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Submission and Evaluation of Proposals for Private Power Generation Projects in Developing Countries

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Peter A. Cordukes is a principal financial analyst in the Power Development, Efficiency, and Household Fuels Division of the World Bank's Industry and Energy Department.

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Foreword

In January 1993, a new World Bank policy paper was issued setting out guiding principles for its future support of the power sectors of developing countries. These principles were aimed at helping countries establish a framework of policies and institutions that will result in a competitive and more efficient power sector. One of the most important of the new principles seeks to encourage greater private investment in the power sector. This discussion paper was prepared to help governments in developing countries to better manage the process of inviting competitive proposals from the private sector for new power developments.

The World Bank recognizes the importance of the private sector in mobilizing additional funding for power development. However, it has been concerned that some private power projects have been providing power at a higher cost than might be obtained if these contracts had been awarded on the basis of a competitive bidding process.

Consequently, we have in cooperation with USAID and IFC prepared these guidelines to encourage a competitive bidding approach to private power development in developing countries.

Richard Stern
Director
Industry and Energy Department
Finance and Private Sector Development

Abstract

This discussion paper describes how private power development projects can be undertaken through a competitive bidding process. It identifies the key elements that are needed in the host country business environment for successful project development such as a stable macroeconomic environment, clear policies and procedures for project approval and processing.

The main focus is on the development of power generation projects on a limited or non-recourse basis using a project financing approach. The paper reviews the specific risks involved for the power purchaser, the project developer and the lenders and in particular how those risks can be shared and minimized. The chapter on the security package describes the main agreements which make up the package which must formalize the various undertakings between the parties and provide assurances to lenders that their loans will be repaid.

Finally, the process of seeking competitive bids is explained, the use of requests for proposals and the appropriateness of accepting unsolicited proposals. A two step selection and evaluation process is proposed. An example of a suitable bid evaluation procedure is also given.

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Terms, Abbreviations, and Acronyms

Terms

Applicant: the private party (individual, corporation, partnership, or consortium) submitting a proposal to develop a private power project.

Backup power: reserve power for special circumstances, such as an emergency or system failure.

BOO/BOOT/BLT schemes: Build-Own-Operate (BOO) and Build-Own-Operate-Transfer (BOOT) schemes are methods by which private sector participation in the power sector is encouraged. Under these approaches, a project company under private ownership, or a joint venture with a minority public participation, is set up to plan, finance under limited recourse, design, construct, and operate power generation facilities. In a BOOT arrangement, ownership of the facility is ultimately transferred to another entity after a specified period of operation. A variant is the Build-Lease-Transfer (BLT) scheme.

Business interruption: stoppage of normal business operations.

Buy-back rate: the rate charged by a utility to a private power developer for buying back some or all the power the developer is obligated to deliver.

Counter guarantee: a third-party guarantee that is used when one party purchases a service or a product for monetary payments and this party's ability to make payments is in question. This guarantee is required by the provider of the service or product to ensure that payments will be made.

Cross-subsidies: the allocation of funds provided by one or more products or sectors of the economy to other products or sectors of the economy. Often this process is not transparent (e.g., high prices for industrial users of electricity can be used to provide subsidies to domestic consumers).

Debt service: periodic payment of principal and interest on loans, bonds, or fixed/floating-rate notes.

Devaluation: a government action to reduce the purchasing power or value of local currency against convertible currencies.

Easements: a right given to an individual or group to make limited use of another's real property.

Expropriation: a forced transfer of ownership from a private owner to a government institution.

Financial closing: occurs when all the conditions of lenders and investors have been met, and financing disbursements can take place.

Franchise: the grant of certain rights to an individual group, partnership, or corporation, sometimes called a concession.

Hard currency: all major convertible currencies, such as the U.S. dollar, the British pound, the German mark, the Japanese yen, the French franc, the Swiss franc, the Italian lira, the Dutch guilder.

Home country: the country in which a private power developer is registered.

Host country: the country in which the private power project is taking place.

Indexed tariff: an adjusted tariff, based on a variable such as periodic fuel price, interest rates (local or foreign), exchange rate, and/or inflation rate.

Implementation agreements: project-specific agreements that provide government assurances and guarantees to private power producers required for successful project development and allocation of risk.

Implementation team: the private power developer and its contractors.

Independent power producers: private power producers who have developed power plants, typically on a project finance basis, to sell power to an existing utility or directly to distributors or large consumers.

Investors: individuals, groups, or companies that invest cash in a private power developer, group, or company.

Irrevocable liquid credit: a guarantee by a commercial bank to provide credit on demand up to a specified maximum limit. This service is provided by banks for a fee.

Least-cost expansion analysis: analysis of the options available for expansion of the electric system to determine the cheapest option to achieve the intended objectives.

Lenders: commercial banks or other lending institutions that provide loans for investors or directly to a private power developer company for the purposes of developing and building a power plant.

Limited-recourse financing: a lending arrangement under which repayment of a loan and recourse in the event of a default relies mainly on the project's cash flow.

Liquidated damages provisions: specific amounts, with a cap, a construction contractor is obligated to pay the project company in case of nonperformance or schedule delays.

Nondiscrimination: avoiding making distinctions between entities outside of any given and specific evaluation criteria.

Nonrecourse financing: recourse for debt repayment, default, or both belongs exclusively to the project company.

Nonutility generators: power producers other than public utilities.

Peak power: the maximum noninstantaneous electric power in a specified period of time.

Performance bonds: guarantees purchased by the project developer issued by commercial banks or insurance companies for an entity to guarantee full and successful implementation of a contract according to prespecified performance guidelines.

Plant downtime: time when the power plant is not producing power because of scheduled or forced outage or shutdown.

Power purchaser: the entity purchasing power from a private power developer. Usually, the public utility of the host country is the power purchaser.

Private power developer: an individual, group, or company that develops power plants on a private basis to own, operate, lease, and/or transfer.

Project company: the special-purpose entity that assumes legal and financial responsibility for construction and operation of the project. Recourse is limited to the project company.

Project risk: the total risk, including commercial, political, and force majeure risks.

Proposal: a written offer, based on the covenants, terms, and conditions as contained in the **RFP.**

Rate of return: percentage of return on equity that developers expect from a project.

Request for proposal (RFP): issued by a utility or government to solicit bids for a project. It is, collectively, all the covenants, terms, and conditions contained in the following sections and appendixes: Information for Applicants, Instructions to Applicants, Performance Specification and any applicable drawings, draft Implementation Agreement, draft Power Purchase Agreement, and possible draft Fuel Supply Agreement.

Right of appeal: the right of specified parties to legal arrangements to request another hearing by a higher authority according to guidelines specified in a governing law.

Risk profile: the level of risk due to political, economic, or financial uncertainty to which an investor is exposed. This determines the rate of return that an investor requires in order to tolerate exposure to the level of adversity in any country.

Rule 144A: allows the sale of restricted investment-grade securities (notes or bonds) to "qualified institutional buyers" without registration with the U.S. Securities and Exchange Commission, thereby providing foreign companies access to the U.S. capital market. The issue of these securities does not require the same same detailed financial information as a public offering. However, three years after their issue, 144A securities can be freely traded in the U.S. market.

Sovereign guarantee: government guarantee (e.g., of the obligations of a purchasing utility under a power purchase agreement).

Tariff: rates charged for the energy, capacity, and miscellaneous services included in the **PPA.**

Tax holidays: exemptions from some or all taxes for a specified period.

Turnkey contract: a contract given by the project developer to a prime contractor who will be responsible for the design and implementation of a project from start to finish, and who will provide a completed, operational project on a stipulated date, on a lump-sum basis.

Abbreviations and Acronyms

BLT	Build-Lease-Transfer
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BOT	Build-Own-Transfer
ECO	Expanded Cofinancing Operations of the World Bank
EPC contract	Engineering, Procurement, and Construction contract
HC	Host Country
IA	Implementation Agreement
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IFC	International Finance Corporation
IPP	Independent Power Producer
IRR	Internal Rate of Return
kWh	kilowatt hour
LCA	Land Conveyance Agreement
MIGA	Multilateral Investment Guarantee Association (member of the World Bank Group)
O&M	Operations and Maintenance
OECD	Organization for Economic Cooperation and Development
OPIC	Overseas Private Investment Corporation
PPA	Power Purchase Agreement
RFP	Request for Proposal
ROE	Return on Equity
SP	Security Package

Executive Summary

This report has been prepared to help governments of developing countries address some of the constraints that have impeded development of private power generation projects.

Both the World Bank and the IFC explicitly support a major role for the private sector in power supply. The private sector can be an important source of financing for power, a factor that is especially relevant for the financially pressed public sectors of many developing countries. Private power producers also tend to operate more efficiently than publicly owned facilities, since they normally accept responsibility for project risks, such as construction cost overruns and efficient operation of the plant. However, the macroeconomic, legal, and regulatory environments of developing countries frequently do not encourage competitive proposals for investment in private generation. At the same time, these countries often receive unsolicited bids for power development that do not take account of the full system costs and, more importantly, may not provide least-cost power.

This document therefore seeks to assist developing countries both in cultivating the requisite investment environment and in developing the mechanisms and procedures they need to solicit and evaluate internationally competitive proposals for orderly private power development. In particular, the report discusses how to prepare bidding documents and undertake effective technical and commercial evaluation of bids.

Host-Country Business Environment

Crucial to the success or failure of privatization in the power industry of developing countries is the stability of a host country's macroeconomic environment. In particular, the host country's policymakers and political leaders must agree on the role that the private sector should have in the electric power industry, and they must then develop the laws, regulations, and mechanisms to facilitate private power projects.

Initiation of the first private power projects in a developing country can set the stage for the creation of a legal framework for the sector that will help attract investors and lenders to private power development in the country. Governments wishing to encourage private power development should structure the sector to create competition. In the initial stage, competition can be established without restructuring by permitting the existing public utility to purchase power from private producers on a competitive basis.

Since power generation activities can be competitive, it should be possible to reduce the need for regulation. On the other hand, power transmission, which is considered to retain the characteristics of a monopoly, should be subject to regulation. A separate transmission company can be responsible for purchasing power on a competitive basis, for operating the grid, and for load dispatch.

Governments should eventually institutionalize the regulatory process to reduce the number of conditions that need to be included in the contractual agreements for private power projects, and they should provide published procedures, including the specific steps and approvals needed for project processing. Professional management,

institutional independence, and predictable pricing mechanisms are essential to an effective regulatory function. The regulatory structure should ensure the financial viability and creditworthiness of utilities purchasing power from private producers.

Financial and Commercial Issues

The most important consideration for a developer of a private power project is that the project is "bankable," or capable of being financed.

Established electric utilities finance new projects on the basis of their credit standing in capital markets, a method called *balance-sheet financing*. Private power projects, however, are usually undertaken with *project financing*. This involves the formation of a private company or joint venture to plan, finance on a *limited-recourse* or *nonrecourse* basis, design, construct (or lease), and operate power developments. With project financing, lenders and investors look to the project's cash flow for repayment of principal and interest, and for returns on investment. They look to the assets as collateral in the event of a default. Private power projects are financed on a "project" basis because they are normally developed by forming a new company that has no other assets and no previous performance or credit standing.

The report discusses project financing in relation to the specific problems and conditions of developing countries. Although project finance would seem to have advantages over traditional balance-sheet financing, experience in developing countries has not confirmed this. The reason is that project sponsors, lenders, and governments often have difficulty in reaching agreement on the sharing of risks, which are often much greater in developing countries. Moreover, agreeing on the project structure and contractual arrangements can be a lengthy process. Each country and project has unique circumstances that will affect the final structure, agreements, and terms of the project. Recently, some new sources of nonrecourse funding have become available, but the long-term availability of such sources has not yet been established.

Another vital issue for the commercial viability of power projects is the tariff structure. The most common pricing approach followed in private power agreements is the two-part tariff, comprising a *capacity charge*, which is designed to recover the capital or fixed costs of the plant, and an *energy charge*, which varies with the net amount of energy in kilowatt hours actually delivered by the power producer to the purchasing utility. These rates may be adjusted by various incentives and penalties and through indexation, which provides the producer, operations and maintenance operator, and the project's debt and equity sponsors with greater certainty that their costs and earnings will not erode during the life of the project because of factors beyond their control.

The bottom line in any project is the return to equity participants. Although the specific internal rate of return (IRR) varies among countries and projects, power plant developers normally require an IRR of 15 to 20 percent on the total project or at least 20 to 30 percent on invested capital. The specific IRR and return on equity sought will depend on macroeconomic and country risk factors in each case.

Risk

Power generation projects involve risks for all parties—the power purchaser, the project developer, and the lenders. Risks fall into three general categories. *Commercial risks* relate to potential problems during construction, such as cost and schedule variations (completion risks); to problems in the operation of the plant, such as might stem from faulty operation or poor performance (operational risks); and to potential failures to generate cash flow or meet demand (supply and market risks). *Political* or *country risks* are specific to the host country and may include currency and foreign exchange risks, government default on contractual obligations, expropriation, and civil turmoil. Finally, projects must be prepared for *nonpolitical* or *force majeure risks*. These are caused mainly by natural disasters such as fires, floods, storms, or earthquakes.

The development of private projects can proceed successfully only with an appropriate allocation of risks. Generally, project developers take risks that are foreseeable and manageable or for which they are adequately rewarded. However, when developers are not able to provide guarantees that are adequate in the judgment of the lenders, the lenders will seek such guarantees from the host government. One of the main reasons many private power projects in developing countries have not progressed has been an inability to meet the requirements of lenders, notably the provision of guarantees from governments covering the power purchasers' obligations, foreign exchange risk, and so on.

A well-structured project implemented by an experienced power producer selling to a creditworthy purchaser that has a good record of meeting debt-service commitments should not require a government guarantee when the country's political and economic environment is favorable. However, this is seldom the case, and that is why most lenders require some form of sovereign guarantee. Comprehensive coverage of all project risks through a blanket government guarantee is not feasible, however.

The ability of the parties to agree on how risks will be shared is often the key to initiating a successful project. The important element is that risks be accepted by the project parties most suited to bear them, as outlined in the security package for the project.

The Security Package

The security package is established through various contractual arrangements and comprises the key agreements, contracts, and government undertakings. These seek to reduce lenders' and investors' risk by establishing legally binding obligations, financial structures, and operational procedures. Before loan funds can be disbursed, the lenders will wish to be satisfied that all the main agreements meet their requirements and have been executed.

The implementation agreement (or state support agreement) is between the project company and the government agencies that have the authority to provide the guarantees, assurances, and support necessary for private power development.

The power purchase agreement (PPA) is the central contract in a private power project. From the obligations set forth in the PPA the project generates revenues. The sale of power provides the revenues or cash flow to meet debt service, operating costs,

maintenance, and return on investment. For this reason, the creditworthiness of the power purchaser is a key factor in assessing commercial risk.

Once the parties to the PPA have been established, a contract must be structured to provide an uninterruptible cash flow when the power producers are fulfilling their obligations. Often a take-or-pay or firm-capacity sale arrangement is sought by developers to assure a minimum cash flow. From the perspective of a purchasing utility, however, it is more desirable to have plant that is "dispatchable." This enables it to operate its entire system on the basis of merit-order dispatch.

Other formal agreements in the security package include the land conveyance agreement, which ensures that the power producer will have control of the land needed for the power plant and switchyard; ownership agreements, which delineate the obligations among the entities composing the project company; the construction contract and operations and maintenance agreements; and the fuel supply agreement, which ensures security of a long-term fuel supply.

Project Procurement and Selection

Before calling for bids for provision of private power, the power purchaser should have a comprehensive prefeasibility study prepared to establish the requirements of the project.

Selection among potential private power suppliers is best based on competitive solicitations, since these are most likely to lead to least-cost supply. Solicited proposals can be obtained by calling for competitive bids for development of projects for a specific and proven technology, size, and location. These are described as *structured requests for proposals* (RFPs). *Unsolicited proposals* are those that have been prepared and submitted solely at the initiative of the party interested in providing privatized power, and not in response to an official RFP. Host countries should view unsolicited proposals with a fair degree of circumspection; proposals outside the competitive process, where such a process has been established, may seriously undermine the success of competitive solicitations. In addition, it is strongly recommended that before calling for bids for private power the host-country government should prepare a "short list" of three or four qualified developers.

Well-defined evaluation criteria and transparent evaluation processes lend credibility to the procurement effort. Responding to an RFP is expensive, so if the evaluation criteria are not clearly defined, potential bidders may be reluctant to submit proposals. The security package and financial structure sections of the RFP outline an applicant's responsibilities to the power purchaser regarding the implementation agreement, power purchase agreement, fuel supply agreement, land conveyance agreement, insurance requirements, government approvals, O&M agreement, and project financing. Regardless of the scope of the RFP, however, all evaluations will be concerned with two general types of factors: price and nonprice. The specific prices for capacity and energy are the starting point. The specific nonprice factors that are considered will reflect the power purchaser's priorities and other concerns.

The selection and evaluation of bids should be a two-step process. The first step, selection, should determine whether bidders can demonstrate relevant experience. The second step, evaluation, should be based on price. Financial close occurs when all agreements have been executed and financing arranged and disbursements from the proceeds of the financing can take place. This process is the final step before implementation of the project.

The ultimate goal of any private power effort is a project that operates well, has been completed on time and within budget, and generates the expected revenues. Although much of the onus for achieving this objective is on developers, not even the most experienced and seasoned will be able to complete a project successfully without an enabling political, legal, and regulatory environment or the requisite financial climate to encourage investors.

1

Introduction

Purpose of the Report

A severe shortage of finance for public power development has led to a dramatic increase in interest in private power development around the world. It has been estimated that there are more than 500 proposals under consideration in developing countries. Governments in developing countries, particularly in Latin America and Asia, are restructuring their power sectors to encourage competition and attract greater private sector participation, especially in generation. Private power producers not only attract new financing sources for developing countries power sectors but also assume the risks of construction cost overruns and operations. Moreover, they have already demonstrated an ability to complete projects on time and operate them more efficiently than publicly owned facilities. Yet despite the advantages of private power production, very few private power projects have been successfully implemented in developing countries. This report seeks to help governments of developing countries address some of the constraints that so far have impeded development of private power generation projects.

The U.S. Agency for International Development (USAID), Office of Energy and Infrastructure, provides technical assistance to promote private sector participation in the energy sectors of developing countries through its Private Sector Energy Development (PSED) program. The PSED program assists developing countries in designing and implementing policy and regulatory reforms needed to attract private power developers. It also provides technical experts to assist in these areas and with solicitations, requests for proposals, and evaluation of private power proposals USAID's program also advises on sources of financing, structuring of private projects, and risk mitigation, and it arranges study tours and training. See Annex 1 for an overview of the PSED program.

