interpretation.

It should also be borne in mind that CBA is a forecasting technique which necessarily involves predicting the future. This is inherently difficult and there is a risk of a false accuracy attaching to the results of detailed CBA models. Ultimately, the CBA is as good as the underlying assumptions and data. Gathering good data takes time and can impose onerous staffing requirements.

Given that CBA is a technical exercise, care and attention is required to ensure that errors such as double counting, incorrect use of parameters and estimation inaccuracies are avoided.

In all cases, CBA should be accompanied by critical judgement and rigorous scrutiny. Qualitative factors should be taken into account along with the CBA in making the decision. Affordability considerations also play a role as projects may have a positive NPV or BCR result but nevertheless may be unaffordable due to funding constraints.

Despite these limitations, CBA is a key component of project appraisal in most OECD countries.

3. Identifying and Valuing Costs and Benefits

3.1 Introduction

While the procedure for conducting a CBA can be set out in relatively succinct steps, there are some difficulties in the application of CBA. This chapter offers a guide to the main practical and technical considerations in conducting a CBA, including identifying and valuing costs and benefits.

3.2 Identifying costs and benefits

A common mistake in CBA is failure to identify all the relevant costs and benefits. A comprehensive approach should be taken to insure all relevant costs and benefits are included. The analyst should consider tangible and intangible flows. Some of the costs and benefits may be easily quantified and others are more difficult to quantify. It can be useful to consider the different costs and benefits arising by considering the impacts on different stakeholders affected by the project being appraised.

3.2.1 Identifying costs

The costs of a project should reflect the best alternative uses to which resources can be put or opportunity costs. Opportunity costs should usually be reflected in market prices. It can be useful to categorise the various types of incremental costs which arise in a project. One approach to identifying costs involves the distinction between fixed, variable and semi variable costs:

- Fixed costs remain static over a given level of activity or output e.g. rent
- Variable costs change in line with changes to the volume of activity or output e.g. operating costs
- Semi variable costs can include a fixed and a variable component e.g. maintenance costs

Categorising costs is important because it gives an insight into cost behaviour and the drivers of individual costs. Cost can also be categorised as direct, indirect or attributable overheads. When attributable overheads are included, these should be calculated on an incremental basis only i.e. the change in overhead costs resulting from the project. It is also important

that costs are calculated on a marginal instead of an average basis i.e. the costs which apply specifically to the incremental project outputs. For example, the marginal cost for road maintenance on a particular stretch of road included in a project proposal may be lower than the average costs applying to an entire route. Capital and operating costs should be included in the analysis. Capital costs will tend to arise in the earlier time periods whereas operating costs arise on an ongoing basis throughout the project. Cost estimates should always ensure that all lifecycle costs are included. Any cost increases arising in later iterations of the CBA should always be reconciled back to the initial values to explain the reasons for cost increases.

Typical costs arising in projects include:

- Staff
- Investment costs e.g. construction costs, materials etc
- IT costs
- Fixed assets
- Equipment
- Overheads
- Operating costs
- Maintenance costs
- Negative externalities (e.g. water/noise pollution)

Depreciation should not be included as a relevant cost because it is an accounting concept used to allocate expenditure over the life of an asset. The inclusion of the purchase price and depreciation would constitute double counting.

3.2.2 Identifying benefits

The benefits of a project can be more difficult to identify because these are often not obvious cashflows but are outcomes relating to the objectives of the CBA. In identifying benefits, the analyst should have due regard to the direct and indirect effects of the interventions.

Typical benefits may include among others:

- Reduction in loss of life
- Reduction in health care costs
- Accident savings
- Travel time savings

- Reduced environmental emissions
- Lower operating and maintenance costs
- Job creation
- Increased water quality
- Scenic benefits

3.3 Valuing costs

Market prices normally reflect the best alternative uses to which the goods or services could be put or the opportunity cost. Cost estimation is a vital task and requires professional input.

A key pitfall to avoid in cost estimation is related to the scope of the project and the related planning/design specifications. The design for a proposal can be a driver of high costs, particularly if the planned capacity is unnecessary given projected demand.

Some additional cost estimation issues are set out below.

3.3.1 Sunk and Opportunity Costs

Sunk costs are costs incurred before the appraisal period and for which there is no opportunity cost. Sunk costs could include expenditure on previous feasibility studies. CBA is only concerned with costs about which decisions can still be made³.

3.3.2 Contingency costs

Allowance should be made where contingencies are part of the expected costs of the proposal and included in the CBA. Projects with large initial capital outlays should include a contingency provision for escalating construction costs or delays. There may also be specific contingencies arising from contractual obligations which are triggered by certain events occurring. The project analyst should consider whether there is any applicable evidence regarding contingency costs from similar projects in the same sector.

3.3.3 Shadow Prices

The project inputs should be valued at their opportunity cost. It is generally recommended that market prices are used to value the cost of inputs as these best reflect the opportunity cost involved. Market prices are generally reliable and verifiable. However, in some cases

³ UK Green Book Chapter 5

market prices do not reflect opportunity costs due to market failures. Shadow prices may then be used although there should be clear and convincing reasons for doing so. Some of the most common shadow prices used are briefly described out in box 2.

Box 2: Typical shadow prices used in CBA	
Shadow Prices	Description
Shadow price of public funds	The distortionary impact of taxation
Shadow price of labour	Imperfections in labour market
Shadow price of profit	Including some element of profit as a gain instead of at a 100% opportunity cost
Shadow price of carbon	Calculating the price of emissions

It should always be possible to demonstrate that shadow prices are derived using sound means of calculation. Regard should be had to national guidance on shadow prices. Some detail on the key shadow prices are set out below.

Shadow price of labour

The shadow cost of labour has a significant influence on the outcome of a CBA. Labour is one example of an input where a shadow price is sometimes justified due to labour market conditions. It is the opportunity cost to the project of the labour used in delivering the project benefits. Labour conditions can vary on a regional and sectoral basis e.g. unemployment can be higher in certain regions and there are certain economic sectors where demand for labour varies due to the differing levels of skills required. If there are labour resources with zero opportunity costs (i.e. unemployment), the wage rate can overstate the overall social opportunity cost and it can be argued that people who are unemployed and who subsequently gain work on a project would otherwise not be employed in a productive way. In this case, the wage rate would be replaced with a lower opportunity cost. The shadow price of labour is often expressed in percentage terms. The value of this parameter depends on labour market conditions (e.g. unemployment, regional variations, labour force participation etc), project characteristics and skill levels. A single central value cannot take into account all these factors as these must be taken into account in individual project appraisals.

Shadow price of public funds

Taxation gives rise to economic distortions by altering the incentives facing economic agents, leading to changes in their behaviour and reduced economic activity. For this reason, the shadow price of public funds is greater than one. Put another way, a €1 private benefit resulting from a €1 grant raised by extra taxation does not imply a neutral result for the economy. A premium must be attached to the nominal costs of the proposal in order to make private cash flows commensurate with public cash flows and account for the deadweight loss of taxation. If public costs and private benefits are treated equally, the net present value of projects will be systematically overestimated. In practice, the distortionary costs can be incorporated in cost-benefit analysis by adjusting public benefits and costs by a factor to make them commensurate with private benefits and costs. Economic theory suggests that the distortionary costs of taxation vary roughly in line with the square of the marginal tax rate. The existing recommended parameter is 150 percent, i.e. nominal costs should be multiplied by 1.5 to reflect the true economic cost.

In recent years some CBAs undertaken on investment proposals have used a lower parameter value for the shadow cost of public funds. This reflected the reduction in effective tax rates since the late 1990s. Given recent increases again however, coupled with labour market developments, it is likely that the appropriate value has increased once more.

Shadow price of carbon

It is necessary to value emissions which might have an impact on the environment in project appraisal. These include greenhouse gases such as – Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Sulphur Hexafluoride (SF₆), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Nitrogen Trifluoride (NF₃). Emissions of these gases should be estimated over the project's lifespan, these emissions should be converted into CO₂e (carbon dioxide equivalent) using the UN's GWP (Global Warming Potential) conversion rates and appraised according to the values set out in DPER circular on the shadow price of carbon.

Departments should also monetise other non-greenhouse gas emissions, where these may be relevant to air quality. Values are provided in the public spending code for the cost of Particulate Matter with a diameter of less than 2.5 micrometers (PM_{2.5}), Nitrogen Oxide (NO_x), Non-Methane Volatile Organic Compounds (NMVOCs) and Sulphur Oxide (SO_x).

Shadow price of profit

This should generally reflect the opportunity cost of the capital in its best alternative use. This will generally involve a shadow price of 100% unless a justification can be made for using a shadow price lower than 100%.

3.4 Valuing benefits

Benefits should always be valued based on willingness to pay. Where market values are not available (e.g. scenic benefits, value of life, value of time), other techniques can be used. These include stated preference techniques such as contingent valuation as well as revealed preference techniques such as hedonic pricing and travel cost analysis. Ideally, revealed preference techniques should be used because this reflects real behaviour whereas stated preference techniques reflect hypothetical choices in response to questionnaires and surveys. These techniques are summarised in box 3.

