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Project Preparation/Feasibility Guidelines for PPP Projects

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2, Street # 59, Sector F-7/4, Islamabad
Tel: +92 51 2270771-73 Fax; +92 51 9205926
Email: info@ipdf.gov.pk Web: www.ipdf.gov.pk

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1. Background

Project preparation/feasibility guidelines will enable the transaction advisor to do a detailed analysis of a PPP project, comprising of a pre-feasibility and a full feasibility study. This detailed analysis (pre-feasibility and a full feasibility study) will build upon the work conducted in the inception guidelines by IPDF and the Institution on; Initial Needs Analysis, Initial Social & Environmental Evaluation and Initial Project Screening pertaining to PPP suitability.

These project preparation/feasibility guidelines provide a methodology by which transaction advisors would be able to;

- Carry out a preliminary feasibility study to further develop the project concept and verify its potential viability before a full feasibility study is undertaken
- Complete a feasibility study that ensures that a decision to proceed with the project as a PPP is based on awareness of costs, risks, and value for money
- Conduct a risk appraisal & allocation methodology and estimate viability gap funding or concessionary requirements
- Devise a basic flow diagram including combining project and social safeguards appraisal methodologies
- Determine final PPP design parameters and carry out the necessary due diligence process

2. Application, review and amendment of Guidelines

These guidelines apply to projects that fall within the ambit of Public Private Partnership (PPP) and are potentially commercially viable under the PPP modality. Projects that the private sector can do on its own without any need for government support/assistance or those which can be privatized are not the focus of these guidelines.

2.1. Timing and non-retrospective nature of application.

These guidelines will not apply retrospectively to projects already in development or already implemented.

2.2. Type of Project

These guidelines have been established as best practice/benchmarks for the infrastructure projects in key sectors such as civil and municipal infrastructure; water supply, distribution and/ or treatment; solid waste management, sewerage disposal and/ or treatment; toll roads and bridges; transport logistics; ports; fixed infrastructure in support of telecommunications, data and information technology; residential development including for low-income

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people, industrial parks and other development infrastructure, electricity generation and/or distribution; energy infrastructure; health and education. There may be a requirement for certain projects to require specific and more special project appraisals including full economic cost/benefit and risk appraisals. Alternatively there may be projects where certain sections of these guidelines may not be required in the interests of costs efficiency and effectiveness. Characteristics of such projects will evolve and be defined as guidelines go through a subsequent review process.

2.3. Summary of analysis process

The purpose of these guidelines is to provide institutions with an outline of the various tasks required in the development and implementation of projects under the PPP methodology, as well as providing information on the various steps/processes involved in the preparation of project feasibility studies. The main identified tasks/steps are:

- Task 1 - Project Pre-Feasibility Study Process
- Task 2 - Project Feasibility Study Process

After completion of project feasibility, the project procurement, detail design and implementation phase commences along with devising appropriate project monitoring and evaluation mechanisms.

3. Definitions used in Guidelines

These guidelines use the following definitions:

“Environmental Assessment” refers to the entire process of managing, preparing and reviewing IEE’s and EIA’s.

“Inception guidelines” set out a methodology by which institutions are able to decide on which projects to develop/implement under the PPP methodology, register PPP identified projects with the IPDF, devise a Terms of Reference, Request for Proposal, and an evaluation criteria pertaining to the projects in question for appointment of Transaction Advisor.

“Infrastructure Project Development Facility” (IPDF) is a company under the aegis of the Ministry of Finance established in November 2006 to act as a bridge between public and private sector by facilitating the government/public institutions in development and implementation of infrastructure projects via use of Public Private Partnership methodology.

“Institution” means: i) Government, ii) person performing functions pursuant to any law in connection with the affairs of a Government, or iii) a person

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whose ownership or control is vested in a Government or whose ownership or control is vested in a person falling within number ii);

“Public Private Partnership” (PPP) means a commercial transaction between a private party and an institution by which the Private Party:

- a. performs an institutional function on behalf of the institution; and/or
- b. assumes the use of public property for its own commercial purposes;
- c. assumes substantial financial, technical and operational risks in connection with the performance of the institutional function or use of the public property; and
- d. receives a benefit for performing the institutional function or from utilising the public property, either by way of:
 - i. consideration to be paid by the institution from its budget or revenue; or
 - ii. charges or fees to be collected by the Private Party from users or customers of a service provided to them; or
 - iii. a combination of such consideration and such charges or fees;

“Social and Environmental Assessment” refers to the process that determines the social and environmental impacts and risks (including labour, health, and safety) of a proposed project in its area of influence.

“Strategic Environmental Assessment (SEA)” There is no universal definition for SEA, however, more often it is referred to as “a process to assess the environmental implications of a proposed strategic decision, policy, plan, program, piece of legislation or major plan.”

“Transaction Advisor” means a person or persons appointed in by IPDF/PPP Unit who has/have appropriate skills and experience to assist and advise the institution in connection with Public Private Partnership, including the preparation and conclusion of a PPP agreement.

