

2012 MTEF: Budgeting for infrastructure and capital planning guidelines

1. Introduction

The capital expenditure guidelines below provide departments and entities (hereafter “institutions”) with information to make budget submissions for capital projects and programmes. They are designed to promote efficiency in infrastructure planning and budgeting, supporting a better allocation of resources across government.

The issuance of the 2012 Capital Planning Guidelines signals the beginning of a continuous appraisal and evaluation of capital projects. Large and mega projects will now be evaluated throughout the year and the budget process provides the opportunity for appraised projects which are ready for funding to be submitted for evaluation. The capital budget guidelines are designed to ensure that funding is directed to projects that offer maximum economic and social benefits.

Because these guidelines will apply to all infrastructure and capital projects and entail appraisal activities which may be outsourced, depending upon the capacity resident in an institution, in future, each institution should include dedicated funding for project planning in its MTEF budget.

Project evaluation for large and mega projects for the 2012 medium term expenditure framework (MTEF) will be based on the infrastructure project cycle, Figure 1, on page 3 below. The capital planning process is informed by the Government Immovable Asset Management Act (GIAMA) and requires that each project submitted for evaluation be reflected in the Immovable Asset Management requirements for User Asset Management Plans (UAMPs).

The information contained in the capital request will provide insight into where in the infrastructure project cycle the proposed project is located and should match an institution’s requirements from the Budget. Funding decisions for all projects will be premised upon the results of a systematic and rigorous appraisal that will have assessed the various options available to meet an identified need and quantified the costs of the preferred option, which costs will reflect the risks assumed.

Institutions are required to carefully assess infrastructure and capital projects to ensure that they will be effective in delivering on priorities and, where possible, realise savings.

For the purposes of the 2012 MTEF, project proposals with detailed supporting documentation, should be submitted to the National Treasury by **10 August 2011**.

The type and depth of information required for appraisal will depend on the size and nature of the project. Resources spent on compiling proposals should be proportionate to the likely cost of a project, keeping in mind its nature and complexity. All infrastructure projects and major capital acquisitions must be classified according to the broad categories described below.

1.1 Classification and appraisal of capital projects

The depth of the appraisal is dependent on the size of the project. The appraisal process is applicable to all projects. The current project size definition is:

- **Mega projects** are those estimated to cost more than R400 million per year for a minimum of three years, or a total project cost of at least R1 billion. Most mega projects will customarily require a pre-feasibility study and a comprehensive feasibility study for scrutiny by National Treasury.
- **Large projects** are those estimated to cost between R90 million and R400 million per year for a minimum of three years – totalling at least R250 million per year but less than R1 billion over the MTEF. Large projects require a feasibility study for scrutiny by National Treasury.
- **Small projects** are those estimated to cost less than R90 million per year and not more than R250 million over the MTEF. Small projects with the same outputs should be grouped together in a programme for evaluation. Small projects will not be subject to detailed appraisal as required above but they should illustrate that they have been properly planned and meet the identified need and objectives of the institution.

All projects extending beyond the MTEF period, regardless of medium-term funding needs, must outline future funding requirements in the submission. Full project costs, including annual operating and monitoring and evaluation costs over the lifetime of the asset, must be reported.

1.2 Funding motivation for existing projects

Extension of existing infrastructure projects

Funding for an existing infrastructure project should be based on the need to complete or extend the project. Multiple small projects with the same outputs should be grouped together and motivated as an infrastructure programme requiring extension. Ongoing infrastructure transfers to public entities and other spheres of government that require further support may also be motivated under this category. Institutions are required to provide information on the service delivery performance of the projects as part of their capital submissions.

