Payment Mechanisms

Public Private Partnership Guidance Note 12

14 April 2000

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I. Introduction

Purpose and Scope of Guidance Note

1.1 This Guidance Note provides guidance for Central and Contracting Authorities in relation to the development of payment mechanisms for Public Private Partnership projects in the roads, water and waste sectors. The purpose of the Guidance Note is:

- To introduce the principles underlying a range of different types of payment mechanisms and to examine their application to Public Private Partnership infrastructure projects;
- To review the issues that influence the structuring of payment mechanisms for Public Private Partnerships and to identify the advantages and disadvantages of different payment mechanism structures; and
- To provide detailed advice on the development of payment mechanisms for infrastructure projects in the roads, water and waste sectors.

1.2 This Guidance Note is one of a series of Guidance Notes which provide contextual information on Public Private Partnerships and procedural guidance for Central and Contracting Authorities covering each stage in the development and implementation of infrastructure projects using the Public Private Partnership approach. The titles of all of the Guidance Notes are set out in Appendix A to this Guidance Note.

1.3 The Guidance Notes are designed to be informative rather than prescriptive and the aim is to reflect good practice. They are generic in that they provide guidance on the use of Public Private Partnerships across a range of projects in the roads, water and waste sectors. However, different projects will give rise to different issues and the guidance provided will have to be reviewed in the context of each individual project. For this reason it is important that Central and Contracting Authorities obtain expert advice in order to help them to make best use of the Guidance Notes and to complete a successful Public Private Partnership procurement.

Structure of Guidance Note

1.4 The Guidance Note provides an introduction to the use of payment mechanisms in the context of Public Private Partnership infrastructure projects. It then describes in detail the two principal forms of payment mechanism, namely user charges and unitary payments. User charges are paid directly by the users of a particular service whilst unitary payments are made by the Contracting Authority to the Contractor. Unitary payments typically comprise one or more of the following elements - usage payments, availability payments and service performance payments.

1.5 The key payment mechanism issues addressed in the Guidance Note are as follows:

- ***Section Two*** - describes the basic elements and principles underlying payment mechanisms for Public Private Partnership projects and describes a process by which effective payment mechanisms may be developed;

- ***Section Three*** - describes the principles and characteristics of user charging and discusses its potential application to Public Private Partnership projects;
- ***Section Four*** - describes the principles and characteristics of a usage payment and discusses its potential application to Public Private Partnership projects;
- ***Section Five*** - introduces the principles and characteristics of an availability payment within the context of a Public Private Partnership project;
- ***Section Six*** - sets out the principles and characteristics of service performance payments within the context of a Public Private Partnership project; and
- ***Section Seven*** - identifies the main issues that may give rise to a change in cost over the life of a Public Private Partnership project.

1.6 The final Section provides a summary of the main conclusions and recommendations that are identified and discussed within this Guidance Note.

Public Private Partnership Route Map

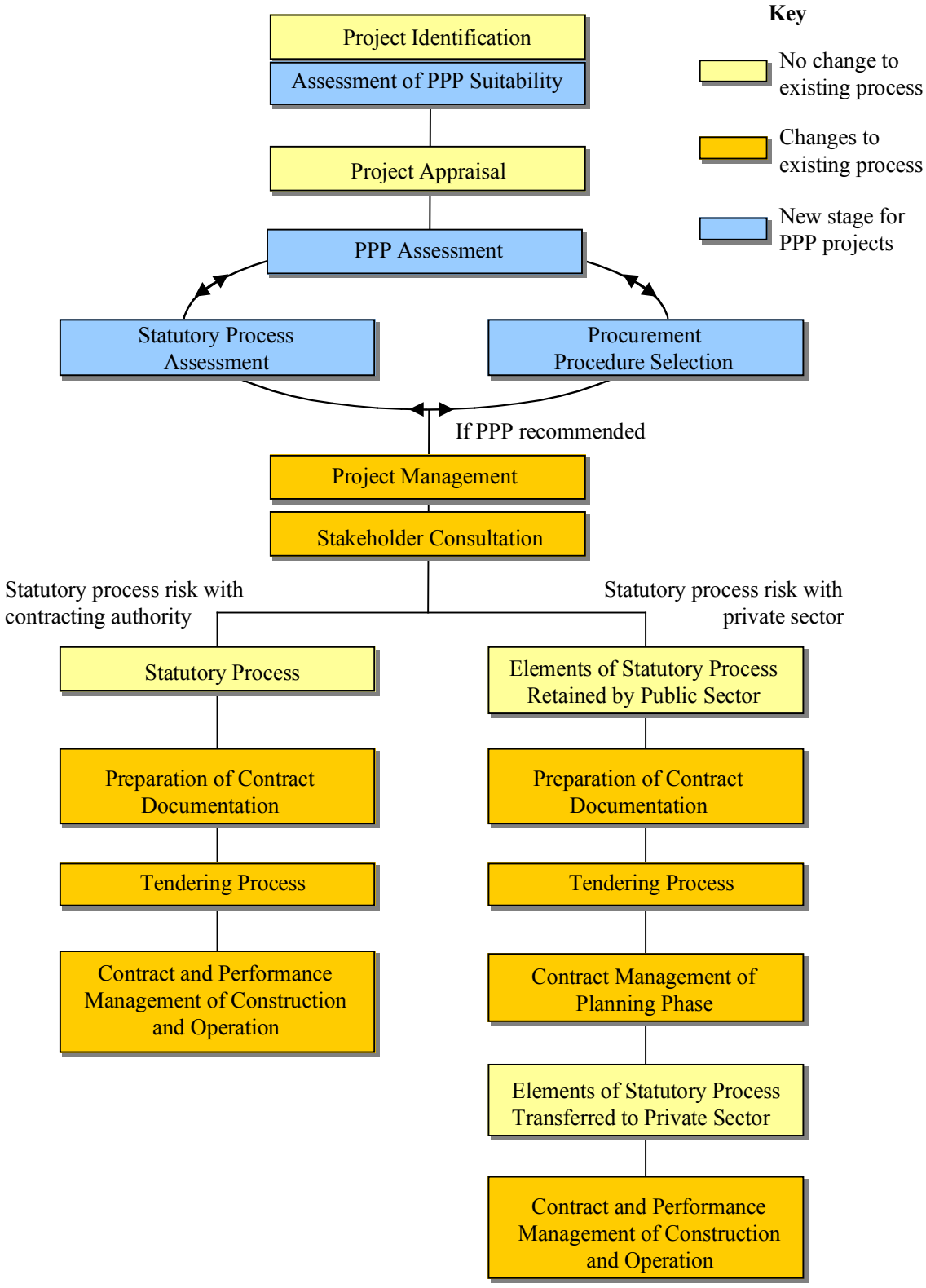
1.7 The process of project development and implementation changes significantly when a project is taken forward as a Public Private Partnership. For this reason a Public Private Partnership Route Map has been developed.

1.8 The Public Private Partnership Route Map sets out the main stages in the development and implementation of a Public Private Partnership project that must be undertaken by the Central Authority and the Contracting Authority. The Route Map is presented in the diagram shown overleaf.

1.9 The Public Private Partnership Route Map shows how the traditional processes of project development, procurement and implementation change for a Public Private Partnership project. A more detailed description of the Public Private Partnership Route Map is provided in the separate Guidance Note entitled *Introduction to Public Private Partnerships*.

1.10 The detailed payment mechanism should be developed as part of the overall process of preparing the contract documentation. In this context, it is important to note that the development of the payment mechanism cannot be undertaken in isolation. As a result, this Guidance Note should be read in conjunction with the separate Guidance Notes entitled *Risk Assessment*, *Output Specifications* and *Contract and Performance Management*.

Figure 1: Public Private Partnership Route Map



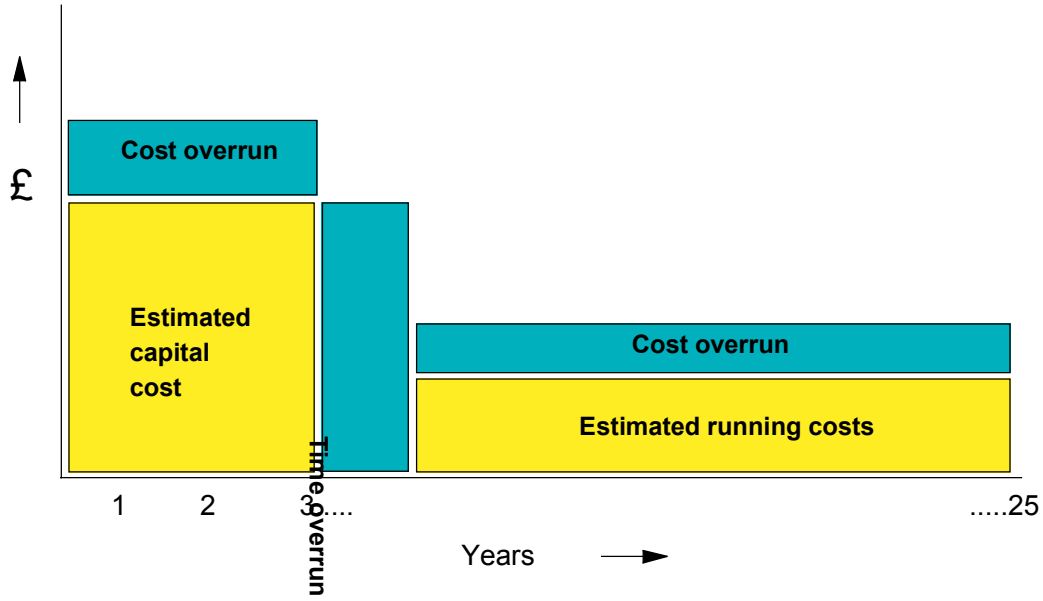
II. Payment Mechanisms

Introduction

2.1 Under a Public Private Partnership contract, the main way of allocating risk between the public and private sectors is through the payment mechanism. It is therefore important that the payment mechanism reflects both the levels of service required, and the most cost-effective transfer of risk to the private sector. The payment mechanism should give the Contractor an incentive to perform well and should provide the Contracting Authority with remedies in the event that the Contractor does not meet its obligations.

2.2 Traditionally, the construction and operation of a new infrastructure project has required the Contracting Authority to provide significant up-front capital funding during the construction phase, followed by reduced levels of revenue funding during the operational phase. As a consequence the Contracting Authority has commonly borne the risks associated with cost and time overruns. A typical expenditure profile for a traditional project is presented in the diagram below.

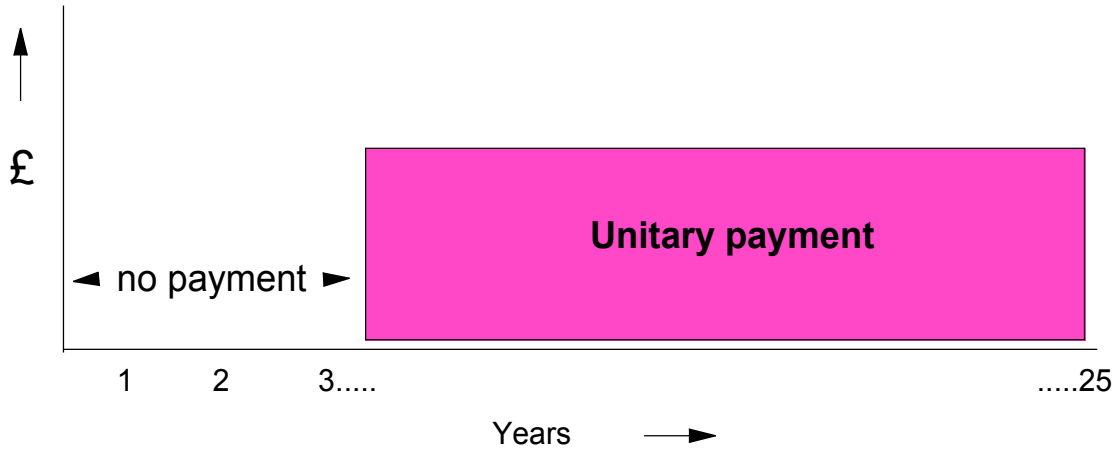
Figure 2: Expenditure Profile for a Traditional Infrastructure Project



2.3 There is some scope for transferring construction and operating risks to the private sector under Design and Build and Design, Build and Operate contracts. Capital payments are likely to be fixed under these arrangements and staged throughout the construction period. Operating costs are also likely to be fixed under Design, Build and Operate contracts and phased throughout the operational period. The mechanisms used to pay for Design and Build and Design, Build and Operate contracts will be structured in a similar way to those for traditional infrastructure projects, and for this reason they are not considered further in this Guidance Note.