“Value for Money” means that the provision of the institutional function or the use of public property by a private party in terms of the PPP agreement results in a net benefit to the institution defined in terms of cost, price, quality risk transfer or a combination thereof. It is the net present cost to the institution using the discounted cash flow, and adheres to the concept that money available now is worth more than the same amount in the future

“Viability Gap Funding” means funds provided by the Government in shape of subsidy (operational or capital) to the institution or the private party to make a

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project financially viable which is unviable due to constraints in charging Cost Recovery Tariffs

4. PPP Project Life Cycle and Project Feasibility Guidelines

PPP project life cycle is comprised of four phases with each phase having its own set of tasks, requirements and timeframes. The four phases are;

- Phase I - Inception
- Phase II - Feasibility Study
- Phase III - Procurement
- Phase IV - Development, Delivery and Exit

The two tasks identified in these guidelines fall in Phase-II of the PPP project life cycle. These project preparation/feasibility guidelines enable a project to move to the next two phases (Procurement, Development, Delivery and Exit) of the project lifecycle. A complete diagram of the PPP life cycle with all its four phases is given in Annexure-A.

FEASIBILITY STUDY

- ▶ Feasibility Study (TA)
 - Solution option analysis
 - Project due-diligence
 - Value Assessment
 - Economic valuation
 - Procurement plan
- ▶ Evaluate recommendations of Transaction Advisor (IPDF/I)
- ▶ Estimate viability gap funding or concessionary requirements (IPDF/I/TA)
- ▶ Market testing (IPDF/TA)
- ▶ Review market test results (IPDF/TA)
- ▶ Determine final PPP design parameters (IPDF/TA/I)
- ▶ Review by IPDF Project Feasibility Committee (IPDF/TA)
- ▶ Recommend to IPFF, for long-term fixed rate local currency financing to fill any market gaps (IPDF/TA)
- ▶ If required, project submitted to Viability Gap Funding Committee (IPDF/TA)

IPDF: Infrastructure Project Development Facility

IPFF: Infrastructure Project Finance Facility

I: Institution

MOF: Ministry of Finance

TA: Transaction Advisor

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5. Project Pre-Feasibility Study Process

The transaction advisor will conduct a pre-feasibility study for each project. This pre-feasibility study is a short, focused and a low cost assessment of a projects' viability. The intention of pre-feasibility is to define the project, and to collate information necessary for the institution and IPDF to develop a project concept based on engineering design concept, technical and financial challenges of implementation, and expected project outcomes and impacts. For work relating to environment and social assessment refer to Environmental Guidelines for PPP projects.

Specifically, the pre-feasibility analysis will:

- (1) Determine the Technical and Operational Feasibility of the project concept through preliminary analysis of:
 - (a) the engineering/technical aspects of the project;
 - (b) the manageability of the operational aspects of the project;
 - (c) all possible technical and operational risks
- (2) Include the following environmental and social safeguard activities:
 - (a) Socio-Economic Assessment and Analysis
 - (b) Environmental Assessment Scoping
- (3) Determine the Financial and Economic Feasibility of the project concept through preliminary assessment of:
 - (a) the cost recovery/income generation assumptions of the project;
 - (b) likely private sector interest in the project;
 - (c) the overall project cost (capital + operations + maintenance);
 - (d) possible financial risks;
 - (e) identification of likely economic benefits generated by the project.
- (4) Identify possible arrangements for private sector participation through:
 - (a) identifying role of the private sector (direct or indirect investment, joint venture partner, etc);

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- (b) identifying the contractual framework for the PPP arrangement;
 - (c) outlining procedure for ensuring competition in the selection of the private sector partner(s);
 - (d) identifying the legal documentation required to allow participation of the private partner(s).
- (5) Identification of Next Steps by:
- (a) assessing the resources required to complete the project preparation process;
 - (b) identifying parties responsible for completing next steps;
 - (c) determining the roles and responsibilities of involved parties;
 - (d) determining the time frame required for completing project preparation.

After completion of this task, the transaction advisor, institution and IPDF will have a well defined description of the proposed project, its general scope, preliminary cost estimates, identified social mobilization and environmental issues/requirements, income generating opportunities, identified project risks, initial financial viability, private sector opportunities, and what further actions are required to be taken to complete the project preparation and by who. This process will provide a good basis for further pursuing the project and taking it to full feasibility study.

6. Project Feasibility Study Process

Feasibility study is a critical component of project preparation, and a technical working document for project appraisal. Any project regardless of its scale and nature can have long-term implications with a great deal at stake once it's implemented. A feasibility study therefore needs to be authentic, accurate and thorough. It is a complete document containing all aspects of the project that can be appraised by government, institutions, and potential private sector investors and the basis on which the institution/GOP would make an investment decision on the project.

