



Department of Treasury and Finance

Projects and Government Enterprises

“Partnerships SA”

Private Sector Participation in the Provision of Public Services

Guidelines for the Public Sector

Document summary

Status	Administrative instruction endorsed by Cabinet
Agency responsible	Department of Treasury and Finance
Applicable to	All agencies
Scope	Applicable to arrangements between the private and public sector that involves the development of infrastructure and the provision of services under public – private partnership arrangements.
Relationship to other Government Policies	Replaces Provision of Infrastructure: Guidelines for the Private Sector (Project Handbook) Complementary to Guidelines for the Evaluation of Public Sector Initiatives, Treasury and Finance, 2007 and Project Initiation Process, Treasury and Finance, 1997
Effective Date	1 September 2002
Revision	October 2004 July 2007 (Branch Name update only)

Contents

Introduction	3
Guiding principles	6
The Procurement Process	10
Project Initiation	11
The Outline Business Case	12
Project Development	16
Cabinet approval and Market testing	17
Cabinet approval and tendering.....	17
Assessment of bids.....	18
Commitment to proceed	18
Negotiation and contractual agreements	18
Contract summaries and review	19
Related Matters.....	20
Accounting for infrastructure transactions.....	21
Attachment A: Types of projects envisaged.....	22
Attachment B: Risk apportionment	23
Attachment C: Design of the output specification	25
Attachment D: The Public Sector Comparator	28
Attachment E: Risk analysis	34
Attachment F: Disclosure of contractual information	48
Appendix 1: Accounting classification of PPP transactions	49
Appendix 2: Adjustments for competitive neutrality	53
Appendix 3: The cost of capital and discount rates	55
Appendix 4: Risk matrix	58

Acknowledgement

The SA Department of Treasury and Finance acknowledges the significant body of work that has been completed by other jurisdictions, particularly Her Majesty's Treasury in the United Kingdom and the Department of Treasury and Finance in Victoria, upon which a portion of these guidelines has been based.



Introduction

The South Australian Government recognises the critical importance of infrastructure in fostering a more productive economy. The Government is committed to encouraging private sector investment in public infrastructure where such investment brings clear benefits to the community. *Partnerships SA* is a procurement program for the private and public sectors that seeks to promote private sector participation in the delivery of Government services to the community where there are sound reasons to support this approach.

The Government is strongly opposed to privatisation. Partnering arrangements are not privatisation. Under a partnering arrangement, the Government retains a key strategic interest in the infrastructure and strong policy control over the services delivered, and in many cases, shares the risks of the project in agreement with the private sector partner over the life of the service agreement.

In striving to improve the range and quality of public services, opportunities will exist to harness the potential of both the public and private sectors. The private sector can contribute innovative ideas and commercial discipline to the process. Equally, the public sector has a crucial role to play in protecting the public interest and safeguarding taxpayers' funds, having responsibility for deciding the level of services required given available resources and establishing and monitoring safety, quality and performance standards.

There is therefore the potential for the private sector to be involved in a broad spectrum of the Government's public capital works program beyond the traditional design and construction of public buildings and facilities. The forms of public-private involvement range from operating contracts over publicly owned facilities to ownership of infrastructure assets where services are either purchased by Government or directly by the community. The types of projects envisaged by the Government in engaging the private sector are provided in Attachment A.

The Government's Approach

In considering private sector participation in public services, the Government will need to be satisfied that a number of key criteria are met. These criteria are as follows:

- private sector involvement must deliver a net benefit to Government, having regard to the risks of the project, compared to traditional public sector delivery;
- the risks associated with the project are clearly identified and allocated to the parties best able to manage those risks;
- projects are subject to a competitive bidding process. Direct negotiations may be entered into only under a limited set of circumstances; and
- probity is maintained during all phases of the process.

The Government recognises that indirect contributions may be necessary in some partnerships arrangements, for example, the cost of maintaining land leased to the private

sector or expenses incurred in assisting the private sector obtaining the necessary planning and environmental approvals for a particular project. However, having capital at risk in the partnership arrangement creates a powerful incentive for the private sector partner to deliver outcomes of a standard required by the Government and it is expected that the private sector will retain equity in the partnership for the entire concession period.

Objectives And Scope

The objective of the guidelines is to provide a set of principles that enable the public and private sectors to enter into mutually beneficial commercial arrangements for the delivery of public services to the community.

The Cabinet, or alternatively the joint approval of the Minister and Treasurer, has the discretion to decide if a project should be considered as a potential public private partnership. The *Partnerships SA* guidelines have been designed to assist agencies to investigate the suitability of a particular project for delivery as a public private partnership.

Unless otherwise decided by Cabinet, South Australian Government agencies are expected to follow these guidelines as closely as possible when contemplating private sector participation in infrastructure development or the provision of public services.

These guidelines relate to the provision of infrastructure or services to the public sector by the private sector, usually of a long-term nature, encompassing the design, construction, management and ownership or use of long life assets under a whole-of-life commercial arrangement between the public and private sector. The guidelines will not normally apply to short-term projects or public works contracts, such as refurbishment or facilities maintenance of public buildings and the associated financing arrangements. Projects of this type are subject to the Government's general procurement policies and are therefore not subject to these guidelines.

Through these guidelines the Government aims to:

- encourage joint participation between the private and public sectors in the design, construction, financing and management of infrastructure projects and the delivery of associated services to the community;
- provide guidance to the private sector in the policy issues relevant to private sector participation in public services, particularly the assessment and approval processes required for a given project;
- provide agencies with guidance on how to engage with the private sector;
- build on existing activities aimed at encouraging a more efficient public sector in joint enterprise with the private sector;
- encourage development of innovative and viable approaches to infrastructure; and provide a mechanism by which such proposals can be brought forward.

The Projects And Government Enterprises Branch - PGE

The purpose of the Projects and Government Enterprises Branch (PGE) is to facilitate private sector participation in infrastructure development where appropriate. Located in the Department of Treasury and Finance, the Branch reports directly to the Under Treasurer. Agencies are required to consult with PGE in regard to all public private partnerships in South Australia.

The PGE operates as a consultative body to agencies seeking to engage with the private sector in infrastructure development and the delivery of public services to the community. The PGE's primary role is to ensure that proposed projects conform to the guidelines and the procurement processes as specified in this statement. In undertaking this role, PGE seeks to ensure that:

- all proposed projects are subjected to objective and thorough analysis based upon an unbiased evaluation of the costs, benefits and risks to Government;
- projects to be delivered by the private sector are assessed on the basis of the private sector's ability to deliver an improvement in the risk-adjusted, whole of life cost of the project compared to conventional procurement methods;
- the private sector is given every opportunity to participate in potential projects supported by a process that is flexible, promotes competition, is transparent to all parties and preserves the highest standards of probity and confidentiality; and
- the private and public sectors enter into mutually beneficial arrangements based upon sound commercial principles, within a framework that promotes trust and respect for the interests of all stakeholders.

It is important that all agencies adopt a consistent approach and process to public private partnerships to ensure that the private sector retains a high degree of confidence in the South Australian government. Consistency of approach and process are also important factors in containing transaction costs. In this regard, the South Australian government is working with other Australian governments to achieve a greater level of consistency and standardisation across Australia.

Guiding Principles

The Government has endorsed a set of guiding principles for private sector involvement in infrastructure projects. Agencies seeking to enter into commercial arrangements with the private sector will need to demonstrate conformity with these guidelines in order to proceed.

A project team must be established early in the process

Agencies contemplating engaging with the private sector in the delivery of a particular project must establish a project team as soon as possible in order to scope the project and develop a project management structure. The project team leader should report to the agency chief executive or a nominated delegate, and it is the responsibility of chief executives to ensure that the project is adequately resourced at all times. Clear project objectives should be established as early as possible and there should be clear lines of accountability for achieving these objectives.

The project team members should be selected on the basis of their skill and experience. The skill requirements of the team will change over time, so it is important that the team has access to necessary skills when required. For example, negotiating skills may not be a key skill requirement at the commencement of the project, but will be critical at the tendering and negotiation stage.

The project team must maintain adequate records of the project development process, including minutes of team meetings and a clear record of decisions taken.

External advice should be sought in cases where the required skills are not available in-house. The appointment of advisers is subject to the Government's current guidelines on the appointment of consultants and advisers.

Project outputs must be clearly specified

It is essential that the Government's expectations are clearly stated and understood by prospective proponents to avoid misunderstandings and costly delays. A public private partnership is first and foremost a method of procurement that seeks to achieve value for money for the Government. The level and quality of services to be delivered must therefore be defined in terms of the policy objective supporting their delivery. Agencies should assess service requirements strictly from this policy objective to avoid either wasteful over-servicing or falling short of community expectations by setting inadequate service standards. The focus of this analysis is on defining precisely the services to be provided by the private supplier, *not* how they are to be delivered.

The outputs to be achieved by the project must be clearly specified well in advance of any approach to the private sector. To this end, agencies should develop a comprehensive output specification that provides detailed information of the outputs to be achieved and the standards of performance expected of the provider. Documentation will concentrate on functionality and performance rather than prescriptive technical specifications over and above the minimum quality standards that may prevail in the design of particular types of assets.

The principal objective of the output specification is to allow suppliers maximum flexibility in designing and delivering efficient and effective outputs and should therefore not attempt to define project inputs or how these outputs may be achieved.

Project risks must be identified, measured and allocated

The apportionment of risk to whichever of the contracting parties is able to manage them at least cost is essential to achieving value for money.

Risk sharing between the proponent and the Government must reflect a realistic assessment of benefit apportionment in achieving service objectives. The commercial benefits to be derived from the project must be commensurate with the level of risk assumed by the proponent.

The identification of project risks relies to a large extent on the skill and judgement of the project manager and project team. Risks vary considerably according to the type of project being undertaken, and it is the responsibility of the project team to identify all material project risks.

The level and type of risk to be assumed by the Government must be understood prior to any short-listing of potential proponents and must be both finite and transparent. The apportionment and pricing of risk, however, is a dynamic process that is often finalised only during the negotiation stage, so that project managers need to retain a flexible approach to the risk management process and the impact on project outcomes that different risk profiles may present.

A fundamental principle in risk allocation is that project risks should be allocated to the parties that are best able to manage these risks. The agency's objective must be to achieve an *efficient* transfer of risks, not simply to avoid as much risk as possible. There are some classes of risk, for example, a change in enabling legislation or government policy that the private sector can never manage efficiently and are always retained by government. Other risks may be shared, for example, the risk of obtaining the requisite planning approvals. Value for money is maximised when the allocation of risks achieves an *optimal* balance in view of the risks and expected rewards attributed to each party's role in the project.

The main classes of risk that will be apportioned are described in Attachment B.

A public sector comparator must be applied

The project must be able to demonstrate that, on a whole of life basis, the cost to the community of the project provided by the private sector is lower than for the equivalent project provided by the public sector. To ensure the analysis of the two alternatives is comparable there will need to be a proper accounting for quality of services, price, time frame, risk apportionment and certainty. Agencies should therefore develop an appropriate benchmark, or Public Sector Comparator (PSC), to provide an assessment of the project's cost effectiveness if wholly delivered by the public sector, against which private sector proposals can be compared.

As a benchmark, the PSC should be developed ahead of seeking to engage the private sector. In the majority of cases, previous project viability studies should provide the basic framework for the comparator, which, when finalised, is to be used as a stable reference benchmark. The comparator should not be changed or re-specified after engaging with the private sector unless there are fundamental changes in the nature of the project (eg a change in risk apportionment amongst the parties) after this time.

The project must deliver value for money to Government

The principal acceptance criterion in the assessment of private-public arrangements is the cost effectiveness in meeting the Government's economic and social objectives. The cheapest proposal (in nominal money terms) is not always the most cost-effective proposal.

Value for money is achieved when the most cost-effective solution is provided, having regard to the allocation of risks of the project between the public and private sectors.

Value for money should be evident from the comparison of private sector proposals relative to the PSC. Agencies should not seek to enter the short-listing stage unless the potential for value for money is evident. If this is not the case, consideration should be given to abandoning the private sector option.

Competitive tendering must be undertaken

Competitive tendering is the primary means of achieving value for money for Government. Competitive bidding by proponents establishes a transparent market for the project, without which it is difficult to ascertain the actual value of the project. It is the best means of ensuring that risk is priced efficiently.

Agencies should assume that all new proposals will be subject to a competitive bidding process, in accordance with Treasurer's Instruction Number 8 *Expenditure for Goods, Services and Works*. The circumstances under which the Government may entertain direct negotiation or some other form of exclusivity are where:

- a high degree of innovation is evident;
- considerable resources have been expended in developing the initial proposal and other potential tenderers are unlikely to offer a proposal of equivalent standard within a required time frame; and
- the project has considerable community benefit, which in other circumstances is unlikely to be achieved.

Formal tendering may be undertaken either under open competition or by invitation to proponents that have responded to a call by the agency for expressions of interest in the project. The decision as to the scope of the formal tender will depend upon the agency's assessment of the likelihood of achieving a better outcome from an open or restricted tender. This will depend upon a number of factors, including, for example:

- whether the project was initiated by the private or public sector;
- the market is restricted due to the highly specialised nature of the required services; or
- the range of prospective proponents was adequately identified in market testing, usually by calling for expression of interest.