Like USAID, the World Bank and the International Finance Corporation (IFC) have also established new policies to assist and support private power project investment in developing countries. The World Bank's support, through its new lending policies, aims at assisting its borrowers in establishing a regulatory environment that will provide opportunities for competition for supply between private power producers and

existing public utilities. Most of the Bank's assistance for private power projects has been through financial intermediaries or loans guaranteed by governments, as required under its charter. The Bank also considers financial support for power sector reform, including sector restructuring and regulation, and provides advice on structuring of projects, processes of bidding, and the like. IFC's participation, on the other hand, has been in the form of direct loans, equity, and mobilization of financing from other sources, including syndication of IFC loans among commercial banks and provision of advice on project preparation and private sector policies. Unlike World Bank loans, IFC loans and investments are not guaranteed by host countries' governments.

Both the Bank and IFC explicitly support a major role for the private sector in power supply. However, solicitation of proposals for development has not been systematic, and developing countries have been receiving many unsolicited bids that do not take account of the full system costs and, more importantly, may not provide least-cost power. Moreover, although many projects are being approved through negotiated contracts based on a memorandum of understanding or a power purchase agreement, few of them have actually gained financing because governments have underestimated their complexity and the difficulty of meeting lenders' requirements.

This report is intended to provide a starting point for the formation of the requisite environment to foster private power and the mechanisms and procedures necessary to facilitate the request, submission, and evaluation of private power proposals. The topics include some of the policy directions and associated legislative, regulatory, and institutional frameworks essential to the development of private power. In addition, the report addresses the concern of the power purchaser that power projects be consistent with the country's resource-use plans and expected needs for power. Also discussed are the financial mechanisms, agreements, and contracts used to convey the fundamental commitments and obligations that are the basis for private power projects.

The report also seeks to assist governments in developing countries to solicit internationally competitive proposals for orderly private power developments and to obtain suitable financing on reasonable terms. It discusses how to prepare bidding documents and how to undertake technical and commercial evaluations of bids. This, it is hoped, should help developing countries obtain private power at the lowest possible cost. Host countries should also be enabled to meet demands for power and, it is hoped, avoid excess capacity and the need to retire existing plants prematurely. Facing the reality that traditional sources of funding from multilateral and bilateral organizations cannot meet all the rapidly increasing demands for electric power financing, developing countries are recognizing that private sector involvement can help.

This document incorporates information extracted from pertinent documents and experiences of the World Bank, USAID, and other international agencies; procedures and directives issued by U.S. and state-level regulatory agencies related to the establishment and operation of independent power producers; and knowledge obtained through the review of recent competitive bidding for private power projects in developing countries.

Overview of Private Power Concepts

The three most common approaches for achieving private sector participation in the electric power sector are (a) privatization of existing assets through the sale or transfer of ownership (commonly involving the sale of stock shares through local stock exchanges); (b) long-term lease of public electric power facilities for operation and maintenance by the private sector; and (c) development, ownership, and operation of new electric power facilities by the private sector. To date, most private sector participation has been in the third category. Accordingly, these guidelines address principally the third approach—private power generation projects.

Private power plants developed by independent power producers are normally *project financed.* This type of financing differs from the corporate financing used by existing utilities, through which projects are financed on the basis of the asset backing and creditworthiness of the utilities (i.e., on the strength of their balance sheets).

The development of private power generation projects necessarily involves the allocation of risks among the power purchaser, the project developer, and the project lenders. In selecting among power projects, power purchasers have a number of concerns. Although the price of the power being offered may be a primary concern, it is by no means the only one. The power purchaser also has a keen interest in ensuring that the power project will provide the type of generation required (e.g., base load, intermediate, or peaking capacity); that the project will enter commercial operation when needed; that the generating facility will be dependable and dispatchable; and that the project will be viable in the long term. The specific concerns of the power purchaser should be reflected in the evaluation criteria adopted for project selection based on an invitation to bid.

In its simplest form, the most important consideration for a developer of a private power project is that the project is "bankable"—that is, capable of being financed. This requires a balance between project risks and returns such that financing can be obtained on a *limited* or *nonrecourse* basis. Under this type of financing, the revenues from the operation of the project are looked to by lenders and must be sufficient to cover the interest and principal payments to lenders as well as to provide a reasonable return to the equity investors. Because "bankability" is the most basic element of the private power development process, many of the documents and agreements discussed in these guidelines are aimed directly or indirectly at facilitating the provision of necessary financing. Without such financing, the prospects for developing private power are diminished significantly.

A variety of schemes are used to formulate private power projects. These vary in structure and format depending on the conditions and requirements under which the project is executed. The most commonly found are the following:

- Build-Own-Operate (BOO)
- Build-Own-Operate-Transfer (BOOT)

- Build-Lease-Transfer (BLT).

These arrangements involve the formation of a private company or joint venture being set up to plan, finance on a limited-recourse basis, design, construct (or lease), and operate power developments. Many utilities have preferred to adopt a BOOT approach so that the plant will eventually be transferred to them. However, the World Bank generally prefers to see the private developers and investors retain responsibility for operation of the plant so that the benefits of private management can be maintained for the life of the plant.

Use of the Report

The implementation of private power projects is not a simple process, and experience so far in many developing countries has been that agreeing on the internal framework and contractual arrangements can be a lengthy process. Each country and project has unique circumstances that will affect the final structure, agreement, terms, and conditions of the project. This report, although general, provides information to demonstrate the complexity of the process and to identify and discuss areas in which governments may need additional information, support, or both. It may also help determine whether the host-country environment, including the clarity and definition of the project selection and implementation process, is attractive to private power developers and investors. However, the report does not obviate the need to appoint experienced financial and legal advisors to assist the host country. This document is likely to be most useful to countries about to invite private power investment participants for the first time. Once independent power projects have become established, their role, and the scope for competition, should be enhanced. Furthermore, approaches to private power developments are continuing to evolve, and the details of these arrangements are likely to change as the private sector's role increases.

Chapter 2 discusses the host-country business environment and its political, economic, legislative, regulatory, and institutional/organizational aspects. Chapter 3 treats the financial and commercial issues; project financing structure; taxes, duties, and levies; tariff structures; fuel supply, transmission, and distribution; and returns on equity. Chapter 4 assesses the degree of risk that each party (public or private) assumes—commercial, political, and nonpolitical. Chapter 5 explains the different agreements that compose the security package and that need to be executed to enable financial closure and approval of loans for financing the project. Key provisions covered in the main agreements can be found in the annexes: Implementation Agreement (Annex 4); Power Purchase Agreement (Annex 5); Fuel Supply Agreement (Annex 6); and Construction Contract (Annex 7). Chapter 6 sets out the methods of bidding, bid preparation, and bid evaluation and explains the requirements for project closing.

2

Host-Country Business Environment

Political and Economic

One of the most important factors contributing to the success or failure of privatization in the power industry of developing countries is the stability of a country's macroeconomic environment and its ability to foster a sustainable framework for private power development. Investors, lenders, and private power developers must believe that the host country's economy will remain stable, if they are to have the confidence to make long-term financial commitments. Countries with stable exchange rates and inflation and predictable political environments are thus much more likely to attract private power projects at lower costs than countries that lack these attributes.

In addition to political stability, political consensus is essential to provide a suitable framework for private power development. Policymakers and political leaders must agree on the role that private sector should have in the electric power industry of the country and then develop the laws, regulations, and mechanisms that will facilitate private power projects. Moreover, a degree of political consensus must be reached, because many of the issues involved in establishing an attractive environment for private power will likely affect other politically sensitive matters. For example, where electricity is sold by state utilities at subsidized prices, nonsubsidized private power may not be competitive. Removing subsidies to make private power feasible, however, is likely to raise political opposition (e.g., among subsidized domestic or industrial consumers), which must be resolved if private power is to become a viable alternative to public supply, especially if it is intended to establish competition for supply between public and private producers.

Private power developers and lenders are also concerned about issues affecting the long-term reform of the electric power sector:

- Adoption of broader privatization policies (e.g., covering divestiture of assets of public enterprises and utilities)
- Legislation for licensing of electric power systems to private power developers

- Elaboration of clear rules and procedures for approval and operation of private power projects.

Legislative

It is not essential to have a comprehensive legal and regulatory framework for private power in place for a country to undertake private power projects. Nevertheless, some basic legal provisions must be in force to ensure the presence of private power. These may include basic provisions permitting private sector involvement in the electric power industry, obligating the existing utility to purchase power from private suppliers where it is economic to do so, and providing for enforcement of contracts and settlement of disputes. Disputes should be resolvable by clearly defined and equitable procedures or through binding arbitration. If the basic enabling legislation exists, private projects can be structured, and obligations can be clearly defined and established in contractual agreements between the private power producer, the purchaser of power, and the government. The main contractual agreements for private power are discussed in chapter 5.

The development of the first private power projects in a host country can set the stage for the creation of a legal framework in the sector that is designed to attract investors and lenders to private power development. As the private sector role evolves, a more comprehensive legal framework can be established. The laws should be simple and should cover the following basic elements:

- Responsibilities of ministries and government agencies for private power sector
- Utilities and power companies that will be subject to the law
- Issue of licenses and power franchises and trade restrictions
- Responsibilities, obligations, and rights of power purchasers
- Mechanisms for resolving disputes between the power purchaser and the project developer, owner, or operator
- Enforceability of contractual commitments
- Regulation and control of prices for sales of electricity
- Regulation of the terms and conditions of electric service
- Tax obligations of the private power sector
- Objectives and scope of the law in terms of safety and environmental legislation
- Rights related to easements of land for power plants and transmission facilities
- Broad regulations for operation, labor relations, and management oversight.

Even if basic in scope, the laws must be clear. Legislation that gives government regulators excessive flexibility in approving new projects creates uncertainty for investors and developers that may deter or impede the development process.

Regulatory

Like the legislative framework, an established regulatory structure is not a requirement for the development of private power projects, but its existence can be very helpful. Normally in private power projects, the conditions and obligations of the power producer, purchaser, and host government are clearly defined in specific project documents, such as the implementation agreement and power purchase agreement. These define the relationship between the producer, purchaser, and host government and should provide safeguards to protect the interests of all parties. The extent of these safeguards should be determined during the earliest phase of the project. However, the absence of clear regulations may prolong the negotiations, especially in countries where government officials do not have a strong background in and understanding of private power development issues and where they may lack full authority to make decisions on behalf of the government. An effective regulatory environment can help to promote financially sound practices by utilities, and it can thereby increase investors' and lenders' confidence.

Governments should eventually institutionalize the regulatory process to reduce the number of conditions that need to be included in the contractual agreements for private power projects. Governments also should provide published procedures, including the specific steps and approvals needed for project processing. These should identify the agency (or agencies) in charge of permit and licensing procedures, tariff policies, and so on. The key features of a sound regulatory framework are as follows:

- Transparency and openness of the system
- Clear articulation of regulatory objectives and the wholesale and retail tariff-setting mechanisms
- A legal structure that clearly defines the rules and procedures that allow participation by the private sector
- The conditions enabling market entry and exit of private companies
- A well-defined process for issuing private power project permits and licenses.

Some countries may have an existing regulatory body that governs the electric power sector, but that entity may not be equipped to handle the approval of private power developments. Professional management, institutional independence, and a predictable pricing mechanism are essential characteristics of an effective regulatory function. The regulatory structure should ensure the financial viability and

creditworthiness of utilities that are to purchase power from private producers. Otherwise, investors and lenders will look to governments to provide assurances and guarantees.

Institutional and Organizational Aspects

The structure of the electric power industry is a key element in the development of private power in developing countries. Most developing countries have a single national utility that is responsible for generation, transmission, and distribution. In other cases, the industry is more fragmented, and responsibility for power supply lies with regional or state utilities, which may or may not be involved in all three functions. Very few developing countries have long-standing privately owned electric power operations. Regulation of the sector has traditionally been the responsibility of the ministries of Electric Power or Energy—especially project approval, processing, and resource-use policy.

Governments wishing to encourage private power development should structure the sector to create competition. In the initial stages, competition can be established without restructuring by permitting the existing public utility to purchase power from private producers on a competitive basis. This creates opportunities for competitive procurement but does not involve the public utility's own plant. It also limits the extent of competition. In larger power systems, separation of generation functions from transmission and distribution has been found to be essential to increasing supply competition. Because generation activities can be competitive, it should be possible to reduce the need for regulation in that subsector. On the other hand, transmission, which is considered to retain the characteristics of a monopoly, should be subject to regulation. A separate transmission company can be responsible for purchasing power on a competitive basis, for operating the grid, and for load dispatch. Where full competition is being sought, wheeling arrangements should give private producers the right to use the transmission grid. This should enable producers to sell directly to distributors and will provide opportunities for retail competition and sales to large bulk customers. Retail competition removes the exclusive right to supply that public utilities and franchise holders have enjoyed.

Promoting private power requires rationalization and coordination among the utilities, ministries, and government agencies that affect the power industry. In countries with both central and regional regulatory institutions, rules and regulations must be reconciled. The country's power sector structure must be organized and regulated to expedite and facilitate timely review and approval of private power project proposals. Lengthy evaluation processes increase development and project costs. When possible, the government should institute a "one-stop-shop" concept whereby developers can obtain information on processing and approvals from a single agency. That arrangement can greatly facilitate the approval or accreditation process for private projects. Several developing countries have established a single agency responsible for encouraging private power development (e.g., Pakistan and Philippines).

3

Financial and Commercial Issues

Financing Structure

Established electric utilities typically initiate new projects with financing that is obtained based on their credit standing in capital markets, and the utilities themselves are responsible for repaying the debt. This method of financing is referred to as *balance-sheet financing*. For private power projects, no single financing structure is typical or optimal, but primary responsibility for financing lies with the developer or sponsor of the project.

Financing drives a project's commercial structure, the technical parameters, and the speed of implementation. For example, a developed-country utility building a power plant will use internal sources of funds and will borrow, principally from the capital markets. It will have great flexibility in choosing the technology and plant configuration. The project can also be implemented quickly because procurement policies and contracting procedures are already established. These countries have higher credit ratings and more stable political and economic climates, so financing a private power project also can be much simpler and may not require many of the agreements and guarantees that developers and lenders seek in developing countries. A developing country's state-owned utility relying on export or suppliers' credits will be more limited in terms of technology and vendors and therefore in the type of power plant it can consider. The portion of the project financed with export credits will have to be substantially produced in the country providing credit. Foreign borrowings are often guaranteed by the government. In such cases, the lenders have recourse in the event of a default to the sovereign guarantee of the government.

Private power projects are usually financed on a project finance basis because they are normally developed by forming a new company that has no other assets and no previous performance record or credit standing. With this type of financing, lenders and investors look to the project's cash flow for repayment of principal, interest, and return on investment, and they consider the project's assets as collateral in the event of a default. The right to use the project's cash flow to meet debt-service obligations is given to the project sponsors through the power purchase agreement. Furthermore,

investment is usually in project companies that are created for the sole purpose of developing a private power project. If the project cannot produce sufficient cash flow to service the debt, then the lenders would have recourse to the project company's assets (e.g., capital equipment and contracts) but not to the parent company or project sponsors. That is why project finance is commonly referred to as *nonrecourse* or *limited-recourse* financing. Project finance is normally the approach chosen for private power projects in both developed and developing countries.

The credit analysis by the lenders for project finance requires assessment of the risk of the project—commercial, technical, and political—as opposed to balance-sheet risk analysis, which is based on the assets and finances of the utility as a whole rather than of the project alone. Credit analysis for project finance requires a complex and time-consuming assessment by lenders and credit rating agencies. Often, lenders will require a private developer to contribute a certain level of equity. This equity is usually not contributed until the construction phase is completed, so at least initial financing of the construction costs must be secured through borrowing. The exact level of equity required will depend on the lender's perceived risk for the project in the country where it is to be implemented. In general, equity requirements for projects in developing countries tend to be in the range of 20 to 25 percent. The remaining 75 to 80 percent must then be provided by borrowings that can be raised from a mix of sources, both commercial and official. In practice, developers have experienced few problems in obtaining equity financing but have found access to commercial bank funding very limited.

Project finance would seem to have advantages over traditional balance-sheet financing. Yet experience so far in developing countries has not borne this out. The reason is that with project finance, it has proved much more difficult for sponsors, lenders, and governments to reach agreement on sharing of risks, which for developing countries are often substantial. In fact, project finance creates significantly higher levels of risk to lending institutions than any other type of financing (see chapter 4 for details). Therefore, structuring a project (particularly in a developing country) is neither easy nor standardized and—like the credit analysis—is often time-consuming. This is why lenders need to be well-established financial institutions, such as large commercial banks. It is also why project developers look to bilateral and multilateral institutions, such as the International Finance Corporation (IFC), and to export-import credit agencies and banks, which are sufficiently capitalized to share some of the risks associated with project finance and to help make the projects more attractive to other lenders.

To date, bilateral and multilateral agencies have been unwilling to take the completion risk for private power projects, although they have been considering moving in that direction. If a project sponsor can pass through the stage where completion risk is not an issue by using such mechanisms as bridging financing or by using existing assets as collateral, lenders may then be willing to replace some or all of the project's commercial liabilities with debt on softer terms. On the other hand, commercial banks have made some nonrecourse loans to power projects, including projects in developing

countries. The banks normally scrutinize these schemes carefully and can be expected to be cautious in developing countries. Granting of loans will often be closely related to the country's political, legal, regulatory, and economic/financial stability.

In addition to the traditional sources of off-balance sheet financing, several alternative sources of funding may be available. These include private placements, or Rule 144A market, and public markets, such as the stock and bond markets. The private placement market relies on the placement of debt to sophisticated investors, such as insurance companies, pension funds, and mutual funds. However, not enough private placements have been made to determine whether this market can be a long-term sources of funds. Furthermore, to date, investment banks involved in private placements have not been willing or able to place debt to cover completion risk.

Stock issues have increased in the public market for capital fund raising related to specific projects being developed by a company or agency affiliated with a sovereign country. Although compliance with securities laws and the need for complete disclosure of project risks can complicate such stock offerings, the current market climate makes this an attractive option.

One of the main reasons many private power projects in developing countries have not progressed beyond the stage of the power purchase agreement or a memorandum of understanding is that the developers have not been able to meet the requirements of lenders, notably the provision of guarantees from governments covering the power purchaser's obligations, foreign exchange risks, and so on. Many of the successful projects have relied on support from multilateral lenders such as the Asian Development Bank and the International Finance Corporation and export credit agencies such as those of Japan and the United States.

Taxes, Duties, and Levies

Taxes, duties, and levies can have a substantial effect on project returns and viability. The project company will usually be structured to minimize local tax withholdings and take advantage of any tax concessions. However, to the extent that these costs cannot be offset by local tax credits, they will be passed through to the power purchaser in the form of a higher tariff. Generally, foreign income taxes can be credited to the project company to the limit of the company's home-country tax rate. Further, taxes in excess of the home-country rate are usually neither creditable nor allowed to be carried forward to the subsequent years. They thus become an additional cost to the project company that must be passed through to the power purchaser.