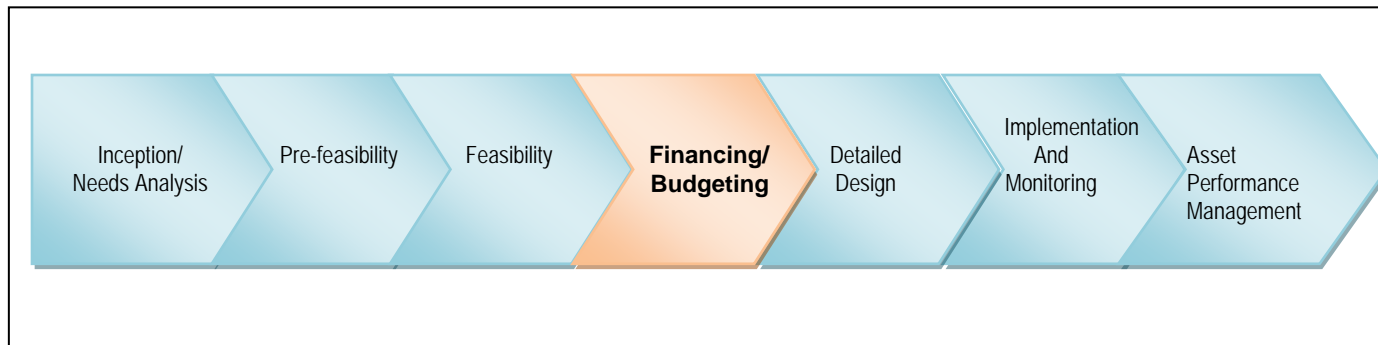
2. Funding motivation for new capital projects

The primary mechanism for motivating funding for new capital projects is, as described herein, a systematic and rigorous appraisal of the project. Institutions are responsible for this appraisal. These appraisal guidelines are designed to promote efficient project planning across government by assessing the underlying assumptions, cash flows and calculations to reach the most economically efficient decision. Project appraisal is necessary to:

- Develop and formulate potential projects precisely and concisely;

- Promote value-for-money projects;
- Identify and mitigate risks; and
- Promote transparency.

All projects go through a series of distinct stages between the initial idea for the project and the time when the project is completed. Figure 1 illustrates the stages in this project cycle.



It is important for institutions to understand these project stages and the analysis to be carried out at each stage. The project cycle allows for a logical approach to project planning that will assist in the appraisal of a project and provide the necessary information to justify an institution's funding request. Cognisance should be taken of where the project is in the appraisal cycle relative to the institution's requirements from the Budget. This guideline provides a general approach to the planning and preparation of a project and details the requirements at each stage. It also highlights the interrelationships between the project phases.

2.1 Inception/Needs Analysis

This is the first stage in the project cycle and it identifies the service infrastructure need requiring a capital expenditure. It is important to demonstrate a clear infrastructure need for a particular project and why government should become involved. The needs analysis should demonstrate alignment with government's policy direction and the fit with the institution's strategic objectives. The analysis should describe:

- The problem that has given rise to the need;
- The data, information, surveys or service-delivery indicators demonstrating the need;
- The extent and urgency of the need;
- The consequences if the need is not addressed;
- The extent of the need this request is intended to meet; and
- How the proposed capital solution to the problem fits into the institution's long-term strategic delivery plan.

The output from this stage is an articulation of the service infrastructure need.

2.1.1 Institutional requirements

There is need for an institutional organisation that will manage the different phases of the proposed project, identify issues that need to be resolved and ensure their early resolution; ensure that the required approvals and direction are obtained at each appropriate stage of the project; ensure an open information flow between stakeholders and that the necessary policies and procedures are followed.

The administrative support required to implement and manage the project is critical for the success of the project, and must be identified and not assumed that it exists. Key skills requirements must be determined and matched with the availability in the labour markets.

Outcomes from this step include:

- Project governance structure
- Staffing requirements
- Administrative systems development
- Relevant policies and procedures

2.2 The pre-feasibility study

As noted above, a pre-feasibility study is usually only required for mega projects. The purpose of the pre-feasibility study is to undertake a scoping exercise to determine the precise parameters of the project. An example might be the appraisal of a toll road project across the Kalahari.

2.3 The feasibility study

The feasibility study builds on the information from the pre-feasibility study, where it has been undertaken, and provides a more detailed evaluation of the project. Where no pre-feasibility study has taken place, the Needs Analysis (2.1, above) provides the basic information from which the feasibility study proceeds. The feasibility study confirms the need for the service and the strategic alignment with the broad objectives of the institution. The project option must be examined to determine whether it is technically feasible and meets the agreed financial, economic, and social criteria.