The overriding principle in regard to tendering is that the process must be able to demonstrate fairness amongst competitors while retaining competition throughout the tender process to maximise value for money.

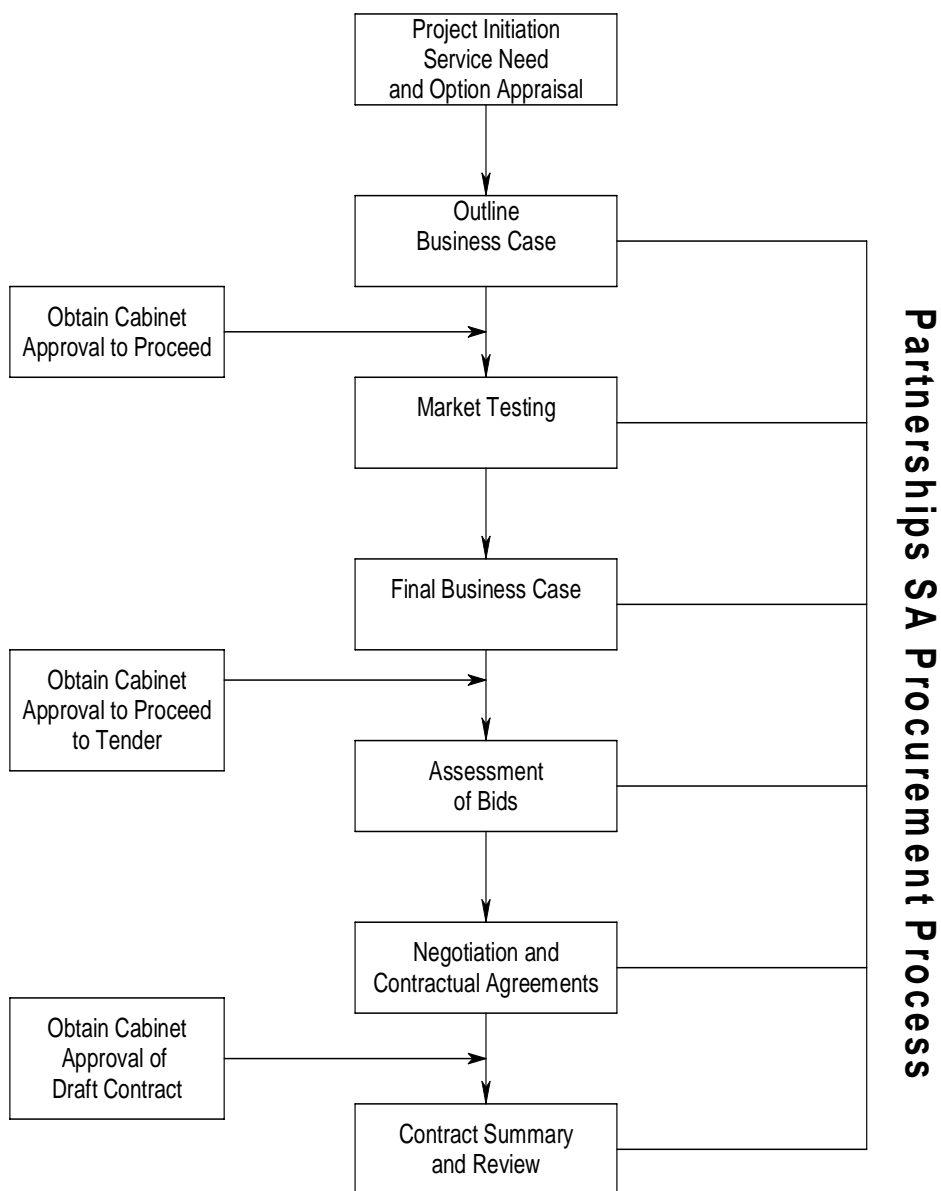
Probity must be maintained throughout the process

Probity is essential to ensuring that decisions are made free of conflicts of interest or biased information and maintaining fair and competitive bidding processes. The failure to observe strict probity protocols jeopardises the Government objective of receiving value for taxpayers' money and delivering optimal solutions to the community.

The project management framework must ensure that adequate probity processes are in place for the entirety of the project. The process must address all key probity issues, particularly mechanisms to manage potential conflicts of interest, protection of confidential information and ensuring equality of access for all proponents.

The Procurement Process

The key steps in the *Partnerships SA* procurement process are summarised below. These guidelines provide information on the main elements of each step, which are supported by technical information in the attachments as required.



Project Initiation

Consider service needs and outputs

Traditionally public sector procurement has focused primarily on the **assets** that are required to support the delivery of services to the community. The *Partnerships SA* approach focuses primarily on the **services** to be delivered to the community and not on prescriptive solutions or predefined inputs. An important source of value for money in a public private partnership is to provide the private sector the opportunity to devise innovative solutions or introduce design efficiencies that reduce ongoing operating costs. The public private partnerships approach also requires careful consideration by agencies of likely service needs well into the future, which implies that periodic benchmarking regimes must be included in service specifications to provide a flexible means of expanding, contracting or enhancing service delivery over time.

Project objectives must be defined in precise terms, which nevertheless should be sufficiently broad to accommodate any changes to definitions of service needs, as they may be refined during development of the project.

If the department and the Minister consider that meeting an identified service need has a sufficiently high priority, the next step involves the identification and appraisal of the options available to meet those needs.

Identification of delivery options

Partnerships SA opens up a range of options for delivering infrastructure and has some advantages over traditional procurement methods depending upon the particular project. However, it does not suit all needs and other options should be properly considered before a preferred delivery mechanism is recommended.

Consideration of a public private partnership solution will depend principally upon two preconditions, which are:

- the extent to which outputs may be clearly specified in a service contract and whether there is sufficient operational content in the project to support ongoing provision of services by the private sector; and
- the extent to which project risks can be efficiently transferred to the private sector, a key element of the options appraisal.

The allocation of risks between the public and private sector will form the backbone of any eventual service contract, so it is crucial that the project team has a clear view of the project's risks as early as possible in the procurement process.

The financial model should provide a summary of the cost of each option expressed as present values. In the majority of cases, the public sector option is a suitable reference point for developing the Public Sector Comparator if a public private partnership is the preferred option.

The effect of the project on forward capital and recurrent expenditure should also be provided as a test of the affordability of the project against current forward expenditure estimates as approved by Cabinet.

Option Appraisal and Outline Business Case

The option appraisal stage is potentially the point of departure between conventional procurement and a partnership arrangement between the public and private sectors. If a public private partnerships solution is recommended, an outline business case must be developed to allow the Government to form a view on the merits of a partnerships approach before significant resources are expended on developing the detailed elements of the project. The outline business case is discussed in detail in the following section.

Consultation with PGE

The PGE must be consulted during all stages of the project. However, it is essential that the PGE be involved as soon as it is apparent that the participation of the private sector is a possible option. From that point the PGE will work with the agency to progress the project through to completion of the contract or, where it is evident that the project cannot be successfully delivered under a public private partnership, the abandonment of this option.

Private sector initiation of projects

Projects may be initiated by the private sector from its own assessment of the Government's potential service needs, or drawn from the annual list of capital investment projects published by the Government.

Private sector proponents should have regard to the Guiding Principles in this document when framing project proposals. Proposals must demonstrate that the outputs to be delivered are the most effective means of meeting identified needs and that the proposal offers value for money to the Government, having regard to the risks of the project and the party that will be expected to manage those risks.

Private sector proponents intending to initiate projects should also be aware of the Government's commitment to competitive tendering. In principle, agencies will not deal with proponents on an exclusive basis unless there are sound and justifiable reasons for doing so. Proponents should nevertheless be confident that in the event that the project is committed to competitive tendering, strict rules of confidentiality and the highest standards of probity will be applied to their proposals. The Government is committed to ensuring that intellectual property and any competitive advantage proponents may have in initiating projects, is preserved.

The Outline Business Case

Development processes

The development of the outline business case is a key step in the decision making process and is essential to receiving in-principle funding approval for the project. The purpose of the business case is to provide Cabinet with a comprehensive overview of the project and the rationale for proceeding with the project as a public private partnership.

The detail of the business case will vary according to the type of project. However, as a guide it should as a minimum include:

- project structure and objectives and summary of the delivery options considered in the project initiation phase;
- outputs to be delivered, in the form of a comprehensive Output Specification;
- risk analysis and risk management strategy, including a preliminary risk allocation;
- indicative project cost and a preliminary PSC (which is refined into a final PSC prior to the commencement of the tendering process)
- government support required;
- market appetite;
- proposed performance measurement and payment mechanisms;
- report on consultation with stakeholders, where appropriate; and
- project timetable and resources.

The Output Specification

The community expects to receive services in the form of outputs. The means by which these outputs are achieved is important only in so far as the delivery of outputs does not waste scarce resources. The accurate and detailed specification of outputs helps to ensure that only the required amount of resources is consumed to produce the outputs.

What are outputs? The following are examples of outputs and the associated input:

- access to healthcare is the output of a hospital;
- vocational education is the output of a university or college;
- serviced accommodation is the output of an office building; and
- the accommodation of offenders is an output of a prison.

A clear and accurate statement of core requirements - outputs - is crucial to developing an output specification that will underpin the entire project. A clear specification of the core requirements is essential, as this will define the elements of the partnerships contract that cannot be varied if the defined service need is to be met.

Other aspects of the output specification are largely discretionary in nature, but must be clearly distinguished from the core requirements. The inclusion of discretionary elements enables tenderers to offer innovative or “packaged” solutions that may provide better value for money.

Deciding which elements to include or leave out is a matter of skill and judgement. Including unnecessary information may confuse the essential issues. The primary task is to include all such information that provides a better understanding of the needs to be serviced. The output specification should, as a minimum, contain the following elements:

- the policy outcomes and context within which the outputs are required;
- a statement of the agency’s requirements in clear and concise terms;

- ensure that all relevant information required by proponents to prepare their bids for the services is included;
- encourage proponents to develop innovative solutions if possible;
- specify any constraints that are essential to delivery, eg planning requirements;
- provide a briefing on the major risks that the private sector will be required to manage; and
- indicate, to the greatest extent possible, the standard or quality of output required and the expected timeframe for delivery.

Privately supplied infrastructure projects are generally procured through a negotiated procedure. The output specification must be a flexible document that can be refined as circumstance changes, but only to the extent that it does not provide an unfair advantage to any particular proponent or group of proponents, or impede the delivery of the core requirements.

It is essential that the project team have due regard for probity at all times in developing and refining output specifications, particularly the protection of innovative ideas or intellectual property. Under no circumstances should the intellectual property of bidders be included in the output specification without the prior consent of the owner of the intellectual property.

The majority of infrastructure projects entail lengthy contractual arrangements, often twenty-five years or more. The services required at the beginning of the period may vary considerably over the life of the agreement. The potential for variation in services, where applicable, needs to be addressed in the output specification. This is usually achieved through pre-specified benchmarking reviews.

The output specification will need to be fixed before invitations to tender are issued. Care must be taken that the final output specification is not framed in a manner that may unjustifiably favour a particular solution.

Further guidance as to the design of the output specification is provided in Attachment C.

The Public Sector Comparator

The purpose of the Public Sector Comparator (PSC) is to:

- determine whether there is value for money in delivering the project as a ; and
- provide a management tool to the project team during the procurement process.

The PSC is essentially a refinement of the feasibility analysis completed in the project initiation phase that incorporates the outputs identified in the output specification. While the feasibility analysis is intended to identify whether the project provides positive benefits to the community net of costs, the PSC provides an assessment *a priori* that the project provides value for money to Government.

The PSC should not be used solely as a pass/fail test. Although the PSC will facilitate pass/fail decisions when there is a wide difference between the PSC and private bid prices, public private partnerships procurement is a complex process that relies to a large extent on judgement, skill and experience. In the majority of cases, the difference between the PSC and the private sector proposal will be relatively narrow, and arguably a properly constructed PSC should logically lead to this outcome. Consequently, the agency will need to make

professional judgements as to the value for money to be derived from contracting with the private sector. The PSC is the primary management tool for assisting these decisions.

A PSC is not required for financially freestanding projects that do not rely on budget outlays or where delivery by the public sector is not contemplated.

The PSC is also closely related to the benchmarking that agencies would normally undertake to assess the efficiency and effectiveness of outputs. The PSC represents the base case for the quantity and quality of service outputs that can be delivered by the agency within current resource constraints, adjusted for competitive neutrality effects, for example, taxes and charges or exemptions from legislation or administrative regulations.

The starting point for the PSC is to identify all the costs and benefits to the agency as if it were to deliver the full range of outputs as a conventional procurement. The major part, if not all, of the PSC can be derived from the analysis undertaken in the project initiation phase. This will include the cost of assets such as buildings or equipment procured conventionally, as well as the whole of life operating costs of those services and any external income. The final PSC will include the costs of the risks being retained by the public sector and identify those to be transferred to the private sector.

Performance standards

The PSC must establish the standard of service to be delivered by the public sector, including the minimum standards required by law (occupational health and safety, environment, etc.). The standard and quality of service should be assessed realistically in view of current resource constraints, not an “ideal” outcome. Care must be taken not to introduce optimism bias into the model.