2.4 Public Private Partnership contracts that introduce private sector finance provide an opportunity for the public sector to translate the large up-front capital expenditures associated with traditional projects into a flow of recurring service payments. For example, under Design, Build, Operate and Finance contracts, the private sector contractor is responsible for financing the up-front capital expenditure, and usually recovers its costs through a unitary payment from the Contracting Authority. The typical expenditure profile for an infrastructure project procured using such a contract is presented in the diagram below.

Figure 3: Typical Expenditure Profile for a DBOF Contract



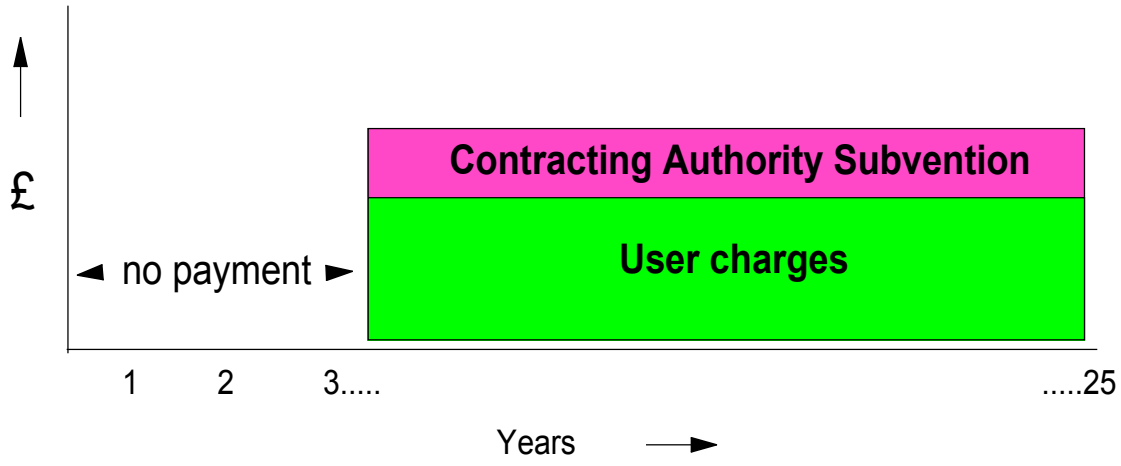
2.5 For projects involving the provision of new infrastructure, the unitary payment does not usually commence until the start of the operational period, once the required services are being provided to an acceptable standard. This increases the amount of risk transferred to the private sector and provides a significant incentive for the Contractor to complete construction as early as possible.

2.6 However, where a project involves the continued provision of an existing service (e.g. the upgrading of a major road), then some payments may be made to the Contractor during the construction period to reflect the continued availability of the existing service. In addition, where statutory process risk is being transferred to the Contractor, then some payments may be made to the Contractor during the course of the statutory process period to reflect the detailed design work being undertaken.

2.7 Concession contracts may be financially free standing, but where public subvention is required the public expenditure profiles are similar to those for Design, Build, Operate and Finance contracts, except that any payments required from the Contracting Authority will be smaller. This reflects the fact that under a Concession contract, the Contractor recovers its costs either through direct charges on private users of the asset (e.g. road tolls), or through a mixture of user charging and public subventions.

2.8 The typical income stream for a Contractor under a Concession contract is presented in the diagram shown overleaf.

Figure 4: Typical Income Stream for a Concession (with subvention)



2.9 Design, Build, Operate and Finance contracts and Concession contracts provide significant scope for using the payment mechanism to transfer risk to the private sector. For example, by making no payments until services are provided to an acceptable standard, the payment mechanism transfers significant design and construction risk and provides significant incentives for the faster implementation of infrastructure projects. This is highly relevant in the context of the *National Development Plan 2000-2006*.

2.10 This Guidance Note therefore focuses on the provision of advice for Contracting Authorities on the preparation of payment mechanisms for Public Private Partnership projects involving private finance.

Basic Elements of a Payment Mechanism

2.11 There are a variety of elements that can be used in isolation or, as is more likely, in combination to provide payment mechanisms for a Public Private Partnership infrastructure project. In general, payment mechanisms are likely to include one or more of the following basic elements:

- ***User charges*** – payments received by the Contractor directly from private users of the infrastructure or service (e.g. road tolls);
- ***Usage based payments*** – payments from the Contracting Authority to the Contractor that vary according to how much the infrastructure or service is used;
- ***Availability based payments*** – payments from the Contracting Authority to the Contractor for making infrastructure or services available for use at an acceptable standard; and
- ***Performance based payments*** – payments from the Contracting Authority to the Contractor that vary according to the quality of service provided.

2.12 The suitability of the above elements for use in a payment mechanism for an infrastructure project will depend on the particular characteristics of the project concerned, and in particular, the desired allocation of risk between the public and private sectors. A detailed discussion of the principles underlying each of the above elements, and their potential application to infrastructure projects in the roads, water and waste sectors, is provided in the sections of this Guidance Note that follow.

Underlying Principles

2.13 Under a Public Private Partnership contract, the public sector is interested in the delivery of the service rather than the construction of the asset. Therefore, when developing the basic structure of a payment mechanism, the following principles should be addressed:

- the services to be delivered should be measurable, both in terms of quantity, and in terms of quality. The services to be delivered should be defined in the output specification;

- payments should not commence until the full service is available to the required standard. As described previously, an exception to this is when the project includes the continuation of an existing service (e.g. the upgrading of an existing road that is to remain open during the period of the works). Also, where statutory process risk has been transferred to the Contractor, then some payments may be made to the Contractor during the statutory process period to reflect the detailed design work being undertaken;

- the payment mechanism should be based on measures such as usage, availability and performance, and not on the inputs needed to deliver the service;

- usage payments should be related to measures that can be forecast, such as traffic volumes along a road, or flows volumes through a water treatment works;

- availability payments should be based on objective measures, such as number of road lane kilometres available;

- performance payments should be based on the achievement of standards that are practical to measure over the entire contract period. It is important that any practical difficulties in monitoring, measuring and auditing the basis for performance payments are carefully thought through;

- the payment mechanism should make deductions for unsatisfactory performance;

- the payment mechanism should not, in principle, contain any fixed element, as the intention is to pay for results;

- Contractors should be capable of managing the risks which are being transferred;

- the payment mechanism should be bankable insofar as private sector bidders and their financiers must be able to model their probable revenue and expenditure streams with reasonable certainty, and the public sector should be able to model and cap its own costs; and

- the payment mechanism must be simple to understand, and any change from existing systems (or in the case of the pilot projects, systems used elsewhere in Europe) that are well understood and accepted by the private sector should as far as possible be evolutionary.

2.14 A well structured payment mechanism should exhibit, as far as possible, the following features:

- simplicity;

- measurable project deliverables;

- strong and appropriate incentives for the private sector to perform;

- flexibility;

- bankability (the ability of the Contractor to finance the project given the risks allocated to them in the payment mechanism);

- affordable to the public sector; and

- accountability (the ability to resolve any disputes that may arise over the level of payments).

Developing a Payment Mechanism

2.15 The development of a payment mechanism is commenced at the start of the Procurement stage of the Public Private Partnership Route Map. An initial output specification and preliminary risk assessment will already have been prepared at the Option Appraisal stage and included in the Public Private Partnership Assessment. In addition, the most relevant procurement procedure will have been selected, and a decision will have been taken on the potential to transfer statutory process risk to the Contractor.

2.16 The requirements of the payment mechanism should first be considered during the Option Appraisal stage. In undertaking the procurement procedure selection, the Central Authority should think carefully about whether the risks associated with a project, and the private sectors willingness to accept them, are likely to be sufficiently well defined to enable a payment mechanism to be developed in sufficient detail to permit prior overall pricing by tenderers.

2.17 For example, in the case of a Design, Build, Operate and Finance contract, the Contracting Authority will be seeking to achieve through the payment mechanism optimal risk transfer in the context of the introduction of private finance. Where the restricted procedure is followed in Design, Build, Operate and Finance projects, it may lead to the pricing of projects based on private sector costs of equity and debt without sufficient scope for innovation and an efficient allocation of risk to the private sector.

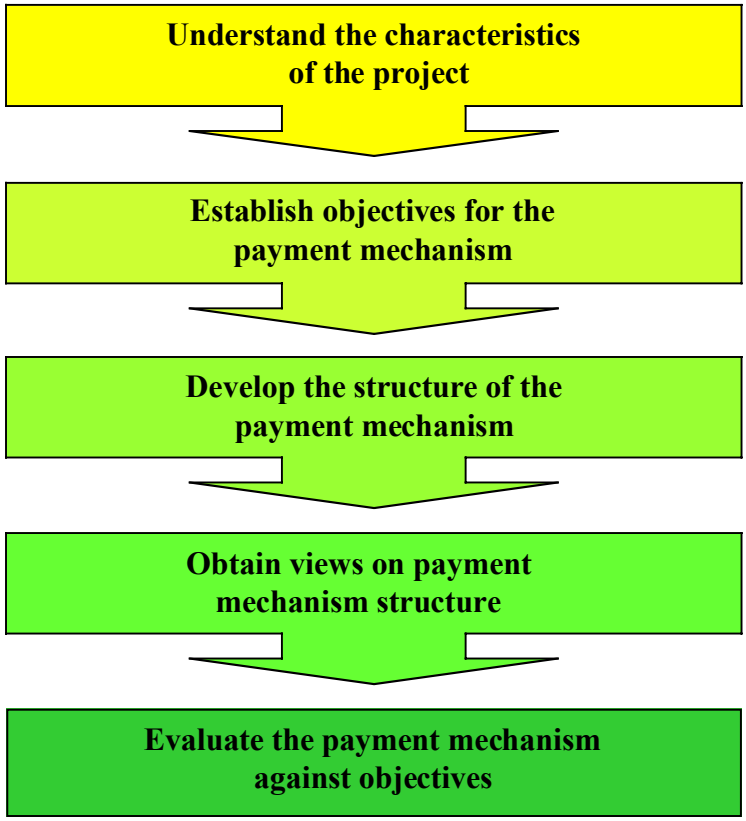
2.18 A Contracting Authority can improve its judgement on the appropriate allocation of risk through regular and structured market sounding of private sector appetite for various types of project and the spectrum of risks and rewards they represent. However, any such market sounding may be unlikely to elicit responses which involve significant proposals for innovative, technical, commercial or financial solutions as the private sector may be likely to guard those proposals until such time as they have a realistic opportunity to commercially exploit their own innovative ideas. Thus, the Contracting Authority may not, having undertaken such market sounding, achieve its aim. It will then be in the position that it would be desirable to adopt the negotiated procedure.

2.19 Detailed guidance on the selection of procurement procedure is set out in the separate Guidance Note entitled *Procurement Procedure Selection*.

Indicative Approach

2.20 There are a number of basic steps to follow when designing an efficient payment mechanism for a Public Private Partnership project. If these are not followed then the Contracting Authority will run the risk that the payment mechanism will not transfer risk effectively and will not provide appropriate incentives to the private sector to perform to the standard required. An indicative approach to designing a payment mechanism is set out in the diagram shown overleaf.

Figure 5: Indicative Approach to Developing a Payment Mechanism



2.21 The main features of this indicative approach are discussed in the paragraphs that follow.

Understand the Characteristics of the Project

2.22 The payment mechanism should reflect the underlying characteristics of the project. For example, a payment mechanism based almost entirely on usage payments would be inappropriate for services with a highly stable demand profile as the risk transferred (and hence incentive given) to the private sector will be small. Payment mechanisms need to have regard to:

- the economic fundamentals of the project (supply, demand, cost and timing characteristics);
- legal and economic viability of user charges;
- the economic characteristics of the Contracting Authority. For example, the project must be affordable over the term of the Project Agreement; and
- the underlying project risks, including the most cost effective allocation of these risks between the public and private sectors.