Box 3: Valuation techniques for benefits

<i>Revealed Preference</i>	<i>Inferring a price from observing consumer behaviour</i>
Hedonic pricing	Using the different characteristics of a traded good to establish the value of a non traded good e.g. value of a seafront by comparing prices of houses with and without the seafront
Travel cost analysis	Using the value of traded goods and services to estimate the value of non traded goods and services e.g. value of an amenity using travel costs and time
<i>Stated Preference</i>	Estimated by asking people what they would be willing to pay for a particular benefit: can be willingness to pay or willingness to accept
Contingent valuation	Asking consumers about value they would place on outputs/benefits through interviews or questionnaires

The principle of proportionality should always be adopted i.e. if the amount of efforts and resources required to quantify a particular benefit outweighs the advantages of including it, it should not be quantified but a qualitative assessment should be clearly made.

The following sections contain outline material on the key considerations for estimating benefits as well as some typical benefits.

3.4.1 Analysis of demand

An important driver of the quality of a CBA is the rigor of demand estimates. The projections of demand for a proposal must be based on reliable evidence and subject to independent, expert validation. Data on demand should be based on existing sources and if necessary, efforts should be made to gather new data on demand from primary sources.

Demand analysis should always focus on incremental demand and reflect projected actual demand as opposed to potential demand. It should be noted that the pattern of demand take up may vary over time and that demand may ramp up at a slow or a quick pace over time, depending on a variety of circumstances e.g. state of the economy, employment levels, population growth etc.

The project analyst should carry out a demand analysis which takes into account the role of determinants such as price and non price determinants such as income levels, expectations etc. Demand forecasting techniques include, among others, extrapolation methods, consultation with experts and econometric analysis.

3.4.2 Value of time

Transportation projects frequently involve time savings as a benefit. Time savings generally account for a significant share of the benefits of major transport projects. There are different types of time savings i.e. work time and leisure time. Time saved in the course of work or travelling to work is measured by output which equates to the average wage rate for labour plus overheads and employment taxes.

Leisure time valuation is more difficult to assess but is generally valued at a cheaper rate compared to work time.

The calculation of the value of time benefits often involves the aggregation of time savings across many users as for individual users the time savings may be small.

There are already existing sector specific guidelines regarding the parameter values for the value of time published by the Department of Transport, Tourism and Sport. These parameters were last updated in 2016 and a further update is planned in late 2019.

3.4.3 Value of Life

It is sometimes necessary in CBA to put a monetary value on a human life or more correctly the benefit of saving a human life. This is a difficult but necessary element of CBA but there must be some rational basis to choose between projects or project options that propose to save a human life. Common methods to place a monetary value on a life included foregone earnings (as the lifetime contribution to national output expressed in present values), willingness to pay for additional safety or willingness to accept payment for bearing additional risk for life.

3.4.4 Residual Values

If the project has capital assets that have a useful life exceeding the time period of the CBA, the residual values of the assets should be calculated and included as a benefit. It is important that residual values are accurately estimated and include any offsetting costs such as decommissioning or remediation costs. Residual value should be understood as the market value for the fixed assets (or liquidation value of assets in the case they are sold out at end year) and includes the appraisal of the net revenues the project can generate beyond the time horizon. Further guidance on residual values will be developed centrally over time.

3.5 Other technical considerations

3.5.1 Externalities

All economic activity has both positive and negative effects. An externality is a side effect to an economic action that affects a third party. Externalities can be benefits or costs which affect third parties who are not charged for the benefit or compensated for the cost. External benefits include public good effects and beneficial spillover effects for third parties (e.g. new tourist facilities may benefit local businesses). External costs include congestion effects and pollution. Only those externalities which represent a significant project outcome and which can be valued on the basis of a reliable, well-established methodology should be included in the actual CBA. Examples of externalities for a rail project include noise pollution (negative) and reduced carbon emissions (positive). A CBA model may include externalities in both the cost and benefit sections of the CBA analysis.

It can prove difficult to price externalities. Studies and national guidelines can provide useful reference values. International data may also be available but it is always advisable to critically assess whether such externality values are suitable in an Irish context. In the first

instance, due regard should be had to national and sectoral guidelines issued by D/PER and line Departments for key types of externalities.

Significant externalities which cannot be given a monetary value should be excluded from the cost-benefit calculation but nonetheless fully assessed in the cost-benefit report in such a way as to ensure their full consideration in the decision-making process.

3.5.2 Deadweight, displacement and additionality

Deadweight occurs when public expenditure is incurred to achieve benefits which have would been achieved in the absence of the project scheme being funded. Deadweight is closely linked to additionality. Additionality takes place when the funded project achieves benefits which otherwise would not have been achieved and these benefits can be attributed to the intervention. Benefits should be valued net of deadweight and should reflect the best estimate of additionality accruing to a project.

Measures of deadweight can be difficult to source. There may be reference values for deadweight from Irish sector specific models or previously conducted research studies and Value for Money reviews. Commonly used research methods to establish deadweight include, for example, control/comparison group studies, but there are practical barriers to establishing a control group.

The possibility of the project displacing other economic activity should also be specifically examined. For example, it is reasonable to assume that the construction of a Visitors Centre in a particular locality could lead to a reduction in tourism levels in a different area and for the purposes of a CBA, it is necessary to revise the stream of benefits downwards in accordance with the estimated volume of displacement.

3.5.3 Taxes and subsidies / Transfer payments

In general, transfer payments should be excluded because from society's perspective such payments have no effect on real resources and benefits are merely transferred from one part of society to another e.g. unemployment benefits. Such issues are best considered in an Exchequer cashflow analysis (see document D-02)

However, to the extent that the economic activity arising from the project will be additional (i.e. not displaced), the tax revenues arising, including PRSI, should be included as a benefit. Care should be taken to avoid double-counting in this regard: taxation is a portion of the total value-added (benefit) generated by the project; it is not a benefit in addition to the total value-added generated. Grant-aid and subsidies to the project should be included as a cost. Exchequer cash flows (taxes and grants) should be shown separately from other cash flows.

3.5.4 Doublecounting

A common error made in CBA analysis relates to the double counting of the same benefits. This artificially increases the BCR and NPV value. Any type of benefit that is not deemed to be additional should not be included in a CBA. For example, it is reasonable to assume that the construction of a Visitors Centre will have a consequent impact upon house prices in the locality due to the presence of any improved amenity, rise in tourism, etc. However, if this benefit is estimated and captured already in the CBA it would be double counting to also include the rise in house prices. Other examples of double counting include:

- Including both commercial revenue from usage charges and economic benefits to users e.g. including total toll revenue and total time savings for a transport project
- Value of time savings for a road project and benefits for local shops
- Including the shadow cost of labour in the cost component of the CBA and simultaneously including wage benefits from the same job creation in the benefits component of the CBA,
- Including wages as a result of job creation due to an intervention and also including the tax revenue additionality as a separate cashflow

3.5.5 Appraisal timeframe

The appraisal timeframe should be the economically useful life of the project. Infrastructure projects such as road and rail should be appraised over a twenty year period whereas productive sector projects should be appraised over shorter time period.

4. Present Values and Discounting

4.1 Basics of discounting

People generally prefer to receive benefits as early as possible while paying costs as late as possible. Costs and benefits occur at different points in the life of the project so the valuation of costs and benefits must take into account the time at which they occur. This concept of time preference is fundamental to CBA and so it is necessary to calculate the present values of all costs and benefits.

4.2 Selection of Discount Rate

The discount rate is important because it affects the outcome of the NPV. A high discount rate tends to reduce the NPV because the benefits of capital projects tend to materialise in later time periods whereas costs are incurred in earlier time periods. There is a significant body of literature around the calculation of the discount rate and there are several methods to estimate the rate. In Ireland, two methods which have been used to date include the social rate of time preference (SRTP) and the social opportunity cost of capital. The current discount rate calculation is based around the SRTP method. There are other methods of calculating the discount rate (e.g. the weighted average method and the social return on private investments).

The Public Spending Code provides that a common discount rate should be used for appraising public expenditure. This is important because it ensures uniformity of approach in calculating present values across the public sector and it also removes the incentive to adjust the discount rate to affect the outcome of the NPV analysis.

The Test Discount Rate (TDR) for use in cost benefit analysis and cost effectiveness analysis of public sector projects is currently 4%. This is the rate in real terms (i.e. excluding projected inflation) and should be applied to a project's future costs and benefits expressed in constant prices (i.e. excluding projected inflation). The rate was last revised from 5% to 4% in 2007. However, given the significant changes in economic circumstances and the length of time since the last review, a re-assessment of the discount rate is now timely. In particular, it can be argued that the discount rate should be increased due to the rising opportunity cost of public funds.

It is recommended that appraisers use discount rates of varying magnitudes to test the robustness of CBA's against an increased discount rate i.e. flexing the discount rate using higher rates.

There are a number of other issues which will be taken into account in the formulation of a revised test discount rate. These include:

- The potential use of hyperbolic discounting⁴
- The most appropriate estimation method for a revised discount rate
- Calculating the input values for the estimation method chosen

For commercial public projects the cost of capital or a project-specific rate should be used.

