CAPITAL PLANNING GUIDELINES

1. Introduction

The capital planning guidelines below outline for departments and entities (hereafter "institutions") information on project appraisal techniques and an explanation on the kind of information that needs to be submitted to the National Treasury when a capital project is being planned. The guidelines are designed to ensure thorough planning of capital projects and the prioritisation of projects that offer maximum economic and social benefits to society, a feasible implementation plan and sound risk mitigation strategies. This will ultimately assist with improving service delivery to the public.

The appraisal and evaluation of capital projects is a continuous process which takes place throughout the year and goes beyond the period of the Medium Term Expenditure Framework (MTEF).

2. Extension of existing infrastructure projects

All submissions for existing capital projects should be based on the need to complete or extend the project. If the completion/extension was contemplated in the original planning documentation, a reference to these documents is sufficient.

However, if the additional bid is due to cost overruns or an increase in the scope of the project which was not part of the original planning documentation, a clear explanation and motivation is necessary as part of the submission.

3. New capital projects

All new capital projects are required to undergo a systematic and rigorous appraisal as described in these Guidelines. The type and depth of information required will depend on the size and the nature of the project. Resources spent on appraising capital project proposals should be proportional to the likely project cost, keeping in mind its nature and complexity.

The appraisal activities may be outsourced, depending upon the capacity resident in an institution. Institutions must provide for project planning within their current MTEF budget baselines, including, as necessary, funding for outsourced capital project appraisals.

In principle, every proposed capital project requires a separate appraisal. In some instances however, it is possible to group similar projects and submit one capital bid for the entire infrastructure programme. The projects must have the same output specifications and similar environmental, technical, legal and implementation requirements. The appraisal documentation must clearly describe the different projects making up the grouped infrastructure programme and, insofar as possible, analyse each project's need, demand and economic viability separately.

4. Minimum information required

The following information must be submitted for each capital project. While every project must address all the elements, the detail and rigor applied will be dependent upon the size and complexity of the project.

1. Preparatory Work
    - Needs and demand analysis with output specifications
    - Options analysis
2. Viability Evaluation
    - Financial analysis
    - Economic analysis
3. Risk Assessment and Sensitivity Analysis
4. Professional Analysis
    - Technology discussion
    - Environmental impact assessment
    - Legal and regulatory due diligence
5. Implementation Readiness
    - Institutional capacity
    - Procurement plan
6. Final Summary Matrix

Appraisal of capital projects is not a straight forward step by step process where the different analyses are independent from each other and can be performed in a perfectly sequential manner. Information will need to flow between the different analyses and constant feed-back mechanisms need to be in place to ensure the coherency of all the planning documentation.

5. Preparatory Work

5.1 Needs and Demand Analysis

The purpose of this analysis is to enable the institution to clearly identify its unmet service needs, spell out detailed output specifications and ascertain the extent of current and future demand for the service.

The analysis should describe:

- The problem that has given rise to the need for additional infrastructure, including an analysis of the existing asset capacity;
- The extent and urgency of the need and the quality of service currently rendered;
- Clear output specifications that describe the service the institution needs to deliver, the required minimum standards of the service output as well as the specific key indicators to measure performance;
- The data, surveys or service-delivery indicators demonstrating the current demand and estimating the future growth. The demand analysis cannot simply assume a continuation of a historic trend, but must demonstrate what long-term factors are driving demand, and how those trends may be shifting demand;
- The consequences if the services infrastructure need is not addressed;

The output from this stage is an articulation of the services infrastructure need, a specification of the output requirements and a sound demand analysis.

5.2 Options Analysis

The purpose of an options analysis is to undertake an initial high-level analysis of all feasible options that can achieve the identified output specifications. This will assist in identifying the preferred solution that will be explored in the next stage.

The options should include:

- Non-infrastructure related options such as operational or managerial reorganisations;
- Variations of the same solution option with significantly different technologies;
- A scenario which sets out the base case (the 'do nothing' scenario) where the current situation is sustained with minimal operating and maintenance investments and basic efficiency improvements.