Establish Objectives for the Payment Mechanism

2.23 The payment mechanism is the principal method of transferring risk to the Contractor. It is also one of the most difficult aspects of a Public Private Partnership project to develop. It is essential that the objectives of the payment mechanism reflect the desired allocation of risk on the project (as defined by the detailed risk assessment), as the objectives will determine the structure of the payment mechanism, and the extent to which risk is actually transferred to the private sector.

2.24 The basic objectives of the payment mechanism will vary from one project to another. Generally they will include:

- delivering value for money;
- allocating risks to the party best able to manage them;
- providing incentives to the private sector to deliver services to the required standards of performance in defined time scales;
- providing incentives for the private sector to continue to deliver high quality services over the life of the contract;
- rewarding the private sector for efficiency gains; and
- making the scheme affordable to the Contracting Authority.

2.25 The objectives of the payment mechanism are highly dependent on the requirements set out in the Output Specification and the results of the risk assessment. These items are closely related, and it will be important to establish mechanisms to facilitate iteration between these three important elements of a Public Private Partnership.

2.26 For example, the decisions to be taken during the development of the payment mechanism will be informed by the Output Specification and risk assessment. Similarly, the process of developing the payment mechanism may also lead to further refinement of the Output Specification and risk assessment.

2.27 Guidance on preparing output specifications and undertaking detailed risk assessments is provided in the separate Guidance Notes entitled *Output Specifications* and *Risk Assessment*. It is strongly recommended that these Guidance Notes are read before the payment mechanism is developed.

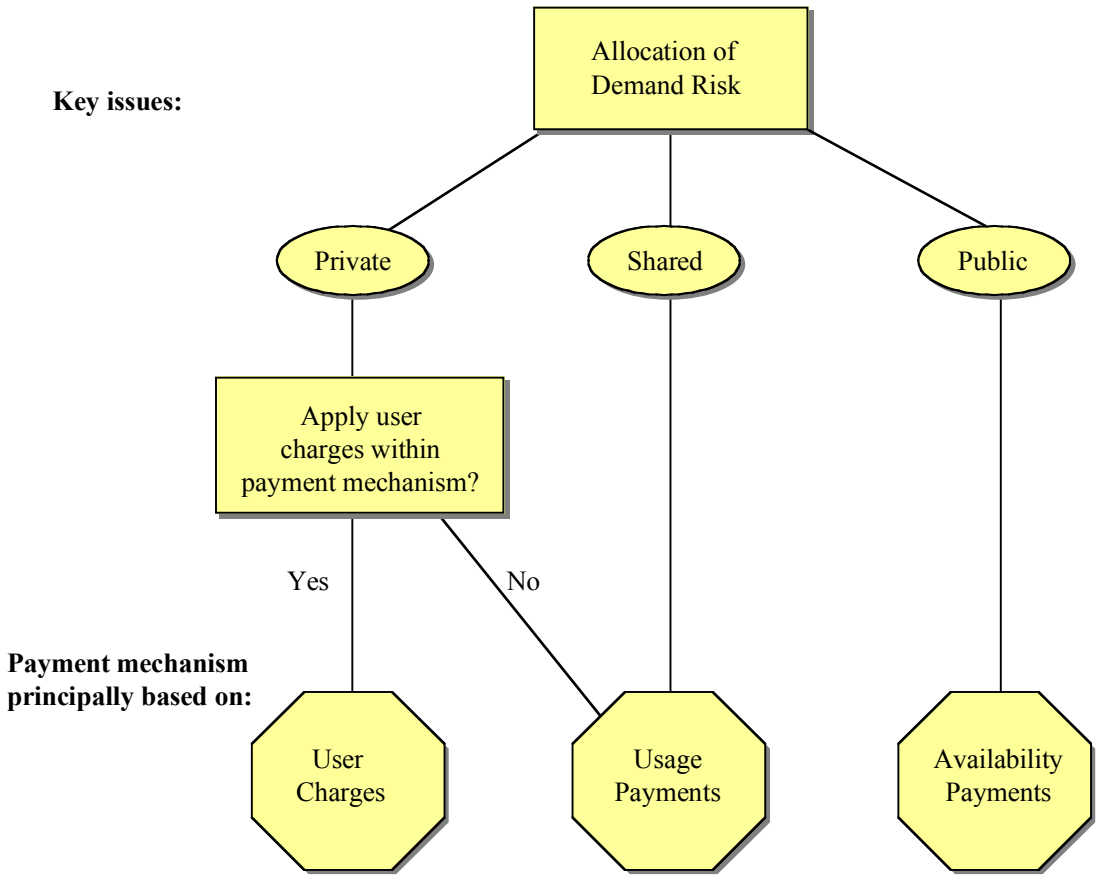
Develop the Structure of the Payment Mechanism

2.28 The development of payment mechanisms should be evolutionary, and Contracting Authorities should draw on the experience of similar projects taking into account differences in project objectives and project scope.

2.29 A common approach to developing a payment mechanism is to first consider the most cost-effective allocation of demand risk between the Contracting Authority and the Contractor. The allocation of demand risk is a determining factor in the identification of the most appropriate payment mechanism structure.

2.30 The importance of demand risk in the identification of the most appropriate payment mechanism structure for an infrastructure project is highlighted in the diagram shown below.

Figure 6: Identification of the Most Appropriate Payment Mechanism



2.31 If demand risk is fully transferable to the private sector, and private users of the service are to be charged for its use (e.g. road tolls), then as indicated in the diagram above, the payment mechanism is likely to be structured principally on user charges. If, however, demand risk is to be shared between the Contracting Authority and the Contractor, then the payment mechanism is likely to be structured principally on usage payments. If the Contracting Authority is to retain demand risk, then the payment mechanism is likely to be structured principally on unitary payments involving availability and service performance measures.

2.32 Service performance can be taken into consideration in the unitary payment by means of a separate performance related payment, or as is more common, through performance related deductions within a usage or availability based unitary payment. On this basis, the main elements that could be used to comprise the payment mechanism in each of the circumstances described above are summarised in the table that follows.

Table 1: Main Elements Comprising a Payment Mechanism

User Charges	**Usage Based Unitary Payment**	**Availability Based Unitary Payment**
User charges or User charges plus subvention comprising one or more of: ▪ Usage payment ▪ Availability payment • Performance payment • Capital grant • Revenue support • Guarantees	Usage payment less deductions in relation to: ▪ Availability; and/or ▪ Service performance	Availability payment less deductions in relation to ▪ Usage; and/or ▪ Service performance

2.33 As presented in Table 1 above, unitary payments are based primarily on either usage or availability, and deductions are made from the unitary payment in respect of the performance of the Contractor in relation to other elements.

2.34 A more detailed explanation of user charges, usage payments, availability payments and service performance payments is provided in Sections Three, Four, Five and Six of this Guidance Note respectively.

Example:

For road projects in Ireland, the primary objectives may be to improve the quality and capacity of inter-urban roads as soon as is reasonably practicable, so that the economic development of the region is not hindered by unsatisfactory transport infrastructure, and to achieve value for money for public expenditure.

The secondary objectives of the roads projects may be to introduce user charges (tolls) on key routes, and to transfer usage related risk to the private sector

These objectives will influence the structuring of the payment mechanism, and in particular a decision on the application of user charges involving options such as:

- The Contractor receiving toll income, possibly augmented by capital and/or revenue subvention from Government; and
- The Government setting tolls and receiving toll income, and paying the Contractor a unitary payment based on availability and service performance, possibly including a usage element.

Obtain Views on Payment Mechanism Structure

2.35 The procurement procedure selected will have a direct impact on the way in which the payment mechanism is developed, and on the extent to which it can be discussed with short listed tenderers in particular.

2.36 If the restricted procedure is selected, then the payment mechanism will need to be fully developed prior to the issue of the Invitation to Tender. Under the restricted procedure, there is limited scope for obtaining the views of short listed tenderers on the proposed structure of the payment mechanism prior to the issue of the Invitation to Tender, but no scope for negotiation after the Invitation to Tender has been issued. The Contracting Authority should seek advice from its appointed legal advisers in relation to the discussion of the payment mechanism with short listed tenderers.

2.37 If the negotiated procedure is selected, then there is scope for negotiating the structure of the payment mechanism with short listed bidders after the Invitation to Negotiate has been issued. However, in order to keep the scope and duration of negotiations to a minimum, it is recommended that the payment mechanism is developed as far as possible prior to the issue of the Invitation to Negotiate. Further advice is provided in the separate Guidance Note entitled *Procurement Management*.

Evaluate Payment Mechanism against Objectives

2.38 Based on the views expressed by short listed tenderers, the payment mechanism may be refined to provide a more cost effective allocation of risk between the Contracting Authority and the Contractor. Care should be taken to ensure that in refining the payment mechanism, the Contracting Authority does not inadvertently take back risks that it had intended to allocate to the Contractor.

2.39 Finally, the payment mechanism should be evaluated against its original objectives to ensure that all objectives are achieved in a cost-effective way, and to verify that the structure of the payment mechanism represents best value for money.

III. User Charges

Introduction

3.1 The application of user charges to infrastructure projects in the roads, water and waste sectors must reflect Government policy on user charges and the application of the polluter pays principle to fund the construction and operation of infrastructure projects in these sectors. Therefore in devising payment mechanisms for projects in these sectors, the principal objective should be to attribute an appropriate proportion of the costs of constructing and operating the project to its users if the project is suitable for the application of user charges.

Suitability of Projects to User Charges

3.2 User charges can take different forms in each of the sectors under consideration. Some examples of the use of user charges in each sector are as follows:

- ***Roads*** - tolling of bridges, tunnels or motorways;
- ***Waste*** - waste charges including gate fees; and
- ***Water*** - industrial and non-domestic charges.

3.3 To date, user charges have only been applied to infrastructure projects in limited circumstances, such as the East Link or West Link bridges. These two concessions are both operated by the same business, National Toll Roads. The Roads Act 1993 gives the National Roads Authority (for national roads) and Local Authorities (for regional and local roads) the power to introduce user charges on roads projects.

3.4 In assessing the suitability of different projects for the application of user charges, some consideration needs to be given to the following factors:

- ***Availability of alternatives*** - the application of user charges on a project may discourage potential users and result in them using available alternatives. This could have a significant impact on the ability of the project to deliver the benefits for which it was designed.
- ***Elasticity of demand*** - this considers the extent to which user charges would dissuade potential users from using the project. It considers the relationship between user charges and expected level of use, and can be used to predict, for example, the level of user charge that maximises project revenues, or the level of user charge that best delivers the objectives of the project (e.g. reducing traffic congestion).
- ***Practicality of applying user charges*** - in some instances it may not be practical to apply user charges. For example, it may not be cost effective to apply user charges to a road with many points of entry and egress.

- ***Ability to forecast demand*** - the ability to forecast demand will determine the extent to which a Contractor is likely to accept demand risk on the project, and the extent to which the private finance can be secured in a cost effective way. This in turn will influence the decision as to whether it is cost effective for the Contractor to recover its costs through user charges, or whether another mechanism should be used to pay the Contractor.

- ***Government policy*** - the application of user charges to a Public Private Partnership project must reflect government policy on user charging, including for example government policy not to charge domestic users for water supply. It must also reflect government policy on the application of the polluter pays principle to fund the construction and operation of infrastructure projects in the roads, water and waste sectors.

- ***Legality*** - the application of user charges to Public Private Partnership projects in the roads, water and waste sectors will be dependent on the legal powers of Contracting Authorities and private sector contractors to charge users of services in these sectors. Further advice is provided on this issue in the separate Guidance Note entitled *Legal Context*.

Applying User Charges

3.5 In order to determine the best way of applying user charges to Public Private Partnership infrastructure projects, the following issues must be considered in detail by Central and Contracting Authorities:

- Should the Contractor recover its costs directly through user charges? (i.e. should the payment mechanism be based in user charges?)

- How should user charges be set?

- What form of subvention should be used by the Contracting Authority to pay the Contractor, in the event that user charges are unlikely to be sufficient to meet the full cost of the project?