Discounting can easily be carried out in Excel. The method for applying the discount rate is set out in box 4 below.

Box 4 Applying the discount rate

Discounted value = Future value/cashflow X relevant discount factor

$$\text{Discount factor} = \frac{1}{(1+\text{discount rate})^n}$$

N = time period

4.3 Inflation and Interest Rates

The monetary value of costs and benefits should be expressed in real terms so that the effects of inflation do not distort future cost and benefit streams. This is consistent with the use of a constant (real) test discount rate. Interest payments are reflected in the discounting process and so should not be included in the analysis. It may be necessary to deflate future cash flows which reflect expected inflation by using a deflator based on forecast inflation levels.

Real adjustments to prices over time may be made if there will be changes to the price of a good or service relative to all other goods and services. These effects should be reflected in the analysis. Such price effects may occur for the following types of costs:

⁴ This refers to the use of lower discount rates for longer time periods and is a different approach compared to the more commonly used exponential discounting technique.

- Technology products where prices may rise/fall over time for legitimate reasons i.e. some computer technologies will become out of date and become less costly or some technologies (health) naturally tend to cost more over time as additional functionality is added.
- Resources which are scarce and where constrained supply will lead to price increases e.g. petrol.
- Input costs where market dynamics such as increased competition may lead to reduced prices over time.

The expertise on relative price movement should always be sought from appropriate expert bodies and economists with experience in the area. However, unless empirical evidence is available, real prices which assume constant price levels should be used.

5 Analysing the Options

Having identified and quantified the costs and benefits there are a number of methods/performance metrics which can be used to differentiate between options. These include:

- Net Present Value Method
- Benefit Cost Ratio
- Internal Rate of Return

These are also described elsewhere in the Public Spending Code.

5.1 Net Present Value

The NPV is the sum of the discounted cash flows over the period. This criterion is simply based on whether the sum of discounted benefits exceeds the sum of discounted costs. The NPV of several options or projects can be compared in order to rank projects although care should be taken to ensure that NPV comparisons are for proposals with equal lives. In addition, there may be qualitative factors which, when taken into account, affect the selection of the preferred option.

The NPV of proposals can be presented for alternative options or can also be expressed as incremental differences to the do minimum or do nothing.

NPV analysis can be best carried out using spreadsheets which contain standard formulas for calculating present values. Box 5 overleaf contains a sample presentation of an NPV analysis. There are different ways of presenting the NPV analysis. However, the individual costs and benefits should always be clearly identifiable and the final result should be highlighted. The underlying assumptions should also be noted alongside the NPV analysis along with a clear illustration of parameter values.

Box 5 Example of an NPV calculation (transport)												
Ref	Flows	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
		€m	€m									
	Benefits											
	Travel time saving			0.8	0.9	1.0	1.1	1.1	1.1	1.1	1.1	8.2
	Accident savings			0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	4.6
	Carbon emission savings			0.2	0.2	0.3	0.5	0.7	0.9	1.0	1.5	5.3
(a)	Total economic benefits	0.0	0.0	1.3	1.5	1.8	2.2	2.5	2.7	2.8	3.3	18.1
	Costs											
	Land	-10.0										-10.0
	Buildings	-5.0										-5.0
	Operating Costs		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-9.0
	Maintenance costs		-0.	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-4.0
(b)	Total economic costs	-15.0	-1.0	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-28.0
	Net benefits/costs (b) – (a)	-15.0	-1.0	-0.2	0.0	0.3	0.7	1.0	1.2	1.3	1.8	-9.9
	<i>Discount factor @ 4%</i>	0.9615	0.9246	0.8890	0.8548	0.8219	0.7903	0.7599	0.7307	0.7026	0.6756	
	Present value	-14.4	-0.9	-0.2	0.0	0.3	0.6	0.8	0.9	0.9	1.2	-10.9
	Notes											
	(1) Normally projects have longer durations, 10 years is used here purely for illustrative purposes											
	(2) The monetary values assigned to costs and benefits are similarly provided purely for illustrative purposes											
	(3) There many ways to present an NPV analysis and this example is one variant e.g. cumulative NPV values can be used, years can be used as the row line items , NPV of costs and benefits can be calculated separately etc											

5.2 Benefit Cost Ratio

This is the ratio of discounted benefits to discounted costs. The formula and a worked example is set out in box 6 below.

Box 6 Sample BCR calculation

$$\text{BCR} = \frac{\text{sum of present values of benefits}}{\text{sum of present values of costs}}$$

Example:

$$\text{Using illustrative data, a sample BCR calculation:} = \frac{\text{€13.7m}}{\text{€25.2m}} = 0.5:1$$

If the benefit cost ratio is greater than one the project may be accepted as there are more benefits than costs. Unfortunately however this method does not take the size of the project into account so the results can be misleading. Generally a BCR of greater than 1:1 is an indicator that the proposal can go ahead as a BCR greater than zero implies a positive NPV but there will be projects with a greater BCR. As with the other performance indicators, a positive BCR does not automatically mean a proposal is accepted as other issues are relevant such as affordability constraints and qualitative factors.

The BCR is also a useful measure because it allows a large number of projects to be ranked.

5.3 IRR

The internal rate of return is the maximum rate of interest that a project can afford to pay for the resources used which allows the project to cover the initial capital outlay and ongoing costs and still break even. It can also be described as the discount rate that equates the present value of benefits and costs. The IRR is generally compared to a hurdle rate of return (normally the test discount rate for public investment appraisal) which corresponds to the opportunity cost of funds.

There are a number of points to note regarding the use of the IRR. There may be mathematically more than one IRR and it can be difficult to know which one to use. There may also be no one IRR i.e. no discount rate that gives an NPV of 0. It should also be noted that the IRR does not distinguish between projects of different sizes.

5.4 Deciding on a preferred option

The rationale for recommending the preferred option should be clear and sufficient evidence presented to decision makers to check the evidence and assumptions leading up to the selection of that option. It may be that the preferred option is not the proposal with the highest NPV due to some critical non-quantifiable or qualitative factors. If this is the case, the specific reasons for disagreeing with the quantitative analysis should be explicitly stated. If there is a budget constraint the proposal which maximises the benefits within the spending constraint should be chosen as the preferred option.

Further detail on presenting and reporting on the results of the CBA analysis is set out in section 6.

6 Risk and Uncertainty

6.1 Assessing risk and uncertainty

Project appraisal involves forecasting the values of costs and benefits using the best information available. An inherent problem with the CBA approach is the difficulty in predicting these values. The estimated values of costs and benefits may not materialise as expected due to uncertainty and risk. There may also be biases in the analysis. The risks of adverse conditions and the potential uncertainty associated with each option should be identified and factored in to the decision making process. Realistic assumptions should be made which reduce the element of uncertainty and risk minimisation strategies should be put in place.

It is important that steps are taken to manage risk and uncertainty as part of the appraisal process. The assessment of risk and uncertainty is one the most important components of a CBA and should be given significant attention. There are a number of key steps which should be taken:

1. Ensuring the data and assumptions underlying the estimation of costs and benefits are reliable and realistic
2. Identifying risks e.g. examining each variable to assess the level of uncertainty involved
3. Using risk assessment techniques to assess the level of risk and the impact of risk on project performance including such techniques as:
 - a. Sensitivity analysis
 - b. Scenario analysis
 - c. Expected values
 - d. Monte Carlo analysis
4. Devising a risk management strategy including measures to contain, avoid and mitigate risks, as appropriate
5. Communicating the risk management strategy to relevant stakeholders

6.2 Sensitivity Analysis

Sensitivity analysis should always be carried out as part of a CBA. Sensitivity analysis describes the process of establishing the extent to which the outcome of the cost benefit analysis is sensitive to changes in the values of the input variables. It generally involves recalculating the NPV based on changes to the values of variables and assumptions. A comprehensive approach to sensitivity analysis allows the analyst to determine those variables and assumptions to which the NPV is most sensitive. Therefore, it is not sufficient to simply test what are assumed to be the critical variables for the analysis. Instead, the sensitivity analysis should be carried out for all project variables. In addition, the analyst should test the NPV for significant adjustments to variables (e.g. 10% to 20% +/-) in order to adequately assess the robustness of the CBA.

The results of the sensitivity analysis should also be used during the implementation phase of the project as the project manager should be made aware of the key variables and assumptions which will affect project performance. Particular attention should be devoted to implementing risk avoidance, containment or mitigation measures for these variables and to monitoring out-turn for these variables as the project is implemented.

Care should be taken to avoid a number of pitfalls inherent in sensitivity analysis. For example, if some of the variables are highly aggregated, sensitivity analysis should be carried out on the sub components to ensure that all sensitivities are reflected.

It is important that sensitivity analysis is clearly presented and communicates whether or not a project is worth proceeding even if there are significant changes in the variables.

6.3 Switching values

A variant of sensitivity analysis involves the use of switching values. The switching value of a variable is that value at which the project's NPV becomes zero or the IRR equals the discount rate. Switching values are generally presented as percentages e.g. the switching value for the investment cost of a rail project is 20% - a 20% increase in the cost would reduce the NPV to zero. Switching values are a good presentational tool in sensitivity analysis because they are easily understood. A useful way to present switching values is to list the values for the key variables in a table.