For the institution and the PPP Unit (IPDF) the feasibility study will:

- ensure that the project is in accordance with its predetermined needs, and is the most suitable technical solution to the needs;

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- provide information about costs (explicit and hidden), and give an indication whether these costs can be met from within institutional budgets without disruptions to other activities;
- consider the economic rationale for the project;
- allow for identification, quantification, mitigation and allocation of risks associated with the project throughout its project life;
- identify, analyze and devise a complete resettlement plan including all relocation plans and resettlement impacts; and the corresponding instruments including compensation programs and costs;
- document all consultation completed for the project;
- include the project specific land acquisition;
- provide management programs for supervision to ensure compliance with approvals and defined mitigation plans;
- consider whether or not the project is affordable to the institution and/or the end user of the services in terms of explicit and contingent fiscal obligations

In addition to this the feasibility study will:

- consider how the project will be structured;
- contain a financial model with key investment ratios, and the capability of running scenario and sensitivity analyses;
- identify constraints which may cause the project to be halted;
- ensure that the project is developed around a proper business plan; and has been subject to a due diligence that shows it is legally, physically and socially compliant

The feasibility study is based on a design of an appropriate level of detail that meets good engineering design and construction practices and standards as specified by the Government of Pakistan or other standards/best practices accepted in the country, as well as in accordance with relevant laws, decrees, regulations, ordinances, financial policies/rules, and related circulars of the Government. It is important to point out that the various activities identified at this stage of project preparation can/should be pursued simultaneously to expedite project preparation. Also, it is to mention that during this stage there

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can be a number of common project design and structuring issues that would need to be considered.

The feasibility study needs to be a “complete” document containing all aspects of the project that can be fully appraised by IPDF, the institution and future intended private sector partner(s).

The box below provides a summary outline / checklist of the main items that need to be included in a Feasibility Study.

Checklist for Contents of the Feasibility Study

1. THE NEEDS ANALYSIS <ul style="list-style-type: none">a. Step 1: Demonstrate that the project aligns with the Institution’s strategic goals and objectivesb. Step 2: Identify and analyze the available budget for project developmentc. Step 3: Demonstrate the commitment and capacity of the Institution and other state authoritiesd. Step 4: Specify the outputse. Step 5: Define the scope of the project
2. THE OPTIONS ANALYSIS <ul style="list-style-type: none">a. Step 1: List all the solution options the institution has consideredb. Step 2: Evaluate each solution optionc. Step 3: Choose the best solution option
3. PROJECT DUE DILIGENCE <ul style="list-style-type: none">a. Step 1: Legal issuesb. Step 2: Site ownership and availability issuesc. Step 3: Environmental Assessmentd. Step 4: Social Assessment including land acquisition/resettlement impacts
4. FINANCIAL ASSESSMENT <ul style="list-style-type: none">a. Technical definition of the projectb. Identifying direct costsc. Identifying indirect costsd. Identifying project revenuee. Model assumptionsf. The Base Case modelg. The Risk Matrixh. The risk adjusted financial modeli. Creating the model to reflect PPP project structure and sources of fundingj. Carry-out various sensitivity testingk. Economic Analysis
5. VALUE ASSESSMENT
6. ECONOMIC ASSESSMENT
7. DEMONSTRATE PROJECT VIABILITY
8. VERIFY INFORMATION AND SIGN-OFF

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9. PROJECT MANAGEMENT AND PROCUREMENT PLAN

10. REVISITING FEASIBILITY STUDY

A detail on each of the above ten items are given below:

6.1. The Needs Analysis

In this stage the transaction advisor gathers all the available information on the project, institutions' present and future needs, and the resources on-hand for project development/implementation, including budget. Existing and future needs of the institution pertaining to the project and resources available for its implementation are assessed and analyzed.

Needs analysis gives definition to the project, paving the way for the options analysis component of the feasibility study phase. Needs analysis is also briefly looked at in the inception phase, however, during the feasibility study phase it is thoroughly interrogated.

Needs analysis will comprise of the following parts:

Part 1: Demonstrate that project aligns with institution's strategic objectives

To be in an institution's best interest, a project needs to align with its policies and priorities. This is comprised of three steps.

Step 1: Summarize the institution's mission and vision statements, its strategic objectives, and the government policy that determines what the institution's deliverables are.

Step 2: Describe the functions that the institution performs in the public interest or on behalf of the public service.

Step 3: Discuss the following aspects of the project:

- How does the project contribute to the implementation of government and institution policy?
- Does the institution have the ability and the capacity to provide the services?
- What is the relative size of the project, in terms of its anticipated budget or capital expenditure?
- What are the potential cost savings for the institution?

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- What is the capacity of the private sector to provide the services?
- What is the expected life of the project?
- Will the proposed project address the broad needs of the institution over time?

Part 2: Identify and analyze the available budget(s)

Keeping in view that affordability is a cornerstone of the feasibility study phase, this analysis must include the following:

- A discussion of any assumptions about future budgetary commitments required from the government; for example; How much will be required over what time period, escalating inline with the Consumer Price Index?
- A discussion of any consolidation of budgets, namely, drawing funds from various budgets into a consolidated budget, which will be ring-fenced for this project.
- A list of cost items currently in the institution's budget which may no longer be incurred as a result of the proposed project. For example: If a government department is housed in different buildings, there may be costs associated with delivering mail between buildings. If the proposed project is to house the department in one building, then the department would no longer incur these costs, thus representing potential savings.