- Should the Contracting Authority provide guarantees to the Contractor in relation to minimum levels of income, and should the Contracting Authority include mechanisms to prevent the Contractor from making excessive profits?

3.6 Each of the above issues is discussed in detail in the remainder of this section of the Guidance Note.

3.7 It is envisaged that, for major road and waste projects in particular, Contractors will recover their costs directly through user charges. This is in accordance with Government policy on user charges and the application of the polluter pays principle. However, even when user charges are not considered to be a cost-effective means for Contractors to recover their costs, the Contracting Authority may still apply them to a project. Under such circumstances the Contracting Authority would take responsibility for setting user charges, and could either collect the revenues itself, or ask the Contractor to collect them on its behalf.

3.8 There are two advantages to the Contracting Authority setting user charges and receiving associated revenues, and then paying the Contractor based on usage, availability or service performance payments. Firstly, because lenders and other providers of capital are not so directly exposed to usage risk, the cost of capital should be lower and thus the amount of support needed to be provided by the Contracting Authority (net of the revenues it will receive from user charges) will be lower. Secondly, this sort of arrangement will allow the Contracting Authority to set user charges at a level that maximises economic and social benefit and provides the greatest contribution to the project objectives.

3.9 However, the user charge set by the Contracting Authority could directly affect the level of use of the road. Therefore, if the Contractor was to be paid by means of a usage payment, then it may require input into the setting of user charges to minimise any adverse effect of user charges on its revenues. A detailed description of usage payments is provided in the next section of this Guidance Note.

Basing a Payment Mechanism on User Charges

Key Issues

3.10 One of the simplest forms of payment mechanism is a system of user charges, where the Contractor recovers its costs either through direct charges on private users of the asset (e.g. road tolls), or through a mixture of user charges and public subventions.

3.11 Payment mechanisms that are based on user charges provide Contracting Authorities with the opportunity to maximise the extent to which demand risk is transferred to the Contractor. They also reduce the requirement of the Contracting Authority to monitor the performance of the Contractor, as the Contractor has a direct incentive to improve its performance to encourage greater use and to maximise revenues.

3.12 User charges are a cost-effective means of reimbursing a Contractor when the Contractor is able to forecast demand and revenues with relative certainty. Where a Contractor is unable to forecast demand with relative certainty, the revenues generated from user charges will be less certain and the cost of financing the project will increase.

3.13 Under such circumstances, other forms of payment mechanism that reduce the extent to which demand risk is transferred to the Contractor may represent a more cost effective method of payment. The Contracting Authority can either reduce the proportion of the revenue of the Contractor that comes from user charges, or reimburse the Contractor through other means such as usage, availability and performance payments.

Advantages

3.14 The main advantages associated with payment mechanisms that involve user charges are as follows:

- the public in general are not providing a subsidy to the users of the new infrastructure;
- user charges are a practical option, provided that payments can be collected efficiently. They are also simple to understand and consistent with Government policy;
- user charges can vary, for example by vehicle type and time of day on a road project, so that the demand for the service can be managed through the pricing policy;
- Contracting Authority finances are unencumbered;
- private sector efficiency is brought into what has traditionally been a public sector activity; and
- user charges contribute to more economically efficient use of infrastructure (and roads infrastructure in particular).

Disadvantages

3.15 The main disadvantages associated with payment mechanisms involving user charges are as follows:

- the level of charge required to fully amortise the capital expenditure on a project may be so high that it would discourage potential users, and reduce the benefits that the project had sought to deliver. Under these circumstances the Contracting Authority may need to cap user charges and provide a subvention to the Contractor;
- the application of user charges raises the issue of equitable treatment. This is a key issue that must be taken into consideration when selecting projects for the application of user charges, and when setting the levels of charge to be applied;

- user charges can only effectively be used within a payment mechanism when the private sector is able to forecast demand and revenues with a reasonable degree of certainty; and

- users may have to pay more for a project on which the private sector is reimbursed through user charges, because the risk transferred to the private sector is greater than for a project whose revenues come directly from the Contracting Authority.

Risks

3.16 The principle of user charges is simple in theory. However, in practice, the application of user charges to finance infrastructure projects in the roads, water and waste sectors is complex, and it introduces a number of risks to a project. These include:

- ***Demand risk*** – Concession contracts are often awarded to the Contractor that has the highest demand forecasts, expects to generate greater revenue through user charges, and therefore requires the lowest subvention from the Contracting Authority. However, demand forecasting is subject to a high degree of uncertainty and there is a significant risk that the lowest priced tender will have over estimated demand, and therefore will be unable to make a commercial return on the project.

- ***Collection risk*** - collection risk is the risk that users of the service try to avoid paying the user charge. Collection risk increases in line with user charges. Therefore the higher the user charges are set, the greater the collection risk will be.

- ***Protestor action risk*** – the risk of protestor action may increase as a result of the application of user charges. However, it is unlikely to be significant as generally protestor action comes from two sources, those with a proprietary interest in the land in question and those who protest on environmental/heritage grounds. In neither of these cases is protestor action likely to be influenced by the application of user charges.

3.17 The use of user charges to finance infrastructure projects in the roads, water and waste sectors can also give rise to a number of practical difficulties. For example, in the roads sector, practical difficulties arise from the diversionary impact of user charges, and detailed market research and demand modelling is required to examine the elasticity of demand relative to the level of charge that is set.

Skye Bridge

The objectives of the Scottish Office Development Department (the "Department") in taking forward the Skye Bridge project were:

- early delivery of a privately tolled crossing to solve the problems of congestion and delay associated with the existing ferry service;
- satisfactory design of the crossing, taking into account the sensitivity of the environment;
- to finance the bridge through user tolls, set at an amount no greater than the existing ferry fare linked to inflation, with Government funding the approach roads; and
- to achieve value for money through a tender competition for a DBOF contract for the provision of the crossing, including the design and build of approach roads.

The Department signed a contract with Skye Bridge Limited consortium in 1991. Under the terms of the PPP contract, Skye Bridge Limited is responsible for constructing and maintaining the crossing, and is reimbursed though the collection of toll revenues. The Department is responsible for the capital and maintenance costs of the approach roads (capital cost of £6 million at 1991 prices), and for covering the cost of design changes and time delays resulting from the public inquiry (£3.8 million at 1991 prices).

The contract period is limited to a maximum of 27 years, or as is expected to be the case, for a shorter period (currently expected to be some 14 to 18 years) until the total toll revenue collected by Skye Bridge Limited amounts to some £24 million (measured in constant 1991 prices and discounted to 1991 base year over the lifetime of the project). The 27 year maximum concession period was established as the period required for the company to collect enough revenue to recover its total forecast costs, on the conservative assumption that traffic levels remained unchanged at 1990 levels.

Skye Bridge Limited has accepted demand risk on the understanding that tolls may be increased by up to 30 per cent more than the rate of inflation should actual toll revenue fall below an agreed threshold after 1997. However, in the first year of operation to October 1996, traffic levels were some 16 per cent greater than the previous year's ferry traffic. It is therefore considered very unlikely that toll revenues will need to be increased by more than the rate of inflation during the period of the concession contract.

Under the terms of the concession, Skye Bridge Limited must supply the Department with annual revenue forecasts and quarterly reports on actual toll revenues and traffic flows. The Department has access rights to inspect and to audit the company's financial procedures. Skye Bridge Limited is also required to maintain the bridge in a serviceable condition, having regard to its 120 year design life, for the duration of the concession. The Department's engineers have access rights to the bridge to check its condition and to verify that the agreed inspection and maintenance programmes are being conducted to the agreed standards. In the event of a serious deterioration in the financial viability of Skye Bridge Limited, or its failure to comply with any of its obligations, the Department is entitled to terminate the agreement and to take control of the bridge. Ownership of the bridge is vested with the Secretary of State throughout the duration of the contract.

Setting User Charges

3.18 The setting of user charges is a complex issue that will require detailed consideration by Central and Contracting Authorities. There are a number of factors that need to be considered when determining the level at which to set user charges:

- ***Elasticity of demand*** - the extent to which user charges would dissuade potential users from using the project. The relationship between user charges and expected level of use should be investigated, to predict, for example, the level of user charge that maximises project revenues, and the level of user charge that best delivers the objectives of the project (e.g. reducing traffic congestion).

- ***Objectives of Contractor*** - if user charges are to be used to reimburse the Contractor, then the Contractor will want user charges to be set at the level that maximises its operating revenue.

- ***Objectives of the project*** – there will be a level of user charge that maximises the social and economic benefits of the project.

- ***Government policy*** – user charges should be set at a level that reflects government policy on user charges and on the application of the polluter pays principle to fund the construction and operation of infrastructure projects in the roads, water and waste sectors.

- ***Equity of treatment*** - Central and Contracting Authorities need to consider is the issue of equitable treatment with regard to the application and setting of user charges. For example, should there be a national toll that applies to all toll roads in Ireland, or should tolls be set independently to reflect the economics of the project concerned, and to avoid cross-subsidisation from one project to another.

3.19 Detailed consideration of the above issues will help Central and Contracting Authorities to determine a preferred approach to the application of user charges at a national level within each sector, and at a project specific level. The development of national policy on user charges is outside the scope of this Guidance Note.

3.20 There are a number of approaches that could be considered by Central and Contracting Authorities for the setting of user charges at a national level and for specific projects. These approaches include:

- ***Setting a national rate*** – a national rate is set for each type of user charge within a sector (e.g. a national toll rate for motorways). This rate would be specified within the contract documentation for the procurement, and private sector contractors would then specify in their tender the amount of additional subvention required from the Contracting Authority.

- ***Setting a national maximum rate*** – a national maximum rate is set for each type of user charge within a sector. This maximum rate would be specified in the contract documentation for the procurement, and private sector contractors would then specify in their tender a user charge at or below the maximum rate, and also the amount of additional subvention required from the Contracting Authority.

- ***Setting a project specific rate*** – user charges are set at a project level rather than at a national level. The project specific rate would be specified within the contract documentation for the procurement, and private sector contractors would then specify in their tender the amount of additional subvention required from the Contracting Authority. The project specific rate could be set by the Contracting Authority at or below the level of the national maximum rate.

- ***Setting a project specific maximum rate*** – a maximum level of user charge is set for a specific project. This maximum rate would be specified within the contract documentation for the procurement, and private sector contractors would then specify in their tender a user charge at or below the maximum rate, and also the amount of additional subvention required from the Contracting Authority. The project specific maximum rate could be set by the Contracting Authority at or below the level of the national maximum rate.

- ***Rate set through tendering*** – private sector contractors specify in their tenders the user charges that they would require to obtain a commercial return on their investment. This approach is of greatest relevance to financially free-standing projects. It is best used in conjunction with the negotiated procedure, which enables the Contracting Authority to cap user charges and negotiate additional subventions in the event that the user charges specified in tenders are significantly greater than anticipated.

3.21 It should be noted that, in addition to setting maximum rates as set out above, Contracting Authorities could set minimum rates to reflect government policy and to ensure that the objectives of the project are achieved. Minimum rates would ensure that an appropriate proportion of the costs of constructing and operating the project is borne by its users.

3.22 For road schemes involving tolling, the Roads Act requires the making of a toll scheme by the National Roads Authority, to be confirmed by the Minister, setting the *estimated level* of toll for a project. In practice, this limits the scope for tendering of the appropriate market price, where this significantly exceeds the toll set. Ultimately, the existing approach permits competitive tendering on the basis of a toll rate that is either lower, or at any rate not significantly greater than that approved by the Minister. In the event that the toll required by Contractors to make a commercial return is significantly greater than the estimated level of toll, then the Contracting Authority may be required to cap the toll level and provide revenue subvention.

3.23 Many of the world's privately financed road projects involve payment mechanisms based on user charges (tolls). Tolls are commonly collected in one of two ways: cash payments at toll booths set up at intervals along a road and at on- and off-ramps, or through a cashless monitoring system. Cashless systems typically involve a registration scheme that requires users to display a visually recognisable pass, or to carry an electronic system that can be monitored remotely. Whether the system of toll collection is based on cash payments or a cashless system, the road user pays directly for the infrastructure they use.