Customs duties and other taxes are usually paid by private power developers and passed through to the power purchaser in the tariff. From the host country's perspective, it is important to ensure that all power producers are subject to the same taxes, duties, and levies. If competition is to be established between existing public utilities and private producers, a level playing field is necessary.

Tariff Structure

Objectives

The tariff is the price of the electricity purchased from a private power producer. Its structure is agreed in the power purchase agreement. From the project developer's perspective, determination of an appropriate tariff is extremely important because it ensures that sufficient revenues are generated to cover the fixed and variable costs of the project and to satisfy equity-return criteria. This, in turn, determines whether sufficient debt and equity funds can be mobilized to finance the project.

The price of electricity is equally important to the power purchaser. The purchaser will seek to obtain desired levels of capacity and energy to meet load requirements; obtain a tariff (preferably one lower than its own costs of building and operating generation plants); and meet technical, financial, and environmental criteria.

Lenders to private power projects, likewise, pay significant attention to the tariff structure and often provide guidance during negotiations to ensure that the agreed tariff structure matches their lending criteria. The revenues obtained should provide them with a desired minimum debt-service coverage (i.e., the ratio of earnings to principal and interest).

Types of Tariffs

The structure of the tariff must be agreed between producer and purchaser. Any preference for a particular type of tariff structure will be influenced by cash flow and risk considerations. For example, a tariff that has a significant portion of the cost stream in the early years of the proposed agreement (i.e., a front-end-loaded structure) may have higher initial cash requirements and risk than other alternatives. The best approach, if a fully competitive market exists, would be to offer private power producers a simple tariff expressed in terms of a price per kilowatt hour. This may not be feasible yet in many developing countries because their markets are not fully developed. In the interim, at least three types of tariffs can be considered, as described below.

Ascending Tariff. This is a tariff in which the purchaser accepts a proposed, constant per-kilowatt-hour price for electricity subject to annual adjustments for inflation and subsequently for increases in later years to provide investors a return on equity. In essence, this type of tariff structure defers return on equity payments to later years. In addition, both the project owner and the power purchaser face market risks over the term of the power purchase agreement from what is basically a fixed-price contract. For example, to the extent that actual variable costs increase more rapidly than contemplated in the annual adjustment factor, the viability of the project may be compromised. On the other hand, to the extent that actual variable costs increase at a lower rate than that contemplated in the annual adjustment factor, the power purchased from the project may become overpriced relative to other supply sources available in the market.

Two-Part Tariff. Such a tariff is separated into capacity and energy components that respectively reflect the costs of constructing and operating the power facility. This tariff is calculated by agreed-on formulas that determine the capacity and energy components of a first-year tariff and that then are adjusted annually to reflect inflation or changes in project costs. This tariff assumes a base level of electrical production that takes account of normal availability for this type of plant. Thus, when operation of the plant exceeds this level, the investor benefits.

Levelized Tariff. This type of tariff can be determined by calculating a single, discounted value for the tariffs for each year. This method is followed where costs are expected to fluctuate widely from year to year. Its use is constrained, however, by the fact that the payment of a levelized annual tariff to a producer does not ensure that sufficient revenue will be generated.

Some approaches to levelization result in higher real costs for the power purchaser in the early years of the power purchase agreement. Although this will improve the ability of the project developer to obtain financing, the power purchaser is faced with the risk that, having paid the higher real costs early, the project will not be available in its later years, when real costs are lower. That risk can be addressed through the power purchase agreement with provisions such as those for escrows, minimum operations and maintenance requirements, and preferential rights to the facility. In addition, when levelized pricing includes the energy component of the purchase price, the same risks exist as those discussed above with regard to a "fixed or ascending" tariff.

Tariff Components

The most common approach followed in private power agreements is the two-part tariff, comprising a *capacity charge* and an *energy charge*. This type of tariff has benefits for both the power purchaser and the power producer. Where the power purchaser has a right to dispatch, the energy purchase price will be used to determine whether the plant will be called on to provide energy. If the plant is not called on, only the capacity purchase price will be paid to the producer. The producer thus has the benefit of obtaining a capacity payment, which, as discussed below, should cover its fixed costs. Although the methods used to determine the tariff structure for capacity and energy payments may vary among projects, the combined tariff would be expected to cover all of the project development costs and provide a profit to the producer over the term of the agreement.

Capacity Charge. The capacity charge is designed to recover the capital or fixed costs of the plant. The power purchaser should be obligated only to pay for capacity that is dependable (i.e., available to be called on in accordance with the power purchase agreement). The producer, however, desires a revenue stream that will cover fixed costs and will not depend on how often the plant is called on to deliver energy. Capacity payments should generate sufficient revenue to cover the project's capital and fixed costs and investor returns, which include costs that the project would incur even if the purchaser did not "dispatch" the plant and purchase electrical energy. The capacity

purchase price can decrease or increase each year based on the level of reliability achieved by the plant. In addition, the capacity payment may vary based on the type of tariff structure, the period of debt-service amortization, and the amount of return of equity expected in the later years of the project. In the last case, the tariff is, in effect, increased every year to obtain the necessary return. The most important factor in determining the annual charge for capacity is the term of the loan. Short periods result in unreasonably high capacity charges and make the project uneconomic. It is desirable to seek a period of at least 12 to 15 years and preferably as close as possible to the expected economic life of the plant. Although the method of determining capacity payments can vary among projects, a typical capacity payment usually includes the following elements:

- *Project capital costs.* These comprise all project development and construction costs, including but not limited to prefeasibility, engineering, legal, and auditing services.
- *Fixed O&M costs.* These comprise maintenance; cost of spare parts; and, if applicable, overhauls, management fees, and necessary professional services.
- *Financing costs.* These are for the interest and principal payments on the debt or total borrowing, as well as supplementary finance charges including any front-end and commitment fees, letter-of-credit charges, trustee fees, account and remittance fees, project-monitoring fees, and interest- and exchange-rate hedging costs.
- *Insurance costs.* These comprise the costs of payment of premiums to cover fire, business interruption, all risks including political risks, and workers' compensation insurance.
- *Equity shareholder returns.* These provide for returns to investors on capital invested in developing, building, insuring, and operating the project. The return sought by investors will vary according to their perception of risk but would normally need to match returns available from investments with a similar degree of risk in the host country.

Energy Charge. The energy charge is a variable payment that depends on the net amount of energy in kilowatt hours actually delivered by the power producer to the purchasing utility. It is usually designed to generate sufficient revenue to cover actual fuel costs and variable operating and maintenance costs. Energy costs are incurred only if the plant is dispatched by the purchaser and electrical energy is purchased. A typical energy purchase payment includes fuel costs and variable O&M costs, as detailed below:

- *Fuel costs.* These reflect the cost of fuel consumed to generate electricity. Depending on the terms of the fuel supply agreement, the fuel could be supplied either by a state-owned agency or a private company:
  - State-owned agency. If the fuel supply is contracted from a state-owned supplier that also controls price and quality, the state purchasing utility

should treat the price of the fuel as a pass-through to the customer in the tariff, thus relieving the supplier from supply and price risks. This arrangement is described as a "fuel conversion agreement," and because of the pass-through arrangement, the power producer does not accept any of the fuel risk. In this situation, there may be extensive emphasis during negotiation of the power purchase agreement on a fixed heat rate for the plant. Lower fuel costs might be achievable if the power purchaser were responsible for ensuring quantity and if price were optimal and based on competitive supply.

- Private company. If the fuel is supplied by a private company, a long-term fuel supply contract over the life of the power purchase agreement could include various price escalation provisions, and the fuel supply risk would be borne by the power supplier. However, this risk would only be assumable where the fuel is tradable or where fuel can be imported. It also depends on the existence of an efficient and reliable fuel transportation system.

- *Variable O&M Costs.* These represent the variable costs incurred by the producer in generating electrical energy per unit running hour. In the base tariff, agreed on between the producer and purchaser, this component of the tariff could be based on an anticipated level of output derived from the country's least-cost expansion plan.

Other supplemental charges depend on the situation and the agreement between producer and purchaser. These charges might include a start-up charge, a heat-rate adjustment charge, a hot-standby charge, and increases in other local duties and taxes unanticipated when the project was negotiated. Because project developers have different views of risks, some bids may not include these types of charges.

Incentives and Penalties

In addition to the base tariff, incentives and penalties may be negotiated to reward a producer for better-than-anticipated performance and to penalize the producer for failing to meet expectations. Bonuses and penalties could be paid to or charged against a power producer in the form of adjustments to the capacity or energy purchase price to reflect superior or inferior performance. They would be imposed in cases of increases or shortfalls in commissioned capacity, plant availability, net capacity, forced outages, or achievement of expected levels of dispatch. In many cases, producers expect to be able to operate plants above contracted levels in order to increase their profits. This is reasonable, provided scheduled maintenance is kept up.

Tariff Indexation

Indexing a tariff uses objective data or indexes to reflect changes in costs to the project company that are outside its reasonable control. Indexation provides the producer, O&M operator, and the project's debt and equity sponsors with greater

certainty that their costs and earnings will not erode during the life of the project because of factors beyond their control. For example, ascending tariffs, through capacity charges, defer revenues or returns on equity to later years but are usually adjusted over time by a factor to ensure that these revenues or returns on equity are recovered during the life of the project.

Indexation provisions should be included in the project's capital costs and constant-dollar operating costs before financial close. They should be applied to tariffs from the start of commercial operations, and the tariffs should be adjusted periodically to reflect the costs to the supplier.

Just as appropriate indexation affords some protection to the producer and its lenders that earnings and debt coverage will not be eroded, it provides the power purchaser with some assurance that the costs of the power will continue to reflect the market. When bids are received, the power purchaser will have an indication of the then-current market cost of power. As purchases from the producer proceed, it is important that the prices continue to reflect the market. An inappropriate index could cause prices to exceed or lag behind the market and would have a detrimental effect on the power purchaser. Above-market prices increase costs to the purchaser's customers. Below-market prices may affect the viability of the project and place a needed power resource at risk. To avoid these consequences, any indexation should be responsive to the market.

Details of the actual costs that can be indexed should be negotiated between the purchaser and the producer. Major components that can be indexed and the principles that apply to each are shown in Table 3.1.

Table 3.1. Principles of Power Tariff Indexation and Adjustment

Tariff cost component	*Type of cost*	*Indexation adjuster*
	Capacity component	
Fixed O&M	Local costs	Local inflation
	Foreign costs	Foreign inflation, exchange rate changes
Debt service	Local debt	Changes to variable interest rates
	Offshore debt	Changes to variable interest rates
Shareholder returns	Local equity	n.a.
	Foreign equity	Exchange rate changes
	Energy component	
Fuel costs	Purchase & transport	Internationally published fuel indexes
Variable O&M	Local costs	Local inflation
	Foreign costs	Foreign inflation, exchange rate changes
	Pass-through items	
Country costs	Insurance, local taxes, and fees	Passed through in the tariff

Fuel Type and Availability of Supply

The principal types of fuel used in power generation projects are identified in Annex 2. Because of its low price and environmental acceptance, gas has been a preferred fuel for most private power developments. Where gas has not been available, developers have generally chosen coal or oil-based fuels. Annex 2 also discusses factors that should be considered in establishing responsibility for fuel supply. In most cases, fuel is supplied either by the power purchaser or by a state-owned fuel supplier. Where a free market exists, the power producer may prefer to buy its own supplies. The annex raises environmental considerations as well in the choice of fuel, pricing, availability, reserves, and impact on the local economy.

Transmission and Distribution Capabilities and Wheeling

General Considerations

A private power project that is not an enclave generator would normally need to be connected to the public transmission or distribution system. Power delivered at these interconnections will be destined to the owner of the transmission and distribution system, as a block of energy to be added to network requirements; one or more blocks of energy to be delivered to purchasers (wheeled) through the system's existing transmission or distribution lines; or a combination of the above.

Characteristics of Interconnections

Before selecting a project, it is essential to ensure that the existing transmission and distribution systems can carry designated blocks of power, that the system's stability will not be jeopardized by the addition of the power project, that the generators will not pull out of step during system faults, and that the flow of reactive power will ensure adequate voltage levels. Conformity to these criteria can be predicted by computerized simulation studies, such as load flows, stability, and fault calculations. Sometimes, a new power project may require modification of the transmission and distribution systems to transmit additional blocks of power or, alternatively, changes in the number, sizes, and locations of power plants to conform to the system's requirements.

In terms of wheeling, if the transmission and distribution system has more than two points where the power enters or leaves, there is no assurance that power produced will be delivered to purchasers, especially during power shortages, because electricity flows through paths of least resistance (impedance). If it is essential that the project's output is delivered to specific users, it may be necessary to modify transmission and distribution lines and substations to provide direct, controllable paths. This may require modifications to the system's operating procedures and could increase cost. The point or points where the project delivers its output and the transmission and distribution systems receive it should also be specified. If wheeling is used, the point or points where the power is delivered also must be specified. Responsibility for payment for modification to the transmission system is usually agreed on in each case through negotiation between the developer and the power purchaser. Definition of the interconnection point or points delineates the metering point (which also indirectly specifies losses to be absorbed by each party); responsibility and liabilities for equipment maintenance and repair; and access facilities. Related to this delineation are definitions of the equipment to be installed in the other party's properties and rights of access to the equipment.

Other Information to be Specified

The power project must interface and conform with the technical requirements of the transmission and distribution system and with the system protection and communication equipment used to control and dispatch the system. These interfaces must be carefully specified in terms of voltages; fault levels; size and type of equipment (especially when the transmission and distribution system has standardized the use of specific equipment); type and quantity of protective relays; type, accuracy, and detail of metering equipment and associated transducers; method, frequency, number of channels, and equipment be used for communications; and roads, fences, and storage areas.

Availability of a bulk electric power market, in addition to the market from sales to the existing public utility, can provide additional economic benefits and incentives for private investors and retail customers. It can afford private producers the opportunity to obtain additional revenues through sales to other bulk users.

Private participation in a bulk power market also requires the following authorities and conditions:

- Legislative authority for sale of electricity by the private sector to customers other than a utility power purchaser
- Legislative authority for private access to transmission and distribution systems
- Establishment of conditions under which utilities or other owners of bulk transmission systems wheel power from private generators
- Establishment of a clear transmission pricing mechanism.

Return on Equity and Internal Rate of Return

The power purchaser's concerns revolve around the overall cost of its purchases from a power project and how a particular project will satisfy its needs. As a result, the specific returns achieved by the project developer generally are of little concern to the power purchaser. On the other hand, prediction of earnings plays a central role in the analysis of a project by investors and lenders. The bottom line in any project is the return to equity participants. Returns can be measured either statistically (at one point in time) or dynamically (over several periods in time) and are a measure of net income (the difference between revenues and costs) over owner's equity. They do not account for the time value of money, and they can vary depending on how depreciation methods affect net income.

The internal rate of return (IRR) technique determines a time-adjusted rate of return based on the time value of money. The IRR is the discount rate expressed as a percentage that makes the net present value of an income stream equal to a project's net outflows or investment. In other words, it is the maximum cost of capital that a company can pay for a project and expect to break even. Although the specific IRR varies between countries and projects, power plant developers normally require an IRR of 15 to 20 percent on the total project cost or at least 20 to 30 percent on invested capital. The specific IRR and return on equity sought will depend on macroeconomic and country risk factors in each case.

4

Risk

Power projects involve risk for all parties—the power purchaser, project developer, and lenders. Generally, project developers take risks that are foreseeable and manageable or for which they are adequately rewarded. However, when developers are unable to provide guarantees adequate to satisfy lenders, the lenders will seek government guarantees. The ability of the parties to agree on how risks will be shared is often the key to initiating a successful project. These risks fall into one of three categories: commercial risks, political or country risks, and nonpolitical or force majeure risks. Commercial risks can arise during the construction phase and relate to variations in costs, schedule, and ability to meet completion requirements (completion risks). They can also arise during the operating phase (operation risks) and relate to the project's ability to generate projected revenues or cash flow and meet the needs of the market (supply or market risks). Project investors will be exposed to risks that could impair or jeopardize the project company's ability to repay debt and maintain dividend payments. Mitigation of those risks, or transfer of them to parties best suited to bear them, is essential to obtain financing. Country or political risks are those that are beyond the control of negotiating parties, such as foreign exchange or expropriation risks. Last are the nonpolitical or force majeure risks of natural disaster.

Successful mitigation of the risks of commercial, political, and nonpolitical or force majeure events is critical to a project's financial feasibility. The agreements, contracts, and measures associated with a project are designed to maximize risk mitigation, and a risk matrix should be prepared by potential investors as a tool to analyze the extent of mitigation and the residual risk. That residual risk, together with the financial rewards, will determine investor interest in participation in the project (see Annex 3 for an example of a typical risk matrix).

Commercial Risks

Commercial risks are faced by both the power purchaser and the project developer. For example, the power purchaser faces the risk that the electricity it is seeking to procure will not be required. In addition, the power purchaser faces risk from a delay in project completion. Such a delay may require the power purchaser to obtain

power from another source, possibly at a higher cost. The commercial risks faced by the power purchaser can be addressed contractually. The commercial risks faced by the project developer are generally under its control. For example, the failure to meet contractual obligations is a risk that arises primarily from the performance of the project developer and its contractors. Evidence of that failure during the construction phase can be manifested through delays in completion or increases in construction costs. For example, problems related to improper management practices, such as improper budgeting and cost overruns, can increase the project costs substantially. During the operating phase, the failures are manifested through poor technical and financial performance. These risks are mitigated by arranging a well-thought-out project structure with reliable and experienced construction companies and operations and maintenance contractors.

The key to a sound financial structure is risk management. Every project risk should be transferred or mitigated. Risk must be allocated properly among all parties through the various contracts, insurance policies, bonds, or letters of credit. The important element is that risks are accepted by the project parties most suited to bear them. Often it is worthwhile to consider local participation in risk sharing. This can involve equity participation in a joint-venture project company or partnership or association with local construction or operating contractors. Such arrangements can also facilitate the negotiation of contracts, and they can help to secure government commitments and guarantees.

In a private power project, the central contract is the power purchase agreement (PPA). It is from the obligations set forth in this contract that the project generates revenues. The sale of power provides the revenues or cash flow to meet debt service, operating costs, maintenance, and return on investment. For this reason the creditworthiness of the power purchaser is a key factor in assessing commercial risk. A project must first be structured around a purchaser that needs the power, can fulfill payment obligations, and has demonstrated creditworthiness. If the power purchaser has anything less than an impeccable history of debt servicing and management, as is frequently the case with state-owned utilities, a counter-guarantee will be required. This additional layer of risk mitigation can be provided through a sovereign guarantee of the utility's obligations, multilateral support, or irrevocable letter of credit facility. In addition, it is most important from the power purchaser's perspective to be able to pass through all power purchase costs in the tariffs. The ability to do this will depend on the regulatory arrangements.