Part 3: Demonstrate the institution's commitment and capacity

It needs to be clear that the institution has the capacity to manage, process, evaluate, negotiate and implement the project. This is comprised of two steps.

Step 1: Provide information on institution's project team and an assessment of its institutional capacity.

Step 2: Provide information on key stakeholders, their relationship with each other, and the project's impact on each. Also, there should be a clear plan to incorporate the views and contributions of these key stakeholders.

Part 4: Specify the outputs

Once an institution's objectives and budget are identified, and its commitment and capacity demonstrated, the outputs of the proposed project need to be specified. While specifying outputs, care should be taken to ensure that any inefficiencies are not subsidized, and outputs identified are clear and measurable because around these outputs a payment mechanism will be structured.

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PPP procurement focuses on project outputs, as opposed to the conventional procurement method where inputs are specified. The institution defines the service that it needs to deliver in shape of outputs and this is comprised of the following seven steps.

Step 1: Describe the service that the institution needs to deliver

Step 2: Specify the outputs required to deliver that service

Step 3: Specify the minimum standards for outputs. This will ensure that the service delivered by the project meets the institution's expectations

Step 4: Assess whether the output specifications can meet the institution's ongoing service needs

Step 5: Specify key indicators that will measure performance. This will allow for more accurate costing of the output specifications

Step 6: Identify service interface expectations. This pertains to the interface between the project and the institution's other services

Step 7: List the socio-economic targets that the institution wishes to achieve in the project

Note: Here the focus should be on outputs and not inputs. The risk of providing adequate inputs and assets to deliver the required outputs must lie with the private sector. For instance, a PPP must provide clean and adequate water to 'X' number of households and not a network of pipes and water treatment plants, or an airport capable of handling 'X' number of flights and 'Y' number of passengers and not a building surrounded by ramps. In the process assets are created, over which the institution/public entity/Government of Pakistan has certain rights over the life of the project and these assets are usually transferred to the institution/public entity/Government of Pakistan at the end of the PPP term or concession period. Therefore it is crucial to define project outputs upfront.

Part 5: Define the scope of the project

In light of the institution's needs, strategic objectives, and project's output specifications for delivering the required service, a brief concept note defining the proposed scope of the project is prepared. This concept note should be a concise outline of the institution's requirements, allowing for the selection of reasonable service delivery options.

While conducting the needs analysis ensure that the following is carried out:

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- Identify/devise a list of significant government assets which will be used for the project (such as land and equipment);
- Identify extent of existing facilities in the project area;
- Determine how the project will complement other developments taking place in the area through review of sector master plans/studies;
- Review existing land use plans and topographical/geotechnical data for the development of project design;
- Specify environmental and social assessment work plans through description of projected work tasks;
- Assess land acquisition and resettlement requirements. Undertake community consultation processes to determine willingness of affected persons/community to agree with the implementation of the project and the proposed assistance and compensation program

6.2. The Options analysis

Options analysis provides a range of technical, legal and financial options available to the institution for meeting its output specifications. The various options identified are evaluated against a set criteria specific to the project, thus allowing the institution to choose a preferred option from the available.

For example, if the institution were faced with the need to offer working environment accommodation services for its staff of 1000 people, the reasonable options available to the institution might be to:

- a) rent space in another more suitable building
- b) refurbish its current building or refurbish another building, or
- c) construct a new building

With the rental option, the institution could enter into a rental agreement for office space in another building, move its staff and continue operating.

With the refurbishment option the institution could either decide to refurbish the building itself and provide its own ancillary services (cleaning, security, IT, furniture, etc) or it could enter into a PPP agreement where a Private Party would refurbish the building and provide ancillary services, receiving a fixed fee for doing so.

The same would apply if the institution wishes to construct a new building.

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The transaction advisor will conduct the options analysis by undertaking the following four steps:

Step 1: List all reasonable options considered

Step 2: Evaluate each option in terms of its advantages and disadvantages by taking into account its;

- technical and financial aspects
- land acquisition and resettlement impacts and costs
- environmental impacts and costs

Step 3: Discuss which options are likely to attract private sector investment

Step 4: Recommendation of the preferred option

The purpose of this analysis is to identify the advantages and disadvantages of each option and to examine its risks, benefits and potential impacts. The analysis must cover all the viable delivery options available for meeting the institution's specific identified needs.

All reasonable options considered need to be evaluated clearly and with appropriate weightings of criteria. The criteria by which the feasibility study evaluates each option would be decided on and devised by the institution during the needs analysis stage. The criteria could include raising private finance, speed of implementation, ease of implementation etc.

Once the preferred option is selected a design appropriate to the complexity of the project is prepared in order to provide sufficient information for costing, risk and financial analysis. This design may be a preliminary design for more complex and high cost projects or a lesser design standard for simpler projects that have reliable cost data.

Note: This design is not to be provided in full to any private sector bidders at the stage of bidding as it will result in the design risk remaining with the institution/public entity/Government of Pakistan and may also have an adverse effect on the efficiency of private sector design. Final design will be that of the private sector who will obtain all the necessary approvals (construction, technical, architecture, design, etc.) as required by applicable law.