6.4 Optimism Bias

Optimism bias describes the effect that project analysts overestimate the benefits and underestimate the costs and timings for a project. A range of ex-post reviews of investment projects have shown a systematic tendency to overstate the benefits and understate the costs in the ex-ante appraisal⁵. It is generally accepted that optimism bias can be a common feature of capital appraisal in many countries for both the public and private sectors. Typical examples of optimism bias include forecasts of demand which turn out to exceed actual usage levels for projects or overly ambitious planned schedules for projects which take a much longer time to deliver. Appraisers should be conscious of this effect and it is critical therefore that optimism bias is avoided.

There are a number of techniques which may be used to address optimism bias. Standard optimism bias factors may be applied to costs and benefits. Best practice requires that sector specific optimism bias factors based on empirical data be used, adjusted where necessary for the specific characteristics of the project under consideration. Project appraisers may also use project specific bias factors where detailed information is available for similar projects previously undertaken. However, neither sector specific nor project specific optimism factors are generally available. Therefore, pending the emergence of detailed optimism bias data for sectors in Ireland, it is recommended that the appraiser take a comprehensive approach to addressing optimism bias by systematically testing low benefit outturns against highest cost outturns for the critical variables as part of the sensitivity analysis. This testing should also include a pessimistic view of the project timings including delays in project delivery.

6.5 Scenario Analysis

Scenario analysis is similar to sensitivity analysis as outlined above. The sensitivity analysis allows users of the CBA methodology to identify those individual parameters and assumptions to which the outcome of the analysis is most sensitive. However, this approach must be augmented to take into account the fact that variables can be inter-dependent in practice.

In contrast to the variable-by-variable approach, the scenario analysis technique recognises that the various factors impacting upon the stream of costs and benefits are inter- independent. In other words, this approach assumes that that altering individual variables whilst holding the remainder constant is unrealistic. Rather, scenario analysis uses a range of

⁵ Such as Flyvberg (2009) and Florio and Sartori (2010)

scenarios (or variations on the option under examination) where all of the various factors can be reviewed and adjusted within a consistent framework. Scenario analysis takes into account the major political, technological, regulatory and economic uncertainties surrounding a project.

A number of scenarios are formulated – best case, worst case, etc – and for each scenario identified, a range of potential values is assigned for each cost and benefit variable. The appraiser should compile a series of “what if” questions in relation to the variables to populate the various scenario analyses. When formulating these scenarios, it is important that appropriate consideration is given to the sources of uncertainty about the future (i.e. technical, political, economic etc). Once the values within each scenario have been reviewed, the NPV of each scenario can then be recalculated. A proportionate approach to scenario analysis should be taken depending on the scale of the project. For larger projects, a more complex approach can be taken.

6.6 Monte Carlo Analysis

Monte Carlo analysis is a risk modelling technique that uses statistical sampling and probability distributions to simulate the effects of uncertain variables on model outcomes. It can be used to model the effects of key variables on the NPV of a given proposal. The approach provides a systematic assessment of the combined effects of multiple sources of risk in key variables and can also allow for known correlations between these variables. The analysis can generate a probability distribution for the NPV. Although it is a useful technique, it requires expertise to apply and interpret the analysis. In particular, critical judgment is required to input the probability distributions of the project variables. If the project analyst is inexperienced in the technique, it is satisfactory to focus on sensitivity and scenario analysis for risk assessment purposes.

7 Presentation and Reporting

The final outcome of the CBA analysis is a recommendation as to whether there is a preferred option and whether the project should proceed or not. Given the importance of appraisal decisions for projects and programmes, it is vital that the results of the CBA are presented and reported clearly, transparently and comprehensively.

Since the readers of appraisal documents are often decision makers who may not have detailed technical knowledge of economic appraisal methods, non technical language should be used wherever possible to ensure clear communication.

Summary tables should be used to highlight the performance indicator results of the CBA for *all* the options. There should also be a clear presentation of the main costs and benefits which influence the outcome of the analysis for each option. There should be a summary of the main performance criteria for all realistic options including the NPV values, IRR values (where appropriate) and BCR ratios. It is not sufficient to present unitary values for any of these indicators. Instead, the range of values based on the risk assessment including the detailed sensitivity analysis should be provided. The range of potential outcomes based on the risk assessment should be described. In addition, any relevant decision criteria for the performance indicators should be outlined e.g. the IRR should exceed the official discount rate, the NPV should exceed 0 and the BCR should exceed at least 1:1. Departments and agencies may also have more rigorous decision rules for projects e.g. projects should achieve a BCR of at least 2:1.

The conclusions arising from the CBA analysis should be clearly backed up by and linked to the appraisal analysis contained in the CBA. That said, it is generally not advisable to outline all the detailed assumptions, parameter rules and working rules used to carry out the CBA in this section of the appraisal. These can be provided in detail in the appendices so that the reader can understand the valuation of costs and benefits from first principles. It is however necessary to re-iterate any major issues regarding data sources and assumptions for the CBA e.g. lack of availability of primary data to estimate patronage for a transport project. Similarly if there are major uncertainties regarding parameters or difficulties in monetising certain costs and benefits, these should also be discussed.

The business case document is an important source document for decision makers. Therefore, it should be possible to follow the audit trail of assumptions, data sources, analytical methods and working rules in order to assess the final analysis. However, there are

other audiences for the final CBA. It is likely to be subject to internal quality assurance procedures within the line Department or agency. The quality assessment will generally be carried out by someone independent of the appraisal process. The Department of Public Expenditure and Reform will also be reviewing the CBA for approval purposes. Finally, the CBA may be subject to a post project review or evaluation. It should also be noted that the CBA may be published prior to Government decision.

In general, the CBA and related reporting will be contained in a business case document as set out in box 7 below.

Box 7: Contents of the Business Case

In general, the results of the CBA analysis will be contained in a business case document containing:

- Rationale for the project, justification and objectives
- Project scope
- Feasibility study including options identification and constraints analysis
- Financial appraisal of all the options
- Economic appraisal of all the options
 - Methodology
 - Assumptions
 - Discount rate
 - Valuation methodologies to estimate costs and benefits
 - Selection of relevant costs and benefits (reasons for inclusion and exclusion)
 - any significant non-monetary elements identified (including externalities, deadweight and displacement);
 - the justification for the decision criteria used
 - the limitations of the analysis, if any.
 - Options analysis
- Risk analysis
- Planning and design issues
- Evaluation plan and proofing
- Summary and recommendations

The following outlines some guidance to ensure the common problems and pitfalls in presenting the final CBA report.

- Check to make sure costs are not underestimated nor benefits overestimated
- Check that all relevant costs and benefits been included
- Are the estimation values and parameters robust e.g. shadow prices, WTP values, externalities?
- Is predicted usage based on a sound demand analysis?
- Is there double counting of benefits?
- Is the time horizon appropriate?
- Are there other CBA analyses for the same sector which could be used for reference purposes?
- Are there qualitative factors which should be addressed?
- Does the sensitivity analysis address risk in a comprehensive way?

8 Further reading and resources

8.1 Further reading

There is a wide selection of guides and papers relating to CBA published by academics, Governments and organisations such as the EU Commission. This section provides an illustrative list of CBA material for reference purposes.

Guidance issued by Departments in other jurisdictions

HM Treasury, *'The Green Book', Appraisal and Evaluation in Central Government*, HMSO, 1997.

New Zealand Treasury, *Cost Benefit Analysis Primer*, The Treasury, July 2005

Commonwealth of Australia, *Handbook of Cost Benefit Analysis*, 2006

Guidance issued by Irish Government and Departments

CSF Evaluation Unit, *Cost-Benefit Analysis in the Community Support Framework: A Critical Review*, June, 1997.

CSF Evaluation Unit, *Review of Ongoing Evaluation Function in the CSF*, October, 1998

CSF Evaluation Unit, *Proposed Working Rules for Cost Benefit Analysis*, 1999

Department of Finance, *Capital Guidelines for Appraisal and Management of Capital Expenditure Projects in the Public Sector*, 2005

Department of Transport, *Guidelines on a Common Appraisal Framework for Transport Projects and Programmes*, March 2016

National Roads Authority, *Project Appraisal Guidelines*, 2011 [Guidance](#)

issued by other international organisations

European Commission, Regional Policy, *Guide to Cost -Benefit Analysis of Investment Projects*, July 2008 Edition.

Publications by academics and institutes

IPA edited by Michael Mulreany, *Cost Benefit Analysis Readings* (2002),

Brealey, R. A. and Myers, S. C., *Principles of Corporate Finance*, Ninth Edition.

Flyvbjerg, B., Holm, M., Skamris, K. and Buhl, S.L., "How common and How large are Cost Overruns in Transport Infrastructure Projects", *Transport Reviews*, Vol 23 (1): 71-88 (2003)

Goodbody Economic Consultants in association with Atkins, *Cost Benefit Parameters and Application Rules for Transport Project Appraisal*, 2004

Gray, A. W., *EU Structural Funds and Other Public Sector Investments - A Guide to Evaluation Methods*, 1995.