Once the parties to the PPA have been established, a contract must be structured to provide an un-interruptible cash flow when the power producers are fulfilling their obligations. Often developers seek a take-or-pay or firm-capacity sale arrangement to assure a minimum cash flow. *Take or pay* refers to an agreement to purchase power or otherwise pay for capacity (i.e., availability regardless of whether energy is actually produced). This process guarantees the producer that fixed costs such as debt-service payments, fixed O&M costs, and return on equity will be covered.

Variable costs, such as fuel costs, will be paid only if power is actually purchased. Firm capacity also guarantees the producer that at least fixed costs will be covered from project revenues. Regardless of the arrangement adopted, the obligation of the purchaser must be clear and absolute—to pay under all circumstances, as long as the producer has the available capacity. However, from the perspective of a purchasing utility, it is more desirable to have plant that is dispatchable. This enables operation of the entire system on a merit-order-dispatch basis.

Plant downtime can expose the project to interruption in cash flow and therefore can disrupt debt-service payments. Because the producer is responsible for all risk associated with the operation of the power plant, adequate risk transfer and mitigation becomes necessary outside the PPA. The risks include fuel interruption, variations in the quality of supply, machinery breakdown, poor O&M, and poor plant performance. Losses incurred because of scheduled maintenance should be covered by a well-funded sinking fund or reserve for maintenance. This fund or reserve is the responsibility of the power producer or its O&M contractor.

Machinery breakdown can cause extended downtime and substantial repair costs. This risk can be reduced by selection of experienced contractors and proven equipment, and it can be further mitigated by comprehensive (and usually expensive) insurance not only for repair of machinery but also for business interruption or loss of revenue.

Fuel risk must be mitigated via a long-term fuel supply agreement (FSA) guaranteeing quality, quantity, and delivery. Fuel-price changes should be reflected in the energy component of the purchase price. Strong penalty clauses must be incorporated into the FSA to ensure that contracted quantities and quality are delivered. The penalties should be sufficient to cover the project's basic cash flow needs (such as debt service and ongoing costs) if there is a shutdown caused by interruption of fuel supply. If the private producer is purchasing from a state-owned fuel supply company—as in Mexico, India, and Malaysia—the fuel risk is assumed by the state.

Poor or inefficient operation and maintenance can cause plant performance to fall below levels stipulated in the PPA. It also can cause premature wear and tear on plant components. The project company can mitigate this risk by entering into a long-term O&M contract with a reputable operator. The guaranteed availability and minimum operating parameters stipulated in the PPA thus can be passed on to the operator. The O&M contract should have incentives for encouraging good maintenance and high plant availability, and it should contain a significant penalty clause covering the operator's performance obligations. Because there is a limit to such penalties, this risk cannot be entirely assumed by the O&M contractor. Hence, a certain degree of confidence in the operator's experience and plant operating history is required, and some of the risk should be retained by the project company.

Technical quality also affects performance. A plant producing at less than expected capacity, for example, can have severe effects on the producer's ability to meet

obligations. This risk is substantially mitigated by having a strong engineering, procurement, and construction (EPC) contract, which must have a fixed price and a firm completion date (delays in commercial operation will cause default). The scope of work also must be complete. In other words, a strong turnkey contract is required. Substantial damages for failure to meet guaranteed or specified performance during plant commissioning must be incorporated into the contract and be backed by performance bonds and letters of credit. It is important to note that a strong EPC contract, or turnkey construction contract, is the responsibility of the project company and not the power purchaser. However, the purchaser should make sure that an adequate contract exists and should not rely solely on penalties to minimize delays in construction. Primary responsibility for construction risks and the availability and performance of the plant, however, rests with the project company.

The degree to which commercial and operational risks can be reduced depends largely on the quality of the construction contractors. Accordingly, it is essential that construction contractors possess the technical, managerial, and financial capabilities to assure completion of the project and its continuing operation. This may be accomplished by prequalifying construction contractors and carefully reviewing the contractors' past experiences on similar projects and commitment during construction. Liquidated damages provisions in the construction and operation contracts are a second line of defense. Further mitigation is provided by securing completion guarantees from the consortium responsible for construction. The project company can minimize risks through the quality of its own management and technical resources and through its ability to manage the contractors and the project's financial and commercial agreements.

Political or Country Risks

Political or country risks are inherent to the country in which the project is being implemented and are of greatest concern to lenders because such risks could adversely affect the development and operation of the project. A prerequisite of a successful project, therefore, is commitment by government to reforms that will encourage private power investment, and developers will specifically assess the degree of the government's commitment and the risk that the government will lack the political will to reform. Some of the primary political risks developers will consider include availability of foreign exchange to service the project debt and to pay dividends to offshore investors; potential for default on the part of the government or its agencies in meeting contractual obligations; risks of expropriation; and possibilities of political turmoil. Some of these risks can be mitigated by a number of different public and private means. Mitigation of risks by the government—through new laws, regulations, or institutions, or through guarantees—reflects a trade-off between the costs of mitigation and the risk premiums that will be paid through either the purchase price or other means. In any event, to the extent the government plans to take steps to facilitate the development of private power projects, it should act in a timely manner so that the expected reductions in risk will be reflected in any bids that are received. Those bids will

then identify the project developers that will assume the remaining risks at the lowest cost.

An example of country risk is the need to convert revenues from local currency. Currencies of different countries are not perfect substitutes for each other, and without an ability to convert local revenues to a hard currency, a project may not be financeable. The lack of availability of hard currency can cause default, because the project company is typically required to pay its suppliers and lenders in hard currency. Similarly, devaluation of the host-country's currency exposes a project to reduced revenues and can have a severe impact on the rate of return and, ultimately, on the ability to service project debt. These risks can render a project virtually impossible to finance.

Currency risk is usually mitigated through establishment of a currency risk management program using instruments such as currency swaps and purchase of forward currency. The project company must be allowed access to hard currency through the central bank at free-market rates. In addition, government regulations should not prohibit the project entity from maintaining foreign bank and escrow accounts with hard currency deposits to protect against devaluation of local currency. The foreign deposits should then be allowed to pay the project's foreign cost components. In countries where inflation is a significant factor, project revenues and expenses specified in the project documents can be denominated in hard currency, if allowable by law. This greatly simplifies complex inflation indexing and devaluation accounting. The risk of commercial default arising from an unwillingness to make hard-currency payments is mitigated by the ability of the project entity to sue the counterparties and seek judgments in hard currency. If the counterparty is a strong exporter, another possible protection is to allow the project company to attach foreign receivables. Finally, the project company can take out inconvertibility insurance from the bilateral, multilateral, or private insurance markets.

To attract investors and lenders, governments should expect to reduce political risks by creating and implementing policies and legislation that provide the necessary institutional and legal environment. This involves actions such as providing sovereign guarantees to attract investors, legislation that will provide adequate protection to investors against political risks, and streamlining of bureaucratic processes associated with project implementation.

Where, for example, government guarantees of the contractual obligations may be required, the extent to which these mitigating measures will be required depends on the country's political and financial conditions. In addition, investors may obtain insurance against political risks from multilateral and bilateral financial institutions, such as the World Bank's Extended Co-financing (ECO) guarantee program, the Multilateral Investment Guarantee Agency's (MIGA) insurance program, and various political risk insurance programs available from export credit agencies and country agencies to commercial lenders and investors. ECO provides guarantees largely for commercial lenders and also offers extended maturities to facilitate financing of private power investments. MIGA can provide coverage against specified political risks such as

currency convertibility, expropriation, and civil disturbances. Protection of this kind can extend for up to 20 years, but the coverage is limited to a maximum of US$50 million per project. The applicability of these programs and the extent of coverage will differ from project to project depending on many variables. In the long run, the best approach to reducing country risks is for governments to adopt sound macroeconomic policies.

Nonpolitical or Force Majeure Risks

Nonpolitical or force majeure risks are caused by natural disasters or accidents such as fires, flood, storms, or earthquakes. In the section above on commercial risk, mention was made that investors and lenders should be expected to assume commercial risks to a limited extent. However, nonpolitical or force majeure risks can generally be mitigated through commercial insurance. The project company is responsible for obtaining and paying for the necessary insurance coverage, which should be comprehensive throughout the construction and operation phases of the project. It should cover not only any asset loss such as construction risk but also business interruption, including loss of revenues for delays in plant operations caused by natural disasters. Furthermore, the insurance should cover at least six months to one year of debt service and fixed costs (depending on investors and lenders' requirements). The ability to obtain insurance and account for it in the proposal is crucial to securing project financing and a good indicator of the developer's standing.

Sovereign Guarantees

Sovereign or government guarantees are often needed to assure the project company that certain events within the government's control will or will not occur. If such assurance is breached, project companies and investors will be compensated or relieved from the consequences of these events. Most of these events would fall within one of the political, legal, regulatory, and financial risk categories discussed above.

Comprehensive coverage of all project risks through a blanket government guarantee is not feasible. The actual requirement for government guarantees will depend on the characteristics of the project and the extent of risks. The ability of the sponsors to structure the various agreements so that those risks are mitigated will minimize the need for government guarantees. Normally, government guarantees are a product of extensive negotiation and compromise.

Availability of government guarantees also will depend on the host government's commitment to the project, which depends on factors such as the size of the power development program, the current balance between power supply and demand, and the ability of private investors to finance projects without government guarantees. The perception of the host government of what the financial community will require to support the project also is important. A well-structured project implemented by an experienced power producer selling to a creditworthy purchaser that has a good track record of meeting debt-service commitments should not require a government guarantee

where the country's political and economic environment is favorable. However, this is seldom the case; most lenders require some form of sovereign guarantee.

There are few rules about government guarantees, but all are linked to the sophistication and detail of host-country laws and regulations regarding foreign investment and private power generation, transmission, and distribution. Hence, government guarantees may take one or more of the following forms:

- Explicit guarantees of power purchaser obligations
- A simple comfort letter indicating the host government's support of the private power initiative
- Public proclamation of the host government's commitment to encourage foreign investment in private power
- Adaptation of laws supporting private ownership of power generation facilities
- Establishment of retail tariffs permitting recovery of actual costs and reasonable return on equity
- Government participation in implementation agreements with private power project companies
- Direct government guarantees of privately funded debt.

5

The Security Package

The security package (SP) is established through the various contractual arrangements and comprises the key agreements, contracts, and government undertakings. These seek to reduce lenders' and investors' risk by establishing legally binding obligations, financial structures, and operational procedures. Before loan funds can be disbursed, the lenders will wish to be satisfied that all the main agreements meet their requirements and have been executed. Lenders may want legal opinions, independent engineering reports, and copies of government approvals. In addition, they will want to confirm that the parties to each agreement are creditworthy and capable of performing under the terms of their respective contracts. Lenders look to the SP to provide security for the loan, and in the event of a breach of any of the agreements they may seek the right to take over the company and install their own managers within the framework of the agreements. The preparation of the various agreements thus must be coordinated so that there is no conflict between them. The main agreements that make up the SP, described in more detail in this chapter, are as follows:

- Implementation agreement
- Power purchase agreement
- Land conveyance agreement
- Ownership structure and agreements
- Supply agreements
- Construction contract
- Operations and maintenance agreement.

Implementation Agreement

The implementation agreement (IA), or state support agreement, as it is sometimes described, is between the project company and the government agencies that have the authority to provide the guarantees, assurances, and support necessary for private power development. The IA may contain a variety of commitments, inducements, and guarantees that can be given only by the recognized governmental authority (see

Annex 4). Issues range from authorization to do business to granting of certain tax benefits or exemptions from customs duty. If government policy has not been established in areas that could affect the project company, lenders will require that the government make appropriate commitments.

Often, the IA will contain terms and conditions necessary to ensure the effectiveness of other key project agreements, such as the power purchase agreement (PPA) or fuel supply agreement (FSA). In effect, the IA seeks to guarantee the performance of government entities involved in the project. All of these agreements have interlocking terms and conditions and need to be supported by the IA, since lenders are particularly concerned about government actions that might jeopardize their loans or investments. Moreover, in projects with long payback periods, this concern is compounded in host countries that lack a record of strong support for political, regulatory, economical, and financial reforms.

If the legal, institutional, political, and regulatory environment is conducive to private power development, the IA may be relatively simple and straightforward. Moreover, if the public sector is not a party directly involved in the obligations to private power developers, an IA would not be required. However, in such a case the risks that would have been transferred to the public sector must be shared, in some form, among the private parties, both power producer and purchaser. Even if a portion of the power generated is purchased by the government, a well-structured project with the private sector as a purchaser may not require an IA. In essence, the private sector would be providing any necessary guarantees. This approach was used recently on the Mamonal project, a private power development in Colombia, where the private sector purchasers guaranteed the 30 percent portion purchased by the government entity.

Power Purchase Agreement

The PPA establishes the power sales obligations between the private producer and the power purchaser and identifies the type of transaction (e.g., BOO or BOOT). Although the terms and conditions are often complex, the PPA commits the producer to specified conditions (e.g., maximum output, total electrical generation in kilowatt hours) over a defined period and commits the purchaser to compensate the producer by an established amount and tariff rates whenever the facility is available and capable of generating power.

Because the PPA provides the only revenue stream for repayment of debt and return to investors, it is important to the lender. Consequently, the terms and conditions of this agreement will be heavily influenced by the lender's desire to enhance potential revenue and minimize risk. In this case, the risk to be avoided is the reduction or termination of the revenue stream, regardless of the cause. The greater the real or perceived risk to the power producer, the higher the price the purchaser can expect to pay.

In reality, the purchaser can reduce or even terminate the revenue stream under some conditions. For example, if the purchaser has fulfilled all obligations and

power is not being provided, the purchaser has the right to decrease (through penalties) or suspend payment until the situation is remedied. However, depending on the insurance carried by the producer (as mandated by lenders), debt service may be maintained for some period. The PPA often provides for the producer to compensate the purchaser should power production cease or fall below a specified level.

Producers may want a PPA with an extended duration, typically 15 years, for a BOOT-type project that provides for a revenue stream beyond the point of debt repayment, thus enhancing return to investors. For BOO projects, the producer may seek a PPA that extends to the point where the costs of maintenance and capital improvements make the project financially unattractive. The latter approach (i.e., BOO) should be preferred, so that the producer is committed to maintain the plant adequately after the debt has been repaid.

The task of establishing specific performance guarantees, future adjustments to the tariff, and penalties or bonuses for exceeding or failing to meet performance guarantees are the heart of the PPA and usually require lengthy discussions. These include not only the purchaser, producer, and lending institutions but also the construction contractor, equipment suppliers, and O&M organizations. Each participant that can affect the facility's performance must provide an acceptable undertaking with respect to its respective obligations. For example, the construction contractor may offer a turnkey project. The price and construction period effort will be fixed and the contractor's performance guaranteed. Each of these items affects the cost of production and the purchase price. Even though the producer may have obtained certain preliminary commitments and guarantees from the contractor, modifications may be required based on negotiations between the producer and the purchaser. The contractor's offer may have to be modified to include certain contingencies. Each participant has a "bottom line" that establishes the maximum risk-and-reward scenario it is willing to accept.

Annex 5 contains a summary and notes on the key provisions of the PPA that define each party's responsibilities and penalties. Whereas PPAs generally contain sections with similar titles, the specific content of each section will reflect the uniqueness and complexity of each project, the influence of the current and anticipated business environment, and the knowledge and negotiating skills of the parties.

Land Conveyance Agreement

The land conveyance agreement (LCA) transfers land ownership to the project company, which purchases the land or executes a long-term lease. The LCA covers the land required for the power plant and for the adjacent switchyard, which interconnects it with the purchaser's transmission lines.

Land use must be exclusive to project purposes and must be assignable to the lenders so that they can take over the facility in case of default by the power producer. The LCA term commences no later than the start of construction, and the duration should be at least commensurate with the term of the PPA. Under certain circumstances it is

desirable and usually more financeable to have a LCA term greater than the term of the PPA to provide for construction delays or force majeure events that typically extend the PPA on a day-to-day basis. Without this extension, the terms of the LCA and PPA may not match, and that could mean that the term of the PPA could be terminated prematurely.

The LCA (or PPA) generally divides the responsibilities for the installation of water, sewer, gas, electricity services, fuel transmission, and fuel storage. Existing or newly required covenants, easements, or other restrictions are identified, along with the responsibility to conform to applicable zoning laws, building codes, regulations, and other requirements (or to obtain necessary variances). In addition, the parameters and procedures for access to the site by personnel other than the project owner and operator are agreed upon. Any sharing arrangements for existing or new site facilities (such as for fuel handling, water treatment, access operation, and related financial arrangements) are also agreed upon.

The LCA also identifies the party responsible for payment of government charges or taxes levied on the site, equipment, structures, or other personal property. Responsibilities for existing and future conditions at the site (suitability of soil conditions, environmental contamination, etc.) are agreed upon. In addition, governing laws, regulations, and methods of dispute resolution are defined. Finally, arrangements for disposition, at the termination of the LCA, of the land, power generation facilities, and other related constructions are outlined.

Ownership Structure and Agreements

Ownership agreements describe the structure and obligations among the owners comprising an entity, often referred to as the *project company*. This company is separate from its sponsor so that liability and risk to the project are limited. Project ownership can be structured in a number of ways, depending on host- and home-country tax laws, customs duties, and liability environments.

The project company incorporates the liabilities of associated project risks. As mentioned in chapter 3, when a project is financed against the balance sheet of its sponsor (*recourse finance* or *corporate finance*), all the project risks run directly to the sponsor, which is therefore the final recourse in the event of default by lenders and other investors.

In a typical limited or nonrecourse financing structure, the entity formed by the ownership agreement is the central point to which all project documents connect and is where the ultimate recourse to the lenders and other parties lies. Consequently, the entity is limited in all matters relating to its business and is referred to as *single purpose*. The project company is obligated to cause all other parties to perform under the project agreements, limit other parties' indebtedness and investments, and furnish documentation required by the company or lenders. Similarly, the operational limitations imposed on the company; on its financial, tax, and liability structure; and on its ability to continue its obligations under the project documents are designed to protect assets from the actions of

any of the project parties. For example, the project company cannot create liens on collateralized assets or sell project assets. It is limited in its ability to make certain investments or amend the project documents.

Equity investment in a project can be protected (although in all cases subordinate to creditors) using appropriate all-risk, machinery breakdown, general liability, and political insurance in the market. All-risk and machinery breakdown coverage should be slightly more than the value of the asset to account for legal and other indirect expenses related to the adjustment of a claim. General liability coverage depends on the size of the project but is generally between $10 million and $20 million. Political risk insurance usually covers less than the full value of assets to provide a parallel incentive for project parties to prevent insurable events and commit to their resolution.

The unique advantages of a project finance structure are not without substantial risk in allocation and mitigation, all of which are embodied in the structure and obligations of the project company to protect the assets and the resulting cash flow.

Fuel Supply Agreement

Firm and reliable long-term fuel supply and transportation agreements will be required by investors and lenders before financing is provided and construction commences. They also will require evidence (an independent engineering evaluation) of the existence and dedication of fuel reserves sufficient to meet the project's needs for the duration of the contract. If the supplier or transporter are government entities, additional sovereign guarantees of their obligations may be required (see Annex 6).