6.3. Project Due Diligence

At this stage of the feasibility study all legal, land, site, technical, social safeguard and environmental issues are addressed and dealt with. The list below is not complete for every project but gives an example of the issues that

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should be considered:

- Include environmental scoping assessment report and identify how the negative impacts will be mitigated. Estimate what the magnitude of mitigation measures will be;
- Land acquisition plan including required land expropriation;
- Prepare a consultation plan to ensure that all affected parties are provided with information and opportunity to express concerns regarding project impacts;
- Prepare a Resettlement Action Plan (RAP) in accordance with the approved Resettlement Policy Framework with full public disclosure;
- Finalize the EIA Terms for Reference, to be completed by the Project Enterprise;
- Analyze the relevant design;
- Review supporting infrastructure;
- Review availability of raw material and fuel supply;
- Full technical site analysis;
- Consider legal aspects including relevant legislation, tax laws, land title, etc.;
- Carry out a preliminary financial due diligence on the availability of financing, sources of revenue, hedging/risk mitigation products, tax structures, etc

Keeping in view the above issues the transaction advisor will conduct project due diligence by undertaking the following four steps:

Step 1: Legal issues

All legal aspects pertaining to projects development and implementation are identified, studied and addressed.

Step 2: Site ownership and availability issues

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It must be ensured that the site for the project is available for the successful party and clear of all legal, institutional, technical and other issues pertaining to its availability

Step 3: Environmental Assessment

Strategic Environmental Assessment (SEA) is becoming an accepted and widely used instrument for integrating environmental issues into the formulation of plans to undertake the projects. Environmental requirements to underpin implementation of infrastructure projects involve far more than simply making sure that there is compliance with environmental law and regulations. Authorization of projects by the environmental authorities is an important step because a projects inability to meet environmental requirements can have an adverse impact on its financing efforts. There needs to be a proper and full consideration, understanding, application and mitigation of the environmental aspects throughout the projects' lifecycle. (Refer to Environmental Guidelines for PPP projects for this step)

Step 4: Social Assessment including land acquisition/resettlement impacts

Social and resettlement considerations require that all infrastructure projects should avoid adverse impacts to the people and be appropriate to the culture of the local communities and project beneficiaries. In case adverse impacts are unavoidable, efforts should be made to mitigate these impacts to ensure that the affected people can restore or improve their living standards as before the project. A projects inability to meet social requirements can have an adverse impact on its financing efforts. Social and resettlement issues need to be properly highlighted, understood and mitigated at all stages of the projects lifecycle. (Refer to Environmental Guidelines for PPP projects for this step)

6.4. Financial Assessment

In this stage the deliverable is a risk adjusted PPP financial model of the said project. Model will analyze the financial soundness of the proposed project including fiscal sustainability of the project based on the costs projected for adequate maintenance and operation of the project. The model will represent the cost of delivering the preferred solution/options through a Public Private Partnership arrangement.

Financial model must also include an evaluation of the impact of the project on public sector/government finances, taking into account (a) the incremental taxes that would result from the project; (b) the increase in recurrent costs resulting from the project and the prospects for financing this increase; (c) the overall level of recurrent costs required to operate the project adequately; (d) the budget allocated by the institution where this is relevant and (e) the availability and certainty of counterpart funds for the project.

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In developing the financial model, the following ten steps are required:

Step 1: Technical definition of the project

This sets out a technical definition of the parameters of the project. What norms and standards will be applied in the project? What maintenance cycles are expected?

Step 2: Identifying direct costs

Direct costs are those that can be allocated to a particular service. All costs assumed should relate to historical cost information where available, or utilize realistic expected costs and revenues based on other similar projects within Pakistan, if available, or in a similar environment in another country. Some details regarding the types of direct costs are discussed briefly:

- Direct capital costs

These are costs specifically associated with the production of new services; and can include construction of a new facility or acquisition of a new asset. The model should account for capital costs in the year in which they occur, including, but not limited to, the design, land and development costs, raw materials, construction, plant and equipment. Capital costs should also account for labor, management and training costs related to development and implementation of a project, including financial, legal, procurement, technical and project management services. Costs pertaining to asset replacement as they occur during the projects' life should also be included.

- Direct maintenance costs

Maintenance costs will include the full life-cycle costs of maintaining the assets in the condition required to deliver the output specifications. It may include elements such as raw materials, tools/equipment costs and labor costs associated with maintenance. Level of maintenance costs assumed must be consistent with the capital costs; the operating cost forecasts and the residual value treatment of any assets.

- Direct operating costs

These are associated with the daily operation of the service and will include full staff costs (including wages and salaries, employee benefits, accruing pension liabilities, contributions to insurance, training and development, annual leave, travel and any expected redundancy costs), raw materials and consumables, direct management costs and insurance.

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Step 3: Identifying indirect costs

Indirect costs will include any additional overhead costs related to the project, for example; senior management's time and effort, personnel, accounting, billing, legal, rent, communications and other resources that are used by the project. The project's indirect costs can be determined by using an appropriate method of allocation.