Identification and allocation of risk

The costing analysis of the PSC must make full account for all the risks that the project might transfer to the private sector. In a conventionally procured solution, the agency may be bearing not just the risks associated with delivering the infrastructure, such as time overruns, but also all the risks that might affect the operating costs over the longer term. These may include changes in demand for the services, asset maintenance, utilities, wages, technological obsolescence and residual value. All these elements must be included in the comparator if a fair evaluation is to be made.

Guidance on the development of the PSC is provided in Attachment D.

Risk analysis

Risk analysis merits detailed attention because the final allocation of risks between the private and public sectors forms the backbone of the service contract and is the primary determinant of value for money. The identification, valuation and allocation of project risks are part of an iterative process that is refined throughout the project’s development and is incorporated in the overall costing analysis in the final business case.

The risk analysis should provide a summary of the risks that can be transferred to the private sector and, where possible, an estimate of the expected cost of transferring those risks. The

initial risk allocation should be based upon an objective assessment of which parties to the project are most capable of managing a particular risk or group of risks.

A thorough financial model is the principal mechanism for determining if a given project is potentially a viable PPP. The analysis in the financial model should be presented in the form of a scenario analysis incorporating all project risks and must encompass the entire life of the project to ensure that risks that may arise in the future are identified and valued.

Risk analysis is discussed further in Attachment E.

Payment mechanisms

The basis upon which the private sector will be remunerated for services delivered is an integral component of the output specification. As a general guide, payment mechanisms should be structured that:

- reinforce the behaviour expected of the private sector to achieve policy objectives;
- involve significant performance-based incentives and penalties;
- are commensurate with the expected quality of the service. Payment is made for results achieved, not tasks or processes completed; and
- reflect the real risks the private sector carries to support the expected outcomes.

While standard commercial contracts usually provide for penalties in the event of a breach of contract, material breaches often have to be addressed through a lengthy judicial or arbitration process. The service mechanism must therefore be structured so as to minimize the potential for errors in interpretation and the possibility of protracted disputation.

The terms of the payment mechanism must be unequivocal, simple to apply in practice and linked to outcomes that can be objectively observed and measured. It is also important that payments are made for specified services of a specified quality and no more. The private sector should not receive any additional remuneration for the provision of discretionary services or services of a higher standard than specified. Incentive payments should be linked to a predetermined service objective and clearly specified in the service contract.

Incentive payments and penalties for substandard outcomes must be commensurate with the relative importance or priority of the service received. Penalties for critical service failures will be greater in monetary terms than for services of lesser importance.

Project Development

Projects often involve complex processes and require an adequate commitment of resources to all stages of the project process. It is essential that continuity be maintained throughout the process to avoid delays and potential errors in decision-making through inadequate information management and communication within the project team and senior management. It is therefore essential that a project team is established at an early stage in the project, and that it operates with a clear set of objectives and lines of accountability.

The project management framework is determined largely by the complexity of the project. Project teams need to operate within an established governance framework, with the objective of ensuring that adequate resources are committed to the project, the project team is set clear

objectives and realistic timeframes, and the project management process is transparent to all interested parties. Ideally, complex projects should be managed by a Steering Committee comprising relevant stakeholders to oversee the project's implementation.

Project team members should be selected on the basis of the particular skills required for each stage of the project, and membership may vary through time as the project moves through the various stages of project specification, financial modelling, tendering, assessment, contract negotiation and project implementation.

Cabinet Approval And Market Testing

The outline business case must be provided to Cabinet for approval. Cabinet approval is also required for agencies to seek Expressions of Interest (EOI) from the private sector. The EOI brief will be expressed on a broad needs basis via the output specification. To reduce the expense of the EOI process to both public and private sectors, the Government requires only sufficient information from which to be able to assess the ability of the private sector to deliver the specified outputs and receive initial estimate of the cost of private sector delivery. Information received from the EOI can be used to refine the outline business case and discretionary elements in the output specification

The Government has advised that for PPPs it will allow the lodgement of expressions of interest, rather than full proposals. This will enable a short-list of preferred bidders to be selected at an early stage and reduce much of the uncertainty and costs for private sector bidders. Accordingly depending upon the outcome of the EOI, the agency may decide to terminate further involvement of the private sector, provide an Invitation to Negotiate (ITN) to respondents or proceed to open tender. An ITN approach may be chosen, for example, if the outcome of the EOI suggests that only a limited number of respondents are likely to satisfy the project criteria and output specification. Open tender is appropriate where there is a relatively large field of prospective proponents and it is difficult to exclude a proponent or group of proponents solely on the basis of information received in the EOI.

The EOI and ITN must specify clearly that the responses do not under any circumstances commit the Government to proceeding with the project.

Cabinet Approval And Tendering

A full business case must be prepared for Cabinet approval before going to tender or issuing ITNs. The full business case is essentially a refinement of the outline business case with a more detailed assessment of the benefits to be derived from undertaking the project as a public private partnership. Following Cabinet approval, the relevant Minister assumes responsibility for the tender or ITN. Agencies should refer to *Contracting Out and Competitive Tendering: Guidelines for the Private Sector* when conducting tenders and ITN's.

The PGE will participate in the tendering and ITN processes and be part of the negotiating team. In the majority of projects, the significant element in negotiations will concern risk transfer and the pricing of risks. It is therefore essential that the financial expertise of the PGE and the project-specific expertise of the agency be brought to bear on these issues. The PGE will undertake a final assessment of the full business case prior to submission to Cabinet.

Agencies should assume that all tendering be conducted on a competitive basis. Following the assessment of tenders, agencies will either shortlist the preferred proponent or proceed to direct negotiation with the preferred bidder.

Invitations to negotiate must also be conducted in a manner that preserves competition amongst proponents. A high standard of confidentiality and probity must be maintained, and care should be taken that information obtained as a result of negotiations with proponents is not utilised in a manner that may impede competition or provide an advantage to one or more proponents.

As with the EOI and the ITN, all tenders must state clearly that they are non-binding on the Government.

Assessment Of Bids

Following assessment of the tender responses or results of the initial negotiation with prospective proponents, proponents will either be short-listed for a detailed competitive bid or firm negotiations will be initiated with preferred proponents. Where no satisfactory bids are received, the project will be reconsidered. For private sector initiated proposals the originating proponent normally would be short-listed.

For projects involving direct negotiation, the project team leader will lead the detailed negotiations and prepare the final recommendations, which may include, where the negotiations fail to produce an acceptable result, the rejection of all tenders.

All tenders must be assessed against the PSC, and a comprehensive report provided of the benefits the Government can expect by contracting with the private sector. The responsible functional agency will forward the final recommendations to Cabinet.

Commitment To Proceed

The recommendation to Cabinet to proceed with the project must contain the full business case supporting the project, an evaluation of the detailed proposal against stated assessment criteria and the benefits to be derived from private sector delivery relative to the PSC. The report to Cabinet should also provide a summary of the heads of agreement of the contract to be negotiated with the private sector proponent(s).

Cabinet approval to proceed to negotiate with the preferred tenderer(s) is non-binding on the Government. The agency must at all times reserve the right to suspend or terminate negotiations with any or all bidders at any time in the negotiation process. The fact that negotiations may take place over a considerable length of time does not imply any commitment to proceed by the Government.

Negotiation And Contractual Agreements

Negotiation with private sector proponents should focus on the essential information accumulated in the EOI and tender process. Additional information brought to the process should only be permitted in so far as it would be detrimental to the Government's position were it to be excluded. It would be inequitable if proponents were permitted to bring additional information that should properly have been provided at an earlier stage of the process.

Agencies should be mindful of the need to invest sufficient resources in the negotiation process. Negotiations need to be conducted with a view to crystallising points of agreement as early as possible in the process, so that the parties are provided adequate time and resources to negotiate the more difficult or complex issues.

It is essential that project teams retain adequate records of negotiations. In complex projects, different team members may be required to negotiate in matters relating to areas of their particular expertise. The record of negotiations should be minuted, with clear reference to points of agreement and areas of difference. The record of negotiations provides the basis of the contract with the private sector proponent, so that it is imperative that the outcome of negotiations is presented clearly, concisely and unambiguously.

Agencies must be mindful of the impact of negotiations on the financial model of the project and the PSC. Much of the time spent in negotiations will be devoted to the allocation of risks between the public and private sector, which will ultimately be reflected in the service contract. The financial modelling of the project must be conducted dynamically with the negotiating process to properly reflect the outcomes, allocation of risk, incentives and penalties and financial results that the contract will ultimately deliver. Draft contracts must be submitted to Cabinet for approval prior to signature.

Contract Summaries And Review

The relevant agency and the PGE will conduct a review of the project implementation within 90 days of signature. The purpose of the review is to provide a report as to the process adopted in implementing the project and to identify any issues of probity or confidentiality that may have arisen during the implementation process.

The information that may be disclosed in the contract summary is provided in Attachment F.

Related Matters

Confidentiality and Intellectual Property

The Government recognises that private sector proposals will contain commercially confidential information or intellectual property. All proposals will be treated in confidence, and formal confidentiality agreements will be considered when specifically requested by the proponent.

The Government, however has a requirement of public accountability and as such all agreements will be transparent. The proponent must satisfy the Government that the community's interests in respect of probity, equity and value for money can be assured.

In proposing to entertain direct negotiation, the Government recognises the need to provide positive encouragement to the private sector through acknowledging the considerable value that accords to many development proposals. The Government also recognises the expense incurred by the private sector in bidding for projects and circumstances may exist where the net economic benefit to the community may not warrant the expense of requiring other parties to develop additional proposals.

Where a proposal which was initiated by the private sector is subject to competitive bidding, the brief or tender will be written on a broad functional or performance needs basis to protect specific ideas regarding potential solutions and any intellectual property rights in the initial proposal.

In those instances where the original proponent is an unsuccessful tenderer, the Government may consider providing the proponent with compensation to reflect the costs incurred in developing the proposal to the expression of interest stage.

If the proponent requires this arrangement, the requirement for and the quantum of the compensation will be subject to an agreement between the Government and the proponent at the time of initial registration of interest. In such circumstances, the proponent must be able to demonstrate that:

- considerable resources have been expended in developing the initial proposal;
- the project has sufficient community benefit to warrant the additional expenditure; and
- would not otherwise in the course of normal business have been likely to emerge in the proposed form. A high degree of innovation approaching the legal concept of "intellectual property" would be expected.

In the interests of public accountability and subject to the requirements of the *Freedom of Information Act*, essential elements of infrastructure projects involving public financing should be transparent. While the Government respects the private sector requirements for confidentiality, elements that may involve public sector exposure to liability will be subject to disclosure, if such disclosure is required.

Accounting For Infrastructure Transactions

Infrastructure transactions are currently classified according to Australian Accounting Standard 17 Accounting for Leases (AAS17). For accounting purposes, transactions involving the delivery of infrastructure can have the characteristics of a lease agreement, whereby the payments received by the operator are regarded as rental-type obligations that have to be classified in the accounts of the agency according to the nature of the obligation.

The standard requires that leasing-type arrangements be classified as either operating or finance leases. Because finance leases are essentially a loan to the lessee, the lease is recorded as a liability on the lessee's balance sheet. Lease payments under an operating lease, on the other hand, are recorded as an expense in the revenue and expense accounts.

While the accounting standards attempt to create a clear distinction between the two types of leases, for evaluation purposes most service contracts with the private sector under consideration by agencies will fall somewhere between the strict definitions of operating and finance leases.

The degree to which ownership risk is transferred between the owner of the infrastructure and the "lessee" agency is the critical variable in classifying payment obligations under public private partnerships. The methodology provided in these Guidelines has been developed to assist in the resolution of these issues.

Agencies should keep in mind that there is a fundamental tension between meeting the requirements of AAS17 for operating leases and achieving value for money. The fundamental objective of the partnerships procurement process is to achieve an efficient allocation of risk, not simply to transfer as much risk as possible in order to achieve an operating lease classification.

Where uncertainty exists as to the classification of a lease, the agency should contact the Department of Treasury and Finance for clarification.

General guidance for the accounting classification of infrastructure transactions is provided in Appendix 1.

Attachment A: Types Of Projects Envisaged

Projects that may be suitable as a *Partnerships SA* investment cover the full range of community facilities normally provided in the public domain. The program also covers social infrastructure, such as prisons and hospitals. Accordingly, the main categories are:

- transport (road, rail)
- water resources (filtration plants, irrigation, sewage treatment, pipelines)
- tourism (facility development)
- health (hospitals and specialised health services)
- specialised accommodation facilities (courts, police stations)
- educational facilities (schools, museums, libraries)
- correctional facilities (prisons and remand centres)
- arts, sport and recreational facilities

Information technology projects are not usually considered suitable for delivery under PPP arrangements, due to the complexity of the business processes involved and the low level of operational content in many IT projects. While some IT projects may be suitable for PPP delivery, in the majority of cases IT projects with the private sector are best managed as outsourcing arrangements. As with all potential public private partnerships, however, each project must be considered on its merits.

Attachment B: Risk Apportionment

The Government will entertain risk sharing with the proponent where there are clear economic benefits to be derived from such an approach. The Government, however, will not accept the position of the risk taker of last resort.

In determining risk apportionment on individual projects the Government will generally adhere to the apportionment of risks listed below.