Honohan, P., *Methodological Issues in Evaluation of Irish Industrial Policy*, ESRI Working Paper 69, January, 1996.

Honohan, P., (ed.), *EU Structural Funds in Ireland: A Mid-Term Evaluation of the CSF 1994-99*, Policy Research Series, No. 31, Dublin: The Economic and Social Research Institute, 1997.

Honohan P., *Key Issues of Cost-benefit Methodology for Irish Industrial Policy*, ESRI General Research Series No. 172, November, 1998.

Morgenroth, E., *How can we improve evaluation methods for public infrastructure*, ESRI, November 2011

Murphy, A, Walsh, B, Barry, F, *The economic appraisal system for projects seeking support from the industrial development agencies*, Forfás 2003

Section E.

Central Technical References and Economic Appraisal Parameters July 2019

Contents

Introduction	165
1.1 Central Technical References	165
1.2 Central Economic Appraisal Parameters	165
1.2.1 Objectives	165
1.2.2 New Parameter Values	166
1.2.3 Sectoral Parameters	166
1.2.4 Sectoral Appraisal Frameworks	166
2 Calculation of Staff Costs	168
2.1 Overview	168
2.2 Staff Costs: Key Components	168
2.3 Direct Salary Cost	168
2.4 Total Staff Cost	169
2.5 Daily and Hourly Rates	170
2.6 Situations where use of the composite rate may not be appropriate	171
3. Social Discount Rate for Economic Appraisal – 4%	172
3.1 Overview	172
3.2 Methodology	172
3.3 Hyperbolic Discounting	173
3.4 Other Discount Rates	174
4 Shadow Price of Labour: 80% - 100%	176
4.1 Overview	176
4.2 Description	176
4.3 Methodology	177
4.4 Application	177
5 Shadow Price of Public Funds - 130%	179
5.1 Overview	179
5.2 Description	179
5.3 Methodology	179
5.4 Application	180
6 Shadow Price of Carbon	181
6.1 Overview	181
6.2 Description	181
6.3 Valuing CO ₂ e emissions	183

1 Introduction

This document sets out the key central technical references and parameter values for use in financial and economic appraisal.

1.1 Central Technical References

Quantifying costs for the purposes of financial analysis is an important step in preparing business cases, and carrying out appraisals as well as evaluations. The central technical reference for estimation of staff costs and the related overhead component is set out in section 2 of this document.

1.2 Central Economic Appraisal Parameters

The main economic appraisal parameter values have been updated by the Department of Public Expenditure and Reform in July 2019.

These new parameter values apply to all economic appraisals and evaluations undertaken in compliance with the Public Spending Code and should be used by Government Departments and State agencies undertaking economic appraisals. The new parameter values should also be used by practitioners commissioned to carry out appraisals of public expenditure programmes, projects and proposals.

This document and the guidance on each parameter should be read in conjunction with the Public Spending Code – “Guide to Economic Appraisal: Carrying Out a Cost Benefit Analysis, [Available here](#).

This guidance supersedes previous guidance regarding economic appraisal parameters provided in the Public Spending Code 2013 and 2015.

1.2.1 Objectives

The central economic appraisal parameters are in place to ensure that there is consistency across the analysis being conducted such as Cost Effectiveness Analysis (CEA) and Cost Benefit Analysis (CBA). The objectives of providing central parameters is to:

- Enhance accuracy and precision in the conduct of economic appraisals across the public sector;
- Ensure that there is consistency in the preparation of economic appraisals;

- Support practitioners in the development of appraisals to inform spending decisions.

The key values were revised based on a review of the literature and consultation with the Irish Government Economic and Evaluation Service (IGEES).

1.2.2 New Parameter Values

The updated values are summarized in Table 1. While precise estimates for parameters can be a matter of debate, the overall aim is to anchor appraisals in a set of central values which facilitates consistency and clarity.

Table 1: Central Economic Appraisal Parameter Values

Central Economic Appraisal Parameters	Values
Social Discount Rate	4% Note: for projects with long time horizons a declining discount rate applies
Shadow Price of Labour	80% - 100%
Shadow Price of Public Funds	130%
Shadow Price of Carbon	ETS Emissions 2019: €23.60 per tonne of CO ₂ e. Non-ETS Emissions 2019: €20 per tonne of CO ₂ e. Note: The values above only apply to emissions in 2019. Projects which will give rise to emissions over time must apply the relevant values set out in the annual schedule of shadow carbon prices in Section 6 of this document.

1.2.3 Sectoral Parameters

The list of parameters in Table 1 is not exhaustive. Individual Departments and public bodies should also quantify additional parameters applicable in their own sectors where relevant expertise and project experience have developed over time. Departments are also responsible for providing more detailed guidance regarding the application of parameters for their specific sectors of responsibility.

1.2.4 Sectoral Appraisal Frameworks

Government Departments with responsibility for oversight of sectoral guidance are required to ensure that their appraisal frameworks are consistent with the Public Spending Code and updated guidance relating to the central parameters.

Revisions and updates to sectoral appraisal frameworks must be approved by the Department of Public Expenditure and Reform. Departments developing or overseeing new sectoral appraisal and evaluation frameworks for the first time are required to submit these to the Department of Public Expenditure and Reform.

2 Calculation of Staff Costs

Summary

The calculation of staff costs is a key variable in appraisals of public spending and public sector reform proposals. This area was reviewed by the Department of Public Expenditure and Reform taking account of actual data regarding variable overheads across the civil service and imputed pension costs presented in an actuarial review of public sector pensions. This section outlines a framework for estimating staff costs by providing a composite, average parameter of 25% in respect of the overhead component of staff costs on a general basis. This section also highlights those situations where application of the 25% parameter is not appropriate and notes that appraisal of each direct and indirect cost is recommended in the first instance through consultation with the relevant Corporate Services Unit.

2.1 Overview

Quantification of staff costs and overheads is an important element of appraisal both for new spending proposals as well as for public sector reform measures which may involve a reduction in staff headcount. As a rule, for the purposes of detailed appraisal, estimates of pay and non-pay costs should always be prepared in the first instance on a cost-by-cost basis using the information available through the relevant Corporate Services Unit and Management Information Systems. In many cases, however, such an approach may prove highly resource-intensive and the “principle of proportionality” will dictate that a standard estimation methodology be used instead, based on service-wide averages. This document sets out a framework for estimating staff costs and also provides a formula for daily and hourly rates.

2.2 Staff Costs: Key Components

It is important that staff costs are fully taken into account when making decisions that involve changes to the level of resources. For example, establishment of a new Agency or the creation of new functions for a Department or Agency may result in a need for additional staff. Conversely, a reform initiative such as external service provision could result in a structural headcount reduction over time. Staffing costs will be a key variable in decisions of this nature, and it is important that they are accounted for fully and consistently. A framework to assist officials in estimating staffing costs is set out in summary form in Table 2.

Table 2: Framework for Estimating Staffing Costs

	Cost Component	Methodology
A.	Pay	Midpoint of pay range using formula below
B.	Direct Salary Cost	Pay + Employers PRSI
C.	Total Salary Cost	B + Imputed pension cost (see Tables 3A and 3B)
D.	Total Staff Cost	C + 25% of A in respect of ‘overheads’

2.3 Direct Salary Cost

Direct Salary Cost is defined as the gross wage or salary paid to an individual at the relevant grade, based on the midpoint of pay range, plus the associated employer’s PRSI payment. An average salary cost should be worked out for each grade based on the current salaries Circular 22/2017

issued by Department of Public Expenditure and Reform. This is achieved by taking a cash value midway between the scale minimum and the highest point, or Long Service Increment (LSI), as appropriate.

PRSI rates are subject to change under Government policy and the Department of Employment and Social Protection guidelines should be consulted for the most recent rates that pertain to each employee category¹.

Total salary cost is defined as direct salary cost plus an imputed employer pension contribution. Employing public servants normally results in the creation of entitlements to pensions which are payable in the future. The employee currently meets a proportion of the cost through employee pension contributions and additional superannuation contributions. However the balance is a deferred cost which is borne by the State. In estimating the total cost of employing a civil servant, allowance must be made for this deferred cost. The imputed pension contribution is based on gross salary, and not direct salary cost, because employers' PRSI payments are not reckonable for pension purposes.

The estimated costs for certain cohorts of the Public Service are set out in Tables² 3A and 3B. It should be noted that these figures represent the cost of pension less normal employee contributions and that no adjustments have been made to allow for Additional Superannuation Contributions (ASC) paid by employees.

Table 3A: Standard Accrual Categories – Cost of Pension less Normal Employee Contributions

	Pre-2013 Cohorts	Post-2013 Cohorts
Civil Servant	27%	8%
Teacher	29%	9%
Nurse	28%	8%
Engineer	33%	10%
Hospital Consultant	46%	14%
Average ³	29%	9%

Table 3B: Fast Accrual Categories – Cost of Pension less Normal Employee Contributions

	Pre-2013 Cohorts	Post-2013 Cohorts
Garda	53%	14%
High Court Judge	71%	39%

2.4 Total Staff Cost

Total staff cost is defined as total salary cost plus 25% for overheads. Each officer requires office space, materials, use of telephones, computers, postage service etc. It is estimated that an addition of 25% to direct salary cost is appropriate to reflect these overhead costs. This is a

¹ The Department of Employment & Social Protection 2019 PRSI rates and user guide is [Available here](#).