Step 4: Identifying project revenue

Total cost of output specifications should be offset by the anticipated project revenues. It should be borne in mind that forecasting potential revenues could be a particularly difficult aspect of the model especially where there is little or no historical data available. This element is a vital part of the feasibility study, and therefore steps like; involvement of specialist advisers and conducting market testing should be considered. Any assumptions on projected revenue must reflect the project's ability to invoice and collect revenue. Analysis on appropriateness of fees in relation to user affordability and long-term marginal costs, operation & maintenance costs, and the effect of pricing & cost recovery policies on the financial viability of the project should also be conducted.

Note: Revenue over-estimation and cost under-estimation is the most common failing of feasibility studies. Carry out scenario analyses to check what happens to the project in worst case scenarios.

Step 5: Model assumptions

Any assumptions made regarding inflation rate, discount rate, depreciation, and budget availability must be explained in detail.

Step 6: The Base Case model

A discounted cash flow model must be created that takes into account the operating costs, capital costs and revenues anticipated for this project.

Step 7: The Risk Matrix

Constructing a risk matrix is a fundamental part of the feasibility study process and can be usefully integrated with the construction of the financial model. It involves the following inter-related stages:

- Identifying risks involved in the project
- Assessing the impact of these risks
- Assessing the likelihood of these risks arising

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- Calculating the value of risk (and ranges of possible outcomes)
- Allocating risks to party best able to manage risk
- Identifying strategies for mitigating risk.

Note: These guidelines require the valuation of risk as a separate cash flow item, and not by adjusting the discount rate as an indication of the level of risk for each project. Principal reasons for adopting the cash flow impact approach is that it promotes a focus on costs of each risk and enables an understanding of how risk transfer can be achieved and what would be its financial effects. In addition to this, different risks have different timing implications throughout the project term (some risks may only have an impact on the initial stages of the project, whilst the impact of other risks diminishes or escalates over the life of the project). Valuing each risk as a separate cash flow item accounts for the time implication of that risk.

Some risks to be considered are given below divided between “project related risks” and “non-project related risks”:

Project Related Risks

(Relatively manageable by Private Party and lenders)

- Completion Risk (engineering & construction cost / time cost control)
- Operational Performance Risk (technical & operational know-how)
- Market Risk (Volume and Tariff)
- Financial Risk (Exchange Rate and Interest Rate Fluctuations)
- Environmental Risk (past and future liabilities, project delays, costs overruns)
- Land Acquisition to the extent that the enablement confirmed by the project due diligence has not been completed.

Non-Project Related Risks

(Non-manageable or partially manageable by Private Party and lenders)

- Political Risk (expropriation, political violence, currency convertibility and transfer, etc.)

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- Contractual [Regulatory] Risks. (default on contractual obligations, such as; pricing formulas)
- Macroeconomics Environment - Volatility Risk (changes in macro balance in relatively short periods, i.e., exchange rate, inflation, etc.)
- Legal Environment (rule of law, i.e., judicial system, regulatory procedures and arbitration)

Step 8: The risk adjusted financial model

The base case financial model is revised to include project risks. Here the transaction advisor undertakes a detailed project risk analysis exercise covering such items as market forces; price and inflation, demand and sustainability, technology/operational risks, and measures identified to mitigate such risks.

Step 9: Creating the model to reflect PPP project structure and sources of funding

A proposed structure of the project is devised demonstrating the relationship between the institution, Private Party SPV, lenders, shareholders, suppliers, subcontractors and other stakeholders. This planned project structure must incorporate the funding structure, appropriate equity returns, and the costs and key terms of debt funding (including for instance, debt service cover ratios if applicable). All assumptions must be clearly stated, as these will directly affect the cost of capital for the project.

In a project finance structure, the following elements must be addressed:

- Legal and financial structure and participants: legal documentation that supports the structure;
- Ratios such as Annual Debt Service Cover Ratio (Assesses the project company's ability to service debt from its annual cash flow, and is calculated as operating cash flow of the project over the year divided by debt service of the project over the year. This will be determined for each project based on its risk assessment but will not be less than 1.10) and Loan Life Cover Ratio (Based on a similar calculation as above, but taken over the whole term of the loan: projected operating cash flow divided by debt outstanding on the calculation date and determined for each project).
- Other analysis would include calculating the Financial Internal Rate of Return that measures the return on investment over its life. It is the discount rate at which the Net Present Value (value today of sum of money due in future taking into account the cost of money/discount

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rate) of the project is zero. Discount rate should be based on the appropriate (chosen at the time of appraisal and based on the duration of the project) government bond yield plus an appropriate risk margin determined by the transaction advisor in consultation with IPDF and the institution for each project.

Step 10: Carry-out various sensitivity analysis of the Financial Internal Rate of Return subjecting it to;

- (i) increase in investment cost by 10% to 50%;
- (ii) increase in operating costs by 10% to 50%;
- (iii) increasing both investment and operating costs by 10% to 50%; and
- (iv) reduction in revenue by 10% to 50% and for range of discount rates

6.5. Value Assessment

It is necessary to demonstrate/assess if the project has the ability to provide value for money if it is procured and implemented under the PPP methodology. There are two ways in which this can be measured; Quantitative assessment and Qualitative assessment.