Melbourne City Link

This £720 million project is the largest road project in Australian history. It links existing motorways that terminate at the city fringe and its aim is to significantly reduce journey times into the city centre and divert through traffic out of the city centre area. It comprises 22 kilometres of road works, an elevated six lane bridge, and two three lane tunnels. The project is a Build, Own, Operate, Transfer scheme, and the Contractor is to finance the capital costs of the project through the collection of tolls from users of the facility.

The project includes the world's largest electronic tolling system, with frequent users requiring a tagging device that will be used to deduct tolls from a pre-paid account. Occasional users will be able to buy day passes at garages and other retail outlets. Tolls for cars are less than 50 pence for the shortest journey and are capped at £1.50 for a single continuous journey irrespective of length. Tolls may be increased each quarter, but are capped at the lower of either 1.065 per cent or the increase in the general inflation index.

There are no government operating or debt subsidies and the concessionaire has accepted the risk of reductions in traffic volumes and associated toll revenues arising from incorrect traffic flow projections, adverse economic conditions, changing travel patterns and habits, and increases in the price of petrol. However, this risk is to some extent mitigated by State undertakings that it will not build a competing road system, and that associated freeways and principal traffic routes will be managed in a manner that maintains City Link as a central part of the road network.

Subventions

3.24 In order to gain access to private sector finance, Contracting Authorities will have to augment user charges with public subvention where:

- user charges are unlikely to generate sufficient revenues to enable the Contractor to recover its costs and make a commercial rate of return within the period covered by the contract; and/or
- where user charges are capped below the level required by the Contractor to make a commercial rate of return, in order to achieve the objectives of the project or to reflect social and public interests.

3.25 It is expected that Contracting Authorities will be required to provide subventions for some Public Private Partnership projects in the roads, water and waste sectors in Ireland. The subvention could take a number of forms depending of the level of additional risk that the Contracting Authority wishes to transfer to the private sector. Options include usage related payments, availability related payments, performance related payments, capital grant and revenue support. Usage related payments, availability related payments and performance related payments are discussed in the following sections of this Guidance Note. Capital grant and revenue support are discussed in the paragraphs that follow.

3.26 It is important to note that Contracting Authorities may also wish to provide subvention directly to users in the form of rebates. This form of subvention may be applied to all users or to certain groups of users such as pensioners. As such rebates are not part of the mechanism for paying the Contractor they are not discussed further in this Guidance Note.

Capital Grant

3.27 Capital grants may be offered to a Contractor to cover that part of the capital cost of a project that cannot be met by user charges. The main advantage associated with the use of capital grants is that capital grants will reduce the cost of private sector finance. This in turn will reduce the overall cost of the project and should result in lower costs to users. However, the provision of capital grants may also reduce the extent to which risk is transferred to the Contractor. Other advantages of providing a capital grant are as follows:

- it enables a project to maintain user charges at an acceptable level;
- it enables a project to go ahead despite its failure to generate sufficient user charges;
- it is a simple mechanism of support that can be structured on a project by project basis; and
- the extent of the financial commitment to be provided by the Contracting Authority is generally certain.

3.28 However, the payment of a capital grant also has a number of disadvantages associated with it and these are set out below:

- it results in an immediate impact on the budget of the Contracting Authority;
- the payment is not in any way dependent on the performance of the private sector supplier; and
- the grant is a sunk cost which may not be refunded in the event of project termination.

Revenue Support

3.29 Revenue support may be offered to a Contractor to improve overall cashflow. Revenue support can be a simple flat payment set at a level sufficient to cover debt service obligations, or it can be sufficient to reduce toll levels to a level considered reasonable or economically optimal levels.

3.30 Revenue support can be structured in many ways. For example, it could reduce over time to incentivise the Contractor to increase usage levels, it could reduce as usage (and hence revenue from user charges) increases, or it could arise only in years where revenue from user charges falls below a set level.

3.31 The main advantages associated with revenue support are as follows:

- it enables user charges to be maintained at an acceptable level;
- it enables a project to go ahead despite its failure to generate sufficient user charges;
- it is a simple mechanism of support that can be structured on a project by project basis; and
- the extent of the financial commitment to be provided by the Contracting Authority is generally certain.

3.32 The main disadvantages associated with revenue support are as follows:

- it results in an immediate and continuing impact on the Contracting Authority's budget over the operation of the project; and
- the payment is not in any way dependent on the performance of the private sector supplier.

Guarantees and Excessive Profits

Guarantees

3.33 Guarantees limit the exposure of the Contractor to certain risks. Internationally, guarantees have been provided on some Public Private Partnership projects where, on base case revenue forecasts, sufficient revenue is generated to fully amortise the debt (or other forms of capital used to finance the project), but where the risk inherent in those base case projections are such that funders will not provide the full amount of funding without further financial support.

3.34 However, in certain circumstances, the provision of financial guarantees to reduce the degree to which risk is transferred to the private sector is akin to the Contracting Authority borrowing capital finance from the private sector.

Sydney Harbour Tunnel

The Sydney Harbour Tunnel is a four lane carriageway extending 2.3 kilometres between the northern and southern sides of Sydney Harbour. The tunnel was constructed between 1988 and 1992 by a joint venture company, which has a concession to operate the tunnel until 2022 when ownership will revert to the New South Wales (NSW) Government.

The joint venture company receives the toll revenue collected from both the tunnel and Sydney Harbour Bridge less toll collection costs. The Road and Traffic Authority (RTA) ensures the joint venture company's revenue stream, and is obliged to make top-up payments if inflation rates or traffic volumes are lower than projected.

The project has been criticised by the NSW Auditor-General because the RTA retains much of the project risk through the ensured revenue stream. The RTA also carries the primary financing risks because, although finance for the project was raised by issuing bonds fully underwritten by the private sector, the responsibility for those bonds rests with the State.

3.35 There is therefore a significant risk that by providing guarantees to gain access to private finance, the Contracting Authority can inadvertently assume risks that it has intended to allocate to the Contractor. This can result in a project costing significantly more than expected, and so result in poorer value for money than traditional procurement.

Wijker Tunnel Project, Netherlands

The Wijker tunnel project, completed in 1993, was one of the first projects undertaken in the Netherlands using private finance. The risk transferred to the private sector was limited by a government guarantee in relation to traffic flows. The guarantee resulted in the public sector providing much greater funding than was originally anticipated, and the project became regarded as a failure as it did not offer value for money.

3.36 In Ireland it is not appropriate for the State to give guarantees in the context of Public Private Partnership projects. Nevertheless, it is in the interest of Central Authorities to ensure, in so far as is possible, that private funders have confidence in the competence and capacity of sub-sovereign bodies to fully engage in the PPP process.

3.37 Non-financial guarantees may, however, be applicable in certain circumstances. For example, a Contractor may only be willing to accept demand risk on a road project if the Contracting Authority guarantees that it will not construct a competing road. The implications of any guarantee that is sought by the private sector should however be considered in detail. For example, in the situation described above, the Contracting Authority should review the expected growth in traffic levels in future years, and consider its ability to stand by a guarantee not to build another road if traffic levels rise and traffic congestion becomes a problem for the local economy.

Excessive Profits

3.38 Under certain circumstances, for example in the event of a significant increase in user demand, Contractors may generate excessive profits from user charges. Payment mechanisms should therefore take into account the generation of excessive profits by way of a reduction in the charges applied to future users or a rebate provided to existing users.

3.39 The extent to which the private sector can generate excessive profits from user charges may be limited by means of a cap on the equity rate of return of the Contractor, or by the Contracting Authority taking a royalty on turnover. The most appropriate arrangements will depend on the characteristics of the project. Whatever arrangement is used to cap excessive profits, the overall payment mechanism should still provide an incentive to the Contractor to enhance overall efficiency.

3.40 Further discussion of possible profit sharing arrangements is provided in Section Seven of this Guidance Note.

IV. Usage Payments

Introduction

4.1 Usage payments, where the Contractor is paid according to a pre-determined schedule of charges for usage, are one of the main ways of sharing the risk that actual usage of the project may be more or less than envisaged. Usage payments can be expressed in a variety of different ways based upon the characteristics of the project. The most obvious form of usage payment is payments based on the actual number of users of the project in any given period.

4.2 Usage payments are analogous to user charges, but differ in that the Contracting Authority makes the payment to the Contractor. In most cases where usage payments have been implemented they have been banded, to reduce the amount of usage risk transferred to the Contractor. In such cases, the cost of utilising private finance is cheaper because the revenue stream of the Contractor is exposed to a lower degree of risk.

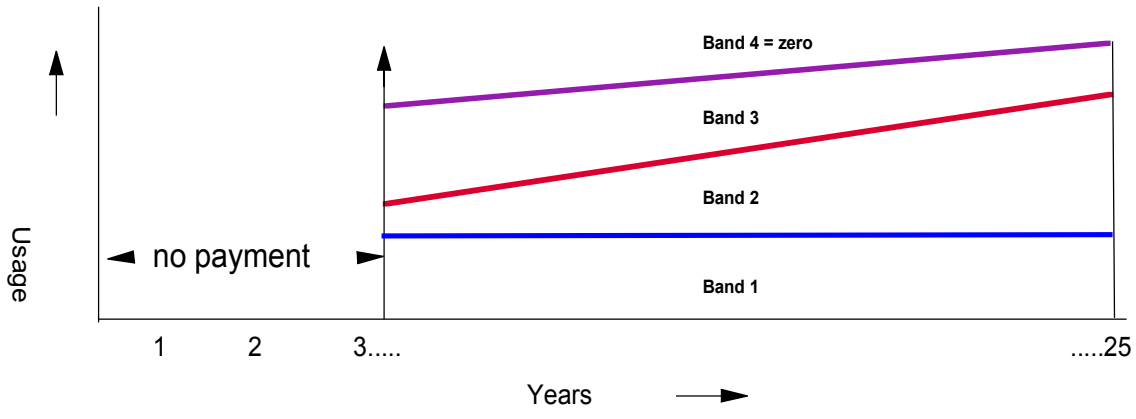
Use of Usage Payments

Principles

4.3 The basic principle of usage payments is that it is the Contracting Authority, and not the user, who makes the payment to the Contractor. Payments are related to usage volumes and are often made in accordance with a banded payment mechanism.

4.4 Banding can be used at higher usage levels to cap the number of users for which the Contracting Authority pays, thereby limiting the financial liability of the Contracting Authority. Banding can also be used at lower usage levels to reduce the risk to the Contractor that usage volumes are lower than expected, and to provide sufficient comfort to satisfy financial institutions. A typical banding structure for a usage based payment mechanism is presented in the diagram below.

Figure 7: Typical Banding Structure



4.5 In the example presented in the diagram above, the lower band is typically set at the lowest expected level of use, and provides the Contractor with a relatively certain minimum usage payment to cover debt service requirements (but not sufficient to provide a return on equity). The upper band is set to zero to ensure that the maximum liability of the Contracting Authority is capped.

Example

On an integrated waste project, the private sector operator could be paid for each tonne of contract waste received. The rate payable per tonne is likely to be banded, with the rate payable falling as the volume of waste increases. This allows the payment mechanism to reflect the marginal increases in cost to the Contractor of handling the additional waste.

Additional payments may be made for each tonne of waste diverted from landfill. Different payment rates may be applied to each form of waste recovery to reflect the costs incurred by the Contractor and the environmental objectives of the Contracting Authority. The payment rates fall as the volume of waste recovered increases so that the Contracting Authority is protected in relation to its overall cost exposure.

Minimum targets are set for overall waste recovery and for waste recycling in particular. A fixed rate per tonne is deducted in the event that the minimum targets are not achieved. The Contracting Authority retains the option to terminate the contract if actual recovery or recycling rates are below an agreed percentage of the minimum targets.

The Contracting Authority will need to consider whether it should provide the Contractor with a minimum guaranteed payment. In doing so, it will also need to determine the level of payment that may be required to reduce the risk to the Contractor associated with reductions in demand so as to enhance the bankability of the contract.