Design, Construction and Commissioning Risk

Design and construction risk, incorporating asset quality and commissioning risk, fall substantially on the private sector. In identifying these risks, it is important to distinguish between the risk of cost overruns, which are primarily of a capital nature, and delays in commissioning the asset for use, which affects the recurrent contractual payments for services. In the former case, the private sector usually accepts this risk under standard procurement contracts where the Government is the owner of the asset. In the latter case, the private sector may not receive payment for services until the asset is in a fit state to meet quality standards, and may face contractual penalties reflecting the opportunity cost of the delay to Government.

Demand Risk

In some instances, demand risk can be addressed by normal market mechanisms and allocated substantially to the private sector. The scale, the site specificity, the need to provide full capacity in advance of demand, the potential for changes in market dynamics over the longer than usual economic life of a project all impact on the assessment of demand risk.

Where the demand for outputs is determined substantially by the public sector, demand risk can be identified in terms of a number of factors, for example:

- the availability of the asset;
- variable payments for service quality, which will be clearly distinguished from unitary payments associated with the right to use the asset; or
- payments based upon actual use, such as “shadow” tolls or fees.

Maintenance And Operating Risk

Operating risk will be allocated to the party responsible for operating the project, which in most instances will be the private sector. Allocation of this risk will be clearly defined between all of the parties prior to the project’s commencement, with performance secured by appropriate contractual arrangements. This risk includes the efficiency and efficacy of operating the project as well as meeting performance requirements in terms of level of output or quality of service.

Residual Value Or Ownership Risk

The private sector will usually accept residual value risk. For assets of considerable economic life, such as roads, the asset may revert to Government at the end of the concession period, which will usually be substantially less than the expected economic life of the asset.

Residual ownership rights are a key determinant in the likely accounting classification of a PPP transaction. If the contract is to confer residual value risk on the Government, there must be sufficient operational risk borne by the private sector under the terms of the service contract to support an assessment that the private sector nevertheless carries *substantially* all of the risks related to the underlying asset.

Legal, Taxation And Policy Risks

Risks associated with changes in law, taxation and Government policy are usually shared between the parties or negotiated to apply conditionally to a particular party. Normally, the private sector will bear the risk of changes to Commonwealth taxation law, as a normal risk in the course of carrying on a business.

The allocation of risks arising from changes to the law generally is more complex. Where, for example, the project is exposed to changes in Government legislation, an adverse outcome arising from a policy decision taken by Government to change that law will be borne by Government rather than the private sector.

Attachment C: Design Of The Output Specification

Key Elements

The output specification must cover the objectives, purpose, scope and performance requirements for the contract. It should also discuss compliance, constraints, risk allocation and encourage innovative or alternative solutions.

Objectives

The objectives of the project will have been considered in the project initiation stage, during the feasibility study or the development of the initial business case. The project team needs to understand and be committed to the objectives, which should be expressed in terms of delivery of services rather than assets.

Purpose

The purpose of the project should be a high level statement, which summarises the desired outputs.

Example

The purpose of this project is to provide a full custodial service for 200 sentenced prisoners in (district). The service will include secure management and control of prisoners, visiting arrangements, the provision of health care, training and employment for prisoners, together with arrangements for the maintenance of records, and to meet prisoners' spiritual needs.

Scope

The scope of the project should consider the following issues:

- does the project directly or indirectly impact on other projects?
- is it or could it be part of a wider strategy?
- could or should the scope of the project be widened or narrowed?
- could doing so expand the opportunities for alternative revenue streams?

Example

The contractor is responsible for designing, building and commissioning the hospital, relocating equipment from the three interim sites and operating and maintaining the facilities and plant during the contract period. Completion of construction, commissioning and relocation must be achieved by September 20X5 to enable medical services to begin at the new site at that time. The contractor will, in operating the hospital, be responsible for a range of services, including building, grounds and plant maintenance, waste management and disposal, warehousing and safekeeping of certain pharmaceuticals, the training of service and maintenance personnel and a range of 'soft' facilities management services such as catering and cleaning.

Performance

The required performance must be clearly stated by setting out details of operating outputs. The specification should not state how this performance is to be achieved. However, thought should be given to the practicalities of measuring performance - there is little point in relating payment to a performance standard where there is no way to measure it. Where, in exceptional cases, performance characteristics are insufficient to define the requirement, technical specifications may be used.

The project team must ensure that there are no inconsistencies between technical and performance characteristics. It is often useful to have a person independent of the project team to check these items for consistency and clarity.

Example

Design standards for cells in Police Stations have been developed within the public sector to meet the performance standards set out above in respect of prisoner safety. Bidders may, but are not required to, use these design standards. However, bidders should be aware that they would be fully responsible and accountable for meeting the performance standards. In choosing to use these design standards, the bidders must be satisfied that they are adequate to deliver the level of prisoner safety set out in this document. No risks in this respect will remain with the Police Service and no warranty as to the suitability of the standards is given.

Compliance and compatibility

Consideration must be given to compliance, for example, with legal or other regulations or policies and compatibility, for example, with existing systems. Only essential requirements should be included and as far as possible they should be expressed in terms of interfaces. Explicit technical specifications may be required to define the limits of compatibility or to describe an item that has already been designed or has been prescribed. For example, the communications systems to be provided by the private sector on a private road must be compatible with the relevant government agency's own systems.

Constraints

Only the core aspects essential to define an acceptable solution should be included in the specification. Some solutions, however, may be constrained, for example, planning permission or other statutory approvals. The specification should provide the detail of any constraints on the project that limits the contractor's ability to develop innovative solutions. Mandatory constraints should be clearly specified.

Risk

The allocation of risk and responsibility is a central feature of the service contracts. If risk allocation is left entirely open, the private sector will seek to minimise risks, which will limit the prospect of achieving value for money. The specification needs to give an indication of the risks each party will be expected to manage and should avoid anticipating tenderers' reluctance or otherwise to take on certain risks. What may be a substantial risk for the public sector may be quite acceptable to tenderers.

The presumption should be that a risk should be allocated to the private sector unless it is clear that bidders would be unable to manage it. It may become apparent at a later stage in the process that a particular risk will only be accepted by the private sector at a substantial cost premium, so that alternative arrangements may have to be negotiated. This outcome, however, should not be anticipated in the specification.

In many cases, the final allocation of risks will emerge only following detailed negotiations. Ownership of many of the risks will be implicit in the rest of the specification, but others may have to be set out explicitly. A useful mechanism is to set down the agency's expectations as to risk allocation in a table, as provided in Appendix 4. As with other aspects of the specification, tenderers will need to know which risks are negotiable and which are not.

Alternative solutions

The specification should be designed in such a way as to provide tenderers the opportunity to offer alternative solutions

Example

The Supplier will be responsible for the maintenance or replacement of electrical and mechanical equipment throughout the life of the contract to a standard that permits service standards to be met.

Attachment D: The Public Sector Comparator

The Public Sector Comparator

Introduction

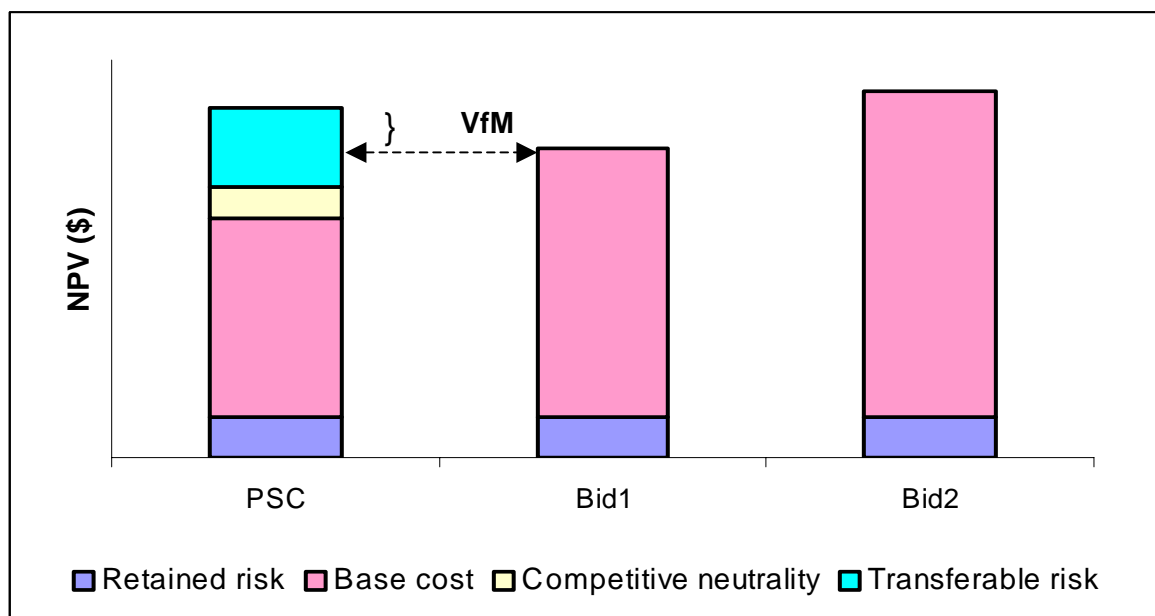
The PSC is a model of the risk-adjusted costing of the public sector as a supplier of the outputs specified in the output specification. The PSC is comprised of a series of internal benchmarks that specify the main attributes of the entire project on a whole-of-life basis, specifically:

- the standard of performance required in the delivery of outputs; and
- an analysis of the cost sensitivities and financial impact of project risks.

Value for money is demonstrated when the total present value cost of private sector supply is less than the net present value of the base cost of the service, adjusted for:

- the cost of risks to be retained by the Government
- competitive neutrality effects; and
- cost adjustments for transferable risks.

Figure 1 The PSC and value for money



The components of total cost for the PSC and the private supplier are:

- **retained risks** which, by their nature, always rest with the public sector. The cost of retained risks is identical for the PSC and the private supplier. Retained risks are typically:

- changes in enabling laws or regulations, and
- demand for the services (where there is no direct charge to the public) for instance long term demographic changes;
- the **base or raw cost** of providing the services required by the public sector. This is the public sector's estimate of what it will spend to build, and maintain the infrastructure and provide the associated services over its expected useful life in accordance with the performance specification; and
- **risk adjustments** for transferable risks that reflect the probability that services may not be delivered at the cost shown in the base cost projection because of events like cost overruns or technical problems, or that budgets may be maintained, but only at the expense of reductions in service quality.

The PSC should not be confused with an “in house” bid. Indeed, where an agency is bidding in competition with the private sector, the in house bid will be assessed against the PSC on an equivalent basis with private sector bids. Strict principles of probity apply in the case of in-house bids and the in-house bidder must be treated in the same manner as any other bidder.

The PSC and the Output specification

The output specification defines what the supplier is expected to provide but does not define the inputs or input costs. The output specification nevertheless defines the basis of the PSC in that the public sector must determine the inputs it would provide to meet the requirements of the output specification.

The output specification is derived from the business case that identifies the public sector's service requirements. The business case is essentially the *reference project* from which the PSC is constructed and defines the cost of the services if delivered by traditional procurement methods.

The PSC and Competitive neutrality

The PSC should be competitively neutral with the private sector proposal. Competitive neutrality ensures that the analysis of private sector bids (including in-house bids) does not lead to preference by reason only of re-distributive mechanisms or other policy arrangements affecting either the private or public sectors.

Where applicable, the PSC should therefore incorporate State and Local Government taxes, levies or charges that may be payable by the private sector, as well as the cost of insurance that the public sector may otherwise insure through captive insurance.

An example of the main competitive neutrality adjustments to be made in the PSC is provided in Appendix 2.

Format for the PSC

There is no prescribed format for a PSC, as the scope of the PSC will vary considerably depending upon the complexity of the project. As guide, the PSC should as a minimum contain the following information:

1. An overview of the project, providing:
 - the identified service needs that will be met by the project;
 - the essential terms of the output specification, including performance standards where applicable; and
 - the expected cost of the project if delivered by the public sector.
2. An estimation of basic procurement costs including:
 - the required capital investment, capturing all costs such as purchase, construction, project management, consultants' costs and all other costs associated with bringing the asset to a fit-for-purpose standard; and
 - estimated operating costs of the project over its expected life.
3. A summary of the expected asset values on transfer, disposal and termination of the contract.
4. A summary of the major risks, the likelihood of occurrence and the financial impact of the risks if realised.
5. A summary of potential third party revenues or alternate use of the asset.
6. A discounted cash flow analysis showing the timing of costs (capital investment, operating costs and residual values) discounted to yield an overall net present value of costs of the project, presented in summary form.
7. Sensitivity analyses showing the consequences of varying key assumptions.
8. Supporting documentation or appendixes as required.

The main components of the PSC are discussed in detail below.

The Project overview

The project overview is an executive summary of the policy context, objectives and scope of the project and the output specification. Additional information should include detail of the project team and its main roles and tasks, the project management objectives, timing and any constraints to meeting project objectives.

The project overview also functions as a project record. Summary detail as to the expected cost of public sector delivery, the identification and initial allocation of risks, the EOI or ITN process, bid evaluation and contract award are added to the overview as the project proceeds through time. At the completion of the project, the project overview will in effect be an executive summary of items 1 – 7 above.