2.3.1 Options analysis

The purpose of an options analysis is to evaluate all feasible options to achieve the identified objective. The options analysis provides decision makers with a consistent approach to decision making that is well-informed and transparent.

The following principles should guide the options analysis:

- All feasible options should be evaluated
- The preferred option should achieve value for money
- The analysis should consider those factors crucial to the project's success.
- The preferred option should identify obvious risks and risk management mechanisms.
- A sensitivity analysis of the preferred option to changes in key assumptions should be carried out.

This guideline provides details of an options analysis. The output is one preferred option.

Step 1: Identifying options

This step involves identifying as many possible options that meet the institution's needs. A brainstorming session in which all potential options are listed is an often-used mechanism. Thought should be given to approaches which might not otherwise be considered. It is advisable to consult with key stakeholders as this is often a productive way of creating a set of implementable options. A 'do nothing' option should always be included, otherwise the status quo will not serve as a comparable base case when assessed against other options.

Step 2: Evaluate the options

The second step involves analysing the list of options and choosing the most viable. The 'do nothing' option should always be carried forward to allow comparability between the shortlisted options. This analysis identifies the advantages and disadvantages of each option in terms of the risks and benefits to government of each and how each meets the objective(s) of the project. The analysis should be based on quantifiable data. Depending on the particulars of the project, the matters to be considered when evaluating the list of options include:

Demand Analysis

The first step is to confirm that there is demand for the goods and services that will be produced by the project. This is important because levels of current and forecasted demand should be sufficient to meet the financial and economic feasibility of the project. There is need to ensure that constraints governing the volume of sales or pricing are factored into the demand forecasts.

The outcome of this analysis will give confidence on the following:

- Forecast quantities of sales and prices over the life of the project;
- Constraints such as government regulations (administered prices, ceilings, quotas including arrangements for making future adjustments to prices); and
- Other variables that affect the volume of sales or prices such as technological developments impacting on the product life cycle and subsidies.

Technical Engineering Analysis

This is an important step that determines the scale, the design, location and technology that will be adopted by the proposed project. The input parameters necessary for the construction, operation and maintenance of the project are identified, quantified and the cost approximated over the life of the project. To be able to do this it is necessary to come up with an implementation schedule that sets the output levels. The most cost effective procurement procedures are also considered at this stage. The outcomes of the analysis include:

- The technology choice for the project including designs, prototypes;
- Project size and location;
- Construction schedule and output targets;
- Input parameters and their prices including labour for the construction and operation and maintenance of the project; and
- Procurement procedures.

Environmental Analysis

Every project involving new construction or substantial rehabilitation of an existing structure will involve undertaking an Environmental Impact Assessment (EIA). In those instances where the institution is going to procure, by conventional means, the construction of a facility of its own design, the institution must undertake the EIA and obtain all necessary environmental, zoning and town planning consents. The cost of so doing is one of the costs that must be identified and quantified when determining feasibility of a particular project.

In those instances where the feasibility study is assessing whether a PPP is the appropriate procurement mechanism for a capital infrastructure project the scope of the EIA to be undertaken by the institution is limited because the final design of the infrastructure will be undertaken by a private party. Nevertheless, the cost to the institution for undertaking its part of the EIA must be assessed and included in the value assessment for the project.

Outcomes from this analysis include:

- An Environmental Impact Analysis (EIA) report
- Mitigation or displacement costs
- Necessary approvals and permits

Socio-economic Analysis

Many services infrastructure projects provide potential economic benefits to BEE and SMME enterprises and to the community in general. The implementation of a project can result in an increase in land values or in an increase in demand for affordable housing. The use of local labour and materials in a major infrastructure project also provides significant benefits to communities affected by the infrastructure project. There may also be costs not easily realisable such as congestion in the city which is emanating from the implementation of the project. All these will need to be translated into economic values.

Outcomes from this analysis include:

- Positive and negative BEE, SMME and local labour and materials economic values
- A comparison of the economic costs to these sectors in a “no project” scenario

Financial Analysis

The objective of this analysis is to establish the financial viability of the option. The financial analysis is carried out in accordance with a discounted cashflow method. It must be noted that the financial analysis is also the starting point for the economic analysis as it identifies the key input variables to be used in the analysis.