Advantages

4.6 The main advantages associated with payment mechanisms involving usage payments are as follows:

- the banding structure dampens the financial effect of usage risk, reducing the return on capital required by the Contractor, and in turn reducing the amount of Contracting Authority contribution required;

Roads Projects in Portugal

Over recent years, Portugal has initiated a large road building programme through the use of private finance. Two roads projects, the West and North Concessions, have already been commenced using private finance, and Contractors will be reimbursed through user tolls. These projects are being followed by seven Design, Build, Operate and Finance roads projects, for which the Contractors will be reimbursed by the State using a payment mechanism based on shadow tolls (usage payments). Following those will be a further five real toll roads.

The real toll and shadow toll projects will be part funded by the European Investment Bank (EIB), with the European Investment Fund providing guarantees on the EIB loan. From the EIB's perspective, one of the big differences between the real toll and the shadow toll projects is that the guarantees on its loan are able to fall away much faster on the shadow toll projects. This results in lower financing costs, and is due to the lower risk profile associated with the shadow toll projects.

- the use of usage payments defers Contracting Authority expenditures, and the variability of the payments is likely to be such that they are not perceived as a disguised form of Contracting Authority borrowing;

- usage payments are likely to be easier to implement as they are more consistent with existing practice, where infrastructure projects are paid for out of public funds;

- it is generally more bankable than user charges, as bands can be used to ensure that the risk transferred to the private sector is more manageable, and the usage payments are underwritten by the public sector rather than the user; and

- they are very flexible, in that there are multiple combinations of usage, availability and performance measures that can be applied to determine the level of the payment from the public sector to the private sector.

Example

For a project involving the design, construction, operation and financing of a waste water treatment works, the payment mechanism could be based on usage payments relating to either the volume of flow or the effluent load.

Linking the payment to volume of flow means that the payment received by the Contractor is subject to significant fluctuations arising from, for example, variations in rainfall. Flow volumes are therefore difficult for the Contractor to forecast and the payment mechanism will be less attractive to financiers (i.e. it will be costly to transfer demand risk on this basis).

Effluent loads, on the other hand, are much more predictable as they are a function of the population. Payments linked to effluent loads are therefore likely to be more attractive to the private sector, and they can be linked directly to the cost of treatment. Problems may arise however if there are industrial users whose effluent levels are likely to be highly variable and difficult to forecast.

Disadvantages

4.7 The main disadvantages associated with payment mechanisms involving usage payments are as follows:

- the level of risk retained by the Contracting Authority is usually greater than for well structured payment mechanisms based on user charges;
- although the banding mechanism means there will be a cap on the contribution of the Contracting Authority, the amount paid will be uncertain, and this can cause difficulties in budget planning; and
- users do not pay for the economic cost of infrastructure provision. As a consequence, users are subsidised by the general public, and infrastructure investment is not rationally allocated.

Risks

4.8 The risk transferred to the Contractor under a usage based payment mechanism is likely to be less than for a project in which the private sector generates its revenues from user charging. For example, the financial risks associated with low usage levels can be mitigated by the use of banded usage payments.

Almond Valley, Seafield and Esk Valley Wastewater Treatment Works

In March 1999, the East of Scotland Water Authority entered into a £100 million, thirty year concession contract with the Stirling Water Seafield consortium to implement improved wastewater treatment and disposal facilities in the River Almond, the Firth of Forth and the Esk Valley areas. The project includes alternatives to the practice of sewage sludge disposal at sea, and enables the achievement of standards imposed by European wastewater purity and sewage sludge disposal regulations.

The East of Scotland Water Authority proposed to transfer risk to the private sector through the use of a payment mechanism based on the volume of waste water flowing through the three distinct catchments. To address the concerns of financiers regarding fluctuations in waste water volumes, a banded payment mechanism was used, with payment bands relating to price and volume. Payments within the bands were set so as to reduce the financial risks associated with significant reductions in wastewater flows.

The payment mechanism also included an adjustment for availability. To cater for the multi-site nature of the project, which includes five wastewater treatments works, the contract allows payments to commence at partial completion, with payments increasing as more elements come into service. The multi-site nature of the project is also reflected in terms of performance related payments, which vary according to importance of each site as reflected by the capital and operating expenditure involved.

Partial Usage Payments

4.9 The term *partial usage payment* applies to payment mechanisms that are based on usage payments, but also include other sources of revenue for the Contractor. For example, the Contractor may also receive revenue from user charges, or from other forms of payment from the Contracting Authority that are not directly related to usage, including, for example, availability. Alternatively the payment mechanism may be based on usage payments, but include deductions in respect of availability and service performance.

4.10 Partial usage payments provide a number of advantages, over and above those set out previously for usage payments. The additional advantages of partial usage payments are as follows:

- if there are to be user charges, then partial usage payments can enable the user charges to be set at an affordable rate, thus ensuring that the socio-economic benefits of the infrastructure project are realised; and

- if user charges are applied to the project, then usage will be influenced by the level at which user charges are set. The use of a payment mechanism based on partial usage payments (rather than a payment mechanism based solely on usage payments) will therefore lessen the extent to which payments to the Contractor are affected by variations in user charges.

Shadow Toll Roads Projects

The shadow toll roads projects in the UK, Finland and Portugal are all based on a similar payment mechanism structure, which involves usage related payments according to the number and type of vehicles using the road, and is subject to performance adjustments. Adjustments might relate, for example, to lane closure and safety performance.

- ***Usage payments*** - The usage payments (or "shadow tolls") are banded, with different bands relating to different traffic volumes and different costs per vehicle kilometre. Bidders set the lowest and middle bands based on their own assessment of traffic levels. Contracting Authorities set the upper band. Bidders commonly set usage payments in the lowest band, which applies when traffic levels (and hence vehicle kilometres per annum) are much lower than forecast, at a level that would cover debt service requirements (but not provide a return on equity). Contracting Authorities set usage payments in the upper band (which applies when traffic levels are much higher than forecast) to zero to limit their financial liability on the project.

- ***Availability*** – the usage payments described above are commonly subject to adjustment for availability. In the case of the construction of a new road, this means that usage payments will not commence until construction is complete (although on large projects a partial payment may be made when the road is first opened to traffic but is not fully complete). On roads projects that involve the upgrading of an existing road, usage payments may be made during the construction period to reflect the existing level of traffic on the road.

- ***Performance*** – in the UK there are two aspects of performance payments: safety performance payments and lane closure charges. Safety performance payments apply to upgraded roads and are based on a percentage of the economic cost of each accident avoided over a five year period. The number of accidents avoided is calculated by comparing the actual number of accidents on the upgraded road with historical records. Lane closure charges apply when lanes are closed. The size of charge is dependent on the number of lanes closed, the duration and distance of closure, the expected traffic at the time of closure, and the estimated economic value of user delay. Lane closure charges only apply when the closure is within the control of the Contractor.

Hereford and Worcester Integrated Waste Management Project

In 1996 Hereford and Worcester County Councils decided to let a contract with a private sector partner to develop and implement an integrated waste management system. The principal aim was to reduce the amount of household rubbish and achieve the UK Government's targets for the recycling of waste and recovery of value from waste.

Focsa Services (UK) Limited (now known as Mercia Waste Management Limited and hereinafter referred to as "Mercia") was selected as the preferred bidder in November 1997 and financial close was achieved on 23 December 1998. Under the terms of the 25 year contract (valued at over £500 million), the Councils will retain responsibility for collecting household waste and Mercia will take delivery of all such waste for treatment to achieve optimum recycling/recovery. The main facilities and services to be provided are as follows:

- Introduction of kerbside collection of recyclables with separation at source;
- Construction and operation of three pre-sorted material reclamation facilities;
- Construction and operation of a mixed waste material reclamation facility;
- Construction and operation of seventeen household waste sites;
- Refurbishment and operation of four transfer stations;
- Refurbishment and operation of two green waste composting plants;
- Construction and operation of a 10 MW waste to energy plant; and
- Operation of the existing Hill and Moor Landfill site.

Mercia is paid a base line fee per tonne of waste received under the contract, plus:

- An availability payment for managing the household waste sites;
- Supplements per tonne of waste recycled/recovered, which vary according to the process the waste is subjected to (e.g. incineration or composting); and
- Reimbursement of the Councils' share of the landfill tax.

To protect Mercia from significant changes in the quantity of household waste, the base line price paid to Mercia is banded and is inversely proportional to the amount of waste received (i.e. if tonnage falls the price per tonne increases, and *vice versa*). Payments to Mercia are reduced if the services or facilities do not meet the required performance standards, and this could ultimately lead to the termination of the contract.

In addition to payments from the Councils, Mercia will gain additional revenues from the treatment and disposal of commercial waste and it will enter into a power purchase agreement for the electricity produced at the waste to energy plant once it is operational in year five of the contract. To take into account revenue generating potential of the project, the payment mechanism also includes adjustment for the sharing of "net excess revenues" between Mercia and the Councils.

V. Availability Payments

Introduction

5.1 Availability payments relate to the capacity of a service in that, irrespective of whether there is a demand for that service, the Contractor will be paid subject to meeting the terms and conditions in the Output Specification and providing the specified level of performance. In other words, where availability payments are concerned the private sector is rewarded for making the facilities (the service) available even if the available capacity is not actually used.

5.2 Availability payments can relate simply to the mere provision of an item of infrastructure. However, in Public Private Partnership projects elsewhere in the world the definition of availability is being broadened to include the provision of the ongoing services that are core to the requirements of the Contracting Authority.

5.3 Projects for which availability is a key consideration are generally those that involve the provision of public infrastructure, without which the required services cannot be provided. Availability payments are therefore very suitable for projects in the roads, water and waste sectors, and may relate for example to lane availability on roads, or available capacity at water treatment works and waste separation and recycling plants.

Example

For a project involving the private sector in the management and operation of existing municipal waste sites, the payment mechanism could be based primarily on availability payments. The availability payments could then be supplemented with usage payments relating to the volume of waste received at each site.

Deductions would be made to the contractual payments when municipal waste sites are not available to receive waste. Deductions are likely to be made in accordance with an agreed rate per hour for each facility, with the agreed rate reflecting the relative importance of the waste site to the Contracting Authority.

Use of Availability Payments

Principles

5.4 One of the fundamental principles of availability based payment mechanisms is that payment should not commence until the full service is available. This principle should be applied to all new infrastructure projects in which availability is a key criterion. However, where a project involves the continued provision of an existing service (e.g. the upgrading of a major road), then some payments may be made to the Contractor during the construction period to reflect the continued availability of the existing service.

5.5 A common characteristic of availability based payment mechanisms is the recognition that the capital costs incurred by the private sector operator are generally fixed at the outset. Accordingly, it is this amount that is often associated with the deduction for failing to make the facility available.

5.6 It is also important to recognise that without the facility, it is likely that many of the required services cannot be provided. Therefore, many availability based payment mechanisms are constructed so that the whole of the unitary payment is subject to deduction for unavailability, even though the private sector is capable of delivering some of the services.

5.7 In considering a payment mechanism which is related to the availability of a facility to provide the services required, the Contractor will focus on the events, or criteria which can lead to the facility not being available.

5.8 Bearing in mind the potential for financial deduction, the tests applied in order to measure unavailability need to be objective. The Contracting Authority will need to take into account the unit to be measured and the factors affecting availability.

5.9 The definition of unavailability is of great importance and should be developed as early as possible in the process. The definition will depend heavily on the characteristics of the project concerned, but there will always be different degrees of unavailability that can be incorporated into the payment mechanism.

Example

The definition of unavailability on a road could include a number of measures. They are listed below in descending order of the level of deductions made and the amount by which the Contractor can manage the risk.

- Road closed due to planned maintenance
- Road closed due to emergency maintenance
- Road closed due to planned works by utilities
- Road closed due to emergency work by utilities
- Lane blocked due to broken down vehicles
- Lane blocked due to accident
- Lane blocked due to congestion
- Traffic slowed due to congestion

As one includes more items from the above list, the Contractor becomes subject to deductions over which it has questionable levels of control. For instance, the Contractor would have limited control over utilities. Further to this, while it may be possible for the Contractor to manage traffic within the confines of the network that it controls, congestion could be caused by other parts of the network. For instance, if traffic is queuing to leave a motorway at an intersection because the adjoining road is closed, then the Contractor would suffer a loss because of congestion for which it was not responsible.