A first high-level analysis of these options should include a qualitative listing of the advantages and disadvantages as well as preliminary quantification of the costs and benefits of each option. This comparison should allow for the development of a shortlist of 1, 2 or maximum 3 preferred options to be further assessed.

This shortlist of options can contain slightly different versions of the same general option where they differ predominantly in terms of the scope, the financing or the implementation structures.

Each of these preferred options will be separately assessed in the stages below.

6. Viability Evaluation

6.1 Financial Analysis

Financial cash flow analysis

The financial analysis entails developing a financial model projecting the cash flows for the costs and any revenue generated from the project over its lifetime. This analysis needs to be undertaken for each of the preferred options identified. If the institution lacks the capacity for developing such financial models, outsourcing this expertise should be considered.

The financial model must be informed by all the life-cycle costs to deliver the identified outputs. These include construction costs, personnel costs, maintenance costs, key input costs, overheads and financing costs, if applicable. The costs related to achieving any socio-economic targets set by the institution must also be incorporated into the financial model. All revenues generated over the lifetime of the project must be projected, bearing in mind, where applicable, the requirements of the Public Finance Management Act (PFMA) requiring such revenues to be deposited into the appropriate national or provincial revenue fund (sections 13 and 22). For some projects, this will entail projecting expected demand and fees to be charged. All assumptions should be clearly documented. The result of this analysis is a timeline on which all cash flows over

the project's lifetime, both positive (i.e. revenues) and negative (i.e. expenditures) are laid out.

For large projects with a long lifetime and solid revenue streams, it is relevant to use the cash flows estimated above and calculate the net present value (NPV) and internal rate of return (IRR) of the project, which give a first indication of the financial bankability of the project. The discount rate used in the calculations is within the discretion of the Institution but it needs to be justified.

Smaller projects without stable revenue streams that require extensive State funding should focus on the outlay of the cash flows but don't necessarily need to calculate the NPV or the IRR of the project.

Financing and repayment options

This analysis attempts to ensure that investment in infrastructure can be financed and repaid in a manner that is sustainable, affordable and fair. The information is sourced from the financial cash flow predictions prepared in the previous section as well as from the economic analysis which will be explained in the following section.

Institutions need to demonstrate that different options were investigated and specify why some are rejected and others are preferred.

The financing of a project refers to the source of cash up-front needed to construct the infrastructure. The primary financing options are budget support from the fiscus and non-budgetary financing where institutions utilise internal resources or raise funds from investors. The details of the financing structure can become very technical and complex and are dependent upon the financial situation of the institution, the market, the risks related to the project and requirements stipulated in national Acts and Treasury guidelines. The detailed financial arrangement will be set-out in the procurement plan, but the main options should already have been touched upon in this analysis. If an Institution asks for budgetary support to finance the infrastructure, it should be made clear in this analysis why other options were impossible or inappropriate.

The repayment of infrastructure refers to the stable source of funding for operating and maintenance costs and, if necessary, debt repayment. The primary repayment options are user chargers and fiscal contributions. If users are to pay, there needs to be sufficient rigor applied to ensure that there is a good reason for them to pay, that users have the ability to pay and that there is public acceptance that users should pay. The repayment burden should be allocated in line with the benefits generated by the project, as set out in the economic analysis below. If users are the main beneficiaries of a project, levying user chargers is justified.

6.2 Economic Analysis

An economic analysis is different from a financial analysis in that it analyses the viability of a project based upon economic and social welfare improvements, and not financial bankability. An economic analysis thus takes non-monetary welfare impacts into account, such as improved health, reduced accident risks, congestion and pollution. Several tools for undertaking an economic assessment are outlined below.

All projects will need to undertake either a cost-benefit analysis or a cost-effectiveness analysis for each of the preferred options. Generally, the cost-benefit analysis is more appropriate for economic infrastructure projects, e.g. transport, water, energy and communications sector projects, whereas a cost-effectiveness analysis will be more appropriate for social infrastructure projects, e.g. health, and education.