² For further details regarding the cost of pension provision in the public sector please see the Department of Public Expenditure and Reform Technical Paper *Actuarial Review of Pension Provision in the Irish Public Service and a Comparison with the Private Sector* (2017) [Available here](#).

³ An average notional employer contribution rate was calculated for public service employees with broadly similar benefit structures and salary progression i.e. Civil Servants, National School Teachers, Nurses and Engineers. Hospital Consultants were excluded from the average as their average cost of accrual is higher due to their faster than average salary progression.

composite figure applicable to the generality of civil service situations and includes but not limited to costs for accommodation, utilities, support and back-office staff, training, travel, etc.

With respect to accommodation costs, it should be noted that in those instances where accommodation is owned by the State, although there may be no cash outlay with respect to rent, it still represents an economic cost, and must be factored into the decision-making process concerning resources or overheads.

The 25% figure is recommended as a norm both in situations where additional staff are being recruited, and where staff numbers are being reduced. While it is the case that there are few immediate overhead savings arising when a staff member leaves and is not replaced (unlike in the hiring scenario where many of the costs are borne up-front), it is entirely valid to count a proportion of overhead as part of the staff cost savings. Over the medium term, a structural headcount reduction will yield proportionate overhead savings: for example, fewer IT licences and property leases will be required to be renewed, with consequent reductions in utility bills, and replacement costs for hardware and furniture will be lower.

The overhead percentage should be reviewed to reflect any changes in overhead profile (for example due to increased efficiencies) as required.

It is important to note that these are average costs and are applicable only on a general basis. When preparing estimates of staff costs, it is appropriate to consult with the relevant Corporate Services unit in the first instance in order to appraise direct and indirect costs on a cost-by-cost basis. Where more specific information is available, it should be used, particularly if there are additional costs in respect of specialist equipment or accommodation, or higher levels of travel and subsistence, for example.

2.5 Daily and Hourly Rates

Daily and hourly staff costs in respect of any grade conditioned to a 43 hour (gross), 37 hour (net) week can be calculated by using the following general formulae based on Department of Public Expenditure and Reform Circular 11/2013.

Daily Rate for a grade:

(Annual cost for a grade \div (251 less annual leave entitlement))

Hourly Rate for a grade:

(Annual cost for a grade \div ((251 less annual leave entitlement) x 7.4 hours))

2.6 Situations where use of the composite rate may not be appropriate

Certain decisions that could lead to a material change in resourcing – for example the establishment of a new agency, or conversely the closure of an agency – may lead to a step change in overheads, involving inter alia the acquisition or disposal of office accommodation. In these cases, the use of the composite 25% factor would not be appropriate, and it is important that consideration be given to the actual costs involved in the context of the costing of total cost of staff time. The factors to be taken into account will include: the number of staff to be accommodated, the proposed space allocation per head, the ancillary functions proposed such as public spaces and meeting rooms, the location considered appropriate, the availability of suitable accommodation and the balance between supply and demand in the office accommodation market which will affect the cost per square meter which can be agreed.

In situations where the accommodation is owned by the State an appropriate level of imputed rent should be calculated (OPW can assist with this). Consideration should also be given to the level of IT spend that will be necessary to support the added staff. If you are unsure as to the level of accommodation costs which may be involved, or if specialist accommodation is required, you should seek the advice of the OPW.

3 Social Discount Rate for Economic Appraisal – 4%

Summary:

This section sets out the Social Discount Rate (SDR) which should be used in relation to economic appraisals. It provides a description of the methodology used to arrive at the social discount rate and how the social discount rate is typically applied. The areas of hyperbolic discounting and other discount rates in the public sector are also explored.

3.1 Overview

When comparing the costs and benefits of a prospective public project over time, standard practice under economic appraisal is the use of a discount rate. This permits assessment of a project's net-worth in present terms.

It is evident that the costs and benefits of a project will often occur at different points in the project's lifecycle. For example, in a construction project costs generally arise and peak in the short term while construction occurs whereas benefits generally emerge in the medium to longer term as the investment is utilised. Assuming that society values costs and benefits differently depending on how far into the future they arise, a social discount rate should be used to convert future income streams into their value today (present value) to permit the inclusion of time preference for appraisal purposes.

The Social Discount Rate for application in economic appraisal of current and capital expenditure proposals carried out in accordance with the requirements of the Public Spending Code is now set at 4%. This represents a 1% downward revision from the historical 5% rate set during the 2015 review. This new rate of 4% should be applied to a project's future costs and benefits expressed in constant prices i.e. the value of costs and benefits should not be adjusted to take account of general inflation⁴.

3.2 Methodology

The updated Discount Rate parameter value is based on analysis presented in a 2018 staff paper by the Department of Public Expenditure and Reform⁵. This should be consulted for further information. The methodology employed is consistent with the approach outlined in previous guidelines regarding the discount rate; the analysis found that the Social Rate of Time Preference (SRTP) method was most appropriate in the estimation of the discount rate. The SRTP methodology bases its estimation of the SDR on three components: the rate of pure social time preference, the elasticity of the marginal utility of consumption, and the expected future rate of consumption growth. Empirical and secondary evidence on each of the SRTP components was gathered, and potential ranges for each parameter were laid out. Practice from other jurisdictions, EU Commission guidance and the academic literature was also taken into account, as well as analysis of the origin, and potential implications of social discounting. From these the current SDR was estimated.

⁴ Adjustments to prices over time may be made if there will be changes to the price of a good or service relative to all other goods and services. (See Public Spending Code – *Guide to Economic Appraisal* [Available here](#).)

⁵ O'Callaghan, D. and Prior, S. (2018) *Central Technical Appraisal Parameters – DPER Staff Paper, Dublin* [Available here](#).

It is a requirement that a centrally set SDR is applied across economic appraisals and other forms of NPV analysis to ensure uniformity of approach and consistency in calculating present values across the public sector. This also facilitates the comparison of projects within and across sectors.

The following formula should be used when applying the discount rate for NPV purposes. The discount rate should not be used as a method to account for risk. This should be addressed separately in a sensitivity and scenario analyses.

Applying the Social Discount Rate

Formula

*Discounted value = (Future value or cashflow) * relevant discount factor*

$$\text{Discount factor} = \frac{1}{(1 + \text{discount rate})^n}$$

Where n = time period

Application - Example

Determine the discount factor for a cash-flow of €5m in year 3 of a project. Solution:

$$\text{Discount factor} = \frac{1}{(1+0.04)^3} = 0.88899$$

$$\text{Net Present Value} = €5\text{m} * 0.88899 = €4.44\text{m}$$

3.3 Hyperbolic Discounting

As discussed in the background research documentation⁶, a large majority of projects will fall within the general time horizon upper limit of 30 years. For the few projects for which it can be shown a longer time horizon is justified however, use of hyperbolic discounting is permissible. There are several theoretical justifications for applying hyperbolic discounting for projects. The methodology employed in informing the recommended long-term discount factors was through giving consideration to the uncertainty around the fundamental SRTP parameters, and calculating a declining rate based on that uncertainty.

While practitioners should employ hyperbolic discounting by using the published discount factors set out in Table 4 (available in Excel [here](#)), expressed in exponential terms, an equivalent decline

⁶ O'Callaghan, D. and Prior, S. (2018) *Central Technical Appraisal Parameters – DPER Staff Paper, Dublin Available here.*

would be as follows; years 0-30 discounted at 4%, years 31-60 discounted at 3.5%, years 61-100 discounted at 3%, years 101-175 discounted at 2.5%, years 176-275 discounted at 2%, and at 1.5% thereafter.

3.4 Other Discount Rates

There are other discount rates which are applied in specific circumstances and these include:

- Commercial Projects undertaken by Commercial Semi State Bodies: These bodies generally apply discount cash flows for commercial projects using the relevant cost of capital or a project specific rate.
- PPP Projects: The discount rates for PPP projects are set by the National Development Finance Agency (NDFA) available [here](#).