The Risk matrix – transferred and retained risks

The PSC should be developed on the basis of the risks that are to be apportioned amongst the parties according to which party will be able to manage a particular risk more efficiently than the other party. Control over the risk allocation process is best achieved by constructing a risk matrix that will ultimately form the basis of the contract with the private sector proponent(s).

Each identified risk must be costed within the PSC and grouped according to whether the risk will be retained by the Government, shared or transferred to the private sector. The initial allocation may be provisional, pending negotiations with private sector proponents as to the final risk allocation. These costings are used to adjust the base costing, as illustrated in Figure 1, to provide a full risk adjusted cost of the project.

In undertaking a risk assessment, it is also important to distinguish between discrete and correlated risks. In some instances, the occurrence of particular event is dependent upon the occurrence of a prior event, or sequence of events. It is therefore important to prioritise risks not only according to their importance in affecting project outcomes, but also the likelihood that their occurrence will trigger other events that may not have otherwise occurred.

As a general rule, the risk arising from a project fall within two broad categories:

- the development phase, where the majority of risks relate to the capital costs of the project, including design, construction and commissioning costs; and
- the operational phase, where the majority of risks relate to revenue (if any) and recurrent costs, such as wages, utilities, asset maintenance and insurance, to name a few.

An example of a risk matrix is provided in Appendix 4.

Base costing

The cost estimate should reflect the entire set of resources required over the life of the project. Costs can generally be classified as falling into one of two categories: capital costs and operating costs.

The types of expenditure typically contained in the capital cost of a project can include the following:

- design, construction and commissioning costs;
- legal and consulting fees;
- equipment purchases and installation costs;
- non-routine maintenance or future capital expenditure;
- depreciation (as expressed by the residual or terminal values of assets).

Apart from the initial capital cost of the project, the majority of a project's cash flows will be the annual project revenues and expenditures. Operating costs are recurrent costs that are incurred to deliver the required services over the life of the project, such as:

- total staff costs, including leave loading, overtime or overtime equivalents, superannuation, worker's compensation, protective clothing;
- accommodation expenses;
- materials and consumables;
- utilities, communication and information technology;
- insurance; and
- routine maintenance.

Costs incurred that do not involve a cashflow at some time during the life of the project are normally ignored when deriving the NPV of the project costs. Depreciation expense, for example, is a capital cost, not a cashflow. The effect of depreciation is captured by assigning a terminal value to assets at the end of the project's life, and is not included as a cost during the term of a project.

Risk – adjusted costing

The base cost estimate for a particular cost item is adjusted for the risk of the forecast cost not being achieved. For example, the financial impact of an expected overrun in a particular cost is summarised in Table 1 below on the basis of its probability of occurrence:

Table 1

Probability of outcome	Cost overrun \$000	Weighted cost overrun \$000
(a)	(b)	(a) x (b)
5%	60.0	3.0
20%	80.0	16.0
40%	120.0	48.0
20%	170.0	34.0
15%	190.0	28.5
100%		129.5

Although the *most likely* cost overrun is \$120,000, the *expected* overrun is \$129,500. The expected overrun of \$129,500 must be recorded in the PSC and is potentially a transferable risk. While a simple probability analysis may suffice for some risks, comprehensive risk analysis requires a somewhat more sophisticated approach than this simplified example, and

the risk adjustment will depend primarily on the probability distribution of the costs. Risk analysis is discussed in further detail in the following section.

Attachment E: Risk Analysis

Risk analysis

A comprehensive risk analysis is fundamental to identifying the value for money, if any, that may be available from delivering the project as a public private partnership. While the risk matrix provides a necessary checklist for the risks associated with a particular project, these risks must be quantified within the PSC to determine the potential value for money from a partnership arrangement.

Agencies should bear in mind that the purpose of the PSC is to identify and cost *material* risks. Although the preparation of the PSC requires the identification of all project risks, not all of these risks will be material. Materiality is a function of the value of the risk and its probability of occurrence. A commonsense approach is required, as in the majority of cases, only a small proportion of the total risks identified will have material consequences – the *Pareto* principle should be applied so that the PSC is not rendered meaningless through excessive complexity.

The identification of key risks in a project relies principally upon experience, judgement and, to a significant extent, creative and lateral thinking. The effective identification of risks is also dependent upon a disciplined approach that requires the completion of each stage in the risk analysis process before proceeding to the following stage. The failure to complete each essential stage in the process can lead to an incomplete and inaccurate analysis that can undermine the substance of the business case supporting the project.

The stages in the risk analysis process are:

- identification of all material risks;
- defining risks in the broad categories of retained, transferable and shared risks;
- quantification and modelling of risk outcomes to value these risks; and
- the allocation of risks that will eventually be incorporated in a draft PPP contract.

Identifying risk

The identification of risks is best achieved in a workshop environment. Workshop attendance should be mandatory for all project team members, and where necessary the workshop should include experts with proven experience in the areas of risk being assessed – design, construction, commissioning, operations etc.

It is not necessary to quantify the impact of particular risks during the identification phase. The identification process is sufficiently complex without the added complexity of numerical quantification. To assist the quantification of risk in the next stage, the project team should make an assessment of:

- the likelihood of the risk occurring; and
- the consequence or impact of the risk if it did occur.

Once all risks have been identified and recorded, the likelihood and consequence of the risk occurring should be recorded and ranked in a simple matrix.

Table 2: Preliminary risk matrix

		<i>Likelihood</i>		
		Low	Medium	High
<i>Impact</i>	High	1, 2, 5	6, 9	4, 3
	Medium	7, 8	12, 13, 16	19, 20
	Low	10, 11, 15	14	17, 18

The preliminary risk matrix provides a shortcut for the project team in selecting which risks should be quantified. Of the 20 risks identified in the above example, risks 10, 11, 15, and perhaps 14 should clearly not be quantified, due to their relatively low likelihood of occurrence and impact. However, these risks should not be eliminated from the risk analysis process, as they have not as yet been allocated in the PSC. Further, although the risks may be relatively immaterial if the project were to be delivered by the public sector, they may nevertheless be of a material nature to a private supplier.

The project team should also make a preliminary assessment of the relationships between the identified risks. Risks that are not mutually independent should be noted as potentially correlated with other risks.

The project team should also identify the risks that it expects will be retained by the public sector and those that may be transferred or shared. Appendix 4 provides an example of a risk allocation matrix. Each material risk should be identifiable in the risk-adjusted costing in the financial model for the PSC.

Categorisation of project risks

The application of expected values in the PSC takes account of risk in the sense that all possible outcomes are considered and a mean or expected value is derived, as in Table 1 above. However, the expected value calculation does not in itself provide any information as to the potential variance of that value over time. The PSC has to incorporate adjustments for the *variance* of project cashflows due to risk. Finance practitioners generally classify project risks as either systematic – ie risks to project revenues and costs that are associated with the broader economic cycle - or unsystematic, which are risks specific to a particular project.

A fundamental principle of corporate finance theory is that an investor can eliminate project-specific or unsystematic risk by holding a diversified portfolio of investments. If, for example, Company A's revenues decline in cool weather, while Company B's revenues decline in warm

weather, the investor can eliminate its exposure to lower investment returns *due to the weather* by investing in both A and B. In this case, the weather is an unsystematic risk. In finance theory investors are not rewarded for accepting unsystematic risk - by demanding a higher return on their investment relative to other investments - as these risks can be eliminated through portfolio diversification.

The investor is nevertheless unable to eliminate the risk of decline in investment returns from *both* companies as a consequence of factors unrelated to the weather, for example, economic recession. Recession is a systematic risk. Consequently, the only relevant risks in any investment are systematic risks. Typical systematic risks in PPP arrangements are demand or end-user risk, inflation risk and residual value risk.

Compensation for accepting systematic risk is achieved by adding a risk premium to the project's cost of capital, which is notionally the risk-free rate of interest before any adjustment is made for systematic risk. The extent of the premium depends upon the extent to which project returns vary with the returns from the broader economy. Private sector proponents will structure their bids on the basis of their assessment of the systematic risks that they will be required to manage under the partnerships arrangement and will reflect the risk premium attached to the project's systematic risk by individual bidders.

Quantifying systematic and unsystematic risk in the PSC

For the purposes of the PSC, it is assumed that the government is not capable of eliminating unsystematic risk through diversification (even though in theory individual taxpayers can do so). Consequently, the PSC financial model should account for the consequences of all risks in the project, whether systematic or unsystematic. Where a particular cost or revenue item may be volatile over time, or the potential variance is difficult to estimate, the expected value should include a contingency or "certainty equivalent" adjustment. This is particularly relevant for cashflows that are likely to be subject to significant systematic risk and cannot be estimated with a high degree of accuracy.

Modelling the consequences of risk

The quantification of risks is an iterative process that relies upon reliable information and sound judgement. Some risks are readily quantifiable due to data available from prior experience in the management of these types of risk, while other risks are not easily quantifiable and an accurate quantification will depend upon the judgement and experience of the project team, as well as expert opinion.

Statistical risk analysis assists the project management team to make informed judgements of the impact of variables that are either controllable or subject to exogenous influences, but that at best can only be anticipated within a reasonable boundary of probability. These are the principal *risk drivers*, including input prices, technological innovation or obsolescence, vandalism, fire, theft and potentially the total destruction of the asset.

The aim of statistical analysis is to eliminate optimism bias that occurs in many forecasts by introducing an *expected* outcome as a weighted average of all probable outcomes. In its simplest form, discrete probabilities are assigned to each outcome to derive the expected outcome, as illustrated in Table 1 above. The assignment of probabilities can be assisted by software packages that provide multiple probability distributions. The use of probability distributions also addresses estimation problems when historical data on specific risk items is

not available. The probability distribution, if correctly described, effectively replicates the historical data that would otherwise be used in the analysis.

For highly complex projects with correlated risks, consideration should be given to the use of advanced techniques such as *Monte Carlo Simulation*, which is used to estimate the probability distribution of a model's output by a random sampling of the probability distribution of each variable. Discrete probabilities can be assigned to each outcome, and for projects that may be implemented in a highly complex environment; Monte Carlo analysis can also be used to construct scenario outcomes relating to distant future periods.

Risk adjusted costs are therefore derived primarily from statistical risk analysis as discussed in the following section. However, when estimating the probability and consequence of risk, it is important to keep in mind that not all risks need to be assessed by means of advanced risk valuation techniques. A risk that has a low operational or financial impact can be evaluated using subjective probabilities that are based upon judgement and experience. In these cases, the value if the risk is simply:

$$\text{Value of risk} = \text{probability} \times \text{consequence} + \text{contingency (if necessary)}$$

Even though an individual risk may have a low impact, the accumulated value of these types of risks can be significant. It is therefore preferable to use a subjective estimate that may not be completely accurate rather than no estimate at all. In practice, the experience and judgement of the project team should produce reasonable values for most risks.

Risk simulation and statistical probabilities

Risk can be described as any outcome that cannot be predicted with certainty. The appropriate use of inferential statistics, however, can assist the project team to make an informed judgement of the likelihood of a given risk occurring and the consequence(s) of that occurrence. However, statistical output can often be misleading and should not be regarded as an absolute solution in the quantification of the risks – the objective is to augment the judgment, experience and creative processes of the project team managing the risk analysis function, not to displace them.

In the context of the PSC, an estimate can be made of the financial impact of risk by simulating the likely behaviour of the risk over time. Simulation can be described as a mathematical model that explains the relationship between various input variables (or independent variables) and one or more output (dependent) variables, where the value of one or more of the independent variables is uncertain.

Random variables

A **random variable** is any variable the value of which cannot be predicted with certainty. However, not all variables have complete freedom of movement. For example, a variable may vary randomly, but within a maximum and minimum boundary, with a “most likely” value somewhere in between. Share prices are an example of a bounded random variable, in that the price of a share can never be negative. Other variables may be completely random (at least theoretically) with infinite upper and lower values, but with an infinitesimal probability of occurrence.

Irrespective of the actual behaviour of a particular variable, the fact that it may have a range of possible values results in a distribution of possible values, referred to as a **probability**

distribution. The purpose of statistical simulation is to describe the distribution and characteristics of a **dependent** variable, given the behaviour of an **independent** variable that determines the value of the dependent variable.

There are three basic probabilistic risk distributions:

- **Discrete distribution.** The variable can only represent a discrete event, such as the number of pumps in use in a water filtration system.
- **Continuous distribution.** Any value can occur within a described limit. A normal distribution with upper and/or lower bounds of positive or negative infinity is a continuous, **unbounded** distribution. A **bounded** distribution lies between a defined upper and lower boundary.
- **Parametric and non-parametric distributions.** An **exponential** distribution is an example of a parametric distribution, used mostly in models of time dependent events, such as the lifetime of a device with a constant probability of failure. A **triangular** distribution is an example of a non-parametric distribution and is characterised by a minimum, most likely and maximum value.

The standard normal distribution, which is represented by the familiar “bell shaped” curve, is the most commonly used distribution in risk analysis. The normal distribution assumes that the expected or mean value of x has the highest probability of occurrence, with the probability of any variance distributed evenly around the mean. The key statistic in the normal distribution is the standard deviation (σ), which is the measure of dispersion around the mean or expected value. Where a normal distribution is evident, the standard deviation provides a level of certainty that a random value in a sample population lies within a certain distance from the mean:

+/- σ of the mean = 68% of the probability density

+/- 2σ of the mean = 95% of the probability density

+/- 3σ of the mean = 99.7% of the probability density

A related measure to the standard deviation is the percentile. The n^{th} percentile of a variable is that value for which there is an $n\%$ chance of the variable being equal to or lower than that value.