Construction Contract

The project company will enter into a contract with a reputable contractor for design, equipment procurement, and construction in accordance with the power supply requirements of the PPA. This is usually written as a turnkey contract for complete supply, erection, and commissioning. The turnkey contract provides a single source for all responsibilities and guarantees associated with plant performance, project schedule, plant warranty, and project completion. Depending on the financing arrangements, schedule, and technical specifications, larger projects may require a construction consortium or award of a number of separate contracts with contractors and equipment suppliers.

The terms, conditions, and obligations of the construction contract (see Annex 7) support those contained in the PPA unless the project company has other means to limit risk. Consequently, although discussions between the project company and the construction contractor establish cost, schedule, performance, and other standards and criteria, the construction contract cannot be finalized until after the PPA has been negotiated. The construction contractor will try to limit risk by obtaining favorable terms and passing along as much risk as possible to material and equipment suppliers and subcontractors. Generally, for a project to be financeable, the construction contractor will

need a fixed-price contract with a specified completion date and a guarantee of performance. Failure of the contractor to meet obligations will result in substantial financial penalties.

Operations and Maintenance Agreement

The project company may choose to enter into an O&M agreement with a reputable operations and maintenance contractor to run and maintain the facility. This arrangement has the advantages of a single source of responsibility, professional personnel, and experience with required spare parts and consumables. Because of the importance of operations management and maintenance practices to the long-term performance of the facility, the power purchaser also has a keen interest in the ability of the O&M contractor. That interest may be protected by reserving in the PPA a right to approve the contractor.

Whether the O&M contractor is affiliated with the developer or project company, the agreement should

- Reflect the obligations of the developer under the IA and PPA.
- Specify price components tied to the tariff under the PPA and provide an explanation and adequate information for future adjustments.
- Be specific in regard to spare parts and consumables, responsibilities, and requirements.
- Establish commitments necessary to commission and operate the plant.
- Address future improvements and additions.
- Provide for operations during emergencies.
- Specify that operations and maintenance will be consistent with the standards set forth in the PPA. In the event of failure to do so, the O&M contractor will be required to pay damages sufficient to cover a percentage of the liquidated damages assessed under the PPA.
- Establish standards for plant availability, heat rate, and performance efficiency.
- Establish requirements for maintenance, outage management, and necessary equipment overhaul.
- Clarify whether the O&M contractor's performance should be guaranteed by a performance bond or whether a corporate guarantee is sufficient.
- Reflect lines of communications with the power purchaser for plant dispatch and operation.

6

Project Procurement and Selection

Project Feasibility

Solicitation of bids from prospective developers allows the power purchaser to determine the ability of the private sector to fulfill that need. Even where there are only a limited number of potential developers, the existence of competition should yield a range of prices and accompanying risks for the power purchaser's consideration. Before calling for bids for provision of private power, the power purchaser should commission a comprehensive prefeasibility study that can establish the project's requirements and serve as the basis for the project procurement. The study also serves the following functions:

- Helps ensure that the project will fit into the planned generation mix as intended
- Allows the power purchaser to take a strong leadership role in dealing with potential developers
- Helps attract qualified developers who can quickly evaluate project needs and risks.

A project prefeasibility report evaluates the following features of the project:

- *Capacity and energy requirements.* The report assesses the capacity and energy requirements for (if appropriate) summer and winter peak periods and opportunities to wheel excess capacity to other utilities.
- *Operational characteristics.* These are assessed for annual operational delivery requirements of energy and capacity as well as planned project operation (e.g., base load unit, peaking unit, or dispatchable unit).
- *Schedule.* The schedule is checked for flexibility and for its ability to allow response to changing conditions as well as additional flexibility to allow for possible construction delays.

- *Technology.* Various generation technologies are investigated, along with site-specific requirements, including emission control equipment, maintenance, site arrangements, and availability of cooling water.
- *Fuel.* The sources, costs, and available methods of transportation for fuel are assessed. Sources of backup fuel(s) and on-site backup storage requirements are investigated as well.
- *Location.* The report investigates the electrical interconnection costs of transmission lines and substations; it also evaluates the effect of a new plant on the stability of the existing system.
- *Cost.* The cost of project capital, O&M costs, engineering costs, interest during construction, price contingencies, and cost of electricity produced are reviewed.
- *Environmental impact.* The environmental impact is assessed for conformity with host-country regulations or lending-institution requirements.

A final project feasibility study is usually prepared by the successful developer after the power purchase agreement is signed and before financial closure. The final feasibility study will be required by project lenders before they approve a loan for the project's construction.

Project Initiation Options

It is preferable to select developers of private power projects based on competitive solicitations, since these are more likely to lead to least-cost supply. Solicited proposals can be obtained by calling for competitive bids for development of projects for a specific and proven technology, size, and location. These are described as *structured* requests for proposals (RFPs). Where the parameters are not specified, the process is referred to as *unstructured.* The advantage of a highly structured request for proposals is that they will reduce the variations among the bids received and thereby simplify the evaluation of the bids. The disadvantage of a highly structured request is that it fails to take advantage of the possibility of other approaches to satisfying a particular need that, in the long run, may be more economic or otherwise attractive. An unstructured request leaves many of the choices—technology, size, location, timing—to the developers, but the increased number of variables, along with the different combinations of proposals that must be considered together to satisfy the power purchaser's needs, complicate the evaluation process. Unsolicited proposals, which the World Bank does not wish to encourage, do not involve any formal bidding. Each of these approaches is reviewed in the following sections.

Solicited Proposals

Prequalification. It is strongly recommended that prior to calling for bids for private power a short list of three or four qualified developers should be prepared. This should ensure that only experienced developers with the capabilities of raising

finance are invited to submit proposals. The prequalification selection process must remain outside political, financial, and technical influences.

Structured RFPs. In the case of structured RFPs, developers are required to submit their proposals in response to a specific set of technical and commercial criteria. If no prequalification is sought, the RFP should incorporate the selection criteria requirements in the prequalification document with the proposed evaluation criteria requirements. However, unless required by constraints of fuel or system considerations, developers should be allowed to bid on any technologies or type of plant. This will allow full competitive bidding and consideration of the least-cost options for meeting the purchaser's power requirements. RFPs should contain selection criteria to evaluate and rank developers based on their experience, financial condition, technical and commercial expertise, manpower, and so on. The results of the selection criteria review should be combined with the technical and commercial evaluation of the developers' offers, resulting in a ranking of developers based on their qualifications and proposals for the project. The structured RFP is in many ways comparable to a solicited bid under international competitive bidding (ICB) procedures. The structured RFP should contain the following:

- Invitation to applicants
- Information for applicants
- Instruction to applicants
- Security package and financing structure
- Tariff structure
- Applicants' proposal and supportive data
- Performance specifications and drawings
- Draft implementation agreement
- Draft power purchase agreement
- Draft fuel supply agreement
- Draft land conveyance agreement
- Site soils investigation data.

Unstructured RFPs. Should the purchaser be disinclined to choose the technology, size, and location of proposed new power facilities, it can solicit and select a developer based on an unstructured RFP, which specifies principally the capacity the owner wishes to purchase and the conditions of the power purchase arrangement. Details such as plant technology, location, and financing would be left to the developer. Proposals submitted in response to unstructured RFPs are often difficult to evaluate because of all of the differences in the variables (e.g., type of fuel, technology, schedule, and financing). However, this is the closest to a market-driven approach, and, despite the

fact that it requires sophisticated evaluation and analysis, it should not be overlooked when large amounts of power need to be developed. This process was used successfully in the early 1990s, for example, by the Virginia Electric Power Company to solicit developers for independent projects. It is a useful approach that developing countries should consider when they require specific blocks of power rather than development of a specific site. Virginia Power's procurement experience is summarized in Annex 8.

Unsolicited Proposals

An unsolicited proposal is prepared and submitted solely at the initiative of the party interested in providing privatized power and not in response to an official RFP. Its validity and seriousness can be difficult to determine, particularly if the offer contains limited detail. The party making the offer may limit detail as a way of limiting competition. On the other hand, unsolicited proposals can represent a serious attempt to establish a viable alternative power source by taking advantage of usually favorable fuel supply agreements, beneficial site conditions, or other such unique opportunities. Agreements based on unsolicited proposals are normally reached on the basis of negotiations between the parties. The attractiveness of unsolicited bids needs to be evaluated against the existing costs of supply or a benchmark price per kilowatt hour. This may be established from comparison with other proposals.

A proposal's credibility can be evaluated effectively even if limited information is provided. The process should include a background check of the offering party, status of privatization process within the host country, compatibility with published and confidential reports on the current thinking within the energy sector, and discussions with officials who will be involved in the process. The ability to judge the project's viability is enhanced as more specifics are provided, but the offerer may be reluctant to make this information available without some form of commitment from the appropriate government authority. The party providing an unsolicited proposal, if credible, recognizes that it will eventually have to provide additional information if it is to interest the public sector seriously.

The proposing party (developer), as a minimum, should be willing to provide the following information:

- Identification of ownership group
- Size and type of facility
- Tentative project implementation milestones
- General tariff structure and price
- Status of site selection or acquisition
- Status of fuel supply commitment
- Financing commitments.

If it is making a serious offer, the developer will have evaluated the host-country business environment and concluded that a project of this type is feasible, particularly if steps have been taken to secure preliminary commitments for financing, fuel supply, land, and other components.

Unsolicited proposals should be viewed with a fair degree of circumspection where a competitive process has been established, since proposals outside this process may seriously undermine the success of competitive solicitations. If developers know that their projects will be considered on an unsolicited basis, they will have little incentive to submit to the rigors of competition. In most situations, it is best to call for competitive bids. When serious power shortages create time constraints, or the sponsor has access to a unique site or fuel resources that would not be accessible to other potential bidders, it may be appropriate to choose an unsolicited proposal. There is a risk with such proposals, however, that they will not provide the cheapest source of supply.

Request for Proposal Preparation

An RFP for a BOO/BOOT power project typically contains the following sections to describe the RFP process and obtain a firm tariff from the applicant:

- Section I - Information for applicants
- Section II - Instructions to applicants
- Section III - Security package and financial structure
- Section IV - Applicant's submission documentation
- Section V - Project performance specifications and drawings.

Each of these aspects is discussed in the following sections.

Information for Applicants (Section I)

The information for applicants section of a private power RFP contains all the necessary information required for preparation of bids. The purchaser should identify the type of plant sought, site location, fuel quality specification, load profile, and project implementation milestone schedule. The purchaser must specify these items to ensure that developers can propose the tariff. Information provided to applicants should include the following:

- Private power policy in the country
- Technical description of the project
- Site location and access
- Subsurface investigations
- Site utilities
- Site ambient conditions

- Station load profile
- Fuel quality specifications
- Environmental requirements
- Project milestone schedule.

Instructions to Applicants (Section II)

The instructions to applicants section for a RFP gives instructions and outlines the purchaser's procedures and requirements for receipt and opening of proposals, evaluation, clarifications, negotiations, and how the project agreements will be completed and awarded. This section also outlines security requirements and, most importantly, conveys to developers the requirements and procedures to be followed for evaluation and award of the project. The instructions to applicants section address

- Description of the selection process
- Cost of preparation
- Site visit
- Clarifications and amendments
- Language, structure, and content
- Tariff and supporting cost data
- Currencies of tariff, proposal prices, and payments
- Proposal validity and security
- Variations in proposal conditions
- Prebid meeting
- Format, signing, sealing, and marking
- Deadline and late proposals
- Modification and withdrawal
- Proposal opening
- Confidentiality
- Determination of responsiveness
- Correction of errors
- Evaluation and award cycle and criteria
- Clarifications and negotiations
- Performance security requirements
- Applicant's responsibilities.

Security Package and Financial Structure (Section III)

The security package and financial structure section of the RFP outlines an applicant's responsibilities to the power purchaser regarding the implementation agreement, power purchase agreement, fuel supply agreement, land conveyance agreement, insurance requirements, government approvals, O&M agreement, and project financing.

The RFP may contain draft implementation, power purchase, fuel supply and land conveyance agreements. Of these, the power purchase agreement will define the tariff for the purchases as well as other key points in the relationship between the power purchaser and the power producer. To enhance the comparability of bids, the RFP may require that all bidders adopt the draft power purchase agreement with specific delineation of any changes proposed to that agreement. A material deviation from the draft power purchase agreement may be grounds for rejecting the proposal. With this approach, the acceptable tariff structures could be defined by the power purchaser, or they can be left for the developers to fill in.

Typical Submission Documentation (Section IV)

The information and other material to be submitted by the developer will be spelled out in the RFP. In general, the developer will be required to furnish the information necessary to evaluate the bid in comparison with other bids, such as information on price, in-service date, the size and type of the facility, and information about the developer's experience and finances. Because the evaluation process can be complex, the proposals should be submitted on standard forms provided in the RFP. This will ease the process of data assembly and analysis. The following paragraphs discuss in more detail the typical documents and information that will be provided in response to an RFP.

Letter of Conveyance. The letter of conveyance is the cover letter, prepared by the applicant, offering the proposal. It contains information that the applicant must validate or verify to the owner concerning the proposal, for example:

- Verification of tariff prices
- Validity period of the proposal
- Verification of completeness and accuracy
- Verification that the RFP is fully understood by the applicant
- Verification of bank guarantees
- Other information requiring validation or verification of the RFP.

The letter of conveyance must be signed by the authorized representatives of the individual, company, joint venture, or consortium submitting the proposal and must contain the official address of each participant. A sample letter of conveyance is shown in Annex 9.

Proposal Security and Performance Guarantee. Developers are usually required to furnish a proposal security in an amount equal to approximately 2 percent of the total capital costs. The proposal security is a financial instrument used to protect the power purchaser's interests prior to selecting a successful applicant and during financial close. This security can be in the form of a guarantee issued from an acceptable bank or in the form of a security bond. It should be valid for the same period as the proposal or until the successful applicant has executed the project agreements and has established the project company. The best performance guarantee for a purchaser is the company's cash equity. Financial strength of the project company can ensure success.

Tariff Structure and Supporting Documentation. The proposed documentation contains pricing data for each major component of the tariff should be submitted so that a detailed evaluation can be made of the capacity and energy costs to the power purchaser. Pricing data is provided for the following:

- *Capacity price.* This comprises the annual costs (monthly/kW) through the duration of the PPA. Adjustments are allowed depending on the agreed-on tariff structure.
- *Fixed O&M price.* This is the annual cost (monthly/kW) through the duration of the PPA, with method of indexation and O&M expenditures identified.
- *Fixed energy price.* This is the energy price for both primary and alternate fuels, with starting cost (per unit of energy) and indexation.
- *Variable O&M price.* This is the price (per unit of energy delivered) with method of indexation and O&M expenditures identified.

Alternative tariff structures may be a part of any draft PPA included in the RFP. To the extent this approach is used to solicit pricing information, the developer would select among the alternatives and provide the information required for that alternative.

Legal Form of Developer. A developer submitting a proposal may be an individual or sole proprietorship, a corporation, general or limited partnership or a joint venture or consortium. The developer must submit suitable evidence that it is an established business and that the individuals who will manage the project are authorized and nominated by the developer. This must be evidenced by submitting either a power of attorney or a signed corporate resolution.

It is also incumbent on developers to submit sufficient evidence of their financial structure, level of capitalization, and audited financial reports. The power purchaser also may request information about developers' past experience in the development and financing of projects of a similar size and technology. This type of background information about the developer is needed to evaluate viability of the proposed project. A developer with extensive financial resources and broad experience in successfully building and operating the type of project being proposed generally is more likely to succeed than a developer without those characteristics.

Joint venture arrangements require nomination of a managing partner who will be authorized to incur liabilities and receive instructions on behalf of all partners. A copy of the joint venture agreement signed by the partners should be submitted with the proposal.

Exceptions to or Deviations from RFP. The proposal submitted by a developer may include exceptions and clarifications to the RFP, which must be considered in the evaluation process. Extensive exceptions or clarifications will make comparisons among the proposals received more difficult. To minimize the number of exceptions and clarifications, it is desirable for the RFP to identify a contact person to answer any questions about the RFP. Preferably, questions would be submitted in writing well before the prebid meeting. In that way, the answers to the questions can be provided at the prebid meeting to all prospective bidders. Generally, bidders are required to comply fully with the RFP, but it may list clarifications and exceptions that do not constitute a material deviation. Material deviations from the RFP are usually grounds for rejecting the proposal. The RFP may include an exhibit that provides the applicant with guidelines and a structured method for submitting exceptions and clarifications to the RFP.

Bidders wishing to qualify proposals or otherwise deviate from the RFP on items of a technical and financial or administrative nature may present such qualifications or deviations separately in the form of alternative offers to the basic RFP. An alternative offer must be accompanied by a detailed description and price breakdown indicating the bidder's estimate of cost if the alternative offer were to be accepted by the owner and incorporated into the contract. Proposals not fully detailed and priced as alternative offers may be rejected. The owner reserves the right to accept or reject such offers.

If a bidder wishes to offer unsolicited technical alternatives, it must first price the basic technical requirements of the RFP and then describe the alternative, including design calculations, technical specifications, breakdown of prices, proposed construction methodology, and other relevant details. Exceptions to and clarifications of the RFP document are shown in Annex 10.

Project Performance Specifications and Drawings (Section V)

Technical data, in the form of performance specifications and drawings and related information, are required to evaluate the impact of adding the proposed power plant or plants to the power purchaser's current and planned mix of generation capacity, including review of proposed technology, fuel type, project size, plant location, plant characteristics, and method of plant operation.

As part of the purchaser's overall economic and financial evaluation of proposals, various categories of technical data are used as key criteria to rank competing proposals. Ranking categories are typically weighted in importance and vary according to each purchaser's particular needs. Categories included in technical rankings are ability to close financially, project location, size, feasibility, reliability, stage of project

development, and developer's experience with the proposed technology. Technical evaluation should pay particular attention to reliability and fuel and should not overemphasize technological details in the sense that market forces should help dictate the type of plant and technology the developer is willing to guarantee. Technical data and related information are shown in Annex 11.

Evaluation Criteria

Well-defined evaluation criteria and a transparent evaluation process lend credibility to the procurement process. Responding to an RFP is expensive, so if the criteria are not clearly defined, potential bidders may be reluctant to submit proposals.

A prequalification process can ensure that all bidders have relevant experience. It is most likely that such experience will be provided by a consortium already engaged in power development. One of the first steps in the evaluation process is to determine which, if any, of the bids must be rejected as nonresponsive. A bid may be deemed nonresponsive if

- It is not received by the due date established in the RFP
- It is not accompanied by the prescribed fees and security
- It is not submitted in the required form
- It does not include sufficient information for it to be evaluated
- It fails to comply with any other specific requirement that has been identified as mandatory in the RFP.

So that potential bidders understand the risk of a nonresponsive proposal, the criteria that will be applied to determine responsiveness should be set forth in the RFP.