- Quantitative assessment for Value for Money is the net present value of the risk that is transferable to the private sector which otherwise would have been kept in the public sector project.
- Qualitative assessment for Value for Money is based on a demonstration that the project has efficiencies that the private sector can and has provided on similar projects, that there is a suitably competitive market, that risks can be transferred to the private sector and that such risk transfer will be achieved within the costs of the PPP model.

In such case the bidders must provide identical or better financial terms for the same risk transfer assumed in the PPP model devised in the feasibility study accordingly adjusted for changes in macro-economic conditions between the feasibility study and the bid.

6.6. Economic Assessment

Here the transaction advisor calculates the incremental benefits and costs of the project to the society as a whole based on “with” and “without” project scenarios, and demonstrate in economic terms that the proposed project is the least cost option when considering both capital and recurrent costs.

- Determine the economic costs of the project (investment cost and operating cost) derived from the financial costs by excluding taxes and duties and by converting the non-traded components to the domestic

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price numeraire;

- Determine major assumptions to be applied to the economic analysis including (i) projected life of the proposed project asset; (ii) constant value (currency and year) for defining incremental costs and revenues; and (iii) opportunity cost of capital based on the current savings rate of local commercial banks;
- Undertake calculation of Economic Internal Rate of Return (EIRR) for each component and for the project as a whole, and the Economic Net Present Value (ENPV) for the whole project;
- Estimate expected economic benefits to be generated from the project such as increase in land costs, time saving, employment generation, improved public health conditions, reduced pollution; and various cost saving benefits

6.7. Demonstrate Project Viability

Here a projects' viability is assessed taking into account the following points;

- Is it technically deliverable
- Affordable to users
- Economically viable
- Financially viable to investors
- Socially and environmentally sustainable

Feasibility study must also identify appropriate and comprehensive collateral security arrangements required for making the project bankable, for example; in some cases there may be a need for Viability Gap Funding (VGF). In these cases a clear justification for VGF along with the quantum of Viability Gap Funding required must be part of the financial analysis (refer to the box below as well as Guidelines on Viability Gap Finding).

Viability Gap Funding (VGF)

Viability Gap Funding is a strategy for supporting the delivery of basic services such as; electricity, telecommunications, water, sanitation, and transport where policy concerns justify public funding to complement or replace user fees. Affordability of particular groups of users, positive externalities, or the infeasibility of imposing direct user-fees represent examples of the types of

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policy concerns that have motivated governments to use public funds to facilitate access to infrastructure services.

VGF schemes can take a variety of forms depending on the nature of the service and the rationale for public funding. Examples of possible applications include:

- payment of subsidies tied to the number of new connections made, when a goal is to expand access to network services;
 - payment of declining transitional subsidies tied to verified consumption to ease;
 - tariffs toward cost-recovery levels, when a goal is to bring retail prices in line with costs;
 - payment of subsidies tied to verified household consumption of targeted disadvantaged groups, equivalent to the difference between a life-line tariff (paid for by the household) and the full tariff;
 - payment of subsidies tied to the achievement of positive externalities (e.g. subsidies for sanitation disbursed against the achievement of specific environmental targets)
 - Payment of targeted voucher-based support to allow consumer choice of provider, when a goal is to enhance competition and performance between service providers. These income transfers are eligible as long as the payment linked to a specific output delivery (For example; Rs./unit of consumption) is expenditure-based.
- (i) **Affordability and value for money test.** The transaction advisor prepares a robust financial model to determine project viability, bank-ability, affordability and the value for money it offers compared to direct public procurement. The model includes estimates of viability gap and the need for subsidies.
- (ii) **Market Test.** Transaction advisor conducts market testing to determine under which technical conditions the market is willing to offer the services. This will be an interactive process and should preferably be done by an independent advisor. IPDF assists the Institution in reviewing the market test and the need for viability gap and other funding support and determine the final PPP design parameters. Assigned IPDF project manager submits project to IPDF Project Feasibility Committee.

6.8 Verify Information and Sign-Off

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The Institution must ensure that all information used in the feasibility study is as accurate and verified as possible. This will include

- A statement from all advisors on the reasonableness of the information collected and the process by which the information was collected.
- A description of how the assumptions used in constructing the financial model are realistic and appropriate, taking into account past practice, performance, current practice and anticipated future developments. For complex projects an independent party will check if the assumptions are reasonable, and confirm that they have been correctly incorporated into the model to produce an accurate result (arithmetic and logic).
- A record of the methodologies used for valuing various costs, including the costs of key risks.
- Ensuring that all the inputs into the feasibility study are signed off as accurate and verified by each of the transaction advisor specialists.

Once this information verification and sign off has been completed the approval process must be completed in accordance with applicable law.

6.9. Project Management and Procurement Plan

The preparation of a project management plan based on the packaging of the various project components needs to be part of the feasibility study agreed by all concerned parties. The plan must include a section setting out how the PPP will be procured.