Cost Benefit Analysis

Different methodologies are available for analysing the economic viability of a project; the most common one is the Cost Benefit Analysis (CBA). A CBA seeks to establish whether a particular investment is the most efficient use of society's resources. It does this by identifying and monetising the costs to society and the benefits to society to enable comparison.

A CBA identifies and monetises every direct impact and predicts the timing thereof over the same horizon as the asset's economic lifetime. This is best presented as an economic (value) flow on a timeline, quantifying the economic costs and benefits on an annual basis. These values are then discounted back to their present values using a social discount rate.

Every preferred option will be subject to this approach. The result will then be a comparison of every option with the base case "do-nothing" scenario and a ranking of the different options in accordance to their net welfare benefit to society.

The result of a CBA is best reported in the form of an Economic Net Present Value (ENPV) which are the costs subtracted from the benefits or in the form of a Benefit-Cost Ratio (BCR) which is the ratio of the benefits over the costs. A project that will benefit the country will have an ENPV larger than zero and a BCR larger than one.

Cost Effectiveness Analysis

Cost-effectiveness studies are appropriate where project options must be compared but assigning a monetary value to the desired outcome would not be appropriate. This usually applies to projects that do not represent an economic activity, such as social, health or human rights projects, and where a needs analysis has been informed by a defined social requirement.

Decision-making in these cases is focused on finding the solution that is the most efficient in realising the desired project outputs, and the results of the studies are therefore expressed as a ratio (cost per 'unit' of benefit).

The cost-effectiveness analysis analyses the costs of a project in exactly the same manner as a CBA. However, the benefits are described in a very specific non-monetised way such as 'number of HIV tests conducted' or 'number of lives saved per year' or 'number of children vaccinated'. The results are then presented as the cost per 'unit' of benefit (1 HIV test, 1 life saved, or 1 child vaccinated). The project with the best ratio is the one with the optimal scale that uses the resources the most efficiently. In certain occasions however, there is a particular threshold (minimum of 10.000 vaccinations) that needs to be reached before comparing projects on the efficiency ratio.

The cost-effectiveness analysis allows Institutions to assess projects without having to monetise social benefits.

Economic Impact Assessment

Once the viability of one or more project options has been demonstrated through cost-benefit analysis or cost-effectiveness analysis, it may be necessary to do further analysis to identify the macro-economic growth effects, spill-over effects, or distributional impacts.

If the proposed project is so large, capital intensive or import reliant that it might influence national or sectorial GDP, the balance of payments or the exchange rate, a macro-economic impact assessment is required.

If the project has the potential to affect a particular social group, a region or a sector, a micro-economic impact assessment is required. The assessment allows for the identification of the losers and the winners from the project and the judgement of whether these distributional impacts are aligned with Government priorities. If the potential losers are identified as an already vulnerable group, this might require mitigation actions to be undertaken. The project's scope and financial structure must be aligned towards the findings in the impact assessment.

The results of these impact assessments can assist in prioritising viable projects on the basis of other developmental goals such as impact on rural or regional development, industrial expansion, potential for job creation or losses, or reduction in inequality; or for large projects, their impact on exchange rates, balance of payments, inflation, and GDP growth.

Methodological tools for analysing these impacts are Social Accounting Matrices (SAMs), Input Output tables (I/O), Computable General Equilibrium models (CGE) and simple surveys and public consultation.

6.3 Risk assessment and sensitivity analysis

The outcomes of both the financial and economic analysis are based on certain modelling assumptions and risk predictions. These assumptions need to be scrutinised and tested to ensure that the project remains viable even in an unsecure environment.

Large projects with significant technical, financial and economic risk are required to undergo a qualitative as well as quantitative risk assessment. Smaller projects with limited technical or contextual risk, must attempt to draw up a risk matrix where all the potential risks are listed and the likelihood and impact of the identified risk on the project is qualitatively described and controls or mitigating actions identified.

A risk assessment looks at all risks related to a project and assesses the impact of these risks and if mitigating actions are possible. For certain projects where uncertainty is significant and involves large financial risks, presenting a risk-adjusted costing model is crucial. Costing for risks is then undertaken by identifying all the risks, approximating the financial impact they will have on project costs and revenues and estimating the probability of occurrence of the risk event.