Table 4: Appropriate Discount Factors for Use in Long-Term Discounting

Year	Discount Factor						
0	1.0000	31	0.2979	62	0.1035	93	0.0414
1	0.9615	32	0.2878	63	0.1005	94	0.0402
2	0.9246	33	0.2781	64	0.0976	95	0.0390
3	0.8890	34	0.2687	65	0.0948	96	0.0379
4	0.8548	35	0.2596	66	0.0920	97	0.0368
5	0.8219	36	0.2508	67	0.0893	98	0.0357
6	0.7903	37	0.2423	68	0.0867	99	0.0347
7	0.7599	38	0.2341	69	0.0842	100	0.0337
8	0.7307	39	0.2262	70	0.0817	101	0.0329
9	0.7026	40	0.2186	71	0.0794	102	0.0321
10	0.6756	41	0.2112	72	0.0770	103	0.0313
11	0.6496	42	0.2040	73	0.0748	104	0.0305
12	0.6246	43	0.1971	74	0.0726	105	0.0298
13	0.6006	44	0.1905	75	0.0705	106	0.0290
14	0.5775	45	0.1840	76	0.0685	107	0.0283
15	0.5553	46	0.1778	77	0.0665	108	0.0276
16	0.5339	47	0.1718	78	0.0645	109	0.0270
17	0.5134	48	0.1660	79	0.0626	110	0.0263
18	0.4936	49	0.1604	80	0.0608	111	0.0257
19	0.4746	50	0.1550	81	0.0590	112	0.0250
20	0.4564	51	0.1497	82	0.0573	113	0.0244
21	0.4388	52	0.1446	83	0.0557	114	0.0238
22	0.4220	53	0.1398	84	0.0540	115	0.0233
23	0.4057	54	0.1350	85	0.0525	116	0.0227
24	0.3901	55	0.1305	86	0.0509	117	0.0221
25	0.3751	56	0.1261	87	0.0495	118	0.0216
26	0.3607	57	0.1218	88	0.0480	119	0.0211
27	0.3468	58	0.1177	89	0.0466	120	0.0206
28	0.3335	59	0.1137	90	0.0453		
29	0.3207	60	0.1098	91	0.0439		
30	0.3083	61	0.1066	92	0.0427		

4 Shadow Price of Labour: 80% - 100%

Summary:

This section sets out the Shadow Price of Labour (SPL) for use in economic appraisals. The guidance provides that the appropriate range for the SPL is between 80% and 100%, to be employed in appraisal. In general, a value of 100% should be adopted. However, it is acknowledged that in specific circumstances (i.e. labour market conditions which are immediately relevant to the particular sector and/or region where new employment will be generated) the use of a value between 80% and 100%, where robustly justified, is permissible.

4.1 Overview

When considering the labour costs of a project in economic appraisal, the market cost of labour (wage paid) may not, in some cases, be the same as the economic or social cost of labour (the cost to society). This may be the case due to distortions and imperfections in the labour market. An example of this is where there is underemployment of resources (e.g. high levels of unemployment). As such, the Shadow Price of Labour (SPL) is a parameter which adjusts the cost of labour in appraisal, in order to account for the social opportunity cost. This note outlines the permissible usage for applying the SPL in the appraisal of publicly funded projects.

For general projects the market rate of labour (i.e. SPL = 100%) is most appropriate for appraisal purposes; this is not the case only where there is clear evidence that shadow prices are required. Where an SPL value other than 100% is employed, the minimum possible value is 80%.

Practitioners of economic appraisal, when using an SPL value other than 100% must base their selection on objective evidence and criteria, focussing in particular, on sectoral conditions. Sensitivity analysis must always be conducted on the upper bound of the scale i.e. 100%. This range of acceptable values is consistent with previous centrally-set rules⁷.

4.2 Description

The SPL is a parameter designed to incorporate the social opportunity cost of newly generated employment in appraisal. In a situation where newly created employment causes a move into more valuable/productive employment sectors, the social opportunity cost (i.e. the cost of leaving the previous area of work) will be lower than the social value of the new work. In this case, it therefore makes sense to incorporate this net benefit into appraisal, by adjusting the cost of labour downward.

An often cited appropriate example of the SPL usage is the case of industrial development in previously agrarian economies. The movement from low productivity farm labour to semi-skilled industry or manufacturing. The large scale move into more productive sectors comprises a collective economic benefit.

In developed countries appropriate usage of the SPL is not as clear-cut; use of the SPL is appropriate in cases where unemployment will clearly be reduced as a result of job creation. It should be noted however that research has shown that job creation does not reduce

⁷ CSF Evaluation Unit, Department of Finance (1999), *Proposed Working Rules for Cost Benefit Analysis*, Dublin.

unemployment one-for-one⁸. Application is further complicated by the potential of inducing migration flows through employment creation, which while economically beneficial in the long run, does not constitute a move to higher productivity within the existing labour market.

The defined appropriate range is based on a 2018 staff paper by the Department of Public Expenditure and Reform⁹. The paper found that the existing range of 80 to 100% remained appropriate in the context of the theoretical literature, appraisal practice in Ireland and international practice. The paper highlighted the need for clear justification to be provided for deviations from 100% in the context of current labour market conditions.

4.3 Methodology

The shadow price of labour should be project specific since it is derived from the local labour market conditions (e.g. unemployment, regional variations, migration) and labour skills profiles associated with projects.

In estimating shadow prices within this range, it is recommended that a sectoral approach is taken in the first instance – particularly for enterprise related projects. This is because the sectoral level is where labour market characteristics are most evident.

The criteria, assumptions and evidence used to justify the selection of the shadow price of labour should be transparently presented with any appraisal. In particular, detailed justification should be provided for the use of an SPL less than 100% in the context of labour market conditions.

4.4 Application

In applying the sectoral shadow wage rates, the range of considerations which can also inform the relevant rate to be applied include, among others:

- Rate of sectoral unemployment
- Vacancy levels and unfilled vacancies
- Migration flows
- Skill levels
- Regional considerations

A range of 80 to 100% for the shadow price of labour implies that 0-20% of the benefit accruing from the labour component of a project may be included in the appraisal. For example, it is frequently argued that construction projects have employment impacts, particularly in the short term.

Convention dictates that the adjustment be applied to the cost side, i.e. any benefit of employment generation be included by adjusting the cost of labour (giving us its shadow price). The shadow price of labour applies not just to labour costs incurred at the outset of the project but also to labour costs arising over the course of a project, where this is practicable.

In the case of projects where employment generation is an explicit project objective however, i.e. generated employment is an output rather than an input into the project and is thus not considered as a project cost, the residual of the SPL may be applied to the benefit side.

⁸ Honohan (1998), *Key Issues of Cost Benefit Methodology for Irish Industrial Policy*, Dublin

⁹ O'Callaghan, D. and Prior, S. (2018) *Central Technical Appraisal Parameters* – DPER Staff Paper, Dublin. [Available here.](#)

As a hypothetical example, if an intervention is expected to generate one job, where the salary is €100,000 per annum and SPL is estimated at 90%, the undiscounted annual benefit is equal to $(1 - 90\% = 10\%) * €100,000 = €10,000$.

5 Shadow Price of Public Funds - 130%

Summary:

This section sets out the parameter value for the Shadow Price of Public Funds (SPPF) at 1.3 or 130%. It briefly presents the rationale for the adjustment of publicly funded cash-flows under economic appraisal, as reflecting economic distortion resulting from taxation. It outlines the methodology employed in the estimation of the parameter, and the considerations taken into account in its revision. Finally it offers practitioner guidance on how the parameter should be used under economic appraisal.

5.1 Overview

Government taxation which distorts market prices will necessarily alter the incentives faced by economic agents when making decisions. In some cases, where a tax raises the price of a good with negative externalities (such as polluting goods, or unhealthy goods), the consequent reduction in economic activity may be positive for society. Most taxes however are necessarily levied on economic goods which contribute positively to economic growth, such as labour (PAYE), consumption goods (VAT), profits (corporation tax). On the margin, this causes a reduction in economic activity in comparison to that which would otherwise have occurred, creating a deadweight loss for society. This opportunity cost of taxation is often referred to as the Shadow Price of Public Funds.

The task of economic appraisal is to consider the widest possible range of positive or negative implications for society arising from expenditure, including opportunity costs of investment. In this respect it therefore makes sense to consider the deadweight loss associated with taxation as a cost in the appraisal of publicly funded expenditure.

The estimated deadweight loss associated with taxation is €0.30 per €1 collected, meaning the estimated value of the Shadow Price of Public Funds in Ireland is set at 1.3, or 130%.

5.2 Description

The Shadow Price of Public Funds is a technical parameter for use in economic appraisal. The parameter is employed to account for the distortionary effects of taxation, such as productive and consumptive decisions which are different than they would be relative to a counterfactual scenario of no tax. The actual SPPF will vary according to the specificities of the given tax system; for example, the relative size of the different tax sources as a proportion of the overall tax base will affect the parameter value, as different tax sources generally have differing distortionary effects. Similarly the marginal rate of tax will affect the parameter, as higher marginal rate of tax generally implies disproportionately higher rates of economic distortion.

5.3 Methodology

The 2018 revision of the central technical parameters¹⁰ found the existing SPPF of 130% to be appropriate, based on a detailed literature review and analysis of international practice. Notably the review considered the findings of a 2018 empirical study on the elasticity of taxable income,

¹⁰ O'Callaghan, D. and Prior, S. (2018) *Central Technical Appraisal Parameters* – DPER Staff Paper, Dublin. [Available here.](#)

conducted by the Department of Finance and ESRI, which focused on the distortionary impacts of income taxation¹¹. The current rate of 130% has been in place since the 2015 revision of the central technical parameters.

5.4 Application

In practice, the SPPF should be applied to the net public financial costs of a project in appraisal, increasing the values by 30%. In the case that some costs of individual projects will be borne by EU grant aid or private contributions, the net public financial cost should be reduced by the amount of their contribution.

In certain cases, it may also be appropriate to adjust benefits by the same percentage. This applies to taxation flows on the benefits side. For example, net additional flows in income taxes directly and solely attributable to a project/proposal would be increased by 30% to reflect the shadow price of public funds.