While the standard normal distribution is a useful measure of risk where the variables are random and continuous (for example, securities markets), it is unlikely that many of the costs in the PSC will exhibit the symmetry implied in the standard normal distribution. Cost variables may nevertheless be continuous within a bounded distribution that approximates a normal distribution, as discussed below.

Skewed distributions

Under real world conditions, probability distributions are usually skewed. The skewness of a distribution can be measured by most spreadsheet functions (eg SKEW in MS EXCEL) as a measure of how “normal” a particular distribution may be. For a normal distribution, the measure of skewness of course approximates zero.

Kurtosis is a measure of the “peakedness” of a distribution, and can be measured by the KURT function in EXCEL. A uniform distribution (described below) that describes an equal probability of outcomes will have a kurtosis of around 1.8, while a triangular distribution (also described below) is around 2.4. A distribution that has a skewness of around 0 and a kurtosis close to 3 should be considered to be a normal distribution.

The normal distribution is useful in determining the behaviour of many *cost drivers* in a project. For example, a construction engineer may wish to determine the number of construction delays, in days, which may be caused by extreme weather during July and August of any given year. The weather bureau provides the engineer with data on the number of extreme weather days over the past 30 years during the July-August period. Statistical analysis of the sample distribution provides the following information:

- Average: 10 days
- Standard deviation: 6 days
- Skew: 0.1
- Kurtosis: 2.8

The skew and kurtosis of the data indicates a normal distribution. Using standard statistical analysis, the engineer can establish a 95% confidence level for the sampling distribution that the average number of extreme weather days will be between 8 and 12 during any July and August construction period.

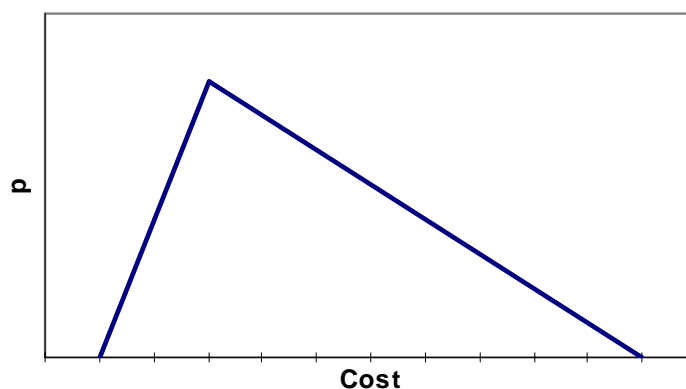
Types of probability distributions

There are a large number of probability distributions that may be used, the most common distributions other than the normal distribution are:

- **Binomial distribution.** Returns the number of successes within in a given sample size where each trial has a probability p of success. The binomial distribution uses a **Bernoulli process**, which involves a sequence of trials where there are only two possible outcomes, for example the probability that a certain value will be observed from a random sample of a large population, based upon a fixed probability for that value.
- **Poisson distribution.** Describes the number of independent events that will occur per unit of time where the rate of occurrences is constant but unlimited. The Poisson distribution may be useful as means to establish a performance measurement system. For example, the Poisson distribution returns the cumulative probability of a given number of failures occurring against an average or expected number of failures.
- **Uniform distribution.** Applies where the variables are bounded by maximum and minimum values, but all variables have an equal likelihood of occurrence.
- The **triangular distribution** is characterised by a minimum, most likely and maximum value and is used when there are reasonable grounds for believing that the probability distribution is not normal. The triangular distribution is useful when analysing cost behaviour relating to construction, maintenance and operations, where large cost overruns can happen, but with relatively low probability. The triangular distribution allows for a reasonably accurate calculation of contingency costs that must be included in the PSC. In

the absence of evidence to the contrary, project risks should be assumed to follow a triangular distribution.

Figure 2: Right-tailed triangular distribution



It should be noted that in a triangular distribution the mean or *expected* value is not the most likely value, but is given by:

$$[\text{Minimum} + \text{most probable} + \text{maximum}]/3$$

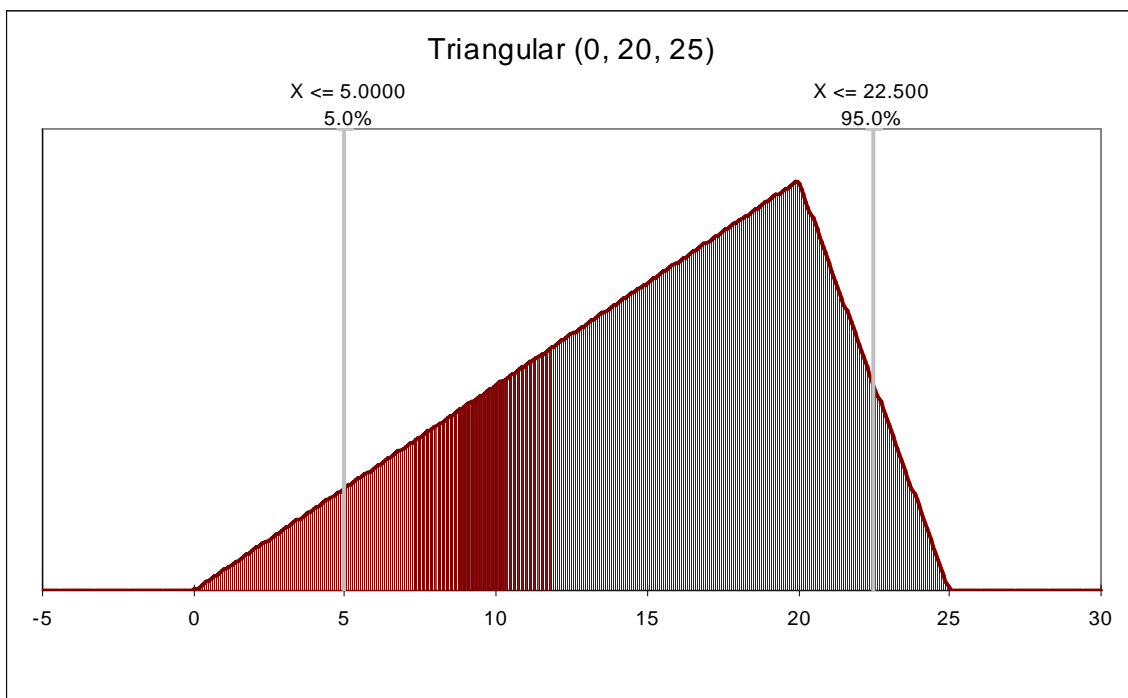
Example

A project team is considering the residual value of risk of light rail rolling stock, initial costing \$100 million, after 20 years use. The residual value of the rolling stock is a function of a range of factors such as usage intensity, quality of maintenance and technological obsolescence. Lacking comprehensive historical data, the project team believes that the distribution of possible values is in the form of a triangular distribution, based on the logical assumption that the rolling stock is unlikely to fetch very high values, but there is a reasonable prospect of very low resale values. The likely range of values is:

Lowest value: \$0m Most likely value: \$20m Best value: \$25m

The expected residual value is roundly \$15 million, which should be reflected in the PSC, not the forecast value (\$20 million). However, there is no information on the extent to which the actual residual value may vary. Random sampling of the distribution using as utility such as @Risk provides the following distribution

Figure 3 Triangular distribution of residual values



The project team may wish to make a further risk adjustment in view of the extreme “tail” of the distribution. An appropriate adjustment may be to take the 50th percentile (\$12.5 million). The PSC would record an expected receipt of \$15 million, with a downward risk adjustment of \$2.5 million.

Truncated normal distribution

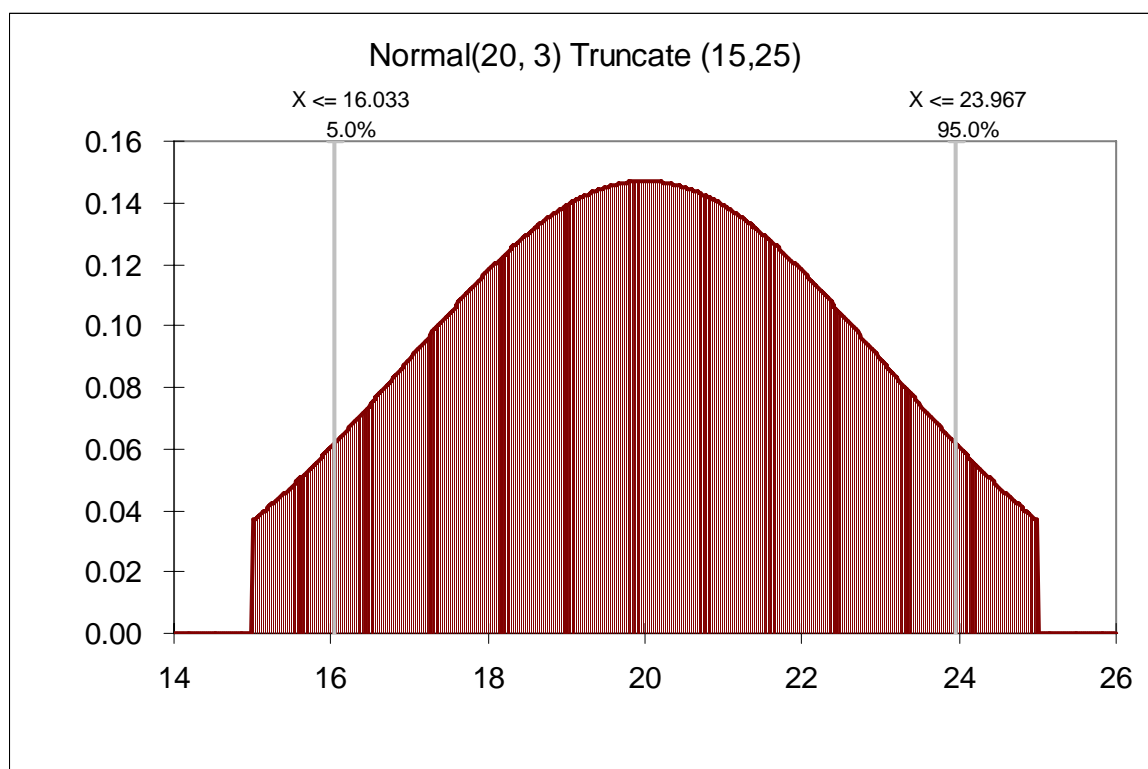
A distribution may be approximately normal but truncated at a minimum and maximum value.

Consider the following cost values:

- Mean: \$20 million
- Standard deviation: \$3 million
- Upper limit: \$25 million
- Lower limit: \$15 million

Again using a utility such @Risk, a sampling of the truncated distribution would take the following form:

Figure 4 Truncated distribution



The mean of \$20 million is recorded as the expected cost. A conservative approach may be to include the possibility of a cost outcome at the 80th percentile or around \$22 million. The base PSC cost would therefore be the mean of \$20 million, with a risk adjustment of \$2.0 million.

Selecting probability distributions

The following summary can be used as a guide to the selection of an appropriate probability distribution:

- If a variable is a discrete variable, the **Poisson** or **Binomial** distribution may be applied to model an either/or outcome.
- If the distribution of the variable is symmetric and continuous, the **normal distribution** should be used; if it is symmetric but bounded, the symmetric **triangular** or **truncated normal** distribution may be applied.
- If the distribution is asymmetric but bounded, the **triangular** distribution may be used, either left or right tailed.
- If there is no information as to the likely form of the distribution, it should be assumed that all variables have an equal probability of occurrence and the **uniform distribution** should be used.

Correlation

A frequent error in risk analysis is that interdependencies between variables are often ignored, which may result in the under-estimation of total risk. For example, the project team may include the cost of insuring a risk in the PSC, but if the event that a claim were to be made, the insurance premium to reinsure that risk in following periods may increase. Thus the occurrence of an identified risk may trigger a further risk (increased insurance costs) that are directly correlated with occurrence of the initial event.

Correlation analysis is a complex and time-consuming process. The analysis should only be undertaken where the cost is material and would impact significantly on the total cost of the PSC. However, correlation analysis must be undertaken where it is readily apparent that interdependencies exist between key variables.

Initial tests of correlation can be constructed by using data analysis functions such as the CORREL and PEARSON add-in functions in EXCEL. The CORREL function is used to define rank and order coefficients for non-linear relationships, while PEARSON calculates the Pearson's coefficient for the degree of linearity between two variables. The correlation coefficients are defined between +1, (the variables move together), and -1, (the variables move in opposite directions). Ideally, the variables in question should have a correlation coefficient close to 0, indicating perfect independence.

Sophisticated software packages are often required to undertake a comprehensive correlation analysis and are usually included in Monte Carlo simulation software, discussed in the following section.

Monte Carlo Simulation

Monte Carlo simulation is a technique that uses the probability distributions specified for the model inputs to produce a probability distribution of a single output of interest. Specialised software is required, although a number of applications are available, such as @Risk (above) and Crystal Ball that operate as add-ins to spreadsheet packages such as EXCEL or Lotus 1-2-3.