5.10 The main factors that influence the structure of an availability based payment mechanism are:

- ***Importance of space*** - it is important to include a criticality factor within an availability based payment mechanism to adjust payments according to the importance of the areas or services that become unavailable;
- ***Time of unavailability*** - clearly the length of the period of unavailability needs to be factored into an availability based payment mechanism. This should include a definition of the commencement of an unavailability incident;
- ***Maximum availability payment deductions*** - there may need to be a cap on availability payment deductions in any one year; and
- ***Rectification periods*** - there may be a need to include grace periods or rectification periods during which, if incidences of unavailability are put right, then availability payments are not effected.

5.11 There will also be events where the Contractor is excused payment deduction even though availability requirements have not been met. Such exceptions commonly apply in the following circumstances:

- if suitable alternative provision (determined by the Contracting Authority) is made available;
- if the facility would not have been used anyway during the period of unavailability for other reasons;
- default by the Contracting Authority;
- a variation instigated by the Contracting Authority;
- vandalism (depending on the cause); and
- maintenance conducted in accordance with an agreed maintenance programme (e.g. where available capacity is reduced, such as lane closures on a motorway, to facilitate maintenance but a level of service is still available available).

Advantages

5.12 The main advantages associated with payment mechanisms involving availability payments are as follows:

- availability is largely under the control of the Contractor. The Contractor is therefore likely to seek a lower return on its capital than if the payment mechanism was based on usage payments, which the Contractor is less able to control;
- the Contracting Authority does not pay until the full service is available;

- it encourages the Contractor to respond quickly and efficiently to incidences of non-availability;

- it is generally a bankable system, as the Contractor should be able to forecast revenue and expenditures streams with reasonable certainty; and

- payments are spread over the life of the contract. This allows the Contracting Authority to pay the Contractor based on the performance of the asset, and not simply on completion of construction.

Disadvantages

5.13 The main disadvantages associated with payment mechanisms involving availability payments are as follows:

- unless the charges for non-availability are highly ratcheted, or the payment mechanism also includes usage payments, there is a limited ability to transfer risk to the private sector and encourage high levels of performance;

- monitoring availability may not be straightforward (for example, for major roads projects). Sometimes the only realistic option is self reporting by the Contractor augmented by random audit checks by the Contracting Authority; and

- a payment mechanism based solely on availability payments has very little variability in it, and so the contractual arrangements may be seen as akin to Contracting Authority borrowing.

5.14 Whilst a significant proportion of a payment mechanism could be based on availability payments, it is recommended that an element of user charges or usage payments should be included to improve the variability of the payment. This would increase the incentives given to the private sector, and at the same time reduce the risk of the contractual arrangements being viewed as Contracting Authority borrowing.

5.15 A further important consideration in the development of any payment mechanism is the issue of bankability. This is because the manner is which Public Private Partnerships are financed means that often, but not always, a substantial amount of the finance required to construct a facility comes from a senior lender. Under an availability based payment mechanism, for example, servicing of bank debt will be generated from a proportion of the unitary payment, which is susceptible to deduction for failure to make the facility available.

5.16 This is a key consideration when devising a payment mechanism, and the Contracting Authority should at an early stage give consideration to the ability of the private sector operator to finance the transaction on favourable terms, or indeed at all. However, not all transactions involve a third party funder, in which case the Contractor may have some flexibility in this area.

VI. Service Performance Payments

Introduction

6.1 As well as the initial provision and long term maintenance of a facility over the contract period, a Public Private Partnership project may also include the provision of other services, for example the operation of a water treatment works or the provision of an integrated waste management service. For such services, payment is usually based on the ability of the Contractor to meet predetermined performance standards. Deductions are made if the performance of the Contractor falls below these standards.

6.2 Service performance can be taken into consideration in the unitary payment by means of a separate performance related payment, or as is more common, through performance related deductions within a usage or availability based unitary payment.

Example

For a project involving the private sector in the provision of an integrated waste management scheme, the contract will define a range of minimum performance criteria, against which the standard of service provided by the Contractor is measured. These performance criteria may be split into a number of categories, including for example:

- Waste acceptance and treatment failures;
- Environmental failures;
- Transportation failures; and
- Staffing and administrative failures.

A financial penalty is set for each criterion, together with a rectification period within which the Contractor must remedy the defect. If the Contractor fails to satisfy any of the minimum performance criteria and the failure has not been remedied within the rectification period, then deductions are made from the contractual payments.

This provides an incentive for the Contractor to ensure that services are provided to the required standards, and if not, that any shortfall is rectified as soon as possible. It also enables the Contracting Authority to set differential performance periods and rectification periods to target those elements of the service that it considers most important.

Use of Service Performance Payments

6.3 When structuring payment mechanisms that are based on service performance, care needs to be taken to ensure that the payment mechanism is both simple and flexible, and is based on measurable objectives and outcomes. Measurement of performance is often one of the most difficult areas of a payment mechanism to develop, as it is not always obvious how to specify standards of performance in way that can be measured and monitored.

6.4 The payment mechanism must set out clearly the consequences of any failure by the Contractor to perform to the standard required by the Output Specification. A common approach is for a specified number of performance points to be attributed to the Contractor each time its performance falls below the required standard. The number of points attributed to the Contractor would depend on the seriousness of the failure.

6.5 The payment mechanism should establish a direct link between the seriousness of failure, the number of points attributed to the Contractor, and the financial deduction taken from the unitary payment to the Contractor. A schedule setting out the number of points that will be attributed to the Contractor for failure to meet a specified performance output should be included in the Project Agreement. Commonly financial deductions are only made once a certain level of points has been accrued by the Contractor within a defined period.

6.6 Where the Contracting Authority is seeking enhanced levels of performance under a Public Private Partnership contract, the payment mechanism can be structured so that additional payments are made if the enhanced levels of performance are achieved. However, care is needed to ensure that value for money is not compromised by establishing a payment mechanism that provides additional payments for levels of service that are higher than those required by the Contracting Authority.

6.7 Furthermore, in addition to paying for the quality of the performance supplied by the Contractor, it may also be appropriate for a service performance based payment mechanism to take into account the quantity of service delivered. For example, for a waste management project, payments could be based on the both quality of waste management (for example, in terms of recycling targets), and on the quantity of waste processed.

Performance Monitoring

6.8 A performance monitoring system is required to determine the quality of the service that is actually provided by the Contractor. This can be measured by defining either a minimum or a range of service levels, which are monitored continuously or by sample.

6.9 In most cases the Contractor will be responsible for providing and maintaining performance monitoring, quality management and information systems. All records of performance, maintenance responses and customer feedback should be maintained by the Contractor and made available for verification by the Contracting Authority and its advisers.

6.10 A common difficulty with monitoring performance criteria (sometimes referred to as "performance indicators") is the ability to measure definitively whether a given criterion has actually been met or not. With objective performance criteria, such as water quality measures (e.g. pH levels), definitive measurements can be made and failure is unquestionable.

6.11 The difficulty arises with subjective performance criteria, for example in respect of the condition of an asset. In cases such as these, judgement can be made by reference to benchmarks which can be supported by photographic evidence of what is, and what is not, considered to meet the agreed performance criteria. In relation the condition of an asset, condition schedules can be formulated that describe, with photographic evidence, the condition regarded as acceptable in a given of area. Monitoring would then look for defaults against the acceptable condition.

6.12 Specific guidance on performance monitoring is included in the separate Guidance Note entitled *Contract and Performance Management*.

VII. Financial Issues

Introduction

7.1 The value of the user charges or unitary payment underlying a Public Private Partnership contract will be subject to change during the course of the contract. The main circumstances that could result in changes to the payment mechanism during the course of the contract are described in this section of the Guidance Note.

Indexation

7.2 It is usual practice for a Public Private Partnership contract to take account of the impact of inflation through a suitable indexation arrangement. The indexation formula used will be dependent on the nature of the project, and will be arrived at by considering the nature of the risk allocation arrangements between the public sector and the private sector in relation to inflation. For consistency between projects being undertaken by different Contracting Authorities, the relevant index may be selected for all Contracting Authorities by the Central Authority.

7.3 Selection of the appropriate index to be used will also be dependent on the nature of the project. The most commonly used index is the Consumer Price Index. Industry specific indices can also be adopted. For example there is the possibility of using labour market indices for part of the payment to reflect the rise in the underlying costs of the private sector. In addition, there are complex formulae available, which will pass through to the public sector the rise in underlying construction indices, such as the Construction Materials Index. The benefits of including complex indices such as these in the payment mechanism will be reduced if there is a benchmarking or market testing regime in place.

7.4 Consideration should also be given to the degree to which the whole of the user charge or unitary payment is indexed. This will be a significant factor when the Contracting Authority is considering the economic characteristics of the project, and in particular its ability to afford the project over the contract life.

7.5 Indexation arrangements can also be used as a mechanism to derive pre-agreed efficiency savings by the Contractor which give rise to a reduction in the unitary payment. For example, the following formula can be used if the Contracting Authority does not want the user charge or unitary payment to increase by the full amount of the Consumer Price Index. The increase in unitary payment is diluted through the use of an X factor. If the Contracting Authority also wishes to see efficiency savings by the Contractor, then this can be reflected in a price reduction, by a Y factor.

$$\frac{CPI - Y}{X}$$

where Y represents an efficiency factor (the Efficiency Factor) and X represents an inflation adjustment factor (the Inflation Factor).

Benchmarking and Market Testing

7.6 It is widely recognised that a payment mechanism that offers no flexibility in price over a long period of time, perhaps 25 or 30 years, is unlikely to offer best value for money for the Contracting Authority. This follows the principle that risk should be managed by the party best able to do so, and the fact that for certain services, it is not possible for either the public sector or the private sector to accurately predict pricing over such a long time frame. If the private sector were requested to do so then it is likely that it would build into its pricing structure a substantial risk premium for taking this risk.

7.7 The services to which this relates are often referred to as 'soft facility management services' and cover such requirements as catering and cleaning, where changes in the method of service delivery are not expected to remain stable over the life of the project. To deal with this the contract could provide for these services to be periodically benchmarked and/or market tested.

7.8 Under benchmarking arrangements, the Contractor would carry out a benchmarking exercise to compare the cost of carrying out the soft facility management services against the cost of providing similar services. Such a benchmarking exercise may involve obtaining price quotations from alternative providers, and should be carried out in an independent and objective manner by ensuring that the similar services are in a relevant sector and are also delivered to a similar specification.

7.9 If either the benchmarking exercise proves to be inconclusive, or the Public Private Partnership contract does not provide for benchmarking, then it is likely that the soft facility management services will be market tested, i.e. the Contractor will re-tender those soft services that are subcontracted to third parties. Conflicts of interest may arise where the sub-contractor is an equity stakeholder in the special purpose vehicle established to undertake the contract. In such circumstances, the involvement of the Contracting Authority in market testing and benchmarking is essential in ensuring a fair and equitable outcome. The criteria for undertaking a market test will be the same as those for a benchmarking exercise.

7.10 For Public Private Partnership contracts that contain the provision of accommodation, it is usual for the maintenance element to be excluded from the benchmarking/market testing provisions. This is because such services cannot be easily separated from the provision of the facility itself, and the Contractor takes on the risk of making the facilities available over the life of the project. Benchmarking and market testing may therefore be less relevant for projects in the roads, water and waste sectors due to the preponderance of hard services.

7.11 Once a benchmarking/market testing exercise has been undertaken, and if the price of the services tested is different from that which is currently paid by the Contractor, then the payment mechanism will be adjusted to take this into account. The extent of the adjustment will be a matter for inclusion in the contract. It will not always be the case that the payment mechanism will be adjusted by the whole of the variation.

7.12 The intervals between testing arrangements will depend on the nature of the service being delivered, but is usually no more frequently than every five years. These arrangements provide for some element of risk sharing between the contracting parties, whereby the Contractor can offer the best value for money because it is, in part, protected by this arrangement as well as the indexation provisions.

Variations

7.13 Inevitably during the course of a long term contract there are likely to be occasions when the service delivery requirements change. As a result, the Public Private Partnership contract needs to be flexible to take into account any adjustments to the payment mechanism when they arise. The manner in which any cost implications are shared between the parties needs to be specified within the contract documentation and this will depend on:

- who initiated the variation;
- who is responsible for a variation event when it takes place; and
- the implications of a change in law causing a variation event (see separate Guidance Note entitled *Key Contractual Issues*).