Once the responsive bids have been identified, they must be evaluated. The complexity of the evaluation process will be affected by nature of the RFP. To the extent the bidders are bidding for a narrowly defined project, such as a gas-fired combustion turbine of a specific size located at a specific site, the number of variables among the proposals will be limited, and the evaluation process will be simplified. Evaluation of bids can be done either by comparing the proposed prices or tariff rates (usually, the average discounted price in cents per kilowatt hour) or by using a points system.

On a 60 MW private power station in Jamaica, the proposed prices were evaluated. The proposals were first reviewed for responsiveness to the RFP requirements on a yes/no basis (as a structured RFP was prepared for this project with schedule, site technology, environmental and capacity equipment well defined). The bids that were fully responsive to the selection requirements were then evaluated only on the basis of the proposed tariff. This approach is attractive since it is simpler to apply and more objective and from the bidders' perspective well understood.

In Oman, the government used a points ranking system to select a developer of a 120 MW private power station. The points system, although more subjective than the tariff-only evaluation, proved very useful, since RFP issues such as technical deviations, schedule deviations, commercial aspects, and financial aspects could be considered and compared between bidders. The tariff rate proposed received the highest proportion of ranking points so that the final selection of the developer was determined more by the tariff than the other evaluation factors. If a points system is employed as the evaluation process, it must be structured carefully to represent those factors which are most important to the power purchaser.

In contrast, to the extent the bidders are bidding for a more broadly defined project—for example, as part of a block of 2,000 megawatts—there will be more variables to consider, and the proposals will need to be evaluated in different combinations to determine the best fit with the power purchaser's resource needs. This process will be much more complex, but it will also take advantage of the alternatives available in the market.

The scope of the RFP will affect the criteria included in evaluation and the specific weights given to each criterion. Regardless of the scope of the RFP, however, all evaluations will be concerned with two general types of factors: price and nonprice.

Evaluation of Price Factors

Evaluation of the prices being offered requires consideration of several issues. Of course, the specific prices for capacity and energy are the starting point. The term of the power purchase agreement and the structure of the capacity and energy payments, fuel costs and indexation arrangements are also key elements. In addition, the dispatchability of a proposed facility will affect the evaluation of the price.

In simple terms, the price evaluation, as discussed above, is based on a broad comparison of the expected net present value cost of the various proposals. In a narrowly defined RFP, that evaluation will not be complex and may well focus on only the alternative proposals. In a more broadly defined RFP, the expected cost of the different proposals will be affected by their fit with the power purchaser's resources, including any other proposals accepted through the bidding process. For example, a given mix of facilities (both existing and planned resources) will result in a projected level of dispatch and thus costs for the proposed facility. A different mix may result in a different level of dispatch and costs. The power purchaser should consider which mix of facilities produces the least cost for its system. This process will require computer modeling of the alternatives.

Consideration of the Nonprice Factors

The specific nonprice factors that are considered will reflect the power purchaser's priorities and other concerns. Typical nonprice factors include

- Project viability

- Fuel and fuel diversity
- Dispatchability
- Location
- Use of local resources
- Exceptions to the draft power purchase agreement.

Project Viability

The viability of a project can be affected by a number of considerations. In addition to the financial status and experience of the developer, which have been discussed, the degree to which the developer already has taken steps to begin planning for the proposed facility—especially for obtaining the financing—may affect the ultimate viability of the project. That factor can be assessed based on the completeness of the technical description of the facility, including the experience of the construction contractor, suitability and past reliability of the proposed equipment, identification of a specific site, identification of the specific permits required for the proposal, and completeness of the development schedule.

Other considerations affecting the viability of the project are the degree of exposure and the creditworthiness of the power purchasers, the level of security provided by the developers, and the availability of other revenue streams. In most developing countries, lenders will seek the government's guarantee of the power purchaser's obligations under the PPA. Normally, some minimum level of security for performance by the developer is also required under the PPA. To the extent a proposal offers additional security for performance, especially the capacity and reliability of the plant, the viability of the project will be enhanced. As to additional revenues, some power projects may be able to cogenerate electricity and steam. Although the availability of revenues from steam sales may reduce the developer's proposed prices, those revenues also provide an additional margin for the success of the project. In evaluating the potential steam sales revenues, however, the power purchaser must be cognizant of the viability of the steam purchaser.

Fuel and Fuel Diversity

Fuel and fuel diversity may be important to a power purchaser that historically has relied predominantly on one type of fuel. A mix of fuels will spread risks of fuel supply disruptions, fuel price increases, and environmental regulation. To the extent the proposed facility is able to employ more than one type of fuel, risks will be spread even further.

Dispatchability

Dispatchability affects both the economics of the proposed facility and the operability. The economic effect is considered in the price evaluation. The operational effect is a nonprice issue. All else being equal, a power purchaser generally will prefer

the flexibility of a fully dispatchable facility to a facility that has some level of a must-run requirement.

Location

The location of the proposed facility has several potential impacts. For example, proximity of the proposed facility to transmission lines and load centers will affect the power purchaser's long-term resource plans. If the facility is proposed in an area that needs additional load support, that may have additional value to the power purchaser. If the facility is proposed for a location where transmission access is available, that may affect the time and effort required to bring the facility into operation.

Use of Local Resources

Use of local resources—manpower, materials, suppliers, and fuels—also is important, particularly in developing countries. To the extent the local economy is improved, the power purchaser presumably will be benefited. In addition, the use of local resources may foster acceptance of the proposed facility in its community.

Exceptions to the Power Purchase Agreement

As discussed above, exceptions to the terms of the draft power purchase agreement also should be considered.

The power purchaser will place different levels of importance on the various factors considered in its evaluation. The weighting system that will be used should be identified in the RFP so that the prospective bidders concentrate on improving their bids in the areas that are most important to the power purchaser.

Example of a Typical Points Evaluation System

A weighting system based on the factors discussed above follows:

- Price = 70 points
  - Capacity and energy prices
  - Tariff structure
  - Dispatch
  - Effect on system costs
- Nonprice = 30 points
  - Viability (10 points)
    - Financial status of developers and power purchaser
    - Experience of developers and contractors and O&M operators
    - Level of development, completeness of proposal
    - Level of security, guarantees provided
    - Other revenues

- Fuel (10 points)
  - -- Adds diversity to power purchaser's system
  - -- Ability to use more than one fuel
- Other (10 points)
  - -- Dispatchability
  - -- Location
  - -- Use of local resources
  - -- Exceptions to the power purchase agreement.

Through the evaluation process, the power purchaser must assess whether the solicitation successfully identified power supply options at a cost lower than could be achieved otherwise. Assuming that to be the case, the power purchaser must notify the successful bidder or bidders. Generally, a deadline for that notification will have been established in the RFP.

Project Closing

The ultimate goal on any private power project is to have the project operating well, having been completed on time and within budget, and generating expected revenues. Before construction can get under way, however, all financing must be available so that the contractor can be mobilized and capital expenditures can begin. This happens at financial close—the ultimate financial goal in the development of a private power project.

Financial close occurs when all agreements have been executed and financing arranged and disbursements from the proceeds of the financing can take place. In practice, execution of most agreements occurs at the time of financial closing. This affords the lender the opportunity to seek inclusion of any of its requirements prior to their signature.

The obvious requirements for financial close are major agreements that are acceptable to the lenders and signed by the parties. However, these documents do not fulfill nearly all the conditions for financial close. Often, signature of major agreements occurs before financial close takes place. Many other contracts, certifications, and other documents must be executed before a closing. These are shown in Annex 12.

This process is the final step prior to project implementation. A developer's ability to take a project to financial close is crucial to the process. A brief overview has been presented in chapter 5 of the agreements and procedures that need to be executed to ensure that a project reaches financial close. Although much of the onus is on developers, not even the most experienced and seasoned will be able to complete a project successfully without an enabling political, legal, and regulatory environment or the requisite financial climate to encourage investment. In that regard, private power must be supported by both developers and the host government to be successful.

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Annex 1

Overview of the Private Sector Energy Development Program of the USAID Office of Energy & Infrastructure

The Private Sector Energy Development Program (PSED) is a program within the Office of Energy and Infrastructure of the Agency for International Development (AID). The PSED Program was established to accelerate sustainable social and economic development by promoting private sector solutions to the energy problems of developing countries and emerging market economies. Through its programs, PSED seeks to increase the supply of reliable, affordable, and environmentally sound energy provided by the private sector in AID-assisted countries.

PSED promotes private sector solutions by providing technical assistance, disseminating market information, and training. Concentrating on electric power, the PSED Program works with host country governments to create an environment which encourages the private ownership of energy facilities. Private sector participation helps governments to utilize their own resources more effectively, to access new sources of capital, and to capitalize on the technical and managerial expertise of private energy companies.

PSED provides technical assistance to foreign governments, working with them to establish the building blocks essential to successful private power development. PSED collaborates with host governments to modify their regulatory and legal frameworks, to help them better understand project proposals and to accelerate their proposal review process, and to build in-country knowledge and technical skills required to make sound decisions concerning private power projects.

PSED facilitates project development in AID-assisted countries by working with developers and host officials to identify and capitalize on project opportunities. Emphasis on investment, financing, and operation of electric power and related facilities.

PSED seeks to create win-win situations for the host country governments and U.S. companies through its programs. Since U.S. companies are world leaders in private power development, their active participation in international project development serves host governments by accelerating the development of new power projects, thereby alleviating power shortages, and transferring advanced technologies and technical skills.

<u>PSED TECHNICAL FOCUS</u>

PSED:

- Sponsors experts which work with host governments to analyze and modify existing legal, regulatory, and financial policies and institutions in order to encourage and facilitate private sector development.

- Provides technical assistance to officials in developing counties in order to familiarize them with the private power development process and project analysis and evaluation, and to strengthen in-country knowledge, skills and techniques concerning project assessment.
- Assists in formulation of guidelines and draft agreements for the purchase of electricity from the private sector.
- Assists in the development of potential energy projects by providing advice on project development, financing and risk assignment and mitigation.

PSED PROJECT DEVELOPMENT FOCUS

PSED:

- Accelerates development by helping governments to foster an enabling environment for private power and streamline their private power review and approval process.
- Helps foster project development by linking representatives of developing countries with key players in the private power industry.
- Assists in the development of private power projects through contacts with AID Missions and host governments.

PSED KNOWLEDGE FOCUS

PSED:

- Conducts country assessments, private power market analyses, and special studies that can be utilized by U.S. companies seeking opportunities in developing counties' energy markets.
- Organizes and sponsors international conferences, seminars and workshops concerning privatization, technical topics, business development, and market opportunities.
- Arranges tours of utilities in the U.S. and abroad regarding strategies, techniques, and practices leading to private sector energy development.
- Publishes a quarterly newsletter, Private Power Reporter, which provides information concerning international private power development.
- Cooperates with U.S. government agencies and multilateral lending institutions to collect and disseminate the latest market information on worldwide privatization.

For more information, contact:

Private Sector Energy Development Program (PSED)
1601 North Kent Street, Suite 1102
Arlington, VA 22209
USA

Telephone: 703-524-4400
FAX: 703-524-3164

Attachment 1 to Annex 1: Activities of the Private Sector Energy Development Program of the USAID Office of Energy & Infrastructure

PAKISTAN

In cooperation with The World Bank, the Office of Energy and Infrastructure of USAID and the Pakistan USAID Mission supported long term assistance for the establishment of a private power program within the Ministry of Water and Power and WAPDA (the publicly owned electric utility). This assistance created permanent institutional changes within the energy sector that have led to the submission of over 15 private power project proposals.

USAID has:

- Provided legal and technical assistance for the preparation policy and regulations to promote private power;
- Conducted major seminars and workshops in Pakistan covering all aspects of private power development;
- Arranged private power study tours in the United States for Pakistan energy officials;
- Provided full time advisors to the Private Power Cell of WAPDA, the National Development Finance Corporation, and the Ministry of Water and Power; and
- Supported feasibility studies by U.S. private power developers for projects in Pakistan.

INDIA

In a partnership with the Government of India, the Ministry of Energy and the USAID Mission in India, the Office of Energy and Infrastructure of USAID has launched a $5.3 million technical assistance initiative to support the GOI to implement environmentally sound private power projects, including clean coal technology projects. Titled the "India Private Power Initiative" (IPPI), the program will provide technical assistance in the areas of information exchange about the benefits and approaches to private power, the required legal and regulatory framework, new institutional changes and approaches, project financing, and project-specific contracts and agreements.

USAID has:

- Arranged conferences on private power in Washington D.C., Houston, and New York for Indian energy officials;
- Arranged private power implementation seminar in India;
- Conducted a Study Tour for Indian central government and state electricity board officials; and
- Provided a full time Private Power Technical Advisor to the Investment Promotion Cell of the Ministry of Energy in New Delhi.

DOMINICAN REPUBLIC

The Office of Energy and Infrastructure of USAID is cooperating with the Government of the Dominican Republic (GODR), CDE (the publicly owned electric utility), The World Bank, the InterAmerican Development Bank, and the local USAID Mission to implement an electric power sector reform plan. Under this program, USAID is providing technical assistance and orienting the high level officials of the GODR about the benefits and the need for private power development & investment, project financing, and legal and regulatory framework.

The assistance provided by USAID will enable the GODR to attract private power developers and investors. The GODR can benefit from this assistance and should be able to provide for the needs of private power developers and investors.

USAID has:

- Provided legal and technical assistance in drafting the Electricity Law and regulations to promote private power;
- Conducted a study tours for GODR and CDE officials; and
- Provided advice to private power developers about how to structure proposals for projects in the Dominican Republic.

PHILIPPINES

The Office of Energy and Infrastructure of USAID has been working with the Government of the Philippines (GOP), the National Power Corporation (NPC), and multilateral developmental banks to reconstruct the struggling power sector. The GOP and NPC have turned to the private sector to build, own, and operate its power plants. USAID is providing the pre-condition and framework for private power generation and is encouraging foreign private power projects developers and investors to propose environmentally sound, independent power plants.

USAID has:

- Arranged a private power seminar in the Philippines;
- Conducted study tours for NPC and GOP energy officials;
- Drafted and reviewed legislation and regulations to encourage private power projects;
- Provided technical assistance to NPC in how to evaluate private power project proposals;
- Provided in-country training on private power implementation; and
- Advised private power developers seeking to submit project proposals to NPC.

JAMAICA

In cooperation with The World Bank, InterAmerican Development Bank, the Government of Jamaica, and Jamaica Public Service (JPS), the Office of Energy and Infrastructure of USAID has provided technical assistance on private power legislation and regulation, project solicitation and project evaluation.

USAID has:

- Conducted a conference on private power implementation;
- Arranged a study tour for JPS officials and a representative of the Attorney's General office on private power in the United States;
- Supported technical assistance to help JPS prepare a Request for Proposals and evaluate submitted proposals for a private power project; and
- Provided assistance for the structuring of a special private power financing fund to support feasible projects.

Annex 2

Fuel Type and Supply/Availability

1. Types of Fuel Sources

The principal types of fuel for power projects are:

1.1 Fossil fuels comprise coal, natural gas, petroleum residual fuels, and petroleum medium distillates.

a. Coal, widely used throughout the world, has a variety of compositions. Certain types have lower impurities content than available petroleum residuals. Although coal is not as easily transportable as natural gas or petroleum products, it may be preferable to the development of LNG processing and transportation facilities.

Processes have been developed to reduce detrimental environmental effects of coal. While most of the coal used for electric power production is burned in steam-producing boilers, diesel engines and combustion turbines can use gasified coal and have been tested on finely pulverized coal.

b. Natural gas is the least expensive fuel and has the fewest detrimental environmental effects if it has been cleaned of impurities at the production source.

c. Petroleum residual fuels are the heaviest hydrocarbons resulting from distillation of crude (petroleum). Since residual fuels contain most of the impurities carried by the crude, their composition varies considerably, depending on the source of the crude. Residual fuels go by names such as: Bunker "C," ASTM #6, fuel oil, or mazout. Residual fuels are used in steam-producing boilers and large diesel engines.

d. Petroleum medium distillates, the medium-density hydrocarbons resulting from the distillation of crude, vary in characteristics and compositions. Distillates usually contain fewer impurities than residual fuels. Distillates go by names, such as diesel fuel, gasoil, marine diesel, ASTM #2, solar, or kerosene. They are used mainly in combustion (gas) turbines and small and medium-sized diesel engines.

e. Emulsions are mixtures either of water and residual fuels or water and heavy crudes with high bitumen content. They are used to reduce the emission of nitrogen compounds in certain types of engines, and permit the transportation of crudes that would otherwise be too thick to handle. These fuels are used in some installations of large diesel engines and steam-producing boilers. One product is marketed as Orimulsion.

1.2 Hydro power depends on the existence of favorable hydrological conditions, and is limited to specific projects. The use of hydro energy should be coordinated

with other forms of energy to ensure a reliable supply of electricity even when the availability of water is low.

1.3 Nuclear power projects are unlikely to be built with private funds because they demand very large investments and may require decisions on sensitive national policy matters.

1.4 Nonconventional renewable energies, which produce electricity from nonconventional energy sources (wind, solar, tidal, etc.), have a potential for private development but will not be discussed here.

2. Responsibility for Providing Fuel

The responsibility for providing fuel depends on local circumstances and preferences, especially procurement financing.

Some of the following factors may be involved in reaching a decision:

2.1 For fuel supplied by the power purchaser

a. Are there sufficient guarantees that the buyer of electricity will provide fuel that meets the project's quality specifications within required schedules?

b. Are there limitations on fuel suppliers that place the buyer in an advantageous position? For example, are subsidized prices applicable only to some sectors of the economy?

c. Will the methods stipulated by the buyer to account for the fuel received, stored, and used ensure that they will not unduly increase the project's operating costs?

2.2 For fuel supplied by the producer

a. A producer that purchases fuel on the free market may want to finance these purchases in the expectation of profiting from the transactions. This is of particular interest to producers experienced in the international market.

b. If a buyer cannot assure adequate supplies of fuel, the producer should prefer to obtain its own.

3. Environmental Considerations

Selection of fuel characteristics and price depend on how it will affect the environment. Environmental effects fall into three main categories: chemical composition and impurities; type and quantity of waste materials produced; and damage caused to land and water by improper handling.

3.1 Effects due to the chemical composition of fuels

A fuel's sulfur content has the most significant controllable effect on the environment because the sulfur content affects price and the desulfurization facilities that would have to be built to deal with the type of fuel used. When appraising the desired sulfur content of fuel, consideration should be given to the existing environmental levels of sulfur compounds due to emissions from natural sources (volcanoes) or man-made sources (industries and vehicles).

Emissions from power plants are caused by atmospheric nitrogen used in the combustion process. So, while some fuels have small concentrations of environmentally detrimental nitrogen, NO_x control is mainly a function of equipment design.

Fuels contain other impurities such as metals that are especially detrimental to equipment, but which also can indirectly affect the production of detrimental discharges.