Monte Carlo simulation should be used where there are multivariable relationships between key risks and should only be considered in highly complex projects. Project teams that may be required to conduct the analysis should be thoroughly trained in the use of the model, which is susceptible to "garbage in, garbage out" results if inappropriately applied.

Sensitivity analysis

Sensitivity analysis may be used to test the cost variables in the PSC. The extent of the analysis should reflect the materiality of key variables and the complexity of the project. Key variables that should be tested are for example:

- service demand, for example due to demographic change;
- inflation rates;
- key operating costs;
- residual values;

- third party revenues.

Sensitivity analysis in the PSC is relevant in that it may provide some insight when comparing the PSC with private sector bids, some of which may have used different input assumptions than the PSC. The analysis also allows for a broad comparison between related costs; for example, if the construction commencement date is brought forward, pre-construction risks such as site suitability, planning and design risks may increase.

Risk allocation

The fundamental objective of risk allocation is that the *benefit* to the agency of risk transfer exceeds the *cost* of transfer. This is achieved by transferring risks to the party or parties that are best able to manage them and are therefore likely to price these risks competitively.

An iterative approach should be taken to risk allocation, by initially grouping risks in three basic categories:

- **retained** risks, being those risks that will always reside with the public sector, such as policy or regulatory risk;
- **transferable** risks that may be assigned to the private sector; and
- **negotiable** risks that may be retained by the public sector or transferred to the private sector through negotiation.

The initial risk allocation provides the project team with a preliminary indication that there are sufficient, material transferable risks that can deliver a value for money outcome. For the majority of projects, there will be a number of transferable risks that are **not negotiable**, meaning that value for money cannot be achieved unless these risks are passed to the private sector.

Distinguishing between retained and transferable risks at an early stage also allows project team to identify those retained risks that should not be passed to the private sector. If the private sector is compelled to accept risks that it may not be able to manage, it is highly likely that the cost of transferring those risks will exceed the benefit to the agency of transferring the risk. This will erode value for money and in the extreme case may lead to the failure of the project.

Risks should be prioritised prior to allocation, to ensure that the project team focuses on the transferable risks that may have a major impact on project costs and benefits, and may require extensive negotiation with the private supplier. Low cost/low probability risks are unlikely to materially affect the PSC and can be given a correspondingly low priority.

The overall profile of risk transfer is likely to change as the project progresses. It is vitally important that these changes are recorded in the risk matrix and updated in the PSC.

Retained Risk

Retained risks have to be managed, and the cost of managing these risks should be reflected in the PSC, including the impact of the risk occurring. Retained risks are reflected principally in the output specification and are those risks in the service contract that *could* be allocated to the private sector, but are best retained by the public sector. Risks that are associated with services that are not expressly provided for in the output specification are of course excluded

entirely from the PSC. If, for example, the public sector is to continue providing clinical services in a hospital project, this is not a retained risk in the PSC, because the private sector will not be providing these services in the partnerships contract.

The total cost of the risk to be retained by the public sector is added to the private sector bid when making comparisons. Typically, retained risks in the construction phase relate to matters such as a change of law or public policy, or where the Government assumes responsibility for site availability and planning approvals. In the operational phase, a retained risk may be a revenue sharing arrangement.

Risk and Insurance

Allowance should be made for insurable and uninsurable risks. The PSC should contain the notional cost of insuring a particular risk if passed to the private sector that may not otherwise be insured if retained by the public sector.

Some of the risks to be passed to the private sector may not be insurable. The return that the private sector may require for accepting uninsurable risks depends of course on the severity of the risk. For example, the private sector may be extremely reluctant to accept the risk of a change in legislation that may affect the viability of the project in its entirety and will charge a prohibitive price for accepting this risk, or refuse to accept it at all. These sorts of risks are best retained by the public sector as a “self-insured” risk.

The cost of uninsured risk must nevertheless be estimated in the PSC. If an accurate estimate of the insurance premium is not available, the notional “premium” should reflect the severity of the loss incurred, adjusted for the likelihood of its occurrence.

Care must be taken not to include the cost impact of risks that are fully insured in the PSC. In these cases, only the direct cost of insurance should be included in project costing data.

Discounted Cashflow Analysis

Discounts rates and the PSC

Costs and benefits must be expressed on a net present value (NPV) basis. This requires discounting the cashflows of the project over its lifetime using an appropriate discount rate.

The general formula for calculating the net present cost (NPC) of the PSC is:

$$NPC = \frac{CFn}{(1+i)^n}$$

where

CF is the period cashflow;

i is the discount rate; and

n is the number of periods in which the cashflows occur.

Discounting is essential to determine the value of the PSC relative to the best bid, in current dollars. The PSC and the bid cashflows are discounted at the same rate.

Assume for example that the procurement of a hospital requires a capital investment of \$120m in years 1 – 2, and operating expenses of \$15m per year thereafter for 25 years. The private supplier contract requires the operator to build the facility with its own capital and commence providing services in year 3, for which the operator will receive a periodic payment. The best private sector bid is \$22 million per year. Table 3 below summarises the comparison.

Table 3 NPV Analysis

	NPV (\$m)	1	2	3	→	25
PSC	297	100	20	15	15	15
Private sector bid	269	0	0	22	22	22
VFM	28					

Discounted at a real rate of say 5% pa, the private sector option delivers the service at approximately 10% less than the public sector option.

The discount rate that will be used to discount project cashflows can be expressed on a nominal or real basis. If a nominal basis is selected, the effect of price inflation must be expressly incorporated into the analysis. Inflation can be ignored if real discount rates are used.

Preferably nominal, rather than real costs, should be used in the PSC, which is consistent with standard practice for project evaluation in Australia. These costs will generally include the impact of inflation, which can be significant for projects extending over several years, in some cases up to 50 years. However, appropriate adjustments should be made to cost values that are expected to change at a different rate to the general inflation level. For example, the cost of technology has changed over time at well below the increase in the general price level. Realistic assumptions must be made as to the behaviour of all relevant costs according to the particular variables driving that cost.

Discount rates in risk simulation

Risk simulations are usually conducted using the risk-free rate of interest (approximated by the relevant Commonwealth Bond rate) as the objective of the simulation is to derive a variance around an expected value, not to derive a risk-adjusted value of the project *per se*. However, the risk adjustments in the PSC relate to base costing that uses the discount rate as advised by Treasury and Finance, currently 5% real. For consistency in valuation, this discount rate should also be used in risk simulation models.

Discount rates sensitivity

A common practice in project evaluation is to test NPV results by varying the discount rate. This practice is not recommended for the PSC. Varying the discount rate simply varies the NPV value of both the PSC and private sector bid(s), and does not in itself provide any useful information as to the risks of the project, which in any event have already been incorporated in the PSC's numerator cashflows.

Agencies may nevertheless wish to be satisfied that the difference in the PSC and private sector bid cannot be explained entirely in terms of differences in private sector cost of capital and the PSC discount rate. In this event, the variation in the discount rate should be constrained to no more than 2% pa either side of the PSC discount rate. The manipulation of discount rates to achieve target values is of course entirely unacceptable.

The private sector bid must be valued in NPV terms *at the same discount rate* as the PSC. It is therefore unlikely that agencies will need to apply sensitivity tests to the discount rate for the purposes of comparing private sector bids.

Further information on public sector discount rates is provided in Appendix 3.

Attachment F: Disclosure Of Contractual Information

A new regime of contract disclosure has been introduced which is effective from July 1, 2001. The underlying principle of this policy is that all Government contracts for goods, services and works will be made publicly available. All contracts entered into under public private partnerships arrangements will be covered by this policy. Exceptions to the disclosure policy are available if sound reasons exist that contracts or specific portions thereof, should remain confidential. The reasons for non-disclosure, however, must be made public.

All departments and agencies are required to inform potential private sector partners of the disclosure policy. Full details of the Contract Disclosure policy can be found at <http://www.contracts.sa.gov.au/>.

Appendix 1: Accounting Classification Of Ppp Transactions

Accounting classification of PPP transactions

Australian Accounting Standards

There is at present no authoritative accounting standard for public private partnerships. Guidance must be sought from existing standards, particularly Australian Accounting Standard AAS17 "Accounting for Leases"

The Standard requires leases to be classified as either operating or finance leases, sometimes referred to as "capital" leases.

Operating leases are essentially "off balance sheet" whereby the lease payments are expensed as incurred, whereas finance leases require the "leased" property to be recorded as an asset and the lease rentals are capitalised as a liability.

Paragraph 5 of AAS17 defines a finance lease as:

"a lease which effectively transfers from the lessor to the lessee substantially all of the risks and benefits incident to ownership of the leased property."

An operating lease is defined as:

"a lease under which the lessor retains substantially all of the risks and benefits incident to ownership of the leased property."

The standard requires that the **economic substance** of the transaction be examined, rather than its technical or legal form. The risks and benefits that are either transferred to the lessee or retained by the lessor are described in paragraph 7:

"those (risks) associated with unsatisfactory performance, obsolescence, idle capacity, losses in realisable value and uninsured damage or condemnation of the property; the benefits include those obtainable from use of the property or gains in realisable value"

Paragraph 9 of the standard sets down the criteria for the classification of finance leases:

"The effective passing, from lessor to lessee, of substantially all of the risks and benefits incidental to ownership is normally assumed where the following criteria are satisfied:

the lease is non-cancellable; and

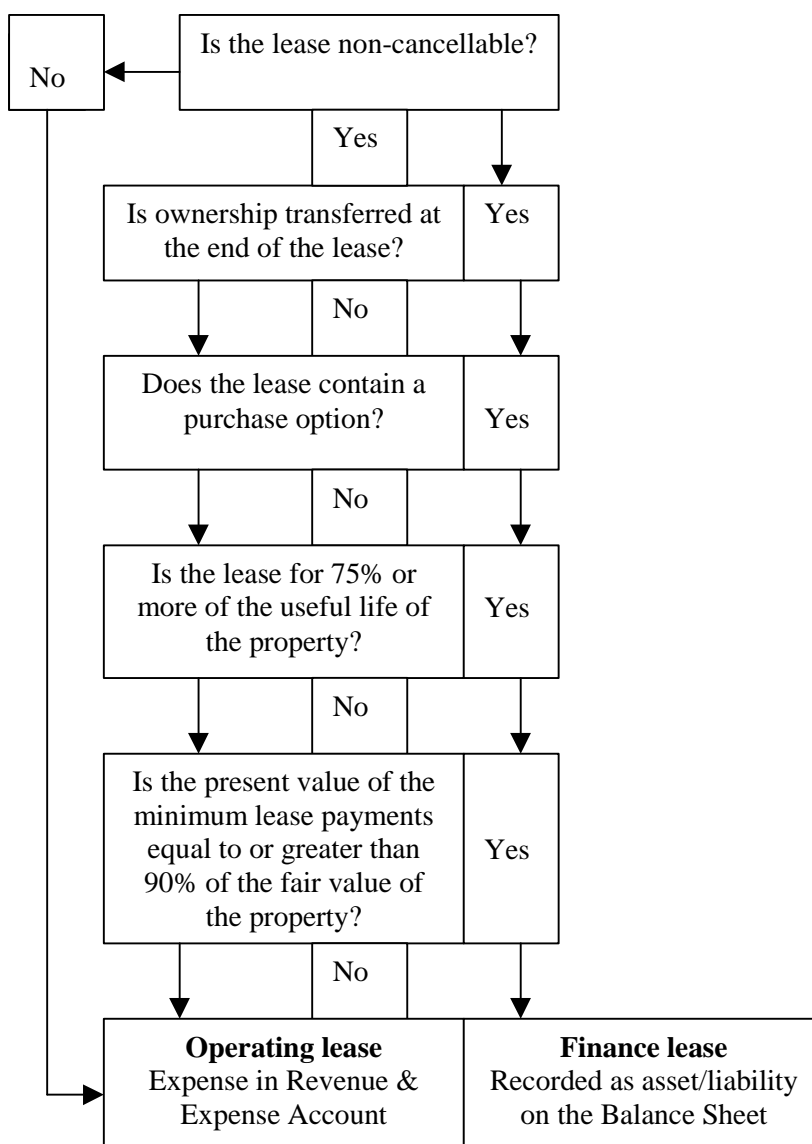
either of the following tests is met:

- the lease term is for 75% or more of the useful life of the leased property; **or**
- the present value, at the beginning of the lease term, of the minimum lease payments equals or exceeds 90% of the fair value of the leased property to the lessor at the inception of the lease"

Accounting Guidance 3 addresses the propensity for lease packagers to structure transactions outside of the technical criteria, for example, by providing a lease term of 74% of useful life.

The Guidance emphasises that the criteria provided in paragraph 9 are “guidelines only and are not part of the accounting standard.” Figure 5 below summarises the criteria to be examined when classifying a lease as finance or operating.

Figure 5 Decision criteria for the classification of leases



Interpretation issues

The main criteria to be examined under AAS 17 relate to

- cancellation clauses;
- residual ownership rights;

- lease term and useful life; and
- the present value of the minimum lease payments.

Cancellation clauses

Under AAS17 a lease is non-cancelable if it is capable of being cancelled only if:

- the lessor consents to the cancellation;
- a remote or unexpected contingency occurs that has a significant impact on the terms of the lease;
- the lessee is required, under the terms of the lease, to enter into another lease for the same or equivalent property with the same lessor or party related to the lessor; or
- the lease provides for substantial penalties so as to discourage cancellation.