A sensitivity analysis tests the impact of changes in various modelling assumptions on the viability of the project. After the financial model has been finalised, sensitivity analyses need to be undertaken in order to determine the resilience of the cash flows to changes in assumptions over the project's life-cycle. Adjusting each variable individually

by a given percentage and then stress-testing project viability will highlight which assumptions are the most vulnerable. The impact of changes in these assumptions on the NPV and IRR should be determined.

7. Professional Analysis

7.1 Technological discussion

This is an important step that determines the optimal scale, design, location and technology that will be adopted by the proposed project. This technical feasibility assessment must go into much more detail than the listing of the different technologies undertaken in the options analysis.

For straightforward projects, where the technology risk profile is known, the technical assessment can be relatively brief. An introduction to the chosen technology and design as well as a proven track-record of this technology in other projects would be sufficient.

For larger and technically more challenging projects, however, the technical assessment is crucial and needs to be accomplished accurately and thoroughly. The technical feasibility will then inform the financial analysis, through providing detailed clarification on the costs of construction, operation and maintenance of the project and identifying potential risks. Different technology choices for the project, including designs and the need for prototyping should be assessed to determine whether they will be viable for delivering the desired project outputs. In addition, potential locations for the project should be assessed to determine their viability, including geological and heritage aspects.

7.2 Environmental Impact Assessment

Every project involving new construction or substantial rehabilitation of an existing structure will involve undertaking an Environmental Impact Assessment (EIA). The extent of this assessment is defined by the relevant legal documentation with which Institutions need to comply.

Outcomes from this analysis include:

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

Identified costs and risks must be taken into account in the viability analysis. Institutions should note that EIA can be very costly and can extend over a protracted period of time hence the need for an EIA should be recognised early so that adequate budgetary provision can be made for such costs.

7.3 Legal and Regulatory Due Diligence

A legal and regulatory due diligence study should confirm that the project will be able to comply with all regulatory requirements, identify any risks and obligations that could increase costs of or decrease benefits. The cost of compliance must be included in the financial and economic analysis.

The analysis should also demonstrate that the proposed project is consistent with the institution's strategic objectives and mandate as well as with government's policy direction.

Typically the analysis will include an assessment of the following:

- Sector legislation, policies and regulations
- Tax legislation
- Labour legislation
- Environmental legislation
- Heritage legislation
- BBBEE legislation and Codes of Good Practice
- Local procurement requirements
- Foreign exchange requirements
- Zoning and town planning requirements
- Building codes
- License requirements
- Site ownership and/or access approvals

8. Implementation Readiness

8.1 Institutional Capacity

Sufficient capacity to deliver the project on time, on budget and to specifications should be demonstrated clearly. An institutional arrangement that is conducive to effective delivery is critical.

Analysis to ensure that the institutions responsible for implementation, including project management, and operational responsibility will be appropriate to the task, should demonstrate that:

- Institutions have an appropriate mandate;
- Suitable incentives or penalties are in place to ensure delivery;
- Accountability, transparency and appropriate risk allocation are guaranteed;
- There are no governance issues that may affect implementation;
- The relevant institutions have, or can access, the required capacity.

If necessary, a plan for institutional capacity building should be included in this analysis. This includes sufficient planning, procurement and skills transfer of the required technical expertise. Options for enhancing implementation potential include in-house training as well as various forms of partnering with the private sector.

8.2 Procurement Plan

A procurement plan must be submitted. The plan needs to demonstrate that the proposed procurement method is the most appropriate for the project and will result in achievement of the targeted outcomes. This includes indicating the procurement methodology that will be employed and how it will be managed.

The plan will include a description of the bidding and bid evaluation process, a high-level project plan key milestones and timelines as well as the envisaged institutional and financial arrangements.

9. Final Summary Matrix

In the final summary matrix, the different options are compared with each other on all the aspects addressed throughout the planning process and a final justification for the preferred option is presented. The result is a clear reasoning as to why and how the preferred option was chosen.