3.2 Waste materials

Combustion of most fuels will produce solid waste, mainly ashes. The quantities of these solids may be insignificant in the case of natural gas but can be considerable with residual petroleum products or coal. Storage and disposal of such wastes can have detrimental environmental effects, especially on underground water.

3.3 Handling fuel

Fuel transportation can cause spills that contaminate land and water tracts and filter to the water tables below. Stored solid fuels, especially small particle components, can be blown away by the wind.

Transportation facilities (pipelines, conveyors, etc.) use valuable land, and land or water conveyances can produce environmentally unsound traffic congestions.

4. Pricing

Two factors influence the price of fuels: market forces and national energy policy constraints.

4.1 Market forces

International fuel prices fluctuate considerably. Factors that influence fuel prices are demand and supply, production facilities, transportation and insurance costs, storage facilities, elasticity of demand, competition among alternative fuels, pressures from cartels, and speculation.

4.2 National energy policy constraints

Most countries impose controls, incentives, disincentives, taxation and subsidies (or cross subsidies) on fuels. Sometimes, special exemptions or privileges are extended to fuels used for electricity generation.

Controls, incentives, and disincentives range from limitations on imports to incentives to local production or refining. Taxation and subsidies can be used to produce revenue or vary the price of fuels that are not considered in the national interest. Taxation usually results in cross subsidies that favor one type of fuel over others.

In some countries taxation of fuels used for electricity generation contribute significantly to national revenues.

5. Availability and Reserves

Since fuel supply is part of the long-range commitments for a generating plant, consideration should be given to the assurance that adequate supplies will be available.

When the fuel is expected to originate from recently-developed indigenous sources, it is prudent to ascertain that the known reserves are sufficient to provide the quantity and quality requirements of the power project, especially if these reserves may be used to supply other, more profitable, markets.

6. Economic Effects of Fuels for Electricity Generation

The choice of certain fuels for electricity generation may introduce distortions in a country's economic conditions, including:

- Overburdening of certain sectors of the petroleum refining industry to the detriment of others (especially transportation);
- Favoring inefficient local producers, although imports may be cheaper;
- Establishing unusually large need for foreign exchange, when fuels must be imported, or production that could otherwise be exported to obtain foreign exchange; and
- Distorting local pricing.

Annex 3

Risk Matrix

RISK MITIGATION ANALYSIS				
RISK	**REASON**	**REMEDY**	**CONSEQUENCES FOR LENDERS**	**CONSEQUENCES FOR INVESTORS**
Construction Period				
Cost Overrun	Within Construction Consortium Control	Included in Fixed Price Lump Sum Contract	No Effect	No Effect
	Outside Construction Consortium Control:			
	- Insured event	Proceeds of insurance policy including business interruption insurance	Draw on standby finance if insurance policy exhausted; Debt cover factors reduced if stand-by debt used	Return eroded by servicing of stand-by finance
	- Uninsured force majeure	Draw on stand-by finance	Debt cover factors reduced if stand-by debt used	Return eroded by servicing of stand-by finance
	- Ground conditions	Draw on stand-by finance	Debt cover factors reduced if stand-by debt used	Return eroded by servicing of stand-by finance
	- Owner variation orders	Draw on stand-by finance and limit scope of variations by Owner	Debt cover factors reduced if stand-by debt used	Return eroded by servicing of stand-by finance
	- Changes of law, delays in obtaining approvals or permits, increased taxes	Stand-by finance drawn pending tariff adjustment	Debt cover factors reduced if stand-by debt used	Return might be reduced because of timing effects
Delay in Completion	Within Construction Consortium Control	Penalties on a daily basis. (Sufficient to cover interest due to Lenders and fixed operating costs)	Debt cover factors reduced, if stand-by debt drawn	No effect (except loss of opportunity to earn bonuses) unless penalties fully spent. Use of stand-by finance for further costs will erode return
	Insured Force Majeure	Proceeds from business interruption insurance policy	Standby finance drawn if insurance policy exhausted; debt cover factors reduced if standby debt finance used	To extent ability to pay dividends is postponed, return eroded
	Ground Conditions	Draw on standby finances	Debt cover factors reduced if standby debt finance used	Return eroded by servicing of standby finance

NOTE: This table is intended as an illustrative example only and is not intended to be an all-inclusive project risk analysis. Risk analysis will depend on the specific conditions of each project.

RISK MITIGATION ANALYSIS				
RISK	**REASON**	**REMEDY**	**CONSEQUENCES FOR LENDERS**	**CONSEQUENCES FOR INVESTORS**
Failure of Plant to meet Performance Specifications at Completion Tests as result of fault by Construction Consortium	Capacity shortfall	Penalties payable by Construction Consortium supplemented by insurance	No effect	Return reduced if penalties from Construction Consortium exhausted
	Heat rate shortfalls	Penalties from Construction Consortium	Debt cover factors reduced. If Construction Consortium fails to remedy defect, credit risk on Construction Consortium	Return reduced by cost of additional residual fuel oil less penalty receipts.
Operating Costs Overrun	Costs exceed original estimates, not insurance or Force Majeure event	Standby finance drawn	Debt cover factors reduced if standby debt used	Return reduced by servicing of standby finance
	Insurance costs exceed original estimates	Standby finance drawn pending Tariff adjustment	Debt cover factors slightly reduced depending on timing effect	No effect
Increased Financing Costs	Interest rate increase	Standby finance drawn pending Tariff reopener	Debt cover factors slightly reduced depending on timing effect	No effect
	Adverse exchange rate change	Stand-by finance drawn pending tariff reopener	Debt cover factors slightly reduced depending on timing effect	No effect
	Adverse exchange in terms of finance	Stand-by finance drawn pending tariff reopener	Debt cover factors slightly reduced depending on timing effect	No effect
Government	Minor changes in tax, law, customs, legal requirements, environmental standards	Tariff adjustment (if during construction period, standby finance drawn)	Stand-by finance could be required. No effect on Debt Service Cover Factor	No effect
	Expropriation, nationalization, consents withdrawn, interference causing severe prejudice	Owner entitled to terminate as Government default	If owner terminates, loan repaid or assumed as compensation	If Government defaults and owner terminates, compensation paid for termination

NOTE: This table is intended as an illustrative example only and is not intended to be an all-inclusive project risk analysis. Risk analysis will depend on the specific conditions of each project.

RISK MITIGATION ANALYSIS				
RISK	**REASON**	**REMEDY**	**CONSEQUENCES FOR LENDERS**	**CONSEQUENCES FOR INVESTORS**
	Fundamental breach by the Government, under agreements	Owner entitled to terminate as Government default	If owner terminates, loan repaid or assumed as Compensation	If Government defaults and Owner terminates, Compensation paid for termination
OPERATION PERIOD				
Operating Costs Overrun	As a result of changes in regulations	Tariff adjustment	No effect	No effect
	At Owner's request	No adjustment to Tariff	Debt cover factors reduced	Return reduced
	As result of failure by the operator	No adjustment to Tariff. Penalties payable by the operator	Debt cover factors reduced if penalties exhausted	Return reduced if penalties exhausted
Inflation, Adverse Changes in Cost of Finance, Exchange or Interest Rate Rates		Tariff adjusted by indices. Small possibility that movements in indices do not exactly match changes in actual costs	Debt cover factors could be reduced/increased	Possibility of erosion/increase in return
Foreign Exchange Non-Availability/ Non-Convertibility		Government guarantees availability of foreign exchange. If Government defaults Owner can terminate	Loan repaid or assumed as Compensation	No effect (except loss of opportunity to earn bonuses) if Government pays under guarantee. If Government defaults under guarantee and Owner terminates Compensation paid for termination
Failure to Make Available Sufficient Foreign Exchange	Government default	Owner can terminate	If Owner terminates, loan is repaid or assumed as Compensation	Compensation paid for termination.
Failure of purchaser of power (State owned utility) to Perform Obligations		Government guarantees performance. If Government defaults under guarantee, Owner can terminate	No effect if Government pays under guarantee. If Government defaults under guarantee and Owner terminates, loan repaid or assumed as Compensation	No effect (except loss of opportunity to earn bonuses) if Government pays under guarantee. If Government defaults under guarantee and Owner terminates, Compensation paid for termination

NOTE: This table is intended as an illustrative example only and is not intended to be an all-inclusive project risk analysis. Risk analysis will depend on the specific conditions of each project.

RISK MITIGATION ANALYSIS				
RISK	**REASON**	**REMEDY**	**CONSEQUENCES FOR LENDERS**	**CONSEQUENCES FOR INVESTORS**
Forced Outage/De-Rate or Temporary Shortfall in Capacity, Deterioration in Heat Rate	Owner's fault	Penalties payable by Owner	If penalties completely erode shareholders returns, possibility of insufficient cash Debt service Escrow Account to be drawn down.	Any penalty paid will erode return for investors
Forced Outage or Temporary Shortfall in Capacity	Purchaser of electricity's fault	Capacity Purchase Price payable anyway	No effect	No effect
	Force majeure event	Capacity Purchase Price paid anyway	Government guarantees default by Purchaser. If Government defaults, Owner terminates and loan repaid or assumed as Compensation	Loss of opportunities to earn bonuses). If Government defaults, Owner can terminate. Compensation for termination paid by Government
Increased Fuel Costs (not arising from higher Heat Rate deterioration than Base Case)	Increase in price of RFO	Tariff adjustment	No effect	No effect
Boiler Explosion	Insured event	Insurance proceeds for physical reinstatement and business interruption cover for debt service costs	No effect unless insurance policy exhausted and standby debt finance used	Reduction in return if insurance policy exhausted
Failure of the Operator to Perform Obligations	The Operator's breach of Operations and Maintenance Agreement	Penalties payable by the Operator	Debt cover factors reduced if the Operator's penalties exhausted and standby debt finance used	Return reduced
Environmental Incidents Caused by the Operator	The Operator's breach of Operations and Maintenance Agreement	Indemnity from the Operator	Debt cover factors reduced if the Operator's penalties exhausted and standby debt finance used	Return reduced

NOTE: This table is intended as an illustrative example only and is not intended to be an all-inclusive project risk analysis. Risk analysis will depend on the specific conditions of each project.

Annex 4

Implementation Agreement

Typical Commitments

Chapter 5 contains an overview of the key security agreements for private power projects. The list of commitments are provided as examples only, and are not to be considered a "model" to fit all situations. They are, however, typical of the public and private sector, and the degree to which they can be explicitly addressed and negotiated will be reflected in the viability of the project.

Public/Government Commitments

- Authorization to do business in the country is a basic provision that recognizes and authorizes the project company to implement a private power generating facility.
- Authorization to generate, transmit and/or distribute electrical energy, which provides for the project company to generate and possibly transmit and distribute electrical energy under certain controlled conditions.
- Authority to obtain permits allows project company to secure construction permits, operating permits, if in compliance with related laws and regulations.
- Guarantee of performance of Project company, fuel supplier, or other public sector entity who are party to the implementation and operation of the project means that the government, via a sovereign guarantee compensates the project company for failure of one or more of the public sector entities to perform per agreement.
- Currency protection to the power supplier for a variety of currency issues, including convertibility, availability of foreign exchange, devaluation, and repatriation.
- Tax and Duty incentives can be provided by creating decreases and/or total exemption from tax and duty obligation.
- Legislative protection against changes in the law and regulations which would adversely effect or potentially effect the participants in the project.
- Financial protection against certain force majeure events such as war, insurrection, and general strikes.
- Work permits authorize import and use of specified foreign work force.

Power Provider Commitments

- Comply with laws and regulations.
- Undertake project development.
- Obtain project financing and achieve financial close within specified parameters including time.

- Describes form of company, ownership, registration, terms of ownership.
- Project insurance to be obtained.

Mutual Obligation/Commitments

- Termination defines under what conditions one party or the other can terminate the IA and recourse should termination occur.
- Penalties define type, form, value of penalties imposed should a party fail to perform.
- Governing law and arbitration.
- The government and project company will mutually secure the other party against loss and damage arising from the performance of contractual obligations within certain limitations.

Annex 5

Power Purchase Agreement

a) Summary of Key Provisions

Article 1 - Definitions

Provides the meaning of significant words or word groups used in a document.

Article 2 - Sale and Purchase of Energy and Capacity

Contains statements a project company agrees to sell power to a purchaser per terms and conditions of the agreement, and that purchaser agrees to the terms and conditions. The project company is obligated to provide a number of documents that verify and certify characteristics of the generating facility.

Article 3 - Preoperation Period

Contains the responsibilities of the project company and purchaser during the permit, construction, testing, and start-up period. Terminates at commercial operation date.

Article 4 - Term and Termination

Identifies the effective start and end date of the agreement, conditions under which it can be extended and/or terminated, and the process and remedy for termination.

Article 5 - Representations, Warranties and Covenants

Conveys agreement of the project company to operate the plant as designed within the laws and regulations of the territory. Certifies that the project company is a valid legal entity, will use acceptable business practices, and provide information (as mutually agreed upon) to the power purchaser.

Article 6 - Control and Operation of Facilities

Describes how the facility will be operated and maintained, how power will be dispatched, and the types of documents and records to be maintained.

Article 7 - Interconnection

Defines the responsibility of the project company and purchaser for the facilities used to transmit power from generating facility to transmission grid. Describes the interconnection point at which responsibility transfers from the producer to purchaser.

Article 8 - Metering

Describes how power generation will be measured, metering responsibilities, and other interface responsibilities between the project company and purchaser.

Article 9 - Compensation, Payment and Billing

Describes the price of power to be paid by the purchaser to the project company for the duration of the agreement, which is stated on a unit rate basis (such as U.S. cent/kWh) to include both energy and capacity charges or broken down into its components. Pricing formulas are often complex and are comprised of a number of components that reflect fixed and variables cost of power generation, including debt service, fuel cost, and operating and maintenance costs. These components in turn are based on actual costs, cost indices, or other methods.

Article 10 - Testing and Capacity Rating

Establishes a program for determining the maximum reliable electrical power generating capabilities of the facility under various conditions. If test results are acceptable, the facility will be placed in operation.

Article 11 - Insurance

Delineates the type and limits of insurance to be obtained by the project company.

Article 12 - Liability, Noncompliance and Guarantees

- Indemnification obligations between power producer and purchaser
- Form and limits of facility completion guarantee
- Form and limits on facility performance guarantee
- Limits and conditions on transfer of facility from project company to other organizations

Article 13 - Force Majeure

Defines what events constitute a force majeure, the actions required, and who bears the risk.

Article 14 - Taxes and Claims

Contains obligations of project company for local, regional, and national taxes and levies, and claims for payment for work and/or materials provided by others that might result in legal action.

Article 15 - Choice of Law and Resolution of Disputes

Identifies under which laws the agreement will be governed, and the process and method to be used to resolve disputes.

Article 16 - Notices

Provides for method, language, process, and distribution of notices among parties.

Article 17 - Changes in Law

Provides for protection of the project company should the law change to adversely affect the cost of construction or operation.

Article 18 - Options to Purchase

Depending on the type of agreement, defines how the project company can exercise the option to purchase the facility.

Article 19 - Entirety

Designates the agreement as the final expression of the intent of the parties and abrogates all prior written or oral understandings. Includes a signature page.

Article 20 - Miscellaneous Provisions

Includes a variety of other general terms and conditions considered necessary but not warranting a separate section.

b) Explanatory Notes

Term of Agreement

- The term of the agreement is stated in years. The effective date is the date of commission of the complex. The agreement should be in effect as long as there is outstanding debt. An option to extend the term of the agreement may be included here. Disposition of project assets at the termination of the agreement is specified.

Plant Fuel

- Plant fuel should be described in detail, including constituent make-up, heat content, limits on contaminants, supply pressure (if gas) and other qualitative measurements. Fuel can be a pass-through cost from supplier to purchaser or, depending on the risk the participants are willing to accept, and be tied to a price index. As fuel is the major operational cost for most technology, treatment and recovery of fuel cost is critical to power price.

Facility Operation

- Operation and dispatch of the power complex allows for a base load or fully dispatchable plant (if required by the system), in accordance with the principles of economic dispatch. It provides the right of the owner to suspend purchase of power without penalty during emergencies. It obligates the producer to operate the complex in accordance with recognized practices and the owner's requirements.

Performance Testing

- The article on testing and capacity rating details procedures for testing the project facilities based on international codes and standards and project specifications. The producer is required to pass certain performance and reliability tests before the project goes into commercial operation and capacity payment begins. A one-time adjustment at a specified price per kW is made if power tests do not meet guarantee, which is usually reflected in the negotiated capacity change. Performance tests are made on both heat rate (to assure efficient use of fuel, as specified) and on capacity. In addition to the performance tests prior to operation, the power purchase agreement may call for periodic tests of dependable capacity. A failure to satisfy those performance tests could result in a reduction in capacity payments.

Energy Purchase

- The article on sale and purchase of energy and capacity requires that the producer will make available and sell to the purchaser, and the purchaser will purchase from the producer for an agreed-on compensation a specified maximum dependable capacity and an associated energy output of the plant after its commercial operation date.

Tariff Structure

- The article on compensation, payment, and billing describes the tariff compensation to the power producer for plant capacity and energy payments based on actual operation.

Project Insurance

- The insurance article requires the power producer to obtain and maintain minimum levels of insurance, including business interruption.

Interconnection

- Interconnection describes the responsibilities of the developer and owner in planning, design, construction, commission, operation, and maintenance of the interconnecting facilities.

Metering and Communications

- Metering and communications facilities establishes the responsibilities of the developer and owner for installation, operation, and maintenance of communications equipment, as well as the measurement of energy output and dependable capacity using the plant metering system. Typically, the power purchaser will control the measurement of the energy output and dependable capacity.

Guarantees, Warranties, Indemnification and Liabilities

- Contained within the PPA are specific obligations of one party to the other should there be plant equipment failure, property damage, failure to provide electrical power as specified.

Force Majeure

- The article must define force majeure such as acts of God, war, riots, nonculpable labor strikes, and their consequences to each of the parties during the ownership and operation of the project.

Taxes, Duties, and Levies

- The article defines all taxes, duties, levies, and other impositions applicable to the producer during construction and operation of the project, part of which may be passed on to the purchaser.

Defaults and Termination

- Defaults and termination include: material breach of obligations not cured within a reasonable time, insolvency of developer, and failure to produce a certain minimum amount of energy or achieve a certain availability of plant over an extended period of time. Remedies for default should include the right of owner to operate the project.

Dispute Resolution

- This article defines the process by which the project company can settle disputes about the interpretation of agreements and performance of various commitments. This process may include a mutually appointed operating committee, discussions, referral to an expert and arbitration in a predesignated location.

Transfer of Ownership

- Transfer of ownership of the assets addresses the final disposition of the project facilities at the end of the agreement period. This may include physical transfer or purchase of the facility, continuation of the agreement, or liquidation of salvageable assets.

Annex 6

Fuel Supply Agreement - Summary of Key Provisions

1. Delivery. Supplier must guarantee fuel availability. If delivery delays result in noncompliance in providing power, the supplier must pay penalties to cover lost revenues and/or the price difference of substitute fuel.