Residual ownership rights

Which party holds the risk of ownership of the asset at the end of the lease term is an important issue in determining the likely accounting classification. It is not, however, an absolute test, as there may be other risks in the service contract that offset the risk of ownership that may be borne by the lessee. The following table summarises the likely classification depending upon the Government's contractual position at the end of the partnership contract.

Government position at end of contract	Residual value risk to the Government	Residual value risk to the owner/lessor	Likely classification
1. Is not obliged to acquire asset	None	Full RV risk to: – Condition – Changes in market value	Operating lease
2. Is obliged to acquire the asset but at market value	None	As above	Operating lease
3. Asset automatically reverts for nil consideration, but in defined condition	RV risk relating to change in market value	Cost risks due to poor condition	Uncertain – may depend on other factors
4. Must acquire asset at a fixed price	Full RV risk	None	Finance lease

Government position at end of contract	Residual value risk to the Government	Residual value risk to the owner/lessor	Likely classification
5. Automatic reversion for nil consideration	Full RV risk	None	Finance lease

Lease term and useful life

The useful life of a leased property is the estimated period, at the beginning of the lease term, over which:

- the property is expected to be used; and
- the remaining benefit represented by the right to use the property is expected to be derived.

The determination of useful life can be difficult in the case of long-life assets, as there may be different assessments of an asset's useful life depending upon whether the assessment relies on an accounting, economic or actuarial viewpoint.

Present value of lease payments

In the case of partnerships agreements, payments of a leasing nature relate to unitary charges such as an accommodation, the rental of fixed assets or availability payments. Payments for services are not of a leasing nature and are classified as normal operating expenditure, provided they are clearly identifiable as such.

The discount rate to determine the present value of the minimum lease payments is the interest rate implicit in the expected return to the private supplier. Where this rate is not explicitly stated, it should be calculated by the agency. This calculation can be made using relevant formulae and tables for annuities, or by the internal rate of return (IRR) method. Most spreadsheet packages provide most financial mathematics functions.

Appendix 2: Adjustments For Competitive Neutrality

Adjustments for competitive neutrality

Introduction

Competitive neutrality is achieved when government-owned suppliers of goods and services do not gain a competitive advantage relative to private providers by reason only of their public sector status.

The key principle in competitive neutrality is that public sector providers are compared with private sector providers on an equal footing, net of any regulatory or redistributive mechanisms that may exist as a matter of law or public policy.

For the PSC, this involves estimating and adjusting for competitive advantage that may arise by virtue of public sector ownership. For example, State taxes and charges need to be estimated in order to ensure that the PSC shows the full costs of the public sector provision. This allows a valid comparison of the PSC with private sector bids.

State Taxes

Competitive neutrality can be addressed by incorporating into the financial analysis estimates of the financial payments that the public sector would have to make if it were subject to State taxes.

The most significant State tax will often be payroll tax. Most agencies are in any event required to pay payroll taxes, so that an estimate of these tax equivalent payments should be used. If the exempt agency is considering private sector involvement where the private providers would be required to pay the tax, then an estimate should be made of the value of the exemption received by the exempt agency. If an agency is exempt from payroll tax and **all** private bidders are also exempt, is it not necessary to impute payroll tax in the PSC.

Tax equivalent streams may also need to be estimated for a variety of other States taxes – notably Financial Institutions Duty (FID) and land tax.

Income Taxes

The cash flow analysis for the PSC should be conducted on a pre-tax basis for tax exempt entities. Entities subject to the tax equivalent regime should evaluate the project on the basis of their tax status, ie net of tax.

Goods and Service Tax

The Commonwealth Goods and Services Tax (GST), where it cannot be claimed as a credit by the agency as part of providing the good or service in question, must be imputed for the PSC. In the majority of cases, however, it is expected that the agency will be able to claim the GST credit and therefore the GST should not be included in the PSC.

Input cost disabilities

In some instances government owned providers may be subject to costs imposed by Government policy, but from which private providers are exempt. A public sector provider may carry additional obligations by reason of its public sector ownership – for instance different industrial relations standards, different safety standards, different recruitment standards, different reporting requirements and so forth. In these cases, an allowance for these cost disabilities is to be made in constructing the PSC. The adjustments required for these allowances can be complex, so that before making such allowances, agencies should consult the PGE for guidance. Materiality is also a consideration.

In adjusting for cost disabilities, the cost disability must unambiguously be caused by Government impost.

Superannuation and other labour costs

The costs of accruing superannuation, WorkCover levies and other staff-related costs must be included in the PSC. The costs of redundancy or separation packages, if required, must also be included.

Discount rates and taxation

Competitive neutrality is achieved by using a **pre tax** discount rate to discount the PSC cashflows. A pre-tax discount rate ensures that financial analysis and comparisons do not become distorted by the effect of taxation. In the main, bids will reflect the individual bidder's effective tax position, which is reflected in the bidder's quote.

Appendix 3: The Cost Of Capital And Discount Rates

The cost of Capital and Discount rates

The riskiness of an asset is independent of the owner or its source(s) of finance. A project's cost of capital – the discount rate used to derive the present value of the project's cashflows - is a function of the riskiness of the project, irrespective of whether the project is undertaken by the public or private sectors.

For a typical private sector project, the riskiness of a project is therefore reflected in rate of return at which the project's forecast cashflows are discounted. The project's net cashflows are discounted at the risk-adjusted rate to the present day and if the difference between the present value of the cashflows and the capital investment is equal to or greater than zero, the project is accepted or otherwise rejected. For non-commercial sector agencies, the value of project risks in the PSC is included in the numerator cashflows referred to as risk-adjusted *expected* values, as opposed to *forecast*, or *most likely* values, as discussed in Attachment D.

The PSC is a model of the capital and cost structure of the project, adjusted for risk, which is directly reflected in the project's cashflows. Once discrete adjustments have been made for project risk, the application of a risk-adjusted discount rate would in effect be double-counting risk.

The relevant rate for the purpose of discounting cashflows in the PSC is provided in the following sections.

Approach to Discount Rate Determination for the Public Sector Comparator

Components of Discount Rates

The following section provides a background to the basic discount rate components. Understanding the basic discount rate elements is necessary before the models that develop the rates themselves can be examined.

A basic concept in economics is that people prefer to consume today rather than later. For people to be induced to forego consumption today, they must have a sufficiently strong incentive. In the absence of any risk, this incentive is the rate of return at which the marginal investor is prepared to invest in deferred consumption.

The proxy for this in the marketplace is the real risk-free rate of return. Australian Commonwealth Government securities are the closest approximation of a risk-free investment available.

Inflation

The effect of inflation is to erode the purchasing power of money. A *real* rate of return is one that has been adjusted for inflation and measures the increase in purchasing power directly. *Nominal* returns are what are viewed in the market place and have not been adjusted for inflation.

Because purchasing power is lost over time, rational investors incorporate inflation into the return they require for foregoing consumption. This relationship is given by Fisher's theorem:

$$(1 + i_n) = (1 + i_r) \times (1 + ei) \quad (1)$$

$$i_n = i_r + ei + (i_r \times ei) \quad (2)$$

$$i_n \approx i_r + ei \quad (3)$$

where

i_n is the nominal interest rate,

i_r is the real interest rate, and

ei is the expected rate of inflation over the long term.

The first two equations provide the mathematical relationship between nominal and real interest rates and inflation. Nominal interest rates are simply real interest rates 'grossed up' by an estimate of the anticipated rate of inflation.

For example, assume the 10-year nominal bond yield is 7.5% pa. The latest Treasury and Finance estimate for inflation over the longer term is 2.50% pa. The approximate 10-year real interest rate is therefore 7.50% – 2.5% = 5.00% pa. Using Fisher's equation, the exact real interest rate is $[(1.07/1.025) - 1]$ which is 4.90% pa. The difference between the methods is 0.10% pa, not significant.

Project evaluation requires that a consistent approach be taken to the treatment of inflation. Real cash flows must be discounted at real discount rates and nominal cash flows at nominal discount rates.

Tax

Just as investors require a return that compensates for inflationary effects, they also require a return that compensates for any tax payable on the return. At the investor level, there is an extensive array of taxes on investments with different marginal tax rates and structures for different investors, different investments and different countries. The return observed in the marketplace therefore must represent an aggregate after-tax rate required by investors on average.

At a corporate level, some forms of capital are tax deductible to some investors. For example, franking credits are available to Australian resident investors under a regime that takes into account company tax paid on profits so as to avoid double taxation

For public sector projects, exactly the opposite approach is taken. Applying pre-tax discount rates to public sector cash flows (which are also tax-free) ensures that public sector projects are assessed on a neutral basis relative to private sector projects.

Government projects usurp capital that would otherwise be available to private sector projects upon which corporate taxes would have to be paid. Therefore, to ensure efficient allocation of resources between the public and private sectors, the appropriate public sector discount rate must incorporate the same tax wedge as would apply to the marginal private sector project.

This is achieved by valuing pre-tax cash flows at a pre-tax discount rate. The use of a pre-tax discount rate with pre-tax cash flows automatically removes any advantage the Government may have from being tax-exempt. This ensures that projects are assessed in a manner that does not distort investment decisions between public sector and private sector projects. The same methodology applies to the PSC as a reference project.

The Treasury Discount Rate

The financial model of the PSC incorporates discrete adjustments for risk in the model's numerator cashflows. For this reason, discount rates are not adjusted to reflect project risk. PSC cashflows – and those of the private sector proponent – are discounted at the State's long term cost of funds as estimated by Treasury and Finance.

The long-term nature of public private partnerships requires the PSC to be valued in terms of a long run, stable discount rate. Treasury and Finance adopts a long-term real interest rate that removes the impact of short-term inflation expectations and other speculative factors. The current estimate for the State real interest rate is 5% pa, which should be converted to a nominal rate if nominal cashflows are used in the PSC, which is the preferred approach. This rate is subject to periodic review by Treasury and Finance.

Adjusting for inflation

Nominal rates are converted to real rates by applying the Fischer equation as follows:

$$i_r = \frac{1 + i_n}{1 + ei} - 1$$

where i_n = the nominal interest rate.

Real rates i_r are converted to nominal rates as follows:

$$i_n = (1 + i_r)(1 + ei) - 1$$

If the real rate is 5% pa and inflation is expected to average 3% pa over the life of the project, the nominal rate is:

$$i_n = (1 + .05)(1 + .03) - 1$$

$$i_n \approx 8.15\% \text{ pa}$$

Appendix 4: Risk Matrix

Risk Matrix

The following table illustrates the format for a typical risk matrix. The risks listed are typical of public private partnerships, but will vary considerably amongst individual projects.

Description of risk	Costed as part of PSC?	Allocation under PPP		
		Retained risk	Shared risk	Private sector
1. Demand and revenue risks				
- (Type of) service demanded	✓	✓		
- Asset usage	✓		✓	
- Capability of assets	✓			✓
- Assets	✓			✓
- Mismatch between performance incentives and customer disbenefits	✓	✓		
2. Operating risks (including maintenance)				
- Cost of operations	✓			✓
- New regulations	✓		✓	
- Fire	✓			✓
- Theft	✓			✓
- Accidental damage	✓			✓
- Vandalism (to the extent not covered by insurance)	✓			✓
- Health and safety costs	✓			✓

Description of risk	Costed as part of PSC?	Allocation under PPP		
		Retained risk	Shared risk	Private sector
- Breach of environmental regulations	✓			✓
- Training costs	✓			✓
- Exchange rates	✓			✓
- Defects that require repair to maintain performance	✓			✓
- Integration of new assets into the system	✓			✓
- Obligation to repair damage	✓		✓	
3. Design and construction risk				
- Site availability	✓		✓	
- Commissioning and systems integration	✓			✓
- Site costs	✓			✓
- Inadequate design	✓			✓
- Design errors	✓			✓
- Late design changes	✓		✓	
- Design delays	✓			✓
- Site access problems	✓			✓
- Unforeseen ground conditions	✓			✓
- Environment	✓			✓
- Archaeological discoveries	✓			✓
- Weather	✓			✓
- Strikes	✓			✓

Description of risk	Costed as part of PSC?	Allocation under PPP		
		Retained risk	Shared risk	Private sector
- Interference from third parties	✓			✓
- Interactions with utilities and statutory authorities	✓			✓
- Noise restrictions	✓			✓
- Delays with procurement of materials	✓			✓
- Availability of plant	✓			✓
- Unproven technology	✓			✓
- Unforeseen incompatibility with existing systems and services	✓			✓
- Delays with approvals	✓			✓
- Insolvency of subcontractors or suppliers	✓			✓
- Commissioning difficulties	✓			✓
- Contractual claims	✓			✓
- Abandonment of contract	✓			✓
- Corruption	✓			✓
- Construction defects	✓			✓
- Third-party liability	✓			✓
- Fire	✓			✓
- Flood	✓			✓
-				
- Health and safety	✓			✓

Description of risk	Costed as part of PSC?	Allocation under PPP		
		Retained risk	Shared risk	Private sector
4. Other risks				
- Availability and cost of finance	✓			✓
- Taxation	✓			✓
- Legislation	✓	✓		
- Inflation	✓		✓	