The plan will refer to the Procurement Guidelines and must contain at least the following:

- a project timetable highlighting the key milestones and all approvals which will be required to take the project to implementation
- a list of any potential challenges to the project and a discussion on how these will be addressed by the project team
- the governance processes to be used by the institution in the management of the project, especially regarding decision-making
- the project stakeholders and the extent of their involvement in the PPP
- the project team with assigned functions
- categories of information to be made available to bidders and how such information will be developed

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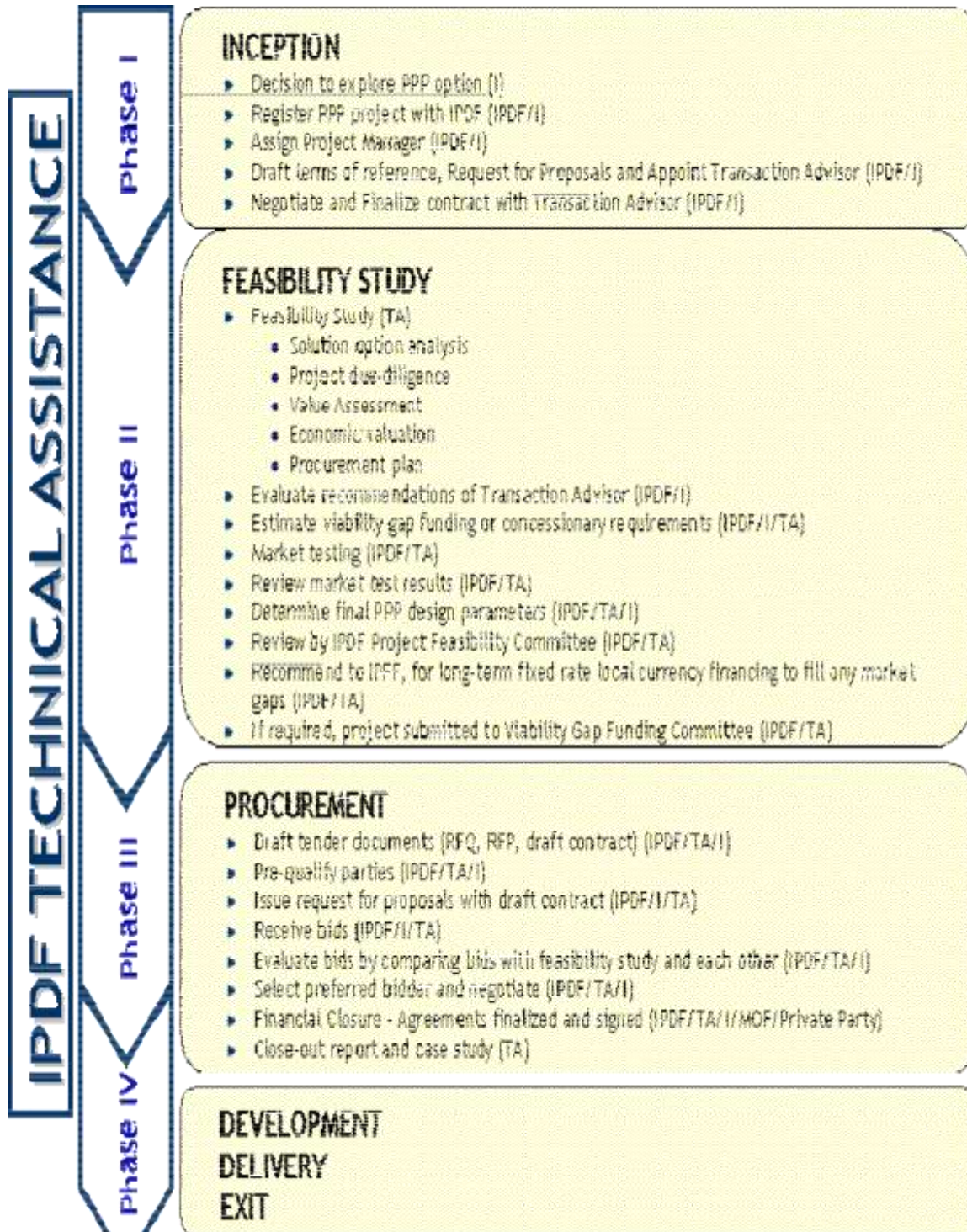
- a list of required approvals from all departments and agencies
 - list of work items necessary for obtaining these approvals (for example, land acquisitions and environmental studies)
- contingency plans for dealing with deviations from the timetable and budgets
- the bid evaluation process and terms
- an appropriate quality assurance process for bid documentation
- the means of establishing and maintaining an appropriate audit trail for the bid process
- appropriate security and confidentiality systems, including confidentiality agreements, anti-corruption mechanisms, and conflict of interest forms to be signed by all project team members.

6.10 Revisiting the Feasibility Study

The feasibility study will be updated or modified when project, external market or macro-economic changes occur.

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Annexure-A



IPDF: Infrastructure Project Development Facility
 IPFF: Infrastructure Project Finance Facility
 I: Institution
 MOF: Ministry of Finance
 TA: Transaction Advisor