The information gathered in the steps above is compiled and used to construct a cashflow profile that identifies all the receipts and expenditure over the life of the project. This is based on the operating costs (including working capital requirements) and revenues; investment costs and residual value (in last year of project) and sources of financing (their characteristics and implications). Expenditure includes all investment and operating costs and revenues including any possible income plus the residual value. By calculating the balances, discounted at an appropriate rate, it is possible to define a financial net present value for the option that will determine its financial viability.

The financial analysis must also determine the minimum net cashflow requirement over the life of project. This must include life-cycle capital or construction costs as well as the annual operating and maintenance costs. This will demonstrate that the option is financially sustainable and will not require supplementary funding. If the proposed option is not financially viable, it is important to check whether it is viable from an economic and social point of view. If it is then consideration is given to other sources of additional funding.

Since capital projects are long-term in nature, there is uncertainty with regards to some of the assumptions used in the calculation of costs and revenues. Costs should be readjusted to reflect different scenarios based upon variations in key assumptions – e.g. what is the effect of a 10% increase in costs, or what is the effect on the cost of imported inputs if there is 5% devaluation in the exchange rate? This is an essential part of the capital bid as it will assist the project planners to be aware of how costs vary with changes in the underlying assumptions.

Example of a scenario analysis for changes in inflation

Risk Variable	Cost Changes		
	Pessimistic scenario (6%)	Baseline Case (4,7%)	Optimistic scenario (4%)
Inflation	R102 000	R100 000	R98 000

Economic Analysis

The economic analysis integrates the socio-economic analysis and the financial analysis. The purpose of the economic analysis is to appraise the option from a national point of view. It follows exactly the same steps as the financial analysis. The economic analysis builds on the financial analysis that serves to identify all the income and expenditure items at relative market prices. There is the need to adjust costs and benefits for the following distortions in order to come up with the economic cashflows of the option:

- Fiscal effects: All fiscal items (taxes, subsidies) are eliminated and market prices are modified whenever they reflect effects of a fiscal nature, such as duty, VAT and other indirect taxes. These are transfers and not cashflows.
- Shadow prices: In order to calculate the opportunity cost that reflects the true value to society. Shadow prices are used to value inputs and outputs.

Having calculated the economic cashflow, it is now possible to discount it at the social discount rate and to derive the economic net present value (ENPV). A project is desirable from an economic point of view if the ENPV > 0.

Risks and Contingencies

Institutions must assess the main areas of risk presented by a particular option that might prevent a project from delivering the anticipated outputs. The feasibility study will identify all major impacts and areas of risk for each option so that there is a good appreciation of the uncertainty and risk surrounding the choice of the preferred option.

2.3.2 Quantifying the cost of the short-listed Options

Having identified and thoroughly evaluated the options that may provide a solution to the identified need, it is important to now quantify the cost of the options that will most nearly provide a complete solution, in order to select a preferred option for funding. The analysis should look at the feasible solution options that will meet identified criteria. The aim is to identify the best solution that will meet the criteria given any constraints the institution may be facing.

The preferred option is the option that meets the project objectives most economically.

3. Implementation readiness

Institutions are required to demonstrate their capacity to implement the project as selected. Details on commencement of construction, construction duration and end date should be specified. Timelines for EIAs, land acquisition and development approvals should be outlined in the supporting documentation. Cognisance should be taken of industry interest and materials availability in outlining the institutions' readiness to implement the project.

4. Budget adequacy assessment

4.1 Adequate budget available

If there is adequate funding for the project within the current baseline, then the National Treasury may permit the institution, contingent on the results of the evaluation process, to proceed with procurement of the infrastructure.

4.2 Adequate budget not available

If there is a funding shortfall for the infrastructure project, the institution may proceed by

- (a) Motivating for additional funding to cover the shortfall; or

- (b) Commencing the processes set forth in National Treasury Regulation 16 to assess the feasibility of procuring the infrastructure as a PPP.

- (c) Re-scoping the project to fit within the available budget where feasible.

5. Asset performance management

The progress of projects appraised, evaluated and funded within the baseline or above the baseline will be monitored separately on a quarterly basis in a format prescribed by the National Treasury.