Pass Through Costs

7.14 For certain projects there will be items of work which the Contractor is best placed to undertake, but where a transfer of risk from the Contracting Authority to the Contractor is not considered appropriate as it does not provide value for money. The Contracting Authority may treat the costs associated with these items of work (e.g. utility costs) as pass through costs, whereby the costs incurred by the Contractor may be reimbursed.

Transfer of Assets

7.15 It may be desirable for assets that are required by the Contractor to provide the contracted services to be transferred at nil value. This avoids the additional financing costs that would result from the Contractor purchasing the assets from the Contracting Authority. The actual market value of asset should be reflected in the payment mechanism in terms of a reduction in user charges or a reduction in the payments made by the Contracting Authority. The ability of the Contracting Authority to transfer assets at nil value should however be considered in terms of relevant legislation. This issue is discussed further in the separate Guidance Note entitled *Legal Context*.

7.16 It may also be desirable for assets that are surplus to requirements to be transferred at nil value in return for a reduction in user charges or a reduction in the payments made by the Contracting Authority. However, in the case of surplus assets, consideration should be given to the income generating potential of the assets, and mechanisms may be required to limit the potential for the private sector to make excessive profits. In addition, the ability of the Contracting Authority to transfer assets at nil value should be considered in terms of relevant legislation.

7.17 The Contracting Authority should ensure that the assumptions made by tenderers in relation to the treatment of transferred assets should be clearly stated in tender submissions. It is important that the Contracting Authority is provided with sufficient information to establish that the treatment of transferred assets represents value for money. In particular, any tax implications of the asset disposals must be clearly identified.

Revenue Sharing

7.18 In addition to delivering the core service requirements of the Contracting Authority, there may be opportunities for the Contractor to derive additional income by using the facilities/assets for other uses. In such circumstances, the payment mechanism should reflect the additional revenue generating potential of the project by way of:

- a reduction in the charges applied to users;
- a reduction in the payments made by the Contracting Authority;
- a profit sharing mechanism; or
- a combination of the above.

7.19 The extent to which the Contracting Authority shares additional profits may be determined by means of a cap on the equity rate of return of the Contractor, or by the Contracting Authority taking a royalty on turnover. The most appropriate arrangements will depend on the project's characteristics.

7.20 Whatever arrangement is used to cap excessive profits, the overall payment mechanism should still provide an incentive to the Contractor to enhance overall efficiency and to identify new opportunities for to generate additional income. Care should be taken to ensure that the activities undertaken by the Contractor to generate additional income do not conflict with the Contracting Authority's core service delivery objectives.

Refinancing

7.21 Most risks in a project are concentrated during the construction phase and once this is successfully completed, it may be possible for the project to be refinanced on more favourable terms. This would result in a reduction in the cost of the project to the Contractor, and, if the benefits of refinancing are shared, could in turn lead to a reduction in the payments made by the Contracting Authority (or by users in the case of user charges). The Contracting Authority should therefore normally allow refinancing by the Contractor on the understanding that benefits are shared.

Payment of Design Costs

7.22 In the event that responsibility for carrying out the statutory process is transferred to the Contractor, then the payment mechanism should facilitate the reimbursement of design costs in the event that the project is terminated at the statutory process stage. Further discussion of this issue is provided in the Guidance Note entitled *Statutory Process Assessment*.

VIII. Conclusions and Recommendations

Introduction

8.1 This section provides a summary of the main issues discussed in this Guidance Note and provides recommendations on the development of payment mechanisms for infrastructure projects in the roads, water and waste sectors.

Developing a Payment Mechanism

8.2 In general, payment mechanisms are likely to include one or more of the following basic elements:

- ***User charges*** – payments received by the Contractor directly from private users of the infrastructure or service (e.g. road tolls);
- ***Usage payments*** – payments from the Contracting Authority to the Contractor that vary according to how much the infrastructure or service is used;
- ***Availability payments*** – payments from the Contracting Authority to the Contractor for making infrastructure or services available for use at an acceptable standard; and
- ***Service performance payments*** – payments from the Contracting Authority to the Contractor that vary according to the quality of service provided.

8.3 The suitability of the above elements for use in a payment mechanism for an infrastructure project will depend on the particular characteristics of the project concerned, and in particular, the desired allocation of risk between the public and private sectors.

Application of User Charges

8.4 The application of user charges to infrastructure projects in the roads, water and waste sectors must reflect Government policy on user charges and the application of the polluter pays principle to finance the construction and operation of infrastructure projects in these sectors. Therefore in devising payment mechanisms for projects in these sectors, the principal objective should be to attribute an appropriate proportion of the costs of constructing and operating the project to its users if the project is suitable for the application of user charges. It is therefore envisaged that, for major road and waste projects in particular, Contractors will recover their costs directly through user charges.

8.5 There are a number of approaches that could be considered by Central and Contracting Authorities for the setting of user charges for Public Private Partnership projects. These approaches include setting a national rate for user charges for each type of project, setting user charges independently for each individual project, and setting user charges for each individual project through a competitive tendering process.

8.6 For road schemes involving tolling, the Roads Act requires the making of a toll scheme by the National Roads Authority, to be confirmed by the Minister, setting the estimated level of toll for a project. In practice, this limits the scope for tendering of the appropriate market price, where it significantly exceeds the toll set. Ultimately, the existing approach permits competitive tendering on the basis of a toll rate that is either lower, or at any rate not significantly greater than that approved by the Minister. In the event that the toll required by Contractors to make a commercial return is significantly greater than the estimated level of toll, then the Contracting Authority may be required to cap the toll level and provide revenue subvention.

8.7 When considering the suitability of different projects for the application of user charges, consideration should be given to a range of factors including the objectives of the project, the legal viability of charging, the availability of alternatives services (or routes), the elasticity of demand, the practicality of applying user charges, the ability of the Contracting Authority or the Contractor to forecast demand, the level of charge that should be set, and the most appropriate methods of revenue collection. Consideration of the above issues will enable Central and Contracting Authorities to determine whether or not user charges should be applied to a project, and if so, whether or not they should be used as a basis for paying a Contractor.

Payment Mechanisms

8.8 Payment mechanisms for infrastructure projects in the roads water and waste sectors are usually linked directly to usage, either through the application of user charges or the use of usage payments. As described above, payment mechanisms for such projects must reflect Government policy on user charges and the application of the polluter pays principle, and also the ability of the private sector to manage demand risk.

8.9 The structuring of a payment mechanism for use on an infrastructure project in the roads, water or waste sectors is therefore highly dependent on two key issues:

- the application of user charges; and
- the ability to transfer demand risk cost effectively.

8.10 It is recommended therefore that for those projects which are considered suitable for user charges, and for which there is sufficient historical information to enable demand risk to be cost effectively transferred to the private sector, consideration should be given to developing a payment mechanism based primarily on user charges. It is envisaged that this will be the case for major road and waste projects in particular.

8.11 For those projects for which there is insufficient historical data on which to base demand forecasts, or for which user charges are not considered appropriate, consideration should be given to developing a payment mechanism based primarily on usage payments. Usage payments are likely to be banded to limit the exposure of the Contractor to demand risk.

8.12 If however market soundings suggest that there is no likelihood of transferring demand risk cost effectively, even on a shared basis, then the payment mechanism could be based primarily on availability and performance payments.

8.13 In practice, it is expected that all payment mechanisms that involve public expenditure should include an element of availability and performance payments and, if at all possible, the transfer of some demand risk. For example, road projects are currently being undertaken in the United Kingdom, Portugal and Finland use payment mechanisms based on a mixture of usage, availability and performance payments. Commonly somewhere in the region of 60 per cent of the payment is determined with reference to usage, and the balance is determined with reference to availability and performance. The balance between the two can vary, depending on the particular characteristics of the road. For example, an inter-urban route might tend towards usage payments, while an urban route might tend towards availability payments.

Guarantees

8.14 There is a significant risk that by providing guarantees to gain access to private finance, the Contracting Authority can inadvertently assume risks that it has intended to allocate to the Contractor. This can result in a project costing significantly more than expected, and result in poorer value for money than traditional procurement.

8.15 In Ireland it is not appropriate for the State to give guarantees in the context of Public Private Partnership projects. Nevertheless, it is in the interest of Central Authorities to ensure, in so far as is possible, that private funders have confidence in the competence and capacity of sub-sovereign bodies to fully engage in the PPP process.

8.16 Non-financial guarantees may, however, be applicable in certain circumstances. For example, a Contractor may only be willing to accept demand risk on a road project if the Contracting Authority guarantees that it will not construct a competing road. The implications of any guarantee that is sought by the private sector should however be considered in detail.

Financial Issues

Indexation

8.17 It is usual practice for a Public Private Partnership contract to take account of the impact of inflation through a suitable indexation arrangement. The indexation formula used will be dependent on the nature of the project, and will be arrived at by considering the nature of the risk allocation arrangements between the public sector and the private sector in relation to inflation. The most commonly used index is the Consumer Price Index. For consistency between projects being undertaken by different Contracting Authorities, the relevant index may be selected for all Contracting Authorities by the Central Authority.

Benchmarking and Market Testing

8.18 It is widely recognised that a payment mechanism that offers no flexibility in price over a long period of time, perhaps 25 or 30 years, is unlikely to offer best value for money for the Contracting Authority. For this reason, Public Private Partnership contracts may provide for those services that cannot be priced accurately over the duration of the contract to be periodically benchmarked and/or market tested to ensure that value for money is provided over the duration of the contract.

8.19 However, for contracts that contain the provision of infrastructure, it is usual for the maintenance element to be excluded from the benchmarking/market testing provisions. This is because such services cannot be easily separated from the provision of the infrastructure itself, and the Contractor takes on the risk of making the facilities available over the life of the project. Benchmarking and market testing may therefore be less relevant for projects in the roads, water and waste sectors due to the preponderance of hard services.

Transfer of Assets

8.20 It may be desirable for assets that are required by the Contractor to provide the contracted services to be transferred at nil value. This avoids the additional financing costs that would result from the Contractor purchasing the assets from the Contracting Authority. The actual market value of asset should be reflected in the payment mechanism in terms of a reduction in user charges or a reduction in the payments made by the Contracting Authority. The ability of the Contracting Authority to transfer assets at nil value should however be considered in terms of relevant legislation. This issue is discussed further in the separate Guidance Note entitled *Legal Context*.

Revenue Sharing

8.21 In addition to delivering the core service requirements of the Contracting Authority, there may be opportunities for the Contractor to derive additional income by using the facilities for other uses. In such circumstances, the payment mechanism should reflect the additional revenue generating potential of the project by way of a revenue sharing arrangement.

8.22 Whatever arrangement is used to share additional revenues, the payment mechanism should still provide an incentive to the Contractor to enhance overall efficiency and to identify new opportunities for to generate additional income. Care should be taken to ensure that the activities undertaken by the Contractor to generate additional income do not conflict with the Contracting Authority's core service delivery objectives.

Refinancing

8.23 Most risks in a project are concentrated during the construction phase and once this is successfully completed, it may be possible for the project to be refinanced on more favourable terms. This would result in a reduction in the cost of the project to the Contractor, and, if the benefits of refinancing are shared, could in turn lead to a reduction in the payments made by the Contracting Authority (or by users in the case of user charges). The Contracting Authority should therefore normally allow refinancing by the Contractor on the understanding that benefits are shared.

Appendices

A. Public Private Partnership Guidance Notes

Public Private Partnership Guidance Notes

The Public Private Partnerships Policy Framework comprises a series of fifteen individual Guidance Notes, the titles of which are as follows:

- *Introduction to Public Private Partnerships*
- *Financial Context*
- *Legal Context*
- *Public Private Partnership Assessment*
- *Statutory Process Assessment*
- *Procurement Procedure Selection*
- *Project Management*
- *Stakeholder Consultation*
- *Procurement Management*
- *Output Specifications*
- *Risk Assessment*
- *Payment Mechanisms*
- *Key Contractual Issues*
- *Accounting Treatment*
- *Contract and Performance Management*