2. Take. Supplier and purchaser must agree on the amount of fuel to be purchased and determine whose responsibility it is to redirect fuel if the purchaser's need is reduced.

3. Price. Because of the purchaser's limited risk-bearing abilities, fuel price increases are passed to the purchaser in the energy component of the PPA tariff. Long-term supply contracts include a prespecified indexation principal to regulate periodic price adjustment to reflect changes in supplier cost.

4. Quality. Change in fuel quality could cause substantial losses to the purchaser because of early degradation of equipment, outages, or reduced performance. Therefore, it is paramount to have a guaranteed fuel quality, heat rate, etc. enforceable by penalties for noncompliance.

5. Transportation. Transportation availability and cost must be agreed on.

6. Mechanical Considerations. The mechanisms for specifying hourly/daily/monthly fuel quantities, for testing/sampling fuel supplies, and for rejecting/securing alternative supplies must be included in the Fuel Supply Agreement before commercial operations begin.

Annex 7

Construction Contracts - Summary of Key Provisions

1. Technical Scope and Specifications

   Describe plant design criteria and specifications, provide summary layout and process drawings, and identify major pieces of equipment.

2. Contractor's Responsibilities

   Describe the services, staffing requirement, security measures, plant acceptance methods, bonding requirements, personnel conduct, reporting requirement and other contractor obligations.

3. Owner Responsibilities

   Describes the obligations of the project company, including approval process and authority, availability and conditions of project site, access to site, permits, fuel, construction owner and other items.

4. Compensation and Payment

   Describes value of contract and payment schedule based on construction progress and testing milestones.

5. Acceptance Testing

   Describes performance testing requirements, performance guarantees, testing schedule, testing review and approval which are included as an attachment to contract.

6. Changes

   Provides mechanism for changing the terms and conditions of the contract. This could include changes in the scope of services, price and/or time for project execution.

7. Rejections

   Should the plant or portions of the plant be rejected by the owner during the construction to testing phase, remedy by contractor is described.

8. Warranties

   The contractor represents that the project meets design and construction standards, has been engineered with prudent and recognized specifications, that the contractor is experienced in providing such services, can meet production schedules, and the material and equipment performed as specified. Should the work prove defective and/or fail, it will be replaced by the contractor at no cost to the owner.

9. Title to Work

Convey all work, supplies and equipment to the owner.

10. Remedies

Defines the consequences/penalties for failure by the contractor to perform as specified, including schedule delay and/or failure to achieve performance guarantees. Damages include monetary compensation to the project company for delay in achieving completion milestones and failure to achieve performance guarantees. Damages assessed on a day-by-day slip in schedule, failure to meet electrical output guarantee and failure to meet plant heat rate guarantee. Damages are tied to financial obligations of the producer as dictated by financing institutions.

11. Performance and Warranty Bonds

Provided by the contractor in support of potential failure to meet contractual obligations.

12. Insurance

Project insurance is provided by contractor and owner, including:

- Comprehensive general liability
- Automobile insurance
- Builder's risk insurance

13. Dispute Resolution

Defines how, where, and by whom disputes will be resolved.

14. Indemnification

The contractor and owner mutually assume responsibility for actions or inactions of their employees and/or others that cause damage to the other party.

15. Assignment

Describes under what conditions this contract, in whole or part, might be assigned to a third party.

16. Suspension and Termination

Contains conditions under which the owner can suspend or terminate work, including default by the contractor. Describes obligations of parties in such an event.

17. Force Majeure

Defines a force majeure and actions and remedies to be taken as a result.

18. Confidentiality

Defines what information should be treated as confidential and how it should be protected.

Annex 8

Virginia Power's Private Power Procurement Experience

Virginia Power is a major investor owned U.S. utility which has extensive experience in successfully obtaining generating capacity and energy using Power Purchase Agreements with private developers. Its generating capacity exceeds 16,000 MW and includes a mixture of nuclear, coal, oil, gas, and pumped storage hydroelectric units. Virginia Power has executed Power Purchase Agreements with private developers for over 18% of its capacity, with about 2,800 MW currently in operation.

Virginia Power has had extensive experience in the procurement of power from private sources. Prior to passage of the Public Utility Regulatory Policies Act of 1978 (PURPA), Virginia Power had about 445 MW of privately owned generation that was used by customers to serve part of their requirements. Virginia Power first sought to purchase power from private developers in the early to mid 1980's through unsolicited proposals. During this period, the company contracted for about 225 MW of power. Following implementation of PURPA regulations by the Virginia State Corporation Commission in 1985, Virginia Power was inundated with proposals from private power developers. The company responded by establishing processes for prioritizing, negotiating, and also bidding for new generation from private sources. Virginia Power's processes have subsequently evolved through four rounds of solicited proposals, including competitive bidding processes.

It's first round solicitation in 1986 set a benchmark price for the power it was willing to purchase, and also required that Virginia Power be able to dispatch the generating unit. Virginia Power's experience in this solicitation with a "Benchmark Price", or price at which it was willing to purchase power, was quite revealing. Since very few developers offered power at prices below the benchmark, the true lowest cost, or market place price of power may not have been achieved by Virginia Power. The company has since moved away from this type of solicitation. In 1988, Virginia Power conducted its first full round of competitive bidding, and included in its solicitation a model Power Purchase Agreement. It subsequently conducted additional competitive bids for peaking power in 1988, and also for capacity and energy in 1989 (which did not include a benchmark price). As one indicator of the success of Virginia Power's process, it has received proposals for over 32,000 MW of new capacity, approximately ten times the amount of its indicated needs.

A number of factors have influenced Virginia Power's success with private power. These include, among others:

- Market opportunity - a clear need for additional capacity.
- The state agency which regulates utilities in the State of Virginia, the Virginia State Corporation Commission, has clearly encouraged private power development and has allowed Virginia Power flexibility in its solicitation process. The Commission, in its orders, indicated that a number of factors, in

addition to price, could be used to distinguish among proposals. These factors include: use of Virginia fuels, manpower or other state resources; demonstrated financial viability of the developer; developer's past experience, or other possible benefits to the people of Virginia.

- A strong, positive commitment to the process by senior management of Virginia Power. Additional staffing resources and capabilities were added to manage the burgeoning capacity acquisition program. Various solicitations were structured, each with emphasis on meeting the differing needs of Virginia Power, such as through peaking power plants, or fully dispatchable plants, and also emphasis on fuel diversity.
- A transparent and streamlined solicitation process that is easily understood by developers. The process made available to developers information about Virginia Power's evaluation process, and provided sufficient time to obtain permits and financing, and for construction of the proposed plants.

The competitive solicitation used by Virginia Power is intended to be perceived by developers as the most appropriate process to follow; unsolicited proposals are not encouraged.

The competitive bidding process includes a complete bidding package and pre-bid meeting; identification of any favored site locations in Virginia Power's service territory; Model Power Purchase Agreement with flexibility to be tailored to each proposal; use of bid prices for capacity and energy determined by the bidders in lieu of the utility's avoided cost; allowance for the pass through and recovery of the market cost of fuel in accordance with specified indices; project milestone dates (i.e. financing, start of construction, commercial operation), and provides other necessary factors such as opportunity for appeal to the state regulatory agency if a developer receives unfair treatment.

Virginia Power's current solicitation process allows the bidding process to establish the market price for capacity and energy. It also permits weeding out of high risk developers by spelling out specific bid submittal requirements; inclusion of bid fees, and posting of security.

It is important to consider differences in conditions which may exist in developing countries and those which exist in Virginia Power's territory, when considering the types of procurement processes used by Virginia; the requirements imposed on private power developers during those processes, and the success achieved by Virginia.

For Example:

- Virginia Power is a financially sound utility, which is overseen by a regulatory agency which closely monitors Virginia Power's financial performance. Risks for developers in this respect are minimal.
- Most private power projects proposed for development are structured to meet the requirements of the U.S. enabling legislation (Public Utility Regulatory and Policy Act, 1978). This legislation permits private power developers to sell power not only to the electric utilities, but also to other industrial customers under prescribed conditions, thereby providing them expanded opportunities and applications (less risk) for selling private power. It also establishes conditions and requirements for utilities to purchase energy from private power sources, thereby assuring developers market and minimum price for their energy.
- Project financing is generally available, and the opportunity to structure highly-leveraged, non-recourse project financing for private power projects selling to Virginia provides significant incentives to some developers.

Review of Virginia Power's experience in obtaining power from private sources provides useful lessons for consideration when developing private power purchase programs:

- A well developed generation resource plan, put in place by a utility, serves as an excellent foundation for a bidding program.
- Particular needs (e.g., peaking power, fully dispatchable power, use of particular fuels, preferred site locations, etc.) can be met by proper structuring of bid solicitations.
- Publishing a benchmark price in advance, as part of a competitive bid process, may result in the utility not obtaining the optimum price for its purchased power. While the utility should develop cost estimates of its own build options, it need not divulge these estimates to bidders. The marketplace will provide the best determination of optimum price. Similarly, the marketplace will provide the best determination of the appropriate power plant technology to fit the utility's generation needs, rather than by specifying a particular technology in an overly restrictive solicitation.
- The utility's request for proposal should contain accurate and complete information about the company's need for capacity. All the information which could reasonably be expected to have a bearing on the project viability should be provided. Potential bidders should have an opportunity to meet with the utility. Evaluation of bids should be based on criteria identified in the request for proposals. Non-price factors selected for evaluation and their weightings should be clearly specified.

Certain features of Virginia Power's private power capacity acquisition program may not be replicable in some other locations. Where fuel diversity and site diversity are limited, non-price factors (e.g., technology) may need stronger consideration. Also, bidders who are unsuccessful in selling power to Virginia Power often have the opportunity to sell all, or part of their potential power elsewhere - to third party industries or to other utilities via transmission interconnections. If those types of alternate opportunities do not exist, utilities elsewhere may need to take that into consideration when establishing bidding requirements such as scheduled operation, number and size of units, financial penalties, etc.

Annex 9

Letter of Conveyance

THE GOVERNMENT OF _____

MINISTRY OF ELECTRICITY AND ENERGY

[TITLE OF PROJECT]

TO:

In response to the RFP Document No._____ entitled "_____", and in accordance with the accompanying Instructions to Applicants, the undersigned hereby proposes to Owner, _____Electricity Authority, an agency of the Ministry of Electricity and Energy or the [Country], to design, furnish, fabricate, test, deliver and transport to the site the "[Title]", for the _____ Power Plant in accordance with provisions of the RFP Document and any addenda thereto, at the prices stated opposite the respective items set forth in Section __, Exhibit __, Schedule __, entitled "Applicant Proposal and Supporting Data."

The undersigned agrees that this proposal shall remain open for acceptance and shall remain irrevocable for a Period of Validity of Proposal of 180 calendar days from the date fixed in Article entitled "Tender Opening" of Instructions to Applicants, and it shall remain binding upon the undersigned and may be accepted at any time before the expiration of that period. The undersigned certifies that the Tenderer has examined and is fully familiar with all of the provisions of the RFP Document and any addenda thereto; that the Applicant has carefully checked all of the words and figures shown in Section __, Exhibit __, Schedule __, "Applicant Proposal and Supporting Data;" that the Applicant has carefully reviewed the accuracy of all statements in this proposal and attachments hereto; and that the Tenderer, by careful examination of the RFP Document and any addenda thereto, is satisfied as to the nature and location of all the works; the general and local conditions of the Contract and all other matters which can in any way affect the Plant or the cost thereof. The undersigned hereby agrees that the Owner will not be responsible for any errors or omissions on the part of the undersigned in preparing this proposal.

Within a period of not more than 10 calendar days commencing on the day following receipt of the Notice of Award, the undersigned will submit a performance guarantee in the form of a Bank Guarantee in an amount of 10 percent of the total funds required for the project; and execute the Contract for furnishing the Plant as described in the RFP Document when requested by Owner.

The undersigned agrees to commence the work upon execution of the Contract and to deliver the whole of the Plant as set forth in the project schedule.

Attached hereto and by this reference incorporated herein and made a part of this proposal are the data required for "Applicant's Commercial Data Submittals for Qualification," "Applicant's Cost Data Submittals," and "Applicant's Technical Data Submittals for Qualification."

In addition to the proposal data required, the undersigned encloses the following additional information:

The undersigned also acknowledges receipt, understanding, and full consideration of the following addenda to the RFP Document.

Addenda Nos. _____

Signature: _____

In the Capacity of: _____

duly authorized to sign proposal for and on behalf of

Applicant: _____

Dated: _____

Home Office:

_____ (P.O. Box or Street and No.)

_____ (State and Country)

_____ (Telephone No.)

_____ (Telex No.)

_____ (Fax No.)

Attention:

_____ (Name and capacity of authorized representative for Applicant negotiations)

Address in the Host Country (if applicable):

_____ (P.O. Box or Street and No.)

_____ (State and Country)

_____ (Telephone No.)

_____ (Telex No.)

_____ (Fax No.) "

Annex 10

Exceptions or Clarifications to RFP Document

1.0 General

Applicant shall list herein all exceptions/clarifications taken by Applicant, if any, to the requirements of the RFP, a., listed in Article __ of the Instructions to Applicants. Applicant shall clearly refer to the applicable Article No. and/or Technical Specifications No. where such exceptions/clarifications have been taken. Should any of the exceptions/clarifications listed by Applicant constitute a major deviation to the RFP requirements or imply a material modification, these exceptions/clarifications may form the basis for rejection of the proposal, in accordance with Instructions to Applicants, notwithstanding the provisions of Article __, entitled "Variation in RFP Conditions." If no exceptions are submitted herein, Owner will construe this to mean that all the terms and conditions contained in the RFP Document are acceptable to Applicant with no exceptions whatsoever.

2.0 Exceptions/Clarifications to RFP Document

Section/Article No.	Exceptions/Clarifications
2.1 Instructions to Applicants	
2.1.1 Proposal Validity (Art __)	
2.1.2 Proposal Security (Art __)	
2.1.3 Variations in RFP Conditions (Art __)	
2.1.4 Requirements for Localization Program (Art __)	
2.1.5 Others (list Applicable Article No.)	
2.2 Section A, General Conditions	
2.2.1 Indemnities (GC-__)	
2.2.2 Contractor Quality Program (GC-__)	
2.2.3 Warranty (GC-__)	
2.2.4 Taxation (GC-__)	
2.2.5 Fees to Agents (GC-__)	
2.2.6 Others (list Applicable Article No.)	

2.3 Section B, Special Conditions

2.3.1 Extent of Contract/Purchase Order (SC-__)

2.3.2 Insurance Requirements (SC-__)

2.3.3 Commencement, Prosecution and Completion (SC-__)

2.3.4 Liquidated Damages (SC-__)

2.3.5 Payment Terms (SC-__)

2.3.6 Special Shipping Instructions (SC-__)

2.3.7 Custom Clearance (SC-__)

2.3.8 Other (list Applicable Article No.)

2.4 Section D, Technical Specifications

2.4.1 Scope of Work ( )

2.4.2 Technical Specifications (list Applicable Article No. and Paragraph)

Annex 11

Technical Data and Required Information for Evaluation

Project Summary Data

- Proposed technology (e.g., pulverized coal, fluidized bed, combustion turbine, combined cycle, hydroelectric)
- Net unit capacity (MWe) during summer and winter
- Net station heat rate during summer and winter
- Method of plant operation (e.g., baseload, must-run, fully dispatchable, peak load)
- Availability

Site-Related Data

- Project location
- Interconnection point (exiting site switchyard)
- Interconnection location to utility's transmission lines
- Location of site-related facilities (e.g., highway access, rail lines, gas supply pipeline, coal supply facilities, coal or oil terminals, and rights-of-way required for site-related facilities)

Fuel-Related Data

- Primary and alternate fuel characteristics and utilization plans
- Planned on-site inventory and storage capabilities
- Fuel supply and fuel transportation contract provisions, including quantities, sources, duration, interruptibility, and annual operating limitations caused by fuel supply plans

Technology and Design Data

- Type of boiler or combustion turbine(s), with net capacities, winter and summer
- Type of steam cycle (e.g., combined cycle)
- Type of cooling system
- Emission/pollution control equipment and capabilities
- Generator capabilities, including reactive power
- Auxiliary boiler size, characteristics, and fuel requirements
- "Black start" (start-up from station blackout conditions) capability

- Proof of operating performance for major components
- Station heat balances and material balances

Environmental Data

- Site use of wetlands/forest or other conservation areas
- Floodplain encroachments
- Quantity and source of water use
- Quantities of solid and hazardous wastes
- Quantities and emission rates for air pollution emissions
- Quantities and nature of wastewater, plus disposal method
- Types of pollution control equipment and other mitigation measures proposed, and guaranteed emission rates.
- Ambient noise levels resulting from operation, during daytime/nighttime hours at the site boundary and nearest populated area
- Exhaust stack height

Electrical Interconnection Data

- Site interconnection substation bus arrangement, including electrical single line diagram of facility/utility interfaces
- Type and ratings of major electrical equipment
- Voltage levels employed
- Relay protection provided
- Metering provisions

Operations and Maintenance

- Net dependable generating capability (winter, summer, and shoulder months)
- Maximum generating capability and minimum operating level
- Dispatch restrictions, including maximum and minimum operating levels at which the plant is to be economically dispatched; minimum duration of each dispatch
- Start-up time requirements
- Ramp rate-of-change of power level restrictions
- Regulated voltage range restrictions
- Duration and timing of normal maintenance schedules
- Duration and timing requirements for major maintenance outages
- Proposed availability projections during winter, summer, and shoulder months
- Margins for heat rate degradation

Annex 12

Summary of List of Documents, Agreements and Contracts Needed for Financial Close

Financing Documents

- Credit agreement
- Promissory notes
- Interest rate protection

Project Documents

- Power purchase agreement
- Engineering procurement and construction contract
- Completion guarantees, performance bonds, and warranty bonds under EPC
- Operations and maintenance contract
- Fuel supply agreement
- Fuel transportation agreement
- Wheeling/transmission agreement
- Water supply agreement
- Site lease or instrument of deed transfer

All the above agreements must be certified for corporate authority.

Insurance

- Political risk insurance contract
- Commercial insurance contract
- Certifications of recognized broker

Security Documents

- Assignment and security agreements between the various project parties and the lenders (several)
- Uniform commercial code filings
- Trust agreements
- Consent and assignments of all major project documents (several)

- Chattel paper
- Surveys

Corporate Documents

- Certified copies of all agreements
- Certification of representations and warranties of all project parties
- Certified financial statements for all project parties
- Certificates of incorporation and good standing
- Certified Bylaws and corporate authority for all project parties

Approvals and Licenses

- Land use
- Operating license
- Construction permit
- Import license
- Environmental permit

Legal Opinions

- Legal opinions from local counsel and project counsel (numerous)

Other

- Approved feasibility study
- Construction budget and payment schedule
- Final base case projection
- Engineer's report
- Environmental report

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