Project appraisers may also include an illustrative scenario based on a shadow price of public funds of 100% to indicate the impact of the shadow price of public funds on the results of the appraisal.

¹¹ Acheson, J. Stanley, B. Kennedy, S and Morgenroth E. (2018), 'The Elasticity of Taxable Income'. ESRI and the Department of Finance Joint Research Programme on the Macro-Economy, Taxation and Banking. [Available here](#).

6 Shadow Price of Carbon

Summary:

This section sets out the parameter values for the shadow price of public carbon to be employed in economic appraisal. This is based on work carried out by the Climate Change Unit in the Department of Public Expenditure and Reform. The shadow price of carbon is used to monetise the value of emissions from the “basket of seven” greenhouse gases. This can be done by converting their values into carbon dioxide equivalents and applying the shadow carbon prices. This shadow price is based on the likely cost to Ireland of removing these emissions from the atmosphere. The cost values are provided in this document. Table 6 provides values for the non-ETS sector and Table 7 for the ETS sector.

On the basis of recommendations provided by the Department of Communications, Climate Action and Environment (D/CCA), economic appraisals should monetise other non-greenhouse gas emissions, where these may be relevant to air quality. Recommended values are provided in this paper for the cost of Particulate Matter with a diameter of less than 2.5 micrometers (PM_{2.5}), Nitrogen Oxide (NO_x), Non-Methane Volatile Organic Compounds (NMVOCs) and Sulphur Oxide (SO_x).

6.1 Overview

In 2018, the Climate Change Unit in the Department of Public Expenditure and Reform undertook a review of the guidance on valuing greenhouse gas emissions in the public spending code. This review concluded that an abatement cost model should be adopted to value greenhouse gas emissions. This means valuing greenhouse gas emissions at the expected marginal cost society will face to remove greenhouse gas emissions sufficient to reach binding greenhouse gas emissions targets. This proposed new methodology was published for public consultation in November 2018. The views received have been considered by the Department, for further detail see *Valuing Greenhouse Gas Emissions in the Public Spending Code* [available here](#). Feedback received through the consultation process has been incorporated into this guidance where relevant.

6.2 Description

The main recommendations in relation to appraising greenhouse gas emissions in economic appraisals are highlighted in Table 5. The Climate change unit in the Department of Public Expenditure and Reform will publish further supplementary guidance in 2019 on the application of the shadow price of carbon. This will assist Departments and Public bodies in calculating the greenhouse gas emissions attributable to investment decisions and provide guidance on the practical application of the shadow price of carbon so as to ensure the consistency and comparability of sectoral measures. Further queries regarding emissions monetisation should be directed to the Climate Change Unit in the Department of Public Expenditure and Reform climate.change@per.gov.ie.

Table 5: Valuing greenhouse gas emissions in economic appraisal

Valuing greenhouse gas emissions in economic appraisal	
1	<p>Economic appraisals are required to value emissions from the “basket of seven” greenhouse gases which can be converted into CO₂e (carbon dioxide equivalent) using GWP (Global Warming Potential) conversion rates – Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Sulphur Hexafluoride (SF₆), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Nitrogen Trifluoride (NF₃) - where emissions are considered relevant, significant and practicable for inclusion. In any cases where emissions are not considered to be relevant, significant or practicable for inclusion, public bodies should note how this conclusion was arrived at in the CBA.</p> <p>These emissions should then be monetised according to the shadow price of carbon, differentiating between non-ETS emissions (Table 6) and ETS emissions (Table 7).</p>
2	<p>Economic appraisals are required to monetise the value of emissions of other specified non-GHG emissions (NO_x, SO₂, PM and noise) where such emissions are considered relevant, significant and practicable for inclusion. In any cases where emissions are not considered to be relevant, significant or practicable for inclusion, public bodies should note how this conclusion was arrived at in the economic appraisal.</p> <p>These emissions should then be monetised according to the values for non-greenhouse gas pollutants included in this document.</p>
3	<p>Greenhouse Gas Emissions should be converted into CO₂e using the latest available and Intergovernmental Panel on Climate Change adopted conversion factors for GWP¹².</p>
4	<p>The shadow price of carbon for non-ETS emissions (Table 6) is based on the estimated cost to Ireland of removing emissions from the atmosphere i.e. the abatement cost. The shadow price of carbon for ETS emissions (Table 7) is based on market projections to 2025 and official EU Reference Values thereafter.</p>
5	<p>For monetising the other specified non-GHG emissions in economic appraisals (Particulate Matter with a diameter of less than 2.5 micrometers (PM_{2.5}), Nitrogen Oxide (NO_x), Non-Methane Volatile Organic Compounds (NMVOCs) and Sulphur Oxide (SO_x)) values, based on EU reference values, are provided in Table 8. The</p>

Notes:

CO₂e emissions from inputs/materials purchased from organisations/facilities/installations with the EU ETS sector should not be included in the quantification of emissions for a project scenario as this would be double counting. Direct CO₂e emissions from sources within the State’s jurisdiction, including those from direct construction and operation should be included in CBAs bearing in mind not to double count. In certain instances consideration may need to be given by project managers to indirect emissions.

¹² The Group recommends the 100-year Direct Global Warming Potential (GWP) values from IPCC AR4 as the best measure currently available to convert other gases into CO₂e. See Annex 1 of report for the latest Direct Global Warming Potentials from IPCC 4th Review (AR4). The latest available and IPCC-adopted conversion factors for the GWP should always be used. These were revised as part of the IPCC’s 5th Review (AR5).

	PM2.5 values are disaggregated by rural, suburban and urban exposure, to reflect the increased damage costs in more densely populated areas where human exposure is higher.
6	The introduction of a carbon tax impacts on the appropriate price of CO2e for inclusion in economic appraisals. The shadow price is used to account for the external costs associated with CO2e emissions. If this is partially or fully internalised in the product or input purchase price through the carbon tax then the price needs to be adjusted to reflect this and avoid double counting. This readjustment should be performed by deducting the current level of the carbon tax (€20 a tonne) where it is included in costs.
7	CO2e emissions from materials directly attributable to the construction phase of a project which are purchased from organisations/facilities/installations operating within the EU ETS should not be included in the quantification of emissions for a project scenario as this would be double counting.
8	Direct CO2e emissions from sources within the State's jurisdiction, including those from direct construction and operation should be included in economic appraisals bearing in mind not to double count (see previous point). In certain instances consideration may need to be given by project managers to indirect emissions. For example, any rebound effects that the project may give rise to.

6.3 Valuing CO2e emissions

For the price of CO2e¹³ emissions in the non-Emissions Trading Sector (non-ETS) the following values should be applied out to 2050:

Table 6: Shadow Price of Carbon 2019-2050 (per tonne of CO2e) for the Non-ETS sector

Shadow Price of Carbon 2019-2050 (per tonne of CO2e) for the Non-ETS sector	
Year	Carbon Price Non-ETS Sectors
2019	€20
2020	€32
2021	€39
2022	€46
2023	€52
2024	€59
2025	€66
2026	€73
2027	€80
2028	€86
2029	€93
2030	€100

¹³ Carbon Dioxide (CO2), Methane (CH4), Nitrous Oxide (N2O), Sulphur Hexafluoride (SF6), Perfluorocarbons (PFCs), Hydrofluorocarbons (HFCs) and Nitrogen trifluoride (NF3)

2031	€105
2032	€110
2033	€116
2034	€122
2035	€128
2036	€134
2037	€141
2038	€148
2039	€155
2040	€163
2041	€171
2042	€180
2043	€189
2044	€198
2045	€208
2046	€218
2047	€229
2048	€241
2049	€253
2050	€265

For emissions originating in the **Emissions Traded Sector (ETS)** the price of CO₂e¹⁴ emissions should be based on the following values:

Table 7: Shadow Price of Carbon 2019-2050 (per tonne of CO₂e) for the ETS sector

Shadow Price of Carbon 2019-2050 (per tonne of CO ₂ e) for the ETS sector	
Year	Carbon Price ETS Sectors
2019	€23.6
2020	€23.6
2021	€23.6
2022	€23.6
2023	€23.6
2024	€23.6
2025	€23.6
2026	€24.7
2027	€26.9
2028	€29.1
2029	€31.3

¹⁴ Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Sulphur Hexafluoride (SF₆), Perfluorocarbons (PFCs), Hydrofluorocarbons (HFCs) and Nitrogen trifluoride (NF₃)

2030	€33.5
2031	€35.2
2032	€36.9
2033	€38.6
2034	€40.3
2035	€42
2036	€43.6
2037	€45.2
2038	€46.8
2039	€48.4
2040	€50
2041	€53.8
2042	€57.6
2043	€61.4
2044	€65.2
2045	€69
2046	€72.8
2047	€76.6
2048	€80.4
2049	€84.2
2050	€88

Table 8: Valuations for the estimated damage costs of non-greenhouse gas pollutants

Estimated damage costs in € per tonne					
PM2.5			NOx	NMVOCs	SOx
Rural	Suburban	Urban			
16,512	47,420	194,660	5,688	1,398	6,959